

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

CONTRACT DOCUMENTS

CONTRACT 2024.15

VARIABLE MESSAGE SIGN AND WALKWAY REPLACEMENT
NORTHBOUND MAINLINE MM 30.35 &
SOUTHBOUND MAINLINE MM 40.7

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

	<u>PAGE</u>
NOTICE TO CONTRACTORS	N-1
PROPOSAL	P-1
CONTRACT AGREEMENT	C-1
CONTRACT BOND	CB-1
FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT	F-1
 <u>ARRANGEMENT OF SPECIFICATIONS</u>	
PART I – SUPPLEMENTAL SPECIFICATIONS	SS-1
PART II - SPECIAL PROVISIONS	SP-1

MAINE TURNPIKE AUTHORITY

NOTICE TO CONTRACTORS

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

CONTRACT 2024.15

VARIABLE MESSAGE SIGN AND WALKWAY REPLACEMENT
NORTHBOUND MAINLINE MM 30.35 &
SOUTHBOUND MAINLINE MM 47.7

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 May 16, 2024 at which time and place the Proposals will be publicly opened and read. Bids will be accepted from Contractors **prequalified** by the Maine Department of Transportation for Highway Construction Projects. All other bids may be rejected. This Project includes a wage determination developed by the State of Maine Department of Labor.

The work consists of removing and replacing a Variable Message Sign (VMS) and walkway on the Northbound Mainline overhead sign structure at Mile Marker 30.35 and fabricating and installing a walkway to the Southbound Mainline overhead sign structure at Mile Marker 47.7. All work shall be in accordance with the Contract Plans and these Specifications. The Contractor is responsible for completing a site visit prior to submitting their bid to understand the full extent of work required and temporary access requirements. Maintenance of traffic shall be provided by the Contractor in accordance with these Specifications. The selected Contractor shall provide a minimum of one week notice prior to the start of work. All work shall be completed by June 1, 2025.

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

All work shall be governed by the Specifications entitled "State of Maine, Department of Transportation, Standard Specifications, Revision of November 2014", "Standard Details, Revision of November 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.

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 2024.15

VARIABLE MESSAGE SIGN AND WALKWAY REPLACEMENT
NORTHBOUND MAINLINE MM 30.35 &
SOUTHBOUND MAINLINE MM 47.7

MAINE TURNPIKE AUTHORITY

PROPOSAL

CONTRACT 2024.15

VARIABLE MESSAGE SIGN AND WALKWAY REPLACEMENT
NORTHBOUND MAINLINE MM 30.35 &
SOUTHBOUND MAINLINE MM 47.7

TO MAINE TURNPIKE AUTHORITY:

The work consists of removing and replacing a Variable Message Sign (VMS) and walkway on the Northbound Mainline overhead sign structure at Mile Marker 30.35 and fabricating and installing a walkway to the Southbound Mainline overhead sign structure at Mile Marker 47.7. All work shall be in accordance with the Contract Plans and these Specifications. The Contractor is responsible for completing a site visit prior to submitting their bid to understand the full extent of work required and temporary access requirements. Maintenance of traffic shall be provided by the Contractor in accordance with these Specifications.

This Work will be done under a Contract known as Contract 2024.15 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. 2024.52
 VARIABLE MESSAGE SIGN AND WALKWAY REPLACEMENT
 NORTHBOUND MAINLINE MILE MARKER 30.35 &
 SOUTHBOUND MAINLINE MILE MARKER 47.7**

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
645.124	REPLACE VMS & WALKWAY MM30.35	Lump Sum	1				
645.125	FABRICATE AND INSTALL WALKWAY MM 47.7	Lump Sum	1				
652.39	WORK ZONE TRAFFIC CONTROL	Lump Sum	1				
659.10	MOBILIZATION	Lump Sum	1				
TOTAL:							

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

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

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

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

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

_____ (SEAL)

_____ (SEAL)

*Affix Corporate Seal
or Power of Attorney
Where Applicable*

_____ (SEAL)

By: _____

Its: _____

Information below to be typed or printed where applicable:

INDIVIDUAL:

(Name)

(Address)

PARTNERSHIP - Name and Address of General Partners:

(Name)

(Address)

(Name)

(Address)

(Name)

(Address)

(Name)

(Address)

INCORPORATED COMPANY:

(President)

(Address)

(Vice-President)

(Address)

(Secretary)

(Address)

(Treasurer)

(Address)

MAINE TURNPIKE AUTHORITY
MAINE TURNPIKE
YORK TO AUGUSTA
CONTRACT AGREEMENT

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

_____ herein termed the “Contractor”:

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

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

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

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

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

AUTHORITY -

MAINE TURNPIKE AUTHORITY

By: _____

Title: CHAIRMAN

Date of Signature: _____

ATTEST:

Secretary

CONTRACTOR -

CONTRACTOR

By: _____

Title: _____

Date of Signature: _____

WITNESS:

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS that _____
of _____ in the County of _____ and State of _____
as Principal, and _____ a Corporation duly organized under the
laws of the State of _____ and having a usual place of business in _____

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

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

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

Witnesses:

CONTRACTOR

_____ (SEAL)

SURETY

_____ (SEAL)

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

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

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

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

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

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

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

(Contractor)

By:

Title:

State of MAINE

County of _____

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

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

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

(Company Name)

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

(SEAL)

Notary Public

My Commission Expires: _____

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART I – SUPPLEMENTAL SPECIFICATIONS

(Rev. November 10, 2016)

Supplemental Specifications are available at www.maineturnpike.com

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

PART II - SPECIAL PROVISIONS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
—	GENERAL DESCRIPTION OF WORK	SP-1
—	PLANS	SP-1
101.2	DEFINITION	SP-1
103.4	NOTICE OF AWARD	SP-1
104.3.8	WAGE RATES AND LABOR LAWS	SP-2
104.4.6	UTILITY COORDINATION	SP-5
104.4.7	COOPERATION WITH OTHER CONTRACTORS	SP-6
107.1	CONTRACT TIME AND CONTRACT COMPLETION DATE	SP-7
626	FOUNDATIONS, CONDUIT, JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS (Conduit and Foundations)	SP-8
626	FOUNDATIONS, CONDUIT, JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS (Quazite Junction Box)	SP-9
645	HIGHWAY SIGNING (Install VMS & Replace Walkway MM 30.35) (Fabricate and Install Walkway MM 47.7)	SP-11
652	MAINTENANCE OF TRAFFIC	SP-19
652	MAINTENANCE OF TRAFFIC (Specific Project Maintenance of Traffic Requirements)	SP-44
Appendix	VMS AND CABINET DETAIL SHEETS	APP A

MAINE TURNPIKE AUTHORITYSPECIFICATIONSPART 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

This work shall consist of a replacing the Variable Message Sign (VMS, supplied by MTA) and walkway on the Northbound Mainline overhead sign structure at Mile Marker 30.35 and adding a walkway to the Southbound Mainline overhead sign structure at Mile Marker 47.7. The work shall be in accordance with the Special Provisions and Plans attached hereto. In general, the work shall include removing and replacing the VMS and Walkway on the Southbound overhead sign structure at Mile Marker 30.35, fabricating and installing a new walkway on the Northbound overhead sign structure at Mile Marker 47.7, replacing damaged conduit and junction box, installing a VMS cabinet, powering and testing the new VMS sign, maintenance of traffic, and mobilization of equipment. VMS and Cabinet will be supplied by the Authority and will be available to the Contractor for transport from the Maine Turnpike Sign Shop in Cumberland.

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 2024.15 – Variable Message Sign and Walkway Replacement Northbound Mainline Mile Marker 30.35 & Southbound Mainline Mile Marker 47.7”. 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 DefinitionHolidays

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

Juneteenth Day 2024
(June 19, 2024)

Independence Day 2024
(Fourth of July)

6:00 a.m. preceding Wednesday to
6:00 a.m. the following Monday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on May 23, 2024.

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.

2024 Fair Minimum Wage Rates -- Heavy & Bridge York County

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons And Blockmasons	\$35.00	\$0.86	\$35.86
Bulldozer Operator	\$31.50	\$7.53	\$39.03
Carpenter	\$30.65	\$4.06	\$34.71
Cement Masons And Concrete Finisher	\$25.33	\$17.07	\$42.40
Commercial Divers	\$30.00	\$4.62	\$34.62
Construction And Maintenance Painters	\$25.75	\$23.07	\$48.82
Construction Laborer	\$26.91	\$5.17	\$32.08
Crane And Tower Operators	\$35.50	\$3.05	\$38.55
Crushing Grinding And Polishing Machine Operators	\$23.00	\$4.94	\$27.94
Drywall And Ceiling Tile Installers	\$26.20	\$10.62	\$36.82
Earth Drillers - Except Oil And Gas	\$24.16	\$2.53	\$26.69
Electrical Power - Line Installer And Repairers	\$38.93	\$10.57	\$49.50
Electricians	\$34.00	\$24.65	\$58.65
Elevator Installers And Repairers	\$68.38	\$45.29	\$113.67
Excavating And Loading Machine And Dragline Operators	\$33.00	\$3.15	\$36.15
Excavator Operator	\$35.45	\$5.20	\$40.65
Fence Erectors	\$24.00	\$2.05	\$26.05
Flaggers	\$20.00	\$0.50	\$20.50
Floor Layers - Except Carpet/Wood/Hard Tiles	\$27.00	\$6.21	\$33.21
Glaziers	\$37.00	\$6.60	\$43.60
Grader/Scraper Operator	\$23.00	\$1.99	\$24.99
Hazardous Materials Removal Workers	\$21.50	\$1.54	\$23.04
Heating And Air Conditioning And Refrigeration Mechanics And Installers	\$32.00	\$5.46	\$37.46
Heavy And Tractor - Trailer Truck Drivers	\$28.50	\$3.36	\$31.86
Highway Maintenance Workers	\$20.00	\$0.00	\$20.00
Industrial Machinery Mechanics	\$32.00	\$0.96	\$32.96
Industrial Truck And Tractor Operators	\$30.00	\$2.90	\$32.90
Insulation Worker - Mechanical	\$24.05	\$3.59	\$27.64
Ironworker - Ornamental	\$27.75	\$4.50	\$32.25
Light Truck Or Delivery Services Drivers	\$22.84	\$1.25	\$24.09
Millwrights	\$31.00	\$5.71	\$36.71
Mobile Heavy Equipment Mechanics - Except Engines	\$30.00	\$2.21	\$32.21
Operating Engineers And Other Equipment Operators	\$28.00	\$2.67	\$30.67
Paver Operator	\$25.30	\$3.73	\$29.03
Pile-Driver Operators	\$35.00	\$1.73	\$36.73
Pipelayers	\$28.50	\$4.89	\$33.39
Plumbers Pipe Fitters And Steamfitters	\$29.75	\$4.02	\$33.77
Pump Operators - Except Wellhead Pumpers	\$31.49	\$32.08	\$63.57
Radio Cellular And Tower Equipment Installers	\$27.00	\$3.90	\$30.90
Reclaimer Operator	\$27.03	\$7.68	\$34.71
Reinforcing Iron And Rebar Workers	\$30.83	\$24.97	\$55.80
Riggers	\$31.25	\$7.68	\$38.93
Roofers	\$24.00	\$3.35	\$27.35
Screed/Wheelman	\$29.25	\$4.94	\$34.19
Sheet Metal Workers	\$27.38	\$6.74	\$34.12
Structural Iron And Steel Workers	\$30.83	\$24.97	\$55.80
Tapers	\$28.00	\$1.71	\$29.71
Telecommunications Equipment Installers And Repairers - Except Line Installers	\$28.33	\$6.08	\$34.41
Telecommunications Line Installers And Repairers	\$26.00	\$2.65	\$28.65
Tile And Marble Setters	\$27.75	\$6.73	\$34.48

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
Wage & Hour Director
Bureau of Labor Standards

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.

2024 Fair Minimum Wage Rates -- Heavy & Bridge Cumberland County

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons And Blockmasons	\$35.00	\$0.86	\$35.86
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Carpenter	\$30.65	\$4.06	\$34.71
Cement Masons And Concrete Finisher	\$24.35	\$15.65	\$40.00
Commercial Divers	\$26.50	\$2.66	\$29.16
Construction And Maintenance Painters	\$27.50	\$23.07	\$50.57
Construction Laborer	\$25.00	\$4.68	\$29.68
Crane And Tower Operators	\$34.50	\$4.29	\$38.79
Crushing Grinding And Polishing Machine Operators	\$23.00	\$4.94	\$27.94
Drywall And Ceiling Tile Installers	\$26.20	\$10.62	\$36.82
Earth Drillers - Except Oil And Gas	\$24.16	\$2.53	\$26.69
Electrical Power - Line Installer And Repairers	\$38.93	\$9.75	\$48.68
Electricians	\$33.41	\$12.91	\$46.32
Elevator Installers And Repairers	\$68.38	\$45.29	\$113.67
Excavating And Loading Machine And Dragline Operators	\$31.50	\$3.08	\$34.58
Excavator Operator	\$35.00	\$4.94	\$39.94
Fence Erectors	\$24.00	\$2.05	\$26.05
Flaggers	\$20.00	\$0.50	\$20.50
Floor Layers - Except Carpet/Wood/Hard Tiles	\$27.00	\$6.21	\$33.21
Glaziers	\$37.00	\$6.60	\$43.60
Grader/Scrapper Operator	\$23.00	\$1.99	\$24.99
Hazardous Materials Removal Workers	\$21.50	\$1.54	\$23.04
Heating And Air Conditioning And Refrigeration Mechanics And Installers	\$32.00	\$5.46	\$37.46
Heavy And Tractor - Trailer Truck Drivers	\$28.25	\$3.63	\$31.88
Highway Maintenance Workers	\$20.00	\$0.00	\$20.00
Industrial Machinery Mechanics	\$32.00	\$0.96	\$32.96
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Insulation Worker - Mechanical	\$24.05	\$3.59	\$27.64
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Millwrights	\$31.00	\$7.59	\$38.59
Mobile Heavy Equipment Mechanics - Except Engines	\$29.38	\$3.44	\$32.82
Operating Engineers And Other Equipment Operators	\$28.00	\$2.67	\$30.67
Paver Operator	\$25.30	\$3.73	\$29.03
Pile-Driver Operators	\$35.00	\$1.73	\$36.73
Pipelayers	\$28.50	\$4.89	\$33.39
Plumbers Pipe Fitters And Steamfitters	\$29.75	\$4.33	\$34.08
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Reclaimer Operator	\$27.03	\$7.68	\$34.71
Reinforcing Iron And Rebar Workers	\$30.83	\$24.97	\$55.80
Riggers	\$31.25	\$7.68	\$38.93
Roofers	\$24.00	\$3.35	\$27.35
Screed/Wheelman	\$29.25	\$4.94	\$34.19
Sheet Metal Workers	\$27.38	\$6.74	\$34.12
Structural Iron And Steel Workers	\$29.93	\$5.74	\$35.67
Tapers	\$28.00	\$1.71	\$29.71
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Telecommunications Line Installers And Repairers	\$26.00	\$2.65	\$28.65
Tile And Marble Setters	\$27.75	\$6.73	\$34.48

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
Wage & Hour Director
Bureau of Labor Standards

104.4.6 Utility Coordination

- A. Pre-construction Utility Meeting Whereas utility impacts are not expected as part of this project, a Pre-Construction Utility Meeting will not be held for this project.
- B. Utilities Within Right-of-Way: Except as provided otherwise in the Contract including but not limited to subsection E - Temporary Relocations below, all Utility Facilities of all Utility Companies within the Right-of-Way will be relocated and adjusted as provided in the Contract by and at the expense of the affected Utility Company, provided, however, that the Contractor is responsible for scheduling its Work in accordance with the time allowed for utility relocation as provided in the Contract. Utility relocation Work may not proceed without authorization from the Department.
- C. Contractor's Responsibilities
1. Utility Coordination –The Contractor has primary responsibility for coordinating its work with utilities after contract award. The Contractor shall communicate directly with the utilities regarding any utility work necessary to maintain the Contractor's schedule and prevent project construction delays. The Contractor shall notify the Resident of any issues. The Contractor shall plan and conduct its work accordingly.
 2. The Contractor must exercise every reasonable precaution to prevent damage to Utility Facilities or interruption to utility services known to or discovered by the Contractor, whether or not shown on the Plans. Such precautions must include notice to Utility Companies before undertaking Work that could damage Utility Facilities. The Contractor must provide each Utility Company with notice at least three Business Days before the date a Utility Company will have to support any pole.
 3. The Contractor must take all reasonable precautions to determine the presence of underground Utility Facilities before commencing any excavation Work and must provide all affected Utility Companies with at least 72-hour prior notice of the proposed excavation. The Contractor must comply with 23 MRSA § 3360-A, entitled "Protection of Underground Facilities," Maine's "Dig Safe" statute, and also contact the non-member underground facility operators in the Maine Public Utilities Commission's "OK-TO-DIG" directory.
 4. **The contractor shall notify the Resident 10 calendar days prior to submitting a utility locate request through Dig Safe so that the Resident can arrange for Maine Turnpike underground utility location. All proposed sign locations and excavation shall be marked at the notification time.**
 5. The Contractor must maintain initial markings (spray paint, stakes, etc.) made by the authorized representative of a Utility Company to indicate the location of underground Utility Facilities and otherwise comply with 23 MRSA § 3360-A(4).
 6. The Contractor must cooperate with Utility Companies in its relocation or operations so that these operations proceed in a logical sequence, minimize duplication of Work, and avoid unnecessary interruptions to utility service.

7. If utility services are interrupted as a result of the Contractor's Work, the Contractor must promptly notify the appropriate Utility Company and must cooperate fully in the restoration of service. If service is interrupted, repair Work will be continuous until the service is restored. No Work can be undertaken around fire hydrants until the local fire authority has approved provisions for continued services.
8. The Contractor must schedule its Work so as to provide for all Utility Company Work and to complete the Work within the Contract Time. The estimated number of workdays required by each Utility Company to perform its relocation Work contained in the Contract is provided by the Utility Companies and are estimates only. Such Utility Facility relocation times assume normal Working times (Monday through Friday, 8 hours per day), and are dependent upon normal weather, normal Working conditions, and freedom from emergencies. The Authority is not responsible for the accuracy of these estimates. If a Utility Company fails to perform its Work within the time frames set forth in the Contract or in the minutes of the Pre-construction Utility Meeting, and such failure affects the Contractor's Critical Path, the Contractor may request a suspension of Work pursuant to Section 107.5.2 and such Delay will be analyzed in accordance with Section 109.5 - Adjustments for Delay.
9. Any clearing and tree removal that is a part of the Contract and that must be done in areas where Utility Companies are involved must be completed by the Contractor before the Utility Company can relocate its Utility Facilities. Any clearing, cutting of single trees, or limbing required for the temporary or permanent Utility Facility location must be approved by the Authority. The Contractor must provide the Authority with prior notice of at least 4 Days before removing or trimming any trees or other vegetation.
10. If blasting occurs on the Project, the Contractor must provide each Utility Company having Utility Facilities that could be damaged by the blast with at least 24-hour prior notice that includes the anticipated time of the initial blast.
11. If the Contractor observes a Utility Company Working within the Project Limits in a manner that (A) violates the MUTCD, the Contractor's Traffic Control Plan, or an applicable OSHA requirement or commonly accepted safety practices, and (B) represents a clear and immediate risk of significant bodily injury to any person within the Project Limits, then the Contractor must notify the Resident and the Utility Company immediately.
12. The Contractor agrees to indemnify, defend, and hold harmless the Authority from and against any and all claims or causes of action arising from any act or omission of the Contractor, the Subcontractors or their respective agents, representatives, or employees for failure to comply with this Section. This clause is not meant to limit in any way the Contractor's general indemnification obligations under this Contract.

D. Cost The cost of all Work related to utility coordination is Incidental to the Contract.

104.4.7 Cooperation With Other Contractors

This subsection is amended by the addition of the following:

Adjacent Contracts currently scheduled for the 2024 Construction season include:

- MTA Contract 2024.02 Portland Area Pavement Rehabilitation Southbound MM 42.0 to MM 49.3.

107.1 Contract Time and Contract Completion Date

This Subsection is amended by the addition of the following:

- The new VMS is expected to be available by September 2, 2024.
- All work on the site shall be completed on or before June 1, 2025.

SPECIAL PROVISION
SECTION 626
FOUNDATIONS, CONDUIT, AND JUNCTION BOXES
FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS

(Conduit and Foundations)

The provision of Section 626 of the 2014 MaineDOT Standard Specifications shall apply with the following additions and modifications:

626.02 Materials

First sentence of second paragraph shall be replaced:

All electrical equipment shall conform to NEMA or UL standards and conduit used for conductors shall conform to NEMA, UL or EIA standards and listed certification by a Nationally Recognized Testing Laboratory.

626.034 Concrete Foundations

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

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

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

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

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

SPECIAL PROVISIONSECTION 626FOUNDATIONS, CONDUIT, AND JUNCTION BOXES
FOR HIGHWAY SIGNING, LIGHTING, AND SIGNALS

(Quazite Junction Box)

626.031 Conduit

The third paragraph shall be deleted and replaced with:

All junction or pull boxes shall be vehicle rated with a minimum design load of 22,000lbs and installed as shown on the plans. Junction boxes for the traffic signal and communication conduit associated with the project shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems, or an approved equal. The boxes shall be 36" x 24" and 21" deep or 48" x 36" x 30" deep as noted on the plans. The words TRAFFIC SIGNAL or COMMUNICATION shall be stamped on the cover as noted in the Plans or directed by the Resident. All existing junction boxes in useable condition shall be removed and stacked as directed by the Resident Engineer.

Junction boxes for the electrical associated with highway lighting shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems or an approved equal. The boxes shall be 18" x 11" and 18" deep or 48" x 36" x 30" deep or as noted on the Plans. New boxes shall have the word LIGHTING stamped on the cover as noted in the Plans or directed by the Resident. The boxes shall have a 22,000-lb. load rating.

The fourth paragraph shall be deleted and replaced with:

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

The following shall be added to the end of the fifth paragraph:

During the backfilling of the trench, a "buried conduit" warning tape shall be placed above the conduit. This warning tape shall be capable of being located by a cable locator and shall be labeled and colored as appropriate to the type of utility the conduit is intended for.

626.033 Polyvinylchloride Conduit Installation

The following paragraph shall be added:

Exposed conduit shall be rigidly and securely fastened with acceptable fasteners or supports, as indicated on the plans or approved. Except as otherwise authorized, fasteners or

supports shall not be placed more than 6 feet apart on center. Conduits shall generally be supported by an approved spacer at the point of support so that there is an air space between the conduit and the supporting surface. Ends of conduit terminating in any box without a threaded hub shall be provided with a metallic locknut and insulated bushings on the inside of the box.

626.04 Method of Measurement

The following sentence is added:

Quazite junction box shall not be measured for separately for payment but shall be incidental to 645.124 pay item.

SPECIAL PROVISIONSECTION 645HIGHWAY SIGNING

(Replace VMS & Walkway MM 30.35)
(Install Walkway MM 47.7)

645.01 Description

The following paragraph is added:

This work shall consist of the removal and disassembly of the Variable Message Sign (VMS), mounting brackets, and walkway and replacement with a new VMS (provided by MTA), mounting brackets and walkway at the MM 30.35 overhead sign structure as specified herein and as shown on the Plans. The Contractor shall dispose of the existing mounting brackets and walkway components and transport the existing VMS to the MTA Crosby Maintenance Facility. The work shall also consist of the fabrication and installation of a new walkway at the MM 47.7 overhead sign structure as specified herein and as shown on the Plans.

This work includes the following:

- **MM 30.35 Overhead Sign Structure**

- Removal and disassembly of the existing overhead VMS and support brackets, walkway, and removal of wiring and controller cabinet. The existing VMS and controller cabinet shall be transported to, and stacked at, the MTA Sign Shop in Cumberland, or as directed by the Resident. All VMS support brackets and walkway assembly components shall be disposed of by the Contractor.
- Removal and disposal of the existing cabinet concrete foundations to 24 inches below existing grade.
- All conduits running from the existing cabinet to the sign and services shall have wiring removed and the conduits shall be capped.
- MTA shall provide the new VMS sign and cabinet for Contractor Installation. The VMS is a DAKTRONICS model VF-2020-96-384-20-RGB. Cabinet shall be a Vanguard 334 Equipment Cabinet. See Appendix A for sign details. VMS and Cabinet will be available to the Contractor for transport from the MTA Sign Shop in Cumberland.
- Installation of the VMS with new vertical support members, new controller cabinet, and all labor, materials, and equipment required for the VMS to be fully operational. This includes all trenching, conduit installation, backfill, wiring, electrical work from the existing service pole, and other incidentals required to complete the work. Location of controller cabinet shall be determined in the field by the Resident Engineer.
- Fabrication and installation of the walkway.

- Replacing the junction box, galvanized metal conduit, lightning suppression system, and grounding on the existing sign structure.
 - Installing and connecting utility power, configuring, and system testing the variable message sign (VMS), VMS controller, ground mounted control cabinet, in its new location as shown on the plans.
 - The VMS and associated controls shall be fully operational within 3 weeks after the VMS installation.
 - Removal of the grout pads underneath the existing overhead sign structure column base plates and wrapping space between base plate and top of foundation with AWG #16 stainless steel wire cloth with ¼” maximum opening.
 - Repairing areas of erosion around the sign structure foundations.
- **MM 47.7 Overhead Sign Structure**
 - Fabrication and installation of the walkway as specified and shown in the Plans.

645.02 General

The following paragraphs are added:

Removal and replacement of the VMS and walkway shall be completed in accordance with the details as shown on the Plans and provided in these Specifications.

Steel components shall be fabricated and installed in accordance with Standard Specification Section 504 Structural Steel.

All dimensions related to the sign truss at Mile Market 30.35 shown on the plan are assumed. The Contractor shall field measure all overhead sign structure dimensions shown in the plans prior to submittal of shop drawings. The Contractor shall submit fabrication drawings considering field measured dimensions for the VMS support system and walkway for review and approval by the Turnpike. The submittal shall include a copy of the Contractor’s field measurements.

VMS and walkway installation shall be completed within the lane closure and traffic stoppage periods noted in Specification 652 – Maintenance of Traffic.

All materials required for installing and connecting to utility power and configuring the proposed VMS, including conduit, shall be new.

Any damage caused to existing sign structure by the Contractor shall be repaired or replaced by the Contractor at no additional cost to the Authority.

Workmanship shall conform to the requirements of: NEC, NESC, ASTM Standards, and the ANSI, the local Utility Companies, the State of Maine, Manufactures Specifications and any local ordinances that may apply except when otherwise noted on the Plans or in the Special Provisions.

Ground mounted control cabinet foundation shall be constructed as shown in the Plans and in accordance with Standard Specification Section 626 and Special Provision Section 626.

645.021 Materials

The following is added:

Structural Steel	713.01
Heavy-Hex Structural Bolts, Washers, Nuts and DTI's	713.02
Steel Conduit	715.02
Non-metallic Conduit	715.03
Conductors	718.12

All bolts, nuts, connectors and miscellaneous hardware required for installation of the VMS support brackets and walkway assembly shall be new and in accordance with the provisions of Standard Specification 504 – Structural Steel.

All replacement structural steel shall be in accordance with the materials listed in the Plans and shall be hot-dip galvanized after fabrication in accordance with the requirements of Standard Specification 504 – Structural Steel.

Walkway grating shall be 19-W-4 galvanized welded carbon steel bar grating, 175 Serrated (1-1/2" Depth), manufactured by:

P&R Metals
4017 Richard Arrington Blvd North
Birmingham, AL 35212
(877) 880-3319

Above ground conduit shall be galvanized rigid metal and underground conduit shall be schedule 80 PVC.

Electrical materials shall meet the standards herein, local and public utility codes, and the National Electrical Code (NEC).

All grounding and electrical installations shall meet the requirements of NEC, as well as all applicable state, local, and applicable public utility codes. All grounding shall meet the requirements of the manufacturers of the devices installed on the project. If the manufacturers' requirements are more stringent than those of the national, state, and local codes, then the manufacturers' grounding requirements shall apply.

Lightning suppression materials and installation shall meet current NFPA 780 standards.

The Contractor shall furnish and install Transient Voltage Surge Suppression (TVSS) device(s) for all power and communications conductors leaving the equipment cabinets, and ITS equipment, including but not limited to power service, and power and communications for all devices that are external to the cabinet.

645.023 Support Structures

The following paragraph shall replace the second paragraph under section b. Bridge, Cantilever, and Butterfly Type Sign Supports:

Signs shall be placed on the existing support structure to accommodate the minimum height requirement shown on the Plans – see Standard Specification Section 645.06. The Contractor shall use the Contract Drawings in order to determine the approximate horizontal placement of signs. Installation shall be in accordance with Section 645.06 – Installation of Type I Signs.

645.071 Removing and Installing the VMS and Walkway

The VMS shall be provided by MTA and shall be DAKTRONICS model VF-2020-96-384-20-RGB. The Contractor shall furnish and install all hardware required to attach the VMS panel to the supports. VMS shall be mounted using Zee bars attached along the top, bottom, and center of the VMS panel. The Zee bars shall be bolted to the steel supports on each side of the web as shown in the plans.

The VMS Control Cabinet shall be provided by MTA and shall be a Vanguard Model 334 Equipment Cabinet and compatible with the DAKTRONICS sign model.

The Contractor shall furnish a written plan and procedures to the Authority for the removal and disassembly of the structure, the erection of the installation of the new VMS, support brackets and walkway assembly. The installation of VMS, support brackets and walkway shall be in accordance with:

1. AASHTO “Standard Specifications for Structural Supports for Highway Traffic Signs, Luminaries and Traffic Signals”;
2. FHWA Guidelines for the Installation, Inspection, Maintenance and Repair of Structural Supports for Highway Signs, Luminaires, and Traffic Signals;

Contractor shall remove existing concrete cabinet foundations to 24 inches below grade.

The galvanized sign conduit shall be installed in accordance with Standard Specification Section 626 and Special Provision Section 626.

Areas of existing corrosion on existing components to remain shall be repaired as directed by the Resident. Repairs shall be in accordance with ASTM A 780, *Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings* (A 780), Annex A1 or A3. All cold galvanizing repair materials shall be brush applied ZRC Cold Galvanizing Compound, manufactured by ZRC Worldwide. Application shall be in accordance with the manufacturer’s written specifications.

Contractor shall maintain or remove and reset the existing radio communication antenna located on the overhead sign structure.

645.072 Conduit & Wire Installation

The Contractor shall furnish and install conduit and trenching in accordance with Standard Specification Section 626 and Special Provision 626.

The Contractor shall install pull-lines in all conduits. The ends of the lines shall be secured in such manner as to prevent accidental withdrawal of the wire. All conduit ends shall be capped with watertight conduit caps.

Ground Mounted Cabinet Foundation shall be constructed per section 626 of the Standard Specifications and Standard Detail 626(05). Conduit feeds to ground mounted cabinet foundation shall include two (2) 3" PVC for electrical power to cabinet with two (2) 3" conduits out for controls and power to VMS respectively. Embedded conduit stubs shall not be paid for separately but are included in the ground mounted cabinet foundation item.

Cable Installation shall be in accordance with Section 634.04 – Cable Installation. Contractor shall be responsible for contacting Dig-Safe prior to excavating.

Testing shall be in accordance with Section 634.09 – Testing. Once the electrical and operational testing has been successfully performed by the Contractor in the presence of the Resident, the Contractor shall provide a minimum of 48 hours of notice to Maine Turnpike tolling system personnel in order for them to complete acceptance testing of the VMS operation.

645.073 AC Power Systems

The Contractor shall provide utility power systems to VMS systems as indicated in the Contract Documents.

- a. The Contractor shall make the necessary arrangements with the utility company to ensure having needed utility service available at the time of equipment testing and turn-on. Any utility energization, connection, or disconnection delays will not be a valid reason for a time extension. The Contractor shall be responsible for all utility charges, including connection and monthly service charges, until System Acceptance.
- b. The Contractor shall adhere to all applicable NEC, IEEE 1100-1992, UL 1459, and UL 1950 standards and practices.
- c. The metered service shall include a 100 amp main disconnect.

645.074 Testing

The Contractor shall provide testing on all components of the system. The testing shall meet the following requirements:

- a. The Contractor shall propose a test plan for the VMS system and submit the test plan(s) and procedures as detailed herein. Each of the test plans shall contain the following elements:
 - i. Proposed date, time, and location of the testing
 - ii. Names and credentials of the Contractor personnel who will be conducting the testing

- iii. Descriptive overview of the proposed test procedure
 - iv. List of test equipment required to perform the testing
 - v. Test cases and test logging forms which detail every step of the test procedure
- b. Test logging forms shall be presented in tabular format, with separate columns for each of the following:
- i. Test case description detailing the test step to be performed.
 - ii. Expected result
 - iii. Actual result
 - iv. Pass/fail
 - v. Comments
- c. The Contractor shall supply separate test logging forms at the time of testing for each test plan, and for each device location. The test logging forms shall show the device location, date, and the start and end times of the test.
- d. At the end of each test logging form, there shall be signature and date locations for each of the following:
- i. Contractor personnel conducting the test
 - ii. Engineer representative witness
 - iii. Authority Resident
- e. Signatures on the test logging form will signify only that the test was performed and witnessed, not that it passed or failed.
- f. The detailed Test Plans shall be submitted to the Engineer no later than thirty (30) days prior to the beginning of each test phase.
- g. The Contractor shall have approved test plans prior to submitting a request to schedule the start of any test activities. The Contractor shall notify the Resident no less than seven (7) days prior to the beginning of any equipment or systems testing.
- h. Testing shall provide verification and documentation that all requirements as detailed in this Section and the Plans are met. The Test Plans shall be developed by the Contractor to provide a mechanism that ensures that all contract requirements have been met and tested successfully and verified.
- i. If any deviations or changes to the approved Test Plans arise, it shall be resubmitted for review and approval by the Engineer at least fourteen (14) calendar days prior to any planned test activity stage. No tests shall be conducted until the Engineer has approved the test plan.
- j. A summary of all tests shall be produced at the completion of each testing phase of the project to ensure that all requirements defined by the system are satisfied.

The VMS Control Cabinet will be provided by MTA and shall be mounted and installed at the location shown in the Plans, and in conformance with all requirements shown in the Plans. This work shall include all wiring, cabling, and connections from the VMS cabinet to the VMS panel.

- a. A concrete work pad shall be installed in front of the cabinet door. The pad shall be placed on a minimum of four inches of compacted granular material. The pad shall be set with at least one percent grade such that any water on the pad shall flow away from the cabinet. The VMS cabinet shall be secured to the concrete foundation provided by the Contractor as shown in the Contract Documents. Where the work pad is installed on a slope, the depth of the pad shall be increased such that there is at least two inches of the concrete pad below grade.
- b. All exposed, high voltage electrical terminals shall be insulated with non-conducting material such as rubber boots or silicon/rubber caulking.
- c. The VMS cabinet shall be electrically bonded to all of its associated metallic VMS support structure grounding systems, as described elsewhere in this document or in the Contract Documents.
- d. The Contractor shall furnish in a watertight container a control cabinet-wiring diagram. Three sets of identical wiring diagrams shall be furnished for each cabinet.

645.08 Method of Measurement

Replacement of the VMS and Walkway on the overhead sign structure at MM 30.35 will be measured by the lump sum for a fully operational system in place in accordance with the Contract Plans and these Specifications.

Fabrication and Installation of the Walkway on the overhead sign structure at MM 47.7 will be measured by the lump sum for a fully operational system in place in accordance with the Contract Plans and these Specifications.

645.09 Basis of Payment

The Lump Sum Payment for Replacement of VMS and Walkway at MM 30.35 shall be full compensation for the following:

- All materials, equipment, labor and hardware necessary to remove the existing VMS, support brackets and walkway in accordance with the Specifications and details as shown on the Plans. This work includes transporting and stacking the existing VMS at the specified Turnpike maintenance yard. The remaining brackets and walkway components shall be disposed of.
- Removing and disposing of existing concrete cabinet foundation, galvanized steel sign conduit, replacing the existing junction box, furnishing and installing underground PVC conduits and pull-line for conduit including trenching. Trenching for conduit will be incidental and shall include excavating, furnishing and placing screened sand and backfilling.

- Furnishing installing utility power and communication, all utility connections, attachments, hardware, meters, disconnects, associated cabling and all equipment required to install utilities associated with VMS installation.
- Installing VMS Ground Mounted Control Cabinets and constructing the VMS Control Cabinet foundations.
- VMS installation, configuration and electrical and communication testing, associated with existing VMS board and the VMS controller including full compensation for furnishing, installing, erecting, and testing: wiring in underground conduit, VMS wiring, and all other wiring, transformer enclosures, all identification tags, and all materials, labor, equipment, tools, miscellaneous hardware and incidentals necessary to complete the work. No separate payment will be made for bonding, grounding and ground rods including the relocation of the existing lightning suppression and grounding system.
- Regrouting the existing grout pads underneath the overhead sign structure column supports.
- Regrading the erosion at the overhead sign structure outside foundation.
- Touch of areas of corrosion with cold galvanizing compound.

The Lump Sum Payment for Fabrication and Installation of the Walkway at MM 47.7 shall be full compensation for the following:

- All materials, equipment, labor, and hardware necessary to fabricate and install a new walkway on the overhead sign structure at MM 47.7 in accordance with the Specifications and details shown on the Plans.

No additional compensation will be made for items replaced as a result of damage occurring during the modification or relocating of existing overhead signs.

Final payment will not be made until the system is fully operational, tested, and accepted by Maine Turnpike.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
645.124	Install VMS & Replace Walkway MM 30.35	Lump Sum
645.125	Fabricate and Install Walkway MM 47.7	Lump Sum

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, retroreflectorized, and of sufficient strength to withstand deflections using a wind speed of 80 miles/hr.

652.2.2 Signs

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

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

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

652.2.3 Flashing Arrow Board

Flashing Arrow Boards must be of a type that has been submitted to AASHTO's National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations' Approved Products List of Portable Changeable Message Signs & Flashing Arrow 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 $\frac{1}{2}$ or $\frac{5}{8}$ 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 threshold. 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 Flagging basics
4. 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 mainline 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 deceleration 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:
 - a. **Unbolting structural steel**
 - b. **Removing structural steel**
 - c. **Erecting structural steel**
 - d. **Erecting or moving sign panels on bridges or sign structures**
 - e. **Bolting structural steel**
 - f. **Loading and unloading trucks**
 - g. **Light pole removal or installation**
 - h. **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.

Temporary Mainline Shoulder Closures

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

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

The location (limits) of shoulder closures with concrete barrier are shown on the Plans. The barrier must be placed prior to the start of the work requiring concrete barrier and shall remain in place until the work activity is complete.

Equipment Moves

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

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

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

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

Request for Complete Stoppage of Traffic

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

received after 12:00 p.m. shall be considered as received the following day. The Contractor shall plan the work accordingly.

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

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

652.3.5 Installation of Traffic Control Devices

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

Portable signs shall be erected on temporary sign supports approved crashworthy devices so that the bottom of the sign is either 1) 12 inches or 2) greater than 5 feet above the traveled way. The bottom of all regulatory signs and ramp exit signs shall be a minimum of 5 feet above the traveled way. 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 **patterns. 652.4**

Flaggers

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

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

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

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

Flagger stations shall be located far enough in advance of the workspace so that approaching road users will have sufficient distance to stop at the intended stopping point. While flagging, the flagger should stand either on the shoulder adjacent to the traffic being controlled, or in the closed

lane. At a spot obstruction with adequate sight distance, the flagger may stand on the shoulder opposite the closed sections to operate effectively. Under no circumstances shall the flagger stand in the lane being used by moving traffic or have their back to oncoming traffic. The flagger should be clearly visible to approaching traffic at all times and should have a clear escape route.

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

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

652.41 Traffic Officers

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

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

652.5.1 Rumble Strip Crossing

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

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

652.6.1 Daylight Work Times

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

652.6.2 Night work

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

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

The Contractor shall have available portable floodlights for special areas.

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

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

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

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

Night Work lighting requirements:

- **Mobile Operations:** For mobile-type operations, each piece of equipment (paver, roller, milling machine, etc.) will carry indirect (i.e. balloon type) lights capable of producing at least 10 foot- candles of lighting around the work area of the equipment.
- **Fixed Operations:** For fixed-type operations (flaggers, curb, bridge, pipes, etc.), direct (i.e. tower) lighting will be utilized capable of illuminating the work area with at least 10 foot- candles of light.
- **Hybrid Operations:** For hybrid-type operations (guardrail, sweeping, In-slope excavation, etc.), either direct or indirect lighting may be utilized. The chosen lights must be capable of producing at least 10 foot-candles of light around the work area of the equipment
- **Inspection Operations:** Areas required to be inspected by the Authority will require a minimum of 5 foot-candles of lighting. This may be accomplished through direct or indirect means.

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

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

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

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

652.6.3 Traffic Coordinator and Personnel

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

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

- a. Developing, in conjunction with the Resident and Project superintendent, a traffic control program for the days' work activities which will facilitate traffic in a safe and efficient manner.
- b. Ensure that all traffic control implements (signs, arrow boards, barrels, etc.) are on-site so the traffic program can be implemented effectively.
- c. Ensure a safe and effective setup or take-down of all signing implements to least impact the traveling motorist; and,
- d. Working knowledge of construction signing/traffic control requirements in conformance with the latest issued Manual on Uniform Traffic Control Devices.
- e. The Contractor shall supplement the traffic control plan with a daily plan, which includes schedules for utilizing traffic coordinators and flaggers. This plan shall be submitted daily and agreed upon cooperatively with the Resident.

652.7 Method of Measurement

Work Zone Traffic Control will be measured as a lump sum as indicated in the Plans and Specifications for all authorized and installed traffic control devices for which traffic shall be maintained in accordance with the approved traffic control plans.

Signs (supplied by the Contractor, static and automated), signals (including temporary traffic signals), lighting devices, pavement markings, rumble strips, barriers, and barricaded, work zone crash cushions, channelizing devices, hand signaling devices, portable light towers, flashing and steady burn warning lights and beacons, flashing arrow panels (trailer mounted and vehicle

mounted), portable-changeable message signs, truck mounted equipment and trailers, traffic officers, flaggers and traffic coordinators will not be measured regardless of when or how often used or relocated on the project but shall be incidental to the Work Zone Traffic Control item. No additional payment will be made for devices that require replacement due to poor condition or inadequate retroreflectivity.

The installation and removal of existing and temporary pavement markings, regardless of material, will not be measured but shall be incidental to the Work Zone Traffic Control item. No additional payment will be made for refreshing temporary paint pavement markings due to inadequate retroreflectivity or for re-installation of temporary tape pavement markings due to poor adhesion.

Flaggers or traffic officers used during the Contract, either as directed by the Resident or for the convenience of the Contractor, will not be measured separately for payment, but shall be incidental to the Work Zone Traffic Control item. This includes use of Flaggers for 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.

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 Work Zone Traffic Control item.

Temporary portable rumble strips will not be measured but shall be incidental to the Work Zone Traffic Control item. As shown in the plans, a maximum of 3 units may be used at each lane closure. A unit shall consist of 1 group of 3 full-lane width rumble strips.

Portable Changeable Message Signs will not be measured but shall be incidental to the Work Zone Traffic Control item. This includes all costs associated with setting-up and paying for a data cellular account, technical support, training and any costs associated with the GPS location device.

652.8 Basis of Payment

The Lump Sum for Work Zone Traffic Control will be payable in installments as follows: 25% of the Lump Sum once the Contractor's Traffic Control Plan is approved; 70% of the Lump Sum paid as work progresses, proportional to the overall completion percentage of the Contract; and the remaining 5% paid upon Final Acceptance.

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, uncovered and etc. will result in a \$150 fine per traffic control device if the issue 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 Contract's Section 652 Supplemental Specifications, Special Provisions and Standard Specification and/or the Manual on Uniform Traffic Control

Devices (MUTCD) and/or the Contractor’s 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

<u>1st</u>	<u>2nd</u>	<u>3rd & Subsequent</u>
\$500	\$1,000	\$2,500

652.8.1 Work Zone Traffic Control

Work Zone Traffic Control will be paid at the Lump Sum price as indicated in the plans and specifications. Such payment will be full compensation for the development and submission of the traffic control plans for approval and for the installation, operations, maintenance, relocation, replacement, and removal of all traffic control devices for the project, including signs, signals (including temporary traffic signals), lighting devices, pavement markings, rumble strips, barriers and barricades, channelizing devices, hand signalizing devices, portable light towers, flashing and steady burn warning lights and beacons, flashing arrow panels (trailer mounted and vehicle mounted), portable-changeable message signs, truck mounted equipment and trailers, traffic officers (except State Police as authorized by the Resident), flaggers and traffic coordinators. The Lump Sum price shall also include full compensation for all daily operations and maintenance of the approved traffic control plan (maintenance of traffic control devices) and for all labor, tools, materials, equipment, incidentals, transportation, and labor required to implement the approved traffic control plans.

652.8.2 Other Items

There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time.

For PCMS that fails to operate when required the Contractor will be given 24-hours to repair or replace the PCMS. For periods longer than 24-hours, a payment deduction for the Work Zone Traffic Control item will be assessed on the pro-rated time that the PCMS is out of service.

If Contractor wishes to utilize temporary portable rumble strips, then the Contractor may propose use of them to the Authority for consideration. If the Authority grants permission for use of temporary portable rumble strips, they shall be considered incidental to the Work Zone Traffic Control item.

<u>Pay Item</u>	<u>Pay Unit</u>
652.39 Work Zone Traffic Control	Lump Sum

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. Additional requirements may be found in Section 107 (work restrictions and completion dates) and the maintenance of traffic Plans.

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

When installing construction signs along the Turnpike northbound median south of the Route 236 underpass, the Contractor shall use the MTA Traffic Control Detail 35L (Mobile Operation — Passing Lane Closure) with a minimum of three (3) shadow vehicles, each equipped with an arrow board and a TMA.

Where traffic control signs and/or channelizing devices are required on or south of the Piscataqua River Bridge (High Level Bridge), the Contractor shall coordinate the placement of signs and channelizing devices with the New Hampshire Department of Transportation (NHDOT) Transportation Management Center (TMC) at 603-271-6862 and the New Hampshire State Police at 603-223-3861.

Maine Turnpike Traffic Control Requirements

Working directly over traffic or 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. Bolting structural steel
5. Removing and replacing conduit
6. Loading and unloading trucks

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.

**MAINTENANCE OF TRAFFIC LIMITATION TABLE: TURNPIKE MAINLINE APPROVED
SHOULDER CLOSURES AND LANE CLOSURES**

Temporary lane closures will be permitted when active work is occurring in accordance with the dates and times in the tables below with approval of the Resident.

Mainline Northbound – MM 25 – 32 July 1st, 2024 to August 30th, 2024			
	Permanent Shoulder Closures	Single Lane Closures	Double Lane Closures
Sunday PM through Monday AM	Allowed	5:00 PM to 11:00 AM	9:00 PM to 7:00 AM
Monday PM through Friday AM	Allowed	6:00 PM to 7:00 AM	10:00 PM to 7:00 AM
Friday PM through Sunday AM	Allowed	8:00 PM to 10:00 AM	10:00 PM to 9:00 AM

Mainline Southbound – MM 47 – 48 July 1st, 2024 to August 30th, 2024			
	Permanent Shoulder Closures	Single Lane Closures	Double Lane Closures
Sunday PM through Monday AM	Allowed	2:00 PM to 8:00 AM	10:00 PM to 6:00 AM
Monday PM through Friday AM	Allowed	Anytime except 8:00 AM to 9:00 AM	8:00 PM to 6:00 AM
Friday PM through Sunday AM	Allowed	Anytime until Sunday at 11:00 AM	8:00 PM to 9:00 AM

Note: Contractor may be required to remove lane closures if backups on mainline occur.

APPENDIX A

DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

VF-2020-96x384-20-RGB

Face Panel	Aluminum mask over polycarbonate face panel
Pixel Pitch	20mm
Operating Temp. Range	-30° F to 165° F (-34° C to 74° C)
Humidity Range	0 to 99%, non-condensing
Ventilation	Positive pressure, forced-air, filtered system
Color Capability	Full-color RGB (32,000+ colors)
Brightness - Typical Nits	12,400
Viewing Angle	30°
Power	120-240 VAC single phase (3-wire plus ground)
Controller Location	External Controller
Control Protocol	NTCIP, UTMC, and other protocols by request.
Communications options	Cellular, fiber, direct Ethernet and radio Ethernet
Structural Design Standard	NEMA 3R
Cabinet Enclosure Standard	AASHTO
NEMA Compliance	NEMA TS-4, Section 2 Environmental Standards

Note 1: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 2: See contract specific drawings for customized product weights

Note 3: Other protocols available. Please consult your Daktronics representative.

Note 4: Display cabinet depth measurement includes "Z" mounting brackets on the rear of the cabinet.

Note 5: Face panel and border will be black. Rear of display is mill finish aluminum.

Note 6: Amps per per leg calculation is based on the maximum load of a typical DMPS, including a fully loaded 15A convenience outlet.

Note 7: Typical power includes a partially-illuminated LED sign (15% of the amber pixels or 38% of the RGB pixels at full intensity), the sign controller, and ventilation system.

DISPLAY SPECIFICATION

Overall Cabinet Size (HxWxD)	7'11" x 28'1" x 4'0"
Matrix Size (HxW)	96 Pixels x 384 Pixels
Display Weight	3800 lbs
Total Maximum Power Consumed (Amps per Leg)	31
Typical Power Consumed (Watts)	1676

201 Daktronics Drive PO Box 5128 Brookings, SD 57006-5128

800-325-8766 605-692-0200 fax 605-697-4700

www.daktronics.com email sales@daktronics.com

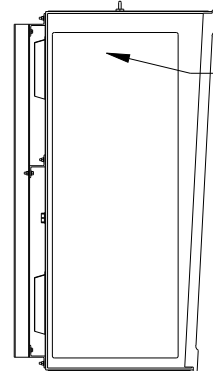
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VERTICAL SUPPORT SPACING TABLE

MOUNTING CALCULATIONS: SEE NOTE 11
 IF THE VERTICAL SUPPORTS EXCEED THE STATED MAXIMUM SPACINGS
 THEN CONTACT DAKTRONICS ENGINEERING.

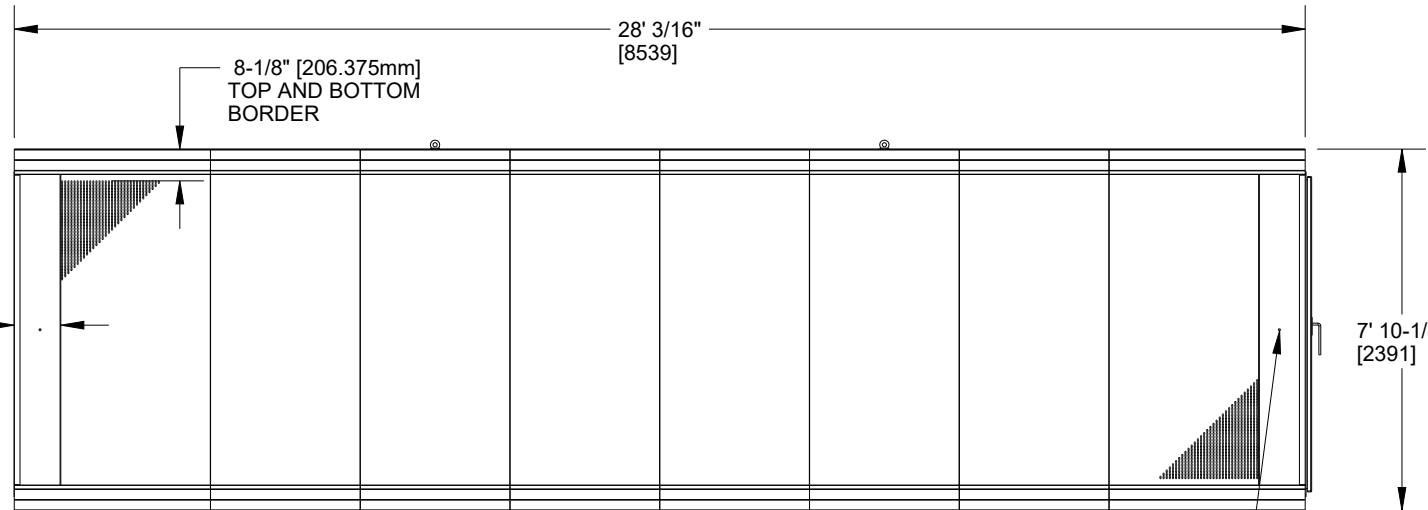
MAX VERTICAL SPACING "A"	6'-6"
MAX END SPACING "B"	11"
MINIMUM # OF VERTICAL SUPPORTS REQUIRED	6



SECOND ACCESS DOOR OPTIONAL BASED ON PROJECT REQUIREMENTS

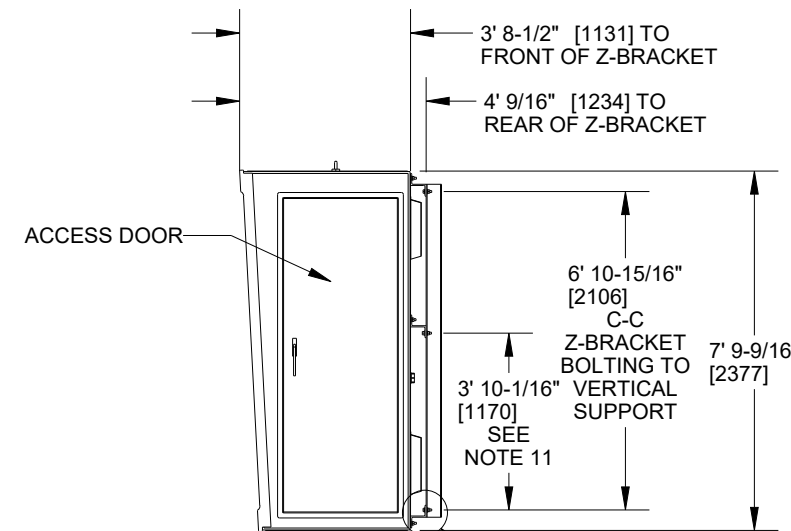
12" [304.8mm] LEFT AND RIGHT BORDER

LEFT SIDE

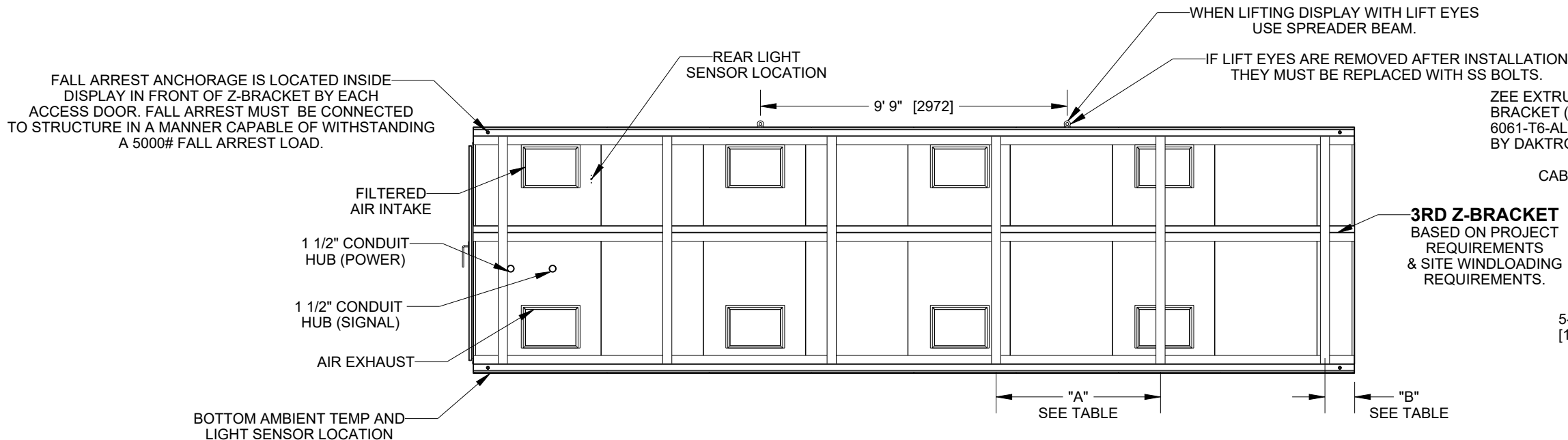


FRONT VIEW

FRONT LIGHT SENSOR LOCATION



RIGHT SIDE



REAR VIEW

3' 3-9/16" [1005] TO FRONT OF Z-BRACKET

SEE DETAIL A

FALL ARREST ANCHORAGE IS LOCATED INSIDE DISPLAY IN FRONT OF Z-BRACKET BY EACH ACCESS DOOR. FALL ARREST MUST BE CONNECTED TO STRUCTURE IN A MANNER CAPABLE OF WITHSTANDING A 5000# FALL ARREST LOAD.

FILTERED AIR INTAKE
 1 1/2" CONDUIT HUB (POWER)
 1 1/2" CONDUIT HUB (SIGNAL)
 AIR EXHAUST

BOTTOM AMBIENT TEMP AND LIGHT SENSOR LOCATION

WHEN LIFTING DISPLAY WITH LIFT EYES USE SPREADER BEAM.

IF LIFT EYES ARE REMOVED AFTER INSTALLATION THEY MUST BE REPLACED WITH SS BOLTS.

ZEE EXTRUSION MOUNTING BRACKET (ALUMINUM 6061-T6-ALLOY) PROVIDED BY DAKTRONICS

3RD Z-BRACKET BASED ON PROJECT REQUIREMENTS & SITE WINDLOADING REQUIREMENTS.

CABINET

5-15/16" [151]

5-3/16" [132]

DETAIL A SCALE 1/5

VERTICAL SUPPORTS & MOUNTING HARDWARE (PROVIDED BY OTHERS)

Z-BRACKETS ARE BOLTED TO THE REAR OF THE DISPLAY BY DAKTRONICS. EACH Z-BRACKET IS ATTACHED TO THE CABINET USING Ø5/8" A325 MECHANICALLY GALVANIZED STRUCTURAL GRADE HARDWARE. FINAL REVIEW OF MOUNTING DETAILS ARE THE RESPONSIBILITY OF THE CUSTOMER AND THE CUSTOMER'S ENGINEERS. THE VERTICAL SUPPORTS MUST BE ATTACHED AS SHOWN WITHIN THE MAXIMUM SPACING REQUIREMENTS. STAINLESS STEEL HARDWARE AVAILABLE PER CONTRACT REQUIREMENTS.

NOTES

- MATRIX SIZE 96 X 384 , 6" NOMINAL CHARACTER.
- DISPLAY WILL BE A SINGLE FACE CONFIGURATION.
- SEE ILLUSTRATIONS FOR POWER AND SIGNAL CONDUIT ENTRANCES.
- ALL DIMENSIONS ARE IN FEET & INCHES [mm].
- FULL PROTECTIVE MASKED FACE PANEL.
- MAINTENANCE OF DISPLAY IS INTERNAL VIA WALK IN CABINET.
- ALL ALUMINUM CONSTRUCTION.
- POSITIVE PRESSURE VENTILATION SYSTEM.
- WEIGHT OF THE DISPLAY IS APPROXIMATELY 3800 LBS (1724 KG).
- VERTICAL SUPPORTS DESIGNED AND SUPPLIED BY OTHERS.
- ALL DESIGN AND MOUNTING CALCULATIONS CONFORM TO "AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION"
- DISPLAYS ARE NOT DESIGNED FOR GALLOPING LOAD REQUIREMENTS IN AASHTO SECTION 11.7. DISPLAYS MAY ONLY BE INSTALLED ON STRUCTURES THAT ARE NOT SUSCEPTIBLE TO GALLOPING OR PROPER MITIGATION DEVICES SHALL BE INSTALLED TO PREVENT GALLOPING ON SUSCEPTIBLE STRUCTURES SUCH AS MONOTUBE, CANTILEVERED STRUCTURES.

03	05-MAY-2022	UPDATED NOTES SECTION TO INCLUDE ITEM 12 - EXCLUSION OF GALLOPING FROM DESIGN AND STRUCTURE INFORMATION	MMS
02	13-JAN-2022	ADDED BORDER DIMENSIONS	MMS
01	05-FEB-2018	UPDATED AASHTO SPEC	LMS
REV:	DATE:	DESCRIPTION:	BY:

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THIRD ANGLE PROJECTION

PROJECT: VANGUARD
 TITLE: SHOP DRAWING, VF-20**-96X384-20-*, 5/8" HW
 DATE: 05-MAY-22 DIM UNITS: INCHES [MILLIMETERS] SHEET REV
 SCALE: 1/50 DO NOT SCALE DRAWING 03
 DESIGN: DREITZ JOB NO. FUNC - TYPE - SIZE
 DRAWN: CKOLBEC P2032 F - 10 - B **3580630**

SWARCO

McCain 334L CONTROLLER CABINET



The McCain 334L Controller Cabinet is an enhanced modern version of the Caltrans 334 standard cabinet. The cabinet's 19-inch Electronics Industry Alliance (EIA) rack, modular design, and ample cabinet space allows for standard assemblies and components to be easily interchanged and stored, making it an excellent choice for all specialty installations. Additionally, the McCain 334L Controller Cabinet offers reduced energy consumption through the use of a high-efficiency power supply, making the cabinet environmentally friendly.



KEY BENEFITS

- Accommodates all Caltrans and FHWA requirements
- Meets lower power specifications
- Allows for a variety of applications
- Offers easy access to the cabinet's large interior
- Provides sufficient space for two 170 or 2070 controllers
- Permits interchangeability between manufacturers with standard assemblies
- Assures maximum security with industry standard locks and three-point latching system.

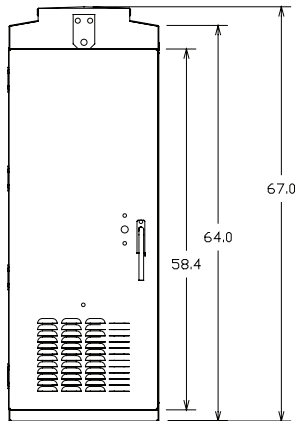
PRODUCT DESCRIPTION

The McCain 334L Controller Cabinet is perfect for specialty installations like ramp metering, CCTV, data acquisition, and surveillance. Standard assemblies include a 14-position input file that accepts two-channel or four-channel detector modules and a PDA-3L assembly with a Model 206L switching 24 V power supply and three loadswitch sockets.

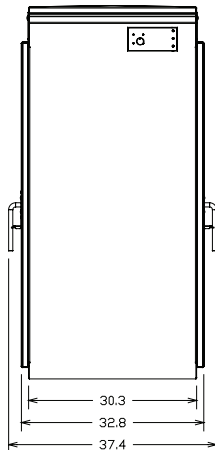
The cabinet's high-efficiency power supply saves an average of 267kWh of electricity per cabinet, per year (based on a 50% load). This green cabinet reduces energy consumption thereby saving money and minimizing your carbon footprint. The cabinet's marine-grade aluminum exterior and thermostatically controlled ventilation protects equipment from harsh and varying elements while providing filtered air for the cabinet.

McCain 334L CONTROLLER CABINET

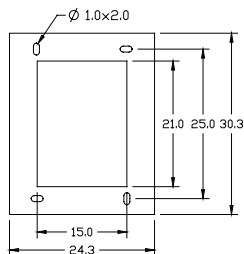
FRONT



SIDE



BOTTOM



STANDARD FEATURES

- 3-phase operation
- 2-channel or 4-channel industry standard detection modules
- Detector input with terminal blocks or Panduit ducts

ASSEMBLIES AND COMPONENTS

- Up to 28 isolated inputs
- 9 AC switched outputs
- Combined PDA-3L power distribution assembly, Model 206L 24 VDC plug-in switching power supply, and 3 loadswitch sockets
- Service panel
- Controller shelf

GENERAL SPECIFICATIONS

Dimensions ¹ :	24"W x 67"H x 30"D
Material:	5052-H32 aluminum, 0.125" thick
Finishes ² :	Natural, anodized, or powder coated
Door:	Front (1), back (1), all full size
Latching System:	3-point, choice of Corbin or Best locks
Handles:	3/4" round, stainless steel, with padlock hasp
Door Stops:	90° and 180° (±10°), bottom and 90°, top
Rack Assembly:	Removable 19" EIA rack
Ventilation:	Thermostatically controlled 100 CFM fan, louvered air intake in door, pleated filter
Mounting:	Base mounted
Shipping Weight ³ :	200 lbs

OPTIONS

- 3/4" x 16" anchor bolts for mounting (4)
- LED cabinet light(s) with door switch(es)
- Dual fans
- Communication panels
- External modems
- Pull-out drawer/shelf assembly
- Special configurations available
- 208 watch dog monitor
- Additional input files
- Police panel with lights "On/Off" and control "On/Off" switches
- Underwriter's Laboratories Listed (cabinet housing)

¹Dimensions rounded to the nearest inch

²Powder coated options include standard, anti-graffiti, and custom colors

³Without plug-ins or controller(s)