MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

CONTRACT DOCUMENTS

CONTRACT 2018.06

PARKING INSTALLATION
KENNEBUNK SOUTHBOUND SERVICE PLAZA MILE 25.5
PAVING REHABILITATION
BIDDEFORD INTERCHANGE MILE 31.6

BRIDGE AND CULVERT REPAIRS
CREDIFORD BROOK CULVERT MILE 18.75
ROUTE 111 UNDERPASS MILE 31.3
BIDDEFORD INTERCHANGE UNDERPASS MILE 31.6

NOTICE TO CONTRACTORS

PROPOSAL

CONTRACT AGREEMENT

CONTRACT BOND

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

SPECIFICATIONS

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

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

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

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ARRANGEMENT OF SPECIFICATIONS

MAINE TURNPIKE AUTHORITY

NOTICE TO CONTRACTORS

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

CONTRACT 2018.06

PARKING INSTALLATION
KENNEBUNK SOUTHBOUND SERVICE PLAZA MILE 25.5
PAVING REHABILITATION
BIDDEFORD INTERCHANGE MILE 31.6

BRIDGE AND CULVERT REPAIRS
CREDIFORD BROOK CULVERT MILE 18.75
ROUTE 111 UNDERPASS MILE 31.3
BIDDEFORD INTERCHANGE UNDERPASS MILE 31.6

at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, ME, until 11:30 a.m., prevailing time as determined by the Authority on March 15, 2018 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 Bridge Construction Projects. All other bids may be rejected. This Project includes a wage determination developed by the State of Maine Department of Labor.

The work consists of repairs to three structures at three locations for the Maine Turnpike Authority. The work includes: substructure repairs at Crediford Brook Culvert, deck repairs, expansion joint replacement and modification, and substructure repairs at Route 111, pavement rehabilitation, deck repairs, expansion joint installation, and end post replacement at Biddeford Interchange, maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

The work also consists of paving rehabilitation at the Biddeford Interchange and parking improvements at Kennebunk Southbound Service Plaza along with required maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

Plans and Contract Documents may be examined by prospective Bidders weekdays between 8:00 a.m. and 4:30 p.m. at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine. **The half size Plans** and Contract Documents may be obtained from the Authority upon payment of Fifty ($75.00) Dollars for each set, which payment will not be returned. Checks shall be made payable to: Maine Turnpike Authority. The Plans and Contract Documents may also be downloaded from a link on our website at http://www.maineturnpike.com/project-and-planning/Construction-Contracts.aspx.

For general information regarding Bidding and Contracting procedures, contact Nate Carll, Purchasing Manager, at (207)482-8115. For information regarding Schedule of Items, plan holders

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

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

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

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

A pre-bid conference will be held on February 27, 2018 at 11:00 a.m. at the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

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

MAINE TURNPIKE AUTHORITY

Nate Carll
Purchasing Manager
Maine Turnpike Authority

Portland, Maine

Maine Turnpike Authority

MAINE TURNPIKE

PROPOSAL

CONTRACT 2018.06

PARKING IMPROVEMENTS
KENNEBUNK SOUTHBOUND SERVICE PLAZA MILE 25.5
PAVING REHABILITATION
BIDDEFORD INTERCHANGE MILE 31.6

BRIDGE AND CULVERT REPAIRS
CREDIFORD BROOK CULVERT MILE 18.75
ROUTE 111 UNDERPASS MILE 31.3
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MAINE TURNPIKE AUTHORITY

PROPOSAL

CONTRACT 2018.06

PARKING INSTALLATION
KENNEBUNK SOUTHBOUND SERVICE PLAZA MILE 25.5
PAVING REHABILITATION
BIDDEFORD INTERCHANGE MILE 31.6

BRIDGE AND CULVERT REPAIRS
CREDIFORD BROOK CULVERT MILE 18.75
ROUTE 111 UNDERPASS MILE 31.3
BIDDEFORD INTERCHANGE UNDERPASS MILE 31.6

TO MAINE TURNPIKE AUTHORITY:

The work consists of repairs to three structures at three locations for the Maine Turnpike Authority. The work includes: substructure repairs at Crediford Brook Culvert; deck repairs, expansion joint replacement and modification, and substructure repairs at Route 111: pavement rehabilitation, deck repairs, expansion joint installation, and end post replacement at Biddeford Interchange; maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

The work also consists of paving rehabilitation at the Biddeford Interchange and parking improvements Kennebunk Southbound Service Plaza along with required maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

This Work will be done under a Contract known as Contract 2018.06 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

SCHEDULE OF BID PRICES
CONTRACT NO. 2018.06
Bridge and Culvert Repairs
Kennebunk SB Service Plaza, Biddeford Interchange,
Crediford Brook Culvert, Route 111 Underpass, Biddeford Interchange Underpass

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
201.23	Removing Single Tree Top Only	Each	6				
201.24	Removing Stump	Each	6				
202.12	Removing Existing Structural Concrete	Cubic Yard	10				
202.202	Removing Pavement Surface - Mainline	Square Yard	27,700				
202.2021	Removing Pavement Surface - Bridge Deck	Square Yard	2,950				
202.2026	Removing Pavement Surface - Drainage Paths	Square Yard	150				
203.20	Common Excavation	Cubic Yard	360				
304.10	Aggregate Subbase Course - Gravel	Cubic Yard	270				
304.14	Aggregate Base Course - Type A	Cubic Yard	36				
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	Ton	162				
403.2081	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, (Polymer Modified) - RAP	Ton	2,420				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
403.2084	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Sidewalks, Drives, Islands & Incidentals)	Ton	25				
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	Ton	760				
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)	Ton	195				
409.15	Bituminous Tack Coat - Applied	Gallon	2,420				
419.30	Sawing Bituminous Pavement	Linear Foot	440				
424.323	Asphalt Rubber Fiber Crack Sealer	Pound	3,050				
470.08	Berm Dropoff Correction - Grindings	Ton	170				
502.21	Structural Concrete, Abutments and Retaining Walls	Cubic Yard	15				
503.14	Epoxy-Coated Reinforcing Steel, Fabricated and Delivered	Pound	3,600				
503.15	Epoxy-Coated Reinforcing Steel, Placing	Pound	3,600				
507.095	Aluminum Bridge Railing - Splice Modification	Each	8				
514.06	Curing Box for Concrete Cylinders	Each	2				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
515.201	Pigmented Protective Coating for Concrete Surfaces	Square Yard	300				
515.202	Clear Protective Coating for Concrete Surfaces	Square Yard	2,300				
518.39	Granite Curb Joint Mortar and Bedding Mortar Repair	Linear Foot	180				
518.40	Epoxy Injection Crack Repair	Linear Foot	170				
518.43	Parapet Joint Repair	Linear Foot	1,070				
518.51	Repair of Upward Facing Surfaces - Below Reinforcing Steel < 8 inches	Square Foot	100				
518.511	Repair of Upward Facing Culvert Surfaces - Below Reinforcing Steel < 8 inches	Square Foot	160				
518.53	Culvert Floor Refacing	Square Foot	1,650				
518.60	Repair of Vertical Surfaces < 8 inches	Square Foot	260				
518.86	Bridge Joint Header Concrete Replacement	Square Foot	450				
520.2228	Metal Armor Repair	Linear Foot	10				
520.2234	Joint Armor Modification	Linear Foot	150				
			CARRIED FORWARD:				

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
520.23	Expansion Device - Asphaltic Plug Joint	Linear Foot	97				
526.306	Temporary Concrete Barrier, Type I - Supplied by Authority	Lump Sum	1				
527.342	Work Zone Crash Cushions - TL-2	Unit	2				
603.1753	18 Inch Reinforced Concrete Pipe - Class V	Linear Foot	44				
603.28	Concrete Collar	Each	1				
604.184	Rebuild Catch Basin to Grade - Type II	Each	2				
606.1723	Bridge Transition - Type III	Each	8				
606.178	Guardrail Beam	Linear Foot	653				
606.278	Terminal End - Anchored End	Each	1				
606.352	Reflectorized Beam Guardrail Delineator	Each	290				
606.353	Delineator Post	Each	88				
606.3562	Delineator Post - Remove and Stack	Each	88				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
606.3621	Guardrail Adjust, Single Rail	Linear Foot	7,363				
606.3622	Guardrail Adjust, Double Rail	Linear Foot	1,525				
606.369	Guardrail - Remove and Stack	Linear Foot	150				
606.471	Single Offset Block - W-Beam	Each	86				
606.48	Single Galvanized Steel Post	Each	74				
607.24	Remove and Reset Fence	Linear Foot	35				
609.15	Sloped Curb Type I	Linear Foot	45				
609.238	Terminal Curb Type 1 - 8'	Each	1				
609.441	Curbing Removed and Stacked	Linear Foot	115				
615.07	Loam	Cubic Yard	20				
618.13	Seeding Method Number 1	Unit	2				
619.1201	Mulch - Plan Quantity	Unit	2				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
619.1202	Temporary Mulch	Lump Sum	1				
619.14	Erosion Control Mix	Cubic Yard	70				
626.12	36" x 24" x 36" Quazite Junction Box	Each	3				
626.13	18" x 12" x 18" Quazite Junction Box	Each	4				
626.22	Non-Metallic Conduit	Linear Foot	240				
626.32	24" Diameter Concrete Foundation	Each	1				
627.712	White or Yellow Pavement Marking Line	Linear Foot	24,600				
627.77	Removing Existing Pavement Marking	Square Foot	520				
627.812	Temporary Raised Pavement Markers	Each	1,170				
627.943	Pavement Marking Line - Recessed Tape, Solid White or Yellow Lane Line, 6 - inch width	Linear Foot	1,300				
627.944	Pavement Markings - Recessed Tape, Words, Arrows, Stop Bars	Square Foot	490				
629.05	Hand Labor , Straight Time	Hour	70				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
631.10	Air Compressor (including operator)	Hour	60				
631.11	Air Tool (including operator)	Hour	60				
631.12	All Purpose Excavator (including operator)	Hour	40				
631.172	Truck - large (including operator)	Hour	30				
631.36	Foreman	Hour	30				
631.40	Welder (including operator)	Hour	40				
631.53	Electrician	Hour	40				
631.54	Electrician's Apprentice	Hour	40				
634.208	Remove and Reset Light Standard	Each	1				
643.901	Interconnect Wire IMSA 50-2 #14 AWG	Linear Foot	480				
645.106	Demount Regulatory, Warning, Confirmation, and Route Marker Assembly Sign	Each	3				
645.116	Reinstall Regulatory, Warning, Confirmation and Route Marker Assembly Sign	Each	3				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Crediford Brook	Lump Sum	1				
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Kennebunk Service Plaza	Lump Sum	1				
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Route 111	Lump Sum	1				
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Biddeford	Lump Sum	1				
652.38	Flagger	Hour	40				
652.41	Portable-Changeable Message Sign	Each	5				
652.411	Portable-Changeable Message Sign	Calendar Day	60				
652.45	Truck Mounted Attenuator	Calendar Day	10				
652.451	Automated Trailer Mounted Speed Limit Sign	Calendar Day	20				
655.101	#6 AWG Wire	Linear Foot	1,000				
655.11	#10 AWG Wire	Linear Foot	250				
655.204	3" Schedule 80 PVC Conduit	Linear Foot	700				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
656.50	Baled Hay, in place	Each	42				
656.632	30 inch Temporary Silt Fence	Linear Foot	1,200				
659.10	Mobilization	Lump Sum	1				
				TOTAL:			

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.

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

_____

_____

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

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

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

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

_____ *(SEAL)*

_____ *(SEAL)*

Affix Corporate Seal
or Power of Attorney
Where Applicable

_____ *(SEAL)*

By: _____

Its: _____

Information below to be typed or printed where applicable:

INDIVIDUAL:

(Name)	(Address)

PARTNERSHIP - Name and Address of General Partners:

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

INCORPORATED COMPANY:

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

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

YORK TO AUGUSTA

CONTRACT AGREEMENT

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

_____

herein termed the "Contractor":

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

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

_____

_____

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

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

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

AUTHORITY -

MAINE TURNPIKE AUTHORITY

By: _____

Title: CHAIRMAN

Date of Signature: _____

ATTEST:

_____
Secretary

CONTRACTOR -

_____
CONTRACTOR

By: _____

Title: _____

Date of Signature: _____

WITNESS:

_____

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS that _____

of _____ in the County of _____ and State of _____

as Principal, and _____ a Corporation duly organized under the

laws of the State of _____ and having a usual place of business in _____

_____

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

The condition of this obligation is such that the Principal, designated as Contractor in the foregoing Contract No. _____ shall faithfully perform the Contract on his part and satisfy all claims and demands incurred for the same and shall pay all bills for labor, material, equipment and all other items contracted for, or used by him, in connection with the Work contemplated by said Contract, and shall fully reimburse the Obligee for all outlay and expense which the Obligee may incur in making good any default of said Principal, then this Obligation shall be null and void; otherwise it shall remain in full force and effect.

Signed and sealed this _____ day of _____, A.D., 201___

Witnesses: CONTRACTOR

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

SURETY

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

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

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

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

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

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

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

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

_____
(Contractor)

By: _____

Title: _____

State of MAINE

County of _____

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

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

are true and correct upon his own knowledge and that the foregoing is his free act and deed in said capacity and the free act and deed of the above-named

_____

.

(Company Name)

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

(SEAL)

_____
Notary Public

My Commission Expires: _____

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART I – SUPPLEMENTAL SPECIFICATIONS

(Rev. November 10, 2016)

Supplemental Specifications available on the Maine Turnpike Authority website

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

PART II - SPECIAL PROVISIONS

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II - SPECIAL PROVISIONS

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

General Description of Work

The work consists of repairs to three structures at three locations for the Maine Turnpike Authority. The work includes: substructure repairs at Crediford Brook Culvert, deck repairs, expansion joint replacement and modification, and substructure repairs at Route 111, pavement rehabilitation, deck repairs, expansion joint installation, and end post replacement at Biddeford Interchange, maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

The work also consists of paving rehabilitation at the Biddeford Interchange and parking improvements at the Kennebunk Southbound Service Plaza along with required maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

Plans

The drawings included in these Contract Documents, and referred to as the Plans, show the general character of the work to be done under this Contract. They bear the general title "Maine Turnpike – Contract 2018.06 – "Paving Rehabilitation and Bridge and Culvert Repairs". The right is reserved by the Resident to make such minor corrections or alterations in the Plans as he deems necessary without change in the unit prices on the Schedule of Prices of the Proposal.

101.2 Definition

Holidays

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

Independence Day 2018 (Fourth of July)	12:01 p.m. preceding Tuesday to noon the following Thursday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on March 22, 2018.

104.3.8 Wage Rates and Labor Laws

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

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

THIS DOCUMENT MUST BE CLEARLY POSTED AT THE PERTAINING STATE FUNDED PREVAILING WAGE CONSTRUCTION SITE

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

Wage Determination - In accordance with 26 MRSA §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 --------2018.06-Bridge, Culvert Repairs-HI

Location of Project --Wells, Kennebunk and Biddeford, York County

2018 Fair Minimum Wage Rates
Highway & Earth York County

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asphalt Raker	$16.00	$0.44	$16.44	Ironworker – Ornamental	$23.13	$4.80	$27.93
Backhoe Loader Operator	$20.00	$2.23	$22.23	Ironworker - Reinforcing	$24.79	$10.60	$35.39
Boom Truck (Truck Crane) Operator	$21.66	$6.86	$28.52	Ironworker - Structural	$21.80	$4.88	$26.68
Bulldozer Operator	$22.00	44.17	$26.17	Laborer (Includes Helper-Tender)	$14.50	$0.94	$15.44
Carpenter	$21.00	$2.36	$23.36	Laborer - Skilled	$17.00	$2.24	$19.24
Cement Mason/Finisher	$17.00	$0.56	$17.56	Line Erector-Power/Cable Splicer	$26.00	$7.59	$33.59
Crane Operator =>15 Tons)	$26.00	$5.97	$31.97	Loader Operator - Front-End	$19.25	$3.37	$22.62
Crusher Plant Operator	$17.50	$2.01	$19.51	Mechanic- Maintenance	$21.00	$3.15	$24.15
Diver	$28.50	$1.48	$29.98	Painter	$17.00	$0.00	$17.00
Driller -Rock	$18.38	$2.60	$20.98	Paver Operator	$18.38	$1.73	$20.11
Earth Auger Operator	$22.97	$6.17	$29.14	Pipelayer	$18.00	$3.16	$21.16
Electrician - Licensed	$26.00	$4.67	$30.67	Pump Installer	$21.00	$3.73	$24.73
Electrician Helper/Cable Puller (Licensed)	$17.00	$2.84	$19.84	Reclaimer Operator	$19.13	$2.98	$22.11
Elevator Constructor/Installer	$19.25	$1.62	$20.87	Roller Operator - Earth	$16.00	$1.89	$17.89
Excavator Operator	$21.13	$3.36	$24.49	Roller Operator - Pavement	$18.03	$2.19	$20.22
Fence Setter	$17.25	$1.72	$18.97	Screed/Wheelman	$18.60	$3.68	$22.28
Flagger	$12.00	$0.00	$12.00	Truck Driver - Light	$17.83	$3.74	$21.57
Grader/Scraper Operator	$21.33	$5.65	$26.98	Truck Driver - Medium	$18.00	$1.89	$19.89
Highway Worker/Guardrail Installer	$16.50	$0.79	$17.29	Truck Driver - Heavy	$16.38	$1.61	$17.99
Hot Top Plant Operator	$23.00	$3.90	$26.90	Truck Driver - Tractor Trailer	$19.00	$3.18	$22.18

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

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

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

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

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

Determination No: **HI-053-2018**

A true copy

Filing Date: **February 6, 2018**

Attest: Scott R. Cotnoir

Scott A. Cotnoir
Wage & Hour Director

Expiration Date: **12-31-2018**

BLS(Highway & Earth York)

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 MRSA §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 --------2018.06-Bridge, Culvert Repairs

Location of Project --Wells, Kennebunk and Biddeford, York County

2018 Fair Minimum Wage Rates
Heavy & Bridge York County

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Backhoe Loader Operator	$20.00	$2.16	$22.16	Laborer (Includes Helper-Tender)	$16.50	$1.63	$18.13
Boom Truck (Truck Crane) Operator	$21.66	$6.86	$28.52	Laborer - Skilled	$21.00	$4.15	$25.15
Bricklayer	$24.00	$3.99	$27.99	Line Erector-Power/Cable Splicer	$25.75	$7.36	$33.11
Bulldozer Operator	$20.00	$4.06	$24.06	Loader Operator - Front-End	$21.00	$3.21	$24.21
Carpenter	$24.31	$10.58	$34.89	Mechanic- Maintenance	$20.00	$5.72	$25.72
Carpenter - Rough	$20.94	$4.46	$25.40	Mechanic- Refrigeration	$24.88	$4.76	$29.64
Cement Mason/Finisher	$17.00	$0.56	$17.56	Millwright	$29.90	$23.69	$53.59
Communication Equipment Installer	$20.00	$1.85	$21.85	Painter	$22.00	$3.06	$25.06
Comm Transmission Erector	$19.00	$3.57	$22.57	Paver Operator	$20.00	$3.78	$23.78
Microwave & Cell Crane Operator =>15 Tons)	$29.00	$10.84	$39.84	Pile Driver Operator	$25.00	$11.13	$36.13
Crusher Plant Operator	$17.75	$2.48	$20.23	Pipe/Steam/Sprinkler Fitter	$22.25	$8.62	$30.87
Diver	$32.00	$0.00	$32.00	Pipelayer	$28.00	$12.54	$40.54
Driller -Rock	$18.38	$2.60	$20.98	Pump Installer	$21.00	$3.73	$24.73
Earth Auger Operator	$23.76	$6.31	$30.07	Reclaimer Operator	$18.50	$2.85	$21.35
Electrician - Licensed	$30.07	$17.09	$47.16	Rigger	$20.00	$6.12	$26.12
Electrician Helper/Cable Puller (Licensed)	$27.00	$12.01	$39.01	Roller Operator - Earth	$15.88	$1.76	$17.64
Excavator Operator	$23.25	$3.71	$26.96	Roller Operator - Pavement	$18.30	$1.64	$19.94
Fence Setter	$16.00	$1.17	$17.17	Truck Driver - Light	$18.15	$2.88	$21.03
Flagger	$12.00	$0.00	$12.00	Truck Driver - Medium	$17.75	$1.82	$19.57
Grader/Scraper Operator	$21.33	$5.13	$26.46	Truck Driver - Heavy	$19.00	$3.19	$22.19
HVAC (Heat-Vent-Air Conditioning)	$23.00	$3.05	$26.05	Truck Driver - Tractor Trailer	$20.50	$5.46	$25.96
Ironworker – Ornimental	$22.48	$4.85	$27.70				
Ironworker - Reinforcing	$26.20	$12.15	$38.35				
Ironworker - Structural	$23.00	$6.26	$29.26				

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

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

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

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

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

Determination No: **HB-020-2018**

A true copy

Filing Date: **February 6, 2018**

Attest: Scott R. Cotnoir

Scott A. Cotnoir
Wage & Hour Director

Expiration Date: **12-31-2018**

BLS(Heavy & Bridge York)

104.4.6 Utility Coordination

This Subsection is amended by the addition of the following:

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

General

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

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

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

Biddeford – Route 111

Maine Turnpike Authority
MaineDOT
Maine Fiber Company
Oxford Networks
Revolution Networks
CMP
City of Biddeford

CENTRAL MAINE POWER (CMP)

The proposed work at the Route 111 structure shall be occurring only on the bridge, out of the way of the aerial utility lines over the mainline South of the structure. The Contractor shall notify the utility company of the proposed work and coordinate if necessary.

104.4.7 Cooperation With Other Contractors

This Subsection is amended by the addition of the following:

Adjacent contracts currently scheduled for the 2018 construction season include:

MTA Contract 2017.09 – York Toll Plaza Replacement, MM 8.8

MTA Contract 2018.04 – 2018 Bridge Painting, MM 6.2 to 103.6

MTA Contract 2017.08 – Guide Sign Modifications, MM 32 to 44

MTA Contract 2018.18 – Fuel System Upgrades to Kennebunk Service Plaza

The following Subsection is added:

105.2.4.2 Lead Paint

The Contractor shall not disturb any painted surfaces on the Route 111 Bridge or on the Biddeford Interchange Bridge.

105.8.2 Permit Requirements

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

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

The LOD for this Contract has been estimated to be **0.98** acres. This includes limits of disturbance of 0.14 acres at Kennebunk Service Plaza and 0.02 acres at Biddeford Interchange and Contractor's limit of disturbance for access and storage of 0.31 at Crediford Brook; 0.16 acres at Kennebunk Service Plaza; 0.13 acres at the Route 111 bridge and 0.22 acres at Biddeford Interchange.

For in-water work window and allowances at the Crediford Brook Culvert, refer to the Limits of Operations.

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

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

the NOI for MaineDEP approval. The approval may take a minimum of 21 working days.

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

This Project is also subject to the requirements of the Maine Pollutant Discharge and Elimination System (MPDES) General Permit for the Discharge of Stormwater from MTA's Municipal Separate Storm Sewer Systems (MS4), because it is located within an Urbanized Area (UA) as defined by the 2000 census by the U.S. Bureau of the Census. MS4 compliance requires all Contractors to be properly trained in Erosion and Sedimentation Control (ESC) measures (as per Special Provision Subsections 105.8.1 and 656.07) and implement measures to reduce pollutants in stormwater runoff from construction activities.

107.1 Contract Time and Contract Completion Date

This Subsection is amended by the addition of the following:

All work shall be completed on or before November 30, 2018. The proposed repair work for parking improvements at the Kennebunk Southbound Service Plaza shall be substantially complete by May 15, 2018. Crediford Brook Culvert, Route 111 Overpass, and Biddeford Interchange shall be substantially complete by October 12, 2018.

107.1.1 Substantial Completion

This Subsection is amended by the addition of the following:

Substantially complete shall be defined by the Authority as completion of the following:

Kennebunk Southbound Service Plaza

- All parking area improvements including grading, base, pavement, striping, and site lighting.

Crediford Brook

- All culvert repair work.

Route 111

- All bridge repair work including proposed pavement rehabilitation and striping, expansion joint replacement and modification, and concrete repairs.

Biddeford Interchange

- All bridge repair work including proposed pavement rehabilitation and striping, expansion joint installation, end post replacement, and concrete repairs.
- All interchange paving, guardrail improvement, culvert replacement, ITS, and striping work.

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

the parking improvements where supplemental liquidated damages shall be $175 for each calendar day that substantial completion is not achieved.

107.3.2 Night Work

The Contractor shall be responsible for determining and adhering to the local regulations pertaining to night work time restrictions and noise limitations. The Contractor shall plan his work accordingly.

The following Subsection is added:

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 review 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 of work 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.

A two-week schedule shall be submitted by the Contractor weekly, the first week shall be detailed. The weekly detailed schedule shall show 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.

107.4.6 Prosecution of Work

The following activities must be completed as specified:

- Biddeford Interchange endpost replacement and parapet repairs shall be completed prior to milling of interchange.
- Biddeford Interchange culvert replacement shall be completed prior to the milling, shimming and overlay of the exiting lanes of the toll plaza.

All work requiring lane closures shall be done in the permitted lane closure windows as outlined in Special Provision 652.

The Contractor shall submit to the Authority a construction schedule which shall document that the Contractor has the necessary labor and equipment to work immediately and continuously at the project site once the bridge is closed. The intent of this specification is to minimize the amount of time for bridge closure, while providing the Contractor sufficient time to complete the work in a diligent manner and reopen the bridge as prescribed by the project's Substantial Completion date.

The following Subsection is added:

107.4.7 Limitations of Operations

Crediford Brook

All in-water work shall be completed between July 15, 2018 and October 1, 2018. This includes, but is not limited to, all culvert repairs at Crediford Brook.

All concrete repair work shall be completed in the dry. The Contractor shall submit a water diversion plan for review. Bypass pumping will not be allowed.

The Contractor shall not use fill, excavate, or drive boards within the waterway in a manner that disturbs the natural streambed. The Contractor may only traverse the water; there shall be no disturbance of the stream bed. The contractor shall sequence the work such that a continuous water flow is maintained through the culvert at all times.

Biddeford Interchange Paving

All work is subject to the restrictions in Special Provision Section 652 including ramp closure times, lane closure times and work hours.

The Contractor shall complete the work as expeditiously as practical and shall work at least one ten-hour shift per day once work operations commence. For every work day/night that this requirement is not met the Contractor will be charged a fee in the amount of $1,000. The Contractor will not be charged fees for Sundays or days where, in the sole judgement of the Authority, weather conditions made work impractical.

Contractor shall coordinate the bridge work, guardrail work, ITS work and paving work at all locations to ensure the timely completion of the project.

The Contractor shall complete the paving operations on one ramp prior to beginning paving operations on another ramp.

The Contractor will be allowed to work in two or more separate work areas within the interchange provided traffic can safely move through the work areas when the area under construction is open to traffic. The work areas are not required to be on the same side of the “road”.

The Contractor will be allowed to mill and then shim the entire work area (Exit/ Interchange) prior to beginning the paving operation in the work area provided the milled areas can be surfaced within two weeks. Temporary ramps shall be installed if the milling, shimming and paving operation do not occur in the same closure(s). Temporary bituminous ramps, minimum 25’ per 1 ½ inches of pavement elevation change, will be required at all butt joints and bridge joints. The Contractor shall submit a milling and paving schedule to the Resident for review and acceptance.

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

The Contractor shall secure all catch basin grates with Sikaflex 1a before being allowed to shift traffic onto the catch basin grates.

After each day or night of milling operations the Contractor shall install temporary pavement markings and/or pavement markers as required prior to reopening the roadway to traffic.

The Contractor shall place the permanent pavement markings; solid white edge line (SWEL), solid yellow edge line (SYEL), broken white lane line(s) (BWLL), solid white lane line (SWLL) and dotted white line (DWL), on new pavement at the end of each week unless approved otherwise by the Resident.

All milling and paving work on the Biddeford Interchange ramps, excluding the work listed below, shall be undertaken at night with the respective ramp(s) closed.

- Guardrail work and shoulder work may be undertaken behind drums with the traffic lane shifted away from the work area during non-peak daytime hours provided the work does not interfere with the normal operations of the Biddeford Interchange plazas and ramps, or the safety of the traveling public.

  If, in the sole judgment of the Authority, any of the Contractor's activities interfere with the normal operation of the Biddeford Interchange plazas and ramps, or safety of the traveling public, the Authority reserves the right to direct the Contractor to complete the work during the permitted nighttime work windows or ramp closure work windows for each ramp. The Contractor shall have no claim for monies or time if the Authority directs the Contractor to complete the work during permitted nighttime work windows or permitted ramp closure windows.

  See Section 652 for the permitted daytime work windows for each ramp.

- Work on both the left and right sides of active traffic lane(s) on ramps will not be allowed simultaneously.

The Contractor shall backfill all areas of excavation around catch basin modification locations at the end of each work day to the satisfaction of the Resident.

<u>Biddeford Interchange Culvert Replacement</u>

The culvert replacement work (excavation, remove existing culvert, concrete collar, install proposed culvert, backfill and temporary pavement) is anticipated to take place over one night. If the work is not completed in one night, the contractor will be required to install temporary steel plates over the excavation to maintain traffic in all lanes during the day. The design and detailing of the steel plate shall be the responsibility of the Contractor. Refer to Special Provision 510 and the Plans for additional information on the temporary steel plate requirements.

SPECIAL PROVISION

SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

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

202.01 Description

The following sentences are added:

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

Where full-depth pavement and membrane removal is required or directed by the Resident at bridge deck repair and header concrete repair locations the work shall be completed by scraping or other methods that will not damage the existing concrete deck surface. The removal of pavement from bridge decks will be allowed using milling machines only when the full thickness of the pavement layer is not specified to be removed.

Except as noted above, all pavement removals shall be completed using 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 include the construction of temporary ramps at all butt joints and bridge joints as shown in the MaineDOT Standard Details, November 2014 Edition – Pavement Overlay Butt Joint Detail (Roadways), Page 202(01) or as approved by the Resident. The length of the temporary ramp shall be at least 1/2 L.

The following subsection is added:

202.032 Removing Bridge Pavement Surface and Membrane

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

The following paragraph is added:

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

202.061 Removing Pavement Surface

This Subsection is deleted and replaced with the following:

The milling equipment for removing the bituminous surface shall be a power-operated milling machine or planer capable of removing the bituminous concrete pavement to the required depth, transverse cross slope, and profile grade by use of an automated grade and slope control system. The controls shall automatically increase or decrease the pavement removal depth as required, and readily maintain desired cross slope to compensate for surface irregularities in the existing pavement course. The mill head on the machine shall have a maximum 8mm tooth spacing pattern and a minimum triple wrap configuration. The milling machine shall be capable of accurately establishing profile grades by referencing from a floating straight edge, minimum of 30± feet. The equipment shall also have an effective means for removing excess material from the surface and preventing flying material in compliance with Subsections 105.2.5 Compliance with Health and Safety Laws and 105.2.6 Convenience of the Public, of the Specification.

The contractor shall operate the milling machine such that the forward operating speed of the machine in feet per minute (fpm) does not exceed 65% of the mill head in revolutions per minute (rpm). i.e. 100 rpm head speed equals maximum forward operating speed of 65 fpm. The contractor shall avoid stopping the milling operation during truck exchanges by staging the haul units accordingly.

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

The Contractor shall be responsible for the layout of the longitudinal centerline between the travel lane and passing lane.

The finished milled surface will be inspected before being accepted, and any deviations in the profile exceeding 3/8 inch under a 16 foot string line or straightedge placed parallel to the centerline will be corrected. Any deviations in the cross slope that exceed 3/8 inch under a 10 foot string line or straightedge placed transversely to the centerline will be corrected. In no case shall the cross slope in a single lane width be inverted resulting in a depression as measured transverse to the direction of travel. Any cross slope inversions or depressions shall be corrected by spot shimming the area with HMA as directed by the resident prior to installing any leveling or wearing course. These corrections shall be done with no additional expense to the Authority.

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

Name of Facility	Mile Marker	Cubic Yards
Kennebunk Maintenance	Mile 25.5 NB	170

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

202.07 Method of Measurement

Removing Pavement Surface – Mainline, and Removing Pavement Surface – Bridge, will be measured by the square yard of material removed to the required depth.

The following sentences are added:

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

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

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

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.

Removing Pavement Surface – Bridge Deck will be paid for at unit price per square yard which price shall be full compensation for removing, transporting or disposing of removed bituminous and membrane materials. This payment shall also be considered full compensation for all required areas of full depth pavement and membrane removals as directed by the Resident.

Payment will be made under:

Pay Item		Pay Unit
202.202	Removing Pavement Surface – Mainline	Square Yard
202.2021	Removing Pavement Surface – Bridge Deck	Square Yard

SPECIAL PROVISION

SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing Pavement Surface – Drainage Paths)

202.01 Description

The following paragraphs are added:

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

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

The following Subsection is added:

202.011 Materials

Grinding shall be done in accordance with Section 202.

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

Bituminous tack coat shall conform to Section 409.

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

202.06 Removing Bituminous Concrete Pavement

This Subsection is deleted and replaced with the following:

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

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

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

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

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

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

Vehicles will be permitted to traverse unfilled drainage paths.

202.07 Method of Measurement

The second paragraph is deleted and replaced with the following:

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

202.08 Basis of Payment

The following is added after the last paragraph:

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 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 16.0 percent or less as determined by AASHTO T 327. The crushed stone shall have a maximum of 1.5% material finer than the No. 200 mesh when tested in accordance with AASHTO T-11. Flat and elongated particles shall not exceed a maximum of 8% at a 5:1 ratio in accordance with ASTM D-4791. Coarse aggregate angularity shall be a minimum of 95/90 in accordance with AASHTO T-335.

Mainline Surface HMA Fine aggregate: The material passing the No. 4 sieve, shall be crushed manufactured sand free from dirt, clay balls, or other objectionable material. Natural sand may be incorporated into the mix at a rate no greater than 13 percent by weight of total aggregate. The unconfined void content of the fine aggregate blend shall be a 45 minimum value when tested in accordance with AASHTO T-304, method A. AASHTO T-176 sand equivalent value shall be 45 minimum.

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

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

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

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

Section 401.03 Composition of Mixtures

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

HMA pavement mixtures for local road and bridge projects shall be a currently approved MDOT design.

HMA pavement mixtures for Mainline 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, and a maximum of 20 percent RAP in any base, intermediate, or shim course. Current MaineDOT approved designs with up to 20 percent RAP will be allowed on local roads.

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

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

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

- Properly completed JMF indicating all mix properties (Gmm, VMA, VFB, etc.).
- Stockpile Gradation Summary.
- Test reports for individual aggregate consensus properties
- Design Aggregate Structure Consensus Property Summary.
- Design Aggregate Structure Trial Blend Gradation Plots (0.45 power chart).
- Trial Blend Test Results for at least three different aggregate blends.
- Selected design aggregate blend.
- Test results for the selected design aggregate blend at a minimum of three binder contents.
- Test results for final selected blend compacted to $N_{max.}$
- Specific Gravity for the PGAB to be used.
- Recommended mixing and compaction temperatures from the PGAB supplier.
- Material Safety Data Sheets (MSDS) 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 stone stockpiles, 75 ton for sand stockpiles, and 50 ton of blend sand before the Authority will sample. 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 sufficient 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 shall split a production sample for evaluation. The Contractor shall test its split of the sample and determine if the results meet the requirements. If the results are found to be acceptable, the Contractor will forward their results to the Authority's Lab, which will test the Authority's split of the sample. The results of the two split samples will be compared and shared between the Authority and the Contractor. 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.

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 13% by weight of total aggregates. The cold feed percentage for RAP may be reduced up to five percentage points from the amount listed on the JMF and shall not exceed the percentage of RAP approved in the JMF or for the specific application.

TABLE 1
VOLUMETRIC DESIGN CRITERIA

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

** For 9.5 mm nominal maximum aggregate size mixtures, the maximum VFB is 82.*

** For 4.75 mm nominal maximum aggregate size mixtures, the maximum VFB is 84.*

** For 4.75mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4*

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 shall meet the requirements of Table 1A

TABLE 1A
HAMBURG WHEEL TRACKER REQUIREMENTS

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

* As calculated by the most recently published version of the Maine DOT HWT worksheet, which is available online at http://www.maine.gov/mdot/contractors/publications/

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 401.091 Material Transfer Vehicle (MTV)

The fourth paragraph shall be deleted and replaced with:

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

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 or less	90

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 or laborers.

Section 401.191 Inspection/Testing

In paragraph nine delete and replace Item #8 with:

8. Secure High Speed Internet Access

SPECIAL PROVISION

SECTION 401

HOT MIX ASPHALT PAVEMENT

(HMA using Hydrated Lime)

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

401.01 Description

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

401.02 Materials

Materials shall meet the requirements specified.

Hydrated Lime	AASHTO 216

401.03 Composition of Mixtures

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

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

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

401.13 Preparation of Aggregates

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

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

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

B. The Contractor shall add lime to the produced aggregates during stockpiling using a pugmill. The Contractor shall distribute the lime per the stockpile ratios stated in the asphalt concrete mix design. A minimum moisture content of 2 percent by dry weight for coarse aggregate and 4 percent by dry weight for fine aggregate is required at the time the aggregates and lime are mixed. The Contractor shall marinate treated aggregate in stockpiles from 24 hours to 60 days before using in asphalt concrete mix. Do not use aggregate marinated longer than 60 days.

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

D. Other methods of hydrated lime introduction as approved by the Authority.

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

401.14 Mixing

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

401.18 Quality Control

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

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

403.01 Description

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

403.02 General

The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. The Performance Graded Asphalt Binder (PGAB) shall be polymer modified as detailed in this special provision and shall conform to the requirements of AASHTO M 320. The PG64E-28 Binder shall contain a minimum of 2.5% Styrene-Butadiene-Styrene (SBS) polymer {BWT} in a homogeneous blend. The stability of the modified binder shall be verified in accordance with ATSM D7173 using the Dynamic Shear Rheometer (DSR). The DSR G*/sin(δ) results from the top and bottom sections of the ATSM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report. The binder shall meet the requirements of AASHTO M 332 (including Appendix X1).

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 Turnpike property.

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

403.04 Method of Measurement

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

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

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

403.05 Basis of Payment

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

The following pay items are added:

Pay Item		Pay Unit
403.2081	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Polymer Modified) – RAP	Ton
403.2084	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Sidewalks,Drives, Islands & Incidentals)	Ton

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

Course	HMA Grading	Item Number	Total Thickness	No. of Layers	Complimentary Notes
Route 111 Underpass					
Wearing	**12.5mm**	**403.208**	**1.5”**	**1**	**A,C,E,G,H,J,K,L,M,N**
Biddeford Interchange Underpass					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,C,F,G,H,J,K,L,M,N**
Biddeford Interchange Mill, Shim and Fill					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,C,F,G,H,I,J,K,L,M,N**
Heavy Shim	**12.5mm**	**403.213**	**1.0 -1.5”**	**varies**	**B,C,F,J,L,N**
Shim	**4.75mm**	**403.212**	**½”**	**1**	**B,C,F,J,L,N**

COMPLEMENTARY NOTES

A. The required PGAB for this mixture shall be **64E-28.**
B. The required PGAB for this mixture shall be **64-28.**
C. A maximum of 15 percent RAP may be used.
D. RAP may not be used.
E. 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. The design verification, Quality Control, and Acceptance tests for this mix will be performed at **75 gyrations**. (N design) Minimum and Maximum PGAB content shall not apply.
F. 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)
G. 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.
H. Joints shall be constructed as the “notched wedge” type in accordance with Subsection 401.17.
I. Joint density will be measured in accordance with Subsection 401.165.
J. Tack coat shall be applied between all layers of pavement at a rate of 0.04 G/SY.
K. PGAB shall conform to the provisions of 403.02 – Polymer Modified PGAB for HMA
L. The contractor shall furnish a quality control technician equipped with an approved densometer to ensure density requirements are met.
M. Hydrated Lime shall be incorporated into the mixture.

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

SPECIAL PROVISION

SECTION 409

BITUMINOUS TACK COAT

409.02 Bituminous Material

This Subsection is deleted and replaced with the following:

Bituminous material shall conform to the Specifications for Emulsified Asphalt RS-1h, of the AASHTO Designation M-140.

409.05 Equipment

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

409.06 Preparation of Surface

The following paragraph is added:

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

409.08 Method of Measurement

The following paragraphs are added:

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

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

Cleaning of the surface area where tack coat is to be applied shall be incidental to Item 409.15, Bituminous Tack Coat - Applied.

409.09 Basis of Payment

The following pay items are added:

Pay Item		Pay Unit
409.15	Bituminous Tack Coat – Applied	Gallon

SPECIAL PROVISION

SECTION 419

SAWING AND SEALING JOINTS IN BITUMINOUS PAVEMENT

(Sawing Bituminous Pavement)

419.01 Description

This work consists of sawing bituminous concrete pavement to the limits and depths shown on the Plans, as specified herein, or as directed by the Resident.

419.02 General

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

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

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

419.03 Method of Measurement

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

419.04 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
419.30	Sawing Bituminous Pavement	Linear Foot

SPECIAL PROVISION

SECTION 424

ASPHALT RUBBER FIBER CRACK SEALER

424.01 Description

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

Placement shall consist of:

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

424.02 Materials

Asphalt Rubber Crack Sealer shall be an asphalt and rubber compound designed especially for improving the strength and performance of the base asphalt cement. Hot pour rubber crack sealant material shall conform to ASTM D-3405.

Fiber reinforcing material shall be short-length polyester fibers having the following properties:

Tensile Strength; ASTM D2256-90	>70,000 psi
Elongation at Break; ASTM D2256-90	38%

The asphalt rubber fiber compound shall be mixed at a rate of 3% fiber weight to the weight of the asphalt cement.

424.03 Weather

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

424.04 Equipment

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

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

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

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

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

(e) Melting Kettle: The unit used to melt the joint sealing compound shall be a double boiler. indirect fired type. The space between inner and outer shells shall he filled with a suitable heat transfer oil or substitute having a flash point of not less than 320°C [608°F]. The kettle shall he equipped with a satisfactory means of agitating and mixing the joint sealer with 90% fibers at all times. This may be accomplished by continuous stirring with mechanically operated paddles and/or a continuous circulating gear pump attached to the heating unit. The kettle must be equipped with thermostatic control calibrated between 200°F and 550°F.

424.05 Preparations of Cracks

All cracks greater than ¼ in shall be blown free and raked off of loose material, dirt, vegetation, and other debris by high pressure air. Material removed from the crack shall be removed from the pavement surface by means of a power sweeper or appropriate hand tools as required. Cracks showing evidence of vegetation after being blown out shall be additionally cleaned by appropriate hand tools and additionally blown out. All cracks must be blown and heated via the hot air lance 10 minutes prior to the crack being sealed. Distance between the hot air lance and the crack sealing unit should be no more than 50 ft to eliminate reinvasion of water. debris, and other incompressibles. All debris, vegetation, and water shall be removed to enhance adhesion of the crack sealing material. This work shall not be done in inclement weather.

424.06 Preparation and Placement of Sealer

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

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

Sealer shall be delivered to the crack while the cracks are still hot from the hot air lance preparation through a pressure hose line and applicator shoe. The applicator shall be followed by a V-shaped squeegee to minimize any overband. The cracks are to be filled flush with the milled surface. Any loose material on the surface or in the crack, which may contaminate the crack sealer or impede bonding of the sealant to the pavement, is to be removed by hand tools prior to crack filling. No crack filling material shall be applied in a crack that is wet or where frost, snow, or ice is present.

424.07 Quality of Work

Excess of spilled sealer shall be removed from the pavement by approved methods and discarded. Any quality of work determined to be below normal acceptable standards will not be accepted and will be corrected and/or replaced as directed by the Resident or authorized representative at no additional expense to the Authority.

424.08 Method of Measurement

Asphalt Rubber Fiber Crack Sealer will be measured by the pound of sealant supplied and used. The manufacturer's weights of the sealant will be accepted as the basis for measurement.

424.09 Basis of Payment.

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

Payment will be made under:

Pay Item		Pay Unit
424.323	Asphalt Rubber Fiber Crack Sealer	Pound

SPECIAL PROVISION

SECTION 470

BERM DROP OFF CORRECTION

(Berm Dropoff Correction - Grindings)
(Berm Correction)

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 Passing Square Mesh Sieve
¾"	100
½"	95-100
No. 4	50-80
No. 50	18-28
No. 200	3-10

470.03 Method of Construction

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

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

470.04 Method of Measurement

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

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

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

470.05 Basis of Payment

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

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

Payment will be made under:

Pay Item		Pay Unit
470.08	Berm Dropoff Correction – Grindings	Ton
470.081	Berm Correction	Linear Foot

SPECIAL PROVISION

SECTION 507

RAILINGS

(Aluminum Bridge Railing – Splice Modification)

507.01 Description

The following paragraphs are added:

This work consists of re-centering the existing 3'-0" cast aluminum splice bar in the center of the bridge rail splice joint and mechanically fastening the splice bar to the aluminum bridge rail on one side of the bridge rail splice joint per the details on the Plans.

Replacement sections of splice bars, if required, will be furnished by the Authority. The Contractor shall pick up any required splice bars at the Crosby Maintenance in South Portland, Maine, and shall make all necessary modifications to them to complete the work. Any unused sections of splice bars shall be returned, and properly stored, to the Crosby Maintenance Yard.

507.08 Method of Measurement

The following sentence is added:

Aluminum Bridge Railing – Splice Modification will be measured for payment by each, satisfactorily modified and accepted.

507.09 Basis of Payment

The following sentence is added:

Aluminum Bridge Railing – Splice Modification will be paid at the Contract unit price per each which price shall be full compensation for all labor, materials, equipment and incidentals required for re-centering and mechanically fastening the splice bar as shown on the Plans, in accordance with these Specifications or as approved by the Resident.

Payment will be made under:

Pay Item		Pay Unit
507.095	Aluminum Bridge Railing – Splice Modification	Each

SPECIAL PROVISION

SECTION 508

WATERPROOFING MEMBRANE

(Membrane Waterproofing)

508.01 Description

The following paragraph is added:

The work shall also include furnishing and applying an approved membrane waterproofing system to backwalls and deck surfaces as shown on the plans or as directed by the Resident.

508.02 Materials

The following paragraph is added:

Membrane Waterproofing applied to backwalls and concrete deck surfaces shall consist of an adhesive primer, preformed waterproofing membrane sheet, and mastic designed to work as one system. The following systems have been pre-approved for use on this project for the backs of the curtain walls and abutments:

1) Jiffy-Seal 140/60 Cold Weather membrane, VOC 100 Primer, 160H Mastic – Manufactured by Protecto Wrap Co.

2) 104-AHT membrane, 740 Primer, 104CM Mastic – Manufactured by Royston Laboratories, Inc.

3) Lo Temp Membrane, Bituthene Primer B2, Bituthene Mastic – Manufactured by W.R. Grace

The following paragraphs are added:

508.055 Installation – Membrane Waterproofing

All concrete surfaces to receive membrane shall have a uniform, fine-textured finish that is free of protrusions prior to application of the Membrane Waterproofing system. All honeycombed areas and surface cavities in new and existing concrete shall be cleaned and filled with approved patching materials. All surfaces to be membraned shall be clean and free of laitance, oil and foreign materials.

Immediately prior to application of the primer, the surface shall be cleaned by brooms and compressed air. The concrete surface shall be inspected and approved by the Resident prior to priming.

The adhesive primer shall be thoroughly mixed before use and applied by roller only and allowed to cure in accordance with the manufacturer’s recommendations.

Membrane shall be installed in a shingled pattern so that water is permitted to drain without accumulating against seams. The membrane shall be pressed or rolled into place to assure bond with the primed surface and elimination of air bubbles. Lap joints at the beginning and end of rolls shall be staggered with those of adjacent rolls and shall be sealed in accordance with the manufacturer's recommendation.

Torn or damaged membrane shall be repaired in accordance with manufacturer's recommendations.

508.08 Method of Measurement

The following paragraph is added:

Membrane Waterproofing will not be measured for payment separately. This work shall be considered incidental to the related contract items.

SPECIAL PROVISION

SECTION 510

SPECIAL DETOURS

(Temporary Steel Plate)

510.01 Description

The following paragraph is added:

This work includes furnishing, installing, securing, maintaining and removing temporary steel plates and anchoring devices, if necessary, to span over areas of incomplete or uncured bridge deck repairs, joint header concrete replacement, and joint modifications at the Route 111 Bridge and Biddeford Interchange Bridge. This work will be required when the area of repair will be reopened to traffic before the repairs are complete. The steel plate system shall be as shown on the plans, or as designed by the Contractor.

This work also includes the complete removal of temporary anchoring bolts and patching the resulting holes in the deck surface with an approved patching material selected from MaineDOT's Quality Products List.

This work also includes furnishing, installing, securing, maintaining and removing a Contractor-designed and detailed temporary steel plate system, if necessary, to span over the Biddeford Interchange Culvert extension prior to reopening the roadway to traffic.

510.03 Vehicular and Pedestrian Traffic Not Separated

The second paragraph is deleted and replaced with the following:

If the Contractor proposes to furnish and maintain a temporary steel plate system that differs from the design shown on the Plans, the Contractor shall submit design calculations and details to the Resident for approval. The Contractor's proposed system shall be designed in accordance with current AASHTO LRFD Bridge Design Specifications and shall be designed to safely support all anticipated traffic loads without excessive deformation or damage. The temporary plate system shall be securely anchored in place to prevent movement or shifting while under load. All computations and details submitted for review and approval shall be stamped by a Professional Engineer licensed in the State of Maine.

The third and fourth paragraphs are deleted in their entirety.

The following paragraph is added:

The Contractor shall inspect the temporary steel plate daily to ensure that no component of the system shows signs of distress or has become loose or dislodged. Any evidence that the system is not performing as intended shall be brought to the immediate attention of the Resident.

The following sentence is added to the end of paragraph eleven which begins with “The geometric design ...”:

The slope on the approach and departure pavement ramps shall be no steeper than 140H:1V.

510.08 Method of Measurement

The following paragraphs are added:

Temporary steel plates will not be measured for payment separately but shall be incidental to the related contract items.

SPECIAL PROVISION

SECTION 515

PROTECTIVE COATING FOR CONCRETE SURFACES

(Pigmented Concrete Protective Coating)

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

515.01 Description

The work shall include the surface preparation and application of a pigmented concrete protective coating system, consisting of a clear penetrating sealer followed by a pigmented top coat, to protect new and existing concrete and masonry structures. The coating system shall be applied to piers, endposts, wingwalls, abutments, curbs and fascia in accordance with the Plans, Specifications and the manufacturer's published recommendations.

Where pigmented protective coatings are already present on concrete surfaces specified to receive new protective coatings, the work shall also include removing areas of existing protective coating that are blistered, flaking, peeling or otherwise loosely adhered to the concrete substrate prior to application of the new coating. The removal of loosely adhered pigmented protective coatings shall be completed by high-pressure washing. Where the removal of existing pigmented coatings is required the anticipated removal limits, and the anticipated quantity of removal, will be shown on the plans. The actual removal limits may vary and will be established and marked in the field by the Resident.

515.02 Materials

The pigmented penetrating sealer system shall be a two coat system consisting of Certi-Vex Guard Clear (primer/sealer) and Certi-Vex HBC Smooth (top coat), as manufactured by Vexcon Chemicals, Inc., or an approved equal, consisting of the following two parts:

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

- The top coat shall be solvent borne modified acrylic resins with selected pigments and fillers.

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

The Contractor shall submit the Vexcon Chemical's product data sheets, material safety data sheets and recommended instructions for application of the Certi-Vex Guard Clear and Certi-Vex HBC Smooth.

The pigmented penetrating sealer color shall be Concrete Gray.

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

515.021 Substitute Materials

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

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

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

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

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

515.03 Surface Preparation

All caulking, patching, and joint sealant shall be installed prior to application of the sealer. The surface shall be prepared in strict accordance with the instructions of the approved manufacturer. Surface shall be fully cured, dry, and free from contamination such as asphalt coatings, oil, grease, loose particles, decaying matter, moss, algae growth, and curing compounds. For maximum penetration of the primer, the Contractor shall lightly sandblast the surface.

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

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

Where coatings are specified to be applied to concrete surfaces that have been previously covered with pigmented coating, the Contractor shall remove any protective coating that, in the judgement of the Resident, is blistered, flaking, peeling or otherwise loosely adhered to the concrete substrate. Loosely adhered coating shall be generally defined as any coating that can be removed by vigorously scraping the concrete surface using a 3” steel putty knife and firm pressure. The goal of the removal work is to remove areas of flaking, missing or otherwise compromised

coating systems; protective coatings that are tightly adhered to the concrete substrate need not be removed.

The removal of existing protective coatings shall be completed using high pressure washing. The specific pressure, flow rate, nozzle and standoff distance for the high-pressure washing operation shall be selected by the Contractor to remove loosely adhered coatings as specified. After high-pressure washing the Resident shall verify all loosely adhered coatings have been removed from the specified areas by scraping the surfaces with a putty knife. The Contractor will be required to complete additional pressure washing to remove any remaining loosely adhered coatings identified by the Resident

Following removal of existing coating systems all exposed surfaces of the substructure unit to be coated shall be cleaned and rinsed by pressure washing. The Contractor may use, when required, appropriate cleaning materials recommended by the sealer manufacturer in conjunction with high pressure water for cleaning the concrete or masonry. After pressure washing the concrete surfaces shall be allowed to air dry for a minimum of 48 hours prior to applying the new protective coating.

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

515.04 Application

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

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

The primer shall not be applied in direct sunlight when the air or surface temperature is greater than 90ºF, or when air or surface temperature is below 35ºF. The top coat shall not be applied when air or surface temperature is below 45ºF or as approved by the Resident.

For surfaces that have previously received pigmented coating the primer shall only be applied to areas where the existing coating was marked for removal and then removed by sandblasting. The primer application shall extend beyond the removal limits of the existing coating system by six inches on all sides.

The primer shall be allowed to dry for a minimum of two-hours before applying pigmented top coat. Under poor drying conditions this time shall be extended. The primer shall not be coated with top coat until the surface is dry. The top coat should be applied by brush, roller or suitable airless spray.

Top coat material shall be applied per the manufacturer's recommended application rate and in strict accordance with the manufacturer's written instructions. The top coat shall provide consistent color without light spots or shadows. The Resident reserves the right to have the Contractor recoat the top coat if the dried top coat(s) lack consistent color or show light spots or shadows.

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

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

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

515.05 Method of Measurement

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

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

515.06 Basis of Payment

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 515

PROTECTIVE COATING FOR CONCRETE SURFACES

(Clear Concrete Protective Coating)

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

515.01 Description

The work shall include the surface preparation and application of a clear protective coating on concrete surfaces to protect new cast-in-place concrete, precast concrete and masonry structures. The coating system shall be applied to piers, endposts, curbs and fascia in accordance with the Plans, Specifications and the manufacturer's published recommendations.

515.02 Materials

The penetrating sealer shall be StandOff® SLX100 Water & Oil Repellent, as manufactured by ProSoCo, Inc., or an approved equal. The sealer shall have the following properties:

Active Substance:	modified alkyl alkoxy silane
Active Content:	> 90%
Form:	clear liquid
VOC:	< 3.5 pounds per gallon

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

The Contractor shall submit the ProSoCo's product data sheets, material safety data sheets and recommended instructions for application of the StandOff® SLX100.

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

515.021 Substitute Materials

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

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

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

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

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

515.03 Surface Preparation

All caulking, patching, and joint sealant shall be installed prior to application of the sealer. On new surfaces to be treated, all voids shall be dressed by dry rubbing to remove form marks and blemishes to present a neat appearance. Concrete and masonry surfaces shall be cleaned free of dust, surface dirt, oil, efflorescence and contaminants to ensure penetration of the sealer. The surface may be slightly damp at the time of treatment.

The Contractor may use, when required, appropriate cleaning materials recommended by the sealer manufacturer in conjunction with high pressure water for cleaning the concrete or masonry.

515.04 Application

The Contractor shall apply the clear concrete protective coating in strict accordance with the manufacturer's published recommendations.

The application shall not be conducted when surface and air temperatures are below 40°F or above 90°F. The work shall not be conducted when there is a chance of the surface temperature falling below 40°F in the 24-hours following application; nor should it be applied on hot, windy days.

The treatment shall not be applied during rain to wet surfaces or when there is a chance of rain within 24-hours after application. After treatment, surfaces should be protected from rain for not less than 48-hours. It shall not be applied when winds are sufficient to carry airborne chemicals to unprotected surfaces.

Prior to applying the sealer, the Contractor shall protect all surrounding non-masonry/non-concrete surfaces, landscape and lawn areas, and surfaces not designated for treatment, from contact with the penetrating sealer, and prevent overspray of the penetrating sealer caused by wind drift.

The Contractor shall ensure that all safety equipment, facilities and precautions recommended by the product manufacturer are furnished and/or strictly adhered to.

The sealer material shall be applied in the manner and with the equipment recommended by the product manufacturer. Coverage will vary depending on condition, texture and porosity of the surfaces. Pre-testing is required.

Sealer shall be applied as packaged without dilution or alteration. The sealer shall be applied with low pressure (20 psi) airless spray equipment or with a heavily saturated brush or roller unless otherwise permitted by the Resident. Sufficient material shall be applied to thoroughly saturate the surface making sure to brush out excess material that does not penetrate.

When the sealer is applied to horizontal surfaces, it shall be applied in a single saturating application with sufficient material and applied so the surface remains wet for one to two minutes before penetration into the concrete. Surface residues, pools and puddles shall be broomed-out thoroughly until they completely penetrate into the surface.

When the sealer is applied to vertical and sloped surfaces, it shall be applied in a "wet-on-wet" application for best results on most porous materials. In the case of extremely dense concrete, it may be necessary to restrict the amount of material applied to one saturating application in order to prevent surface darkening. Apply from the bottom up with sufficient material to thoroughly coat the surface and create a slight rundown below the spray pattern. Allow the first application to penetrate the concrete surface, and within a few minutes after the first coat appears dry, reapply in the same saturating manner.

When the sealer is applied to vertical and sloped surfaces, it shall be applied in two applications, 10 minutes apart, with a low pressure (20 psi) airless sprayer.

515.05 Method of Measurement

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

515.06 Basis of Payment

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

Surface preparation, vegetation removal, and protection of surfaces not designated for treatment will not be measured separately for payment, but shall be incidental to the Clear Concrete Protective Coating item.

Payment will be made under:

Pay Item		Pay Unit
515.202	Clear Protective Coating for Concrete Surfaces	Square Yard

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Granite Curb Joint Mortar and Bedding Mortar Repair)

518.01 Description

The following paragraphs are added:

This work shall consist of the removal and replacement of existing deteriorated granite curb joint mortar and granite curb bedding mortar as shown on the plans and as approved by the Resident.

Areas of existing deteriorated granite curb bedding mortar less than ½ inch in depth, will not be repaired under this pay item but shall be repaired as requested by the Resident using hand tools and equipment unit prices. Materials required shall be receipted costs plus 15%. Small tools, defined as those costing less than $600, shall be incidental to the hand labor item.

518.02 Repair Materials

The following sentence is added:

Mortar shall be an approved epoxy resin mortar or an approved polymer modified cementitious repair mortar.

The following Subsection is added:

518.032 Construction Requirements

The Resident will designate areas where the existing granite curb joint mortar and the existing granite curb bedding mortar is to be repaired.

In areas designated for Granite Curb Joint Mortar Repair, the existing granite curb joint mortar shall be removed between curb sections to a minimum depth of 1 in. from the face of curb. Any loose mortar shall also be removed. The repair area shall be repointed with new mortar and tooled concave at the face of curb. The mortar shall be proportioned, mixed, and applied in accordance with the Manufacturer's recommendations.

In areas designated for Granite Curb Bedding Mortar Repair, the existing granite bedding mortar shall be removed under the curb to a minimum depth of 1 in. from the face of curb. Any loose or deteriorated mortar shall also be removed. The mortar shall be replaced with new mortar and finished with a 45° bevel at the face of curb. The mortar shall be proportioned, mixed, and applied in accordance with the Manufacturer's recommendations.

518.10 Method of Measurement

The following sentence is added:

Granite Curb Joint Mortar and Bedding Mortar Repair will be measured for payment by the linear foot along the face of the curb, horizontally and vertically, complete and accepted.

518.11 Basis of Payment

The following sentence is added:

Granite Curb Joint Mortar and Bedding Mortar Repair will be paid for at the contract unit price per linear foot, which includes all materials, labor, equipment, and incidentals necessary to complete the work including removal of existing mortar.

Payment will be made under:

Pay Item		Pay Unit
518.39	Granite Curb Joint Mortar and Bedding Mortar Repair	Linear Foot

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Epoxy Injection Crack Repair)

518.01 Description

The following paragraphs are added:

The work includes the completion of epoxy injection crack repairs at the Crediford Brook Culvert, Route 111 bridge, and the Biddeford Interchange Bridge where crack widths are equal to, or greater than, 0.06 inches as shown on the plans or identified by the Resident.

518.02 Repair Materials

The following paragraphs are added:

Epoxy injection crack repairs shall be completed using a high strength, low viscosity moisture tolerant epoxy resin meeting the requirements outlined below and approved by the Resident. The proposed repair materials shall be submitted to the Resident for approval.

The structural properties of all crack repair materials shall meet or exceed the following requirements:

Tensile Strength (@ 7 days)	5,000 psi	ASTM D638
Bond Strength (@ 14 days)	1,000 psi	ASTM C882
Compressive Strength (@ 3 days, 73 °F)	5,000 psi	ASTM D695
Compressive Modulus (@ 7 days)	250 ksi	ASTM D695
Flexural Strength (@14 days)	8,000 psi	ASTM D790

The Contractor shall submit the product data sheets, material safety data sheets and recommended instructions for application of the proposed material.

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

Wide cracks (1/2" +/- and greater) may be repaired with a non-shrink cementitious grout in strict accordance with the manufacturer's written recommendations and requirements. The following product shall be used:

- CONSPEC UW300 as manufactured by Dayton Superior, 7777 Washington Village Drive, Suite 130, Dayton OH, 45459

The following Subsection is added:

518.071 Placing Epoxy Injection Materials

Epoxy injection crack repair shall be completed as outlined below, and in accordance with the manufacturer's written recommendations and requirements. Where the below requirements differ from the manufacturer's recommendations the more stringent requirement shall be followed.

Preparation:

a) The crack to be repaired and its surrounding surface, within three inches along each side shall be free of oil, solvent, grease, dirt, loose particles, laitance, and foreign matter
b) Cleaning of the crack shall be performed by air blasting, wire brush, and scrapers or other methods approved by the Resident.
c) Place injection ports along the crack using a high-modulus epoxy adhesive ensuring that the injection ports are spaced no more than six inches apart and that the opening of the injection port is not covered by the epoxy.
d) The Resident shall approve the prepared crack prior to applying the sealer.

Application:

a) Mix epoxy components per manufacturer's instructions. Review pot life characteristics of combined materials and prepare quantities accordingly;
b) Open all injection ports along the crack and ensure that all injection ports are securely fastened to the concrete substrate;
c) Attach injection device to the first port in the series on horizontal cracks;
d) Slowly and under constant pressure, inject the epoxy material into the first port until the epoxy flows out of the next port in the series. While maintaining constant pressure and flow at the first port, close the adjacent port and continue injection process until epoxy flows from the subsequent port in the series, or until no additional epoxy can be injected into the first port.
e) Seal the crack with epoxy adhesive using a small trowel, by pushing the epoxy into the crack and then feathering the surface so that the epoxy forms a raised profile over the crack and bonds to the adjacent concrete surface.
f) Repeat the above procedure until all ports have been injected.
g) The epoxy adhesive shall cure for the minimum duration recommended by the manufacturer.
h) The sealant shall not be applied during rain to wet surfaces or when there is a chance of rain within 24-hours after application.

518.10 Method of Measurement

The following paragraphs are added:

The quantity of Epoxy Injection Crack Repair will be measured by the linear foot satisfactorily installed and accepted.

518.11 Basis of Payment

The following paragraphs are added:

Epoxy Injection Crack Repair will be paid at the Contract unit price per linear foot which price shall include, but not necessarily be limited to, removal and disposal of materials, cleaning and preparing existing concrete, furnishing and installing pressure injection system, placing, curing and finishing epoxy, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
518.40	Epoxy Injection Crack Repair	Linear Foot

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Parapet Joint Repair)

518.01 Description

The following sentences are added:

This work shall consist of the removal and replacement of existing deteriorated parapet joint sealant as approved by the Resident. The Contractor shall provide the Resident safe access to all the parapet joints for inspection before this work begins, including access to the fascia parapet joints using a man lift or other approved device.

The following Subsection is added:

518.032 Construction Requirements

After the Resident has identified the joint repair locations, the Contractor shall remove the existing joint sealant to a minimum 1 3/8 inch depth, clean and prepare the concrete surfaces per sealant manufacturer recommendations, and replace the sealant to the edge of concrete with an approved polyurethane-based sealant, such as Sikaflex-1a, listed on MaineDOT's qualified products list of Silicone and Polyurethane Joint Sealants. The proposed material shall be submitted for approved by the Resident.

518.10 Method of Measurement

The following sentence is added:

The quantity of Parapet Joint Repair will be measured by the linear foot of joint satisfactorily repaired and accepted. Work related to the inspection of parapet joints, including providing access for the Resident's inspection, will not be measured for payment separately, but shall be incidental to the related repair work.

518.11 Basis of Payment

The following sentence is added:

Parapet Joint Repair will be paid for at the Contract unit price per linear foot, which includes all materials, labor, equipment, and incidentals necessary to complete the work including providing access for the inspection of existing joint materials, removal of existing joint sealant, preparation of concrete surfaces, and the installation of new joint sealant.

Pay Item		Pay Unit
518.43	Parapet Joint Repair	Linear Foot

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Repair of Upward Facing Surfaces – Below Reinforcing Steel < 8 inches)

518.01 Description

The following paragraphs are added:

The work includes the completion of partial depth concrete deck repairs at the Route 111 Bridge and the Biddeford Interchange Bridge as shown on the plans, described herein, or as directed by the Resident.

The work shall also include furnishing and installing bridge deck weep drain extensions at locations on the Route 111 Bridge and the Biddeford Interchange Bridge where the ends of existing weep drains are located above the bottom of steel girders or, in the judgment of the Resident, drip unacceptably close to structural concrete elements. Weep drains requiring extension will be identified by the Resident for replacement and shall be incidental to the related contract items.

Where concrete repairs are incomplete, or the concrete repair material is not fully cured, a temporary steel plate system shall be installed in accordance with the plans and Special Provision 510 prior to reopening the repair area to traffic.

This work also includes the placement of waterproofing membrane in accordance with Special Provision 508 and the placement of Hot Mix Asphalt Pavement in accordance with Special Provisions 401 and 403 as required to complete the work.

All repair work covered by this special provision shall be completed with AAA-Modified concrete in accordance with Maine Turnpike Authority Supplemental Specification 502.

518.02 Materials

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

All repair work covered by this special provision shall be completed with AAA-Modified concrete in accordance with Maine Turnpike Authority Supplemental Specification 502.

518.10 Method of Measurement

The following paragraphs are added:

Weep drain extensions will not be measured for payment separately, but shall be incidental to the related contract items. If concrete deck repairs are not performed at the Route 111 Bridge or the Biddeford Interchange Bridge, furnishing and installing weep drain extensions shall be measured for payment under the Hand Labor pay item.

Waterproofing membrane will not be measured for payment separately, but shall be incidental to the related contract items.

Cleaning debris as required to allow inspection and sounding of the concrete will not be measured for payment separately, but shall be incidental to the related contract items

518.11 Basis of Payment

Payment will be made under:

Pay Item		Pay Unit
518.51	Repair of Upward Facing Surfaces – Below Reinforcing Steel < 8 inches	Square Foot

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Repair of Upward Facing Culvert Surfaces – Below Reinforcing Steel < 8 inches)

518.01 Description

The following paragraphs are added:

This work includes completing concrete repairs of upward facing culvert surfaces at the Crediford Brook Structure. Except as stated herein, the requirements for the Repair of Upward Facing Culvert Surfaces – Below Reinforcing Steel < 8 inches shall match the requirements outlined in the Standard Specifications for the repair of Upward Facing Surfaces – Below Reinforcing Steel < 8 inches. All work shall be in conformance with applicable provisions of Sections 202, 502, and 503.

This work also includes removing and disposing of debris from within the culvert, including but not limited to sediment, branches, stumps, logs and other foreign material as required to allow proper inspection and sounding of the concrete. The work also includes cleaning of the concrete surfaces to be inspected.

This work also includes the installation, maintenance, and removal of a stream diversion system in accordance with Special Provision 107 as required to complete the specified concrete patching and crack repair work in the dry.

518.07 Placing Repair Materials

The following is added after the first paragraph:

All concrete repairs shall be completed in the dry. The Contractor shall install, maintain and remove an approved stream diversion system in accordance with Special Provision 107.

518.03 Removal of Unsound Concrete

Item (c) under the fourth paragraph is deleted in its entirety and replaced with the following

c) To a minimum depth of 1 inch below the bottom of reinforcing steel.

518.10 Method of Measurement

The following paragraphs are added:

The installation, maintenance, and removal of required stream diversion systems will not be measured for payment separately, but shall be incidental to the related contract items.

Removing and disposing of debris from within the culvert, including but not limited to sediment, branches, stumps, logs and other foreign material as required to allow proper inspection and sounding of the concrete, and cleaning of the concrete surfaces to be inspected, will not be measured for payment separately, but shall be incidental to the related contract items.

518.11 Basis of Payment

The following paragraphs are added:

Repair of Upward Facing Culvert Surfaces – below Reinforcing Steel < 8 inches will be paid for at the Contract unit bid price per square foot for each type of repair satisfactorily completed and accepted which price shall be considered full compensation for, but not necessarily be limited to: removal and disposal of debris and foreign materials from within the culvert; installation, maintenance and removal of an approved stream diversion system; removal and disposal of unsound concrete; cleaning existing concrete and reinforcing steel surfaces; furnishing and placing new reinforcing steel where required; furnishing, placing and removal of formwork, staging, and temporary supports where required; placing, curing and finishing new concrete; and, all materials, labor, equipment, tools and incidentals necessary to complete the work in accordance with the plans, these specifications, or as directed by the Resident.

Payment will be made under:

Pay Item		Pay Unit
518.511	Repair of Upward Facing Culvert Surfaces – Below Reinforcing Steel < 8 inches	Square Foot

SUPPLEMENTAL SPECIFICATION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Culvert Floor Refacing)

518.01 Description

The following paragraphs are added:

This work shall consist of refacing areas of the existing Crediford Brook Culvert Floor as shown on the Plans, as described in these Specifications, and/or as directed by the Resident. Except as stated herein, the requirements for Culvert Floor Refacing shall match the requirements outlined in the Standard Specifications for the repair of Upward Facing Surfaces – to Reinforcing Steel.

This work shall generally include removing loosely adhered or heavily deteriorated concrete, cleaning exposed reinforcing steel and concrete surfaces in repair areas, furnishing and installing proposed reinforcing steel, application of an approved bonding agent and placing and curing repair materials. All work shall be in conformance with applicable provisions of Sections 202, 502, and 503.

This work also includes localized areas of sound concrete removal at the limits of the repair as shown on the plans to "key" the proposed repair into existing concrete, and to provide a flush transition between the existing concrete and the proposed refacing.

This work also includes removing and disposing of debris from within the culvert, including but not limited to sediment, branches, stumps, logs and other foreign material as required to allow proper inspection and sounding of the concrete. The work also includes cleaning of the concrete surfaces to be inspected.

This work also includes the installation, maintenance, and removal of a stream diversion system in accordance with Special Provision 107 as required to complete the specified concrete patching and crack repair work in the dry.

518.02 Materials

The first sentence of the first paragraph is deleted and is not replaced.

518.03 Removal of Unsound Concrete

This section is deleted entirely and replaced with the following:

Except as otherwise noted herein, or on the plans, the removal of unsound concrete shall be limited to the removal of delaminated or loosely adhered concrete; the removal of soft, but firmly

adhered concrete, will not be required. Existing reinforcing steel shall be cleaned to remove rust and corrosion but the replacement of existing reinforcing steel is note required.

The removal of existing concrete shall be accomplished without damage to the portion of the structure that is to remain. The deteriorated or delaminated concrete shall first be removed from areas designated by the Resident. The concrete surface shall then be thoroughly blast cleaned to remove remaining areas of loosely adhered concrete and rust. The Contractor shall implement appropriate measures to capture, contain, and remove and properly dispose of all blasting materials and waste products generated by the work.

The Contractor shall remove areas of sound concrete as shown on the plans to "key" the proposed repair into existing concrete, and to provide a flush transition between the existing concrete and the proposed refacing.

All material removed shall be disposed of outside the limits of the turnpike right-of-way. 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 Chapter 404 of the Maine Department of Environmental Protection Solid Waste Regulations.

518.07 Placing Repair Materials

The following paragraphs are added:

Prior to the installation of the concrete repair materials the Contractor shall install the proposed reinforcing steel as shown on the plans, or as directed by the Resident. All reinforcing steel specified to be drilled and anchored shall be anchored using a material selected from MaineDOT's qualified products list of Epoxy and Resin Based Adhesive Bonding Systems.

518.10 Method of Measurement

The following paragraphs are added:

Culvert Floor Refacing will be measured by the square foot satisfactorily installed and accepted, regardless of depth, and shall be computed as the sum of the products of the average length and width of each area repaired.

Fabrication, delivery, and installation of new reinforcing steel for Culvert Floor Refacing will not be measured for payment separately, but shall be incidental to the Culvert Floor Refacing pay item.

The installation, maintenance, and removal of required stream diversion systems will not be measured for payment separately but shall be incidental to the Culvert Floor Refacing pay item.

Removing and disposing of debris from within the culvert, including but not limited to sediment, branches, stumps, logs and other foreign material as required to allow proper inspection and sounding of the concrete, and cleaning of the concrete surfaces to be inspected, will not be measured for payment separately, but shall be incidental to the Culvert Floor Refacing pay item.

518.08 Basis of Payment

The following paragraphs are added:

Culvert Floor Refacing will be paid for at the Contract unit bid price per square foot for satisfactorily completed and accepted which price shall be considered full payment for, but not necessarily be limited to: removal and disposal of debris and foreign materials from within the culvert; installation, maintenance and removal of an approved stream diversion system; removal and disposal of unsound concrete; removal and disposal of sound concrete to "key" the proposed repair into existing concrete; cleaning existing concrete and reinforcing steel surfaces; furnishing and placing new reinforcing steel; furnishing, placing and removal of formwork, staging, and temporary supports where required; placing, curing and finishing new concrete; and, all materials, labor, equipment, tools and incidentals necessary to complete the work in accordance with the plans, these specifications, or as directed by the Resident.

Payment will be made under:

Pay Item		Pay Unit
518.53	Culvert Floor Refacing	Square Foot

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Bridge Joint Header Concrete Replacement)

518.01 Description

The following paragraphs are added:

This work includes the removal of existing header concrete to the limits shown on the plans, or as directed by the Resident; cleaning of the existing concrete, reinforcing steel, and expansion joint assemblies to receive new concrete; placement of bonding agents; and forming, placing, curing, and finishing concrete materials, to a minimum depth of 4 inches, per the details shown on the Plans, or identified by the Resident.

This work also includes the placement of waterproofing membrane in accordance with Special Provision 508 and the placement of Hot Mix Asphalt Pavement in accordance with Special Provisions 401 and 403 as required to complete the work.

Where concrete repairs are incomplete, or the concrete repair material is not fully cured, a temporary steel plate system shall be installed in accordance with the plans and Special Provision 510 prior to reopening the repair area to traffic.

All repair work covered by this special provision shall be completed with AAA-Modified concrete in accordance with Maine Turnpike Authority Supplemental Specification 502.

518.02 Repair Materials.

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

All repair work covered by this special provision shall be completed with AAA-Modified concrete in accordance with Maine Turnpike Authority Supplemental Specification 502.

518.10 Method of Measurement

The following paragraphs are added:

Bridge Joint Header Concrete Replacement will be measured by the square foot satisfactorily completed and accepted. The area shall be computed as the sum of the products of the average length and width of each area repaired.

Fabrication and placement of reinforcing steel for Bridge Joint Header Concrete Replacement will not be measured for payment separately, but shall be considered incidental to the Bridge Joint Header Concrete Replacement pay item.

Temporary steel plating, where required, will not be measured for payment separately, but shall be considered incidental to the related contract items.

518.11 Basis of Payment

The following paragraphs are added:

Bridge Joint Header Concrete Replacement will be paid for at the Contract unit bid price per square foot which price shall be considered full compensation for, but not necessarily be limited to: removal and disposal of existing concrete and bituminous pavement; cleaning existing concrete, reinforcing steel, and joint armor; furnishing and placing new reinforcing steel where required; furnishing, placing and removal of forms, staging, and temporary supports where required; earth excavation where required; placing, curing and finishing new concrete; installation of aggregate subbase and base pavement in areas of excavation; installation, maintenance, and removal of temporary steel plate systems; and, all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
518.86	Bridge Joint Header Concrete Replacement	Square Foot

SPECIAL PROVISION

SECTION 520

EXPANSION DEVICES –NON MODULAR

(Metal Armor Repair)

520.01 Description

The following paragraph is added:

This work consists of repairing damaged joint armor at Route 111 per the details on the Plans and at locations determined by the Resident.

520.06 Installation

The following paragraph is added:

The repair of damaged bridge joint armor shall be completed in a manner that accommodates the project maintenance of traffic requirements and shall be coordinated with bridge header concrete replacement, modifying joint armor, the installation of temporary bituminous ramps, permanent highway paving, and other proposed contract work.

Welding shall be in accordance with Section 504 of the Standard Specification.

520.07 Method of Measurement

The following paragraphs are added:

Metal Armor Repair will be measured by the linear foot, complete in place and accepted for the work identified on the Plans, or as directed by the Resident, and described in this specification.

Removing the damaged metal armor and prepping the surfaces for welding will not be measured separately but shall be incidental to the Metal Armor Repair pay item.

The removal and replacement of header concrete required to complete Metal Armor Repair will be measured for payment under the Bridge Joint Header Concrete Replacement pay item.

520.08 Basis of Payment

The following paragraph is added:

The accepted quantity of Metal Armor Repair will be paid for at the contract unit price per linear foot. Payment will be full compensation for furnishing and installing all materials, labor, equipment, and incidentals necessary to complete the work, including removing and disposing the existing damaged armor, prepping the armor pieces for welding; furnishing and installing the replacement armor; and for all other incidentals required to complete the work.

Payment will be made under:

Pay Item		Pay Unit
520.2228	Metal Armor Repair	Linear Foot

SPECIAL PROVISION

SECTION 520

EXPANSION DEVICES – NON-MODULAR

(Joint Armor Modification)

520.01 Description

The following paragraph is added:

The work shall include modifying the existing gland seal bridge joint armor on the Route 111 Bridge as shown on the plans, or as directed by the Resident, and as described in this Specification.

520.02 Materials

The following paragraph is added:

Replacement joints shall be Expansion Device – Gland Seal meeting the requirements listed on the Plans.

520.06 Installation

The following paragraph is added:

Furnish and install two 1½ inch thick by 4 inch wide joint extrusions / plates on the existing steel angles located on each side of the existing bridge joint opening. The proposed joint extrusions shall be installed in phases and shall extend the full width of the bridge once completed. A new gland seal shall be installed in a single piece once the full length of the joint extrusion / plate is completely installed and all welding is completed. The Contractor shall submit shop drawings of the proposed joint extrusions / plates, and the proposed installation details, to the Resident for review and approval.

Prior to installation of the joint extrusion / plate all portions of the existing joint armor that will be covered with new steel or concrete materials shall be thoroughly cleaned and sandblasted. Any portions of the existing steel extrusion within the parapet joint opening that must be removed to fit the new joint rails shall be ground smooth prior to installation of the new joint extrusion.

Once the new gland seals are permanently installed, the Contractor shall thoroughly clean the abutment seats, bearings, and girder ends by pressure washing to remove any debris, salt, or other foreign contaminants. Payment for pressure washing shall be incidental to the Joint Armor Modification item.

Welding shall be in accordance with Section 504 of the Standard Specification.

520.07 Method of Measurement

The following paragraph is added:

Joint Armor Modification will be measured for payment by the linear foot of joint modification satisfactorily completed and accepted. Each linear foot of bridge joint shall include the work required to complete the work on both side of the bridge joint opening.

520.08 Basis of Payment

The following paragraph is added:

Joint Armor Modification will be paid for at the Contract bid price per linear foot and shall be considered full compensation for all materials, labor and incidentals required to complete the work including, but not necessarily limited to: shop drawing preparation and submittal; removal and disposal of the existing joint seals and armor; preparing and cleaning existing surfaces to receive new materials; furnishing and installing joint extrusions / plates; field welding; furnishing and installing gland seal; and all materials, labor, tools, equipment and incidentals necessary to complete the work as directed by the Resident and in accordance with the Plans and these Specifications.

Payment will be made under:

Pay Item		Pay Unit
520.2234	Joint Armor Modification	Linear Foot

SPECIAL PROVISION

SECTION 520

EXPANSION DEVICES – NON-MODULAR

(Expansion Device - Asphaltic Plug Joint)

Section 520, Expansion Devices, Non-Modular, is deleted in its entirety and replaced with the following:

520.01 Description

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

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

Bridging plates for asphaltic plug joint systems shall only be used when shown on the Contract Plans.

520.02 Submittals

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

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

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

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

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

520.03 Materials

The asphaltic plug joints shall consist of a system including bridge joint binder material, aggregate, backer rod, elastomeric concrete header material, and polysulfide joint sealant conforming to the details and dimensions shown on the Plans, in accordance with these Specifications and as directed by the Resident.

The following systems are acceptable for use as asphaltic plug joints:

Thorma-Joint	Wabo Expandex	Matrix 502
Surface Dynamics, Ltd.	Watson Bowman ACME	D.S. Brown
373 Village Road	95 Pineview Drive	300 East Cherry Street
Pennsdale, PA 17756	Amherst, New York 14228	North Baltimore, OH 45872

Fibrejoint
Fibrecrete Preservation
Technologies
131 St. James Way
Mount Airy, NC 27030

Materials which are incorporated in or used in conjunction with approved asphaltic plug joint systems are as follows:

(a) Asphaltic Binder:

Binder shall meet or exceed requirements of AASHTO M301 (ASTM D3405) and consist of hot applied, thermoplastic polymeric modified asphalt with the following properties when tested in accordance with the following ASTM methods:

PROPERTY	REQUIREMENT	TEST METHOD
Softening Point, °F	180 min.	ASTM D36
Tensile Adhesion @ 77°F, %	700 min.	ASTM D3583
Ductility @ 77°F, inch	40 min.	ASTM D113
Penetration, 0.1 mm 77°F, 150 g, 5 s 0°F, 200 g, 60 s	 90 max. 10 max.	ASTM D3407
Flow 5 hrs @ 140°F, mm	3.0 max.	ASTM D3407
Bond @ -20°F	pass 3 cycles	ASTM D3407
Resilience @ 77°F, %	40 to 70	ASTM D3407
Asphalt Compatibility @ 140°F	Pass	ASTM D3407
Recommended Pouring Temperature, °F	380 to 390	
Safe Heating Temperature, °F	400 min.	

(b) Backer Rod:

Backer rod shall be a cylindrical closed cell expanded polyethylene foam rod, with a diameter of 150 percent of joint opening width, capable of withstanding the temperature of the hot binder materials and having the following properties:

PROPERTY	REQUIREMENT	TEST METHOD
Density, lb/ft^3	2.0 min.	ASTM D1622
Tensile Strength, psi	20 min.	ASTM D1623
Water Absorption, % of wt.	1.0 max.	ASTM C509

(c) Bridging Plate:

Bridging Plate shall be either Plate Steel or Aluminum Flashing as specified on the plans.

Plate Steel Bridging Plates shall be fabricated from ASTM A36 steel, shall be a minimum of 1/4 inch thick and shall be galvanized. Holes for centering nails shall be located approximately one foot on center along the centerline of plates.

Aluminum Flashing Bridging Plates shall be rust-free roll aluminum. The aluminum flashing shall be a minimum of 6" wide and have a minimum thickness of 0.02 inches.

(d) Centering Nail:

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

(e) Aggregates:

Aggregate shall be crushed, double-washed and dried granite or basalt, and meet the ASTM C33 Size No. 6 gradation. This aggregate shall also be used for top dressing on the finished joints.

(f) Plastic Compound:

Plastic compound used for repairing overcuts in bituminous concrete overlays shall be a two-component liquid with a synthetic resin base. It shall have a minimum viscosity of 3,500 cps at 77°F and a maximum viscosity of 65,000 cps at 25°F. The plastic compound shall be cured by the addition of a specific hardener. Sufficient hardener shall be used to cure the plastic compound in approximately 30 minutes at 77°F. It shall have sufficient strength and resiliency to withstand stresses set up by vibration, expansion and contraction due to temperature changes. It shall also be resistant to most chemicals and solvents, including most salts, acids, and hydrocarbons.

520.04 Installations

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

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

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

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

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

The binder shall be heated to 350°F to 410°F, or a safe temperature as recommended by manufacturer. Heating kettles shall be equipped with continuous agitation system, temperature controller, calibrated thermometer, and double steel jacket with an oil layer in between, to prevent scorching of the binder. During application, the temperature of binder shall be maintained at a minimum of 350°F, but no greater than 410°F. It shall be poured and leveled into expansion joint openings until overfilled, and the excess binder spreads over the area covered by the bridging plates.

If called for on the plans the bridging plates, whether fabricated from steel plate or aluminum flashing, shall be placed from curb to curb on the roadway portion of expansion joints. The plates shall be centered over joint openings. Centering nails shall be placed in pre-drilled holes and hammered in to secure plates.

Once the bridging plates are installed, liquid asphalt binder shall be poured and leveled over the bridging plates and adjacent membrane surfaces in a manner that ensures full coverage.

Areas with excessive application, such as pooling of liquid, should be removed or dispersed along the joint area.

Asphaltic plug joint system aggregate shall be heated in a rotating drum mixer to a minimum of 350°F but no greater than 410°F, or as recommended by the manufacturer. The thermoplastic polymeric modified asphalt binder shall be added to the mixer to pre-coat aggregates.

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

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

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

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

520.05 Method of Measurement

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

520.06 Basis of Payment

The asphaltic plug joint system will be paid for at the Contract unit price per linear foot, which price shall be full compensation for all labor, materials, equipment, and incidentals required for furnishing and installing the Expansion Device - Asphaltic Plug Joint as shown on the Plans, in accordance with these Specifications, and as directed by the Resident.

The backer rod, closed cell foam, all patching needed for the waterproofing membrane, and elastomeric sealant installed up the vertical face, and across the horizontal surfaces, of bridge curbs and sidewalks will not be measured separately for payment, but shall be incidental to the Expansion Device - Asphaltic Plug Joint pay item.

Payment will be made under:

Pay Item		Pay Unit
520.23	Expansion Device - Asphaltic Plug Joint	Linear Foot

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Temporary Concrete Barrier Type I - Supplied by Authority)

526.01 Description

The following paragraphs are added:

This work shall consist of loading, transporting, setting, resetting, removing, transporting and stacking Temporary Concrete Barrier Type I – Supplied by Authority. The barrier shall have attachments allowing individual sections to be connected into a continuous barrier.

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

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

Maintenance Area	Linear Feet of Barrier
Kennebunk Maintenance Area Mile 25.5 Northbound	1,020

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

526.02 Materials

The following paragraphs are added:

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

526.021 Acceptance

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

526.03 Construction Requirements

The following paragraphs are added:

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

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

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

Concrete barrier placed at roadway low points shall be shimmed on 1" by 2" by 2' long wood planks to allow drainage to pass under the barrier. In addition, the Resident may direct the Contractor to shim the concrete barrier at other locations to provide for proper roadway drainage. All labor, material, and equipment necessary to shim the barrier will not be measured separately for payment, but shall be incidental to the Concrete Barrier.

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

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

Retro-Reflective Delineators shall be mounted as follows:

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

526.04 Method of Measurement

The following paragraphs are added:

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

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

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

526.05 Basis of Payment

The fifth paragraph is deleted and not replaced.

The following paragraphs are added:

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 527

ENERGY ABSORBING UNIT

(Work Zone Crash Cushion)

527.01 Description

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

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

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

527.02 Materials

The following paragraph is added:

Only work zone crash cushions meeting the NCHRP Report 350 TL-3 crash test requirements may be used on the turnpike and local roadways with posted speeds of 45 MPH or greater. Work zone crash cushions meeting the NCHRP Report 350 TL-2 crash test requirements may be used on local roadways with posted speeds of 40 MPH or less. The Contractor shall provide the Resident with documentation of the proposed work zone crash cushion's NCHRP Report 350 Crash Test Results prior to installation at the jobsite.

527.03 Construction Requirements

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

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

527.04 Method of Measurement

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

527.05 Basis of Payment

Payment will be made under:

Pay Item		Pay Unit
527.341	Work Zone Crash Cushions – TL-3	Unit
527.342	Work Zone Crash Cushions – TL-2	Unit

SPECIAL PROVISION

SECTION 603

PIPE CULVERTS AND STORM DRAINS

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

603.01 Description

The following paragraphs are added:

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

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

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

603.02 Materials

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

Concrete admixtures from MaineDOT's QPL may be used to accelerate concrete curing time of the concrete collar.

603.11 Method of Measurement

The following paragraph is added:

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

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

603.12 Basis of Payment

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS AND CATCH BASINS

(Rebuild Catch Basin to Grade - Type II)
(Rebuild Catch Basin to Grade - Type IV)
(Rebuild Catch Basin to Grade - Type B1)

604.01 Description

This Subsection is amended by the addition of the following:

The Type II and Type B1 work shall consist of rebuilding catch basins as specified in the Specifications to grade, removing the existing unsound concrete, frame and grate, applying a bead of Elastomeric sealer to the frame seat and reinstalling the existing grate in accordance with these Specifications and in reasonable close conformity with the lines and grades as shown on the Plans. Type II basins include F style basins.

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

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

604.02 Materials

The following sentences are added:

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

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

The third paragraph should be deleted and replaced with:

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

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

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

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

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

5520M5 Grate Product Number 00552060

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

5520M8 Product Number 00552084 or 5520M8 Product Number 00552085

604.04 Altering, Adjusting, and Rebuilding Catch Basins and Manholes

This Subsection is deleted and replaced with the following:

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

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

Rebuild Catch Basin to Grade – Type II

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

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

Rebuild Catch Basin to Grade – Type IV

The existing frame and grate shall be removed, stacked and reset. Remove all unsound concrete and anchor rods to sound concrete as determined by the Resident. Install four Number 4 dowels, twelve inches in length, in each sidewall, reform catch basin to necessary grade using modified Class AAA concrete. Reinstall the existing frame and grate to the finished grade as designated by the Resident and construct a bituminous concrete waterway including regrading (raising) the drainage swale with gravel borrow.

Rebuild Catch Basin to Grade – Type B1

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

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

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

604.05 Method of Measurement

The following are added after Subsection e. Grate:

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

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

Rebuild Catch Basin to Grade – Type B1 will be measured for payment by each unit rebuilt, and accepted.

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

604.06 Basis of Payment

The following paragraphs are added after the first paragraph:

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

The accepted quantity of Rebuild Catch Basin to Grade – Type IV will be paid for at the Contract unit price each. This price shall be full compensation for removing existing frame and

grate, rebuilding the catch basin top to grade, reinstalling the existing frame and grate, and all other labor, equipment and materials required to complete the work.

The accepted quantity of Rebuild Catch Basin to Grade – Type B1 will be paid for at the Contract unit price each. This price shall be full compensation for removing existing frame and grate, rebuilding the catch basin top to grade, reinstalling the existing frame, cleaning the horizontal surface, applying the elastomeric sealer, reinstalling the existing grate, and all other labor, equipment and materials required to complete the work.

The second paragraph is deleted and replaced with the following:

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

Bituminous concrete waterway shall be paid for under Item 459.06.

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

Payment will be made under:

Pay Item		Pay Unit
604.184	Rebuild Catch Basin to Grade – Type II	Each
604.185	Rebuild Catch Basin to Grade – Type IV	Each
604.186	Rebuild Catch Basin to Grade – Type B1	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Bridge Transition- Type III)
(Bridge Transition- Type III, Modified)

606.01 Description

The following sentence is added:

This work shall consist of furnishing and installing Type III Bridge Transitions and Type III, Modified Bridge Transitions at bridge endposts on bridges over the turnpike as shown in the Contract Documents.

The following Subsection is added:

606.071 Guardrail Attachments at Bridges

Bridge transition - Type III, and Bridge Transition - Type III, Modified shall be used at bridge endpost locations as shown on the plans.

606.08 Method of Measurement

The following sentence is added:

Bridge transition - Type III will be measured by each unit of the type specified, installed and accepted.

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

606.09 Basis of Payment

The following paragraphs are added:

Bridge Transition - Type III, and Type III, Modified, will be paid for at the Contract unit price each complete in place and shall be full compensation for furnishing all labor, equipment and materials necessary to complete the work consisting of, but not necessarily limited to, the following: furnishing and installing guardrail, modifications to concrete end wall to accept terminal anchor, one terminal connector, precast concrete transition curb, including terminal connector anchorage and all other detailed accessories; furnishing and installing all required posts, rails, offset brackets, back-up plates, nuts, bolts, washers, and all other items necessary to make for a complete installation as shown on the Plans or as approved by the Resident.

Payment will be made under:

Pay Item		Pay Unit
606.1723	Bridge Transition - Type III	Each
606.1724	Bridge Transition - Type III, Modified	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

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

606.01 Description

The following sentence is added:

This work shall consist of furnishing and installing Terminal End – Anchored End, and Terminal End, Anchored End – Thrie Beam end treatments in accordance with these Specifications, the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report: A Guide to Standardized Highway Barrier Hardware, dated May 1995; and in reasonably close conformity with the lines and grades as shown on the Plans or as approved by the Resident.

606.02 Materials

The following sentences are added:

The guardrail elements shall be per the Components' List found on Sheet No. 2 of 2 of Drawing SEW02a – Trailing End Terminal – Foundation Tube Option in the Task Force 13 Report noted above and/or as noted in the Contract Documents.

The following Subsection is added:

606.042 Terminal End - Anchored End

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

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

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

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

606.08 Method of Measurement

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

606.09 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
606.278	Terminal End - Anchored End	Each
606.279	Terminal End - Anchored End, Thrie Beam	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Reflectorized Beam Guardrail Delineator)

606.01 Description

The following paragraphs are added:

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

Reflectorized beam guardrail delineators shall be mounted as follows:

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

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

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

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

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

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

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

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

606.02 Materials

The fourth paragraph is deleted and replaced with the following:

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

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

606.08 Method of Measurement

The following paragraph is added:

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

606.09 Basis of Payment

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

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

Payment will be made under:

Pay Item		Pay Unit
606.352	Reflectorized Beam Guardrail Delineator	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

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

606.01 Description

The following paragraphs are added:

This work shall also consist of furnishing and installing new delineator posts and/or removing and resetting and/or removing and stacking existing delineator posts within the Contract limits at the Kennebunk Maintenance Facility at Mile Marker 25 North/bound and Southbound. The existing reflectorized delineator panels shall be removed and replaced with new reflectorized delineator panels as required by the Resident.

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

Outside Shoulder:

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

Median:

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

Other Locations:

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

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

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

606.02 Materials

The following paragraphs are added:

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

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

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

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

606.03 Posts

The following paragraphs are added:

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

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

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

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

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

606.08 Method of Measurement

The following paragraphs are added:

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

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

606.09 Basis of Payment

The following sentences are added:

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

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 606

GUARDRAIL

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

606.01 Description

The following paragraphs are added:

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

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

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

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

Guardrail materials may be temporarily stockpiled at the Kennebunk Maintenance Facility at MM 25.5 Northbound.

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

606.02 Materials

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

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

The following Subsection is added:

606.021 General

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

606.036 Adjusting Existing Guardrail

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

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

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

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

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

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

606.08 Method of Measurement

The following paragraphs are added:

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

Raking and compacting the earth around each reset post with a minimum 8 pound hand tamper or an approved device, and infilling and compacting holes created due to resetting posts with

a similar surrounding material will not be paid separately, but shall be incidental to the Guardrail - Remove, Modify and Reset Pay or Guardrail - Adjust pay items.

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

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

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

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

606.09 Basis of Payment

The following paragraphs are added:

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 606

GUARDRAIL

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

606.01 Description

The following paragraph is added:

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

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

606.02 Materials

The following sentences are added:

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

The following Subsection is added:

606.021 General

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

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

606.08 Method of Measurement

The following paragraphs are added:

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

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

606.09 Basis of Payment

The following paragraphs are added:

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 609

CURB

(Curbing Removed and Stacked)

609.01 Description

The following paragraph is added:

Curbing removed and stacked shall also consist of removing, transporting to the Maine Turnpike Authority Kennebunk Maintenance lot at 150 Fletcher St, Kennebunk, ME 04043 and stacking existing granite curbing.

The following paragraph is added:

609.081 Curbing Removed and Stacked

The granite curbing designed to be removed and stacked shall be carefully lifted from its position and hauled the Maine Turnpike Authority Kennebunk Maintenance lot as approved by the resident.

The Contractor shall stack the granite curbing at the Maine Turnpike Authority Kennebunk Maintenance lot site as directed. The curbing shall be carefully and neatly stacked on wooden planks at the stacking area. Curbing which is considered unfit for reuse shall be disposed of by the Contractor at his own expense.

609.10 Basis of Payment

Curbing, removed and stacked, will be paid by the linear foot which will be fill compensation for all labor, equipment, transporting, stacking, and any incidentals needed to complete the item.

Payment will be made under:

Pay Item		Pay Unit
609.441	Curbing Removed and Stacked	Linear Foot

SPECIAL PROVISION

SECTION 619

MULCH

(Mulch – Plan Quantity)
(Temporary Mulch)

619.01 Description

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

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

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

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

619.03 General

The first paragraph is deleted and replaced with the following:

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

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

610.06 Method of Measurement

The following sentence is added:

Temporary Mulch will be paid for by the lump sum.

656.10 Basis of Payment

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 626

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

(Quazite Junction Box 36 x 24)
(Quazite Junction Box 18 x 12)

626.02 General

The following paragraph is added:

Junction boxes for the electrical and communication conduit associated with the toll equipment and intelligent transportations systems shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems. The boxes shall be 36" x 24" and 36" deep or 18" x 12" and 18" deep, as specified on the plans. The words ELECTRICAL or COMMUNICATION shall be stamped on the cover as noted in the Plans or directed by the Resident. The boxes shall have a 15,000 lb. load rating. All existing QUAZITE® Junction Boxes in useable condition shall be removed and relocated as directed by the Resident Engineer.

Junction boxes for the electrical associated with highway lighting shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems. The boxes shall be 18" x 12" and 18" deep. All existing Junction Boxes in useable condition shall be removed and relocated as directed by the Resident Engineer. New boxes shall have the words MTA LIGHTING stamped on the cover. The boxes shall have a 15,000 lb. load rating.

626.04 Method of Measurement

The following sentences are added:

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

626.05 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
626.12	36" x 24" x 36" Quazite Junction Box	Each
626.13	18" x 12" x 18" Quazite Junction Box	Each

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(White or Yellow Pavement Marking Line)

627.01 Description

The following sentences are added:

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

The following sentence is added:

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

627.02 Materials

The following is added before the last paragraph:

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

627.04 General

The following is added to the third paragraph:

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

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

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

627.08 Removing Lines and Markings

The last sentence is deleted and is not replaced.

627.09 Method of Measurement

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

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

627.10 Basis of Payment

This Subsection is deleted and replaced with the following:

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

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Temporary Raised Pavement Markers)

627.01 Description

The following sentence is added:

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

627.02 Materials

The second paragraph is deleted and replaced with the following:

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

627.04 General

The following sentences are added:

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

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

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

627.09 Method of Measurement

The following sentence is added:

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

627.10 Basis of Payment

The following paragraphs are added:

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

Payment will be made under:

Pay Item		Pay Unit
627.812	Temporary Raised Pavement Markers	Each

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Recessed Pavement Marking Tape)

627.01 Description

The following sentence is added:

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

627.02 Materials

The following sentence is added:

Pavement Marking Tape for supplemental lane markings between travel lanes shall be 3M Tape Series 380AW – High Performance pavement marking tape, color- white, six (6) inch wide, as manufactured by 3M of St. Paul, Minnesota.

Pavement Marking Tape for dotted acceleration/de-acceleration lane markings shall be 3M Stamark Extended Season Tape Series 380IES– High Performance pavement marking tape, color- white, eight (8) inch wide, as manufactured by 3M of St. Paul, Minnesota.

Pavement Marking Tape for dotted turning movement lane markings shall be 3M Stamark Extended Season Tape Series 380IES– High Performance pavement marking tape, color- yellow, six (6) inch wide, as manufactured by 3M of St. Paul, Minnesota.

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

3M Traffic Safety Systems Division
Mr. Michael D. Allen
Tel: (401) 368-0438
Email: mdallen@mmm.com

627.04 General

The following paragraphs are added:

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

The recessed tape used to mark a Dotted White Lane Line (DWLL) shall be installed on parallel deceleration and acceleration lanes at locations noted on the Plans. On deceleration lanes, the tape shall be installed from the beginning of the full width deceleration lane and shall extend to the theoretical gore markings. On acceleration lanes, the DWLL shall extend from the theoretical gore markings to a point one-half of the total length of the acceleration lane (including the lane taper length). Layout data is noted on the drawings. White Lane Line tape shall be three (3) foot in length and shall be spaced nine (9) feet apart. Spacing from the Solid White Lane Line (SWLL) or the Theoretical Gore Markings shall be nine (9) feet.

The recessed tape used to mark a Dotted Yellow Lane Line (DYLL) shall be installed on a radius from the Skyway Drive solid yellow centerline into the Exit 46 toll plazas (Northbound on and Southbound on) as noted on the Plans. Layout data is noted on the drawings. Yellow Lane Line tape shall be three (3) foot in length and shall be spaced nine (9) feet apart. Spacing from the Solid Yellow Centerline shall be nine (9) feet.

627.05 Preparation of Surface

The following paragraph is added:

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

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

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

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

627.09 Method of Measurements

The following paragraph is added:

The accepted quantity of Pavement Marking Line – Recessed Tape will be measured for payment by the linear foot in place and accepted. The measurement will not include the gaps.

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

627.10 Basis of Payment

The following paragraphs are added:

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

The white, eight (8) inch wide Dotted White Lane Line (DWLL) installed on parallel deceleration lane at Exit 44 shall be paid under Item 627.94 Pavement Marking Line – Recessed Tape, Broken White Lane Line, 6-inch width.

The yellow, six (6) inch wide Dotted Yellow Lane Line (DYLL) installed for turning movements at Exit 46 shall be paid under Item 627.94 Pavement Marking Line – Recessed Tape, Broken White Lane Line, 6-inch width.

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

Payment will be made under:

Pay Item		Pay Unit
627.94	Pavement Marking Line – Recessed Tape, Broken White Lane Line, 6-inch width	Linear Foot
627.943	Pavement Marking Line – Recessed Tape, Solid White or Yellow Lane Line, 6-inch width	Linear Foot
627.944	Pavement Markings – Recessed Tape – Words, Arrows, Stop Bars	Square Foot

SPECIAL PROVISION

SECTION 631

EQUIPMENT RENTAL

(Welding Machine, including operators)

631.01 Description

This work shall consist of furnishing and operating construction equipment as directed by the Resident. Welding Machine (including operators) shall be used by the Resident for field welding of bridge joint modifications that are not otherwise included in the work of other contract items.

631.02 General

Equipment used for work under this section shall conform to the following minimum sets of requirements:

Equipment

The equipment requirements for the Welding Machine (including operators) are truck or trailer mounted 225 AC/DC 120/240 SMAW/FCAW welding machine with 120/240 V electrical generating capacity (Miller Bobcat 225 AC Welder/Generator or equal), 100 feet of welding leads, 100 feet of 10/3 electrical cord; an oxy-acetylene torch setup with heating and cutting tips; 4 ½ and 7 inch grinders, ½ inch electric drill, and a rotabroach cutter style magnetic drill.

The welding machine operator shall be an AWS D1.5 certified welder in all positions. The welding machine helper shall be a skilled laborer with experience in drilling, cutting, grinding, metal preparation and metal fit-up.

Consumables (welding rod, oxygen, acetylene, grinding wheels, drill bits, rotabroach cutters, etc) will not be paid separately but shall be incidental to the Welding Machine (including operator) pay item.

Steel plate and other steel sections required to complete the work will be reimbursed at cost plus 15%.

Payment will be made under:

Pay Item		Pay Unit
631.40	Welder (including operator)	Hour

SPECIAL PROVISION

SECTION 631

EQUIPMENT RENTAL

631.02 General

The following sentences are added:

Electrician - Licensed by State of Maine.

Electrician's Apprentice - Enrolled in an accredited program.

631.08 Basis of Payment

The following paragraphs are added:

Such related costs such as use of hand tools, meal and room expenses, benefits, insurance, retirement, travel time, overtime, overhead and profit will not be measured separately for payment, but shall be incidental to the unit price for the bid item.

Note: For extra materials required for miscellaneous work the General Contractor shall be allowed 15 percent overhead and profit on the cost of materials and rental equipment (not covered by miscellaneous unit items). Rates for Subcontractor owned equipment required to perform miscellaneous work, not otherwise provided for in the Contract, shall be negotiated.

The General Contractor will be allowed 10 percent overhead and profit on the subcontractor's cost of materials, and subcontractors rented equipment (not covered by miscellaneous unit items). The General Contractor shall include his markup on the Subcontractor's labor in the pay items.

The labor hour bid items shall include labor and labor burdens, benefits, supervision, transportation, travel time and allowances, overnights, small tools and equipment, subcontractor overhead and profit, and General Contractor overhead and profit. Time will be measured from the start of work to the stoppage of work at the project site; less the time taken for lunch. No deduction of time will be taken for the standard morning "coffee break".

Payment will be made under:

Pay Item		Pay Unit
631.53	Electrician	Hour
631.54	Electrician's Apprentice	Hour

SPECIAL PROVISION

SECTION 634

HIGHWAY LIGHTING

(Remove and Reset Light Standard)

634.01 Description

The following paragraph is added:

This work shall consist of removing existing light standards, luminaires, and any breakaway devices and resetting with all associated appurtenances and wiring system on to new or relocated concrete foundations at locations as shown on the Plans.

634.021 Materials

The following paragraphs are added:

Junction boxes shall be polymer concrete (Item 626.13). Provide manufacturer's listed cover for each junction box with logo stating "MTA LIGHTING".

Splices in junction boxes shall be made with ILSCO USPA-350-SS-DB Safetysub Watertight Direct Bury Splice Wire Range 350MCM-10-STR connectors for the appropriate wire count only. Splices in hand holes shall be Ideal SLK Disconnect Fuse Kit 30-S2212.

634.04 Cable Installation

The reset light standards shall be wired with new wiring unless existing wiring is new and approved to be left by MTA Resident.

634.051 Removing Light Standards

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

Before removing light standards, the luminaires shall be removed from the light standard and carefully stored for reassembly at the new location. Care shall be exercised in handling the light standards and luminaires. The Contractor will be required to replace, at his own expense, all equipment damaged or destroyed by his operation.

Breakaway devices shall be required on all light standards. If breakaway devices do not exist on the existing light standard, new breakaway devices shall be supplied and installed. The Contractor will be allowed to temporarily remove a single luminaire from the lighting circuit to allow removing and resetting the light standards, including replacing luminaires and testing. At a minimum, the remaining luminaires at the plaza shall be maintained and operational while relocated light standards are being installed and made fully operational.

634.092 Method of Measurement

The following sentence is added:

Remove and Reset Light Standard will be measured by the single unit each, complete in place and accepted.

634.093 Basis of Payment

The accepted quantity of Remove and Reset Light Standard will be paid at the Contract unit price each for the number of units that are removed and reset. Payment shall be full compensation for the removal and resetting of the light standard, removing and reinstalling the luminaire, resetting the breakaway device or installing a new breakaway device, new pole wiring to the reset fixture if needed and all incidentals necessary to complete the work. Payment for the foundation shall be under the appropriate 626 item.

Payment will be made under:

Pay Item		Pay Unit
634.208	Remove and Reset Light Standard	Each

SPECIAL PROVISION

SECTION 643

TRAFFIC SIGNALS

(Interconnect Wire IMSA 50-2 #14 AWG)

643.01 Description

The following paragraphs are added:

This task shall include providing and installing the cable (IMSA 50-2 #14) shown on the Plans and described herein.

Cable: IMSA 50-2 #14 cable wire shall be as follows:

- Conductors: Solid or stranded tin copper
- Insulation: Polyethylene
- Conductor Configuration: Twisted pair
- Shield: Aluminum/Mylar tape
- Outer Jacket: Low-density polyethylene

Cable shall have two conductors, #14 AWG, 19 strand. Cable must be direct burial grade suitable for installation beneath the roadway, and any other locations shown on the Plans or described within the design documents. All cables shall have tape with length markings.

643.19 Basis of Payment

Measurement and payment for the installation of the IMSA 50-2 #14 cable will be by linear foot to the nearest 10 ft. interval. It shall include the furnishing, installation and routing of the cable per plans and specification.

Payment will be made under:

Pay Item		Pay Unit
643.901	Interconnect Wire IMSA 50-2 #14 AWG	Linear Foot

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Specific Project Maintenance of Traffic Requirements)

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

The following minimum traffic requirements shall be maintained. These requirements may be adjusted based on the traffic volume when authorized by the Authority.

Maine Turnpike over Crediford Brook Traffic Control Requirements

Shoulder closures with drums are permitted both northbound and southbound on the Maine Turnpike for the Contractor to access Crediford Brook for repair work. Shoulder closures with drums are permitted daily 7:00 a.m. to 5:00 p.m. and are not permitted overnight. On Mondays through Fridays in July and August, a four-foot lateral buffer space must be maintained between the solid white edge line and the drums from 7:00 a.m. to 9:00 a.m. and again from 3:00 p.m. to 5:00 p.m.

Kennebunk Service Plaza Traffic Control Requirements

The Contractor is permitted to close access to the parking aisle adjacent to the work area, but all other aisles shall remain open. Both driveways leading to the access road behind the work area shall remain open at all times, with the exception of when conduit is being installed and then one driveway shall remain open.

Route 111 Traffic Control Requirements

Maintenance of traffic plans have been developed for the work at the Route 111 Bridge over the Maine Turnpike. Two lanes of traffic in each direction must be maintained at all times with the exception of between 7:00 p.m. and 6:00 a.m. Sunday through Thursday nights.

Maine Turnpike under Route 111 Traffic Control Requirements

Three lanes of traffic in each direction shall be maintained on the Maine Turnpike under Route 111 at all times. No lane closures or shoulder closures on the Maine Turnpike, northbound or southbound, are required for the work on Route 111 under this contract.

Biddeford Interchange Bridge Traffic Control Requirements

One lane of traffic in each direction shall be maintained on the Biddeford Interchange bridge at all times except when the southbound on or southbound off ramp is closed as described in Section Biddeford Interchange Ramps (west of toll plaza) Traffic Control Requirements below. Lane shifts are permitted as shown on the maintenance of traffic plans.

Maine Turnpike Under Biddeford Interchange Bridge Traffic Control Requirements

Three lanes of traffic in each direction shall be maintained on the Maine Turnpike under the Biddeford Interchange bridge except when lane closure(s) are required related to ramp closure work as detailed in the Plans.

Biddeford Interchange Ramps (west of toll plaza) Traffic Control Requirements

Biddeford Interchange paving work includes, but is not necessarily limited to, pavement milling, crack sealing, pavement shimming, pavement surfacing, installation of pavement markings, guardrail repairs and height adjustments, delineator installations, catch basin rebuilds, concrete barrier sets and removals, and pipe extensions.

Biddeford Interchange work shall be completed Sunday through Thursday nights between 10:00 pm and 5:00 am at which times ramps are permitted to be closed. Work shall be scheduled and coordinated so ramps are not closed for limited activities, or for the convenience of the contractor. The contractor shall set, operate and maintain portable-changeable message signs on the mainline (north of Exit 36 southbound; south of Exit 25 northbound), on Route 111 (Biddeford); on Route 25 (Kennebunk); on I-195 and Industrial Road (Saco) to provide advance notice to turnpike patrons when Exit 32 ramp closures are scheduled or in place.

The Contractor will reimburse the Authority at the rate of $500 per 15-minute period for each ramp not reopened by the times specified above.

Certain activities described in Section 107.4.7 may be permitted on the southbound on ramp and the northbound off ramp between the hours of 9:00 a.m. and 1:00 p.m. Monday through Thursday during the months of March, April, May, June and September.

The contractor shall close Lane 3 southbound at Exit 32 when working adjacent to the mainline on the southbound off or the southbound on ramps. The contractor shall close Lane 3 northbound at Exit 32 when working adjacent to the mainline on the northbound off or the northbound on ramps

Wide loads will not be permitted on the Biddeford Interchange southbound off and southbound on ramps during the project. Wide loads will be allowed on all other project areas during daylight hours as authorized by the Authority. Wide loads are restricted from moving on the Turnpike one-half hour after sunset until one-half hour before sunrise. The Contractor shall plan and sequence the work accordingly.

The contractor shall provide all lane closures, ramp closures and maintenance of traffic control devices required to facilitate the Exit 32 paving work. The Authority shall provide a trooper to monitor and control exiting/ entering traffic when Exit 32 ramp(s) are scheduled for closure.

Biddeford Interchange (east of toll plaza) Traffic Control Requirements

All lanes must remain open all days between the hours of 5:00 am and 10:00 pm. A minimum of one lane exiting and one lane entering must be maintained Sunday through Thursday

during the hours of 10:00 pm and 5:00 am except for when both on ramps are closed or both off ramps are closed resulting in no traffic on the entering side or existing side of the plaza.

Biddeford Interchange (culvert replacement) Traffic Control Requirements

Culvert removal and replacement may occur Sunday through Thursday nights between the hours of 10:00 pm and 5:00 am.

652.7 Method of Measurement

The first paragraph is revised to read as follows:

Signs and panel markers will not be measured separately but shall be incidental to the various Traffic Control Devices and Maintenance of Traffic Control Devices lump sum pay items. Flashing arrow boards, barricades, drums and cones will not be measured separately but shall be incidental to the various Traffic Control Devices and Maintenance of Traffic Control Devices lump sum pay items. Such payment shall be full compensation for all incidentals necessary to install and maintain the respective devices. Portable changeable message signs will be measured by each unit authorized and installed on the project. No additional payment will be made for devices that require replacement due to poor condition or inadequate retro-reflectivity.

Portable Changeable Message Signs will be measured for payment by either each or per month. Five boards will be paid per each and shall be available for the duration of the contract. The per month pay item includes five additional boards required for use when ramps are closed at the Biddeford Interchange. All other provisions of Section 652 of the Supplemental Specifications relating to Portable Changeable Message Signs shall apply.

652.8 Basis of Payment

The first paragraph is revised to read as follows:

The accepted quantity of signs and panel markers will not be paid separately but shall be incidental to the various Traffic Control Devices and Maintenance of Traffic Control Devices lump sum pay items. Such payment shall be full compensation for furnishing and installing all signs, sign supports, and all incidentals necessary to complete the installation of the signs.

The second paragraph is revised to read as follows:

The accepted quantity of flashing arrow boards, barricades, drums and cones will not be paid separately but shall be incidental to the various Traffic Control Devices and Maintenance of Traffic Control Devices lump sum pay items. Such payment shall be full compensation for all incidentals necessary to install and maintain the respective devices.

The accepted quantity of portable changeable message signs will be paid for at the contract unit price each of the actual number of portable changeable message signs authorized, furnished and installed or per month based on supplying five portable changeable message signs on a monthly duration. Such payment shall be full compensation for all incidentals necessary to install and maintain the respective portable changeable message signs. See Supplemental Specifications Section 652 Maintenance of Traffic (General) for additional information.

The accepted quantity of Truck Mounted Attenuator will be paid for at the contract unit price per calendar day for the actual number of Truck Mounted Attenuator days authorized and furnished. See Supplemental Specifications Section 652 Maintenance of Traffic (General) for additional information.

652.8.1.2 Payment by Lump Sum

The following paragraphs are added to the end of the section:

Traffic Control Devices and Maintenance of Traffic Control Devices – Crediford Brook will be paid at the contract lump sum price. Such payment shall be full compensation for furnishing and installing all signs, drums, cones, barricades, and flashing arrow panels as shown on the Plans, or necessary for effective traffic control on the Maine Turnpike over Crediford Brook, and for all days the Contractor maintains traffic as specified herein, and for moving devices as many times as necessary; for replacing devices damaged, lost or stolen; and for cleaning, maintaining and removing all devices used for traffic control.

Traffic Control Devices and Maintenance of Traffic Control Devices – Kennebunk Service Plaza will be paid at the contract lump sum price. Such payment shall be full compensation for furnishing and installing all signs, drums, cones, barricades, and flashing arrow panels as shown on the Plans, or necessary for effective traffic control in Kennebunk Service Plaza, and for all days the Contractor maintains traffic as specified herein, and for moving devices as many times as necessary; for replacing devices damaged, lost or stolen; and for cleaning, maintaining and removing all devices used for traffic control.

Traffic Control Devices and Maintenance of Traffic Control Devices – Route 111 will be paid at the contract lump sum price. Such payment shall be full compensation for furnishing and installing all signs, drums, cones, barricades, and flashing arrow panels as shown on the Plans, or necessary for effective traffic control on Route 111 and the Maine Turnpike under Route 111 bridge and for all days the Contractor maintains traffic as specified herein, and for moving devices as many times as necessary; for replacing devices damaged, lost or stolen; and for cleaning, maintaining and removing all devices used for traffic control.

Traffic Control Devices and Maintenance of Traffic Control Devices – Biddeford will be paid at the contract lump sum price. Such payment shall be full compensation for furnishing and installing all signs, drums, cones, barricades, and flashing arrow panels as shown on the Plans, or necessary for effective traffic control at Biddeford Interchange and the Maine Turnpike under Biddeford Interchange bridge, and for all days the Contractor maintains traffic as specified herein, and for moving devices as many times as necessary; for replacing devices damaged, lost or stolen; and for cleaning, maintaining and removing all devices used for traffic control.

652.8.2 Other Items

The following pay items are added:

Pay Item		Pay Unit
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices – Crediford Brook	Lump Sum
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices – Kennebunk Service Plaza	Lump Sum
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices – Route 111	Lump Sum
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices – Biddeford	Lump Sum

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Automated Speed Limit Sign)

652.1 Description

This special provision provides for furnishing, operating, and maintaining an Automated Trailer Mounted Radar Speed Limit Sign for project use. When a pay item for an Automated Trailer Mounted Radar Speed Limit Sign is included in the Contract at least one will be required on the project when there is a Work Zone Speed Limit in place. 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, either strobe, halogen, or incandescent lamps, shall be visible for a minimum distance of one mile under daylight conditions and shall have a minimum flash rate of 40 flashes per minute. An "On" indicator light shall be mounted on the back of the signs, which is visible for at least 500 feet to provide confirmation that the flashing lights are operating.

Radar

The directional radar shall monitor approaching traffic only. The radar shall be capable of measuring speeds from 5 to 70 MPH at a distance of up to 1500 feet and shall have a high speed cut off thresh hold.

CONSTRUCTION REQUIREMENTS

652.3.2 Responsibility of the Contractor

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

All existing speed limit signs, which conflict with the construction zone trailer mounted speed limit signs shall be covered completely when the work zone speed limit is in place.

Automated Trailer Mounted Speed Limit Signs shall only be used when a work zone speed limit is in place. The Contractor shall manage the utilization and operation of the Automated Trailer Mounted Speed Limit Signs and if at least one is not used when work zone speed limits are in place then it will be considered a Traffic Control Plan violation and result in a reduction of payment as outlined in Section 652.

The Resident will record the actual time and location for the signs on a daily basis when the Automated Trailer Mounted Speed Limit Signs are in use.

The Automated Trailer Mounted Radar Speed Limit Sign may be placed as shown on the plans, or may replace the posted regulatory speed limit signs or may be placed at a location within the closed lane that has a reduced speed limit.

Automated Trailer Mounted Speed Limit Signs shall be delineated with retro-reflective temporary traffic control devices while in use and shall also be delineated by affixing a retro-reflective material directly on the trailer.

Upon delivery of the Automated Trailer Mounted Speed Limit Sign and before acceptance by the Authority, the Contractor shall have a representative of the manufacturer review the condition and notify the Resident in writing, of all deficiencies noted.

The Contractor shall arrange to have all necessary repairs performed at no cost to the Authority.

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

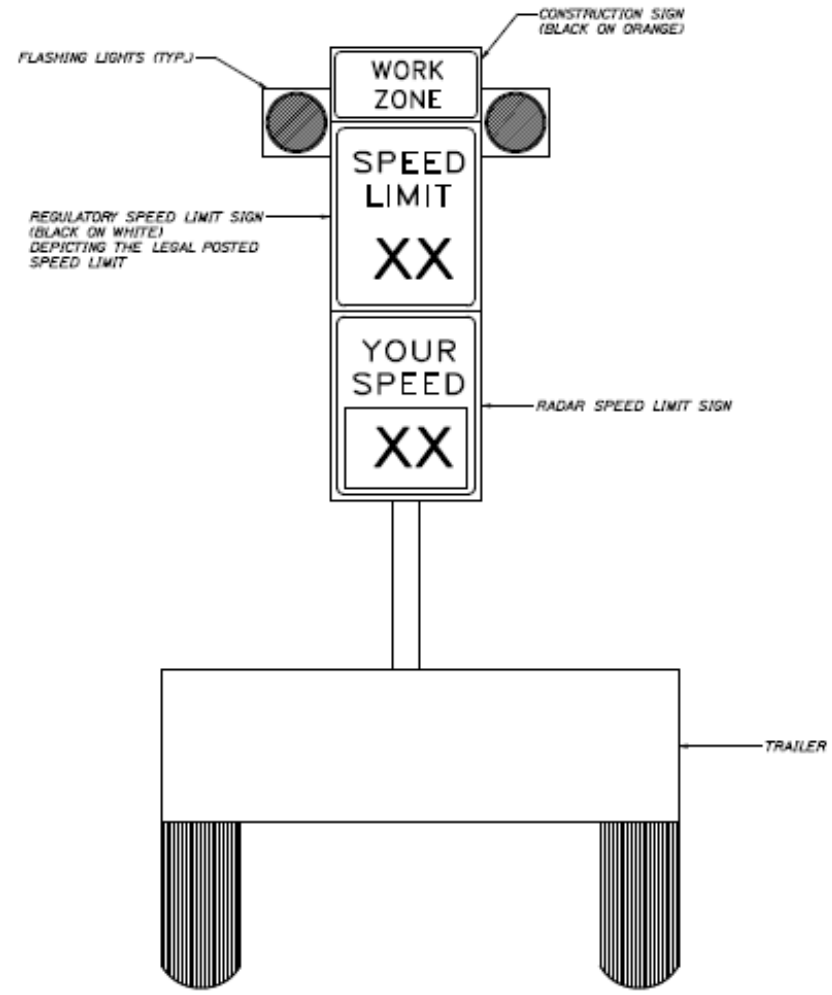
652.7 Method of Measurement

Automated Trailer Mounted Speed Limit Sign shall be measured for payment by the calendar day for each calendar day that the unit is used on a travel lane or shoulder on the project or per each for the continued use for the duration of the project. Payment shall include the Trailer, Radar Speed Limit Sign, flashing beacon amber lights, regulatory speed limit sign, fuel, necessary maintenance, and all checking of Radar Speed Limit Signs by manufacturer and all project moves including the transporting and delivery of the unit.

652.8 Basis of Payment

The Automated Trailer Mounted Speed Limit Sign(s) will be paid for at the Contract unit price per calendar day or per each. This price shall include all costs associated with the use of the Automated Trailer Mounted Speed Limit Sign.

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



Date: 2/13/2018

Filename: Trailer Mounted Speed Limit.dgn

MAINE TURNPIKE

HNTB

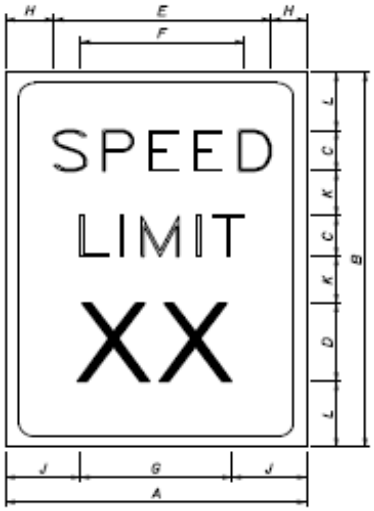
FEBRUARY 2018

AUTOMATED TRAILER MOUNTED
SPEED LIMIT SIGN

1OF 2

SIGN #1

1.25" BORDER, 0.75" INDENT,
BLACK ON ORANGE, 8B GRADE PLYWOOD SIGN



SIGN #2

1.25" BORDER, 0.75" INDENT,
BLACK ON WHITE, 8B GRADE PLYWOOD SIGN

	DIMENSIONS (INCHES) / LETTER FONTS											
	A	B	C	D	E	F	G	H	I	J	K	L
#1	48	20	5D	18⅛	16⅝	14⅞	15⅝	4	2	N/A	N/A	N/A
#2	48	60	8E	16E	38¼	29¼	29½	4½	9⅜	9¼	8	6

Date: 2/13/2018

Filename: Trailer Mounted Speed Limit.dgn

MAINE TURNPIKE

HNTB

FEBRUARY 2018

TRAILER MOUNTED CONSTRUCTION ZONE
SPEED LIMIT SIGN

2 OF 2

SPECIAL PROVISION

SECTION 655

ELECTRICAL WORK

The following Section is added:

655.01 Description

This task shall include the providing and installation of the AWG wire, as described herein for clean and dirty power wiring, for grounding wires (where applicable) and other locations called for in the plans/specifications.

655.05 Measurement of Payment

Measurement and payment for furnishing and installation of the AWG wire as described herein will be per foot, to the nearest 10 foot interval per run.

Basis of Payment

The accepted quantity of AWG Wire will be paid for at the Contract unit price per linear foot for the furnishing, installation, routing, termination, splices and connection of the wire per plans and specifications.

Payment will be made under:

Pay Item		Pay Unit
655.101	#6 AWG Wire	Linear Foot
655.11	#10 AWG Wire	Linear Foot

SPECIAL PROVISION

SECTION 655

ELECTRICAL WORK

(1 Inch Schedule 80 PVC Conduit)
(1 1/2 Inch Schedule 80 PVC Conduit)
(3 Inch Schedule 80 PVC Conduit)
(4 Inch Schedule 80 PVC Conduit)

The following Section is added:

655.01 Description

The Contractor shall reuse existing conduit to the maximum extent practical. Where existing conduit is not suitable for reuse or additional conduit runs are required, the Contractor shall provide new PVC Conduit as shown on the Plans, as directed by the Resident, and as described herein.

This task shall include providing and the installation of PVC Conduit as shown on the Plan drawings and described herein. All conduit shall be installed per NEC specification. Connections to specialized fittings are to be compatible with adjoining conduit.

Joints shall be made in accordance with ASTM D 2855. Solvent cement shall meet the requirements of ASTM D 2564 with particular attention to matching the viscosity to the conduit size.

Joint adhesives shall be in accordance with ASTM D2517.

All conduit runs shall be watertight. Slope conduit to drain into junction boxes.

All empty conduits shall have a labeled pull string. Pull strings shall have length markings and should be used for long conduits over 50’ or for all underground installations. Clean, plug and seal conduit ends after installation.

655.05 Measurement of Payment

Measurement and payment for installing the PVC Conduit as shown on the Plan drawings and described herein will be per foot. It shall include the furnishing, installing, supporting and connection of the conduit and all misc. hardware necessary for the installation. This price shall include the cost of hand digging, trenching, or plowing; furnishing and installing the conduit; and all labor, equipment and incidentals necessary to complete the work.

655.06 Basis of Payment

Payment will be made under:

Item	Description	Unit
655.202	1” Schedule 80 PVC Conduit	Linear Foot
655.203	1 1/2” Schedule 80 PVC Conduit	Linear Foot
655.204	3” Schedule 80 PVC Conduit	Linear Foot
655.205	4” Schedule 80 PVC Conduit	Linear Foot

SPECIAL PROVISION

SECTION 719

SIGNING MATERIAL

Section 719.01 Reflective Sheeting

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

Retroreflective sheeting for signs shall meet at a minimum the requirements for, ASTM 4956 – Type VII, Type VIII or Type IX, for all signs. All Type 1 Guide Signs shall meet at a minimum the requirements for ASTM 4956 –Type XI sheeting. Use of overlay film that degrades the retroreflectivity of the sign sheeting (i.e. Avery-Dennison overlay film) will be prohibited.

Reflective sheeting, used in sign construction, shall have been manufactured within the six months immediately prior to the fabrication of each sign. Upon delivery at the job site of each shipment of signs, a letter of certification shall be provided that the reflective sheeting conforms to the requirements.

Signs may only be covered using materials and techniques explicitly approved by the sheeting manufacturer for that purpose and shall not alter the sign sheeting warranty.

- For Type 1 Guide Signs, all reflective sheeting shall be color matched on each sign unit.
- All warning signs shall be fluorescent yellow except for Ramp Advisory Speed signs which shall be yellow.
- All Construction Series signs that use orange backgrounds shall be fluorescent orange.
- All Pedestrian Signs shall be fluorescent yellow-green.
- EZ-PASS Purple shall conform to the FHWA Purple color block.

719.02 Demountable High Intensity Reflectorized Letters, Numerals, Symbols, and Borders

This Subsection, including the title, is deleted in its entirety and replaced with the following:

719.02 Direct Applied Reflectorized Letters, Numerals, Symbols, and Borders

Direct applied letters, numerals, symbols and borders shall consist of cut out sheeting shall meet at a minimum the requirements for ASTM 4956 – Type VII, Type VIII or Type IX sheeting.

All Type 1 Guide Signs shall meet at a minimum the requirements for ASTM 4956 –Type XI sheeting.