MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

CONTRACT DOCUMENTS

CONTRACT 2026.22

MAINE TURNPIKE TOLL PLAZA TUNNEL REPAIR
NEW GLOUCESTER – MILE 67.0 AND
WEST GARDINER – MILE 100.2

NOTICE TO CONTRACTORS

PROPOSAL

CONTRACT AGREEMENT

CONTRACT BOND

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

SPECIFICATIONS

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

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

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

TABLE OF CONTENTS

MAINE TURNPIKE AUTHORITY

NOTICE TO CONTRACTORS

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

CONTRACT 2026.22

MAINE TURNPIKE TOLL TUNNEL REPAIRS
NEW GLOUCESTER – MILE 67.0 AND
WEST GARDINER – MILE 100.2

at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, ME, until 11:00 a.m., prevailing time as determined by the Authority on January 20, 2026 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 Building or 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 and within access tunnels beneath the Turnpike mainline toll plazas in the Towns of New Gloucester and West Gardiner, Maine. The work includes canopy and tunnel drainage repairs, stairwell enclosure reconstruction, 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 ($50.00) 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 or email at ncarll@maineturnpike.com. 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, email all questions to Nate Carll, Purchasing Manager, at 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 2020" 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 January 8, 2026 at 1:00 p.m.. at the Maine Turnpike Gray Maintenance Facility, Gray Wildlife Parkway, Gray, Maine. Bidders will have the opportunity to visit both New Gloucester and West Gardiner Toll Plazas as part of the pre-bid confernce.

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 2026.22

MAINE TURNPIKE TOLL TUNNEL REPAIRS
NEW GLOUCESTER – MILE 67.0 AND
WEST GARDINER – MILE 100.2

MAINE TURNPIKE AUTHORITY

PROPOSAL

CONTRACT 2026.22

MAINE TURNPIKE TOLL TUNNEL REPAIRS
NEW GLOUCESTER – MILE 67.0 AND
WEST GARDINER – MILE 100.2

TO MAINE TURNPIKE AUTHORITY:

The work consists of repairs to and within access tunnels beneath the Turnpike mainline toll plazas in the Towns of New Gloucester and West Gardiner, Maine. The work includes canopy and tunnel drainage repairs, stairwell enclosure reconstruction, 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 2026.22 according to the Plans and Specifications which are on file in the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

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

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

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

SCHEDULE OF BID PRICES
CONTRACT NO. 2026.22
TOLL PLAZA TUNNEL REPAIRS
NEW GLOUCESTER (MM 67.0)
WEST GARDINER (100.2)

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
515.203	Broadcast Sealant for Concrete Surfaces	Square Yard	1,910				
518.40	Epoxy Injection Crack Repair	Linear Foot	200				
518.511	Repair of Concrete Surfaces - Stairwell Steps	Lump Sum	1				
518.512	Repair of Concrete Surfaces - Stairwell Grinding	Each	4				
518.513	Repair of Concrete Surfaces - Stairwell Landing	Each	4				
518.514	Tollbooth Blockout Sealing	Each	10				
526.306	Temporary Concrete Barrier, Type I - Supplied by Authority (300 LF)	Lump Sum	1				
527.342	Work Zone Crash Cushions - TL-2	Unit	1				
631.53	Electrician	Hour	20				
631.54	Electrician's Apprentice	Hour	20				
652.361	Maintenance of Traffic Control Devices	Lump Sum	1				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
652.41	Portable-Changeable Message Sign	Each	1				
659.10	Mobilization	Lump Sum	1				
800.31	Stairwell Enclosure	Lump Sum	1				
800.32	Tollbooth Canopy Drainage Modifications	Lump Sum	1				
					TOTAL:		

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

_____

_____

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

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

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

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

_____ *(SEAL)*

_____ *(SEAL)*

Affix Corporate Seal
or Power of Attorney
Where Applicable

_____ *(SEAL)*

By: _____

Its: _____

Information below to be typed or printed where applicable:

INDIVIDUAL:

_____	_____
(Name)	(Address)

PARTNERSHIP - Name and Address of General Partners:

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

INCORPORATED COMPANY:

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

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

YORK TO AUGUSTA

CONTRACT AGREEMENT

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

_____

herein termed the "Contractor":

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

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

_____

_____

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

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

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

AUTHORITY -

MAINE TURNPIKE AUTHORITY

By: _____

Title: CHAIRMAN

Date of Signature: _____

ATTEST:

_____
Secretary

CONTRACTOR -

_____
CONTRACTOR

By: _____

Title: _____

Date of Signature: _____

WITNESS:

_____

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS that _____

of _____ in the County of _____ and State of _____

as Principal, and _____ a Corporation duly organized under the

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

_____

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

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

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

Witnesses: CONTRACTOR

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

SURETY

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

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

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

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

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

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

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

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

_____
(Contractor)

By: _____

Title: _____

State of MAINE

County of _____

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

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

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

_____

.

(Company Name)

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

(SEAL)

_____
Notary Public

My Commission Expires: _____

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART I – SUPPLEMENTAL SPECIFICATIONS

(Rev. November 10, 2016)

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

PART II - SPECIAL PROVISIONS

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 and within access tunnels beneath the Turnpike mainline toll plazas in the Towns of New Gloucester and West Gardiner, Maine. The work includes canopy and tunnel drainage repairs, stairwell enclosure reconstruction, 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 2026.22 – Toll Plaza Tunnel Repairs – New Gloucester, Mile 67.0 and West Gardiner, Mile 100.2".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 (July 4, 2026)	12:01 p.m. (Noon) preceding Thursday to 6:00 a.m. the following Monday.
Indigenous Peoples Day (October 12, 2026)	12:01 p.m. (Noon) preceding Friday to 6:00 a.m. the following Tuesday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on January 22, 2026.

104.3.8 Wage Rates and Labor Laws

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

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

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

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

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

2026 Fair Minimum Wage Rates – Heavy & Bridge Cumberland County

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons and Blockmasons	$43.02	$7.64	$50.66
Bulldozer Operator	$30.62	$5.38	$36.00
Carpenter	$30.82	$10.11	$40.93
Cement Masons and Concrete Finisher	$24.35	$15.65	$40.00
Construction and Maintenance Painters	$32.96	$0.45	$33.41
Construction Laborer	$27.60	$3.73	$31.33
Conveyor Operators and Tenders	$30.17	$13.77	$43.94
Crane and Tower Operators	$47.47	$4.40	$51.87
Crushing Grinding and Polishing Machine Operators	$26.15	$3.24	$29.39
Earth Drillers - Except Oil and Gas	$25.04	$3.77	$28.81
Electrical Power - Line Installer and Repairers	$57.50	$28.00	$85.50
Electricians	$42.13	$14.40	$56.53
Elevator Installers and Repairers	$67.34	$39.76	$107.10
Excavator Operator	$38.75	$4.88	$43.63
Fence Erectors	$30.90	$2.18	$33.08
Flaggers	$21.39	$0.86	$22.25
Floor Layers - Except Carpet/Wood/Hard Tiles	$29.00	$8.65	$37.65
Glaziers	$37.00	$6.60	$43.60
Hazardous Materials Removal Workers	$24.12	$1.60	$25.72
Heating and Air Conditioning and Refrigeration Mechanics and Installers	$35.68	$5.93	$41.61
Heavy and Tractor - Trailer Truck Drivers	$30.97	$3.20	$34.17
Highway Maintenance Workers	$23.30	$1.14	$24.44
Industrial Machinery Mechanics	$29.97	$6.74	$36.71
Industrial Truck and Tractor Operators	$24.61	$4.21	$28.82
Insulation Worker - Mechanical	$27.35	$6.05	$33.40
Light Truck or Delivery Services Drivers	$26.79	$5.14	$31.93
Loading Machine and Dragline Operators	$35.50	$4.59	$40.09
Millwrights	$35.99	$10.52	$46.51
Mobile Heavy Equipment Mechanics - Except Engines	$39.05	$3.44	$42.49
Operating Engineers and Other Equipment Operators	$36.50	$9.16	$45.66
Paving Surfacing and Tamping Equipment Operators	$30.74	$10.67	$41.41
Pile-Driver Operators	$37.26	$2.98	$40.24
Pipe/Steam/Sprinkler Fitter	$32.33	$7.56	$39.89
Pipelayers	$28.75	$3.64	$32.39
Plumbers	$34.11	$7.80	$41.91
Radio Cellular and Tower Equipment Installers	$31.98	$6.42	$38.40
Reinforcing Iron and Rebar Workers	$32.94	$25.00	$57.94
Riggers	$31.25	$7.68	$38.93
Roofers	$25.50	$3.49	$28.99
Sheet Metal Workers	$28.77	$7.00	$35.77
Structural Iron and Steel Workers	$31.75	$7.38	$39.13
Tapers	$29.16	$5.64	$34.80
Telecommunications Equipment Installers and Repairers - Except Line Installers	$37.09	$10.21	$47.30
Telecommunications Line Installers and Repairers	$29.54	$5.57	$35.11
Tile and Marble Setters	$28.91	$5.46	$34.37

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

Apprentices – The minimum wage rates for registered apprentices are the rates recognized in the sponsorship agreement for registered apprentices working in the pertinent classification.

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

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

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

A true copy

Attest: Scott R. Cotnoir

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

Supersedes 02-03-2025
Effective 01-10-2026

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

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

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

2026 Fair Minimum Wage Rates – Heavy & Bridge Kennebec County

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons and Blockmasons	$43.02	$7.64	$50.66
Bulldozer Operator	$40.90	$32.21	$73.11
Carpenter	$30.45	$8.23	$38.68
Cement Masons and Concrete Finisher	$24.42	$2.52	$26.94
Construction and Maintenance Painters	$32.96	$0.45	$33.41
Construction Laborer	$25.40	$21.28	$46.68
Conveyor Operators and Tenders	$30.17	$13.77	$43.94
Crane and Tower Operators	$41.32	$11.81	$53.13
Crushing Grinding and Polishing Machine Operators	$26.15	$3.24	$29.39
Earth Drillers - Except Oil and Gas	$25.04	$3.77	$28.81
Electrical Power - Line Installer and Repairers	$49.66	$13.83	$63.49
Electricians	$40.25	$19.66	$59.91
Elevator Installers and Repairers	$67.34	$39.76	$107.10
Excavator Operator	$41.13	$32.21	$73.34
Fence Erectors	$30.90	$2.18	$33.08
Flaggers	$25.40	$21.28	$46.68
Floor Layers - Except Carpet/Wood/Hard Tiles	$29.00	$8.65	$37.65
Glaziers	$37.00	$6.60	$43.60
Hazardous Materials Removal Workers	$24.12	$1.60	$25.72
Heating and Air Conditioning and Refrigeration Mechanics and Installers	$35.68	$5.93	$41.61
Heavy and Tractor - Trailer Truck Drivers	$32.71	$9.12	$41.83
Highway Maintenance Workers	$23.30	$1.14	$24.44
Industrial Machinery Mechanics	$29.97	$6.74	$36.71
Industrial Truck and Tractor Operators	$24.61	$4.21	$28.82
Insulation Worker - Mechanical	$27.35	$6.05	$33.40
Light Truck or Delivery Services Drivers	$26.79	$5.14	$31.93
Loading Machine and Dragline Operators	$41.13	$32.21	$73.34
Millwrights	$35.99	$10.52	$46.51
Mobile Heavy Equipment Mechanics - Except Engines	$32.75	$8.53	$41.28
Operating Engineers and Other Equipment Operators	$34.86	$6.82	$41.68
Paving Surfacing and Tamping Equipment Operators	$37.05	$7.86	$44.91
Pile-Driver Operators	$37.15	$3.12	$40.27
Pipe/Steam/Sprinkler Fitter	$32.33	$7.56	$39.89
Pipelayers	$28.75	$3.64	$32.39
Plumbers	$34.11	$7.80	$41.91
Radio Cellular and Tower Equipment Installers	$34.72	$5.63	$40.35
Reinforcing Iron and Rebar Workers	$32.94	$20.82	$53.76
Riggers	$31.25	$7.68	$38.93
Roofers	$25.50	$3.49	$28.99
Sheet Metal Workers	$28.77	$7.00	$35.77
Structural Iron and Steel Workers	$28.88	$7.34	$36.22
Tapers	$29.16	$5.64	$34.80
Telecommunications Equipment Installers and Repairers - Except Line Installers	$37.09	$10.21	$47.30
Telecommunications Line Installers and Repairers	$31.31	$6.58	$37.89
Tile and Marble Setters	$28.91	$5.46	$34.37

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

Apprentices – The minimum wage rates for registered apprentices are the rates recognized in the sponsorship agreement for registered apprentices working in the pertinent classification.

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

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

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

A true copy

Attest: Scott R. Cotnoir

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

Supersedes 01-01-2025
Effective 01-10-2026

105.8.2 Permit Requirements

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

The 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 **0.1** acres.

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

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

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

105.11 As-Built Plans

The Contractor shall provide the Authority with as-built plans in PDF and MicroStation or AutoCAD. The as-built plans shall note changes to the bid documents, including, but not limited to pavement, concrete, barrier, guardrail, culverts, drainage, foundations, wiring, signs, etc. The as-builts plans shall also provide GPS accurate locations of all underground work. Submittal of Draft, Final Draft, and 100% as-built plans to the Resident shall be conditions of Mobilization Payment, Retainage Reduction, and Final Payment as noted in Special Provision 108.

105.11.1 As-Built Plan Submittals

The Contractor shall make the following submittals of as-built plans to the Resident as part of the conditions of Mobilization Payment, Retainage Reduction, and Final Payment as noted in Special Provision 108:

a. Draft As-built Plans containing any underground work completed within the prior 30 day period once 50% of the Work is complete.
b. Final Draft As-Built Plans containing all underground work
c. 100% As-Built Plans containing all underground work and changes

105.11.2 As Built Plan Requirements

As-built plans and CADD files shall conform to the following requirements:

a. Include legend of line weights and styles
b. Project stationing shall be on its own layer and be color white
c. Changes to pavement, concrete, barrier, guardrail, foundations, signs etc. shall be on their own layer and be color brown
d. Electric power lines, cable, conduit, and lighting cables shall be on their own layer and be color red
e. Gas, oil, steam, petroleum, or gaseous materials shall be on their own layer and be color yellow
f. Communication, alarm or signal lines, cables, or conduit shall be on their own level and be color orange
g. Potable water shall be on its own layer and be color blue
h. Sewers and drain lines shall be on their own layer and be color green
i. Reclaimed water, irrigation, and slurry lines shall be on their own level and be color purple

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 July 17, 2026. Tunnel rehabilitation at both locations shall be substantially complete by June 26, 2026.

107.1.1 Substantial Completion

This Subsection is amended by the addition of the following:

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

- All tunnel repairs, drainage modifications, and all stairwell enclosures complete.
- All toll plaza lanes fully opened to traffic including shoulders.
- All disturbed slopes loamed, seeded and mulched, temporary erosion control mix and/or blanket installed where necessary.

Toll booth sealants and Broadcast sealants at toll booth slabs are installed Supplemental Liquidated damages on a calendar day basis in accordance with Subsection 107.8 shall be assessed for each calendar day that substantial completion is not achieved.

107.1.2 Limitations of Operations

Construction of the Toll Plaza Tunnel Repairs shall not, in the opinion of the Resident, prohibit the safe and reasonable operations of MTA toll staff. The Contractor shall provide clear access to all toll booths and emergency egress from tunnels at all times during construction.

The Contractor shall not block existing MTA parking at the toll plazas. At daily shift changes, 6 AM, 2 PM, and 10 PM, the Contractor shall provide clear access to and egress from a minimum of two parking spaces for the northbound Cash Lanes portion of the New Gloucester toll plaza, and shall provide clear access to and egress from a minimum of two parking spaces on the right shoulder of the southbound West Gardiner toll plaza. The Contractor shall also provide safe parking for MTA Maintenance vehicles as may be needed for service and repair activities.

The Contractor shall provide one standard porta-potty, for exclusive MTA staff use, at each Toll Plaza for the duration of the Contract. The porta-potties shall be cleaned a minimum of once per week. Final location of the porta-potties shall be determined in the field as directed by the Resident. Supplying, cleaning, moving, and maintaining access to the porta-potties shall not be measured for payment but shall be incidental to Pay Item 659.10 Mobilization.

The Contractor shall submit their proposed staging, storage and construction areas for approval to the Resident. The Contractor shall be responsible for minimizing the footprint of the project, and resulting impacts to the MTA, to the extent practical. The Authority will not allow the Contractor to store materials on site prior to starting work. Site access and final area used for storage shall be coordinated and approved by the Resident.

The Contractor shall be responsible for maintaining all utility services, including backup power at all times during construction, except as noted herein. Toll systems, EZ Pass and Cash, shall not be interrupted except as follows. The Contractor shall coordinate through the MTA, with the MTA Toll vendor to schedule all required power and communication interruptions. Such interruptions shall be scheduled a minimum of 14 calendar days prior to the interruption; 21 days required for wide load lanes. The following system outages are allowed and shall be scheduled and approved by the MTA at least two weeks prior to the beginning of any outage: Backup power: Not to exceed four hours. Limited to between June 1st and October 15th;

The Contractor is responsible to keep all temporarily closed toll lanes free of snow and ice at all times for the duration of the approved closure. This includes maintaining snow-free access to the porta-potty. Snow and ice removal shall be coordinated with MTA Maintenance. Snow and ice shall not be moved into open travel lanes or shoulders. Maintaining snow and ice-free conditions shall not be measured for payment but shall be incidental to Pay Item 659.10 Mobilization.

107.4.6 Prosecution of Work

The following activities shall have the time limitations as specified:

- Demolition and reconstruction of the stairwell enclosures shall be scheduled to minimize requirements for temporary lane closures during cold weather.
- The Contractor will be allowed a seven-day period to close the tunnel stairwell, restricting toll staff passage, for constructing the stairwell enclosure and other repairs that would normally impede passage.
- Outside of the seven-day period, the Contractor shall provide, at a minimum, during daily shift changes at 6 AM, 2 PM, and 10 PM, safe passage for MTA staff.
- Installation of sump pit discharge pipe shall be scheduled for non-frost conditions.
- A minimum of one cash lane per bound shall remain open at all times. All lane closures shall be approved by MTA before closure. All lane closures are subject to reopening within a two-hour period as may be requested by MTA. See Special Provision 652 for more information.

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 first toll lane is closed. The construction schedule shall contain specific details for the sequencing of closed lanes and be accompanied by plan details showing the location of MTA toll staff parking and the clear path to both the tunnel and the vacant toll booth to be used as temporary break space. The intent of this specification is to minimize the amount of time for lane closure, while providing the Contractor sufficient time to complete the work in a diligent manner, providing MTA toll staff with safe access and egress, and reopen the full toll plaza as prescribed by the project's Substantial Completion date.

108.2.1 Generation of Progress Payments

The Authority will estimate the amount of Work performed at least monthly and make payment based upon such estimates. Estimates may be paid bimonthly (twice-a-month) if the bimonthly (twice-a-month) invoices exceed $100,000. No such estimates or payment will be made if, in the judgment of the Authority, the Work is not proceeding in accordance with the provisions of the Contract. The Contractor agrees to waive all claims related to the timing and amount of such estimates.

108.2.3 Mobilization Payment

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

Upon approval of all pre-construction submittals required for approval by this Contract, including those listed in Section 104.4.2 – Preconstruction Conference, the Contractor will receive payment of 50% of the Lump Sum price for Mobilization, not to exceed 5% of the Bid less the amount bid for Mobilization. After the Authority determines that the Work is 50% complete and the Contractor has submitted a Draft (50%) as-built submittal of all underground work to date (within the prior 30 day pay period) as defined in Special Provision 105., the Contractor will receive the other 50% of the Lump Sum price for Mobilization, not to exceed 5% of the Bid less the amount bid for Mobilization. Any remaining Mobilization will be at the completion of physical work.

108.3 Retainage

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

When requested by the Contractor, an 80 percent reduction of retainage will be considered by the Authority when the Project is substantially complete and the Contractor has submitted a Final Draft (98%) as-built submittal of all underground work, in accordance with Special Provision 105. When requesting a reduction, the Contractor shall include an explanation of the outstanding Work, an estimate of the cost to complete the Work, and a schedule for completing the Work. Seasonal limitations as well as warranty and establishment periods (for vegetation) shall be addressed.

SPECIAL PROVISION

SECTION 515

PROTECTIVE COATING FOR CONCRETE SURFACES

(Broadcast Sealant for Concrete Surfaces)

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 broadcast sealant on concrete surfaces to repair the concrete cash lane roadway slabs at the West Gardinier and New Gloucester Toll Plazas. The coating system shall be applied to the concrete roadway slabs, toll booth islands and ORT equipment islands as shown on the plans in accordance with these Specifications and the manufacturer's published recommendations.

The repair of cracks greater than or equal to 0.06 inches, or the manufacturer's recommendation for maximum crack width, and the longitudinal construction joint shall be completed in accordance with Special Provision 518 Epoxy Injection Crack Repair and Special Provision 518 Longitudinal Joint Repair, respectively, before applying the broadcast sealant.

515.02 Materials

The broadcast sealer shall be one of the following three products or an approved equal.

- T-78 Methyl Methacrylate Crack Sealer, as manufactured by Transpo Industries, Inc.
- KBP 204 P Seal, as manufactured by Kwik Bond Polymers
- MasterSeal 630, as manufactured by BASF

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

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

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

515.03 Surface Preparation

Concrete surfaces shall be cleaned free of dust, surface dirt, oil, efflorescence and contaminants to ensure penetration of the sealer. Additional surface preparation shall be performed in strict conformance with the manufacturer's published recommendations.

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. Collect all debris and other material removed from the surface and cracks and dispose of in accordance with applicable federal, state, and local regulations.

Cover deck drains, expansion joints, or all other surfaces which are not to be coated with the broadcast sealer.

The Resident shall approve the prepared surface prior to applying the sealer.

515.04 Application

The Contractor shall apply the sealer in strict accordance with the manufacturer's published recommendations. If there is a conflict between the manufacturer's recommendations and the restrictions below, the stricter of the two criteria shall apply.

The application shall not be conducted when surface and air temperatures are outside the range recommended by the manufacturer. The work shall not be conducted when there is a chance of the surface and air temperature falling outside of the recommended temperature range during the appropriate cure time for the air temperature plus 4 hours; 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. Following any rain fall, allow the concrete surface to air dry a minimum of 48 hours before applying broadcast sealant. 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. Provide shielding as necessary to prevent dust, debris, and overspray from striking vehicular traffic.

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. A second coat may be required on very porous substrates. Pre-testing is required.

Sealer shall be applied as packaged without dilution or alteration. 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.

Broadcast sand shall be applied either by hand or mechanical means on the entire treated area of concrete surfaces prior to cure to achieve a uniform coverage. Follow the Manufacturer's requirements for the amount of sand per square area. Place the sand as the sealant begins to gel. Placing of the sand before the gelling of the sealant may cause settlement, excessive coating of the sand, and loss of friction characteristics. Additional sand that does not adhere to the sealant shall be brushed off. The surface shall be inspected and approved by the Resident before allowing traffic to resume. An alternative to sand, if the manufacturer's requirements allow, is providing a brushed finish for skid resistance.

515.05 Storage

Store in factory sealed containers of unmixed material at temperatures within the range recommended by the manufacturer away from direct sunlight and sources of heat. Once the container is opened for product use the manufacturers requirements shall be followed for storage and the product shall not be used if the recommended shelf life is exceeded.

515.06 Method of Measurement

Broadcast Sealant for Concrete Surfaces will be measured for payment by the square yard, satisfactorily applied and accepted.

515.07 Basis of Payment

Broadcast Sealant 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 sealer, in accordance with these Specifications or as approved by the Resident.

Surface preparation and protection of surfaces not designated for treatment will not be measured separately for payment, but shall be incidental to the Broadcast Sealant for Concrete Surfaces item.

Payment will be made under:

Pay Item		Pay Unit
515.203	Broadcast Sealant for Concrete Surfaces	Square Yard

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Epoxy Injection Crack Repair)

518.01 Description

The following paragraphs are added:

The work includes Epoxy Injection Crack Repair of concrete cracks with widths equal to or greater than 1/8 inches as shown on the Plans, or identified by the Resident. Epoxy Injection Crack Repair shall be completed for entire length of tunnel and stairwells.

518.02 Repair Materials.

The following paragraphs are added:

Epoxy Injection Crack Repair shall be completed using a high strength, low viscosity moisture tolerant epoxy resin meeting the minimum requirements in the table below and recommended by the manufacturer for the required application. The proposed repair materials shall be submitted to the Resident for approval.

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

518.07 Placing Repair Materials

The following Subsection is added:

518.071 Placing Epoxy Injection Materials

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 lowest port on vertical cracks, or 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) Repeat the above procedure until all ports have been injected.

518.10 Method of Measurement

The quantity of Epoxy Injection Crack Repair will be measured by the linear foot.

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: cleaning and preparation of existing concrete, drilling of port holes, 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

(Repair of Concrete Surfaces - Stairwells)

518.01 Description

The work shall include removing existing aluminum stair tread nosing and all deteriorated concrete followed by placement of new concrete as shown on the Plans and described herein. Concrete for stair treads shall receive a broom finish. Repairs are only required in the stairwells that are to remain in service:

- New Gloucester Southbound Stairwell – Removed from service
- New Gloucester Northbound Stairwell – Remain in service
- West Gardiner Southbound Stairwell – Removed from service
- West Gardiner Northbound Stairwell – Remain in service

The work shall also include grinding the top surface of the island concrete in front of each stairwell doorway as shown on the plans. Grinding shall produce a clean, uniform surface with a maximum surface roughness of ±1/8 inch in amplitude, or as otherwise approved by the Resident.

In West Gardiner, the work shall also include removing and capping the existing floor drain and sloping the base stairwell landing floor slab towards the tunnel drain trough in both stairwells, as shown in the Plans.

In New Gloucester, both stairwells, base landing floor drain should be tested for functionality. If drain is functional, no modifications are required and the drain and floor shall remain as is. If the drain is not functional, the existing floor drain shall be removed and capped with the floor slab being modified to slope towards the tunnel drain trough similar, to the West Gardiner repair, as shown in the Plans.

At stairwell landing floor slab repairs, the Contractor shall apply a bonding agent to the existing concrete prior to placing the new concrete. Bonding agent shall be selected from the MaineDOT qualified products list for bonding agents. The Contractor shall also provide a broom finish to the new concrete surface.

518.02 Repair Materials.

Concrete:

Concrete shall meet the requirements of MTA Supplemental Specification 502 and shall be concrete class AA. Concrete removal and placement shall be in accordance with MTA Supplemental Specification 518.

518.10 Method of Measurement

The Repair of Concrete Surfaces – Stairwell Steps will be measured by Lump Sum.

The Repair of Concrete Surfaces – Stairwell Grinding will be measured by each unit.

The Repair of Concrete Surfaces – Stairwell Landing will be measured by each unit.

518.11 Basis of Payment

The following paragraphs are added:

Repair of Concrete Surfaces – Stairwell Steps will be paid at Contract Lump Sum, which price shall include, but not necessarily limited to: removal of aluminum nosings and deteriorated concrete, placing new concrete, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Repair of Concrete Surfaces – Stairwell Grinding will be paid at the unit price each, which price shall include, but not necessarily limited to: grinding island concrete to drain away from stairwell entrance, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Repair of Concrete Surfaces – Stairwell Landing will be paid at the unit price each, which price shall include, but not necessarily limited to: modifying slab and drain system in the stairwell at the tunnel level to drain into existing tunnel drain trough, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
518.511	Repair of Concrete Surfaces – Stairwell Steps	LS
518.512	Repair of Concrete Surfaces – Stairwell Grinding	EA
518.513	Repair of Concrete Surfaces – Stairwell Landing	EA

SPECIAL PROVISION

SECTION 518

STRUCTURAL CONCRETE REPAIR

(Tollbooth Blockout Sealing)

518.01 Description

At all existing toll booth enclosures, the work shall include removing the existing aluminum flashing angle, sealant, and backer rod at the joint between the toll booth structure and the concrete parapet wall. Once removed and completely cleaned, new backer rod, sealant, and aluminum angle shall be installed to create a watertight seal as shown on the Plans and described herein.

518.02 Repair Materials.

Tollbooth Blockout Sealant:

Backer rod and Sikasil 728 NS or approved equal shall be installed around the entire perimeter of the toll booth opening as shown in the Plans.

Install 1-1/2" x 1-1/2" x ¼" aluminum angle over the caulked gap; apply a bead of silicone caulking prior to installing the aluminum angle. 1-1/2" aluminum angle shall be attached using self-drilling hex head stainless steel screws. Tool the silicone clean at the edge of the aluminum angle after install. All corners shall be mitered. Dimensions of aluminum angle shall be field verified and upsized as necessary based on field verified dimensions, as shown in the Plans.

The re-use of existing screw holes shall not be permitted. All existing holes shall be sealed with silicone sealant as approved by the Resident prior to the installation of the aluminum angle.

518.10 Method of Measurement

The Tollbooth Blockout Sealing will be measured by each toll booth.

518.11 Basis of Payment

The following paragraphs are added:

Tollbooth Blockout Sealing will be paid at the Contract unit price each, which price shall include, but not necessarily be limited to: removing existing backer rod, sealant, and flashing, installing new backer rod and sealant, installing aluminum angle and caulking, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
518.514	Tollbooth Blockout Sealing	EA

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
Litchfield Storage Area Mile 98.2 Northbound	300

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 50 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)
(Resetting Existing Work Zone Crash Cushions)

527.01 Description

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

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

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

527.02 Materials

The following paragraph is added:

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

527.03 Construction Requirements

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

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

527.04 Method of Measurement

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

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

527.05 Basis of Payment

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 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".

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

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

MaineDOT Standard Specification 2014 Edition Section 652 – Maintenance of Traffic and the Maine Turnpike Authority 2016 Supplemental Specification Section 652 – Maintenance of Traffic are deleted in their entirety and replaced with the following:

652.1 Description

This work shall consist of furnishing, installing, maintaining and removing traffic control devices necessary to provide reasonable protection for motorists, pedestrians and construction workers in accordance with these Specifications, the applicable provisions of Section 105.4.5 - Special Detours, and the plans.

Traffic control devices include signs, signals, lighting devices, markings, barricades, channelizing, and hand signaling devices, portable light towers, truck mounted impact attenuators, portable rumble strips, portable speed trailers, sequential warning lights, traffic officers, and flaggers.

652.2 Materials

All maintenance of traffic control devices shall conform to the requirements of the latest edition of the MUTCD, NCHRP 350 guidelines and all Traffic control devices shall meet Manual for Assessing Safety Hardware (MASH) 16 guidelines if date of manufacture was after December 31, 2019.

All signs shall be fabricated with high intensity fluorescent retroreflective sheeting conforming to ASTM D 4956 - Type VIII, or Type IX (prismatic). All barricades, drums, and vertical panel markers shall be fabricated with high intensity orange and white fluorescent retroreflective sheeting conforming ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic).

Construction signs shall be fabricated from materials that are flat, free from defects, retro-reflectorized, and of sufficient strength to withstand deflections using a wind speed of 80 miles/hr.

652.2.2 Signs

Only signs with symbol messages conforming to the design of the Manual of Uniform Traffic Control Devices (MUTCD) shall be used unless the Resident approves the substitution of word messages.

Any proposed use of temporary plaques to cover text or to change text shall be approved by the resident. All signs or proposed plaques shall have a uniform face and be constructed from similar sheeting.

All signs shall be new, or in like new condition and maintained in like new condition throughout the project duration. Signs shall be cleaned just prior to installation and throughout the project utilizing a method that will not damage the reflective sign sheeting.

652.2.3 Flashing Arrow Board

Flashing Arrow Boards must be of a type that has been submitted to AASHTO's National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations' Approved Products List of Portable Changeable Message Signs & Flashing Arrow Boards.

Flashing Arrow Boards units shall meet requirements of the current Manual on Uniform Traffic Control Devices (MUTCD) for Type "C" panels as described in Section 6F.56 - Temporary Traffic Control Devices. Flashing Arrow Boards shall have matrix of a minimum of 15 low-glare, sealed beam, Par 46 elements capable of either flashing or sequential displays as well as the various operating modes as described in the MUTCD, Chapter 6-F. If a Flashing Arrow Board consisting of a bulb matrix is used, each element should be recess-mounted or equipped with an upper hood of not less than 180 degrees. The color presented by the elements shall be yellow.

Flashing Arrow Board elements shall be capable of at least a 50 percent dimming from full brilliance. Full brilliance should be used for daytime operation and the dimmed mode shall be used for nighttime operation. Flashing Arrow Board shall be at least 96 inches x 48 inches and finished in non-reflective black. The Flashing Arrow Board shall be interpretable for a distance not less than 1 mile.

Operating modes shall include, flashing arrow, sequential arrow, sequential chevron, flashing double arrow, and flashing caution. In the three arrow signals, the second light from the arrow point shall not operate.

The minimum element on-time shall be 50 percent for the flashing mode, with equal intervals of 25 percent for each sequential phase. The flashing rate shall be not less than 25 nor more than 40 flashes per minute. All on-board circuitry shall be solid state.

Primary power source shall be 12 volt solar with a battery back-up to provide continuous operation when failure of the primary power source occurs, up to 30 days with fully charged batteries. Batteries must be capable of being charged from an onboard 110 volt AC power source and the unit shall be equipped with a cable for this purpose.

Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.

The Flashing Arrow Board shall be mounted on a pneumatic-tired trailer or other suitable support for hauling to various locations, as directed. The minimum mounting height of an arrow panel should be 7 feet from the roadway to the bottom of the panel.

The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers.

A portable changeable message sign may be used to simulate an arrow panel display.

652.2.4 Other Devices

Vertical panel markers shall be orange and white striped, 8 inches wide by 24 inches high. On the Interstate System, vertical panel markers shall be orange and white striped, 12 inches wide by 36 inches high.

Cones shall be orange in color, a minimum of 28 inches high, and retro-reflectorized. Retro- reflection shall be provided by a white bands of retro-reflective sheeting conforming to the MUTCD. All cones utilized on the project shall be new or in like new condition and shall have a consistent design/appearance.

Drums shall be of plastic or other yielding material and shall be a minimum of 36 inches high and a minimum of 18 inches in diameter. There shall be at least two retro-reflectorized orange and at least two retro-reflectorized white stripes a minimum of 4 inches wide on each drum. All drums utilized on the project shall be new or in like new condition and shall have a consistent design/appearance.

Flaggers shall use a STOP / SLOW handheld paddle as the primary and preferred hand signaling device. Flags shall only be limited to emergencies. STOP / SLOW paddles shall have high intensity prismatic retro reflective sheeting, have an octagonal shape on a rigid handle and shall be at least 18 inches wide with letters at least 6 inches high and shall be constructed from light semi-rigid material. The STOP (R1-1) face shall have white letters and a white border on a red background. The SLOW (W20-8) face shall have black letters and a black border on an orange background.

STOP / SLOW paddles shall also incorporate either white or red flashing lights on the STOP face and white or yellow flashing lights on the SLOW face of the paddle and always be in use.

Paddles must conform to one of the following patterns:

A. Two white or red lights (colors shall be all white or all red), one centered vertically above and one centered vertically below the STOP legend; and/or two white or yellow lights (colors shall be all white or all yellow), one centered vertically above and one centered vertically below the SLOW legend.

B. Two white or red lights (colors shall be all white or all red), one centered horizontally on each side of the STOP legend; and/or two white or yellow lights (colors shall be all white or all yellow), one centered horizontally on each side of the SLOW legend.

C. One white or red light centered below the STOP legend; and/or one white or yellow light centered below the SLOW legend.

D. A series of eight or more small all white or all red lights no larger than 1/4 inch in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the border of the STOP face; and/or a series of eight or more small

all white or all yellow lights no larger than 1/4 inch in diameter along the outer edge of the paddle, arranged in a diamond pattern along the border of the SLOW face; or

E. A series of white lights forming the shapes of the letters in the legend. Flashing light patterns shall be compliant with Section 6E.03 Hand Signaling Devices in the most current version of the Manual on Uniform Traffic Control Devices.

All flashing light patterns on the STOP / SLOW paddle shall be visible from a minimum distance of 1000 feet.

Type I barricades shall be 2 feet minimum, 8 feet maximum in length with an 8 inch wide rail mounted 3 feet minimum above the ground. Type II barricades shall be 2 feet in length with two 8 inch wide rails, and the top rail shall be mounted 3 feet minimum above the roadway. Type III barricades shall be 8 feet in length with three 8 inch wide rails, and the top rail shall be mounted 5 feet minimum above the roadway. The cross members of all barricades shall be of ½ or ⅝ inch thick plywood or other lightweight rigid material such as plastic, fiberglass or fiber wood as approved by the Resident. The predominant color for supports and other barricade components shall be white, except that unpainted galvanized metal or aluminum components may be used.

652.2.5 Portable Changeable Message Sign

Portable-Changeable Message Signs (PCMS) will be furnished by the Contractor and shall be Ver-Mac PCMS-1210 or an approved equal. The face of the PCMS trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers. PCMS's shall be located and relocated to locations approved by the Resident within the Project limits for the duration of the Project.

Features to the Ver-Mac PCMS shall include:

- An all-LED display.
- Be legible from a distance of 1,000 feet.
- Have three (3) lines available for messages.
- Be NTCIP compliant (NTCIP 1203 & 1204).
- Be capable of being programmed by a remote computer via a data (IP over Cell) cellular modem connection.
- Have GPS location capability by adding on a GPS device capable of providing GPS location remotely to the MTA Communications' Center.
- Be programmable by Vanguard Software by Daktronics.

The Contractor shall complete and/or provide the following:

- Submit a catalog cut shop drawing to the Resident of all proposed equipment for review and approval.

- Establish and pay for a data cellular account so that PCMS may be remotely programmed and operated from the MTA Communications' Center.

- Provide to the Authority technical support from the PCMS manufacturer that may be necessary to integrate the PCMS into the MTA software platform (Vanguard Software by Daktronics).

- Provide the manufacturer's software necessary to change the PCMS messages remotely from the MTA Communications' Center and the Resident's computer if necessary or requested.

- Provide training on the operation of the PCMS to the Resident and the MTA Communications' Center representative.

- Make all PCMS on the Project work site available to the MTA for any/all emergency situations as defined by the MTA. This shall include the preemption of any messages running at the time of need as approved by the MTA and the Resident.

The Contractor shall also:

- Furnish, operate, relocate and maintain the PCMS as approved or requested by the Resident.

- Be responsible for the day-to-day programming and operation of the PCMS for Project purposes.

The PCMS(s) shall be on-site, with data cellular account established, GPS location capable, and all training required complete within one month after mobilization or seven days prior to implementing traffic shifts, detours or stoppages, whichever is sooner. Implementation of traffic shifts, detours, or stoppages of traffic will not be allowed without PCMS boards on-site with the specified MTA Communications' Center Software Platform integration and training.

652.2.5 Truck Mounted Attenuator

The truck mounted attenuator system shall conform to the following requirements:

- Truck and attached attenuator shall conform to the NCHRP Report 350, Test Level 3 criteria or MASH if manufactured after 2019.

- Amber, Green, white or any variation of those colors strobe lights with 360-degree visibility.

- An arrow light bar fixed to the vehicle.

- The attenuator shall be mounted to a vehicle with a minimum weight of 24,000 lbs. unless otherwise specified.

Installation: **The TMA shall be located in the closed lane adjacent to active traffic; for double lane closures, only the outer closed lane requires the TMA**. If a buffer zone is required the TMA shall not be located in the buffer zone. The shadow vehicle shall have its front wheels turned away from the work area and from traffic, have parking brake set, and be put in park if an automatic transmission; or if a manual transmission it shall have its front wheels turned away from the work area and from traffic, have parking brake set and should be placed in gear and shut off if possible while still maintaining warning lights. If length of time or weather are a concern for the battery since the warning lights must be maintained the engine should be started and run periodically for battery recharging. No other vehicles or equipment shall park in front of the shadow vehicle or within the buffer space behind the shadow vehicle. For placement details, reference the Manual on Uniform Traffic Control Devices (MUTCD).

A Truck Mounted Attenuator **shall** be utilized in all lane closures, and shoulder closures, where workers are not protected by other positive means (i.e., closures that do not include temporary concrete barrier). If work is being completed behind guardrail a TMA shall be required for all work that is being completed within the deflection zone of the guardrail (minimum of four feet behind the guardrail post).

The placement and positioning of the vehicle shall be in accordance with the Manual on Uniform Traffic Control Devices and the manufacturer's recommendation. TMAs used on the Turnpike mainline shall have a minimum weight of 24,000 lbs and shall provide a 200 foot shadow distance from vehicles or the work zone. **For lane and shoulder closures in excess of 3,000 feet containing multiple work zones a TMA shall be used at each work zone.**

If a Truck Mounted Attenuator is not used as described above, then it will be considered a Traffic Control Plan violation and result in a reduction of payment as outlined in Section 652.

652.2.6 Sequential Flashing Warning Lights

When included in contracts as a bid item Sequential Flashing Warning Lights on drums used for merging tapers and shifting tapers during nighttime operation for project use. The purpose of these lights is to assist the motorist in determining which direction to merge or shift and to reduce the number of late merges resulting in devices being struck and having to be reset to maintain positive guidance at the merge point. The successive flashing of the lights shall occur from the upstream end of the taper to the downstream end of the taper in order to identify the desired vehicle path.

The Sequential Flashing Warning Lights shall meet all of the requirements for warning lights within the current edition of the MUTCD. Each light unit shall be capable of operating fully and continuously for a minimum of 500 hours when equipped with a standard battery set. Each light in sequence shall be flashed at a rate of not less than 55 times per minutes and not more than 75 times per minute. The flash rate and flash duration shall be consistent throughout the sequence. Sequential Flashing Warning Lights shall be "Pi-Lit" Sequential Barricade Warning Lamps or an

approved equal.

Sequential Flashing Warning lights are to be used for merging and shifting tapers that are in place during the nighttime hours (12-hours when ambient light is dimmed). These lights shall flash sequentially beginning with the first light and continuing until the final light at the beginning of a tangent section.

The Sequential Flashing Warning Lights shall automatically flash in sequence when placed on the drums that form the merging or shifting tapers.

The number of lights used in the drum taper shall equal one half the number of drums used in the taper.

Drums are the only channelizing device permitted for mounting the Sequential Flashing Warning Lights.

The Sequential Flashing Warning Lights shall be weather independent and visual obstruction shall not interfere with the operation of the lights.

The Sequential Flashing Warning Lights shall automatically sequence when placed in line in an open area with a distance between lights of 25 to 150 feet. A 10-foot stagger in the line of lights shall have no adverse effect on the operation of the lights.

If one light fails, the flashing sequence shall continue. Non-sequential flashing is prohibited.

652.2.7 Automated Trailer Mounted Speed Sign

The Contract will furnish, operate, and maintain Automated Trailer Mounted Speed Limit Sign(s) for project use. The automated speed sign shall be required when there is a Work Zone Speed Limit in place. The Contractor shall furnish, operate, and maintain the Automated Trailer Mounted Radar Speed Limit Signs during the project operations

Trailer mounted speed limit signs shall be self-contained units including sign assembly, flashing lights, directional radar to measure speed limits, a regulatory speed limit sign, and power supply specifically constructed to operate as a trailer-mounted sign. The preferred color of the unit shall be “construction orange”.

Base material for the regulatory speed limit signs shall be weatherproof, rigid substrate specifically manufactured for highway signing and meet the retro-reflective sheeting application requirements of the sheeting manufacturer.

Sign text shall consist of the letters, digits and symbols either applied by stick-on or silk screen, to conform to the dimensions and designs indicated in the Contract, MUTCD and/or FHWA Standard Highway Signs. The materials and methods shall be in accordance with standard commercial processes.
“Work Zone” construction signs shall be mounted on the trailer unit above the regulatory speed limit sign. (see attached graphic details).

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

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

Each unit shall be equipped with two mono-directional flashing lights, placed in accordance with the MUTCD, with amber lenses and reflectors, which are visible through a range of 120 degrees when viewed facing the sign. The lights shall be a minimum of 8-inch diameter, either LED, halogen, or incandescent lamps, and shall be visible for a minimum distance of one mile under daylight conditions and shall have a minimum flash rate of 40 flashes per minute. An "On" indicator light shall be mounted on the back of the signs, which is visible for at least 500 feet to provide confirmation that the flashing lights are operating.

The directional radar shall monitor approaching traffic only. The radar shall be capable of measuring speeds from 5 to 70 MPH at a distance of up to 1500 feet and shall have a high speed cut off thresh hold. Speed data shall be recorded and stored on the sign and must be made available to the Authority as requested.

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

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

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

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

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

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

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

To avoid impairing driver vision, the Contractor shall dim the lighted speed limit

readings by 50 percent during nighttime use and restore full power lighting during daytime operation.

652.2.8 Temporary Portable Rumble Strips

If a pay item is included in the contract or the Contract desires to utilize Temporary Portable Rumble Strips this work consists of furnishing and placing temporary portable rumble strips RoadQuake 2F TPRS or an approved equal. Furnishing a temporary portable rumble strip system includes a method to transport and move these to on-site locations where they will be used. The Contractor shall submit for approval, literature and all necessary certifications to the Maine Turnpike prior to procurement of the product.

If used, Temporary Portable Rumble Strips may not be practicable in areas where the roadway has more than two travel lanes, where volume windows do not allow for breaks in traffic to set up and monitor and adjust, or during nighttime lane closures.

Provide rumble strips where the plans show or as directed by the Resident as follows:

Prior to placing rumble strips, clean the roadway of sand and other materials, that may cause slippage.

Place one end of the rumble strips 6 inches from the roadway centerline. Extend the strips perpendicular to the direction of travel. Ensure strips lay flat on the roadway surface.

Only one series of rumble strips, placed before the first work zone, is required per direction of travel for multiple work zones spaced 1 mile or less apart. Work zones spaced greater than 1 mile apart require a separate series of rumble strips. Each lane shall use one group of temporary rumble strips.

Bracketed “Rumble Strip Ahead” and “Bump” signs shall be utilized and will be paid for under the respective construction sign pay items.

Maintain rumble strips as follows:

If rumble strips slide, become out of alignment, or are no longer in the wheel path of approaching vehicles during the work period, thoroughly clean both sides of the rumble strips and reset on a clean roadway.

Repair or replace damaged rumble strips immediately.

652.3.1 Responsibility of the Authority

The Authority will provide Project specific traffic control requirements and traffic control plans for use by the Contractor. The specific traffic control requirements for the Project are identified in Special Provision Section 652, Maintenance of Traffic (Specific Project Maintenance of Traffic Requirements). No revisions to these requirements or Plans will be permitted unless the
Contractor can thoroughly demonstrate an overall benefit to the public and a Contract

Modification is approved.

The Maine Turnpike Authority may erect lane closures on the mainline within the Project area to collect survey, provide layout, and for any other reasons deemed necessary by the Authority.

652.3.2 Responsibility of the Contractor

The Contractor shall provide continuous and effective traffic control and management for the Project that is appropriate to the construction means, methods, and sequencing allowed by the Contract and selected by the Contractor:

The Contractor shall ensure all jobsite personnel shall wear a safety vest labeled as ANSI 107-2004 standard performance for Class 3 risk exposures at all times. This requirement also applies to truck drivers and equipment operators when out of an enclosed cab.

652.3.3 Submittal of Traffic Control Plan

The Contractor shall provide continuous and effective traffic control and management for the Project that is appropriate to the means, methods and sequencing allowed by the Contract; and consistent with the Traffic Control Plans and Maintenance of Traffic Specifications. The Contractor is responsible for ensuring a safe environment for the Contract workforce, local road users, and turnpike users; and maintaining the safe efficient flow of traffic through the construction zone at all times during the Contract. The protocols and requirements outlined in the Contract shall be strictly enforced. The Contractor shall submit, at or before the Preconstruction Meeting, a Traffic Control Plan (TCP) that provides the following information to the Authority:

a. The name, telephone number, and other contact numbers (cellular phone, pager, if any) of the Contractor's Traffic Control Supervisor (TCS). The TCS is the person with overall responsibility for ensuring the contractor follows the TCP, and who has received Work Zone Traffic Control Training commensurate with the level of responsibility shown in the requirements of the Contract, and who is empowered to immediately resolve any work zone traffic control deficiencies or issues. Provide documentation that the Traffic Control Supervisor has completed a Work Zone Traffic Control Training Course (AGC, ATSSA, or other industry- recognized training), and a Supervisory refresher training every 5 years thereafter. Submit training certificates or attendance roster that includes the course name, training entity, and date of training. **State how the traffic control devices will be maintained including a frequency of inspection for both temporary and permanent traffic control devices.**

Traffic Control Training Course curriculum must be based on the standards and guidelines of the MUTCD and must include, at a minimum, the following:

1. Parts of Temporary Traffic Control Zone

2. Appropriate use and spacing of signs

3. Use and spacing of channelizing devices

4. Flagging basics

5. Typical examples and applications

The Traffic Control Supervisor, or designee directly overseeing physical installation, adjustment, and dismantling of work zone traffic control, will ensure all personnel performing those activities are trained to execute the work in a safe and proper manner, in accordance with their level of decision-making and responsibility. The emergency contact list shall contain a listing of individuals who may be contacted during non-work hours and shall adequately respond to the request.

b. Proposed revisions to the construction phasing or sequencing that reasonably minimizes traffic impacts.

c. A written narrative and/or plan explaining how traffic and pedestrians will be moved through the Project Limits, including transitions during the change from one phase of construction to the next, as applicable.

d. Temporary traffic control treatments at all intersections with roads, rail crossings, businesses, parking lots, pedestrian ways, bike paths, trails, residences, garages, farms, and other access points, as applicable.

e. A list of all Contractor or Subcontractor certified flaggers to be used on the Project, together with the number of flaggers which will be used for each type of operation that flagging is needed. If the Contractor is using a flagging Subcontractor, then the name and address of the Subcontractor may be provided instead of a list of flaggers.

f. A procedure for notifying the Resident of the need to change the traffic control plan or the need to remove a lane restriction.

g. A description of any special detours including provisions for constructing, maintaining, signing, and removing the detour or detours, including all temporary bridges and accessory features and complete restoration of the impacted land.

h. The maximum length of requested contiguous lane closure. The Contractor shall not close excessive lengths of traffic lane to avoid moving traffic control devices.

i. The proposed temporary roadway surface conditions and treatments. The Contractor shall provide an adequate roadway surface at all times; taking into account traffic speed, volume, and duration.

j. The coordination of appropriate temporary items (drainage, concrete barriers, barrier end treatments, impact attenuators, and traffic signals) with the TCP.

k. The plan for unexpected nighttime work, the contractor shall provide a list of

emergency nighttime lighting equipment and safety personnel available on-site or have the ability to have them on site within an hour of the time of need.

l. The plan for meeting any project specific requirements contained in special provision 105 and/or 107, and/or Section 656

m. The lighting plan if night work is anticipated.

The Authority will review the TCP for completeness and conformity with Contract provisions, the current edition of the MUTCD, and Authority policy and procedures. The Authority will review and provide comments to the Contractor within 14 days of receipt of the TCP. No review or comment by the Authority, or any failure to review or comment, shall operate to absolve the contractor of its responsibility to design and implement the plan in accordance with the Contract, or to shift any responsibility to the Authority. If the TCP is determined by the Authority to be operationally ineffective, the Contractor shall submit modifications of the TCP to the Authority for review and shall implement these changes at no additional cost to the Contract. Nothing in this Section shall negate the Contractor's obligations set forth in Section 110 - Indemnification, Bonding, and Insurance. The creation and modification of the TCP will be considered incidental to the related 652 items.

652.3.4 General

Prior to starting any work on any part of the project adjacent to or being used by the traveling public, the Contractor shall install the appropriate traffic control devices in accordance with the plans, specifications and the latest edition of Manual of Uniform Traffic Control Devices, Part VI. The Contractor shall continuously maintain the traffic control devices in their proper position, and they shall be kept clean, legible and in good repair throughout the duration of the work. If notified that the traffic control devices are not in place or not properly maintained, the Contractor may be ordered to immediately suspend work until all deficiencies are corrected.

No equipment or vehicles of the Contractor, their subcontractors, or employees engaged in work on this contract shall be parked or stopped on lanes carrying traffic, or on lanes or shoulders adjacent to lanes carrying traffic, at any time, except as required by ongoing work operations. Contractor equipment or vehicles shall never be used to stop, block, or channelize traffic.

Vehicles parked on the shoulder shall be located so all portions of the vehicle(s) are a minimum of one foot from the traveled way. No operation shall be conducted on or near the traveled lanes or shoulders without first setting up the proper lane closure and traffic control devices. These precautions shall be maintained at all times while this Work is being performed. The Contractor shall keep all paved areas of the highway as clear as possible at all times. No materials shall be stored on any paved area of the highway or within 30 feet of the traveled way (unless protected by concrete barriers and specifically approved by the Resident). Private vehicles owned by Contractor's employees shall be parked close together in a group no closer than 30 feet from the traveled way in pre-approved areas.

Channelization devices shall include Vertical Panel Markers, Barricades, Cones, and Drums shall be in accordance with the MUTCD. These devices shall be installed and maintained at the spacing determined by the MUTCD through the work area.

The Contractor shall maintain existing guardrails and/or barriers until removal is necessary for construction. The Contractor shall use a temporary barrier or appropriate channelizing devices,
as approved by the Resident, while the guardrails and/or barriers are absent. Permanent guardrails and barriers shall be installed as soon as possible to minimize risk to the public.

When Contractor operations or shoulder grading leave a continuous 3 inch or less exposed vertical face at the edge of the traveled way, including the shoulder, or when traffic is shifted into the shoulder adjacent to the edge of pavement where an existing 3 inch or less exposed vertical face creates a safety hazard, channelization devices should be placed 2 feet outside the edge of the pavement at intervals not exceeding 600 feet and, depending on type and location of the exposed vertical face, a 48 inch by 48 inch W8-9 Low Shoulder, or W8-11 Uneven Lane, and/or a W8-17P Shoulder Drop-Off sign should be placed at a maximum spacing of ½ mile. When Contractor operations or shoulder grading leave greater than a 3-inch exposed continuous vertical face at the edge of the traveled way, including the shoulder, or when an existing condition of an exposed vertical face of 3 inches or more is adjacent to active traffic shifted into shoulder, the Contractor shall place shoulder material at a slope not exceeding 3 horizontal to 1 vertical to meet the pavement grade, before the lane is opened to traffic.

Special Detours and temporary structures, if used, shall meet applicable AASHTO standards, including curve radii and grade.

Maine Turnpike Traffic Control Requirements

This Section outlines the minimum requirements that shall be maintained for working on, over, or adjacent to the Maine Turnpike roadway.

General

Two travel lanes in each direction (each direction being 24 feet wide including/excluding shoulder) in the two lane portion of the turnpike, and three travel lanes in each direction (each direction being 36 feet wide including/excluding shoulder) in the three lane portion of the turnpike (Mile 0.0 to mile 44.3) shall be maintained at all times except while performing work in a designated lane, directly over or adjacent to traffic, and during the placement and removal of traffic control devices.

Unless otherwise specified in the contract documents the minimum main line width for a single travel lane shall be 14 ft and minimum ramp widths of 16 ft which must be maintained at all times, from ½ hour before sunrise and ½ hour after sunset as indicated on the Sunrise/Sunset Table at: http://www.sunrisesunset.com/usa/Maine.asp . If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting.

Shoulder closures, lane closures, and lane shifts meeting the MUTCD guidelines, other than those shown in the plans, must be submitted for approval from the MTA prior to use in the construction operations.

No lane closures will be allowed during non-working hours, weekends and/or holiday periods unless included in the Contract as long-term traffic control requirement as outlined in Section 652 – Specific Project Maintenance of Traffic Requirements **unless written permission is obtained from the Authority.**

Any special signs, barricades or other devices deemed necessary by the Resident shall be furnished and maintained by the Contractor. Extra care shall be taken so that the traffic flow will not be disturbed. The use of construction signs and warning devices not shown on the Plans or in the MUTCD is prohibited unless approved by the Resident

The Contractor's personnel and equipment shall avoid crossing traffic whenever possible. No Contractor's vehicle may slow down or stop in a traffic lane unless said lane has previously been made safe with signs and barricades as required by the Resident.

No vehicle will move onto the traveled way at such a time or in such a manner so as to cause undue concern or danger to traffic approaching from either direction. The Contractor or his employees are not empowered to stop traffic.

The Contractor shall take necessary care at all times, in all operations and use of his equipment, to protect and facilitate traffic. During periods of idleness, the equipment shall not be left in a way to obstruct the traffic artery or to interfere with traffic.

The Contractor shall furnish approved signs reading “Construction Vehicle - Keep Back” to be used on trucks hauling to the Project. The signs shall be a minimum of 30-inch by 60-inch, Black and Orange, and meet construction sign retro reflectivity requirements

All vehicles used on the Project shall be equipped with amber flashing lights, by means of a single or multiple, flashing LED or strobe lights mounted so as to be visible 360 degrees. **In addition, vehicles operating under direction of the Maine Turnpike Authority may be equipped with auxiliary lights that are green, white or amber or any combination of green, white or amber.** Auxiliary lighting shall have sufficient intensity to be visible at 500 feet in normal daylight and a flash rate between 1Hz and 4Hz. The vehicle flashing system shall be in continuous operation while the vehicle is on any part of the project and positioned or mounted in such a way to not be obstructed by vehicle mounted or other equipment. Dump trucks, **concrete trucks** and utility trucks **at a minimum** shall have a strobe light mounted on each side of the vehicle. **The use of motorcycles is not permitted within a construction site or as a means to arrive at or leave a work zone**.

Where space is available pavement striping for all tapers shall create a minimum buffer of 250 feet to the point where the temporary concrete barrier taper ends and becomes parallel to the travelway. Temporary concrete barrier shall be tapered at a minimum 8:1 unless space is available and then it should be tapered at 15:1 or 100 feet whichever is longest.

Milling and paving of interchange ramps shall be done between 9:00 p.m. and 5:00 AM, unless otherwise shown on the Maintenance of Traffic Phasing Plans or as directed by the MTA. Only a single ramp at an interchange may be closed at once. Ramp closures will not be permitted the day before or after holidays, on holidays, or on Saturdays or Sundays. The Contractor shall request approval from the Resident/Authority two weeks

prior for all ramp closures. Portable changeable message signs shall be used to provide advance notice and warning of the ramp closure. PCMS's shall be operational a minimum of 1 week prior to ramp closure to notify Patrons. The contractor shall coordinate PCMS locations with the Resident and the MTA.

Access to, and egress from, the construction area shall be with the direction of travel without crossing traffic. Construction vehicles are prohibited from merging with mainline traffic during the AM and PM peak traffic hours unless approved in writing from the MTA. The contractor shall develop work zone access/egress with acceleration and deacceleration areas and should utilize interchange ramp areas whenever feasible.

Temporary Mainline Lane Closures

A lane closure may be required whenever personnel will be actively working within four feet of a travel lane.

Loading/unloading trucks shall not be closer than six feet from an open travel lane. Temporary lane closures will only be allowed at the times outlined in Special Provision, Section 652, Specific Project Maintenance of Traffic Requirements. These hours may be adjusted based on the traffic volume each day by the Resident.

A lane closure is required when a danger to the traveling public may exist. The following is a partial list of activities requiring lane closures. Lane closures may be required for other activities as well:

- Milling and Paving Operations
- Bridge work
- Drainage Installation and/or Adjustment
- Clear Zone Improvements
- Pavement Markings Layout and Placement
- **Work directly over traffic within six feet of a travel lane as measured from the painted pavement marking line or traffic control device will require a lane closure. This work includes but is not limited to the following:**

    1. **Unbolting structural steel**
    2. **Removing structural steel**
    3. **Erecting structural steel**
    4. **Erecting or moving sign panels on bridges or sign structures**
    5. **Bolting structural steel**
    6. **Loading and unloading trucks**
    7. **Light pole removal or installation**
    8. **Snow fence installation**

Lane closures shall be removed if work requiring the lane closure is not ongoing unless included in the Contract as a long-term traffic control requirement or approved by the Resident.

During adverse weather condition when the speed limit on the Maine Turnpike has been reduced to 45 MPH, or during fog or when there is less than ½ mile of visibility, shoulder/lane closures cannot be set up and any currently in place shall be removed. Only work on the turnpike mainline that is behind temporary concrete barrier will be allowed when speed is reduced to 45 MPH or fog/visibility conditions exist.

Daytime lane closures shall be a maximum of three (3) miles. Only one daytime lane closure will be permitted per direction. Nighttime lane closures may extend through the entire length of the Project.

Temporary single lane closures are allowed upon approval of the Resident. **Lane and/or ramp** closure setup may not begin until the beginning time specified. Closures that are setup early or that remain in place outside of the approved time period shall be subject to a lane rental fee of **$1,000** per five minutes for every five minutes outside of the approved time. The installation of the construction signs will be considered setting up the lane closure. Removal of the last construction sign will be considered removal of the closure. Construction signs shall be installed immediately prior to the start of the closure and shall be promptly removed when no longer required. The installation and removal of a closure, including signs, channelizing devices, and arrow boards shall be a continuous operation. The Authority reserves the right to order the removal of an approved closure.

The Authority desires to minimize the number of daytime lane closures and the number of times that a complete stoppage of traffic is required. The Contractor is encouraged to schedule work so that the interference with the flow of traffic will be minimized. Lane closures will not be allowed until traffic associated with complete stoppages of traffic has cleared. Complete stoppages of traffic or lane closures may not be allowed on a particular day if another complete stoppage of traffic has been previously approved for another project.

The Resident is required to receive approval from the Maine Turnpike Authority for all lane closures. **The Resident is required to submit a request for lane closures by noon on Thursday for any lane closures needed for the following week.** The Contractor shall plan the work accordingly.

<u>Temporary Mainline Shoulder Closures</u>

Shoulder closures are anticipated at locations where Contractor access to the mainline is required.

Shoulder closures with plastic drums shall be removed at the end of the workday. Temporary shoulder closures with plastic drums will not be allowed during periods of inclement weather as determined by the Authority.

The location (limits) of shoulder closures with concrete barrier are shown on the Plans.

The barrier must be placed prior to the start of the work requiring concrete barrier and shall remain in place until the work activity is complete.

Equipment Moves

The complete stoppage of traffic for an equipment move (including delivery of materials to the median) will be considered for approval if the action cannot reasonably be completed with the erection of a lane closure. Contractor shall be responsible for the installation of Signs CS-3, "Expect Stopped Traffic" and Signs W3-4 "Be Prepared to Stop", in accordance with the Single Lane Closure Detail immediately prior to the equipment move. **Signs will be required on any adjacent ramps within proximity to the stoppage**. These signs shall be covered when not applicable.

State Police will be used to stop traffic. Cost for State Police will be the responsibility of the Authority. The times requested for trooper assisted equipment moves by on-duty troopers cannot be guaranteed. The MTA will not be held responsible for any delays or costs associated with the delay, postponement or cancellation of an on-duty trooper assisted equipment move.

The maximum time for which traffic may be stopped and held for an equipment move across mainline or ramp at any single time shall be five (5) minutes. The duration shall be measured as the time betweenthe time the last car passes the Resident until the time the Resident determines that all travel lanes are clear. The traffic shall only be stopped for the minimum period of time required to complete the approved activity. The Contractor shall reimburse the Authority at a rate of $500 per minute for each minute in excess of the five-minute allowance.

Unapproved movement of equipment or materials across the travel lanes shall be considered a violation of the Maintenance of Traffic Requirements and is subject to a minimum fine of $500 per occurrence with an additional $500 per minute thereafter.

Request for Complete Stoppage of Traffic

A request for a complete stoppage of traffic must be submitted to the Resident for approval. The Resident is required to receive approval from the Maine Turnpike Authority for all stoppages. The request shall be submitted to the Authority by the Resident at least five (5) working days prior to the day of the requested stoppage of traffic and two (2) days for a stoppage less than five minutes. All requests must be received by 12:00 p.m. noon to be considered as received on that day. Requests received after 12:00 p.m. shall be considered as received the following day. The Contractor shall plan the work accordingly.

During the erection or removal of overhead structures or signs

Traffic shall be stopped and may be held for periods of up to 25 minutes during these operations. Before the roadway is reopened, all materials shall be secured so they will not endanger traffic passing underneath. The Contractor will reimburse the Authority at the rate of $2,500.00 per five-minute period for each roadway not reopened (northbound and southbound), in excess of the 25-minute limit. Total penalty shall be deducted from the next pay estimate.

Blasting of Ledge

The maximum time for which traffic may be stopped at any single time shall be six (6) minutes. This duration shall be measured as the time between the time that the last car passes the Resident, until the time the Resident determines that all travel lanes are cleared of blast debris. The Contractor shall reduce the size of the blast, change the design and method of the blast, use more mats, or otherwise alter the blasting so that the traffic is not stopped for more than six minutes. If, due to the throw of rock onto the highway or other blasting related activities, traffic is stopped for more than six minutes, the Contractor shall pay a penalty of $1,000.00 per minute for every minute traffic is stopped in excess of the six-minute limit. The penalty shall be measured separately on the northbound and southbound roadway (or eastbound and westbound roadway). Total penalties will be deducted from the next pay estimate. Whenever the volume of traffic is excessive such that a six-minute interruption would cause objectionable congestion, in the opinion of the Authority, the hours during which blasting may occur may be further restricted. A detailed blasting plan shall be submitted as required in Supplemental Specific or Special Provision Sections 105 or 107.

652.3.5 Installation of Traffic Control Devices

All traffic control devices shall be in conformance with NCHRP 350 requirements and MASH 16 requirements if manufactured after December 31, 2019 and installed as per manufactures recommendations.

Portable signs shall be erected on temporary sign supports approved crashworthy devices so that the bottom of the sign is either 1) 12 inches or 2) greater than 5 feet above the traveled way. The bottom of all regulatory signs and ramp exit signs shall be a minimum of 5 feet above the traveled way. The contractor is responsible for maintaining the temporary sign structures so that the sign face remains in a vertical position. Temporary signs supports shall not be used for signs that will remain in place at a single location for more than one month.

No signs on easels shall be placed on 4 foot shoulders with guardrail, signs required at these location shall be placed on taller easels on the median side of the guardrail.

Post-mounted signs shall be erected so the bottom of the sign is no less than 5 feet above the traveled way, and 7 feet above the traveled way in business, commercial, and residential areas. Post-mounted signs must be erected so that the sign face is in a true vertical position. All signs shall be placed so that they are not obstructed in any manner and immediately modified to ensure proper visibility if obstructed.

The bottom of mainline and ramp traffic control signs intending to remain longer than 3 days, except as provided in 2009 MUTCD Section 6F.03 paragraph 12, shall be mounted 5 feet or greater above the edge of pavement on posts or portable sign supports.

The Resident will verify the exact locations of the construction signs in the field.

Construction signs behind guardrail shall be mounted high enough to be visible to traffic.

Vertical panel markers shall be mounted with the top at least 4 feet above the traveled way.

Drums placed along the Turnpike mainline shall have a minimum of one drum weight. Drums that will remain in the same location for more than three days shall have double drum weights. (i.e. a minimum of 40 lbs of drum tire rings). Drums shall not be weighted on the top. Drain holes shall be provided to prevent water from accumulating in the drums During winter periods, drums shall be placed on the grass shoulder or removed from the roadway so winter maintenance operations will not be impacted. This requires the placement of drums behind the median guardrail. Drums shall not be placed on snowbanks.

The Contractor shall operate and maintain the flashing arrow board unit and for dependable service during the life of the contract. The units shall remain in continuous night and day service at locations designated until the Resident designates a new location or discontinuance of service.

The Contractor shall maintain the devices in proper position and clean them as necessary. Maintenance shall include the covering and uncovering of all signs when no longer applicable (even if for a very short duration). The sign shall be considered adequately covered when no part of the sign face is visible either around or through the covering.
The Contractor shall replace damaged traffic control devices with devices of acceptable quality, as directed by the Resident.

The Contractor is required to cover all existing signs, including regulatory and warning signs, within the Work zone which may conflict with the proposed construction signs. The Contractor is also required to cover all permanent construction signs when they conflict with a daily traffic control setup. The method of covering existing signs must be approved by the Resident. The use of adhesives on the sign face is prohibited.

Work Zone Speed Limits

Work Zone Speed (Fines Doubled) is a regulatory speed limit that indicates the maximum legal speed through a work zone which is lower than the normal posted speed. The speed limit shall be displayed by black on white speed limit signs in conjunction with a black on orange "Work Zone" plate. Speed limit signs shall be installed at each mile within the work zone. Any existing regulatory speed limit signs within the reduced speed zone shall be covered once the reduced speed signs have been erected.

Two orange fluorescent flags shall be attached to all speed limit signs that are uncovered for a period of time exceeding one week. This work shall be incidental. Signs that are covered and uncovered on a regular basis are not required to have the supplemental flags.

The reduced speed limit signs shall be used when workers are adjacent to traffic, when travel lane(s) are closed, when indicated on Maintenance of Traffic Control Plans provided or other times as approved by the Resident:

The signs shall be covered or removed when not applicable. The covering and uncovering of signs shall be included for payment under Maintenance of Traffic. Signs relating to reduced speed shall be installed in accordance with the details. The Contractor shall note that all signs including those behind concrete barrier or guardrail are required to be clearly visible to all drivers

at all times.

Lane Closure Installation and Removal Procedure

The Contractor will follow the following procedures when closing any travel lanes on the turnpike roadways:

1. The sign package shall be erected starting with the first sign and proceeding to the start of the taper. The sign crew shall erect signs with the vehicle within the outside shoulder.

2. Position the arrow board with the proper arrow at the beginning of the taper; and,

3. When arrow board is in place, continue with the drums/cones to secure the work area.

To dismantle the lane closure, start with last drums/cone placed and work in reverse order until all the drums are removed. The arrow board which was installed first shall be the final traffic control device removed, excluding the sign package. The remaining sign package shall be picked-up starting with the first sign placed and continuing in the direction of traffic and with the vehicle in the outside shoulder.

Trucking Plan

The Contractor shall submit a trucking plan to the Resident within 10 working days of the award of the Contract. The trucking plan shall consist of at least the following:

- Date of anticipated start of work per each location.
- Haul routes from plant/pit to work area and return.
- Haul routes from work area to disposal area and return.
- Entering / exiting the work area.
- Vehicle safety equipment and Vehicle inspection.
- Personal safety equipment.
- Communications equipment and plan.

The trucking plan will not be paid for separately but shall be incidental to the Contract.

652.3.6 Traffic Control

The existing travel way width shall be maintained to the maximum extent practical.

Vertical panel markers, drums, cones, or striping shall be used to clearly delineate the roadway through the construction area. Two-way traffic operation shall be provided at all times

that the Contractor is not working on the project. One- way traffic shall be controlled through work areas by flaggers, utilizing radios, field telephones, or other means of direct communication.

The traffic control devices shall be moved or removed as the work progresses to assure compatibility between the uses of the traffic control devices and the traffic flow.

Pavement markings shall be altered as required to conform to the existing traffic flow pattern. Repainting of pavement marking lines, if required to maintain the effectiveness of the line, shall be considered **incidental to the** maintenance of traffic control devices, no separate payment will be made. Inappropriate pavement markings shall be removed whenever traffic is rerouted, and temporary construction pavement markings shall be placed. Removal of non-applicable markings and **initial** placement of temporary construction pavement markings will be paid for under the appropriate Contract items. Traffic changes shall not be made unless there is sufficient time, equipment, materials, and personnel available to complete the change properly before the end of the workday. This provision will not be required when traffic is rerouted for brief periods and the route can be clearly defined by channelizing devices, or flaggers, or both.

All vehicles used during the installation and removal of traffic control devices, including lane closures, shall be equipped with a vehicle-mounted lighted arrow board **or high intensity LED full width light bar** acceptable to the Resident. The arrow board **or full width light bar** shall be capable of displaying a left arrow, right arrow, double arrow, and light bar pa**tterns**.

652.4 Flaggers

The Contractor shall furnish flaggers as required by contract documents or as otherwise specified by the Resident. **Flaggers shall not stop traffic on Turnpike mainline or interchange ramps. Only State Police are allowed to stop traffic on mainline or interchange ramps.**

All flaggers must have successfully completed a flagger test approved by the Maine Department of Transportation and administered by a Maine Department of Transportation approved Flagger-Certifier. All flaggers must carry an official certification card with them at all times while flagging.

For daytime conditions, flaggers shall wear a top (vest, shirt or jacket) that is orange, yellow, yellow-green, or fluorescent versions of these colors meeting ANSI 107-2004, Class 3, along with a hat with 360 ˚ retro-reflectivity.

For nighttime conditions, flaggers shall wear all Class 3 apparel, meeting ANSI 107-2004, including a Class 3 top (vest, shirt or jacket) and a Class E bottom (pants or coveralls), shall be worn along with a hardhat with 360 ˚ retro-reflectivity and shall be visible at a minimum distance of 1000 ft. Flagger stations must be illuminated in nighttime conditions to assure visibility and will be specifically addressed in detail in the Contractor's TCP.

Flagger stations shall be located far enough in advance of the workspace so that approaching road users will have sufficient distance to stop at the intended stopping point. While flagging, the flagger should stand either on the shoulder adjacent to the traffic being controlled, or in the closed lane. At a spot obstruction with adequate sight distance, the flagger may stand on the shoulder opposite the closed sections to operate effectively. Under no circumstances shall

the flagger stand in the lane being used by moving traffic or have their back to oncoming traffic. The flagger should be clearly visible to approaching traffic at all times and should have a clear escape route.

When conditions do not allow for proper approach sight distance of a flagger or storage space for waiting vehicles, additional flaggers shall be used at the rear of the backlogged traffic or at a point where approaching vehicles have adequate stopping sight distance to the rear of the backlogged traffic. All flagger stations shall be signed, even when in close proximity. The signs shall be removed or covered when flagger operations are not in place, even if it is for a very short duration.

Flaggers shall be provided as a minimum, a 10-minute break, every 2 hours and a 30 minute or longer lunch period away from the workstation. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid. Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. If the flaggers are receiving the appropriate breaks, breaker flagger(s) shall be paid starting 2 hours after the work begins and ending 2 hours before the work ends. A maximum of 1 breaker per 6 flaggers will be paid. (1 breaker flagger for 2 to 6 flaggers, 2 breaker flaggers for 7 to 12 flaggers, etc.). If a flagger station is manned for 10 hours or more, then ½ hour for lunch will be deducted from billable breaker flagger hours.

652.41 Traffic Officers

Local road traffic officers, if required, shall be uniformed police officers. State Police officers and vehicles shall be used to warn and stop traffic on the Maine Turnpike. All State Police shall be scheduled through the Maine Turnpike Authority. The Authority will make payment for the State Police officers and vehicles directly to the State Police.

The Contractor will not be entitled to additional compensation if scheduled Work is not completed due to the unavailability of State Police.

652.5.1 Rumble Strip Crossing

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for 7 calendar days or less, the Contractor shall install warning signs that read “RUMBLE STRIP CROSSING” with a supplemental Motorcycle Plaque, (W8-15P).

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for more than 7 calendar days, the Contractor shall pave in the rumble strips in the area that traffic will cross, unless otherwise directed by the Resident. Rumble strips shall be replaced prior to the end of the project, when it is no longer necessary to cross them.

652.6.1 Daylight Work Times

Unless otherwise described in the Contract, the Contractor is allowed to commence work and end work daily according to the Sunrise/Sunset Table at: http://www.sunrisesunset.com/usa/Maine.asp . If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting. Any work conducted before

sunrise or after sunset will be considered Night Work.

652.6.2 Night work

When Night Work occurs (either scheduled or unscheduled), the Contractor shall provide and maintain lighting on all equipment, at all workstations, and all flagger stations.

The lighting facilities shall be capable of providing light of sufficient intensity to permit good workmanship, safety, and proper inspection at all times. The lighting shall be cut off and arranged on stanchions at a height that will provide perimeter lighting for each piece of equipment and will not interfere with traffic, including commercial vehicles, approaching the work site from either direction.

The Contractor shall have available portable floodlights for special areas.

The Contractor shall utilize padding, shielding or other insulation of mechanical and electrical equipment, if necessary, to minimize noise, and shall provide sufficient fuel, spare lamps, generators, etc. to maintain lighting of the work site.

The Contractor shall submit a lighting plan prior to any night work for review showing the type and location of lights to be used for night work. The Resident may require modifications be made to the lighting set up in actual field conditions.

Prior to beginning any Night Work, the Contractor shall furnish a light meter for the Residents use that is capable of measuring the range of light levels from 5 to 20 foot-candles.

Horizontal illumination, for activities on the ground, shall be measured with the photometer parallel to the road surface. For purposes of roadway lighting, the photometer is placed on the pavement. Vertical illumination, for overhead activities, shall be measured with the photometer perpendicular to the road surface. Measurements shall be taken at the height and location of the overhead activity.

Night Work lighting requirements:

Mobile Operations: For mobile-type operations, each piece of equipment (paver, roller, milling machine, etc.) will carry indirect (i.e. balloon type) lights capable of producing at least 10 foot- candles of lighting around the work area of the equipment.

Fixed Operations: For fixed-type operations (flaggers, curb, bridge, pipes, etc.), direct (i.e. tower) lighting will be utilized capable of illuminating the work area with at least 10 foot- candles of light.

Hybrid Operations: For hybrid-type operations (guardrail, sweeping, In-slope excavation, etc.), either direct or indirect lighting may be utilized. The chosen lights must be capable of producing at least 10 foot-candles of light around the work area of the equipment

Inspection Operations: Areas required to be inspected by the Authority will require a minimum of 5 foot-candles of lighting. This may be accomplished through direct or indirect

means.

The Contractor shall apply 2- inch wide retro-reflective tape, with alternating red and white segments, to outline the front back and sides of construction vehicles and equipment, to define their shape and size to the extent practicable. Pickup trucks and personal vehicles are exempt from this requirement.

The Resident or any other representative of the Authority reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Authority shall not be held responsible for any delay in the work due to any suspension under this item.

Failure to follow the approved Lighting Plan will result in a Traffic Control violation.

Payment for lighting, vehicle mounted signs and other costs accrued because of night work will not be made directly but will be considered incidental to the related contract items.

652.6.3 Traffic Coordinator and Personnel

The Contractor shall submit to the Resident for approval a list of traffic control personnel assigned to the Project including qualifications, certifications and experience.

The Traffic Coordinator duties shall include, but are not necessarily limited to:

a. Developing, in conjunction with the Resident and Project superintendent, a traffic control program for the days' work activities which will facilitate traffic in a safe and efficient manner.

b. Ensure that all traffic control implements (signs, arrow boards, barrels, etc.) are on-site so the traffic program can be implemented effectively.

c. Ensure a safe and effective setup or take-down of all signing implements to least impact the traveling motorist; and,

d. Working knowledge of construction signing/traffic control requirements in conformance with the latest issued Manual on Uniform Traffic Control Devices.

e. The Contractor shall supplement the traffic control plan with a daily plan, which includes schedules for utilizing traffic coordinators and flaggers. This plan shall be submitted daily and agreed upon cooperatively with the Resident.

652.7 Method of Measurement

Signs, signs supplied by the Authority, and panel markers will be measured by the square foot for all signs authorized and installed. Flashing arrow boards, portable-changeable message signs, and flashing and steady burn lights, will be measured by each unit authorized and installed on the project. Barricades and cones will be measured by each unit authorized. Drums will be measured by each or as a lump sum authorized and installed, as indicated on the plans and specifications. No additional payment will be made for devices that require replacement due to

poor condition or inadequate retroreflectivity.

Flaggers or traffic officers used during the Contract, for the convenience of the Contractor, will not be measured separately for payment, but shall be incidental to the various pay items. **This includes use of Flaggers for the delivery of materials and equipment to the project or other Flagger use that is for the Contractor's convenience, as determined by the Resident Engineer. If flaggers are required to maintain traffic and there is not a pay item in the contractor for flaggers, then flaggers shall be incidental to the other Section 652 contract items and no separate payment shall be made.**

The accepted quantity of traffic officer and flagger time will be the number of hours the designated station is occupied. The number of hours authorized for payment, **if any**, will be measured to the nearest ¼ hour.

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

Maintenance of traffic control devices, including Truck mounted impact attenuators and Automated trailer mounted speed limit signs required for the project will be measured by the calendar day or as one lump sum, as indicated in the plans and specifications, for all authorized and installed traffic control devices. Traffic control devices will only be measured for payment the first time used. Subsequent uses shall be incidental to Item 652.36 or 652.361.

The vehicle mounted arrow board, mounted on trucks used for installation and removal of lane closures, will not be measured separately for payment, but shall be incidental to Item 652.36 or 652.361.

The traffic coordinator(s) will not be measured separately for payment but shall be incidental to Item 652.36 or 652.361.

Portable light towers, lighting on equipment and lighting plan will not be measured separately for payment but shall be incidental to the related Contract items.

Sequential Flashing Warning Lights shall be measured for payment by the maximum number of sequential flashing warning lights satisfactorily installed and properly functioning at any one time during the life of the project. Payment shall include all materials and labor to install, maintain and remove all Sequential Flashing Warning Lights.

Automated Trailer Mounted Speed Limit Sign shall incidental to the Maintenance of Traffic Control device item Payment shall include the Trailer, Radar Speed Limit Sign, flashing beacon amber lights, regulatory speed limit sign, fuel, necessary maintenance, and all checking of Radar Speed Limit Signs by manufacturer and all project moves including the transporting and delivery of the unit.

The accepted quantity of temporary portable rumble strips shall be measured by the unit complete in place, per lane closure application. A unit shall consist of 1 group of 3 full-lane width

of rumble strips. As shown in the plans, a maximum of 3 units may be used at each lane closure. A unit shall be measured for each group of rumble strips, each time they are used for a lane closure.

652.8 Basis of Payment

All temporary traffic control devices required, including but not limited to advance warning signs, construction signs, drums, cones, barrels shall not be measured for payment but shall be incidental to pay item 652.361 Maintenance of Traffic Control Devices. No additional payment shall be made for devices that require replacement due to poor condition or inadequate retroreflectivity, or that require multiple setups and takedowns.

Failure by the contractor to reinstall cones, barrels, signs, covered/uncovered signs, and similar traffic control devices within an hour of them being displaced, moved, knocked over, un-covered and etc. will result in a $150 fine per traffic control device if the issues is not resolved within 1 hour of notification by the resident. An additional $150 will be assessed for each additional hour that the device has not been corrected. If the traffic control device is critical to the maintenance of traffic creating an actual or potential safety issue with traffic and is not corrected immediately then it will result in a violation letter as described below.

Failure by the contractor to follow the Contracts 652 Supplemental Specifications, Special Provisions and Standard Specification and/or the Manual on Uniform Traffic Control Devices (MUTCD) and/or the Contractors own Traffic Control Plan, or failure to correct a violation, will result in a violation letter and result in a reduction in payment as shown in the schedule below. The Resident or any other representative of the Authority reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Authority shall not be held responsible for any delay in the work due to any suspension under this item. Any reduction in payment under this Special Provision will be in addition to forfeiting payment of maintenance of traffic control devices for that day.

Amount of Penalty Damages per Violation

1st	2nd	3rd & Subsequent
$500	$1,000	$2,500

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 Traffic Control Requirements

Mainline lane and shoulder closures are not allowed. A single temporary toll plaza lane may be closed, one at a time, as the Contractor progresses the work. The Contractor may request to close the left-most EZ-Pass Only lane within the CASH lanes at New Gloucester northbound, on a longer term basis with temporary concrete barrier. The closure may include temporary concrete barrier prior to the toll plaza to close the lane, then temporary concrete barrier shall extend approximately 100 feet, as directed by MTA Resident, beyond the toll plaza to create the Contractor's laydown and parking area. Contractor shall coordinate with the MTA Resident to change overhead lane use signals upon implementing this single, left-most EZ-Pass Only lane closure. Toll lane closures at West Gardiner southbound will be limited to daily single lane closure.

The Contractor is responsible to keep the closed lane free of snow and ice at all times for the duration of the closure. The Contractor shall plan the work, including sufficient labor and materials, such that once the closure is setup, the stairwell caps and booth repairs are completed expeditiously without undue delay to minimize the duration of this EZ-Pass Only lane closure. With the exception of the stairwell closure period defined in Special Provision 652 Temporary Toll Plaza Lane Closure, the Contractor shall be prepared at all times to allow MTA to reopen the closed EZ-Pass Only lane at New Gloucester with a two-day notice and the closed EZ-Pass Only lane at West Gardiner with a four-hour notice.

See Special Provision 652 Temporary Toll Plaza Lane Closure for other allowable closures.

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Temporary Toll Plaza Lane Closures)

The following minimum requirements shall be maintained:

Plaza lanes shall remain available for opening at all times except when the Contractor is performing work in, adjacent to or directly over the plaza lanes. A plaza lane closure is required when danger to the traveling public or turnpike employees may exist. The potential of any material falling onto the roadway shall be considered a potential danger. This shall include, but not necessarily be limited to, demolition debris, water, tools, equipment and material.

A plaza lane closure will be required whenever people or equipment will be present in a plaza lane. The Authority may also require adjacent lanes to be closed to protect the traveling public or turnpike employees. Temporary plaza lane closures will only be allowed at the times outlined below. These hours may be adjusted based on the traffic volume each day by the Resident. Plaza lane closures not completely removed by the ending time specified will be subject to a lane rental fee of $100.00 per 10 minutes for every 10 minute increment beyond the specified ending time. Temporary plaza lane closures will not be allowed during periods of inclement weather as determined by the Authority. Temporary plaza lane closures may not be allowed on days or times when complete stoppages of traffic for other Authority projects are scheduled. The Authority reserves the right to order removal of approved plaza lane closures.

Requests for temporary toll lane closures shall be submitted to the Resident a minimum of 14 days, 21 days for wide load lanes, prior to closure for approval. The Resident is required to receive approval from the Maine Turnpike Authority's Plaza Supervisor for all plaza lane closures. The request shall be submitted to the Plaza Supervisor by the Resident at least one (1) working days prior to the day of the requested plaza lane closure. All requests must be received by 12:00 p.m. noon to be considered as received on that day. Requests received after 12:00 p.m. shall be considered as received the following day. The Contractor shall plan the work accordingly.

Some activities, which require plaza lane closures, will be considered favorably for night work. The Contractor shall submit a request in writing to the Resident. The approval of the request will be at the Resident's discretion and will not be unreasonably withheld.

Wide load and E-ZPass lanes may be closed Monday thru Thursday from 8:00 p.m. to 6:00 a.m. the following morning. The wide load and E-ZPass lane closures must be final scheduled one (1) week in advance, and occur outside of the various Holiday restrictions.

Intermediate single lanes may be closed Sunday thru Thursday from 8:00 p.m. to 3:00 p.m. the next day. The Intermediate single lanes closures must be final scheduled one (1) day in advance, and occur outside of the various Holiday restrictions.

Traffic Control and Plaza Safety

Temporary traffic control layouts shall be submitted to the Resident a minimum of five days prior to the requested temporary layout for review and approval. Typical traffic control Detail TP-51, found in MTA's Traffic Control Plan booklet, is considered the basic layout for temporary toll plaza lane closures, which may be modified as directed by the Resident.

652.7 Method of Measurement

All temporary traffic control devices required, including but not limited to advance warning signs, construction signs, drums, cones, barrels shall not be measured for payment but shall be incidental to pay item 652.361 Maintenance of Traffic Control Devices. No additional payment shall be made for devices that require replacement due to poor condition or inadequate retroreflectivity, or that require multiple setups and takedowns.

SPECIAL PROVISION

SECTION 800

TOLL TUNNEL REPAIRS

(Stairwell Enclosure)

800.01 Description

The work shall consist of furnishing and installing materials and components to remove the existing canvas stairwell enclosure and building new timber framed enclosures as shown on the Plans or described herein. Existing electric supply, switches, and lighting within the stairwell enclosures shall be removed as part of the demolition and installed within the new enclosures. The stairwells closest to the toll building at each plaza shall be capped with a timber framed enclosure with EPDM membrane roofing as shown in the Plans. The stairwells furthest from the toll building at each plaza shall consist of a full height timber framed enclosure with EPDM roofing and a new doorway as shown in the Plans. The work for the new doorway includes all materials, equipment, labor and supervision, and performing all operations necessary to furnish and install steel doors and frames complete in every respect, as shown on the drawings and as specified herein.

The Contractor will be allowed a seven-day period to close the tunnel stairwell, restricting toll staff passage, for purposes of constructing the stairwell enclosure and other repairs. Outside of this seven-day period, the Contractor shall provide, at a minimum, during daily shift changes at 6 AM, 2 PM, and 10 PM, safe passage for MTA staff, through a stairwell and tunnel that are reasonably clear of dust, noxious odors, fumes, and other hazards that could impede safe and reasonable passage by MTA staff.

800.02 Materials.

Materials shall meet the following requirements:

A. Wood: Framing, Sheathing, and Fasteners

Framing Members and Miscellaneous Blocking: Standard Dimensional Pressure Treated Lumber, Grade No. 1 or better, suitable for ground contact. Lumber shall be treated with alkaline copper quaternary (ACQ) or equivalent preservative and kiln-dried after treatment (KDAT). Install all studs, plates, and blocking so that they are accurately level, plumb, and true. Verify alignment at regular intervals during installation. Any framing found out of tolerance per the Resident shall be corrected prior to proceeding with finishes or sheathing.

Moisture Content – The maximum moisture content of treated lumber and timber material prior to treatment shall be 19%. Material treated with water-borne preservatives in accordance with AWPA Standards shall be dried after treatment to a moisture content not exceeding 19% and shall be maintained at a moisture content of 19% or less until it is incorporated into the work.

Preservative Treatment – preservative treatment of lumber and timber materials shall conform to the requirements of Subsection 800.07 B.

Exterior Plywood: Provide 3/4-inch thick CD grade pressure treated plywood, suitable for ground contact. Panels shall be exterior glue bonded, rated for Exposure 1, and suitable for structural applications such as subflooring, roof sheathing, or wall sheathing as indicated on the drawings. Plywood shall bear the APA (Engineered Wood Association) grade stamp showing panel thickness, span rating, and exposure classification. Fasten in accordance with manufacturer's recommendations, APA guidelines, and applicable building codes.

Exterior Siding: Provide pressure treated T1-11 plywood siding panels, minimum 19/32" thickness, bearing the APA grade stamp. Panels shall be manufactured with exterior-type glue, rated Exposure 1 or better, and available in groove patterns. Panels shall have one side textured and grooved for exposed finish use. Install with vertical orientation with overlapping edges. Panels shall be provided in lengths to not require a horizontal splice. In the event the vertical height of the structure requires a horizontal splice, install galvanized steel z-flashing at the seam. Fasten per APA installation guidelines and local building code requirements.

Interior Plywood: Provide ½-inch thick BC Graded pressure treated plywood, suitable for ground contact. The "B" side of the plywood shall face the interior of the tunnel. Plywood shall bear the APA (Engineered Wood Association) grade stamp showing panel thickness, span rating, and exposure classification. Fasten in accordance with manufacturer's recommendations, APA guidelines, and applicable building codes.

Fasteners: Fasteners, connectors and steel components in contact with treated lumber shall be hot-dip galvanized, stainless steel, or otherwise corrosion-resistant in accordance with ASTM A153 (AASHTO M 232) or equivalent.

Unless otherwise specified, bolts, studs, threaded rods, nuts, and washers shall conform to the requirements of ASTM A 307, Grade A. Carbon steel nuts (unless otherwise specified) shall conform to the requirements of ASTM A 563 and ASTM A 563 M.

Nails shall conform to the requirements of ASTM F 1667.

Lag screws shall be of low to medium carbon steel and shall be of good commercial quality.

Miscellaneous Steel: Structural steel shapes shall meet the requirements of ASTM A36.

B. Roofing: EPDM

EPDM Roofing shall be 45 mil thickness and have an exposed face color of black. EPDM shall be manufactured by Firestone Building Products or approved equal. Sheet flashing used at the wall to roof transition shall be aluminum drip edge flashing installed in accordance with manufacturers recommendations.

C. Paint

Interior and Exterior siding shall be painted using two coats of Sherwin-Williams Emerald Exterior Acrylic Latex Paint. Paint colors shall be coordinated and approved by the Authority prior

to ordering. Sherwin Williams Multi-Purpose Exterior Latex Primer/Sealer shall be applied prior to paint.

D. Door

Stairwell enclosure exterior door shall be 36”x82”, with 24”x36” Tempered/Thermal Break glazing complying with SDI SD 100, Grade II, Heavy Duty, Model 1, Galvanized for exterior locations. Doors shall be made of commercial quality, level, cold rolled steel and free of scale, pitting or other surface defects. Face sheets shall be not less than 16 gage and shall be hot dip galvanized. security door with a window and keycard access.

a. Cold Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.
b. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526 having ASTM A 525, G60 zinc coating, mill phosphatized.
c. Supports and Anchors:
    i. Furnish wall anchors as required to secure frames to adjacent construction, formed of not less than 18 gage galvanized steel sheet (before galvanizing), as follows:
        1. Concrete Masonry Unit Construction: Adjustable, T-shape flat, corrugated or perforated, to suit frame size with leg not less than 3 inches wide by 10 inches long. Furnish at least 4 anchors per jamb.
        2. Floor Anchors: Provide floor anchors for each jamb and for mullions which extend to the floor, formed of not less than 0.0625 inch thick (No. 16 gage) galvanized steel sheet, as follows:
        3. Monolithic Concrete Slabs: Clip type anchors, with 2 holes to receive fasteners, welded to bottom of jamb and mullions.
        4. Head Anchors: Provide 2 anchors at head of frames exceeding 36 inch wide.
d. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D, as applicable. Expansion anchors shall be "Kwik-Bolts" as manufactured by Hilti Fastening Systems or approved equal.
e. Prime Finish: Clean, pretreat, and apply manufacturer’s standard primer. Shop primer shall be manufacturer’s standard, fast-curing, lead-and-chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.
f. Field-Applied Coating:
    i. Prime Coat: Touch up and repair all damaged or scratched primer on metal doors with manufacturer-approved primer to provide a uniform, continuous finish ready for final coating.
    ii. Intermediate Coat: Alkyd, Exterior, matching topcoat.
    iii. Topcoat: Exterior, semi-gloss (MPI Gloss Level 5) MPI #47.
g. All finish hardware shall be of the best grade of solid metal, entirely free from imperfections in manufacture and finish. Finish shall be US 26D Satin Chromium Plated and US 32D Satin Stainless Steel, as applicable. Door closer units shall have sprayed lacquer finish to match balance of hardware. The following items and manufacturers therof indicate the quality and design of the hardware required.

i. Hinges: All door butts shall be Stanley No. FBB199 (US 32D), shall conform to ANSI A156.1 (A2111). Equivalent hinges manufactured by Hager Hinge Co. are also acceptable.
ii. Locksets shall Best Lock 35H x 16H x L x US 32D with anti-friction latch bolts and interchangeable cores. Function will be determined at time of hardware submittal by the Resident at no additional cost.
iii. Door Closers shall be LCN Smoothee Series with parallel arm "Cush-N-Stop" for push side and LCN's heaviest duty arm for pull side. Comparable closers manufactured by Sargent and Russwin will be considered for use. Provide coordinator at pairs of doors with adjustable safety release and internal override.
iv. Silencers shall be manufactured by Trimco, Sargent & Co. or Glynn-Johnson.
v. Thresholds shall be of a style approved by the Resident, manufactured by Reese, National Guard or Pemko. All exterior doors shall have an extruded aluminum threshold with an integral slip-resistant surface set in sealant to provide watertight condition. Thresholds shall be secured to floor construction with suitable stainless steel flat head screws in expansion shields. Slip-resistant coating shall be equal to "PemKote" by Pemko. If size is not shown, provided threshold width equal to jamb depth.

Threshold – Type A:	Pemko 171A 1/PemKote
Threshold – Type B:	Pemko 270A and 282A, each with ¼" high w/PemKote

vi. Kick plates and mop plates shall be 22 gage stainless steel, 8" high by width of door less 2", attached with stainless steel screws, as manufactured by Brookline, Ives or Rockwood.
vii. Weather-stripping Systems shall be provided at all exterior doors and frames consisting of a dense, semi-rigid polymeric material which remains resilient and retains its weathering ability through temperature extremes. Weather-stripping and sweep shall be compatible with the threshold provided. Weather-stripping shall be of a style approved by the Resident, manufactured by Reese, National Guard or Pemko.

Door Shoe:	Pemko 234AV (cold weather seal)
Jamb & Head:	Pemko 319CR

viii. Floor Stops, and Wall Stops shall be manufactured by H.B. Ives Co., Brookline Industries Inc., Stanley, or Glynn-Johnson.
ix. Exit Device and Pull:
x. Electric Strike: Provide Galaxy Model 1006-12/24D-630 X KM-630 with removable core for Best Cylinder.
xi. Card Reader: Provided by the authority.

E. Insulation

Insulation shall be closed cell spray foam insulation meeting thermal resistance value R-12.

F. Electrical:

Light: 4’ LED industrial strip light rated for damp locations with frosted acrylic lens with switchable lumens. New light shall be Columbia Lighting CSL-4-LSCS-GLH5 or approved equal.

800.03 General Fabrication Requirements

A. Wood

Unless otherwise specified, all timber materials shall be fabricated prior to preservative treatment.

B. Door

1. The fabrication requirements for standard steel doors are as follows:
    a. Provide metal security doors with a window and keycard as indicated on the Drawings and complying with SDI SD 100, Grade II, Heavy Duty, Model 1, galvanized for exterior locations. Doors shall be made of commercial quality, level, cold rolled steel and free of scale, pitting or other surface defects. Face sheets shall be not less than 16 gage and shall be hot dip galvanized. Minimum door thickness shall be 1-3/4 inches.
    b. All doors shall be strong, rigid and neat in appearance, free from warpage and buckle. Corner bends shall be true, straight and of the minimum radius for the gage of metal used.
    c. Doors shall be reinforced, stiffened and sound deadened with impregnated kraft honeycomb core (or approved closed-cell insulation at exterior locations), completely filling the inside of the door and laminated to the inside faces of panels. Other core construction, standard with approved manufacturer's meeting specified U.L. Label requirements and providing effective sound deadening, are acceptable.
    d. Top and bottom edges of all doors shall be closed with a continuous recessed steel channel not less than 16 gage extending the full width of the door and spot welded to both faces (hot-dip galvanized for exterior doors). Exterior doors shall have an additional flush closing hot-dip galvanized channel at their top and bottom edges with suitable openings be provided in the bottom closure to permit the escape of entrapped moisture.
    e. Beveled edge profiles shall be provided on both vertical edges of doors.
    f. Finish Hardware Preparation:
        i. Prepare doors and frames to receive mortised and concealed finish hardware in accordance with the approved Finish Hardware Schedule and templates provided by hardware manufacturer. Comply with applicable requirements of ANSI A 115 series specifications for door and frame preparation for hardware. Where surface mounted hardware is to be applied, frames shall have reinforcing plates.
        ii. Minimum thickness of hardware reinforcing plates shall be as follows:

            Hinge reinforcements - 7 gage 1-1/4" x 10" minimum size.

            Strike reinforcements - 12 gage.

Flush bolt reinforcements - 12 gage.

Closer reinforcements - 12 gage.

Reinforcements for surface-mounted hardware - 12 gage.

iii. Locate knobs, levers, panic devices, push plates, and pulls in accordance with the requirements of ANSI A117.1-86, "Specifications for Making Buildings and Facilities Accessible to and Usable by, Physically Handicapped People" and ADA Guidelines. Locate other finish hardware items in accordance with "Recommended Locations for Builder's Hardware", published by Door and Hardware Institute.

g. Shop Painting:
   i. Clean, treat and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
   ii. Clean steel surfaces of mill scale, rust, oil, grease, dirt and other foreign materials before application of paint.
   iii. Apply shop coat of prime paint of even consistency and bake to provide a uniformly finished surface ready to receive finish paint.

2. The fabrication requirements for standard steel frames are as follows:
   a. Provide metal frames for doors and transoms, including frames for wood doors, of types and styles as shown on Drawings and schedules butted and wrap-around), utilizing concealed fastenings, unless otherwise indicated.
   b. Frames for exterior openings and interior U.L. labeled doors shall be made of commercial grade cold-rolled steel, not less than 14 gage. Exterior frames shall be hot dip galvanized steel. Frames shall be designed for a minimum 25 pounds per square foot horizontal load.
   c. Frames for other interior openings shall be either commercial grade cold-rolled steel or commercial grade hot-rolled and pickled steel. Metal thickness for frames shall be not less than 16 gage.
   d. Frames for exterior doors, interior masonry walls and drywall openings shall be press brake formed with 5/8" high integral stops. Corners shall be back seam and face welded with face welds ground neatly smooth.
   e. Construction: Knocked down.

800.04 Submittals

Unless otherwise specified, as soon as practical after award of the Contract, the Contractor shall prepare and submit Working Drawings and Product Submittals in accordance with subsection 105.7. Submittals shall include manufacturers specifications, product data and installation instructions for all items furnished. The Contractor shall not be relieved of responsibility for any deviation from the requirements of the specifications unless the Contractor has specifically informed the Turnpike in writing of such deviation at the time of submission and the Turnpike has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions. No portion of the work shall be commenced until the Authority has approved the submittal.

Submittal and working drawing review times shall be in accordance with section 105.7.2 of the Maine Turnpike Authority Supplemental Specifications.

800.05 Storage

A. General

Deliver products in manufacturers original containers, dry, undamaged, with seals and labels intact.

B. Wood

Timber materials stored on the site shall be kept in orderly piles, open stacked, and on supports that provide at least 12 inches of ground clearance. For outside storage, the ground area in the vicinity of the material shall be cleared of grass, weeds, and rubbish. Treated timber shall be stacked together, with no separation between the tiers and courses. Free circulation of air shall be provided between the pile and the ground.

Timber shall be stored under cover. The covering shall adequately protect these materials from direct and blowing rain or snow while providing for full circulation of air and adequate drainage.

All timber shall meet the moisture requirements of Subsection 800.02 before being incorporated into the work.

Fabricated material shall be stored in a manner that will prevent dimensional changes in the members prior to assembly.

C. Door

Store doors and frames at the site under cover in accordance with the manufacturer's recommendations. Place units on wood dunnage at least 4 inches high, or otherwise store on floors in manner that will prevent rust and damage. Avoid use of non-vented plastic or canvas shelters which could create humidity chambers. If cartons become wet, remove them immediately. Provide 1/4 inch to 1/2 inch space between stacked doors and frames to promote air circulation.

800.06 Handling

Materials shall be carefully handled to avoid damaging the edges or surface and kept clean.

Materials shall be picked up or moved with slings or other devices, as required, that will not damage or mar the surface. Peavies, cant hooks, timber dogs, or other pointed tools will not be permitted.

Cranes, lifting devices and any other equipment for all structural timber erection shall be of adequate design and capacity to safely erect, align, and secure all members and components in

their final positions without damage. The Contractor is solely responsible for the methods and equipment employed for the erection of the structural timber members.

800.07 Framing and Installation

A. Wood

Installation, handling and storage of all materials shall comply with the manufacturer's instructions and recommendations.

The Contractor shall make provisions to allow safe access to the work for the Authority in order to inspect the work, facilitate ongoing inspection of the work and to measure the work for payment purposes.

Complete installation to provide weathertight service.

Completed installation shall conform to all applicable National, State and local codes.

Timber shall be accurately cut and framed to a close fit in such a manner that the joints will have full and even bearing over the entire contact surface. Except as indicated in the Contract, shimming will not be permitted in making joints, and open joints will not be accepted. Nails shall be driven with the heads set flush with the surface of the wood. Except as directed by the Resident, structure framing and boarding shall be constructed square, plumb, and straight.

When permitted by the Resident, forms or temporary braces may be attached to treated material. Upon removal, any holes, cuts, or abrasions shall be treated in accordance with Subsection B Wood Preservative Treatment.

B. Wood Preservative Treatment

Timber and lumber shall be pressure treated utilizing Micronized Copper Quaternary (MCQ) preservative treatment. Treatment shall be applied to a total absorption of 0.4 pounds per cubic foot of wood.

Treatment of cuts, abrasions and holes – Cuts, abrasions, and holes bored after treatment shall be treated with two coats of copper naphthenate solution. Cuts and abrasions shall be carefully trimmed prior to treatment. Holes left unfilled shall be filled with wooden plugs treated with copper naphthenate solution.

Temporary Attachments – Holes remaining after the removal of nails used to attach temporary forms or bracing to treated material shall be filled by driving galvanized nails flush with the surface or plugging the holes with wooden plugs treated with copper naphthenate solution.

C. Wood Connections

Holes for Bolts, Dowels, Rods, and Lag Screws

a. Holes for metal round drift-bolts or dowels shall be bored with a bit 1/16” less in diameter than the drift-bolt or dowel to be used.
b. Holes for machine bolts shall be bored with a bit the same diameter as the bolt.
c. Holes for rods shall be bored with a bit 1/16” grater in diameter than the rod.
d. Lead holes for lag screws, and wood screws shall conform to the requirements specified within the latest edition of the AITC Timber Construction Manual.

Bolts and Washers

e. A washer of the size and type specified shall be used under all bolt heads and nuts that would otherwise come in contact with wood.
f. All nuts shall be effectively locked after they have been finally tightened.

D. Door

Install hollow metal units and accessories in accordance with final shop drawings, the manufacturer's approved installation instructions, and as specified herein.

Placing Frames: Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames", unless otherwise indicated.

Install finish hardware in strict accordance with the final approved shop drawings and the manufacturers' instructions, and adjust for easy action All knobs, levers, panic devices, push plates, pulls and other hardware shall be installed in accordance with the requirements of ANSI A117 and ADAAG.. Set locksets level and true with the proper backset. Adjust striking plates to be in exact alignment with bolts and latches. Adjust spindles and latch bolts for easy action. Set all screws flush with the metal surface without any broken or damaged heads.

All wrapping on knobs, handles, pulls, etc., furnished by the manufacturer shall be replaced on the hardware after it is installed and shall remain until final acceptance of the work, at which time the Contractor shall remove and dispose of all coverings. Hang doors plumb and true with a uniform clearance at the head and jambs, in accordance with SDI-100 and NFPA Pamphlet 80, and with all hardware in perfect working order.

E. Electrical

Remove existing light above door and associated EMT conduit, and wire beyond the limits of the canopy demolition. Utilizing the existing lighting circuit, install new EMT conduit and wire to provide power to a new 4’ LED industrial strip light mounted on the ceiling of the new stair enclosure. Contractor shall provide temporary lighting withing the stair enclosure between the demo of the existing light and the install of the new light. Refer to Appendix 1 for additional electrical requirements.

800.10 Method of Measurement

The Stairwell Enclosure work will be measured by Lump Sum for the combined work at New Gloucester and West Gardiner Toll Plazas.

800.11 Basis of Payment

Stairwell Enclosures will be paid at the Contract lump sum price, completed and accepted, which shall be full compensation for the work called for in the Contract, including, but not necessarily be limited to: demolition of existing, timber framing, steel angle supports, expansion anchors, EPDM roofing, flashing, interior and exterior siding, paint, electrical supply and lighting, exterior security door, insulation, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
800.31	Stairwell Enclosure	Lump Sum

SPECIAL PROVISION

SECTION 800

TOLL TUNNEL REPAIRS

(Tollbooth Canopy Drainage Modifications)

800.01 Description

This work shall consist of furnishing and installing the materials and components to modify the existing toll canopy drainage system as shown on the Plans and described herein. This work shall also include the pipe support system and all connections required to complete the work, replacement of existing damaged floor drains and floor drain clean outs, sump pit and sump pump installation, drainage outlet, heat trace and associated electrical requirements. The work shall also include removing existing canopy drainage system that is not in use and leftover during the ORT Conversion.

New Gloucester Toll Plaza:

Work shall consist of partial removal of the existing canopy drain system roadside, through tunnel ceiling, and into the tunnel. Schedule 80 PVC pipe shall be installed to the existing canopy drain system coming through the tunnel ceiling to route the canopy drainage to the existing floor drains as shown on the Plans and in accordance with this specification.

Existing floor drains and cleanouts shall be replaced as shown on the Plans and in accordance with this specification. Prior to replacement of the floor drains and cleanouts, all pipes shall be cleaned and descaled with chain cleaning then flushed to remove any loose debris. Pipes shall then be sealed with 2 coats of Picote Xpress Epoxy coating system or approved equal.

This work shall also include a sump pit and pump at the far end of the tunnel, as indicated in the Plans. The scope also includes furnishing and installing drain lines from each sump pit to an exterior discharge location with a heat trace system, as approved by the Resident. All required electrical work for the sump pump and heat trace system shall be included.

Core drilling through existing concrete walls will be required to accommodate new piping. All core openings shall be appropriately sized to allow installation of link seals with stainless steel hardware, or an equivalent watertight sealing system, in the annular space between the pipe and concrete.

This work shall include trenching for the drain line from the sump pit to the exterior discharge location outside the tunnel. At the discharge location, stone ditch protection shall be installed using plain riprap with a maximum stone size of 18 inches. The riprap shall extend 4 feet beyond the pipe outlet and be at least 3 feet in width. Repair of all disturbed earth surfaces including loam, seed, and mulch shall also be included in the work.

Heat trace cable shall be installed inside the sump pump discharge piping, extending from a minimum of 2 feet inside the tunnel to the exterior drainage discharge location. Provide and install a new circuit breaker in the existing Electrical Panel HP, including all required conduit, wiring, and

associated appurtenances, to serve a dedicated 20-amp GFCI receptacle located adjacent to the heat trace installation. Refer to Appendix 1 for additional electrical requirements.

West Gardiner Toll Plaza:

The work includes installing a sump pit and pump at the west end of the tunnel, as indicated in the Plans. The scope also includes furnishing and installing drain lines from the sump pit to an exterior discharge location with a heat trace system, as approved by the Resident. All required electrical work for the sump pump and heat trace system shall be included.

The work also includes cleaning the existing functioning floor drain and outlet pipe on the east end of the tunnel as shown in the Plans. The floor drain and outlet pipe shall be cleaned and descaled with chain cleaning then flushed to remove any loose debris. Pipe shall then be sealed with two coats of Picote Xpress Epoxy Coating system or approved equal.

Core drilling through existing concrete walls will be required to accommodate new piping. All core openings shall be appropriately sized to allow installation of link seals with stainless steel hardware, or an equivalent watertight sealing system, in the annular space between the pipe and concrete.

This work shall include trenching for the drain line from the sump pit to the exterior discharge location outside the tunnel. At the discharge location, stone ditch protection shall be installed using plain riprap with a maximum stone size of 18 inches. The riprap shall extend 4 feet beyond the pipe outlet and be at least 3 feet in width. Repair of all disturbed earth surfaces including loam, seed, and mulch shall also be included in the work.

Heat trace cable shall be installed inside the sump pump discharge piping, extending from a minimum of 2 feet inside the tunnel to the exterior drainage discharge location. Provide and install a new circuit breaker in the existing Electrical Panel HP, including all required conduit, wiring, and associated appurtenances, to serve a dedicated 20-amp, 120V weatherproof GFCI receptacle located adjacent to the heat trace installation. Refer to Appendix 1 for additional electrical requirements.

Sump Pit Installation at both Toll Plazas Includes:

- Saw cutting with dust control to create clean, vertical wall edges
- Demolition, removal, and off-site disposal of existing concrete
- Excavation and backfill as necessary to install the sump in accordance with the sump pit manufacturer's instructions
- Regrading, loam, seed, and mulch of all disturbed areas.
- Placement of new concrete with a minimum thickness of 6 inches around the installed sump pit to existing line and grade
- Provide and install a new circuit breaker in the existing Electrical Panel HP, including all required conduit, wiring, and associated appurtenances, to serve a dedicated 20-amp, 120V weatherproof GFCI receptacle located adjacent to the sump pump installation. Reference Appendix 1 for further electrical requirements.

800.02 Materials.

Materials shall meet the following requirements:

a. Added pipe shall be 2" diameter schedule 80 PVC pipe meeting the requirements of ASTM D1784 and D1785.

b. Schedule 80 PVC pipe fittings and connections shall meet the requirements of ASTM D2467 and ASTM D1785.

c. Pipes hangers shall galvanized split ring hangers electro-galvanized steel finish for standard plumbing applications. Hangers shall be sized to pipe outside diameter, include threaded rod connection nut, and be suitable for vertical or horizontal suspension of PVC pipe. All hardware shall be galvanized for corrosion resistance. Alternative pipe hanging methods maybe approved by the Resident.

d. Sump Basin:
    1. Basis of Design: Apollo 24" Basin as distributed by Nash Distribution
        i. Product Width: 24 inches
        ii. Product Height: 24 inches
        iii. Capacity: 39 gallons
        iv. **Material:** Impact-resistant LLDPE plastic
        v. Features: Factory-installed, pre-drilled weep holes

e. Submersible Sump Pump
    1. Basis of Design: Zoeller M95 Sump Pump, or approved equal
        i. 115V, 1 phase, ½" HP, oil-filled motor
        ii. 1.5" discharge
        iii. Cord Length: 15' with UL listed, 3 wire, grounded plug
        iv. Cast Iron construction with stainless steel hardware

    2. Accessories
        i. Zoeller Unicheck, combination union and check valve, installed just above the basin to allow easy removal of the pump for cleaning and repair.
        ii. Zoeller Pump Stand installed under pump to provide a settling basin
        iii. Z Control Apak Indoor Alarm with Reed Sensor

f. Floor Drains
    1. Basis of Design – Watts FD-100-B Epoxy coated cast iron floor drain with anchor flange, reversible clamping collar with primary and secondary weepholes, and adjustable heavy duty round heel proof nickel bronze strainer. Or approved equal.
        i. 8" adjustable Strainer Head
        ii. Sediment Bucket
        iii. Backwater Valve
        iv. Outlet Size: Existing piping shall be field verified by contractor prior to ordering

g. Cleanouts

1. Basis of Design: Zurn ZS-1400 adjustable floor cleanout, Dura Coated Cast Iron body, with gas and watertight ABS tapered thread plug. Provide size equal to piping served with maximum size of 4" as verified in the field. Or approved equal
   i. Load Rating: Up to 2,000 pounds or as scheduled
   ii. Body: Dura Coated cast iron, with gas and water tight non-corroding ABS tapered plug and standard or EZ1 top assembly.
   iii. Polished Stainless Steel Extra Heavy Duty Top
   iv. Outlet Size: Existing piping shall be field verified by contractor prior to ordering

h. Heat Trace
   1. Basis of Design: Heat-line Paladin Pre-Assembled Heating Cable Sets for Pipe Freeze Protection, or approved equal.
   2. Provide a self-regulating in-pipe heating cable system designed for direct installation within piping and compatible with PVC piping systems. The system shall be furnished complete with all required plumbing components, factory-terminated self-regulating heating cable, and power lead. Heat trace cable length shall be sufficient to extend a minimum of 2 feet inside the tunnel to the exterior drainage discharge outlet. Installation shall be performed in accordance with the manufacturer's written instructions.

i. Backflow Preventers
   1. Manufacturers:
      i. Zurn Industries, Inc.; Wilkins Div.
      ii. Cla-Val Co.
      iii. Apollo
      iv. CMB Industries, Inc.; Febco Backflow Preventers.
      v. Conbraco Industries, Inc.
      vi. Watts Industries, Inc.; Water Products Div.
      vii. Ames
   2. General: ASSE standard, backflow preventers.
      i. NPS 2 and Smaller: Bronze body with threaded ends.
      ii. NPS 2-1/2 and Larger: Bronze, cast-iron, steel, or stainless-steel body with flanged ends.
      iii. Interior Components: Corrosion-resistant materials. AWWA C550 or FDA-approved
      iv. Exterior Finish: manufacturer's standard.
      v. Provide ball valves on inlet and outlet
      vi. Provide strainer on inlet, lead-free.
      vii. All components shall be lead free.
   3. Atmospheric-Type Vacuum Breakers: ASSE 1001, with floating disc and atmospheric vent.
   4. Double-Check Backflow Prevention Assemblies:
      i. Wilkins Series 950XLT2 (2" and smaller)
      ii. Wilkins Series 350ASTOSY (2-1/2" and larger)
      iii. ASSE 1015, suitable for continuous pressure application. Pressure Loss: 5 psig maximum, through middle 1/3 of flow range.
   5. Reduced-Pressure-Principle Backflow Preventers: ASSE 1013, suitable for

continuous pressure application. Pressure Loss: 12 psig maximum, through middle 1/3 of flow range.

i. Provide air gap fitting.
ii. Wilkins Series 975XL2 (2” and smaller)
iii. Wilkins Series 375ASTOSY (2-1/2” and larger)

800.03 Submittals

Submit product data on all piping components, connections, fitting, and hanger and support devices. Product data to include, but not limited to materials, finishes, approvals, load ratings, and dimensional information.

Sump Pit and Pump: The Contractor shall provide product data and shop drawings for all sump pit basins, sump pumps, outlet piping and heat trace from the sump basin to the exterior of the toll plaza to the Resident for approval.

Floor Drains and Clean Outs: The Contractor is responsible for verifying all existing dimensions on-site. Based on field verification, the Contractor shall develop a detailed removal procedure and submit it for approval. Additionally, the Contractor shall provide product data and shop drawings for all floor drains and clean outs, including all necessary fittings and connections required to tie into the existing system to the Resident for approval.

800.04 Installation

Pipes shall be installed sloped to drain by gravity and maintain a minimum slope of 2%.

All work, materials, and equipment shall copy with the rules and regulations of all codes and ordinance of the local, state, and federal authorities. Such codes, when more restrictive, shall take precedence over these plans and specifications. Plumbing work shall be performed under by, or under the direct supervision of a licensed master plumber. All installations must remain accessible for required inspections and shall not be concealed until approved by the Resident; the contractor shall be responsible for any reinspections resulting from incomplete, noncompliant, or inaccessible work.

Pipe Hanger and Support System shall meet the following:

Pipe hanger installation shall comply with MSS SP-69 and MSS SP-89. Provide hangers, supports, clamps, and attachments as required to properly support piping from the tunnel structure.

1. Provide hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers and other accessories.
2. Hanger rods shall be threaded both ends or continuous threaded rods of circular cross section. Use adjusting locknuts at upper attachments and hangers. No wire, chain, or perforated straps are allowed.
3. Hanger adjustments shall adjust to distribute loads equally on attachments to achieve indicated slope of pipe.
4. Trim excess length of continuous-thread hanger and support rods to 1-½".
5. Pipe protection saddles shall be formed from carbon steel, 1/8 inch minimum thickness.
6. Hangers and support components shall be hot dip galvanized after fabrication in accordance with ASTM A123. All hanger hardware shall be hot dip galvanized.
7. Provide lateral bracing with pipe hangers and supports to prevent swaying.
8. Provide hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by plumbing code and ASME B1.9. Piping shall be supported in a manner as to maintain its alignment and prevent sagging.
9. Space hangers according to the pipe manufacturer's written instructions for service conditions. Avoid point loading. Space and install hangers with the fewest practical rigid anchor points.
10. Hangers shall be placed next to the pipe joint not more than 18 inches from the point joint.
11. Place hanger within 12 inches of each horizontal elbow.
12. Pipe hanger and support maximum horizontal spacing shall be 48 inches and maximum vertical spacing shall be 10 feet. Unless otherwise specified by the manufacturer and as approved by the Resident.

Existing floor drains cleanouts shall be replaced as noted in the contract plans. Existing floor drains cleanouts shall be removed, and existing riser pipe shall be cut clean and extended as necessary for new floor cleanouts to be flush with finished concrete floor. The work shall also include saw cutting with dust control to create clean, vertical wall edges; demolition, removal, and off-site disposal of existing concrete; and placement of new concrete to match existing line a grade.

Sump pit basin shall be installed at locations indicated on the plans. Installation shall proceed as follows:

1. Excavation: Saw cut existing concrete slab with dust control to a minimum dimension of 36" x 36". Remove concrete and underlying granular borrow to form a neat excavation.
2. Subgrade Preparation: Install drainage and separation geotextile fabric around the entire perimeter and base of the excavation. Place a minimum of 6 inches of clean ¾" drainage stone beneath the sump pit basin. Install a minimum of 12 inches of clean ¾" drainage stone around the perimeter of the basin.
3. Basin Placement: Set the sump pit basin such that the top cover is flush with the existing concrete tunnel floor.
4. Concrete Restoration: Place 6 inches of concrete over the drainage stone to restore the slab surface to existing line and grade.

800.05 Method of Measurement

The Tollbooth Canopy Drainage Modifications will be measured by Lump Sum for the combined work at New Gloucester and West Gardiner Toll Plazas.

800.06 Basis of Payment

The following paragraphs are added:

Tollbooth Canopy Drainage Modifications will be paid at the Contract lump sum price, completed and accepted, which shall be full compensation for the work called for in the Contract, including, but not necessarily limited to: Removal of existing pipe, installation of new pipe, all required connections and fittings, pipe hanger and support system, development of shop drawings, installing sump pit and pumps, trenching and installing sump pit discharge pipe outside of the tunnel, heat trace system, electrical, regrading, loam, seeding, mulching, replacing damaged floor drains and floor drain clean outs, cleaning, descaling, and sealing floor drain pipes, removing all drain pipes and components that are not in use, capping canopy drain wall penetrations that are not in use, and all materials, labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
800.32	Tollbooth Canopy Drainage Modifications	Lump Sum

APPENDIX 1
DIVISION 26
BASIC ELECTRICAL REQUIREMENTS

SECTION 261000 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. If the Contractor discovers any ambiguity, error, omission, conflict, or discrepancy, General Conditions Section 101.3.6 Priority of Conflicting Contract Documents shall control.

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

2. State of Maine Department of Transportation, “Standard Specifications,” Revision December 2014, and any revisions thereto, apply to this Section.

1.2 SUMMARY

A. The electrical requirements included herein apply to the necessary installation provisions required for the heating, ventilation and dehumidification equipment and other associated electrical scope related to this project.

B. Alternates: Refer to Division 01 to determine extent of, if any, work of this section that will be affected by any alternates if accepted.

C. Furnish all materials, equipment, labor, and supplies and perform all operations necessary to complete the electrical work in accordance with the intent of the drawings and these specifications.

1.3 QUALITY ASSURANCE

A. All wiring shall be in accordance with the state adopted issue of the National Electrical Code that is in effect at the time of the contract.

B. Ground Resistance Testing:

1. Measure ground resistance with bridge type meter designed for testing grounds.

2. Record readings, conditions of soil, model of meter, date, and name of tester.

3. Conduct test in presence of Owner or his Representative. The test shall be made no less than 48 hours after a rain.

C. The Contractor shall show evidence, upon request, of having successfully completed at least five similar projects. Installation of each system shall be under the supervision of a factory-authorized organization.

D. The Contractor shall show evidence, upon request, that he maintains a fully equipped service organization capable of furnishing adequate inspection and service to the system. The Contractor must have a service contract program for the maintenance of the system after the guarantee period.

E. All electrical equipment shall be listed by Underwriters Laboratories, Inc. Each system shall be products of a single manufacturer of established reputation and experience. The Contractor shall have supplied similar apparatus to comparable installations rendering satisfactory service for at least three years.

F. For each system, the manufacturer shall furnish "gratis" to the Owner a one-year contract effective from the date of installation for maintenance and inspection services of the manufacturer's equipment with a minimum of two inspections during the contract year.

1.4 SUBMITTALS

A. In accordance with Division 01, furnish the following:

1. Manufacturer's descriptive literature: For each type of product indicated.

2. Submit shop drawings which include engineering drawings of the system with specification sheets covering all component parts of the system and interconnection diagrams.

3. Certification:

a. Prior to final inspection, deliver to the Owner's Representative certification that the material is in accordance with the drawings and specifications and has been properly installed.

b. Submit certification of system operating test.

4. Manuals: Submit copies of complete set of operating instructions including circuit diagrams and other information of system components.

1.5 PROJECT CONDITIONS

A. Regulatory Requirements:

1. Conform to the requirements of all laws and regulations applicable to the work.

2. Cooperate with all authorities having jurisdiction.

3. Compliance with laws and regulations governing the work on this project does not relieve the Contractor from compliance with more restrictive requirements contained in these specifications.

4. If the Contract Documents are found to be at variance with any law or regulation, the Contractor shall notify the Architect/Engineer promptly in writing. The Contractor shall assume full responsibility for any work contrary to law or regulation, and shall bear all costs for the corrections thereof.

5. Minimum Requirements: The National Electrical Code (NEC), Underwriters Laboratories, Inc. (UL), the National Fire Codes, and National Fire Protection Association (NFPA) are a minimum requirement for work under this section. Design drawings and other specification sections shall govern in those instances where requirements are greater than those required by code.

B. Permits, Fees, and Inspections:

1. Secure and pay for all permits, fees, licenses, inspections, etc., required for the work under Division 26.

2. Schedule and pay for all legally required inspections and cooperate with inspecting officers.

3. Provide Certificates of Inspection and Approval from all regulatory authorities having jurisdiction over the work in Division 26.

C. Drawings:

1. Do not scale the drawings. The general location of the apparatus and the details of the work are shown on the drawings, which form a part of this specification. Exact locations are to be determined at the building as the work progresses, and shall be subject to the Architect/Engineer's approval. Actual field conditions shall govern all dimensions.

2. Anything shown on the drawings and not mentioned in the specifications or vice versa shall be provided as if it were both shown and specified.

3. It is not intended that the drawings shall show every wire, device, fitting, conduit or appliance, but it shall be a requirement to furnish without additional expense, all material and labor necessary to complete the systems in accordance with applicable codes and the best practice of the trade.

1.6 WARRANTY

A. The Contractor shall guarantee all equipment and wiring free from inherent mechanical or electrical defects for one year from date of acceptance.

1.7 RELATED WORK

A. Division 23 - Mechanical

PART 2 - PRODUCTS

2.1 MATERIALS

A. Receptacles shall be specification grade, mounted 18" above finished floor unless otherwise noted.

1. Provide type TR tamper-resistant where required by code.

2. Provide type WR weather-resistant where required by code.

B. Duplex Receptacles With Ground-Fault Interrupter shall be an integral unit suitable for mounting in a standard outlet box.

1. Ground-Fault Interrupter shall consist of a differential current transformer, solid state sensing circuitry and a circuit interrupter switch. It shall be rated for operation on a 60 Hz, 120-volt, 20-ampere branch circuit. Device shall have nominal sensitivity to ground leakage current of five milliamperes and shall function to interrupt the current supply for any value of ground leakage current above five milliamperes on the load side of the device. Device shall have a minimum nominal tripping time of 1/30th of a second.

2. Receptacle shall be rated 20 amperes, 125 volts for indoor use and shall be the standard duplex, three-wire, grounding type.

3. Provide type WR weather-resistant where required by code.

C. Weatherproof Receptacles shall consist of a duplex GFI receptacle, as specified, mounted in a weatherproof box with a gasketed, weatherproof, cast metal cover plate. The weatherproof integrity shall not be affected when heavy duty specification or hospital grade attachment plug caps are inserted. Cover plates on outlet boxes mounted flush in the wall shall be gasketed to the wall in a watertight manner.

D. Plates shall be 302 stainless steel or PVC with tamper-proof screws.

E. Boxes shall be 302 stainless steel or PVC; minimum 2-1/2" deep.

F. Light Fixtures: The light fixtures shall be as described on the drawings or approved equal.

G. Disconnect Switches shall be heavy-duty type, horsepower rated.

H. Motor Starters:

1. Manual motor starters shall be toggle-switch type with melting alloy thermal overload relay. Thermal units shall be one-piece construction and interchangeable. Starter shall be inoperative with thermal unit removed. Contacts shall be double break, silver alloy. Starters in finished areas shall be flush mounted over the light switch at 60" above finished floor. Starters shall be mounted behind stainless steel device plate and shall have adjacent pilot lights. Square D Class 2510 Type FS-1P-FL1 or approved equal. Starters in unfinished areas shall be surface mounted 60" above finished floor. Square D Class 2510 Type FG-5P or approved equal.

2. Magnetic motor starters shall be combination circuit breaker or fused disconnect switch type, mounted in a common enclosure. Starters shall be three-pole with three melting alloy overload relays. Overload heaters shall be coordinated with Division 23. Thermal units shall be of one-piece construction and interchangeable. Starter shall be inoperative with any thermal unit removed. The disconnect operating handle shall be position indicating.

    a. Provide a control device and pilot light on the cover of each combination starter. Control devices for motors with remote manual or automatic control shall be "hand-off-auto" switches. Control devices for locally controlled motors shall be "start-stop" pushbuttons.

    b. 120-volt magnetic motor starters may consist of a circuit breaker or fused disconnect switch and a magnetic starter in separate enclosures mounted next to each other.

    c. Control circuits shall operate at a maximum of 120 volts. Provide control transformers as required.

3. Starters shall be mounted within NEMA-1 enclosures unless specified otherwise.

4. All starters shall be lockable in the "off" position.

5. Overload heaters shall be sized for the motor nameplate full-load amperes per the manufacturer's recommendations.

I. Wiring Materials:

1. Wiring shall be enclosed in electrical conduit (non-metallic when inside the tunnel) sized in accordance with code requirements for the conductors. Types MC or NM cable may be used where concealed in walls or ceilings and allowed by code.

    a. Conduit fittings shall be non-metallic type (when inside the tunnel).

    b. Terminations for all conduit shall have insulated bushings or insulated throat connectors in accordance with code requirements.

    c. All conduits shall be substantially supported with approved clips or hangers spaced not to exceed ten feet on center. Minimum conduit size shall be 1/2".

2. Interior Surface Metal Raceway (where permitted by the NEC for areas outside the tunnel): UL 5 listed.

a. Not permitted inside the tunnel locations; PVC only in tunnel area.

b. Boxes and fittings for surface metal raceways shall be as recommended by the manufacturer.

c. Support clips for surface metal raceways shall be the concealed type, with attachment screws concealed behind the raceway.

3. Flexible Metal Conduit shall be used for all connections to motors and vibrating equipment and shall comply with Fed. Spec. WW-C-566.

4. Liquid-Tight Flexible Metal Conduit shall consist of flexible steel conduit with a liquid-tight PVC jacket over the conduit.

a. Fittings shall incorporate a threaded grounding cone, a steel or plastic compression ring, and a gland for tightening.

b. Liquid-tight flexible metal conduit shall be used in damp or wet locations when flexible metal conduit would otherwise be used.

c. Liquid-tight flexible metal conduit shall not penetrate the roof or exterior walls, and shall not be installed in lengths exceeding 72” except where necessary for flexibility.

5. Nonmetallic Conduit: Fed. Spec. W-C-1094, Type II or Type III shall apply. Conduit shall be Schedule 40 heavy wall PVC or high density PE. Conduit shall be UL listed for use above ground and direct burial underground and be sunlight resistant.

6. All Wiring shall be type THW, XHHW, or THWN, UL labeled, copper conductors with 600-volt insulation, except as otherwise noted. Minimum size wire shall be No. 12 AWG.

7. Type MC Cable shall have minimum No. 12 AWG type THWN or XHHW insulated copper conductors with an internal bare or insulated copper ground wire.

J. Fire-Stop Material:

1. Fire-stopping material shall maintain its dimension and integrity while preventing the passage of flame, smoke, and gases under conditions of installation and use when exposed to the ASTM E 119 time-temperature curve for a time period equivalent to the rating of the assembly penetrated. Cotton waste shall not ignite when placed in contact with the non-fire side during the test. Fire-stopping material shall be noncombustible as defined by ASTM E 136; and in addition for insulation materials, melt point shall be a minimum of 1700^{o}F for one-hour protection and 1850^{o}F for two-hour protection.

2. Seals for floor, exterior wall, and roof shall also be watertight.

K. Circuit Breakers: Circuit breakers to be added to existing panelboards shall match existing circuit breakers.

L. Grounding Conductors:

1. Grounding conductors shall be soft-drawn bare copper.

2. Insulated grounding wires shall be UL and NEC approved types, copper, with THWN or XHHW insulation color identified green, except where otherwise shown on the drawings or specified.

3. Wire shall not be less than shown on the drawings and not less than required by the NEC.

M. Equipment Grounding Connections: Connections shall be of the compression type solderless connectors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. All work shall be in accordance with the National Electrical Code's requirements as amended to date, with the local electric utility company's rules, the Fire Underwriter's requirements, and all local, state and federal laws and regulations.

2. In general, all wiring in finished areas shall be concealed in walls or above ceilings. Where wiring cannot be concealed due to existing construction, exposed wiring shall be installed in conduit or surface metal raceway as indicated on the drawings. Exposed wiring shall not be installed in finished areas without prior written authorization from the Engineer.

3. Conduits shall be of sizes required by the National Electrical Code. Exposed conduits shall be installed with runs parallel or perpendicular to walls and ceiling, with right-angle turns consisting of bends, fittings, or outlet boxes. No wire shall be installed until work that might cause damage to wires or conduits has been completed. Conduits shall be thoroughly cleaned of water or other foreign matter before wire is installed.

4. Where conduits, wireways and other electrical raceways pass through fire partitions, fire walls, or floor, install a fire-stop that provides an effective barrier against the spread of fire, smoke and gases. Fire-stop material shall be packed tight and completely fill clearances between raceways and openings. Floor, exterior wall, and roof seals shall also be made watertight.

5. Where raceways puncture roof, coordinate with Division 07.

6. Raceway penetrations through roof and exterior walls shall be made with rigid metal conduit, intermediate metal conduit, or EMT with compression fittings.

7. Surface metal raceways shall be sized as required by the National Electrical code and as recommended by the manufacturer. Surface metal raceways shall be installed with runs parallel or perpendicular to walls and ceiling. Changes in direction shall only be made at

device box locations or with fittings designed for the particular application. Installation shall be as visually unobtrusive as possible:

a. Surface metal raceways shall be painted to match wall finishes.

8. All splices shall be mechanically and electrically perfect, using crimp type wire connectors.

9. Provide all disconnect switches required by the N.E.C.

10. Locate motor starters as shown on drawings.

11. Mount disconnect switches and starters at a height of 60" above finished floor unless otherwise noted.

12. Provide all necessary hardware for mounting motor starters.

13. A typewritten schedule of circuits, approved by the Owner's Representative shall be on the panel directory cards. Type the room numbers and items served on the cards. Three-complete separate copies of all directories, neatly bound, shall be delivered to the Owner's Representative.

14. Revise existing panelboard directories. Furnish new cards as needed. Directories shall be typewritten or printed using a computer.

15. Circuit numbers indicated on the drawings are the actual numbers assigned to the circuit in the panelboard and shall not be varied without the consent of the Architect/Engineer.

16. Branch circuit wiring may be nonmetallic-sheathed cable where concealed and allowed by Code, Type NM. NOTE: All romex shall be Properly Supported. (Provide continuous ground wire.)

17. Underground wiring may be installed in rigid nonmetallic conduit. In locations where nonmetallic conduits are used, change to heavy wall metallic conduit of the same internal diameter before rising out of ground. Provide metallic conduit elbows.

    a. Pitch conduits a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes to drain in both directions.

    b. Provide a means for drainage, such a hole drilled in the bottom of the conduit, at low point of underground conduits. Coordinate drainage with Divisions 31 and 33.

18. Feeder circuit wiring shall be in conduit or EMT.

19. All wiring in outside walls shall be in conduit or EMT.

20. All wiring in masonry walls shall be in conduit or EMT.

21. In general, conductors shall be the same size from the last protective device to the load and shall have an ampacity the same as or greater than the ampacity of the protective device where the wire size is not shown on the drawings. Use the 60°C ampacity rating for wire sizes No. 12 through No. 1. For 120V circuits, home runs longer than 100 feet shall be minimum No. 10 AWG, longer than 200 feet shall be minimum No. 8 AWG.

B. Grounding:

1. The entire electrical system shall be permanently and effectively grounded in accordance with Code requirements. Maintain the existing grounding systema and verify its performance and integrity.

2. Connections to junction boxes, equipment frames, etc., shall be bolted.

3. Conduit Systems:

a. Ground all metallic conduit systems.

b. Conduit systems shall contain a grounding conductor sized per NEC Table 250-122 or as shown on the drawings. Increase conduit size where necessary to accommodate the grounding conductor.

4. Feeders and Branch Circuits: Install green grounding conductors with all feeders and branch circuits.

5. Bare copper ground conductors shall be painted with bitumastic paint where they enter and leave concrete structures.

6. Bare copper ground conductors shall be a minimum of 30" below finished grade.

7. Lighting Fixtures: Conduits shall not be used for grounding fixtures. Green equipment grounding conductor must be bonded to all fixtures.

C. Alterations:

1. The Contractor shall study all drawings and specifications, visit the site, and acquaint himself with the existing conditions and the requirements of the plans and specifications. No claim will be recognized for extra compensation due to the failure of the Contractor to familiarize himself with the conditions and extent of the proposed work.

2. The Contractor shall execute all alterations, additions, removals, relocations or new work, etc., as indicated or required to provide a complete installation in accordance with the intent of the drawing and specifications.

3. Reconnect existing circuits to remain. Remove existing equipment to be discontinued.

4. Any existing work disturbed or damaged by the alterations or new work shall be repaired or replaced to the Engineer's satisfaction.

5. Equipment relocated or removed and reinstalled shall be cleaned and repaired to a first-class condition before reinstallation.

D. Continuity of Services: Arrange to execute work at such times and in such locations to provide uninterrupted service to the building or any of its sections. If necessary, temporary power shall be installed to provide for this condition. Authorization for interrupting service shall be obtained in writing from the Owner. Any interruption of normal supply shall be performed during an overtime period to be scheduled with the Owner. Cost for overtime work shall be included in the bid.

E. Identification:

1. Provide tags on each end of all pulled wires giving location of other end.

2. Provide phenolic nameplates for all panelboards, motor starters, disconnect switches (except switches located at motors), and duct smoke detector remote test/alarm-indicating stations.

3. Label each receptacle faceplate and equipment disconnect using machine-printed thermal adhesive labels to indicate source panel and branch circuit. For receptacles connected to normal power, labels shall be white with black letters. For receptacles connected to circuits from operational standby (OS) panels, labels shall be red with white letters.

F. Record Drawings: The Contractor shall keep on the job a set of prints showing any changes to the installation. These shall be given to the Engineer at the completion of the work.

G. Testing and Adjusting:

1. The entire installation shall be free from short-circuits and improper grounds. Tests shall be made in the presence of the Engineer or his representatives.

2. Each individual lighting circuit shall be tested at the panel; and in testing for insulation resistance to ground, the lighting equipment shall be connected for proper operation. In no case shall the insulation resistance be less than that required by the National Electrical Code. Failures shall be corrected in a manner satisfactory to the Architect/Engineer.

3. Each system shall be completely tested and shall be adjusted for proper operation as required by the Engineer.

END OF SECTION 261000