MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

CONTRACT DOCUMENTS

CONTRACT 2019.02

KENNEBUNK TRAVEL PLAZAS
PARKING EXPANSION
MILE 25.5 SB & NB
AND ROUTE 35 TRAFFIC SIGNALS

NOTICE TO CONTRACTORS

PROPOSAL

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SPECIFICATIONS

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

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

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

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MAINE TURNPIKE AUTHORITY

NOTICE TO CONTRACTORS

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

CONTRACT 2019.02

KENNEBUNK TRAVEL PLAZAS
PARKING EXPANSION
MILE 25.5 SB & NB
AND ROUTE 35 TRAFFIC SIGNALS

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 November 14, 2019 at which time and place the Proposals will be publicly opened and read. Bids will be accepted from Contractors **prequalified** by the Maine Department of Transportation for 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 expanding the parking at the Kennebunk Travel Plazas (NB & SB) in the Town of Kennebunk, Maine. The parking expansion will separate the truck parking from passenger car parking, while providing additional capacity for both. The work includes acceleration and deceleration lane extensions, relocated ramps, parking improvements, parking expansions, perimeter road improvements, clearing, lighting, stormwater facilities, utility work, drainage, maintenance of traffic, signing and pavement markings, traffic signal improvements, and all other work incidental thereto in accordance with the Plans and Specifications.

Plans and Contract Documents may be examined by prospective Bidders weekdays between 8:00 a.m. and 4:30 p.m. at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine. **The half size Plans** and Contract Documents may be obtained from the Authority upon payment of Seventy-Five ($75.00) Dollars for each set, which payment will not be returned. Checks shall be made payable to: Maine Turnpike Authority. The Plans and Contract Documents may also be downloaded from a link on our website at http://www.maineturnpike.com/Projects/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/Projects/Construction-Contracts.aspx**. For Project specific information, fax all questions to Nate Carll, Purchasing Manager, at (207) 871-7739 or email ncarll@maineturnpike.com. Responses will not be prepared for questions received by telephone. Bidders shall not contact any other Authority staff or Consultants for clarification of Contract provisions, and the Authority will not be responsible for any interpretations so obtained.

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

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

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

A pre-bid conference will be held on November 5, 2019 at 10:00 a.m. at the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

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

MAINE TURNPIKE AUTHORITY

Nate Carll
Purchasing Manager
Maine Turnpike Authority

Portland, Maine

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

PROPOSAL

CONTRACT 2019.02

KENNEBUNK TRAVEL PLAZAS
PARKING EXPANSION
MILE 25.5 SB & NB
AND ROUTE 35 TRAFFIC SIGNALS

MAINE TURNPIKE AUTHORITY

PROPOSAL

CONTRACT 2019.02

KENNEBUNK TRAVEL PLAZAS
PARKING EXPANSION
MILE 25.5 SB & NB
AND ROUTE 35 TRAFFIC SIGNALS

TO MAINE TURNPIKE AUTHORITY:

The work consists of expanding the parking at the Kennebunk Travel Plazas (NB & SB), signalize and make ADA improvements to the Exit 25 Turnpike approaches NB with Alewive Road/Fletcher Street and SB with Alewive/Park Road, and upgrade the signal equipment and make ADA improvements to the Alfred Road/Alewive Road intersection in the Town of Kennebunk, Maine. The parking expansion will separate the truck parking from passenger car parking, while providing additional capacity for both. The work includes acceleration and deceleration lane extensions, parking improvements, parking expansions, clearing, lighting, stormwater facilities, utility work, drainage, maintenance of traffic, signing and pavement markings, traffic signal improvements, and all other work incidental thereto in accordance with the Plans and Specifications.

This Work will be done under a Contract known as Contract 2019.02 according to the Plans and Specifications which are on file in the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

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

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

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

SCHEDULE OF BID PRICES
CONTRACT NO. 2019.02
KENNEBUNK TRAVEL PLAZAS PARKING EXPANSION MILE 25.5 SB AND NB AND ROUTE 35 TRAFFIC SIGNALS

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
201.11	Clearing	Acre	7				
201.23	Removing Single Tree Top Only	Each	27				
201.24	Removing Stump	Each	27				
202.15	Removing Existing Manhole or Catch Basin	Each	6				
202.202	Removing Pavement Surface	Square Yard	13,600				
202.203	Pavement Butt Joints	Square Yard	2,400				
202.22	Removing and Stockpiling Boulders	Each	41				
203.20	Common Excavation	Cubic Yard	55,300				
203.2312	Health and Safety Plan	Lump Sum	1				
203.2333	Disposal/Treatment of Special Excavation	Ton	250				
203.2334	Disposal/Treatment of Contaminated Groundwater	Gallon	100,000				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
203.25	Granular Borrow	Cubic Yard	4,450				
203.43	Foamed Glass Aggregate Lightweight Fill	Cubic Yard	1,200				
203.45	Clay Borrow	Cubic Yard	200				
304.10	Aggregate Subbase Course - Gravel	Cubic Yard	29,400				
304.14	Aggregate Base Course - Type A	Cubic Yard	7,700				
403.207	Hot Mix Asphalt, 19.0 mm Nominal Maximum Size	Ton	9,000				
403.208	Hot Mix Asphalt, 12.5 mm - RAP	Ton	4,300				
403.2081	Hot Mix Asphalt, 12.5 mm (Polymer Modified) - RAP	Ton	2,900				
403.2084	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals)	Ton	290				
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	Ton	795				
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)	Ton	5,050				
409.15	Bituminous Tack Coat RS-1 or RS1H - Applied	Gallon	7,200				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
411.12	Crushed Stone Surface	Ton	54				
419.30	Sawing Bituminous Pavement	Linear Foot	10,800				
526.306	Temporary Concrete Barrier, Type I - Supplied by Authority (3520 LF)	Lump Sum	1				
526.307	Concrete Barrier Type I - Stormwater Filter	Linear Foot	100				
527.341	Work Zone Crash Cushions - TL-3	Unit	5				
527.342	Work Zone Crash Cushions - TL-2	Unit	1				
602.30	Flowable Concrete Fill	Cubic Yard	110				
603.05	6" PVC Pipe	Linear Foot	52				
603.155	12 inch Reinforced Concrete Pipe - Class III	Linear Foot	1,050				
603.1552	12 inch Reinforced Concrete Pipe - Class IV	Linear Foot	200				
603.165	15 inch Reinforced Concrete Pipe - Class III	Linear Foot	130				
603.175	18 inch Reinforced Concrete Pipe - Class III	Linear Foot	770				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
603.179	18 Inch Culvert Pipe Option III	Linear Foot	50				
603.195	24 inch Reinforced Concrete Pipe - Class III	Linear Foot	520				
603.205	30 inch Reinforced Concrete Pipe - Class III	Linear Foot	440				
603.215	36 inch Reinforced Concrete Pipe - Class III	Linear Foot	300				
603.225	42 inch Reinforced Concrete Pipe - Class III	Linear Foot	120				
603.28	Concrete Collar	Each	4				
604.09	Catch Basin Type B1	Each	21				
604.093	60" Catch Basin Type B1	Each	3				
604.094	72" Catch Basin Type B1	Each	1.5				
604.11	Catch Basin Type C1	Each	1				
604.16	Altering Catch Basin to Manhole	Each	1				
604.164	Rebuilding Catch Basin	Each	1				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
604.18	Adjusting Manhole or Catch Basin To Grade	Each	3				
604.182	Cleaning Existing Catch Basin and Manhole	Each	4				
604.244	Catch Basin Type F4	Each	2				
604.248	Catch Basin Type F6	Each	2				
604.30	Oil-Water Separator System	Each	1				
605.016	6 Inch PVC Underdrain	Linear Foot	1,550				
605.018	8 Inch PVC Underdrain	Linear Foot	600				
605.09	6 Inch Underdrain Type B	Linear Foot	810				
605.10	6 Inch Underdrain Outlet	Linear Foot	23				
605.13	18 Inch Underdrain Type C	Linear Foot	140				
606.1301	31" W-Beam Guardrail - Mid-Way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced)	Linear Foot	1,850				
606.1307	31" W-Beam Guardrail - Mid-Way Splice Flared Terminal	Each	2				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
606.1351	Terminal End - Anchored End - 31" W-Beam Guardrail	Each	2				
606.356	Underdrain Delineator Post	Each	230				
606.3561	Delineator Post – Remove and Reset	Each	58				
606.3605	Guardrail - Remove, Modify and Reset Single Rail	Linear Foot	190				
606.3606	Guardrail - Remove, Modify and Reset Double Rail	Linear Foot	25				
606.79	Guardrail 350 Flared Terminal	Each	2				
607.24	Remove and Reset Fence	Linear Foot	220				
607.44	Safety Fence	Linear Foot	4,470				
608.08	Reinforced Concrete Sidewalk	Square Yard	220				
608.26	Curb Ramp Detectable Warning Field	Square Foot	48				
609.12	Vertical Curb Type 1 - Circular	Linear Foot	85				
609.234	Terminal Curb Type 1 - 4 foot	Each	2				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
609.238	Terminal Curb Type 1 - 8 foot	Each	1				
609.31	Curb Type 3	Linear Foot	150				
609.34	Curb Type 5	Linear Foot	2,350				
609.35	Curb - Type 5 - Circular	Linear Foot	140				
609.38	Reset Curb Type 1	Linear Foot	790				
610.08	Plain Riprap	Cubic Yard	180				
610.18	Stone Ditch Protection	Cubic Yard	120				
610.181	Temporary Stone Check Dam	Cubic Yard	47				
613.319	Erosion Control Blanket	Square Yard	13,800				
615.07	Loam	Cubic Yard	5,400				
618.13	Seeding Method Number 1	Unit	15				
618.14	Seeding Method Number 2	Unit	380				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
618.143	Special Seeding	Unit	38				
619.1201	Mulch - Plan Quantity	Unit	420				
619.1202	Temporary Mulch	Lump Sum	1				
620.56	Drainage Geotextile	Square Yard	4,100				
620.58	Erosion Control Geotextile	Square Yard	950				
620.60	Separation Geotextile	Square Yard	2,700				
621.037	Evergreen Trees (5'-6'), GP A - Pinus Resinosa (Red Pine)	Each	11				
626.121	Quazite Junction Box (36x24)	Each	8				
626.122	Quazite Junction Box (18x11)	Each	110				
626.22	Non-metallic Conduit	Linear Foot	26,300				
626.31	18 inch Diameter Foundation	Each	1				
626.32	24 inch Diameter Foundation	Each	53				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
626.33	30 inch Diameter, 8 feet or less Foundation	Each	16				
626.332	30-Inch Diameter, Greater than 8-Feet Long, And all 36-Inch and 42-Inch Diameter Foundations	Cubic Yard	60				
626.35	Controller Cabinet Foundation	Each	2				
627.712	White or Yellow Pavement Marking Line	Linear Foot	65,000				
627.75	White or Yellow Pavement & Curb Marking	Square Foot	570				
627.77	Removing Existing Pavement Marking	Square Foot	8,470				
627.812	Temporary Raised Pavement Markers	Each	100				
627.941	Pavement Marking Tape - Dotted White Lane Line, 6-Inch Width	Linear Foot	430				
629.05	Hand Labor, Straight Time	Hour	40				
631.12	All Purpose Excavator (Including Operator)	Hour	40				
631.13	Bulldozer (Including Operator)	Hour	40				
631.172	Truck - Large (Including Operator)	Hour	80				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
631.22	Front End Loader (Including Operator)	Hour	40				
631.32	Culvert Cleaner (Including Operators)	Hour	16				
631.36	Foreman	Hour	40				
634.2041	Luminaires	Each	35				
634.208	Remove and Reset Light Standard	Each	37				
634.210	Conventional Light Standard	Each	16				
639.18	Field Office, Type A	Each	1				
643.71	Traffic Signal Modifications at: Alewive Road w/ Fletcher Street	Lump Sum	1				
643.801	Traffic Signal at: I-95 SB w/ Alewive	Lump Sum	1				
643.802	Traffic Signal at: I-95 NB w/ Fletcher Street	Lump Sum	1				
643.831	Video Detection System: I-95 SB with Alewive	Lump Sum	1				
643.832	Video Detection System: I-95 NB with Fletcher Street	Lump Sum	1				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
643.911	Mast Arm Pole - 25' Mast Arm	Each	3				
643.912	Mast Arm Pole - 30' Mast Arm	Each	1				
643.913	Mast Arm Pole - 35' Mast Arm	Each	2				
643.914	Mast Arm Pole - 40' Mast Arm	Each	1				
643.92	Pedestal Pole - 8 Foot	Each	1				
643.94	Dual Purpose Pole - 30' Mast Arm and 12' Luminaire Arm	Each	1				
645.105	Remove and Stack Sign	Each	135				
645.109	Remove and Reset Sign	Each	45				
645.1211	Overhead Sign Structure and Guide Sign	Lump Sum	1				
645.161	Breakaway Device Single Pole	Each	10				
645.162	Breakaway Device Multi Pole	Each	13				
645.251	Roadside Guide Signs, Type I	Square Foot	560				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
645.252	Roadside Guide Signs, Type I - Supplied by Authority	Square Foot	420				
645.271	Regulatory, Warning, Confirmation and Route Assembly Sign, Type 1	Square Foot	570				
645.289	Steel H-Beam Poles	Pound	5,650				
645.511	Radar Activated Flashing LED Yield Sign	Each	1				
652.30	Flashing Arrow	Each	2				
652.312	Type III Barricades	Each	4				
652.33	Drum	Each	490				
652.34	Cone	Each	20				
652.35	Construction Signs	Square Foot	1,370				
652.361	Maintenance of Traffic Control Devices	Lump Sum	1				
652.38	Flaggers	Hour	660				
652.41	Portable-Changeable Message Sign	Each	2				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
652.45	Truck Mounted Attenuator	Calendar Day	12				
652.4501	Truck Mounted Attenuator - 24,000 LB	Calendar Day	16				
652.451	Automated Trailer Mounted Speed Limit Sign	Calendar Day	10				
655.102	#2 AWG Wire	Linear Foot	13,150				
655.106	#6 AWG Wire	Linear Foot	16,700				
655.11	#10 AWG Wire	Linear Foot	5,850				
656.50	Baled Hay, In Place	Each	20				
656.60	Temporary Berms	Linear Foot	3,000				
656.62	Temporary Slope Drains	Linear Foot	500				
656.632	30 inch Temporary Silt Fence	Linear Foot	2,750				
659.10	Mobilization	Lump Sum	1				
673.01	Stormwater Filter Bed	Cubic Yard	710				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
801.1331	6" Sewer Force Main	Lump Sum	1				
822.3408	8-Inch Ductile Iron Water Pipe	Linear Foot	1,600				
822.411	8-Inch Ductile Iron Pipe Fittings	Pound	1,110				
823.325	8-Inch Gate Valve	Each	3				
825.411	Food Truck Water Connection	Lump Sum	1				
827.3641	Remove 8-Inch Asbestos-Cement Pipe	Linear Foot	900				
830.27	Horizontal Directional Drilling, 3 inch HDPE Conduit	Linear Foot	1,420				
				TOTAL:			

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

_____

_____

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

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

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

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

_____ *(SEAL)*

_____ *(SEAL)*

Affix Corporate Seal
or Power of Attorney
Where Applicable

_____ *(SEAL)*

By: _____

Its: _____

Information below to be typed or printed where applicable:

INDIVIDUAL:

(Name)	(Address)

PARTNERSHIP - Name and Address of General Partners:

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

INCORPORATED COMPANY:

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

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

YORK TO AUGUSTA

CONTRACT AGREEMENT

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

_____

herein termed the "Contractor":

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

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

_____

_____

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

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

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

AUTHORITY -

MAINE TURNPIKE AUTHORITY

By: _____

Title: CHAIRMAN

Date of Signature: _____

ATTEST:

_____
Secretary

CONTRACTOR -

_____
CONTRACTOR

By: _____

Title: _____

Date of Signature: _____

WITNESS:

_____

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS that _____

of _____ in the County of _____ and State of _____

as Principal, and _____ a Corporation duly organized under the

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

_____

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

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

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

Witnesses: CONTRACTOR

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

SURETY

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

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

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

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

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

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

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

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

_____
(Contractor)

By: _____

Title: _____

State of MAINE

County of _____

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

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

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

_____

.

(Company Name)

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

(SEAL)

_____
Notary Public

My Commission Expires: _____

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART I – SUPPLEMENTAL SPECIFICATIONS

(Rev. November 10, 2016)

Supplemental Specifications available on the Maine Turnpike Authority website

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II - SPECIAL PROVISIONS

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

General Description of Work

The work consists of expanding the parking at the Kennebunk Travel Plazas (NB & SB) in the Town of Kennebunk, Maine. The parking expansion will separate the truck parking from passenger car parking, while providing additional capacity for both. The work includes acceleration and deceleration lane extensions, relocated ramps, parking improvements, parking expansions, perimeter road improvements, clearing, lighting, stormwater facilities, utility work, drainage, maintenance of traffic, signing and pavement markings, traffic signal improvements, and all other work incidental thereto in accordance with the Plans and Specifications.

Plans

The drawings included in these Contract Documents, and referred to as the Plans, show the general character of the work to be done under this Contract. They bear the general title "Maine Turnpike Authority - Contract 2019.02 – Kennebunk Travel Plazas Parking Expansion Mile 25.5 SB and NB". The right is reserved by the Resident to make such minor corrections or alterations in the Plans as he deems necessary without change in the unit prices on the Schedule of Prices of the Proposal.

101.2 Definition

Holidays

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

Christmas 2019	12:00 p.m. preceding Monday to 6:00 a.m. the following Friday.
New Years 2020	6:00 p.m. preceding Monday to 6:00 a.m. the following Friday.
Independence Day 2020 (Fourth of July)	3:00 p.m. preceding Thursday to 6:00 a.m. the following Monday.
Christmas 2020	12:00 p.m. preceding Thursday to 6:00 a.m. the following Saturday.

New Years 2021	6:00 p.m. preceding Thursday to 6:00 a.m. the following Saturday.
Independence Day 2021 (Fourth of July)	3:00 p.m. preceding Thursday to 6:00 a.m. the following Tuesday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on November 21, 2019.

104.3.8 Wage Rates and Labor Laws

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

The fair minimum hourly rates determined by the State of Maine Department of Labor for this Contract are as shown on the following pages:

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

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

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

Title of Project --------MTA 2019.02-Kennebunk Travel Plazas Parking Expansion Mile 25.5 NB and SB

Location of Project –Kennebunk, York County

2019 Fair Minimum Wage Rates
Highway & Earth York County

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asphalt Raker	$16.00	$0.79	$16.79	Line Erector - Power/Cable	$31.00	$5.32	$36.32
Backhoe Loader Operator	$22.00	$5.08	$27.08	Loader Operator - Front-End	$19.50	$2.97	$22.47
Bulldozer Operator	$23.85	$4.32	$28.17	Mechanic- Maintenance	$20.50	$2.96	$23.46
Carpenter	$20.00	$2.64	$22.64	Millwright	$24.25	$8.80	$33.05
Carpenter - Rough	$19.00	$1.88	$20.88	Oil/Fuel Burner Serv.& Install	$23.00	$3.51	$26.51
Cement Mason/Finisher	$17.00	$1.34	$18.34	Painter	$17.50	$0.42	$17.92
Concrete Mixing Plant Operator	$22.11	$4.89	$27.00	Paver Operator	$21.00	$0.35	$21.35
Crane Operator =>15 Tons)	$26.80	$4.74	$31.54	Pipe-layer	$22.00	$1.49	$23.49
Crusher Plant Operator	$17.00	$3.86	$20.86	Re-claimer Operator	$21.58	$1.80	$23.38
Driller - Well	$19.83	$2.66	$22.49	Roller Operator - Earth	$22.11	$3.02	$25.13
Electrician - Licensed	$22.55	$14.26	$36.81	Roller Operator - Pavement	$19.00	$1.62	$20.62
Electrician Helper/Cable Puller	$17.00	$1.34	$18.34	Screed/Wheelman	$19.25	$1.00	$20.25
Excavator Operator	$21.00	$3.12	$24.12	Sider	$16.75	$1.38	$18.13
Fence Setter	$17.50	$2.94	$20.44	Stone Mason	$21.00	$0.95	$21.95
Flagger	$13.00	$0.00	$13.00	Truck Driver - Light	$17.00	$1.15	$18.15
Grader/Scraper Operator	$18.00	$1.62	$19.62	Truck Driver - Medium	$19.00	$3.13	$22.13
Highway Worker/Guardrail	$17.50	$1.76	$19.26	Truck Driver - Heavy	$17.50	$1.45	$18.95
Ironworker - Reinforcing	$22.11	$2.79	$24.90	Truck Driver - Tractor Trailer	$18.50	$3.20	$21.70
Laborers (Helpers & Tenders)	$15.00	$0.84	$15.84	Truck Driver - Mixer (Cement)	$17.19	$1.07	$18.26
Laborer - Skilled	$18.00	$1.59	$19.59				

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

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

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

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

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

Determination No: HI-152-2019

A true copy

Filing Date: October 10, 2019

Attest: Scott R. Cotnoir

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

Expiration Date: 12-31-2019

BLS(Highway & Earth York)

104.4.6 Utility Coordination

This Subsection is amended by the addition of the following:

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

General

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

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

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

Aerial / Underground Utilities

There are 5 Utility services, identified below, present within the project limits. 2 of the utilities, Communications & Power, enter the site via aerial runs on shared poles and then transition to underground. On the northbound side the communication and power lines transition to underground just south of the toll plaza at the last utility pole on the east side of the ramp. From there the lines run parallel to the east side of the perimeter road until the cross the road at approximately Sta. 417+25. On the southbound side the communication and power lines transition to underground after the lines cross the southbound perimeter south of the plaza building to the only pole set on the east side of the perimeter road at approximately Sta. 376+25 Lt. From there the lines run between the perimeter road and the earthen mound.

There is an existing concrete utility tunnel that runs east-west between the two plazas under the Maine Turnpike located at approximately Sta. 1217+95. There are two utilities, Gas and Sewer, that run through the tunnel.

The following aerial / underground utilities are known to be present on both the northbound and southbound plaza's, including contact information:

COMMUNICATION:

Consolidated Communications (CC)
5 Davis Farm Road
Portland, ME 04103
ATTN: Marty Pease 207-535-4208
martin.pease@consolidated.com

The communication lines within the project sites (NB Plaza & SB Plaza) are not anticipated to be impacted by the proposed work.

The Contractor shall notify CC two (2) weeks in advance of any work taking place within 50 ft of their communication line.

ELECTRIC:

Maine Turnpike Authority (MTA)
2360 Congress Street, Portland, Maine 04102
ATTN: Shawn Laverdiere
Tel: (207) 829-3767
Email: SLaverdiere @maineturnpike.com
(Contractor shall note TESLA has underground electric; plans are available through MTA).

Kennebunk Light and Power District (KLPD)
4 Factory Pasture Lane
Kennebunk, ME 04043
ATTN: Kevin Vezina 207-985-3311
kvezina@klpd.org
ATTN: Charles Tucker 207-985-3311
ctucker@klpd.org

The electric lines within the project sites (NB Plaza & SB Plaza) are not anticipated to be impacted by the proposed work. KLPD does not propose any relocation in order to facilitate the Project.

The Contractor shall notify KLPD two (2) weeks in advance of any work taking place within 50 ft of their power line.

WATER

Kennebunk, Kennebunkport, and Wells Water District (KKWWD)
92 Main Street
Kennebunk, Maine 04043
ATTN: Jamie Paschal 207-985-3385
jpaschal@kkw.org

On the northbound plaza, KKWWD has an existing 8" AC pipe that enters the site from Route 35 from the south, on the west side of the ramp, and then crosses under both the Exit 25 NB Off ramp and the NB Truck ramp heading towards the service plaza building. The project will be extending the truck parking which will require additional embankment to be placed over the existing waterline. Due to the compressive nature of the native soils, there is potential for settlement around the utility. Coordination with KKWWD has led to identifying settlement concerns over the water line. The project will install lightweight fill over the lines as a measure to protect against settlement and potential impacts to the waterline according to these coordination efforts. KKWWD requires a 10 days notice of any excavation, fill, or compaction activities within 50 feet of their line. Therefore, the waterline within the northbound plaza project site is not anticipated to be impacted by the proposed work.

On the southbound plaza, KKWWD has an existing 8" AC pipe that enters the site from Alewive Rd from the west at the I-95 SB Toll Plaza and then crosses under the perimeter road. After crossing the perimeter road the line turns north towards the service plaza building under the large earthen mound. The project is proposing to remove this earthen mound as part of the truck parking expansion. Therefore, the waterline will be impacted by the proposed work within the project site and will need to be relocated by the contractor. Although this line is considered a service by KKWWD, the reconstruction will be completed by the Contractor and construction shall follow KKWWD's construction requirements.

As indicated by KKWD, their waterlines are typically located 5 ft below grade to the top of pipe. A final pipe profile will be determined in the field. Efforts to locate the waterline, including test pits shall be incidental to the related water line items. See plans for more details.

The Contractor shall notify KKWD two (2) weeks in advance of any work taking place to discontinue the existing line and connect the new line into the main trunkline to allow enough time for an inspector to be available to oversee the installation and to test the new water line.

SEWER

Kennebunk Sewer District (KSD)
71 Water Street, Kennebunk, Maine
ATTN: Christopher Gallant 207-985-4741
cgallant@ksdistrict.org

KSD's main sewer trunkline is a gravity line that runs west to east and travels through the project site and through the untility tunnel under the Maine Turnpike.

On the northbound plaza, KSD's trunkline enters the project site from the utility tunnel. Once exiting the tunnel the trunkline crosses under the existing truck ramp and enters a manhole before heading south towards Route 35. From that same manhole, located south of the truck ramp, an 8" AC pipe runs north towards the service plaza building. The project will be extending the truck parking which will require additional embankment to be placed over the existing sewer lines. Due to the compressive nature of the native soils, there is potential for settlement around the utility. Coordination with KSD has led to identifying settlement concerns over the sewer. The project will install lightweight fill over the lines as a measure to protect against settlement and potential impacts to the sewer according to these coordination efforts. KSD requires a two (2) weeks notice

of any excavation, fill, or compaction activities within 50 feet of their line.as a measure to protect against settlement and potential impacts to the sewer, lightweight fill is being proposed in the area of the existing sewer. Therefore, the sewer within the northbound plaza project site is not anticipated to be impacted by the proposed work.

On the southbound plaza, KSD's trunkline enters the project site from Alewive Rd near the I-95 SB Toll Plaza. After the trunkline crosses under the I-95 SB on ramp and enters a manhole before heading north towards a manhole located at approximately Sta. 217+00 Rt. From this manhole the trunkline heads east and enters the concrete tunnel under the Maine Turnpike. There is also an existing service line that runs from the manhole at the entrance of the tunnel north under the existing service plaza paving to the service plaza building. The sewer lines within the southbound plaza site are not anticipated to be impacted by the proposed work.

As indicated by KSD, their sewers are typically located 5 ft below grade to the top of pipe.

KSD does not propose any relocation in order to facilitate the Project. The proposed design has greater than the 60" minimum cover, in most locations as required by KSD.

The Contractor shall notify KSD two (2) weeks in advance of any work taking place over their sewer line.

GAS
Unitil Corporation (UNITIL)
376 Riverside Industrial Parkway
Portland, ME 04103
ATTN: Kelly Brown 207-541-2572

UNITIL has a 4" plastic line that runs east west through the southern side of both plazas and through the tunnel under the Maine Turnpike.

On the northbound plaza, UNITIL's line enters the project site from the utility tunnel. Once exiting the tunnel the line follows the edge of the existing southern parking lot before turning and heading south to Route 35. The project will be extending the truck parking which will require additional embankment to be placed over the existing sewer lines. Due to the compressive nature of the native soils, there is potential for settlement around the utility. Coordination with UNITIL has led to identifying potential settlement concerns over the gas line. The project will install lightweight fill over the lines as a measure to protect against settlement and potential impacts to the gas line according to these coordination efforts. Unitil requires a 40 days notice of any excavation, fill, or compaction activities within 50 feet of their line.as a measure to protect against settlement and potential impacts to the gas line, lightweight fill is being proposed in the area of the existing gas line. Therefore, the gas line within the northbound plaza project site is not anticipated to be impacted by the proposed work.. Although the gas line is not anticipated to be impacted, the vent pipe to the utility tunnel will be impacted by the proposed design. The vent pipe will need to be relocated out of the new pavement area to the grasses side slope southeast of its current location.

UNITIL will require up to four (4) weeks notice prior to the need for the vent pipe to be relocated and five (5) working days for UNITIL to install the new vent pipe for the utility tunnel on the northbound plaza site.

On the southbound plaza, UNITIL's line enters the project site from Alewive Rd. north of the Park & Ride commuter lot and crosses under the perimeter road at approximately Sta. 376+40. After the trunkline crosses under the perimeter road it heads east towards the utility tunnel under the large earthen mound and existing parking area. The project is proposing to remove this earthen mound as part of the truck parking expansion. Therefore, the gas line will be impacted by the proposed work within the project site and will need to be relocated. UNITIL will relocate their line adjacent to the exiting line at a lower elevation as to not be impacted by the new parking area.

UNITIL will require up to four (4) weeks notice prior to the need for their facility to be relocated and five (5) working days for UNITIL to install the new line at the southbound plaza site. UNITIL will also require five (5) days to relocate the vent pipe for the utility tunnel on the northbound plaza site.

The contractor shall coordinate with UNITIL for the final design, construction schedule and working days for this installation.

As indicated by UNITIL, their gas lines are typically located 3 ft below grade to the top of pipe.

SIGNALS
Town of Kennebunk
Department of Public Services
1 Summer St.
Kennenbunk, ME 04043
ATTN: John Stoll

Maine Department of Transportation
Bureau of Traffic Engineering
16 State House Station
Augusta, ME 04333
ATTN: Ron Cote

104.4.7 Cooperation With Other Contractors

This Subsection is amended by the addition of the following:

The Contractor shall allow access to the site by the Authority's fuel vendor C.N. Brown for the removal and/or installation of their materials and equipment, as well as for fuel and goods deliveries to the fuel tanks and office in the plaza building.

Contact Information:
C.N. Brown
1 CN Brown Way
PO Box 200
South Paris Maine, 04281
(207) 743-9212

The Contractor shall allow access to the site by the Authority's food service vendor HMS Host North America for deliveries to the service plaza.

Contact Information:
HMS Host North America
6905 Rockledge Drive
Bethesda, MD 20817, USA
(866) 467 4672

105.2.4.3 Asbestos

This Subsection is amended by the addition of the following:

Portions of the existing electrical conduit and water main may contain asbestos-cement material. Unless otherwise noted or directed, the Contractor shall assume all electrical conduit and water main is asbestos-cement material. Removal of or making connections to this material shall be performed in a manner, and using techniques, that protects workers and environmental safety and health and complies with all local, State and Federal requirements for working with this type of material. As required, the Contractor shall utilize trained and certified personnel when making these connections. Removed asbestos-cement pipe shall be transported and disposed of in a legal manner.

105.8.2 Permit Requirements

The Project is being constructed under the Maine Department of Environmental Protection (MDEP) Natural Resources Protection Act Wetland and Waterbodies Protection regulations Chapter 310, updated November 11, 2018. A copy of the MaineDEP Permit is attached in **Appendix A**. Work in or within 75-feet of any wetlands or waterbodies may not occur until authorization is received. Upon receipt of authorization or denial of the permit the Contractor will be provided a copy of the permit providing the actual Natural Resources Protection Act permit conditions; and providing Plan and Specification changes (if required) to adjust the Project schedule or phasing to meet the permit requirements.

The Project is also being permitted under Section 404 of the Clean Water Act, through the US Army Corps of Engineers Programmatic General Permit, Category 2. Final permit authorization was received June 4, 2019. Work in the wetlands and water may not occur until authorization is received. Upon receipt of authorization or denial of the permit the Contractor will be provided a copy of the permit providing the actual US Army Corps of Engineer's permit conditions; and providing Plan and Specification changes (if required) to adjust the Project schedule or phasing to meet the permit requirements. A copy of the authorized General Permit is attached in **Appendix B**.

A Notice of Intent (NOI), accompanied by a site map and a set of Engineered Project Plans, was submitted by the Authority to the DEP for coverage under the Site Location of Development Act General Permit for the Maine Turnpike Authority (GP) (February 29, 2016). The Project is subject to the requirements and provisions of this GP. Upon receipt of authorization or denial of the permit the Contractor will be provided a copy of the permit providing the actual Site Location of Development Act permit conditions; and providing Plan and Specification changes (if required) to adjust the Project schedule or phasing to meet the permit requirements.

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

A Notice of Intent (NOI), accompanied by a preliminary Limit of Disturbance (LOD) plan was submitted by the Authority to the DEP for coverage under the Maine Construction General Permit (MCGP). Compliance with the erosion and sedimentation control requirements outlined in this Contract is required by the Contractor.

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

The LOD for this Contract, which was submitted as part of the NOI, has been estimated to be 11.87 acres southbound and 12.11 acres northbound, totaling **24.0** acres.

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

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

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

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

The Contractor shall comply with the conditions outlined in the Army Corps General Permit, Maine Department of Environmental Protection NRPA Permit by Rule, the US Army Corps of Engineers General Permit, and the Maine Pollutant Discharge Elimination System General Permit for stormwater discharge associated with construction activity. The Contractor shall indemnify and hold harmless the Maine Turnpike Authority or its agents, representatives and employees against any and all claims, liabilities or fines arising from or based on the violation of the above noted permits.

105.8.3 Wetland and Water Body Impacts

The following locations are classified as streams:

Unnamed Stream S2	352+00
Unnamed Stream S3	1258+00

There is no proposed work in or within 25' of these stream location and no stream impacts.

107.1 Contract Time and Contract Completion Date

This Subsection is amended by the addition of the following:

All work shall be completed on or before November 19, 2021.

107.1.1 Substantial Completion

This Subsection is amended by the addition of the following:

Traffic signals and signal modifications including pavement markings shall be complete with the system fully operational on or before November 20, 2020.

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

The construction for the NB & SB Kennebunk Service Plazas shall be substantially complete by October 22, 2021.

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

- All disturbed slopes loamed, seeded and mulched, temporary erosion control mix and/or blanket installed where necessary.
- The entire project shall be fully opened to traffic, including final signage, guardrail, curbing, and final pavement.
- All temporary concrete barrier removed from the Maine Turnpike and all lanes on the Maine Turnpike shall be open to traffic.

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

107.4.6 Prosecution of Work

The Contractor shall submit to the Authority a construction schedule which shall document that the Contractor has the necessary labor and equipment to work immediately and continuously at the project site once the work area is closed to traffic. The intent of this specification is to minimize

the amount of time for plaza disruption while providing the Contractor sufficient time to complete the work in a diligent manner and reopen the plaza parking with proposed circulation as prescribed by the project's Substantial Completion date.

The Contractor shall not close access to or disrupt the existing fueling operation at any time.

Existing parking lot lighting must be functional from dusk to dawn. If the existing lighting cannot be maintained, then the contractor shall provide temporary lighting, and this shall be considering incidental to the lighting contract items.

Clearing is not permitted during the months of June and July.

If final paving is not completed by a winter shut down period then, the following must occur:

- Drainage structures shall be lowered to intermediate pavement lift elevations and raised to final grade prior to final surface paving.
- Parking stalls shall be restored with temporary pavement markings (paint) for the duration of winter shut down, then markings shall be installed again after final surface pavement is placed.
- This work is incidental to the contract.

The Contractor shall provide the Authority 14 days advance notification of the anticipated ramp closure date. Seven (7) days ahead of the ramp closure, the Contractor shall provide two portable changeable message signs along the Turnpike adjacent to the ramp notifying the public of the upcoming closure. The re-direction of traffic through the plaza parking area shown on the Plans shall be signed to accommodate traffic during the ramp closure and covered or removed immediately following the ramp closure. The Contractor will reimburse the Authority at the rate of $2,500.00 for each one-hour period, or portion thereof, that the ramp(s) remains closed to traffic in excess of the allowed time. Total penalty shall be deducted from the next pay estimate.

107.4.7 Limitations of Operations

The Contractor shall adhere to the following limitations:

- Maintain access and egress from service plazas at all time
- Temporary construction impacts must remain within the areas shown on the permit plans and areas must be restored to original condition upon completion.
- The Contractor shall progress the work in a manner that minimizes disruption to the public and service plaza operations to the extent practical.
- The Contractor shall complete the work as shown on the phasing and maintenance of traffic plans. Modifications to the phasing or associated maintenance of traffic plans will not be permitted unless approved by the Resident.

- The embankment on the southern side of the Northbound Plaza identified on sheet MOT-1 shall be left in place for six months prior to placing subbase and paving. The proposed waterline and sewer line shall be installed in concurrence with the embankment being placed before the six month settlement period.

- The Contractor will not be permitted to place and remove temporary painted pavement markings on the final lift of surface pavement. The final surface lift of pavement shall be placed utilizing temporary lane closures once all concrete barrier has been removed.

- Exit ramp closures will require diverting traffic through the truck parking areas as shown in the plans. Exit ramp closures may only be closed at night as noted in Section 652.

SPECIAL PROVISION

SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing Pavement Surface)
(Removing Existing Pavement Surface)

202.01 Description

The following sentences are added:

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

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

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

Areas requiring shim pavement to reach final pavement grade shall not be milled.

This work shall also consist of construction of temporary ramps at all butt joints as shown in the MaineDOT Standard Details, November 2014 Edition – Pavement Overlay Butt Joint Detail (Roadways), Page 202(01) or as approved by the Resident. The length of the temporary ramp shall be at least 1/2 L.

202.061 Removing Pavement Surface

This Subsection is deleted and replaced with the following:

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

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

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

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

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

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

202.07 Method of Measurement

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

The following sentences are added:

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

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

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

202.08 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
202.202	Removing Pavement Surface	Square Yard

SPECIAL PROVISION

SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing and Stockpiling Boulders)

202.01 Description

This work shall consist of removing existing boulders located around the perimeter of existing parking lots that are within the construction limits or as directed by The Resident. The boulders shall be transported to the former hotel site off the northbound perimeter road and stockpiled neatly as directed by The Resident. The boulders are to remain the property of The Turnpike.

207.07 Method of Measurement

The removal and stockpile of the boulders will be paid for each boulder removed and relocated to the former hotel site.

The quantity of boulders measured will apply to only existing boulders located above existing grade and boulders encountered below grade shall be paid as common excavation per standard specification section 203.

202.08 Basis of Payment

Removing and Stockpiling Boulders will be paid for at the Contract unit price for each boulder removed and stockpiled which payment shall be full compensation for loading, hauling, unloading, and all necessary equipment and labor.

Payment will be made under:

Pay Item		Pay Unit
202.22	Removing and Stockpiling Boulders	Each

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

203.01 Description

The following paragraph is added:

This work shall consist of cutting, removing and disposing of the full depth of existing bituminous concrete pavement within the limits of work as shown on the Plans or as approved by the Resident. The pavement shall be sawcut to the full depth of pavement at the limits of the excavation to provide a clean, vertical cut surface.

203.04 General

The following sentence is added to the end of the third paragraph.

There are no approved waste storage areas or waste areas within the Project limits unless shown on the Plans. Unsuitable materials shall be disposed of off-site in accordance with Subsection 203.06.

All excavations shall be accomplished in accordance with the applicable OSHA Standards. The Resident reserves the right to request the Contractor to prepare an excavation plan. This plan shall include, but not necessarily be limited to, the limit and depth of excavation, side slope, shoring, trench box and utility support.

203.10 Embankment Construction - General

The thirteenth and fourteenth paragraphs are deleted and replaced with the following:

All portions of the embankment shall be compacted in accordance with the designated embankment compaction requirements specified for the Project.

The existing slopes should be benched as shown on the drawings prior to placing additional fill. Embankment fill should be placed in lifts which extend laterally beyond the limits of the design side slopes such that the specified degree of compaction is achieved within the limits of the completed embankment. The slopes should then be trimmed back to design dimensions.

203.16 Winter Construction of Embankments

The word “core” is deleted from the first and second sentences in the first paragraph.

203.18 Method of Measurement

The following paragraphs are added:

There will be no additional payment if an excavation plan is required, the costs of preparing and submitting the excavation plan shall be incidental to the Excavation items.

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

(Contaminated Soil and Groundwater Management)

203.01 General

The work under this Specification shall be performed in conformance with the procedures and requirements described herein for the following activities: contaminated soil handling, reuse, temporary stockpiling, transportation, storage and disposal and contaminated water handling, storage, treatment, and disposal. This Specification also addresses contaminated soil location, identification and classification. The intent of this Specification is to ensure that contaminated soil and/or water encountered during construction will be managed in a manner that protects worker health and safety, public welfare and the environment.

A representative from the Authority's Environmental Services Department shall be notified at least five (5) working days prior to beginning any excavation of the contaminated soil. The representative shall be on site to observe and document the work. For unanticipated contaminated areas see Subsection 203.10.

203.02 Environmental Site Conditions

The Maine Turnpike's Environmental Office has conducted a series of assessments related to the recent Kennebunk Service Plaza Fuel System Replacement. A pre-construction Limited Phase II Investigation for the Project area was completed to obtain a general understanding of the presence of petroleum impacted soil and groundwater for both southbound and northbound plaza sites at and near the underground storage tanks (UST) and dispensers.

The results of these investigations indicate that the subsurface area beneath a portion of both sites have been impacted by petroleum. Data associated with this determination is available for review at the Maine Turnpike Headquarters. A summary conclusion of findings is as follows:

- PID headspace screening and oleophilic dye test results indicate the presence of petroleum in soil at both service plazas, but laboratory sample results did not reveal the presence of any petroleum related EPH or VPH ranges and target compounds above applicable regulatory guidelines. While these data are confirmation that releases have occurred, soil remediation work does not appear to be necessary. However, the current sample data set was collected at the periphery of UST facility components so it is our opinion that the potential exists to encounter contaminated soils above guidelines requiring remediation closer to the tank systems. Similarly, soils further away from the USTs are anticipated to have lower contamination levels.
- Groundwater results indicate that sampled groundwater at several locations at both plazas exceeds the Petroleum Remediation Guidelines and/or the Construction Worker RAGs. Based on this finding, groundwater will have to be properly managed during the excavation work closest to the USTs, primarily on the northbound side, and any construction workers that have the potential to encounter contaminated groundwater

should be properly trained in accordance with pertinent provisions Occupational Safety & Health Administration (OSHA) 1910.120.

203.03 General Procedure for Excavating Contaminated Soils and Groundwater

- The MTA and RE will engage an environmental professional including a Maine C.G. to oversee facility removal work, provide field screening services with a PID and oleophilic dye tests in accordance with DEP SOP TS004.
- The contractor shall assume any groundwater encountered during excavation is contaminated and properly containerize and dispose of the groundwater offsite at a licensed disposal facility. .
- Based on field screening results, the contractor shall segregate soils for reuse onsite or offsite disposal. In accordance with TS004, the following criteria shall be used to characterize soils (based on using a MniRAE PID):
    - Soils for unrestricted reuse (i.e. "clean" soil)
        - Any soil with no visual indications of contamination
        - Any soil with an oleophilic dye test yielding a "negative" result, and
        - Any soil with a PID reading less than 40 parts per million (ppm), i.e. the leaching to groundwater field screening guideline
    - Lightly contaminated soil
        - Any soil with slight discoloration related to contamination
        - Any soil with an oleophilic dye test yielding a "positive or slightly positive" result
        - Any soil with a PID reading exceeding 40 ppm but less than 1,500 ppm
    - Highly contaminated or petroleum saturated soil
        - Any soil with visible gross contamination
        - Any soil with an oleophilic dye test yielding a "saturated" result
        - Any soil with a PID reading exceeding 1,500 ppm

Note that these field screening guidelines may be adjusted by the Resident and their environmental planner usingTS004 based on the PID instrument in use:

Table 1: Approved PID Field Cleanup and Notification Guidelines

Cleanup Scenario	Soil size [grams]	Ion	Thermo	Passport	Foxboro	MiniRAE	Photon
Leaching to GW/ Notification	200	80	60	60	50	40	40
Resident/ Park User	20	700	275	500	250	350	300
Outdoor Commercial Worker/ Excavation-Construction Worker	5	1200	500	850	375	1500	400

Note: No adjustment is made for set points; the response factor should be 1.0 for all instruments.

Based on these characterizations, the following soil management practices shall be employed:

- Soil characterized for unrestricted use can be relocated and reused as general construction material anywhere on the service plaza. If excess soil is generated that cannot be reused this soil should be appropriately evaluated and/or sampled for laboratory analysis prior to reuse.
- Soil characterized as lightly contaminated should be properly stockpiled, covered, and managed as a contaminated material, but can be reused in the vicinity of excavation and

this project's borrow needs. Any excess lightly contaminated soil that is not to be reused should be properly characterized and disposed or recycled offsite.

- Soil characterized as highly contaminated or petroleum saturated should either be live loaded or temporarily stockpiled until sufficient volume has been accumulated and shipped offsite for proper disposal or recycling. The contractor may request Resident approval for on-site reuse of this material. A final determination will be made in concert with the MTA and MaineDEP Project Manager as to the level of contamination.
- Stockpiled contaminated soils shall be placed on an impervious surface atop polyethylene sheeting, be properly covered with poly sheeting at the end of each work day or during inclement weather, and appropriate erosion/sedimentation controls should be used in the vicinity of the stockpiles to prevent stormwater from leaching or washing contaminants to nearby impervious surfaces or stormwater management systems.

The Authority's designated representative is responsible for signing any manifests or bills of lading required to transport and dispose of contaminated soil. All documentation and paperwork associated with the transport and disposal of Group 2 and Group 3 soils (i.e., manifests/bills of lading, weigh slips, invoices, permits, etc.) shall be forwarded to the Maine Turnpike Authority's Environmental Services Coordinator at 2360 Congress Street, Portland, Maine 04102 within 30 days of the last shipment of soil to the licensed facility.

203.04 Secured Stockpile Area

Should the Contractor utilize a Temporary Secured Stockpile Area (hereafter referred to as a "Secured Stockpile"), they shall install a continuous one-foot (0.30 m) high compacted soil berm around the Secured Stockpile (see Secured Stockpile Area – Materials below for Specifications pertaining to soil berm, liner, cover and barricades). The Secured Stockpile shall be placed on a liner of 20-mil polyethylene and securely covered with 20-mil polyethylene. The polyethylene liner and cover shall be placed over the soil berm and be installed to ensure that precipitation water drains directly to the outside of the berm perimeter while leachate from the contaminated soil is retained within the stockpile by covering with a polyethylene. The Secured Stockpile and soil berm shall be enclosed within a perimeter of temporary concrete barriers or security fence. The area within the temporary concrete barriers (or security fence) shall be identified as a "restricted area" to prevent unauthorized access to the contaminated soils. The Contractor shall submit to the Resident a plan (sketch and sections) of the proposed secured stockpile area.

203.05 Secured Stockpile Area - Materials

A. Polyethylene. Polyethylene used for liner and cover in the Secured Stockpile Area shall have a minimum of 20-mil thickness and shall meet the requirements of ASTM D3020.

B. Common Borrow. Fill used in the construction of the Temporary Secured Stockpile Area soil berm shall consist of Common Borrow and meet the requirements of Subsection 703.18.

C. Concrete Barriers or Security Fence. Concrete Barriers or Security Fence to form the sides of the Temporary Secured Stockpile Area shall meet the requirements of Section 526 or Subsection 607.

203.06 Health and Safety/Right-to-Know

Contractors and subcontractors are required to notify their workers of the history of the area and contamination that may be present and to be alert for evidence of contaminated soil and groundwater. The Contractor shall notify the Resident at least 72-hours prior to commencing any excavation.

The Contractor shall prepare a site specific Health and Safety Plan (HASP) for its workers and subcontractors who may work in the contaminated area of the site. A Qualified Health and Safety Professional shall complete the HASP. The HASP shall be submitted to the Authority in accordance with the Submittal section below. The Qualified Health and Safety Professional will be an expert in field implementation of the following federal regulations:

29 CFR 1910.120 or 29 CFR 1926.65	Hazardous Waste Operations, and Emergency Response
29 CFR 1910.134	Respiratory Protection
29 CFR 1926.650	Subpart D - Excavations
29 CFR 1926.651	General Requirements
29 CFR 1926.652	Requirements for Protective Systems

The Contractor shall designate a person to provide direct on-site supervision of the work in the contaminated area. This person shall have the training and medical surveillance under OSHA 1910.120 (e) and (f) respectively, as detailed above and in addition be qualified as a construction Competent Person [OSHA 1926.32 (f) and (l)]. It is the responsibility of this designated person to make those inspections necessary to identify situations that could result in hazardous conditions (e.g., possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions), and then to insure that corrective measures are taken.

Work inside contaminated trench sections may be subject to OSHA's permit-required confined space regulations under 29 CFR 1910.146.

Submittals. The Contractor shall submit for Authority and the Authority's Environmental Services Coordinator, review a site specific Health and Safety Plan (HASP) to the Resident at least two weeks in advance of any excavation work on the Project.

Health and Safety Monitoring. Within the contaminated area of the Project, the Contractor's designated person shall monitor the worker breathing zone for those constituents specified in the Contractor's HASP. The Contractor shall provide all required health and safety monitoring equipment.

203.07 Dewatering

It is likely that groundwater will be encountered during excavation and should its removal become necessary to complete work, it will be treated as "contaminated" water. The Contractor

shall inform the Resident before any dewatering commences. The "contaminated" water shall be pumped into a temporary holding tank(s). The Contractor will be responsible for the procurement of any holding tank(s). Any testing, treatment and/or disposal of the stored, petroleum contaminated water shall be undertaken by the Contractor in accordance with applicable Federal, State and local regulatory requirements.

203.08 On-Site Water Storage Tanks - Materials

If dewatering within the identified contaminated area becomes necessary the holding tanks used for temporary storage of contaminated water pumped from excavations shall be contamination-free and sized appropriately for contractor's storage, treatment, and disposal process.

203.09 Dust Control

The Contractor shall employ dust control measures to minimize the creation of airborne dust during construction within the contaminated area. As a minimum, standard dust control techniques shall be employed where heavy equipment and the public will be traveling. These may include techniques such as watering-down the site or spreading hygroscopic salts.

203.10 Unanticipated Contamination.

If the Contractor encounters previously undiscovered contamination or potentially hazardous conditions related to contamination, the Contractor shall suspend work and secure the area. The Contractor will then notify the Resident immediately. The Resident will then notify the Authority. These potentially hazardous conditions include, but are not limited to, buried fuel piping, vapor recovery piping, "oil saturated soils", strong odors or the presence of petroleum sufficient to cause a sheen on the groundwater. The area of potential hazard shall be secured to minimize health risks to workers and the public and to prevent a release of contaminants into the environment. The source of the suspected contamination will be evaluated by the Resident (or MTA Environmental representative). As appropriate, the Resident will notify the Maine Department of Environmental Protection's Response Services Unit in Augusta, and the Authority's Environmental Services Coordinator. The Contractor will evaluate the impact of the hazard on construction, amend the HASP if necessary, and with the Resident's approval, restart work in accordance with the procedures of this Special Provision.

203.11 Method of Measurement.

Health and Safety Plan (HASP) will be measured for payment by the lump sum.

Disposal/Treatment of Special Excavation will be measured for payment by the ton.

203.012 Basis of Payment.

Health and Safety Plan (HASP) will be paid for at the Contract lump sum price which payment shall be full compensation for development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel.

Disposal/Treatment of Special Excavation (contaminated soils) will be paid for at the Contract unit price per ton which payment shall be full compensation for excavating, loading, hauling, treatment, placing, grading and compacting, and all necessary equipment and labor. Only soil excavated from within the area shown on the plans or as designated by the Resident will be paid under this pay item.

Disposal/Treatment of Contaminated Groundwater will be paid for at the Contract unit price per gallon which payment shall be full compensation for pumping excavations, loading, hauling, treatment, and all necessary equipment and labor. Only groundwater pumped from excavations within this project will be paid under this pay item.

There will be no measurement for identification and environmental screening of contaminated soil material or groundwater (this will be done by the Resident or Authority's Environmental Services Coordinator).

Construction of a Temporary Secured Stockpile Area, or groundwater holding tank, if necessary, will not be measured separately for payment, but shall be incidental to Items 203.2312, 203.2333, and 203.2334.

Hauling Surplus contaminated soils to the Temporary Secure Stockpile area or placement and removal of contaminated soils in or out of the Temporary Secure Stockpile area will not be measured separately for payment, but shall be incidental to Items 203.2312 and 203.2333.

All hauling and any subsequent management/placement of contaminated soils and/or groundwater shall be incidental to Items 203.2312, 203.2333, and 203.2334.

There will be no separate measurement for additional laboratory testing of contaminated soil that is required by the landfill or treatment facility. Testing shall be incidental to Item 203.2333, and 203.2334.

Payment will be made under:

Pay Item		Pay Unit
203.2312	Health and Safety Plan	Lump Sum
203.2333	Disposal/Treatment of Special Excavation	Ton
203.2334	Disposal/Treatment of Contaminated Groundwater	Gallon

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

(Foamed Glass Aggregate Lightweight Fill)

203.01 Description

This work is furnishing and installing foamed glass aggregate fill for construction of embankments in designated locations or as directed by the Owner or Owner's Representative.

The Contractor shall furnish all labor, materials, equipment, tools, and appurtenances required to complete the Work of placing, and compacting the foamed glass aggregate materials shown on the Drawings and as specified in this Section, including:

- Preparation of subgrade.
- Storage and handling of foamed glass aggregate.
- Protection and preservation of all existing utilities and structures.
- Placement and compaction of foamed glass aggregate fill at locations indicated on the Drawings.
- Placement of geotextile wrap at locations indicated on the Drawings.

203.02 Materials

The following Subsections are added:

203.021 Submittals

Prior to material delivery to project site, the Contractor shall provide the Owner or Owner's Representative with a written certification or manufacturer's quality control data which displays that the products meet or exceed the values specified herein.

Prior to material delivery to project site, the Contractor shall provide the Owner or Owner's Representative with documentation that the Manufacturer has manufactured a minimum of 80,000 cubic yards of product meeting the requirements of Section 203.022.

The Contractor shall provide a sample of the products described herein at the request of the Owner or Owner's Representative.

Prior to foamed glass aggregate installation, the Contractor shall provide to the Owner or Owner's Representative the equipment cut sheets for the equipment the Contractor will be using for foamed glass aggregate placement and compaction.

203.022 Foamed Glass Aggregate

Foamed glass aggregate shall be made from of a minimum of 98% recycled glass.

Foamed glass aggregate shall meet the gradation specifications in table below:

Foamed Glass Aggregate Gradation Requirements

Sieve Size	Total Percent Passing
4”	100
2 ½”	85-100
3/8”	0-15

The as-delivered foamed glass aggregate should have a maximum dry bulk density of no more than 15 lbs/ft^3. The loose bulk density of delivered foamed glass aggregate may be determined per ASTM C29/C29M Method C. If necessary, this value shall be adjusted by the moisture content of the foamed glass aggregate to determine the dry, loose bulk density. Moisture content shall be determined using ASTM D2216 or ASTM D4959 or ASTM D4643.

The foamed glass aggregate shall be made using a dry foaming process to produce a closed cell structure and shall be non-leaching.

The foamed glass aggregate manufacturer must demonstrate experience of manufacturing a minimum of 80,000 cubic yards of foamed glass aggregate meeting the requirements of this Section.

The in-place compacted dry density shall not exceed 20 lbs/ft^3 when determined in accordance with the method specified by the Owner or Owner’s Representative.

203.023 Geotextile

The geotextile construction shall be a nonwoven, staple fiber, needle-punched, polypropylene geotextile.

The geotextile shall have a minimum mass per unit area of 6 oz./yd^2 per ASTM D5261.

The minimum grab tensile strength (MARV) of the geotextile shall be 160 lbs. per ASTM D4632.

203.10 Embankment Construction - General

The following subsections are added:

203.101 Delivery, Storage and Handling

Deliver, store, and handle materials in accordance with manufacturer’s recommendations.

During all stages of manufacture, shipment, storage, and construction, minimize the amount of material moves to prevent physical damage. Minimize the amount of trafficking on foamed glass aggregate until an adequate thickness of cover material is placed over the foamed glass aggregate.

203.102 Placement

Place geotextile and foamed glass aggregate at locations indicated on the drawings.

Construction equipment, other than for placement and compaction, shall not operate on the exposed foamed glass aggregate. The area to be filled shall not have any standing water (including ice) in it prior to placement of the foamed glass aggregate.

For compaction using tracked equipment, foamed glass aggregate shall be placed in maximum uncompacted lift thicknesses of 24 inches and compaction shall be performed with a tracked excavator or dozer with ground pressures of 625 - 1,025 psf. Compaction using tracked equipment shall be completed by placing the initial lift thickness, and then raising the blade or bucket and tracking over the layer. The placement of the first and second lift of foamed glass aggregate shall be utilized to establish a project-specific installation methodology that will be used to achieve 20% compaction of a given lift thickness for typical highway loading applications. The project-specific installation methodology shall reflect the lift thickness and identify the piece(s) of construction equipment and the corresponding number of passes required. Alternatively, compaction shall be complete after making the number of passes shown in table below. Excessive compaction shall be avoided to minimize crushing of the aggregate.

Number of Required Compaction Passes

Equipment Ground Pressure	Number of Passes
625-825 psf	4
825-1025 psf	3

For areas not accessible by tracked equipment (e.g. around structures and utilities), foamed glass aggregate shall be placed in maximum uncompacted lifts of 12 inches and compacted with a plate compactor 110-220 lbs. Compaction shall be complete after verifying that 20% compaction of the original lift thickness has been achieved or by making a minimum of two (2) passes with the plate compactor.

For areas that will not experience typical highway loading, the compaction of the foamed glass aggregate lift may be reduced in accordance with the Project Documents. The table below provides final lift thicknesses for varying compaction efforts based on an original 24-inch-thick layer of foamed glass aggregate.

Final Lift Thicknesses

Original Lift Thickness (inch)	Compaction of Lift	Final Lift Thickness (inch)
24	10%	21.6
24	15%	20.4
24	20%	19.2

For areas around structures and utilities not accessible by tracked equipment, foamed glass aggregate should be placed in maximum lifts of 12 inches and compacted with a plate compactor 110-220 lbs.

The geotextile will be placed as a separator between subgrade and the initial lift of foamed glass aggregate as well as above the final lift as a separator between the foamed glass aggregate and capping layer. Care should be taken during placement of capping layer to prevent damage to geotextile. Adjacent panels of geotextile may be sewn together or overlapped a minimum of 12 inches. The geotextile shall not be left exposed for longer than 14 days.

203.18 Method of Measurement

The following sentences are added:

Foamed Glass Aggregate Lightweight Fill furnished and placed in accordance with the Plans and Specifications shall be measured by the cubic yard in place and accepted.

203.19 Basis of Payment

The following paragraphs are added:

Foamed Glass Aggregate Lightweight Fill will be paid for at the Contract unit price per cubic yard which shall be full compensation for furnishing all qualifications, on-site supervision from supplier, shop drawings, labor, materials, equipment, dewatering and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
203.43	Foamed Glass Aggregate Lightweight Fill	Cubic Yard

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

(Clay Borrow)

203.01 Description

The following sentence is added:

This work shall consist of the placement of clay borrow within the core of the embankment of the Stormwater Soil Filter Beds (USF Detention Basins) as shown on the Plans.

203.02 Materials

The following paragraphs are added:

Clay Borrow shall conform to the following requirements:

A. Impermeable Soil Barrier

1. Soil to be used as a barrier such as a compacted clay barrier shall consist of glaciomarine silt-clay material with a hydraulic conductivity of less than 10^{-5} (0.0001) cm/sec. Soil barrier material shall be free of organic material, debris, ice, snow, and other deleterious material, with no stone larger than one inch. Unless approved otherwise by the Resident, materials used for the impermeable soil barrier shall contain greater than 90 percent silt and clay content (minus No. 200 U.S. Std. Sieve) by dry weight, a Liquid Limit greater than or equal to 28, and a Plasticity Index greater than or equal to 11.

203.04 General

The following paragraphs are added:

The placement of the clay borrow shall conform to the following requirements:

1. Moisture Control: The workability of silt clay is acutely sensitive to moisture content. The water content of silt clay borrow used as fill shall be controlled by the Contractor to stay in the range of two percent dry of the laboratory-determined optimum water content to four percent wet of optimum water content. Silt clay not meeting this range of water contents shall be removed or reworked until the moisture content is within these limits, unless approved otherwise by the Resident.

2. Thickness: The final lift shall be a six inch compacted layer as specified on the Plans.
3. Compaction Criteria: Silt clay borrow shall be compacted to at least 95 percent of maximum dry density as determined by ASTM D698. The Contractor shall adjust

the moisture content of the silt clay borrow as necessary to achieve the required degree of compaction.

4. Placement: Silt clay borrow shall be placed in continuous, approximately horizontal layers, not more than 12 inches in loose depth for material compacted by heavy construction equipment, and not more than six inches in loose depth for material compacted by hand-operated tampers. Fill material shall not be placed on surfaces that are muddy, frozen, or contain frost or ice.

   The distribution and gradation of the silt clay borrow throughout earthwork components shall be such that the fills will be free from lenses, pockets, streaks, or layers of material differing substantially in texture, gradation, or moisture from the surrounding material. The combined excavation, separation, and placement operations shall be such that the materials, when compacted, will be blended sufficiently to secure the best practicable distribution of the material.

5. Compaction: When each layer of material has been conditioned to have the specified moisture, it shall be compacted by at least four passes of the compaction equipment. The passage of compaction equipment in either direction (forward or backward) is considered a single "pass". When compacted, the density shall be essentially uniform throughout the layer. Compacted earth material having a moisture content or dry density that does not meet the criteria specified shall be reworked or re-compacted, as approved by the Resident to obtain the specified moisture content and dry density.

6. Heavy construction equipment shall not operate over the adjacent soil filter bed and underdrain system. Any damage or over compaction of these areas shall be corrected at no additional cost to the Authority.

203.18 Method of Measurement

The following sentence is added after the second paragraph:

Clay Borrow will be measured for payment by the cubic yard using the lines, grades and dimensions shown on the Plans.

203.19 Basis of Payment

The following is added after the first paragraph:

The accepted quantity of clay borrow will be paid for at the Contract unit price per cubic yard. Payment shall be full compensation for obtaining clay borrow and excavating, loading, hauling, placing, grading and compacting necessary for the formation of the clay borrow. It shall also include full compensation for disposing of excavated material and surplus material when necessary, and shall include all materials, labor, tools and equipment necessary to complete this work.

Payment will be made under:

Pay Item		Pay Unit
203.45	Clay Borrow	Cubic Yard

SPECIAL PROVISION

SECTION 206

STRUCTURAL EXCAVATION

206.02 Construction Methods

The following paragraphs are added:

There are no approved waste storage areas or waste areas within the Project limits. Unsuitable materials shall be disposed of off-site in accordance with Subsection 203.06.

SPECIAL PROVISION

SECTION 401

HOT MIX ASPHALT PAVEMENT

Section 401 of the Maine Turnpike Authority 2016 Supplemental Specifications is modified as follows:

401.01 Description

The following paragraph is added:

A Quality Control Plan (QCP) is required.

401.02 Materials

Section 401.02 is deleted in its entirety and replaced with the following:

Aggregates for HMA Pavements Coarse Aggregate and fine aggregate for HMA pavements shall be graded such that when combined in the proper proportions, including filler if required, the resultant blend will meet the composition of mixture for the type of pavement specified. Materials shall meet the requirements specified in Section 700 – Materials:

Asphalt Cement	702.01
Aggregates for HMA Pavement	703.07
RAP for HMA Pavement	703.08
HMA Mixture Composition	703.09

Mainline Surface HMA Coarse aggregate: The material retained on the No. 4 sieve, shall consist of angular fragments obtained from crushed quarry stone and be free of dirt or other objectionable materials. Coarse aggregate shall have a Micro-Deval value of 15.0 percent or less as determined by AASHTO T 327. The crushed stone shall have a maximum of 1.5% material finer than the No. 200 mesh when tested in accordance with AASHTO T-11. Flat and elongated particles shall not exceed a maximum of 8% at a 5:1 ratio in accordance with ASTM D-4791. Coarse aggregate angularity shall be a minimum of 95/90 in accordance with AASHTO T-335.

Mainline Surface HMA Fine aggregate: The material passing the No. 4 sieve, shall be crushed manufactured sand free from dirt, clay balls, or other objectionable material. Natural sand may be incorporated into the mix at a rate no greater than 10 percent by weight of total aggregate. The unconfined void content of the fine aggregate blend shall be a 45 minimum value when tested in accordance with AASHTO T-304, method A. AASHTO T-176 sand equivalent value shall be 45 minimum.

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

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

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

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

Section 401.03 Composition of Mixtures

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

HMA pavement mixtures for base, intermediate, shim and local road bridge projects shall be a currently approved MDOT design unless otherwise noted. A maximum of 20% RAP may be used. VMA shall meet the requirements listed in Table 1.

HMA pavement mixtures for Mainline surface paving projects shall conform to the following requirements:

The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF). The Contractor may use a maximum of 15 percent reclaimed asphalt pavement (RAP) in any mainline surface course.

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

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

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

- Properly completed JMF indicating all mix properties (Gmm, VMA, VFB, etc.).
- Stockpile Gradation Summary.
- Test reports for individual aggregate consensus properties
- Design Aggregate Structure Consensus Property Summary.
- Design Aggregate Structure Trial Blend Gradation Plots (0.45 power chart).
- Trial Blend Test Results for at least three different aggregate blends.
- Selected design aggregate blend.
- Test results for the selected design aggregate blend at a minimum of three binder contents.
- Test results for final selected blend compacted to $N_{max.}$
- Specific Gravity for the PGAB to be used.
- Recommended mixing and compaction temperatures from the PGAB supplier.
- Data Sheets (SDS) For PGAB.
- Asphalt Content vs. Air Voids trial blend curve.
- Test report for Contractor's Verification sample.
- Summary of RAP test results (if used), including count, average and standard deviation of binder content and gradation.

At the time of JMF submittal, the Contractor shall identify and make available the stockpiles of all proposed aggregates at the plant site. There must be a minimum of 150 ton for coarse aggregate stockpiles, 75 ton for fine aggregate stockpiles before the JMF may be submitted. The Authority shall obtain samples for laboratory testing. The Contractor shall also make available to the Authority the PGAB proposed for use in the mix in enough quantity to test the properties of the asphalt and to produce samples for testing of the mixture. Before the start of paving, the Contractor and the Authority's representative shall test a production sample in the Contractor's laboratory for evaluation. If the Authority finds the mixture acceptable, an approved JMF will be forwarded to the Contractor. The Authority will then notify the Contractor that paving may commence. The first day's production shall be monitored, and the approval may be withdrawn if the mixture exhibits undesirable characteristics such as checking, shoving or displacement. The Contractor shall be allowed to submit aim changes within 24 hours of receipt of the first Acceptance test result for an individual JMF. Adjustments will be allowed of up to 2% on the percent passing the 2.36 mm sieve through the 0.075 mm and 3% on the percent passing the 4.75 mm or larger sieves. Adjustments will be allowed on the %PGAB of up to 0.2 percent. Adjustments will be allowed on GMM of up to 0.010.

Approved mix designs from the previous calendar year may be carried over, however no aim changes will be granted for a carryover mix design and the initial design must not be older than the previous paving season.

The Contractor shall submit a new JMF for approval each time a change in material source or materials properties is proposed. The same approval process shall be followed. The cold feed percentage of any aggregate except natural sand may be adjusted up to 10 percentage points from the amount listed on the JMF, however no aggregate listed on the JMF shall be eliminated. Natural sand may be adjusted up to 5 percent from the amount listed on the JMF but shall not exceed 10% by weight of total aggregates. The cold feed percentage for RAP may be reduced up to five percentage points from the amount listed on the JMF and shall not exceed the percentage of RAP approved in the JMF or for the specific application.

TABLE 1
VOLUMETRIC DESIGN CRITERIA

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

As part of the JMF submittal, there are Hamburg Wheel Tracker requirements, the Contractor shall provide the Authority the test results in accordance with AASHTO T324. The results shall be generated by a third-party independent testing laboratory as approved by the Authority. The test results for each individual specimen as well as the average shall meet the requirements of Table 1A

TABLE 1A
HAMBURG WHEEL TRACKER REQUIREMENTS

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

Section 401.031 Warm Mix Technology

Add the following to the end of the first paragraph:

Weather and seasonal limitations as outlined in section 401.06 may be reduced by a maximum 5ºF with the use of WMA except for HMA being placed over bridge deck membrane.

Section 401.04 Temperature Requirements

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

Section 401.06 Weather and Seasonal Limitations

The first paragraph shall be deleted and replaced with:

The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 40°F or higher and the area to be paved is not frozen. The Contractor may place Hot Mix Asphalt Pavement as traveled way wearing course, provided the air temperature determined as above is 50°F or higher. For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 50°F or higher.

Section 401.08 Hauling Equipment Trucks for Hauling HMA

Add the following paragraph:

The undercarriage of haul units actively hauling HMA to the site shall be relatively free of dust / mud agglomerations. Haul units found to be contaminating the paving surface shall be removed from the site and cleaned prior to returning.

Section 401.09 Pavers

Add the following to the end of the fourth paragraph:

The forward operating speed of the paver shall be limited based on the course being placed. A shim or leveling course shall have a maximum speed of 50 feet per minute (fpm). Any base, intermediate, or surface course shall have a maximum paver speed of 40 fpm. The limited speed is not to be calculated on an average basis over time but shall be the actual limitation at any moment during the paving operation.

Section 401.091 Material Transfer Vehicle (MTV)

The first paragraph shall be deleted and replaced with:

When required by Special Provision Section 403, the paver shall be supplied mixture by a material transfer vehicle (Roadtec SB2500 or approved equal) capable of receiving and storing bituminous mixture from haul trucks, remixing, and delivering the mix to the paver hopper in a

consistently uniform manner.

The fourth paragraph shall be deleted and replaced with:

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

Section 401.111 Layout

The contractor shall layout the site prior to any pavement course or final striping. Layout shall be achieved by physical measurements obtained every 50’ along the length to be paved or striped. The contractor shall transfer the measurements to the pavement surface every 50’ and apply a paint mark at each location. The marks shall then be connected by a smoothed string line and subsequent paint marks applied along the string at no greater than 10’ intervals. The Resident will inspect the layout line before associated activities may begin.

Section 401.165 Longitudinal Joint Density

The first paragraph shall be deleted and replaced with:

When noted in Special Provision Section 403, the Authority will measure the pavement density of longitudinal joints between adjoining mainline travel lanes in both the unconfined and confined condition as determined by the days paving operation.

The eighth paragraph shall be deleted and replaced with:

The minimum density of the completed pavement shall be 92.0 percent of the theoretical maximum density obtained. Two consecutive failing tests shall result in production shut down. Prior to resuming paving operations, the contractor quality control unit shall satisfy the Authority that the paving operation will produce joint densities in compliance with the Specifications.

The eleventh paragraph and associated table shall be deleted and replaced with:

Payment reduction will be applied to each sublot that has a density lower than 92.0% as outlined below.

PERCENT COMPACTION	PERCENT PAY
92.0 or greater	100
91.9 to 90.0	95
89.9 to 88.5	90
88.4 or less	80

Section 401.17 Joints

The fourth paragraph shall be deleted and replaced with:

When required by Special Provision Section 403, Mainline Longitudinal joints shall be constructed as notched-wedge joint and constructed in a manner that will best ensure joint integrity.

Section 401.18 Quality Control

The following shall be added to section c. Quality Control Technician(s) QCT:

The QCT shall be on site during paving operations performing quality control activities. QCT's shall not act as equipment operators, trainers or laborers.

Section 401.191 Inspection/Testing

In paragraph nine delete and replace Item #8 with:

8. Secure High-Speed Internet Access

401.21 Method of Measurement

The second paragraph shall be deleted and replaced with:

A reduction in payment will occur when the voids, asphalt content, and density are other than the limits specified below for 100 percent payment. The payment reduction for voids and PGAB content and density will be based upon each sublot (500 tons) of production as specified in Subsections 401.162, 401.163, 401.164, and 401.165. The Contractor may request one retest for each failing sublot for core density only. The original core density and the recut core density shall be averaged together to determine payment for the sublot. No retest will be allowed for voids or asphalt content. The Contractor shall pay $250.00 for each additional core tested. Pavement restoration will not be measured separately for payment but shall be incidental to the respective pay item.

SPECIAL PROVISION

SECTION 401

HOT MIX ASPHALT PAVEMENTS

(HMA using Hydrated Lime)

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

401.01 Description

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

401.02 Materials

Materials shall meet the requirements specified.

Hydrated Lime	AASHTO 216

401.03 Composition of Mixtures

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

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

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

401.13 Preparation of Aggregates

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

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

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

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

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

401.14 Mixing

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

401.18 Quality Control

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

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

403.01 Description

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

403.02 General

The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. The Performance Graded Asphalt Binder (PGAB) shall be polymer modified as detailed in this special provision and shall conform to the requirements of AASHTO M 332 (including Appendix 1). The PG64E-28 Binder shall contain a minimum of 2.25% Styrene-Butadiene-Styrene (SBS) polymer {BWT} in a homogeneous blend with a minimum average percent recovery of 75% as determined by AASHTO T350 @ 3.2 kPA (R3.2) on RTFO residue at 64ºC to assure significant polymer load and performance. The stability of the modified binder shall be verified in accordance with ATSM D7173 using the Dynamic Shear Rheometer (DSR). The DSR G*/sin(δ) results from the top and bottom sections of the ATSM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report.

When required PG70E-34 Binder shall be modified with Styrene-Butadiene-Styrene (SBS) polymer {BWT} in a homogeneous blend with a minimum average percent recovery of 75% as determined by AASHTO T350 @ 3.2 kPA (R3.2) on RTFO residue at 70ºC to assure significant polymer load and performance. The stability of the modified binder shall be verified in accordance with ATSM D7173 using the Dynamic Shear Rheometer (DSR). The DSR G*/sin(δ) results from the top and bottom sections of the ATSM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report.

403.03 Construction

All areas which have been milled or overlaid shall have a minimum length temporary ramp constructed as determined by the Resident at the milled or overlaid limits prior to opening the roadway to traffic. Temporary ramps shall be constructed using the same material as being placed on that day or as directed by the Resident. All temporary ramps are to be constructed on a sand joint. The Contractor shall be responsible for all repairs and maintenance required for the temporary ramps.

The Contractor shall be responsible for the layout of the longitudinal centerline between the travel lanes.

The sand and loose debris adjacent to the median guardrail shall be removed and disposed of by the Contractor off of Turnpike property.

The forty-five degree pavement safety edge needed between lanes 1 and 2 shall be incidental to the 202 pay items.

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

403.04 Method of Measurement

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

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

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

403.05 Basis of Payment

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

The following pay items are added:

Pay Item		Pay Unit
403.208	Hot Mix Asphalt, 12.5 mm – RAP	Ton
403.2081	Hot Mix Asphalt, 12.5 mm (Polymer Modified) – RAP	Ton
403.2084	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (sidewalks,drives, islands& incidentals)	Ton

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

Course	HMA Grading	Item Number	Total Thickness	No. of Layers	Complimentary Notes
Mainline Full Depth Pavement – Acceleration/Deceleration Lanes					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,D,E,H,I,J,K**
Intermediate	**12.5mm**	**403.213**	**1.5”**	**1**	**C,I**
Base	**19.0mm**	**403.207**	**7”**	**3**	**C,I**
Mainline Culvert Trench					
Wearing	**12.5 mm**	**403.208**	**1.5”**	**1**	**C,I**
Intermediate	**12.5 mm**	**403.213**	**1.5”**	**1**	**C,I**
Base	**19.0 mm**	**403.207**	**7”**	**3**	**C,I**
Parking Area - Mill, Shim, and Overlay					
Wearing	**12.5mm**	**403.208**	**1.5”**	**1**	**C,I**
Shim	**4.75mm**	**403.212**	**½”**	**1**	**C,I**
Ramp, Perimeter Road - Mill, Shim, and Overlay					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,D,E,H,I,J,K**
Shim	**4.75mm**	**403.212**	**½”**	**1**	**C,I**
Parking Area – Full Depth					
Wearing	**12.5mm**	**403.208**	**1.5”**	**1**	**C,I**
Intermediate	**12.5mm**	**403.213**	**1.5”**	**1**	**C,I**
Base	**19.0mm**	**403.207**	**2.5”**	**1**	**C,I**
Ramp, Perimeter Road - Full Depth					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,D,E,H,I,J,K**
Intermediate	**12.5mm**	**403.213**	**1.5”**	**1**	**C,I**
Base	**19.0mm**	**403.207**	**2.5”**	**1**	**C,I**
Islands					
Wearing	**12.5mm**	**403.2084**	**3”**	**2**	**C,I**

COMPLEMENTARY NOTES

A. The required PGAB for this mixture shall be **64E-28.**
B. RAP may not be used.
C. The Maine DOT will conduct the job mix verification. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. Minimum and Maximum PGAB content limits from 401.21 shall not apply.
D. The MTA will conduct the job mix verification. The aggregate qualities shall meet the design traffic level of 10 to <30 million ESALS for mix placed under this contract. The design verification, Quality Control, and Acceptance tests for this mix will be performed at **75 gyrations**. (N design)
E. A material transfer vehicle (MTV) shall be used for the placement of Hot Mix Asphalt wearing surface on all roadways including acceleration and deceleration lanes and all ramps.
F. Joints shall be constructed as the "notched wedge" type in accordance with Subsection 401.17.
G. Joint density will be measured in accordance with Subsection 401.165.
H. PGAB shall conform to the provisions of 403.02 – Polymer Modified PGAB for HMA
I. The contractor shall furnish a quality control technician equipped with an approved densometer to ensure density requirements are met.
J. Hydrated Lime shall be incorporated into the mixture.
K. The antistrip additive Zycotherm manufactured by Zydex Industries shall be incorporated into the PGAB at a rate of 0.1%.

SPECIAL PROVISION

SECTION 409

BITUMINOUS TACK COAT

409.01 Description

This Subsection is deleted and replaced with the following:

This work consists of furnishing and applying one uniform application of Emulsified Asphalt RS-1 or RS-1h conforming to the specifications of AASHTO M-140. The application rate shall be 0.04 gal/yd^2

409.05 Equipment

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

409.06 Preparation of Surface

The following paragraph is added:

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

409.08 Method of Measurement

The following paragraphs are added:

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

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

Cleaning of the surface area where tack coat is to be applied shall be incidental to Item 409.152, Bituminous Tack Coat - Applied.

409.09 Basis of Payment

The following pay items are added:

Pay Item		Pay Unit
409.15	Bituminous Tack Coat RS-1 or RS1h– Applied	Gallon
409.152	Bituminous Tack Coat NTSS-1HM Trackless– Applied	Gallon

SPECIAL PROVISION

SECTION 419

SAWING AND SEALING JOINTS IN BITUMINOUS PAVEMENT

(Sawing Bituminous Pavement)

419.01 Description

This work consists of sawing bituminous concrete pavement as shown on the Plans, as specified herein or as approved by the Resident.

419.02 General

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

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

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

419.03 Method of Measurement

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

419.04 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
419.30	Sawing Bituminous Pavement	Linear Foot

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Temporary Barrier Markers)

526.1 Description

The following paragraphs are added:

This work shall consist of furnishing, installing and maintaining temporary barrier markers on all temporary barrier supplied by the Contractor and the Authority.

526.2 Materials

The following paragraphs are added:

Temporary barrier markers shall be "Big Dog" barrier markers manufactured by Custom Products Corporation, or approved equal. Markers shall be bi-directional with a minimum effective reflective area of 96 square inches (48 square inches each side) as approved by the Resident. The reflectors shall meet MUTCD reflectivity requirements and shall be orange in color.

526.3 Construction Requirements

The following paragraphs are added:

Temporary barrier markers shall be mounted as follows:

1. One on every fourth barrier in tangents and one on every two barriers in tapers, including all barrier furnished by the Contractor.

2. Delineators shall be physically adhered so as to withstand the force of throw from a snow plow.

3. If more than 25% of delineators in any 50 foot section of barrier fall off for any reason, the Contractor will be responsible for reinstalling all the delineators in that run at that their own cost.

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

526.4 Method of Measurement

The following paragraphs are added:

Temporary barrier markers shall not be measured for payment separately but shall be incidental to the temporary barrier item.

526.5 Basis of Payment

The following paragraphs are added:

Temporary barrier markers shall not be paid for separately but shall be incidental to the temporary barrier item.

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Temporary Concrete Barrier Type I - Supplied by Authority)

526.01 Description

The following paragraphs are added:

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

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

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

Maintenance Area	Linear Feet of Barrier
Kennebunk	3520

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

526.02 Materials

The following paragraphs are added:

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

526.021 Acceptance

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

526.03 Construction Requirements

The following paragraphs are added:

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

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

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

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

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

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

Retro-Reflective Delineators shall be mounted as follows:

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

526.04 Method of Measurement

The following paragraphs are added:

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

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

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

526.05 Basis of Payment

The fifth paragraph is deleted and not replaced.

The following paragraphs are added:

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Concrete Barrier Type I – Stormwater Filter)

526.01 Description

The following sentence is added:

The work also consists of furnishing and installing concrete barrier Type I for use as a weir on the overflow spillway of the Stormwater Soil Filter Beds (USF Detention Basins) as shown on the Plans.

526.02 Materials

The following items are added:

e. Joint between concrete barriers Type I shall be sealed on each side and on top, utilizing a backer rod and Sikaflex – 1a Elastomeric Sealant as manufactured by the Sika Corporation Lyndhurst, New Jersey 07071, telephone 201-933-8800, web site.
f. Concrete for the USF footing shall be Class B (f'c-3000 psi).

The following Subsection is added:

526.031 Construction Requirements – Concrete Barrier Type I - Stormwater Filter

The overflow weir at each Stormwater Filter overflow spillway, at a minimum, shall consist of two 10 foot section of concrete barrier type I doweled together and set on a continuous concrete footing. The ends of the barrier shall be flush and any projecting material such as steel loops used for connection pins shall be cut off flush with the concrete. The space between the two abutting barriers shall be sealed with non-shrink grout resulting in a continuous 20 foot concrete barrier. The concrete footing shall be constructed on stable compacted soil. The concrete barrier (overflow weir) shall be set level to the elevations shown on the Plans. Wood or other type shims will not be used to level the barrier.

The concrete barrier type I for the stormwater filter shall remain on the site at the completion of the Contract.

526.04 Method of Measurement

The following sentence is added:

Concrete Barrier Type I – Stormwater Filter shall be measured for payment by the linear foot of barrier, complete in place.

526.05 Basis of Payment

The fifth paragraph is deleted in its entirety and not replaced.

The following paragraph is added:

Concrete Barrier Type I – Stormwater Filter will be paid for at the Contract linear foot price, complete in place. Such payment shall be full compensation for furnishing, transporting and installing concrete barrier, including connecting dowels, non-shrink grout, concrete footing, and all other incidental materials, labor and equipment, required to complete the work.

Payment will be made under:

Pay Item		Pay Unit
526.307	Concrete Barrier Type I – Stormwater Filter	Linear Foot

SPECIAL PROVISION

SECTION 527

ENERGY ABSORBING UNIT

(Work Zone Crash Cushion)

527.01 Description

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

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

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

527.02 Materials

The following paragraph is added:

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

527.03 Construction Requirements

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

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

527.05 Basis of Payment

Payment will be made under:

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

SPECIAL PROVISION

SECTION 602

PIPE LINING

(Flowable Concrete Fill)

602.01 Description

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

602.02 Materials

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

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

602.03 Composition and Proportioning

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

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

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

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

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

A. Target water cement ratio
B. Target strength

C. Target air content

602.04 Quality Control

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

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

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

Apparatus:

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

Procedure:

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

602.05 Batching

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

602.06 Mixing and Delivery

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

602.07 Cold Weather Placement

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

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

602.08 Forms and Containment Berms

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

602.09 Placing Flowable Concrete Fill

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

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

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

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

602.10 Method of Measurement

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

602.11 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
602.30	Flowable Concrete Fill	Cubic Yard

SPECIAL PROVISION

SECTION 603

PIPE CULVERTS AND STORM DRAINS

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

603.01 Description

The following paragraphs are added:

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

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

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

603.02 Materials

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

603.11 Method of Measurement

The following paragraph is added:

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

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

603.12 Basis of Payment

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

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

Payment will be made under:

Pay Item		Pay Unit
603.05	6” PVC Pipe	Linear Foot
603.155	12 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1552	12 inch Reinforced Concrete Pipe - Class IV	Linear Foot
603.165	15 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1653	15 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.175	18 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1753	18 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.195	24 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1953	24 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.205	30 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2053	30 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.215	36 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2153	36 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.225	42 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2253	42 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.235	48 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2353	48 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.245	54 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2453	54 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.255	60 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2553	60 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.265	66 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2653	66 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.275	72 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2753	72 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.155	12 Inch Reinforced Concrete Pipe – Class III	Linear Foot
603.28	Concrete Collar	Each

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS AND CATCH BASINS

604.02 Materials

The following sentences are added:

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

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

The third paragraph should be deleted and replaced with:

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

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

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

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

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

5520M5 - Grate Product Number 00552060

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

5520M8 - Product Number 00552084 or 5520M8 Product Number 00552085

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

1045Z - Product Number 00104045C02

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS, AND CATCH BASINS

(60” Catch Basin Type B1)
(72” Catch Basin Type B1)

604.06 Basis of Payment

Add the following Pay Items

Pay Item		Pay Unit
604.093	60” Catch Basin Type B1	Each
604.094	72” Catch Basin Type B1	Each

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS, AND CATCH BASINS

(Oil-Water Separator System)

604.01 Description

This work shall include designing, furnishing and installing an oil-water separator system on the southbound and northbound service plazas. The oil-water separator system shall consist of a precast oil-water separator structure, PVC and RCP pipes, and four (4) precast manholes required to provide a complete functioning system as generally shown on the plans or as approved by the Resident. The system shown on the plans is for informational purposes only. The limits of the oil-water separator system will be from the manhole connecting to the upstream drainage system to the manhole connecting to the downstream drainage system. The manhole used to connect to the upstream drainage system shall include a baffle to allow bypass of high flow volumes.

The oil-water separator system shall tie into the existing upstream and downstream plaza drainage system as shown on the plans. The bypass pipe diameter shall not be smaller than the upstream drainage pipe diameter and the final outlet elevation shown on the plans shall be maintained.

The work shall also include connecting to the proposed drainage system as required, all testing, and all other work necessary to complete the construction, all in accordance with these Specifications, the conceptual layout and notes contained in the plans, or as directed by the Resident.

604.02 Materials

The following paragraphs are added:

PVC Pipe shall meet the requirements of Subsection 706.08.

Structures shall be heavy-traffic precast concrete manholes: ASTM C478 designed for HS-20-44, heavy-traffic, structural loading; of depth, shape, and dimensions indicated, with provision for rubber gasketed joints. Increase thickness of one or more precast concrete sections or add concrete to structure, as required to prevent flotation.

Joint gaskets shall be rubber per ASTM C443 or a double bitumastic seal per ASTM C990.

Include two or three reinforced-concrete rings or brick masonry, minimum nine-inch total adjustment, with an opening that matches the structure access opening and the opening of the casting frame and cover.

Pipe connectors shall be per ASTM C923, resilient, of size required, for each pipe connecting to structures.

All frames and covers shall be cast iron conforming to the requirements of AASHTO M105 for Class No. 30 gray iron castings suitable for HS-20 - 44 loading. Frames and covers shall be machined to insure true bearing surfaces. Cover(s) for the oil-water separator shall be cast with the word "O/W SEP" on it. Frame flanges shall have a minimum four-inch width. Casting for oil-water separator shall have a minimum 30-inch clear opening.

Dampproofing for oil-water separator shall be cutback asphalt, AASHTO M81 or M82; asphalt emulsion AASHTO M140 or an approved equal. Two coats shall be applied at one half (1/2) gallon per square yard per coat minimum.

604.03 Construction Requirements

The following paragraphs are added:

The proposed oil-water separator system shall be designed and stamped by a Professional Engineer licensed in the State of Maine and submitted to the Authority for approval. The design shall be completed in accordance with the latest edition of the MaineDOT Standard Specifications and project-specific Special Provisions. The Contractor shall submit detailed plans for approval. The oil-water separator shall also be designed in accordance with the requirements of the Maine DEP Stormwater BMP Manual and shall have a minimum storage capacity of 400 cubic feet/acre of tributary drainage from the bottom of the separator to the invert of the outlet pipe.

The subgrade on which the structures are to be set shall be smooth and level and shall consist of a minimum of six-inch compacted bedding material leveling course. Before inlet or outlet pipes are connected, the excavation for the structures shall be backfilled to the level of the inlet and outlet pipes. After the inlet and outlet pipes have been installed and approved, the remainder of the backfill shall be placed. Castings shall be set flush with the finish grade.

The most likely location to encounter contaminated groundwater and/or soils will be during the construction of the oil-water separator. As such the contractor shall be prepared with all necessary material and equipment to complete the construction in the least amount of time upon beginning excavation. Open excavations and/or dewatering will not be allowed to continue without ongoing and productive construction. Notice of contaminated groundwater and/or soils shall be given to the Resident as noted is Section 203.

604.05 Method of Measurement

The following sentence is added:

Oil-Water Separator System will be measured by the number of units, complete and accepted in place.

604.06 Basis of Payment

The following paragraphs are added:

The accepted quantity of Oil-Water Separator System will be paid for at the contract unit price each complete and place. Payment shall include the design, detailing, fabrication, delivery and installation as well as excavation, dewatering, shoring, bracing, sheeting, bedding, backfill,

compaction, precast concrete manholes, steps, casting frames and covers, brick masonry, concrete, concrete adjustment collars, mortar, damp-proofing, all piping and piping support systems and hardware within the structure, flexible watertight pipe connectors, testing, and all material, labor and tools incidental to the work which is required to construct a complete functional system. Disposal/Treatment of Contaminated Groundwater shall be paid for under the respective item.

Payment shall be full compensation for furnishing and installing and all incidental materials and equipment necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
604.30	Oil-Water Separator System	Each

SPECIAL PROVISION

SECTION 605

UNDERDRAIN

(PVC Underdrain)

605.01 Description

The following paragraph is added:

This work shall consist of the construction of underdrain for the stormwater filter system using pipe and bedding material in accordance with these Specifications and in reasonably close conformity with the lines and grades on the Plans.

605.02 Materials

The following paragraphs are added:

Material for six inch PVC Underdrain (laterals) shall conform to the requirements of AASHTO M278 or ASTM F949.

Material for eight inch PVC Underdrain (header/outlet pipe) shall conform to Subsection 706.08, PVC Pipe.

Underdrain Type B bedding material shall be well graded, clean, coarse gravel, free from organic matter and meeting Subsection 703.22, Type B with no more than two percent by weight passing the #200 sieve.

End caps for orifices shall be mechanically fastened to the outlet pipe.

605.04 Underdrain Construction

The following paragraphs are added:

The underdrain system to be installed as part of each stormwater filter consists of a series of parallel six inch PVC lateral underdrain pipes connected to an eight inch PVC underdrain header/outlet pipe as shown on the Plans. The underdrain pipe system shall be surrounded by underdrain bedding. A drainage geotextile (as specified in Section 620) shall be placed below the underdrain bedding on a graded, compacted and level base. Drainage geotextile shall also extend vertically along the walls of the underdrain bedding (and also extend vertically along the wall of the Soil Filter). A PVC underdrain cleanout shall be located at the upstream end of the eight inch PVC underdrain header/outlet pipe.

605.06 Method of Measurement

The following paragraphs are added:

All elbows, tees, wyes, or other special fittings required for connecting and fabricating underdrain for the stormwater filter system will not be measured.

605.07 Basis of Payment

The following paragraphs are added:

Payment for 6 Inch PVC Underdrain and 8 Inch PVC Underdrain will be made at the Contract unit price per linear foot in place. Payment will be full compensation for furnishing and placing bedding, 8 Inch and 6 Inch PVC Underdrain, all fittings and connections, cutting and connecting the underdrain, drilling orifice holes, and all labor and equipment necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
605.016	6 Inch PVC Underdrain	Linear Foot
605.018	8 Inch PVC Underdrain	Linear Foot

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced))
(31" W-Beam Guardrail – Mid-way Splice – Over 15' Radius)

606.01 Description

The section is amended by the addition of the following:

This work shall consist of furnishing and installing guardrail components at the required locations in accordance with the Specifications and in reasonably close conformity with the lines and grades shown on the Plans. The types of guardrail are designated as follows:

31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks)
31" W-Beam Guardrail – Mid-way Splice – Over 15' Radius

606.02 Materials

The section is amended by the addition of the following:

Steel posts shall be 7 feet long as specified in the plans.

The guardrail elements shall be per the Components' List found on Sheet No. 2 of 2 of draft Drawing SGR47 – 31" W-Beam Guardrail with Standard 8" Offset Block in the Task Force 13 Report noted above and/or as noted in the Contract Documents unless noted otherwise.

606.04 Rails

The section is amended by the addition of the following:

Height of top of rail shall be 31" measured from final grade. Height transition from 31" W-Beam, mid-spliced guardrail to existing guardrail shall occur over a 34'-4 ½" length.

606.08 Method of Measurement

The section is amended by the addition of the following:

31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks) and 31" W-Beam Guardrail – Mid-way Splice – Over 15' Radius will be paid for at the contract unit price per linear foot of rail satisfactorily installed and accepted.

606.09 Basis of Payment

The section is amended by the addition of the following:

The accepted quantity of 31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks) and 31" W-Beam Guardrail – Mid-way Splice – Over 15' Radius will be paid for at the contract unit price per linear foot of rail and shall be full compensation for furnishing all labor, equipment and materials necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
606.1301	31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced)	Linear Foot
606.1304	31" W-Beam Guardrail – Mid-way Splice – Over 15' Radius	Linear Foot

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(31" W-Beam Guardrail – Mid-way Splice Flared Terminal)

606.01 Description

The following sentences are added:

This work shall consist of furnishing and installing a MFLEAT (MASH-compliant Flared Energy Absorbing Terminal) for use with the 31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced) as manufactured by Road Systems, Inc., 3616 Old Howard County Airport Road, Big Spring, Texas 79720, (432) 263-2435, and retroreflective adhesive sheeting in accordance with these Specifications and the manufacturer's installation instructions, and in reasonably close conformity with the lines and grades as shown on the Plans or as approved by the Resident.

606.02 Materials

The following sentence is added:

31" W-Beam Guardrail – Mid-way Splice Flared Terminal components shall be comprised of those shown in the manufacturers installation instructions. 8" blocks shall be used.

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

The following Subsections are added:

606.045 Offset Blocks

8" Non-wood offset blocks shall be used.

606.035 Construction Requirements

The Contractor shall submit a set of installation drawings to the Resident for approval. The system shall be installed in accordance with the manufacturer's recommendation and the installation drawings.

A reflective adhesive sheeting shall be applied to the nose of the MFLEAT System after installation.

606.041 Reflective Sheeting

The color for the reflective sheeting shall be silver (white) when installed on the right shoulder and shall be black chevron on yellow background only when installed on the left shoulder.

606.08 Method of Measurement

The second paragraph is amended by the addition of: "31" W-Beam Guardrail – Mid-way Splice Flared Terminal, " after the words "Terminal section, ".

606.09 Basis of Payment

The first paragraph is amended by the addition of: "31" W-Beam Guardrail – Mid-way Splice Flared Terminal, " after the words "Terminal section, ".

The second paragraph is amended by the addition of: ", 31" W-Beam Guardrail – Mid-way Splice Flared Terminal, " after the words "NCHRP 350 end treatments ".

The retroreflective sheeting will not be measured separately for payment, but shall be incidental to the 31" W-Beam Guardrail – Mid-way Splice Tangent Terminal item.

Payment will be made under:

Pay Item		Pay Unit
606.1307	31" W-Beam Guardrail – Mid-way Splice Flared Terminal	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Terminal End - Anchored End – 31" W-Beam Guardrail)

606.01 Description

The section is amended by the addition of the following:

This work shall consist of furnishing and installing Terminal End – Anchored End – 31" W-Beam Guardrail end treatment in accordance with these Specifications, the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report: A Guide to Standardized Highway Barrier Hardware, Drawing SEW31 in AASHTO Manual for Assessing Safety Hardware (MASH) approval letter B-256; and in reasonably close conformity with the lines and grades as shown on the Plans or as approved by the Resident.

606.02 Materials

The following sentences are added:

The guardrail elements shall be per the Components' List found on Sheet No. 2 & 3 of 3 of Drawing SEW31 – Trailing-end Anchorage System in the Task Force 13 Report noted above and/or as noted in the Contract Documents. The component RWM14a shall be modified to a length of 9'-4½" measured from the center of the Midway Splice to the center of the last guardrail post.

606.042 Terminal End - Anchored End

The following sentences are added:

Installation of the Terminal End – Anchored End - 31" W-Beam Guardrail end treatment shall be in strict accordance with these plans and specifications, the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report and the Details on Sheet No. 1 of 3 of Drawing SEW31 – Trailing-End Anchorage System.

606.08 Method of Measurement

The second paragraph is amended by the addition of: ", Terminal End - Anchored End – 31" W-Beam Guardrail," after the words "Terminal section,".

606.09 Basis of Payment

The first paragraph is amended by the addition of: ", Terminal End - Anchored End – 31" W-Beam Guardrail," after the words "Terminal section,".

The second paragraph is amended by the addition of: ", Terminal End - Anchored End – 31" W-Beam Guardrail, and" after the words "NCHRP 350 end treatments".

Payment will be made under:

Pay Item		Pay Unit
606.1351	Terminal End - Anchored End – 31” W-Beam Guardrail	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Delineator Post – Remove and Reset)

606.01 Description

The following paragraphs are added:

This work shall also consist of furnishing and installing new delineator posts and/or removing and resetting or removing and disposing existing delineator posts within the Contract limits. The existing reflectorized delineator panels shall be removed and replaced with new reflectorized delineator panels as required by the Resident.

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

Outside Shoulder:

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

Median:

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

Other Locations:

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

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

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

606.02 Materials

The following paragraphs are added:

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

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

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

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

606.03 Posts

The following paragraphs are added:

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

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

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

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

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

606.08 Method of Measurement

The following paragraphs are added:

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

Delineator Posts Removed and Disposed will not be measured separately for payment, but shall be incidental to related contract items.

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

606.09 Basis of Payment

The following sentences are added:

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 606

GUARDRAIL

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

606.01 Description

The following paragraphs are added:

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

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

606.02 Materials

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

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

606.08 Method of Measurement

The following paragraphs are added:

Raking and compacting the earth around each reset post with a minimum 8 pound hand tamper or an approved device, and infilling and compacting holes created due to resetting posts with a similar surrounding material will not be paid for separately, but shall be incidental to the Guardrail - Remove, Modify and Reset pay items.

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

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

W-beam rail elements to replace damaged rail elements shall come from the stockpile of guardrail from the Remove and Stack or the guardrail to be disposed of from this Contract and will

not be measured separately for payment. If, in the opinion of the Resident, there are no suitable W-beam rail elements in the stockpile then the W-beam rail elements will be measured for payment.

606.09 Basis of Payment

The following paragraphs are added:

Payment will be made under:

Pay Item		Pay Unit
606.3605	Guardrail – Remove, Modify and Reset Single Rail	Linear Foot
606.3606	Guardrail – Remove, Modify and Reset Double Rail	Linear Foot

SPECIAL PROVISION

SECTION 607

FENCES

(Safety Fence)

607.01 Description The following paragraphs are added:

This work shall also consist of furnishing. erecting, and removing temporary Safety Fence as shown on the plans and in accordance with these Special Provisions and as directed by the Resident.

607.02 Materials The following paragraphs are added:

Safety fences shall be high visibility orange plastic safety fence, a minimum of 36" high. Posts for safety fence shall be steel posts at least 24 inches longer than the height of the safety fence and have the means provided for fastening to the fence.

607.03 General The following paragraphs are added:

Safety Fence shall be installed as a visible barrier beyond which there shall be no construction activity by the Contractor or Project personnel. Safety Fence shall be installed in between the phased construction areas and drums as shown in the plans or as directed by the Resident.

Safety Fence shall be installed on hardwood stakes and shall have a minimum width of 3 inches. The stakes shall be 1 inch x 1 inch x 4 feet, shall be embedded 18 inches into the ground, extend above the fabric, and be installed at a 10-foot spacing.

The Contractor shall install, inspect, and maintain the Safety Fence in accordance with Contract Documents or as directed by the Resident.

The Contractor shall remove the Safety Fence from the project when deemed no longer necessary by the Resident, and the Safety Fence shall remain the property of the Contractor.

607.06 Method of Measurement

The quantity of Safety Fence to be measured for payment will be the number of linear feet used in the complete and accepted work.

607.07 Basis of Payment

Payment for the safety fence shall be full compensation for furnishing and assembling all materials, for excavating and backfilling holes, for maintenance of the fence for the duration of the project, for removal and disposal of the safety fence at the completion of the project, and for all incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
607.44	Safety Fence	Linear Foot

SPECIAL PROVISION

SECTION 608

SIDEWALKS

(Reinforced Concrete Sidewalk)

606.01 Description

The following paragraph is added:

This work shall also consist of furnishing all materials for and constructing reinforced concrete slabs in accordance with this specification and the details included in the plans.

606.08 Method of Measurement

The following paragraph is added:

Constructing reinforced concrete slabs will be measured by square yard of finished surface.

606.09 Basis of Payment

The following paragraphs are added:

Payment will be made under:

Pay Item		Pay Unit
608.08	Reinforced Concrete Sidewalk	SY

SPECIAL PROVISION

SECTION 610

STONE FILL, RIPRAP, STONE BLANKET AND STONE DITCH PROTECTION

(Temporary Stone Check Dams)

610.01 Description

Paragraph (g) is added as follows:

(g) Stone Check Dams – Machine placed stone, including the placement, removal and storage of the stone used for temporary stone check dams.

610.032.e. Stone Check Dams

The following paragraph is added:

Stone check dams shall be constructed in accordance with the details as shown on the Plans, detailed in the MaineDOT's latest Best Management Practices, or as approved by the Resident. The stone shall be placed in one operation without special handling or handwork except to create a low point along the top gradient above the ditch flow lines.

The following Subsection is added:

610.033 Removing Stone

The stone for temporary stone check dams shall be removed after vegetation has been established in the ditches as approved by the Resident.

Any damage to the slopes and ditches caused by the removal of the stone check dams shall be repaired by the Contractor at his own expense.

The area directly under the temporary stone check dams shall be loamed, seeded and mulched immediately after the removal of the stone check dams. The loam, seed and mulch will be measured for payment under the appropriate pay items.

Stone used for temporary stone check dams shall be removed and stored and shall become the property of the Contractor at the completion of the Project.

The following Subsection is added:

610.034 Maintenance

Stone check dams shall be maintained by the Contractor. Sediment deposits behind check dams shall be removed when the depth of sediment reaches 50 percent of the check dam height.

610.05 Method of Measurement

The following paragraphs are added:

Stone for Temporary Stone Check Dams will be measured by the cubic yard complete in place. The removal and storage of the stone will not be measured separately for payment, but shall be incidental to the Temporary Stone Check Dam item. This shall include the transporting and unloading of the stone. If this stone is reused on the Project, it will be measured separately for payment under the appropriate pay item.

The removal and disposal of sediment from behind the Temporary Stone Check Dams will not be measured separately for payment, but shall be incidental to the Temporary Stone Check Dam pay item.

610.06 Basis of Payment

The following sentences are added:

The accepted quantities of stone for Temporary Stone Check Dams will be paid for at the Contract unit price per cubic yard.

Payment will be made under:

Pay Item		Pay Unit
610.181	Temporary Stone Check Dam	Cubic Yard

SPECIAL PROVISION

SECTION 613

EROSION CONTROL BLANKET

613.01 Description

This work shall also include seeding, mulching and watering the median swale and/or longitudinal flow line to the limits and width as shown on the Plans or as directed by the Resident.

613.02 Materials

The following sentences are added:

Seeding shall meet the requirements of Section 618, Seeding, Method Number 2.

Mulch shall meet the requirements of Section 619.

The following Subsection is added:

613.041 Maintenance and Acceptance

See Section 618.10 for maintenance and acceptance of seeding.

613.042 Mulch

All mulch shall be placed after the area has been seeded and prior to the installation of the Erosion Control Blanket.

613.09 Basis of Payment

The following "and mulch" is added after the words "initial seeding" in the second sentence.

SPECIAL PROVISIONS

SECTION 618

SEEDING

(Special Seeding)

618.02 Materials

The following paragraph is added:

Special Seed (wetland seed mix-moist) shall be "New England Erosion Control/Restoration Mix for the Detention basins and Moist Sites" as supplied by New England Wetland Plants, Inc., Amherst, MA or an approved equal. All fertilizers, soil conditioners, limestone and other materials required to germinate, initiate and sustain seed growth shall be materials recommended by New England Wetland Plants, Inc. or other approved seed manufacturer as determined by the Resident.

618.03 Rate of Application

Subsection (a) is deleted and replaced with the following:

(a) Except for Special Seed mix, agricultural ground limestone shall be applied at the rate of 33 pounds per unit for all seeding methods. Liquid lime shall be applied at the rate of 1/2 pint per unit for hydraulic method. A 1/2 pint of liquid lime shall be mixed with five pints of water.

Subsection (g) is added:

g. The Special Seeding shall be applied at a rate of 1 Unit per 1,000 SF.. Fertilizers, limestone and other soil conditioners shall be applied at the manufacturers recommended rate. The Special Seed mix shall be applied directly on top of the horizontal surface of the Soil Filter (i.e., the blended mix) and lightly raked into the mix. On the sloping surfaces surrounding the soil filter up to a height of 1.5 feet above the top of the soil filter, wetland seed shall be placed on a four inch layer of loam and lightly raked into that material. All seed shall be covered by a temporary erosion Control blanket immediately after seeding.

618.10 Maintenance and Acceptance

The second paragraph is deleted and replaced with the following:

The Contractor shall water the special seed as necessary and shall insure the continued growth of the special seed. The Authority will accept areas sown with Special Seed upon attainment of a reasonably thick stand of grass with at least 90 percent coverage, free from sizable thin or bare spots. Areas not meeting this requirement shall be reseeded and shall comply with Subsections 618.03 through 618.09.

618.12 Basis of Payment

The first paragraph is deleted and replaced with the following:

The Authority will pay for the accepted quantity of Special Seed at the Contract price per unit, which price shall be full compensation for furnishing and spreading seed, limestone fertilizer, and inoculants. The price shall also include any reseeding, watering, and maintenance necessary to meet the requirements of Section 618.10, Maintenance and Acceptance.

Payment will be made under:

Pay Item		Pay Unit
618.143	Special Seeding	Unit

SPECIAL PROVISION

SECTION 619

MULCH

(Mulch – Plan Quantity)
(Temporary Mulch)

619.01 Description

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

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

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

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

619.03 General

The first paragraph is deleted and replaced with the following:

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

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

619.06 Method of Measurement

The following sentence is added:

Temporary Mulch will be paid for by the lump sum.

619.10 Basis of Payment

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 620

DRAINAGE GEOTEXTILE

(Impervious Liner)

620.01 Description

The following paragraphs are added:

This work shall consist of installing an impervious liner in between two layers of drainage geotextiles at each of the two underdrain soil filter locations shown on the plans.

620.02 Materials

The following sentences are added:

The Impervious Liner shall consist of linear low polyethylene (LLDP), or PVC with a minimum thickness of 30 millimeters.

620.03 Installation

The following paragraphs are added:

The Impervious Liner shall be installed on the sides and bottom of the underdrain soil filter and extend up the slope to an elevation greater than the top elevation of ponding required for water quality volume. Install drainage geotextile on both sides of the impervious liner to protect the liner from puncture and in accordance with the manufacturer's recommendations. Refer to the Underdrain Soil Filter Detail Sheet for more information.

620.04 Method of Measurement

The following sentence is added:

Impervious Liner will be paid for at the contract unit price under Item 620.56 – Drainage Geotextile.

620.05 Basis of Payment

Payment will be made under:

Pay Item		Pay Unit
620.56	Drainage Geotextile	SY

SPECIAL PROVISION

SECTION 621

LANDSCAPING

(Evergreen Trees)

The provisions of Section 621 of the Standard Specifications shall apply with the following additions and modifications:

626.0001 Description

This work shall consist of the Contractor furnishing and planting trees, shrubs, vines, and other plants and shall include all planting operations and material as well as the care and replacement of the plants during the establishment period, all in accordance with the specifications, planting plans, schedules, and the directions of the Resident.

Landscaping shall include the placement of loam and mulch in planting beds as shown in the details.

626.0037 Method of Measurement

Wood Fiber mulch for the planting and tree areas is to be incidental to the installation of the landscape plants. No separate measurement or payment will be made.

626.0038 Basis of Payment

Payment will be made under:

Pay Item		Pay Unit
621.037	Evergreen Trees (5'-6'), GP A Pinus Resinosa (Red Pine)	Each

SPECIAL PROVISION

SECTION 626

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

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. 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. New boxes shall have the word LIGHTING stamped on the cover as noted in the Plans or directed by the Resident. The boxes shall have an 15,000 lb. load rating.

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 or in concrete foundations shall be fitted with bell ends. Weep holes of ¼ inch diameter shall be placed in all pull boxes, junction boxes, and fuse boxes.

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. Fasteners or supports shall not be placed more than 6 feet apart on centers, except as otherwise authorized. 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 runs terminating in any box without a threaded hub shall be provided with a metallic locknut and insulated bushings on the inside of the box.

626.034 Concrete Foundations

The following paragraph 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 doesn't meet design requirements will be replaced. No repairs to the foundations will be allowed.

626.04 Method of Measurement

The following sentence is added:

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

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

626.05 Basis of Payment

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

Payment will be made under:

Pay Item		Pay Unit
626.121	Quazite Junction Box (36X24)	Each
626.122	Quazite Junction Box (18X11)	Each

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(White or Yellow Pavement Marking Line)

627.01 Description

The following sentences are added:

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

The following sentence is added:

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

627.02 Materials

The following is added before the last paragraph:

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

627.04 General

The following is added to the third paragraph:

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

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

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

627.08 Removing Lines and Markings

The last sentence is deleted and is not replaced.

627.09 Method of Measurement

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

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

627.10 Basis of Payment

This Subsection is deleted and replaced with the following:

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

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

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

Payment will be made under:

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

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Temporary Raised Pavement Markers)

627.01 Description

The following sentence is added:

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

627.02 Materials

The second paragraph is deleted and replaced with the following:

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

627.04 General

The following sentences are added:

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

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

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

627.09 Method of Measurement

The following sentence is added:

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

627.10 Basis of Payment

The following paragraphs are added:

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

Payment will be made under:

Pay Item		Pay Unit
627.812	Temporary Raised Pavement Markers	Each

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Pavement Marking Tape)
(Pavement Marking Tape – Dotted White Lane Line, 6-inch Width)

627.01 Description

The following sentence is added:

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

627.02 Materials

The following sentence is added:

For the Broken White Lane Line (BWLL), Pavement Marking Tape shall be 3M Stamark™ High Performance Tape Series 380AW – High Performance pavement marking tape, color- white, six (6) inch width, as manufactured by 3M of St. Paul, Minnesota.

For the Dotted White Lane Line (DWLL), Pavement Marking Tape shall be 3M Stamark™ High Performance Tape Series 380I ES – High Performance pavement marking tape, color- white, six (6) inch wide and twelve (12) inch wide, as manufactured by 3M of St. Paul, Minnesota.

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

627.04 General

The following paragraphs are added:

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

The tape shall also be used to mark a Dotted White Lane Line (DWLL) and shall be installed on parallel deceleration and acceleration lanes at locations as noted in the Plans. On deceleration lanes, the tape shall be installed from the beginning of the full width deceleration lane and shall extend to the theoretical gore markings. On acceleration lanes, the DWLL shall extend from the theoretical gore markings to a point one-half of the total length of the acceleration lane (including the lane taper length). Layout data is noted on the Plans. Dotted White Lane Line tape

shall be three (3) foot in length and shall be spaced nine (9) feet apart. Spacing from the Solid White Lane Line (SWLL) or the Theoretical Gore Markings shall be nine (9) feet.

627.05 Preparation of Surface

The following paragraph is added:

The Contractor shall mill a groove in the pavement for each tape length to be placed ("in-and-out" pattern). Continuous grooving for installation of the tape shall not be allowed. The groove length shall be the required tape length plus 12 inches on both ends. Tape length spacing shall be as shown on the plans. The groove width for inlaid tape pavement marking shall be the pavement marking width plus 1 inch, with a tolerance of ± ¼ inch. The groove shall have a uniform depth of 150 Mils (±20 Mils). Groove position shall be a minimum of 2 inches from the edge of the pavement marking to the longitudinal pavement joint. The bottom of the groove shall have a smooth, flat finished surface. The use of gang stacked Diamond cutting blades is required for asphalt pavement surfaces. The spacers between blade cuts shall be such that there will be less than a 10 mil rise in the finished groove between the blades.

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

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

627.09 Method of Measurements

The following paragraph is added:

The quantity of Pavement Marking Tape measured for payment will be the linear feet of tape in place and accepted. The measurement will not include the gaps.

627.10 Basis of Payment

The following paragraphs are added:

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

Payment will be made under:

Pay Item		Pay Unit
627.94	Pavement Marking Tape	Linear Foot
627.941	Pavement Marking Tape – Dotted White Lane Line, 6-inch Width	Linear Foot

SPECIAL PROVISION

SECTION 634

HIGHWAY LIGHTING

(Luminaire, Installed)
(Conventional Light Standard, Installed)
(Remove and Reset Light Standard)

634.01 Description

The following paragraph is added:

The work shall consist of verifying the circuits of the existing luminaires .

This work shall consist of removing the existing LED luminaires (and salvage) from the light standards, furnishing and installing new LED luminaires with all new associated appurtenances at locations shown on the plans. Removing and salvaging existing LED luminaires and light standards as shown/identified on the plans. Removing existing light standards, luminaires, and any breakaway devices and resetting at locations as shown on the plans. New LED luminaires will also be installed on new conventional light standards as shown on the plans.

The work shall also consist of furnishing and installing disconnect fuse kits in the pole base of all existing light standards without a disconnect fuse kit, or with a damaged disconnect fuse kit. The work shall also consist of furnishing and installation individual 3 pin NEMA twist-lock photocontrol receptable units on all existing and relocated parking lot light fixtures. The photocontrol unit will be supplied by the Authority.

The work shall also consist of furnishing and installing new wire(s) from the (existing or new) disconnect fuse kit to the (new or relocated) LED fixture in the reused light standards, should the existing wire(s) at the luminaire be brittle and there be insufficient slack in the wire(s) to cut out the brittle wire(s) and properly connect the LED fixture.

The Contractor shall turn over all existing LED luminaires removed and not reused within this contract to the Authority as a spare.

634.02 General

The following paragraphs are added:

All Contract work shall be overseen by a Maine licensed Master Electrician. The lead person for the field installations shall be either a Maine licensed Master Electrician, or a Maine licensed Journeyman Electrician. Apprentice Electricians, Helper Electricians, Journeyman-In-Training Electricians, and helpers may work under the Master or Journeyman Electrician as permitted under the law.

The Contractor shall comply with National Electrical Code (NFPA 70) as applicable to construction and installation; provide electrical cable, wire and connectors, which have been listed and labeled by Underwriters Laboratories, and comply with National Electrical Manufacturers Association/Insulated Power Cable Authorities Association Standards publications pertaining to materials, construction and testing wire cable, where applicable.

At a minimum, the Contractor shall provide the following field quality control:

- Prior to energizing, check wire for continuity of circuitry and for short circuits with ohmmeter type testing equipment. Correct malfunction when detected.
- Subsequent to wire hook-ups, energize circuitry and demonstrate functioning in accordance with requirements.

634.021 Materials

The following paragraphs are added:

Disconnect fuse kits in pole bases shall be Ideal SLK Disconnect Fuse Kit 30-S2212, or similar approved, matched to the pole wiring configuration. All hot and neutral wires shall be fused. Ground wires do not need to be fused.

The 130W 120-277V Conventional Multi-Tap LED fixtures shall be one of the following:

- Model # ATB2-60BLEDE70-MVOLT-R3-NL, as manufactured by American Electric Lighting, 3825 Columbus Road, Granville, Ohio 43023.
- Satellite Series # SAT-96M-0-R-T3-600-GY-1-A-NS, as manufactured by LED Roadway Lighting of Halifax, Nova Scotia; (877) 533-5755
- LEDway Series # STR-LWY 3M HT 08 E UL SV 700 R, as manufactured by CREE, Inc., 4600 Silicon Drive, Durham, NC 27703.
- Philips Roadview LED Series RVS-135W80LED4K-LE3-UNV-GY3, as manufactured by Philips Lighting North America Corporation, 200 Franklin Square Drive, Somerset, NJ 08873

The 220W 120-277V Conventional Multi-Tap LED fixtures shall be one of the following:

- Model # ATB2-80BLEDE85-MVOLT-R4-NL, as manufactured by American Electric Lighting, 3825 Columbus Road, Granville, Ohio 43023.
- Philips RVM-270W160LED4K-R-LE4-UNV-GY3, as manufactured by Philips Lighting, North America Corporation, 200 Franklin Square Drive, Somerset, NJ 08873.

The Manufacturer shall provide a minimum 5 year warranty on all new fixtures, installed and spares, from the Project Completion date.

Each luminaire, existing and proposed, shall be provided with a 3 pin NEMA photocontrol receptacle. All “spare” shorting caps shall become property of the Authority. The photocell shall meet the requirements of Subsection 715.10 Photo Electric Control of the 2014 MaineDOT Standard Specifications. Subsection 715.10.d is revised to read, “The control shall be capable of

operation on the supply voltage to the luminaire and shall be acceptable to the luminaire manufacturer.

Each luminaire shall be furnished with a NEMA label.

Product Data sheets for all fixtures shall be submitted and approved before the fixtures are ordered. Submittals shall clearly identify the product and accessories being proposed, Test Reports and Certifications, and Product Warranties.

634.04 Cable Installation

All existing light standards that do not have a disconnect fuse kit, or have a damaged or un-suitable disconnect fuse kit in the pole base, shall have a new disconnect fuse kit installed.

The Contractor shall advise the Authority's representative if the existing disconnect fuse kit at the pole base is damaged or un-suitable for continued use prior to proceeding with the work.

The Contractor shall advise the Authority's representative if the existing wiring between the pull box and the pole base is unsuitable for installing a disconnect fuse kit prior to proceeding with the work.

All existing light standards receiving new luminaires and where the existing wire(s) at the existing luminaire are brittle and there is insufficient slack in the wire(s) to cut out the brittle portions of wire(s) and properly connect the new LED luminaire, shall have new wire(s) installed from the new LED luminaire to the (existing or new) disconnect fuse kit in the pole base.

New wire(s) between the luminaire and disconnect fuse kit at the pole base will not be paid separately and shall be incidental to pay item – Conventional Light Standard.

If the wiring, shown to remain, from the pole base to the adjacent or nearest pull box needs to be replaced due to insufficient slack or wire brittleness it will be paid as Extra Work and will be measured as prescribed under Specification Section 655. All Extra Work shall be authorized by the Authority before being undertaken by the Contractor. Should Extra Work be required, the splices in junction boxes shall be made with ILSCO USPA-350-SS-DB Safetysub Watertight Direct Bury Splice Wire Range 350MCM-10-STR connectors for the appropriate wire count only.

634.051 Removing Light Standards

The first paragraph is deleted and replaced with the following:

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

The Contractor will not be allowed to remove the existing light standards until all new foundations, wiring, conduits and junction boxes have been installed. Breakaway devices shall be required on all proposed light standards. If breakaway devices do not exist on the existing light standard, new breakaway devices shall be supplied and installed. For all entrance ramp and exit

ramp, lighting locations, the Contractor will be allowed one (1) working day to remove and reset a light standard, including installing the luminaire and testing.

634.06 Luminaires

The second paragraph is revised to read:

The connections between the luminaires and disconnect fuse kits shall be made with number 10 wires AWG copper stranded XHHW, minimum size. A 14 inch long Teflon sleeve shall be placed over each end of each conductor in the luminaire.

634.092 Method of Measurement

The following sentence is added:

LED Luminaire, Installed will be measured per each, complete in place and accepted.

Conventional Light Standard, Installed will be measured per each pole, wired complete in place and accepted, irrespective of the number of wires or total linear feet of wire required to complete the work.

Confirming if the existing pole(s) have a working disconnect fuse kit in the base will not be paid separately, but shall be incidental to the Conventional Light Standard, Installed pay item.

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

Removal of conduits and wires will not be measured separately and shall be incidental to the miscellaneous electrical work.

Removal and salvaging existing LED luminaires will be incidental to the Removal of existing light standards.

634.093 Basis of Payment

In the second sentence of the first paragraph, the words, “LED fixture, pole wiring” shall be added after the words, “bracket arm”.

The following paragraphs are added:

Payment for furnishing and installing LED Luminaire, Installed will be made for the accepted quantity at the Contract unit price per each, which shall include installing a salvaged existing LED luminaire or furnishing and installing the new LED fixture, and all incidentals necessary to complete the work.

Payment for furnishing and installing Conventional Light Standard, Installed will be made for the accepted quantity at the Contract unit price per each pole, which shall include furnishing and installing the new pole wiring from the disconnect fuse kit to the LED fixture, irrespective of the number of wires or total linear feet of wire required to complete the work, and all incidentals

necessary to complete the work. Payment for furnishing and installing the disconnect fuse kit will not be paid separately and will be incidental to the work.

The accepted quantity of Remove and Reset Light Standards will be paid at the Contract unit price each for the number of units that are removed and reset. Payment shall be full compensation for the removal and resetting of the light standard, including relocation of the luminaires, resetting breakaway devices or installing new breakaway devices, new pole wires, new disconnect fuse kit, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
634.2041	Luminaires	Each
634.208	Remove and Reset Light Standard	Each
634.210	Conventional Light Standard	Each

SPECIAL PROVISION

SECTION 643 - TRAFFIC SIGNALS

643.01 Description

This work shall consist of the installation of a new traffic signal at Maine Turnpike Exit 25 SB and Route 35, Maine Turnpike Exit 25 NB and Fletcher Street in Kennebunk. The work shall also consist of modifications to the traffic signals at the intersection of the Fletcher Street and Route 35 in Kennebunk. Work shall include new traffic signal installations, traffic signal modifications and new video detection system installations. The work shall include cabinets, poles, foundations, backfill, and all necessary fittings, cables, and components as required to make a fully functional traffic signal and video detection system.

Traffic signal terms shall be in accordance with those defined in the NEC, MUTCD, NESC, NEMA, IMSA and the ITE Standards for traffic control equipment.

643.02 Materials

A list of the recommended materials required to install the system may be included as an amendment to this specification, but the Authority will give no guarantee as to the completeness of this list. Unless otherwise specified, all equipment and components shall be new and free of defects.

Electrical materials shall meet the standards herein, local and utility codes, and the National Electrical Code, where applicable.

Drawings, manufacturer's specifications and applicable catalog cuts for all materials and components shall be submitted in accordance with Section 105.7 of the Standard Specification within 21 days after award of the Contract. An additional set of final approved documents, to total 6 sets, shall be provided to the Resident.

At the conclusion of the project, three complete sets of cabinet prints (24 inch by 36 inch) and one complete set of user manuals will be provided and left in the cabinet. The cabinet prints will be an exact representation of the wiring, including field wiring, and programming that is actually present in at the time of acceptance.

643.0211 Traffic Signal Heads

New housings shall be constructed of die cast aluminum or polycarbonate with a smooth outer surface. All housings shall be equipped with a Quick Change Kit as manufactured by GGI Road and Traffic. Housings shall be adaptable for pedestal, bracket, or rigid mast arm vertical or horizontal mounting. The assembled housing shall be dust proof and moisture proof. Each housing shall be equipped with a hinged door of die cast aluminum or polycarbonate to hold the lens and parts of the optical units. The doors shall be designed to ensure uniform pressure around the doorframe when closed. Doors shall be fastened by two hinged wing nut assemblies or other approved fasteners. Unless otherwise indicated on the plans, lenses shall be furnished with approved tunnel visors (not less than 10 inches). If either longer visors than those specified above or louvers are deemed necessary, they shall be furnished and installed. If required, louvers shall

be attached with machine screws, nuts and washers. The use of "self-tapping" machine screws will not be allowed. All traffic signals shall be furnished with a 5 inch backplate with a factory applied 2" diamond grade retroreflective border. Backplates shall be louvered aluminum coated flat black, be fastened with stainless steel hex head slotted screws and a 3/16 inch by 3/4 inch stainless steel fender washer. Signal housings shall be manufactured by the Econolite Group, Inc. or an approved equal.

The assembled housings shall be made up of individual sections fastened together with bolts; the assembly of sectional units shall present a smooth unbroken contour of pleasing appearance. Each end of the housing assembly shall have an opening for a 1-1/2 inch pipe nipple. The area around this opening shall be reinforced and serrated so that lock nuts will seat firmly. The use of "Tri-Studs" to join the signal sections together will not be permitted.

One cap shall be supplied with each new assembled housing to act as a cover over the hole in the top to prevent water from entering.

Housing adapters for pedestal mounting shall be constructed of cast iron. They shall be adjustable with serrated surfaces to permit the housing to be locked in the desired horizontal position. The adapters shall be secured to the bottom of the housing by means of a close nipple, shall slip fit at least 7 inches over a standard traffic signal post of 4 inches in diameter and shall be secured to the post by a minimum of four set screws. Adapters shall contain raceways from the housing to the post to protect the wires from the elements.

Mast arm brackets shall be cabled with "Astro-Brac" by Pelco or an approved equal.

Span wire hardware shall consist of hangers with a cast nipple. "Tri-Stud" hangers will not be permitted.

Light Emitting Diode (LED) lamps shall have a regulated power supply designed to electrically protect the diodes. The lamp shall be water tight and sealed to eliminate contaminants. The lamp shall be capable of operating at ambient air temperatures of -40° F to 140° F. LED's shall be a 48 Volt DC LED module as manufactured by Dialight or an approved equal. All LED lamps shall have a date code not to exceed 6 months prior to the start of construction.

Each LED module shall be wired with two leads which shall terminate at the terminal block in each signal head. Separate leads shall be used to wire the block to the base. Leads shall be 18 AWG stranded wire with spade type copper terminal ends. All colors shall be bright and clearly defined and cover the insulation the entire length of the lead. The color of these leads shall be as follows:

(a) From the receptacle behind the red or "Don't Walk" lens: one red wire and one white wire with an optional red tracer;

(b) From the receptacle behind the yellow lens: one yellow wire and one white wire with an optional yellow tracer;

(c) From the receptacle behind the green or "Walk" lens: one green wire and one white wire with an optional green tracer;

(d) From the receptacle behind the green arrow: one blue wire and one white wire with an optional blue tracer.

LED lamp life shall be a minimum of 100,000 hours of continuous operation. Power consumption for 12" indications including power supply shall not exceed 10 W.

LED modules shall conform to the standards set forth by the Institute of Transportation Engineers and shall be of the color indicated, circular in shape, with a visible diameter of approximately 12 inches.

643.0212 Pedestrian Signal Heads.

Pedestrian signal heads shall be LED type conforming to the Institute of Transportation Engineers Standard for Adjustable Face Pedestrian Signal Heads. The LED aluminum pedestrian signal displays bright and uniform symbol message "HAND" in Portland Orange and "WALK PERSON" in Lunar White. In addition, a countdown timer in Portland Orange LED's will be included. All messages shall be contained in a single section head.

Pedestrian signal housings shall be one piece die cast aluminum or polycarbonate complete with top, bottom, sides, and back. For mounting purposes, the top and bottom of the housing shall have openings to accommodate standard 1-1/2 inch pipe brackets. The outside surface of the openings shall be serrated to provide for positive positioning of the housing. Doors and fasteners shall be as specified in 2.2.1. The completed assembly shall be dust and moisture proof. Each housing shall include either a tunnel visor a solar screen visor installed parallel to the face of the HAND/WALKING PERSON" symbol. The solar screen assembly shall consist of a minimum of 20 straight horizontal louvers and 21 zigzag pattern louvers. The solar screen visor assembly shall be held in place using stainless steel screws. Housings shall be manufactured by the Econolite Group, Inc. or an approved equal.

Each LED module shall consist of a 16-inch by 18-inch assembly that utilizes LED overlaid filled countdown style with the filled hand/man on the left and the countdown on the right. The countdown module shall only operate in clearance cycle countdown mode. The countdown module will start counting when the flashing clearance signal turns on and will countdown to "0" and turn off when the steady "Don't Walk" signal turns on. The units shall not have any external attachments, dip switches, toggle switches or options that will allow the mode to be changed from counting the clearance cycle, to the full walk/don't walk cycle or any other modification to the icons or digits. The control and regulation module shall be of the "smart" type in order for the countdown displays to be automatically adjusted with the programmed intervals of the traffic controller. At power on, the module enters a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.

Pedestrian LED modules shall be engineered to fit in all ITE compliant conventional cast aluminum or polycarbonate pedestrian signal housings. Each LED Module shall utilize appropriate technology to achieve the required color and shall be the ultra-bright type rated for 100,000 hours of continuous operation from -40° F to *165*° F (-40°C to +74°C), Each individual LED module shall be wired such that a catastrophic loss or failure of one LED will result in the loss of not more than 5 percent of the signal module light output. The modules shall be rated for a minimum useful life of 48 months. All wiring and terminal blocks must meet the requirements of Section 13.02 of the ITE Publication Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads). LED's shall be 48 Volt DC as manufactured by Dialight or an approved equal.

Each LED module shall feature two 39-inch long 20 AWG minimum wire lead with strain relief and spade terminals for connection to the terminal block of the signal heads. One of the conductors shall contain white insulation to signify neutral. The color of other conductor shall be different and shall be used to differentiate between the "RAISED HAND" and the "WALKING PERSON" LED modules. The two conductors shall be 600 Volt, 20 AWG minimum, jacketed wires conforming to the National Electric Code, rated for service at 220° F. Each LED module shall incorporate a printed circuit board containing all required LEDs and circuit components.

The external lens surface shall be smooth with no raised features, so as to minimize the collection of dirt, debris, and other particulate contaminants, which may impact luminous intensity, and to facilitate periodic cleaning. External lens facets are prohibited. Both the "RAISED HAND," the "WALKING PERSON" and the countdown LED modules shall be filled with LED's to give the appearance that the entire image is illuminated when energized. Outlined images will not be permitted. The height of the "RAISED HAND" and the "WALKING PERSON" images on the module shall not be less than 10 inches and the width of each image shall not be less than 7 inches. The uniformity ratio of an illuminated symbol shall not exceed 4 to 1 between the highest luminance area and the lowest luminance area in the module.

643.0213 Pedestrian Push Buttons.

Pedestrian push buttons shall be of the Accessible Pedestrian Signal (APS) type. The push button station (PBS) shall have push button confirmation, adjustable locator tone, a vibrating button during the "Walk" phase, the ability to play custom messages and shall automatically adjust sound to ambient noise levels. The PBS shall be a 2 Wire with black base and yellow front housing, countdown pedestrian sign (9x15, R10-3e) and saddle, an arrow indicating direction to and parallel with the crosswalk, braille street crossing on the faceplate and custom street crossing message as shown on the plans. PBS to be a Polara EZ Communicator Navigator EN2 or equal. Any ancillary equipment needed to interface the button with the cabinet, such as a CCU2EN, cabling and rack mounting hardware shall be included and no separate payment for these items shall be made.

As part of this contract, 1 spare EN2 PBS will be included per intersection. A spare CCU2EN will be included per project.

643.03 Traffic Signal Poles, Mast Arms, and Pedestals

Section 720 of the Standard Specifications shall apply unless otherwise noted.

Steel Structures. Section 720.04 of the Standard Specifications shall apply.

Concrete foundation shall be concrete Class A meeting the requirements of Section 502 of the Standard Specifications - Structural Concrete. Reinforcing steel shall meet the requirements of Section 503 of the Standard Specifications – Reinforcing Steel. The foundations shall be as shown on the plans.

Anchor bolts. Section 720.07 of the Standard Specifications shall apply.

Mast-arm structure and foundation (when required) design calculations and shop drawings shall be submitted for documentation in accordance with Section 105.7 of the Standard Specifications.

Wood Utility Poles. Section 720.10 of the Standard Specifications shall apply.

Messenger, tether and guy cable shall be a minimum seven strand, 5/16 inch diameter wire with a breaking strength of 8,000 pounds, double galvanized in accordance with AASHTO M 111.

Aluminum Structures. Sections 720.01 and 720.02 of the Standard Specifications shall apply.

643.04 Traffic Signal Controllers and Cabinets.

The controller shall designed to operate on 120 volt, 60 hertz (cycle) alternating current, and shall be delivered completely wired and enclosed in a weatherproof cabinet. All components shall be new, and unless noted, the use of solid state components shall be required. Controllers shall be programmable, menu driven, contain an Ethernet communication port (RJ-45 connection) and one hundred (100) logic processor commands shall be accessible from the front panel of the controller or through remote database management software. The controller shall be designed to mount to a standard EIA 19-inch rack and be 4U high. The controller shall meet, as a minimum, all applicable sections of the NEMA Standards Publications for ATC. The controller shall be a Cobalt Rackmount as manufactured by the Econolite Control Group, part COBRM21130110000.

643.041 Bench test.

All components of the controller and cabinet shall be bench tested for a minimum of 72 continuous hours by the Contractor at the Contractor's facility prior to delivery to the project. A representative of the Authority shall verify the test check list. The Contractor shall notify the Authority at least 3 days prior to testing as to the date, time and place that tests are to be performed. Testing shall be performed by a Level 2 IMSA qualified Signal Technician using a test board and in conformance with the design loads, phasing, timing and auxiliary equipment such as pre-emption phases. Any defective component shall be replaced, retested and continuous testing continued. Test results shall be documented on a check list as provided by the Authority and these results attested by the signature of the performing technician. Upon completion of satisfactory bench testing, a written approval will be supplied to the Contractor by the Engineer for delivery to the project only. This approval does not relieve the Contractor from ensuring proper operation of the equipment. The approval shall accompany the cabinet and controller when delivered to the project.

The checklist will contain the following items:

(a) Install all of the equipment into the cabinet as required per the plans and specifications.

(b) Set the phase timings of the controller in accordance with plans.

(c) Wire in 48 VDC Cabinet Test Display to the switch packs in simulation to the intersection as per the plans.

(d) Check all of the wiring connections for physical tightness.

(e) Power up the cabinet.

(f) Observe the sequences, timings and operations of the controller in conformance to the plans and specifications.

(g) Using the phase test push buttons, insert a call for a phase and observe this phase as it is being called for sequencing, timing and returning to rest condition. Only one separate call for each phase shall be used.

(h) Test the police panel switches, manual, on/off, flash/auto and test the police manual cord if present in the panel.

(i) Test for Fire Pre-emption - Optical Detector - with the receivers wired in the cabinet and using an emitter, test each fire run as per the plans. Hard Wired - Attach a temporary push button as per the plans and test each fire run as per the plans.

(j) Check exhaust fan controls by applying heat from a 100 watt lamp on an extension cord to the thermostat.

(k) Check heat lamp controls by cooling the thermostat.

(l) Check conflict monitor by testing for any conflicting Greens or Yellows by the use of a jumper wire attached to a displayed Green or Yellow and to the other non-parent Greens or Yellows to ascertain that conflicting colors are not present.

When all of the above procedures have been completed, the performing technician shall document the results on the approved form as provided by the Authority.

643.042 Controller Cabinet.

The cabinet shall meet, as a minimum, all applicable sections of the ATC 5301 v02 StdHLD (most current revision) Standards Publications for ATCC. The ATC Cabinet shall be available in 2 different versions and include all of the Authority required items supplied in the following Econolite Cabinet Part Numbers:

48VDC ATCC 16 Channel Output / 24 Channel Input with UPS and battery shall be Econolite Part Numbers ATCC1039, 1089-001 and 1089-004.

48VDC ATCC 32 Channel Output / 24 Channel Input with UPS and battery shall be Econolite Part Numbers ATCC1032, 1089-001 and 1089-004.

643.043 Cabinet Component Spares

The following will be provided as spare equipment, per intersection:

2 SIUs; 3 High Density Switch Packs; one 2212-LV Cabinet Monitor Unit with Datakey; 5 High Density Flash Transfer Relays and 1 - 500-watt UPS battery, Econolite part number 1089-004.

In addition, one Monitorkey Programming Tool will be provided for this project.

643.05 Fire Pre-emption. Fire pre-emption shall be activated by optical detection equipment with optical detectors. Fire pre-emption shall clear the existing phase through a normal clearance followed by the fire phase as shown on the plans for the minimum time specified. The fire phase shall give a green in the called direction; the confirmation light shall be activated only during the fire pre-emption phase, after the call phase is satisfied. Upon release of the fire pre-emption, the

controller shall provide a green to the major movement. Phase selector will be Opticom by GTT model 764. All software and cabling from the manufacturer will be supplied to the Authority to allow communication to the device with a PC.

The engineering, design, and integration of the fire pre-emption shall be by the manufacturer of the equipment, in cooperation with the supplier of the signal controller equipment. Preemption receivers will be Opticom model 7XX series as required.

The confirmation light shall be 48 Volt DC and operated by a HDSP (ie channel #9 Yellow).

Optical detector locations shall be verified by the Authority to assure optimum reception. Optical detector cable shall run unspliced from the optical detector head to the controller cabinet.

Each optical detector lead-in cable shall be marked with plastic tape. The fire preemption shall correspond to the following chart associating the fire preemption call with its corresponding phase:

PREEMPTION PHASE CODE

Preempt 3	Phases 1 & 6
Preempt 4	Phases 2 & 5
Preempt 5	Phases 3 & 8
Preempt 6	Phases 4 & 7

The fire pre-emption system at the Route 35 / Fletcher Street intersection shall be maintained. The fire preemption system shall be tested before any work commences to ensure that the system is fully functional. The system will be tested again at the completion of the project and any components found to be non-functioning shall be replaced by the contractor at no cost to the Authority. All preemption testing will be performed in the presence of a representative of the Authority.

643.06 Video Detection.

The work shall consist of furnishing and installing a video detection system (Econolite Autoscope Vision video-based vehicle detection system – no approved equals) at the traffic signals located at the intersections of Route 35 and the Maine Turnpike Exit 25 SB (I-95) and Fletcher Street and the Maine Turnpike Exit 25 NB interchange ramps. The following subsections shall be added:

643.061 System Hardware.

The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types.

643.0611 Video Sensor.

The video detection system shall include a video sensor that integrates a high-definition (HD) camera with an embedded processor for analyzing the video and performing detection. Each video sensor shall maintain a time-stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis.

643.0612 Camera and Processor.

The camera shall be a color CMOS imaging array and shall have HD resolution of at least 720p (1280x720 pixels). The camera shall include a minimum 10X optical zoom. It shall be possible to zoom the lens as required to satisfy across-the-intersection detection objectives, including stop line and advance detection. It shall be possible to zoom the lens remotely from the TMC for temporary traffic surveillance operations or to inspect the cleanliness of the faceplate. The camera shall have direct, real-time iris and shutter speed control by the integrated processor. The processor shall support H.264 video compression for streaming output. The system shall include one spare camera.

643.0613 Video Sensor Enclosure Assembly

The camera and processor shall be housed in a sealed IP-67 enclosure. The faceplate of the enclosure shall be glass and shall have hydrophilic coating on the exterior surface to reduce debris accumulation and maintenance and shall have a thermostatically-controlled indium tin oxide (ITO) heater applied directly on the interior surface to keep the faceplate clear of condensation, snow, ice and frost. An adjustable aluminum visor shall shield the faceplate from the sun and extraneous light sources. An integral aiming sight shall assist in aiming the camera for the detection objectives. A removable rear cap and cable strain relief shall seal the power connection and shall be tethered to the enclosure to avoid dropping the cap during installation. The rear cap shall be fastened to the body of the video sensor with a single, captive bolt. The rear cap and enclosure shall include Gore breathers to equalize internal and external pressure. The sensor shall be self-supporting on manufacturer's mounting brackets for easier fastening during installation. It shall be possible to rotate the field-of-view 360° without changing the angle of the visor.

643.0614 Power and Communications

Power and communications for the video sensor shall be carried over a single three-conductor cable. Termination of the three-conductor cable shall be inside the rear cap of the enclosure on a three-position, removable Phoenix terminal block. Each conductor shall be attached to the Phoenix plug via a screw connection. The video sensor shall operate normally over an input voltage range of 89 to 265 VAC at 50 or 60 Hz. Power consumption shall be no more than 16 watts typical. No supplemental surge suppression shall be required outside the cabinet. All communications to the video sensor shall be broadband-over-power via the same three-conductor cable that powers the unit. Coaxial cable shall not be required.

643.062 Communications Interface Panel

The video detection system shall include an interface panel in the traffic cabinet that manages communications between the video sensors, the traffic management center, a maintenance technician, and the traffic cabinet itself. The communications interface panel shall maintain a time-

stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis. The system provided shall include one spare Communications Interface Panel.

643.0621 Video Sensor Connection

The communications interface panel shall provide connection points for four video sensors, each sensor connection shall be a 3-pole terminal block, which supplies power and broadband-over-power communications to the sensor. The broadband-over-power communications shall provide a throughput of 70 to 90 Mbps and shall support at least 1,000 feet of cabling to the video sensor. Each video sensor connection shall include a power switch and there shall be an LED for each video sensor to indicate the state of the power to the sensor and an LED for each video sensor to indicate the status of communications. Each video sensor connection shall contain a resettable fuse. Each video sensor connection shall provide high-energy transient protection.

643.0622 Traffic Management Center (TMC) Communications.

An Ethernet port capable of supporting 10/100/1000 Mbps communication shall be provided to connect to a remote Traffic Management Center (TMC). The communications interface panel shall proxy all network requests that arrive on the TMC connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and the video sensors. All communications to the video detection system through the TMC connection shall be to a single IP address.

643.0623 Local User Communications.

A wired Ethernet port capable of supporting 10/100/1000 Mbps communications shall be provided to connect the technician at the cabinet to the video detection system for setup and maintenance purposes. All communications to the video detection system through the maintenance port shall be to a single IP address. The maintenance port shall support DHCP to automatically assign an IP address to the user's computer, if desired. An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes. All communications to the video detection system through the Wi-Fi access point shall be to a single IP Address. The Wi-Fi access point shall support DHCP to automatically assign an IP Address to the user's computer. The Wi-Fi access point shall include a dipole, omnidirectional antenna. A momentary pushbutton shall allow the user to turn the Wi-Fi access point on or off. The Wi-Fi access point shall turn itself off automatically after a period of inactivity from connected devices. An LED shall indicate when the Wi-Fi access point is enabled. The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.

643.0624 Traffic Controller Connection.

The communications interface panel shall provide one connection to communicate to the traffic controller through the cabinet. The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface utilizing a 15-pin female metal shell D subminiature type connector to support a standard NEMA TS2 or TEES SDLC cable. The traffic controller connection shall support a protocol interface to SDLC capable traffic controllers (NEMA or TEES). The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs. The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller. The wired I/O data communications link shall support at least 24 outputs and 16 inputs. It shall be

possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

643.0625 USB Ports.

The communications interface panel shall include two USB 2.0 ports. If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.

643.0626 Power.

The communications interface panel shall accept input voltage in the range of 89-265 VAC, 50/60 Hz power from the transient-protected side of the cabinet. The communications interface panel shall be protected by two slow blow fuses. Spares shall be attached to the panel.

643.063 Wired Input/Output Card.

The video detection system shall support an optional wired input/output card that communicates with the communications interface panel for real-time detection states and other I/O to the traffic controller. The card may reside in a standard detector rack or shelf-mount enclosure with power module. The optional wired input/output card shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack or Caltrans TEES Input File. The card shall occupy two slots of the detector rack and shall provide four detector outputs on its rear-edge connector. A front connector shall provide communication to the communications interface panel. A front connector shall allow 16 inputs and 24 contact-closure detector outputs for wiring into the cabinet. A front panel LED for each of the 16 inputs and 24 outputs shall indicate the state of the input or output. The wired input/output card shall support optional expansion cards in other slots. Each expansion card shall support 4 outputs to the back edge of the card. The wired input/output card shall support optional harnesses for connection to Input Files or C1, C4, C11, and C12 ports to support Type 170 or Type 2070 controllers.

643.064 System Management Software.

Management software shall be a Windows-based application and shall be compatible with Windows 7 and Windows 10 operating systems. The software shall communicate with the video detection system via Ethernet. The management software shall automatically determine all video sensors and communications interface panels available on the local network and populate a list of all devices. The management software shall provide the user a means to name individual video sensors and communications interface panels.

The management software shall provide a means for the user to zoom the camera optics while viewing a live video stream. The management software shall provide a means for the user to calibrate distances in the field of view. The management software shall provide the user a means to create 4-sided detection zones in the field of view using either a still snapshot or live video. The management software will overlay an outline of each detection zone over the background image. It shall be possible for the user to place detection zones anywhere in the field of view for stop line detection and/or advance detection. It shall be possible for the user to set the desired color of both the on and off states of the detection zone overlay. It shall be possible for the user to alter the size and shape of any previously created zone. It shall be possible for the user to overlap zones, either

partially or fully. It shall be possible for the user to name each zone uniquely. It shall be possible for the user to assign each zone to detect vehicles, to detect bicycles, or to detect both, and to specify different outputs for each type. It shall be possible for the user to assign the same output to multiple zones such that the output will be on if any of the zones are detecting a vehicle or bicycle. It shall be possible for the user to assign a single zone to more than one output such that if a vehicle or bicycle is detected, all the assigned outputs shall be turned on. The management software shall be capable of creating at least 99 detection zones per video sensor.

It shall be possible for the management software to retrieve all configuration parameters from video sensors or communications interface panels. It shall be possible for the user to save all the settings for a video sensor or a communications interface panel to a laptop file. The management software shall provide a means to read or import all the settings from a previously saved configuration file for a video sensor or a communications interface panel. The management software shall be able to download a new version of the application software into a communications interface panel and its attached video sensors. The management software shall provide a screen to monitor operation of a video sensor. The monitoring screen shall include a live video stream from the video sensor with at least HD 1280x720 pixel resolution. The monitoring screen shall show indications of detection in real time by changing the color of the detection zone.

It shall be possible for the user to configure different indications for vehicle detections vs. bicycle detections when both are configured for the same zone. The monitoring screen shall include the following optional, configurable objects. It shall be possible for the user to size and position them anywhere on the screen and to change the color and size of text:

A. An indication of when an output is on or off, along with a user-configurable name for that indicator
B. The current time in the video sensor.
C. A user-configurable title or name.
D. The version number of the video sensor software.
E. It shall be possible for the user to turn the overlay graphics on or off with a single setting.

The management software shall provide a screen to monitor operation of the intersection with a quad-view video stream from the communications interface panel. The quad-view video stream shall have a resolution of at least HD 1280x720 pixels, where each of the sensor videos comprising the quad-view shall be at least 640x360 pixels. It shall be possible for the user to configure the order that the sensor videos appear in the quad-view. The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to request a “snapshot” or single-frame image to save to a named file on a laptop. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to record a period of the video to save to a named file on a laptop.

The video detection system and management software shall provide three methods to synchronize the time of day clocks in the communication interface panel and the video sensors, as follows:

A. Manual time synchronization operation by the user, which sets the time to the current time on the laptop where the management software is running.

B. A configuration setting to allow the communications interface panel to automatically obtain time from the NEMA TS2 protocol on the SDLC channel and broadcast it to the video sensors.
C. A configuration setting to allow the communications interface panel to automatically obtain time from up to five Network Time Protocol (NTP) sources and broadcast it to the video sensors.

In addition to the ability to view video streams in the management software, it shall be possible to view video from individual sensors or to view the quad-view from the communications interface panel using a third-party video player application on a tablet, smartphone or laptop computer.

643.065 Detection Performance.

The video detection system shall detect the presence of vehicles in defined zones and turn on the assigned output when the vehicle is present in the zone.

For stop line detection zones, the probability of not detecting the presence of a vehicle shall be 1% or less under all operating conditions when the video sensor is installed and configured properly. For detection zones placed at the stop line, the probability of falsely detecting a vehicle that is not present shall be 3% or less under all operating conditions when the video sensor is installed and configured properly.

For advance detection zones it shall be possible to place the zones such that the farthest point of the zone is up to 600 feet from the video sensor. Advance detector zone placement shall include 2-3 car lengths of field-of-view beyond the farthest point of the zone. To ensure statistical significance for the above detection performance specifications, the data shall be collected over 24-hour time intervals (so as to avoid a single lighting condition) and will contain a minimum of one hundred (100) vehicles per lane. The calculations of detection performance will not include turning movements where vehicles do not pass through the detectors, vehicle lane-change anomalies, or where they stop short or stop beyond the combined detection zones.

643.066 Failsafe Mode.

The video detection system shall provide a failsafe mode for each video sensor. If the failsafe mode is enabled, all programmed presence detection outputs for the video sensor shall be turned on, thus placing constant calls to the controller. When failsafe mode is disabled, all outputs revert to normal on/off operations. The video sensor shall continuously monitor the overall contrast in the video. If the overall contrast falls below a preset level (such as caused by dirty faceplate, severe glare, extreme fog, or temporary ice/snow on the faceplate), the sensor shall enable the failsafe mode. When sufficient contrast is restored in the video, the sensor will disable the failsafe mode.

The communications interface panel shall continuously monitor the connectivity status of the attached video sensors. If any video sensor goes offline due to either electrical failure or internal software failure, the communications interface panel shall enable the failsafe mode for that video sensor. If the video sensor comes back online, failsafe mode shall be disabled.

643.067 Data Collection.

The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be

necessary. The data shall include vehicle counts and vehicle average speeds. The management software shall be able to retrieve collected data for a specified period of time or for all currently stored data and save into a standard CSV file.

643.068 Installation and Setup.

The video detection system hardware shall be designed for flexible, fast and easy installation and setup. It shall be possible to mount the video sensor on an intersection pole, mast arm, or luminaire arm. No special tools or extra equipment, other than a laptop for configuration, will be required. Once all hardware is installed, connected and functional, it shall be possible to configure the video detection system for a typical 4-approach, 8-phase intersection in 15 minutes or less.

643.069 Warranty, Service and Support.

The video detection system shall be provided with the following warranty, service and support options.

643.0691 Warranty.

The manufacturer shall warrant the video detection system for a minimum of three (3) years. An option for up to six (6) years of warranty shall be available.

643.0692 Service.

Ongoing software support by the manufacturer will include software updates of the video sensor, communications interface panel, and management software. These updates will be provided free of charge during the warranty period. The manufacturer will maintain a program for technical support and software updates following expiration of the warranty period. This program will be available to the contracting agency in the form of a separate agreement for continuing support.

643.0693 Support.

A quick-start guide, installation guide, application notes, and other materials shall be available from the manufacturer to assist in product installation and setup for various applications. In addition, training online or in person shall be available. Training shall be available to personnel of the contracting agency in application design, operation, setup, and maintenance of the video detection system. Manufacturer shall provide a tech support website and an 800 number for technical support.

643.07 Contacts.

All contacts used in connection with interval indications shall be of pure coin silver or equivalent, and shall be capable of breaking and carrying 15 A at 125 V alternating current. The contacts shall be readily accessible and capable of being replaced in the timer without the use of any tools other than pliers and screw driver.

643.08 Meter Pedestals.

Meter pedestal shall be as indicated on the plans.

643.081 Battery Backup System (BBS).

The Battery Backup System (BBS) shall be compatible with the Authority's current traffic controller cabinet, controller and cabinet components, including the safety monitor, for full time operation. The BBS shall include all necessary cables to connect Inverter/Controller and battery panel(s).

The BBS shall provide a 2-amp cabinet load a minimum run-time of four (4) hours of full color operation.

The BBS must provide a minimum of 1000W @ +74°C, continuous active output capacity, with a 90% minimum inverter efficiency while running in battery backup mode. When under battery power, the BBS output voltage shall be 120 VAC, pure sine wave output, ±3%, 60 Hz ±0.1%.

The maximum transfer time allowed, from disruption of utility line voltage to stabilized inverter line voltage from batteries shall be eight (8) milliseconds. The maximum transfer time when switching from inverter line voltage to utility line voltage after the line-qualifying period shall be ten (10) milliseconds. The BBS shall be capable of allowing the user to change the transfer time in eight (8) millisecond increments up to 200 milliseconds if needed by the cabinet equipment.

Operating temperature for the Inverter/Controller, Battery Hub and Power Interface Module (PIM) shall be -35°F to +165°F (-37° to +74°C).

The BBS transient protection shall be able to handle a minimum of 480 joules of energy and 39kA peak current. In addition, the input circuit shall contain an RF filter, which provides attenuation of line noise of 25 dB at 10 KHz, 65 dB at 100 KHz and 100 dB at 1 MHz

The BBS shall have the capability to be replaced with ease utilizing single connectors for AC input, AC output and the battery panel(s). The AC input and output shall be separate panel mounted plug/receptacles that allow no possibility of accidental exposure to dangerous voltages. The plug/receptacles shall utilize some form of locking mechanism to prevent accidental disconnect. The battery panel shall utilize a single circular barrel type connector for connecting to the Inverter/Controller with ease.

The BBS battery panel(s) must utilize a Sealed Nickel-Zinc (NiZn) battery technology. Lead-Acid battery technologies will not be allowed. The battery panel(s) must have the capability of being either shelf mounted or installed in the 19" EIA rack. The charging/battery monitoring circuitry shall be incorporated within the battery panel. The BBS must allow the user to 'Hot Swap' the battery panel(s) while on utility power or battery backup power. The Inverter / Controller must allow the connection of four (4) battery panels directly to the Inverter / Controller. The Inverter / Controller must be capable of accepting battery panel(s) of different capacities at once, giving the user the ability to utilize different battery sizes to achieve required run-times. The Inverter / Controller shall accept up to sixteen (16) battery panels when utilizing a battery Hub(s).

The BBS must recharge to full charge capacity within four (4) hours of complete discharge when AC utility line voltage is available. The number of battery panels connected to the Inverter / Controller shall have NO effect on the four (4) hour recharge time. Temperatures below 149°F

(65°C) shall not have any effect on the ability to recharge or the recharge time. The BBS must not require trickle/float charging.

The BBS must have a fail-safe utility tie feature that automatically cuts back to the utility line in the event of an Inverter/Controller failure, battery panel(s) failure or complete battery panel(s) discharge.

The BBS Inverter/Controller shall have a 4 line by 20-character LCD display with an LED back light. From the main screen, the LCD display shall provide the following information;

1. Utility line voltage
2. BBS status
3. Cabinet current consumption
4. Battery charge percentage
5. Available backup time in hours and minutes

The LCD Display Menu shall provide the user the ability to program and monitor the following parameters;

1. Voltage threshold parameters
2. Programmable relays
3. Depth of Discharge (high and normal)
4. Event log

The BBS Inverter/Controller shall include a 4-way navigational keypad to allow users the ability to navigate the menu and program user set parameters.

The BBS shall allow the user to set high and low AC line voltage thresholds to determine parameters to transfer from utility line power to battery backup power. The BBS shall bypass utility line power if the utility line voltage is outside of the set high and low voltage parameters. The BBS shall qualify the utility line power for a minimum of three (3) minutes from the moment the utility line voltage is within the set high and low voltage parameters.

The BBS Inverter / Controller shall include eight (8) programmable relays, which are controlled by power line conditions, and user selected settings of the BBS. These relay contacts shall be rated for 2 amps @ 120 VAC. Each relay shall have the ability to trigger by multiple conditions simultaneously. The programming options are as follows:

1. Loss of utility line voltage
2. Low battery
3. Time of day
4. Temperature
5. Time delay (for red flash)

The BBS shall allow the user to control the depth of discharge of the batter panel(s) by choosing a “High” or “Normal” capacity mode in the menu setting of the Inverter/Controller.

The BBS shall provide an event log, which will allow the user to view the date time and duration of a given event. The event log shall provide the user with an image of the waveform from the given event. The data shall be recorded in a FIFO format so the oldest event is purged as the newest is entered.

The BBS Inverter / Controller must include a Manual Bypass switch to allow the user to manually bypass the inverter while allowing the utility line voltage through to the cabinet. The BBS Inverter / Controller must be equipped with two (2) 20A circuit breakers, one (1) each for the AC Input and Output. The BBS shall be equipped with "Force On" capabilities, which provides the user the ability to turn the BBS on and supply backup power when no utility line voltage is available. This allows the user the ability to install a BBS and provide backup AC power at an intersection that has no utility line voltage available.

The BBS must have the capability to provide Ethernet and IP addressing communications with the capability for remote monitoring and programming. This capability must be provided through a desktop application. The BBS shall be equipped with an Ethernet port. The Ethernet port shall be an RJ45, EIA 568B pin out type connector. The data rate shall be 100mbps.

The Graphical User Interface (GUI) shall be password protected and require a user ID, password and the BBS IP address to access. The GUI shall have a status area that details the BBS status, location, available run-time in hours and minutes, AC line voltage status and real-time cabinet power consumption. The status area must be displayed on every page. The GUI shall have a Home screen with clickable icons and tabs, which will allow the user to navigate the GUI with ease. The home screen shall allow the user to view real-time graphical charts of the cabinet power consumption and AC line voltage status. The home screen must allow the user the ability to view a live waveform from the AC utility line in the cabinet. The GUI shall have an Event Log page to allow the user to view the time, date and duration of a given event. The GUI must provide the user the capability of viewing the waveform of the given event. The GUI shall have a relay Configuration page to allow the user to program the relay contacts. The GUI shall have a System Configuration page that allows the user to configure the following; BBS location, depth of discharge, AC line voltage high and low thresholds, AC switch delay, time and date, network settings (IP address, gateway address and subnet), user ID / password and SNMP settings. The GUI shall communicate notification and alerts through SNMP protocol. Triggers that generate notifications shall be; absence of utility line voltage, battery capacity, remaining run-time and BBS heartbeat status.

The BBS, as a complete system including battery panel(s), must be warranted to be free from defects in material and workmanship for a minimum of 5 years from the date of original receipt.

643.09 Radio and television interference.

Electrical equipment shall be prevented from interfering with radio and television reception.

643.10 Cable and Wire.

Cable shall be plastic covered cable meeting the applicable requirements of the International Municipal Signal Association (IMSA) 19-1 specifications. The conductor color coding shall not be by means of printed code. All wiring shall be new. Reuse of existing cable will not be allowed. Actual color coding shall be used. Wiring will not be paid for separately but will be incidental to the respective signal item. The minimum size wire for the circuits shall be as follows:

	Minimum A.W.G. #
(a) Service to Cabinet	4 Stranded
(b) Cabinet to Pole or Pedestal	12 Stranded
(c) Cabinet to Luminaire	10 Stranded
(c) Pole or Pedestal to Receptacles	14 Stranded
(d) Equipment Grounding Conductor	8 Stranded

Each lead-in cable shall be marked with plastic tape corresponding to the following color code to identify which phase it pertains to at the splice(s) in both the pull box(es) and in the cabinet.

PHASE COLOR CODE

Phase 1	1 Blue
Phase 2	1 Green
Phase 3	1 Yellow
Phase 4	1 Red
Phase 5	2 Blue
Phase 6	2 Green
Phase 7	2 Yellow
Phase 8	2 Red

Traffic signal conduit, pull boxes, frames, and covers shall conform to Section 626 of the Standard Specifications. Conduit for all lines shall be 3 inch in diameter unless noted on the plans. Unless otherwise noted, all conduits shall be schedule 80 PVC.

643.11 Painting.

Prior to erection and assembly, if not manufactured of polycarbonate material, the entire traffic or pedestrian signal housing and visors shall be painted with an approved zinc-rich primer and a finish enamel coat as noted below. All paint shall conform to Section 708 of the Standard Specifications. The following colors of enamel shall be used:

(a) Controller Cabinet	Outside: Natural Aluminum
(b) Housings	Black (2)
(c) Visors	Inside: Black (2); Outside: Black (2)

	Federal No.
(1) Green Enamel =	H8-577
(2) Black Enamel =	17038
(3) Federal Yellow Enamel =	13538

After the signals have been completely installed, two coats of enamel shall be applied to all unpainted or scratched surfaces after the surface has been lightly sanded to remove gloss.

643.12 Interconnect.

Interconnect between the 3 signals will be accomplished wirelessly with equipment by Ubiquiti. The contractor will only be required to install and perform the initial setup on the wireless interconnect equipment. The Authority will supply the wireless interconnect equipment. The equipment shall be installed to the manufacturer's specification. All final setup and testing will be done by the Authority.

643.13 Construction Requirements.

All traffic signal and electrical installations shall comply with the requirements specified herein, local and utility codes, MUTCD, and the National Electrical Code (NEC). All employees of the signal subcontractor shall have an OSHA 10 Hour Certification. The signal subcontractor shall have at least one representative onsite at all times with an IMSA Traffic Signal Level 2 Field certification.

A preconstruction meeting with the Contractor, signal Subcontractor, Engineer and Maine Turnpike Authority representative shall be arranged not less than 3 days prior to the start of signal installation, to resolve any problems.

Upon commencement of any signal work within the intersection, the contractor will be responsible for any ongoing trouble calls at the intersection. There will be no separate payment for this work but shall be considered incidental to the traffic signal modification item.

Any operating traffic signal shall be left in a non-flash operating condition at the end of each work day, with or without detection.

The signal Subcontractor shall notify the Maine Turnpike Authority ITS / Toll Manager no less than 3 days prior to final inspection of signal installation. This final inspection is required prior to signal activation.

Each signal head mounted on a mast arm shall be installed with a 1/8 inch diameter aircraft cable, looped around the mast arm and mast arm bracket, as a safety device to prevent the signal head from falling. Cable ends shall be fastened by two opposing "U" clamps. When suspended by this cable, the top of the signal head shall be no more than 6 inches below the bottom of the mast arm.

All conduit lines necessary shall be constructed for the proper operation of the signals and shall conform to Section 626 of the Standard Specifications.

All conduits terminating in the cabinet shall be sealed with duct sealant.

Concrete foundations with anchor bolts to secure the traffic signal structures, flasher or controller cabinets, and meter pedestals, shall be installed at the locations specified on the plans. The concrete foundation for the controller cabinet shall be raised a minimum height of 3 inches up to a maximum height of 18 inches above the finished surface as directed by the Resident. Chamfer strips shall be used on all signal controller cabinet foundations. Forms shall be inspected before concrete is placed. The use of a precast foundation for the controller cabinet will not be permitted.

Poles shall not be mounted on the leveling nuts until the concrete has cured for at least 7 days or attained a minimum of at least 80 percent of its design compressive strength.

Provide protection for wiring from rodents and other elements as approved by the Engineer and/or as shown on the Plans.

Prior to placing the controller cabinet on its foundation, silicone sealant shall be applied to the area of contact.

The Contractor shall use bolt pattern templates when setting mast-arm anchor bolts, signal pedestal bolts and controller cabinet mounting bolts. The templates shall remain in place for a minimum of 24 hours.

Wood poles shall be placed in the ground to a depth of 20% of their overall length, with a maximum deviation from the vertical of ¼ inch in 5 feet.

Wood poles with a back-guy cable shall be placed in the ground to a depth of 20% of their overall length. Poles shall be back-guyed using a 10-inch expanding anchor with a 3/4 inch by 96-inch anchor rod. Thimble eyes of anchor rods shall extend 12 inches above finish ground. Cable used for back-guying shall be attached to the anchor rod by a short bail automatic type grip and to the guy hook on the pole by a preformed type grip. The pole shall be drilled 14 inches from top and a 5/8 inch oval eyebolt installed with one square flat washer and square nut on the messenger side and one square washer, square nut and guy hook on the opposite side. Any guy wire, messenger wire or span wire installations done on Utility Company poles shall follow Utility Company requirements.

643.131 Backfill for foundations.

Unless otherwise ordered, backfill for foundations shall be material conforming to the requirements of Section 203.26 of the Standard Specifications – Gravel Borrow.

643.132 Service and Meter Box.

Electrical Service for the two new signals will be provided by the Authority. The contractor shall run the needed conduit and wiring from the signal cabinet to the existing generator sheds at the Kennebunk maintenance facility and the Exit 25 SB Toll.

643.133 Signal Cable and Wire Installation.

The Contractor shall furnish and install sufficient cable and wire to operate the system properly and at least 4 spare conductors in each cable run shall be provided. Pulling a separate cable to achieve the required number of spares will not be allowed.

Each approach to the intersection shall have a dedicated cable run from the controller cabinet.

No more than one cable shall be permitted in a conduit except to eliminate splices in pull boxes. When more than one cable is permitted the area of combined cables shall not exceed 30 percent of the inside area of the conduit.

Messenger cable shall run unspliced between poles and shall be installed with a *5* percent sag in the wire when measured from the point of attachment to the middle of span. The cable shall be attached to the pole eyebolt by a preformed type grip on one end and an automatic type grip on the opposite end. Messenger cable shall be grounded to the back-guy cable.

Signal bases, housings and controllers shall be furnished and installed as required. All structures and housings shall be plumb after erection.

Multiple housings on a single post shall be grouped together using 1-1/2 inch galvanized pipe and 1-1/2 inch galvanized rail fittings. All attachments to the posts shall be made by means of adapters conforming to the following. Housing adapters for pedestal mounting shall be constructed of cast iron. They shall be adjustable with serrated surfaces to permit the housing to be locked in the desired horizontal position. The adapters shall be secured to the bottom of the housing by means of a close nipple, shall slip fit at least 7 inch over a standard traffic signal post of 4 inches in diameter and shall be secured to the post by a minimum of four set screws. Adapters shall contain raceways from the housing to the post to protect the wires from the elements. The center of all housings shall be in the same horizontal plane.

Miscellaneous electrical equipment. All additional electrical fittings, service conduit, switches, fuses, traffic signal bulbs, and such other hardware as is necessary to properly and securely install the equipment shall be furnished. All electrical fittings shall be weatherproof.

Wiring and connections. All connections shall be spliced, soldered, compounded, and taped. The use of wire nuts will not be permitted. A minimum of 18 inches of wire will extend outside of the mast arm handhole. The following color code shall be used:

(a) Red Wire	Red, Artery
(b) Orange Wire	Yellow, Artery
(c) Green Wire	Green. Artery
(d) Red with tracer	Red, Side Street

(e) Orange with tracer	Yellow, Side Street
(f) Green with tracer	Green, Side Street
(g) White	Neutral for all signals
(h) Blue	All steady burning arrows
(i) Blue with tracer	Intermittent arrows
(j) Remaining	Push buttons and spares

Note: The white wire shall be used for all neutral connections and shall be connected to the service ground.

No street lighting splices will be permitted in the mast-arm shaft. Splices for street lighting and lightning arrestors shall be located inside the nearest street light pull box.

Ground connections. All installations and equipment shall be bonded and grounded to the service ground rod in accordance with the requirements of the electric power company.

Each signal cable run shall be installed with one green plastic covered copper ground wire to which all equipment shall be bonded in accordance with standard practice. Each base and post, cabinet, and any other component that would be considered a part of the signal system shall be bonded to the ground wire. This ground wire shall be "daisy chained" through each device to be bonded. This ground wire shall be connected to the ground rod at the controller cabinet.

643.134 Installation of signals and equipment.

The signals and equipment shall be installed by competent workmen or the manufacturer's representative.

Prior to placing the signals in operation, the signal housing shall be hooded with approved non-transparent material or turned to clearly indicate that the signals are not in operation.

Signs mounted on the signals not applicable to construction conditions shall be covered as specified in Section 645 of the Standard Specifications.

All material including poles, foundations, fittings and cable shall be supplied and installed to make a complete operative installation.

Signs installed on signal arms shall be mounted with "Astro Sign Bracs" at a right angle to the roadway. Signs mounted on span wire shall be mounted with Pelco "Span Wire Sign Hangar Assemblies," or approved equal.

643.14 Operation.

The Contractor shall commence the operation of the signal system only when permitted by the Engineer. Unless otherwise noted, signals shall be placed in flash a minimum of 1 week before the planned start of operation. New signals shall be made operational between the hours of 10:00

AM and 2:00 PM unless approved by the Engineer. The contractor shall have a factory representative present at the commencement of signal operation.

Operating sequences shall be as shown on the plans or as ordered.

Operating sequences shall be verified by testing.

In cooperation with the Fire Department, the Contractor shall make trial runs to ascertain proper timing of the fire pre-emption system. The minimum time shall be approved by the Chief of the Fire Department or the Chief's representative.

The Contractor shall provide a qualified technician to thoroughly review and confirm that the system is satisfactory and operational as designed. Prior to placing the signals in operation, the Contractor shall have a review with the Authority's Toll / ITS Manager and local officials (including Fire Department technician) to review and comment upon the system.

643.15 Warranty.

Upon completion of the project, the Contractor shall forward to the Authority all warranties to the purchaser that the equipment which has been installed hereunder shall be free from defects in materials, workmanship and title, and shall be of the kind and quality designated or described in the Contract. The foregoing warranty supersedes all other warranties whether written, oral, or implied. If it appears within 24 months from the date of Acceptance of the work that the equipment installed hereunder does not meet the warranties specified above, the Contractor shall promptly correct any defect or nonconformance with the specifications. This warranty does not relieve the Contractor of the requirement of Section 106 of the Standard Specifications.

643.16 Method of Measurement.

The traffic signal installation will be measured as a lump sum unit. The traffic signal modifications will be measured as a lump sum unit. The video detection system will be measured as a lump sum unit.

643.17 Basis of Payment.

The accepted quantity of traffic signals will be paid for at the Contract lump sum price complete in place.

When an item of conduit appears in the Contract, conduit for traffic signals will be paid for under Section 626 of the Standard Specification. When no item for conduit appears in the Contract, any conduit required will be incidental.

All miscellaneous electrical equipment required shall be subsidiary.

Video detection system (Item 643.831 and 643.832) will be paid for at the contract lump sum price, which payment will be full compensation for installation and furnishing all materials and all appurtenances and incidentals required for a complete functioning installation. The Contractor shall coordinate with the Manufactures Representative for initial configuration and onsite training.

The accepted quantity of mast arm poles with mast arms and dual purpose poles will be paid for at the contract unit price for each item. Payment shall be full compensation for furnishing, installing and materials, equipment and labor necessary to install poles and mast arms.

Payment will be made under:

Pay Item		Pay Unit
643.71	Traffic Signal Modifications at: Alewive Road w/ Fletcher Street	Lump Sum
643.801	Traffic Signal at: I-95 SB w/ Alewive	Lump Sum
643.802	Traffic Signal at: I-95 NB w/ Fletcher Street	Lump Sum
643.831	Video Detection System: I-95 SB w/ Alewive	Lump Sum
643.832	Video Detection System: I-95 NB w/ Fletcher Street	Lump Sum
643. 911	Mast Arm Pole – 25’ Mast Arm	EA
643. 912	Mast Arm Pole – 30’ Mast Arm	EA
643. 913	Mast Arm Pole – 35’ Mast Arm	EA
643. 914	Mast Arm Pole – 40’ Mast Arm	EA
643. 94	Dual Purpose Pole - 30' Mast Arm and 12' Luminaire Arm	EA

SPECIAL PROVISION

SECTION 645

HIGHWAY SIGNING

(Protection of Signs with Type XI Sheeting)

645.04 Fabrication of Type I Guide Signs

The following paragraphs are added after the second paragraph in part b. Reflective Sheeting:

The Contractor and Sign Fabricator shall exercise all due caution to avoid any creases, bends, tears, punctures, or other damage to any Type XI sign sheeting, perceptible or not. Sign sheeting shall be protected at all times following application to the extruded aluminum surface. Any defect which becomes perceptible either under direct, indirect or no light conditions shall be cause for rejection of the sign panel.

Following the application of the sign legend and borders, the sign panel shall be protected from all hazards that may cause a defect to the sign sheeting (either background, legend or borders) in accordance with the manufacturer's recommendations. Fabricated signs shall not be stacked during storage, transport, or erection such that concentrated pressure is placed on one area of the sign face that is not uniform across the full sign face.

645.08 Method of Measurement

The fifth (5th) paragraph is deleted and replaced by the following paragraph:

The area of roadside guide signs, regulatory, warning, confirmation and route marker assembly signs of the respective types, will be measured by the area in square feet, computed to the nearest hundredth of a square foot (0.01 SF), as determined by the overall height multiplied by the overall width. Any defect in the surface area of the sign that becomes perceptible under direct, indirect, or no light conditions shall be cause for rejection of the whole sign panel.

SPECIAL PROVISION

SECTION 645

HIGHWAY SIGNING

(Remove and Reset Sign)
(Remove and Stack Sign)

645.07 Demounting and Reinstalling Existing Signs and Poles

The following paragraphs are added:

At locations noted on the Plans, existing ground-mounted signs are designated to be removed and reset. This work shall consist of removing the sign panels, removing and resetting or disposing of the existing wood post and resetting the sign panels on a new wood post if required in the appropriate specified location. The Resident will determine if a new wood post is required.

At locations as shown on the Plans, existing ground-mounted signs are designated to be removed and stacked. This work shall consist of removing and delivering existing sign panels, posts, concrete foundations and breakaway devices to the MTA Sign Shop at Mile 58 NB. Excavations shall be backfilled and ground restored to the satisfaction of the Resident.

Any existing signs not shown on the Plans are to remain in their existing condition unless directed otherwise by the Resident.

645.08 Method of Measurement

The following sentences are added:

Removing and Resetting existing ground-mounted signs shall be measured as complete units each, removed, reset and accepted.

Removing and stacking existing signs shall be measured as complete units each removed and stacked.

645.09 Basis of Payment

The following paragraphs are added:

The accepted signs removed and stacked shall be paid for at the Contract unit price each as specified. Such price shall include removing and stacking sign panels and supports at the location specified.

The accepted signs Removed and Reset will be paid for at the Contract unit price each as specified. Such price will include removing and resetting sign panels, removing and resetting or disposing existing wood post and resetting the sign panels on the existing or new wood post and new hardware as required to complete the sign installation. Any signs or supports damaged by the

Contractor shall be replaced by him with new signs or supports conforming to the applicable Specifications at no additional cost to the Authority.

Payment will be made under:

Pay Item		Pay Unit
645.105	Remove and Stack Sign	Each
645.109	Remove and Reset Sign	Each

SPECIAL PROVISION

SECTION 645

Highway Signing

(Overhead Sign Structure)

645.01 Description

The following paragraphs are added:

This work shall consist of the loading, transporting, delivery, and erection of an existing sign structure over the exiting lanes at the Southbound Kennebunk Service Plaza as described in the Plan drawings. The existing sign structure will be available for pickup at the Turnpike Staging Area at the former Turnpike Motel site adjacent to the Exit 25 (Kennebunk) north bound on ramp, Kennebunk, ME 04043. The Contractor shall coordinate pickup date and time with the Maine Turnpike Authority project manager. The Contractor shall arrange the time for pickup of the existing sign structure a minimum of 7 days in advance.

Following final acceptance of the sign structure in-place, the Contractor shall install signs provided by the Maine Turnpike Authority.

645.08 Method of Measurement

The following sentence is added:

The overhead sign structure shall be measured as one lump sum for loading, transportation, delivery, erection, and sign installation.

645.09 Basis of Payment

The following paragraphs are added:

The Lump Sum payment shall be considered full compensation of for pickup, delivery, and installation of the overhead sign structure including all labor, material, equipment, hardware and incidentals required to complete the work in accordance with the Plans and these Specifications.

Payment will be made under:

Pay Item		Pay Unit
645.1211	Overhead Sign Structure and Guide Sign	Lump Sum

SPECIAL PROVISION

SECTION 645

HIGHWAY SIGNING

(Roadside Guide Signs, Type I, Supplied by Authority)
(Roadside Guide Signs, Type I)
(Regulatory, Warning, Confirmation and Route Assembly Sign, Type 1)

645.01 Description

The following paragraph is added:

This work shall also consist of erecting Guide Signs and Regulatory, Warning and Bridge Number Signs both furnished by the Authority and the contractor and supplying and erecting any necessary sign posts as shown on the Plans or as directed by the Resident.

645.02 General

The following sentence is added:

A copy of the sign details is included in the sign summary tables within the plans and in Appendix C.

645.022 Sign Layout Drawings

This subsection is deleted and replaced with the following:

645.022 Authority Supplied Signs

The Maine Turnpike Authority will supply the proposed sheet aluminum signs for the signs identified in the sign summary tables. The Contractor shall be responsible for coordinating with the MTA Sign Shop, located along the Turnpike northbound at MM 58.3, to pick-up the signs and transport them to the job site.

645.08 Method of Measurement

This subsection is deleted and replaced with the following:

Roadside Guide Signs, Type I shall be measured by the square foot complete in place and accepted.

Roadside Guide Signs, Type I – Supplied by Authority shall be measured by the square foot complete in place and accepted.

Regulatory, Warning, Confirmation and Route Assembly Sign, Type 1 shall be measured by the square foot complete in place and accepted.

645.09 Basis of Payment

This subsection is deleted and replaced with the following:

The accepted Roadside Guide Signs, Type I, Roadside Guide Signs, Type I - Supplied by Authority, and Regulatory, Warning, Confirmation and Route Assembly Sign, Type 1 will be paid for at the Contract unit price per square foot. Such price shall be full compensation for furnishing and installing signs, assembly hardware, and all incidentals necessary to complete the work for Roadside Guide Signs, Type I and Regulatory, Warning, Confirmation and Route Assembly Sign, Type 1. For the signs supplied by the Authority such price shall be full compensation for erecting the sign panels and supplying and erecting the necessary sign posts, pick-up and transportation of the signs from the MTA Sign Shop to the job site, and all other labor, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
645.251	Roadside Guide Signs, Type I	Square Foot
645.252	Roadside Guide Signs, Type I – Supplied by Authority	Square Foot
645.271	Regulatory, Warning, Confirmation and Route Assembly Sign, Type 1	Square Foot

SPECIAL PROVISION

SECTION 645

HIGHWAY SIGNING

(Flashing LED Yield Sign)

645.01 Description

The following paragraph is added:

This work consists of furnishing and installing new solar powered 48" x 48" x 48" Flashing LED Yield Signs at the locations shown on the plans or established by the Resident. The sign shall be self- powered by solar panels and long-life nickel metalhydride batteries with no external electrical power installation.

645.021 Materials

The Flashing LED Yield Signs shall be Tapco BlinkerSigns™ or approved equal and include the following components:

The system shall have the following specifications:

Sign Substrate	.080 Highway Grade Aluminum
Reflective Sheeting	3M™ DG3™- with anti-graffiti overlay
MUTCD Compliance	MUTCD Section 2A.08 Compliant
Battery Lifespan	Up to 5 years
Autonomy- Functionality without Charge	Up to 30 days in 24/7
operation Flash Pattern	MUTCD Compliant
LED Type	High Power Luxeon- 1 watt
LED Life Expectancy Warranty	Over 100,000 hours
Term	1 Full Year Warranty

645.064 Installation

The sign shall be complete, with all the hardware and tools, and ready to be installed on a 6x6 wood sign post. The system shall be mounted using the TAPCO Heavy Duty V-loc Base System or approved equal.

The LED activation shall be 24/7 continuous.

645.08 Method of Measurement

The following sentence is added:

Flashing LED Yield Signs will be measured by each unit, complete in place and accepted.

645.09 Basis of Payment

The accepted quantity of Flashing LED Yield Signs will be paid for at the contract unit price which shall include furnishing sign posts, anchor base system and installation.

Payment will be made under:

Pay Item		Pay Unit
645.511	Flashing LED Yield Signs	Each

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Specific Project Maintenance of Traffic Requirements)

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

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

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

- Milling and Paving Operations
- Drainage Installation and/or Adjustment
- Pavement Markings Layout and Placement

All temporary lane closures shall be made utilizing drums.

The Contractor will be allowed to store drums on the traffic side of the guardrail (face of guardrail) during non-work hours or when drums are not required for a lane closure. The drums shall be placed no more than six inches from the face of guardrail. If there is a Lane 2 closure the drums need to be stored on non-traffic side of the guardrail.

Temporary lane closures shall be removed if construction is not ongoing. Unattended lane closures are not allowed unless included in the contract language or approved by the Resident as a long term traffic control operation.

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

Maine Turnpike Traffic Control Requirements

Maintenance of traffic plans have been developed for the work required to install the culvert under the mainline and the construction of the proposed plaza parking expansion and relocated NB On Ramp and SB Off Ramp. The traffic control plans for the culvert installation utilizes a double lane closure on the mainline while maintaining the both ramps. The lane width is reduced to 11 ft minimum with 1 ft shoulder on either side. The ramp widths of 16 ft (12 ft lane and 2 ft shoulders) will be maintained unless otherwise noted.

Temporary ramp detours will be allowed during the night between 10:00 PM and 5:00 AM unless otherwise approved by the resident. Temporary ramp detour will be required for connecting the newly relocated ramps to the existing perimeter roads and for the installation of the proposed cross culvert. Temporary ramp closures will be allowed during the night between 10:00 PM and 5:00. Temporary ramp closure will be required for the paving of the northbound off ramp. Temporary ramp closures and detours will need to be removed and the ramps opened to traffic daily.

Additional traffic control measure restrictions are as follows:

- Temporary shoulder closures shall maintain a minimum four-foot lateral buffer from an open travel lane when in place between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 6:00 p.m from September through June. During July and August, the four foot minimum lateral buffer applies from 6:00 a.m. to 8:00 p.m.

Ramp and Plaza Traffic Control Requirements

This Section outlines the minimum requirements that shall be maintained for work on, over, or adjacent to the Maine Turnpike roadway, ramps and service plazas.:

- Access to and egress from the passenger vehicle and truck parking areas must be maintained at all times.
- Temporary directional signing through the existing truck parking area will be required while the newly constructed ramp is tied into the existing ramp at both plazas.

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

Ledge Removal:

Ledge is not expected to be encountered on the project, however, if ledge is encountered the Contractor will not be permitted to blast, but shall remove the ledge by use of a hoe ram.

Mainline Northbound & Southbound December 1, 2019 to May 31, 2020				
Days of Week	**Barrel**	**Time Period Allowed**	**Temporary Single Lane Closures**	**Temporary Shoulder Closures**
All Week	NB	All Day	Allowed[1,2]	Allowed[1,2]
	SB	All Day	Allowed[1]	Allowed[1]

[1]Lane & Shoulder closures not allowed December 1st.
[2]Lane & Shoulder closures not allowed May 22 – 23 (Northbound Only).

Mainline Northbound & Southbound June 1, 2020 to June 30, 2020				
Days of Week	**Barrel**	**Time Period Allowed**	**Temporary Single Lane Closures**	**Temporary Shoulder Closures**
Mon. – Thur.	NB	All Day	All Day	All Day
	SB	All Day	All Day	All Day
Fri.	NB	12:00 am – 11:00 am, 6:00 pm – 11:59 pm	Allowed	All Day
	SB	All Day	All Day	All Day
Sat.	NB	12:00 am – 10:00 am, 4:00 pm – 11:59 pm	Allowed	All Day
	SB	All Day	All Day	All Day
Sun.	NB	All Day	All Day	All Day
	SB	12:00 am – 11:00 am, 6:00 pm – 11:59 pm	Allowed	All Day

Mainline Northbound & Southbound July 1, 2020 to August 31, 2020				
Days of Week	**Barrel**	**Time Period Allowed**	**Temporary Single Lane Closures**	**Temporary Shoulder Closures**
Mon. – Thur.	NB	12:00 am – 3:00 pm, 5:00 pm – 11:59 pm	Allowed[1]	Allowed[1]
	SB	All Day	Allowed[1]	Allowed[1]
Fri.	NB	12:00 am – 10:00 am, 9:00 pm – 11:59 pm	Allowed[1]	Allowed[1]
	SB	12:00 am – 12:00 pm, 4:00 pm -11:59 pm	Allowed[1]	Allowed[1]
Sat.	NB	12:00 am – 9:00 am, 6:00 pm – 11:59 pm	Allowed[1]	Allowed[1]
	SB	12:00 am – 9:00 am, 4:00 pm -11:59 pm	Allowed[1]	Allowed[1]
Sun.	NB	12:00 am – 11:00 am, 3:00 pm – 11:59 pm	Allowed[1]	Allowed[1]
	SB	12:00 am – 9:00 am, 8:00 pm -11:59 pm	Allowed[1]	Allowed[1]

[1]Lane & Shoulder closures not allowed on July 2 – 6

Mainline Northbound & Southbound September 1, 2020 to September 30, 2020				
Days of Week	**Barrel**	**Time Period Allowed**	**Temporary Single Lane Closures**	**Temporary Shoulder Closures**
Mon. – Thur.	NB	All Day	All Day	All Day
	SB	All Day	All Day	All Day
Fri.	NB	12:00 am – 3:00 pm, 6:00 pm – 11:59 pm	Allowed	All Day
	SB	All Day	All Day	All Day
Sat.	NB	All Day	All Day	All Day
	SB	All Day	All Day	All Day
Sun.	NB	All Day	All Day	All Day
	SB	12:00 am – 10:00 am, 5:00 pm -11:59 pm	Allowed	All Day

Mainline Northbound & Southbound October 1, 2020 to December 31, 2020				
Days of Week	**Barrel**	**Time Period Allowed**	**Temporary Single Lane Closures**	**Temporary Shoulder Closures**
Mon. – Sat.	NB	All Day	Allowed[1,3]	Allowed[1,3]
	SB	All Day	Allowed[3]	Allowed[3]
Sun.	NB	All Day	All Day	All Day
	SB	All Day	Allowed[2,4,5]	Allowed[2,4,5]

[1]Lane & Shoulder closures not allowed October 2nd , 9th & 10th (Northbound Only).
[2]Lane & Shoulder closures not allowed October 11th (Southbound Only).
[3]Lane & Shoulder closures not allowed November 25th & 26th (Northbound & Southbound).
[4]Lane & Shoulder closures not allowed November 29th (Southbound Only).
[5]October 1-17 (Sundays) Lane & Shoulder closure allowed from 12:00 am – 11:00 am, 5:00 pm - 11:59 pm (Southbound Only)

Mainline Northbound & Southbound December 1, 2019 to May 31, 2020			
Days of Week	**Barrel**	**Time Period Allowed**	**Temporary Double Lane Closures**
Mon. (Night) – Fri. (Morning)	NB & SB	7:00 pm to 6:00 am	Allowed
Fri. (Night) – Sat. (Morning)	NB & SB	11:00 pm to 8:00 am	Allowed[1]
Sat. (Night) – Sun. (Morning)	NB & SB	8:00 pm to 9:00 am	Allowed
Sun. (Night) – Mon. (Morning)	NB & SB	8:00 pm to 6:00 am	Allowed

[1]Lane closures for Southbound Only can begin at 7:00 P.M with approval of the Resident Engineer

652.7 Method of Measurement

The following paragraph is added:

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

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Flagger)

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

And replace with these paragraphs:

"Flaggers shall use a STOP / SLOW hand held paddle as the primary and preferred hand signaling device. Flags shall only be limited to emergencies. STOP / SLOW paddles shall have high intensity prismatic retro reflective sheeting, have an octagonal shape on a rigid handle and shall be at least 18 inches wide with letters at least 6 inches high and shall be constructed from light semi-rigid material. The STOP (R1-1) face shall have white letters and a white border on a red background. The SLOW (W20-8) face shall have black letters and a black border on an orange background. STOP / SLOW paddles shall also incorporate either white or red flashing lights on the STOP face and white or yellow flashing lights on the SLOW face of the paddle and always be in use. Paddles must conform to any of the following patterns:

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

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

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

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

E. A series of white lights forming the shapes of the letters in the legend.

Flashing light patterns shall be compliant with Section 6E.03 Hand Signaling Devices in the most current version of the Manual on Uniform Traffic Control Devices. All flashing light patterns on the STOP / SLOW paddle shall be visible from a minimum distance of 1000 feet."

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

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

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

652.7 Method of Measurement

Add:

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

- Pipe installation under the NB Perimeter road,
- Pipe installation under the SB Perimeter road,
- During connection of new NB & SB Ramps to existing perimeter road, and
- Signal installations.

All other uses of Flaggers will not be measured for payment but shall be incidental to the Maintenance of Traffic Control Devices item. This includes use of Flaggers for the delivery of materials and equipment to the project or other Flagger use that is for the Contractor's convenience, as determined by the Resident Engineer.

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Truck Mounted Attenuator)

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

652.1 Description

The following paragraph is added:

When a pay item for a Truck Mounted Attenuator (TMA) is included in the contract at least one TMA will be required on the project and its use will be required. The truck mounted attenuator should be utilized in lane closures and other construction operations where workers are exposed to traffic and not protected by other positive means. The Contractor shall manage the utilization and operation of the TMA and if at least one is not used as described above then it will be considered a Traffic Control Plan violation and result in a reduction of payment as outlined in Section 652.

652.2.1 Truck Mounted Attenuator

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

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

- Truck and attached attenuator shall conform to the NCHRP Report 350, Test Level 3 criteria.
- A mounted revolving amber light or amber strobe light with 360-degree visibility.
- An arrow light bar fixed to the vehicle.
- The attenuator shall be mounted to a vehicle with a minimum weight of 10,000 lbs.

652.3.7 Operations

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

The Contractor shall manage the operation of the truck mounted attenuator. The truck mounted attenuator should be utilized in lane closures and other construction operations where workers are exposed to traffic and not protected by positive means. The operation of the vehicle shall be in accordance with the Manual of Uniform Traffic Control Devices and the manufacturer's recommendation.

Installation: The chart below identifies the distance from the work zone or hazard where the TMA shall be deployed. If the work zone is within a marked lane closure, the barrier truck distances shall apply and if the work is mobile, then shadow truck distances shall

apply. The TMA shall not be located in the buffer zone. When used as a barrier, the barrier truck shall be parked in low gear with brakes applied and the front wheels turned away from the work zone and the adjacent traffic lane. For placement details, reference the Manual of Uniform Traffic Control Devices (MUTCD).

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

652.7 Method of Measurement

The last paragraph is deleted and replaced with:

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

652.8.2 Basis of Payment

The last two paragraphs are deleted and replaced with:

The Truck Mounted Attenuator(s) will be paid for at the Contract unit price per calendar day for each TMA used. This price shall include all costs associated with the use of the vehicle. Payment shall include operator, fuel, truck, maintenance, flashing lights, arrow board and all other incidentals necessary to operate the vehicle.

Payment will be made under:

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

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Automated Speed Limit Sign)

652.1 Description

This special provision provides for furnishing, operating, and maintaining an Automated Trailer Mounted Radar Speed Limit Sign for project use. When a pay item for an Automated Trailer Mounted Radar Speed Limit Sign is included in the Contract at least one will be required on the project when there is a Work Zone Speed Limit in place. The Contractor shall furnish, operate, and maintain the Automated Trailer Mounted Radar Speed Limit Signs during the project operations.

652.1.1 Instruction and maintenance manuals shall be provided.

652.2 Materials

Automated Trailer Mounted Speed Limit Sign

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

Signs

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

Sign text shall consist of the letters, digits and symbols either applied by stick-on or silk screen, to conform to the dimensions and designs indicated in the Contract, MUTCD and/or FHWA Standard Highway Signs. The materials and methods shall be in accordance with standard commercial processes.

“Work Zone” construction signs shall be mounted on the trailer unit above the regulatory speed limit sign. (see Appendix).

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

Power supply

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

Flashing Lights

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

Radar

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

CONSTRUCTION REQUIREMENTS

652.3.2 Responsibility of the Contractor

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

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

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

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

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

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

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

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

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

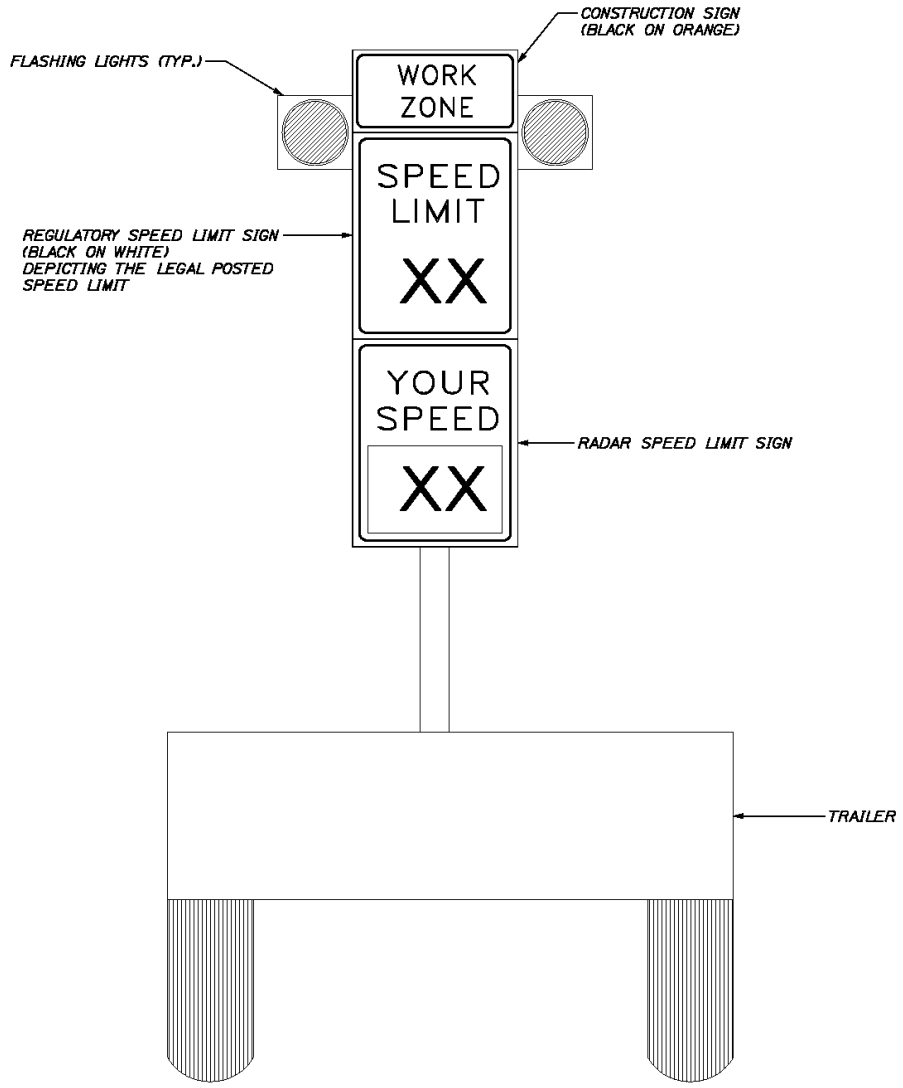
652.7 Method of Measurement

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

652.8 Basis of Payment

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

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



Date:2/13/2018

Filename: Trailer Mounted Speed Limit.dgn

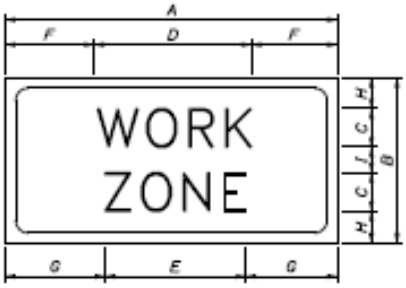
MAINE TURNPIKE

HNTB

FEBRUARY 2018

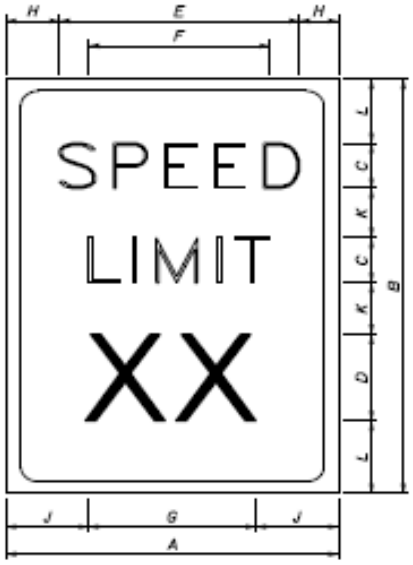
AUTOMATED TRAILER MOUNTED
SPEED LIMIT SIGN

1OF 2



SIGN #1

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



SIGN #2

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

	DIMENSIONS (INCHES) / LETTER FONTS											
	A	B	C	D	E	F	G	H	I	J	K	L
#1	48	20	5D	16 1/8	16 5/8	14 1/8	15 5/8	4	2	N/A	N/A	N/A
#2	48	60	8E	15E	38 1/4	29 1/4	29 1/2	4 1/2	9 3/8	9 1/4	8	6

Date: 2/13/2018

Filename: Trailer Mounted Speed Limit.dgn

MAINE TURNPIKE

HNTB

FEBRUARY 2018

TRAILER MOUNTED CONSTRUCTION ZONE
SPEED LIMIT SIGN

2 OF 2

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Temporary Portable Rumble Strips)

652.1 Description:

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

652.2 Materials:

Furnish a temporary portable rumble strip system, which includes a method to transport and move these to on-site locations where they will be used. The Contractor shall submit for approval, literature and all necessary certifications to the Maine Turnpike prior to procurement of the product.

652.3 General:

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

Placement:

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

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

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

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

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

Maintenance:

Maintain rumble strips as follows:

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

Repair or replace damaged rumble strips immediately.

652.4 Method of Measurement:

The accepted quantity of temporary portable rumble strips shall be measured by the unit complete in place, per lane closure application. A unit shall consist of 1 group of 3 full-lane width of rumble strips. As shown in the plans, a maximum of 3 units may be used at each lane closure. A unit shall be measured for each group of rumble strips, each time they are used for a lane closure.

652.5 Basis of Payment:

The accepted quantity of temporary portable rumble strips will be paid for at the contract unit price per unit which shall include the transport device. Payment is full compensation for providing, relocating, maintaining or replacing, and removing temporary portable rumble strips.

If the pay item is not included in the contract quantities, then the Authority does not anticipate the use of this item on the contract. If contractor wishes to utilize temporary portable rumble strips and the item is not in the contract, then the contractor may propose use of them to the Authority for consideration.

Pay Item		Pay Unit
652.46	Temporary Portable Rumble Strip	Unit

SPECIAL PROVISION

SECTION 655

ELECTRICAL WORK

(AWG Wire)

The following Section is added:

655.01 Description

This task shall include the providing and installation of the AWG wire, as described herein grounding wires (where applicable) and other locations called for in the plans/specifications. All wire installed in conduit must be burial grade, suitable for wet locations.

655.05 Measurement of Payment

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

655.06 Basis of Payment

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

Payment will be made under:

Item	Description	Unit
655.102	#2 AWG Wire	Linear Foot
655.106	#6 AWG Wire	Linear Foot
655.11	#10 AWG Wire	Linear Foot

SPECIAL PROVISION

SECTION 673

STORMWATER FILTER SYSTEM

(Stormwater Soil Filter Bed)

673.01 Description

This work shall consist of constructing a stormwater soil filter bed (Underdrained Soil Fiter (USF) Detention Basins) to treat stormwater runoff from the northbound and southbound parking areas. All work shall be done in accordance with these Specifications and as shown on the Plans, to provide a complete and operating system, and as approved by the Resident.

673.02 Materials

The filter material shall be a thoroughly blended mixture of the following:

a. Sand shall constitute 50-55 percent by volume of the filter material. Sand shall meet Subsection 703.01, Fine Aggregate for Concrete, except no more than two percent % by weight shall pass the # 200 sieve.

b. Loam shall constitute 20-30 percent by volume of the filter material. Loam shall be a loamy sand with a clay content between 15-25 percent by weight passing the # 200 sieve.

c. Bark Mulch shall constitute 20-30 percent by volume of the filter material. Mulch shall be a moderately fine shredded bark mulch or wood fiber mulch with less than five percent by weight passing the #200 sieve.

d. The Contractor may seek approval from the Resident to use filter material from offsite as provided by a supplier that specializes in providing filter material that complies with the above Specifications and DEP requirements for Stormwater Filters.

673.03 Mixing and Placement

The above materials shall be thoroughly mixed to create a uniform mixture. The stormwater filter material shall be mixed before placement over the top of the underdrain bedding.

The stormwater filter material shall be placed using small equipment (small excavators, small trucks) to distribute the mixed soil material over the top of the underdrain bedding. To preserve filtration characteristics of the material, the stormwater filter material shall not be compacted. Natural compaction over time is preferred over intentional compaction methods. Light compaction due to operation of small equipment operating over the surface of the media to spread the material is acceptable. Such equipment operations shall be minimized to limit compaction. The stormwater filter material shall be graded and leveled to the elevations shown on the Plans and, if required, additional filter material shall be added to fill any depressions or natural settlements that occur prior to acceptance of the work.

673.04 Method of Measurement

The Stormwater soil filter bed will be measured by the number of cubic yards computed using the dimension shown on the Plans for the soil filter bed.

673.054 Basis of Payment

The accepted quantity of stormwater soil filter bed will be paid for at the Contract unit price per cubic yard. Payment shall be full compensation for obtaining the filter bed material, excavating, loading, hauling, mixing, placing, grading, and compacting, and all other materials, tools and labor incidental to the work.

The excavation for the filter bed will not be measured separately for payment.

The underdrain for the filter bed and bedding material shall be included for payment under Item 605.016, 6 Inch PVC Underdrain, and Item 605.018, 8 Inch PVC Underdrain.

The drainage geotextile for the filter bed shall be included for payment under Item 620.58, Erosion Control Geotextile.

The Concrete Barrier Type I – Stormwater Filter but shall be included for payment under Item 526.307, Concrete Barrier Type I – Stormwater Filter.

Payment will be made under:

Pay Item		Pay Unit
673.01	Stormwater Soil Filter Bed	Cubic Yard

SPECIAL PROVISION

SECTION 719

SIGNING MATERIAL

Section 719.01 Reflective Sheeting

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

Retroreflective sheeting for signs shall meet at a minimum the requirements for ASTM 4956 – Type XI (Prismatic) manufactured by 3M Company, for all signs.

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

For Type 1 Guide Signs, all reflective sheeting shall be color matched on each sign unit.

All warning signs shall be fluorescent yellow except for Ramp Advisory Speed signs which shall be yellow.

All Construction Series signs that use orange backgrounds shall be fluorescent orange.

All Pedestrian Signs shall be fluorescent yellow-green.

EZ-PASS Purple shall conform to the FHWA Purple color box.

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

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

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

Direct applied letters, numerals, symbols and borders shall consist of cut out sheeting that shall meet at a minimum the requirements for ASTM 4956 – Type XI (Prismatic) sheeting. The sheeting material used for the direct applied legend shall be the same type as used for the background.

SPECIAL PROVISION

SECTION 801

SEWER

(6" Sewer Force Main)

801.01 Description

The following paragraphs are added:

This work shall consist of installing high density polyethylene (HDPE) pipe, fittings, and specialty fittings in reasonably close conformity with the lines and grades shown on the plans or established. The installation shall include the assembly of all components and materials shown on the plans or as directed for a complete and functioning force main service.

In addition to these Specifications, all the materials, construction methods and details, testing and approvals shall conform, as applicable, to the requirements of the Kennebunk Sewer District's Design specifications and Rules and Regulations, and the Maine Plumbing Code.

801.02 Materials

All sewer pipe materials shall meet all requirements of the Kennebunk Sewer District.

All HDPE pipe and fittings shall comply with requirements as specified in AWWA C906, "Polyethylene (PE) Pressure Pipe and Fittings, 4 inch through 65 inches, for Waterworks."

Pipe trench bedding material shall be a granular sand per the District's requirements.

Warning tape shall be a detectable tape made of solid blue film with continuously printed back-letter caption: CAUTION – FORCE SEWER PIPE BURIED BELOW." The warning tape shall be acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.

801.03 General

This work shall be done with as little interruption of the sewer service as possible. Ample notification (5 days minimum) shall be given to the District, Kennebunk Sewer District, and the Authority before any disruption of sewer service.

The Contractor shall not operate any sewer related appurtenances, including but not limited to pumps, valves, and existing service lines, without a District representative present.

Temporary shutdown of sewer service to the service area facilities will only be allowed to occur on a Tuesday or Wednesday between the hours of 12:00 AM (midnight) and 5:00 AM on days when construction is permitted. The Contractor shall schedule its operations during temporary shutdowns such that all the work will be completed, and the sewer system can satisfactorily be re-activated by the time required.

801.05 Sewer Pipe

Sewer piping shall be installed with a minimum of 5 feet of cover. If the piping must be installed with less than 5 feet of cover, the Contractor shall notify the Resident immediately. Pipe trench excavation shall be of sufficient depths and widths to permit the installation of the work to the lines, grades and dimensions as detailed on the Plans or as otherwise specified, except that the width of the trench at the top of the pipe shall not exceed 36 inches.

Install HDPE sewer piping in accordance with requirements of ASTM D2774, “Standard Practice for Underground Installation of Thermoplastic Pressure Piping. After the new pipe has been appropriately joined, cured, placed and tested, the pipe shall be connected to the existing piping, as shown on the Plans. All connections to existing piping shall be done in accordance with recognized plumbing practices. Necessary couplings, fittings, and adapters shall be furnished as required.

Connect new HDPE sewer piping to existing 4” ductile iron sewer piping as shown on the Plans. Utilize transition couplings, adapters and other devices, as may be necessary to complete the connection work.

Install continuous underground warning tape during backfilling of trench for underground sewer-service piping. Locate below finished grade, directly over piping.

Testing of the new sewer piping will be performed by the District. The Contractor shall coordinate these tasks with the District, giving ample advance notices and facilitating access to the facilities for the District.

Contractor shall prepare and furnish the District with as-built plans and information of the installed new sewer force main, including details, field notes and ties.

801.06 Method of Measurement

6” Sewer Force Main will be measured for payment by the lump sum.

801.07 Basis of Payment

The accepted quantity of ductile iron pipe will be paid for at the contract lump sum price, complete in place, which payment will be compensation for furnishing and installing all necessary 6" HDPE pipe, fittings, couplings of the type, class and size designated, flexible connectors, restrained joints, excavation, excavation support, dewatering, pipe bedding, suitable backfill for the trench, compaction, warning tape, connecting to existing systems, plug and abandoning the existing line at each end, and the trench pavement (in accordance with 403.2084).

Excavation will not be paid for separately but will be considered included in the work of the contract item.

Plugging and abandoning the existing sewer line will require the existing AC sewer pipe to be filled completely with flowable fill and capped on either end, and will be considered included in the work of the contract item.

Payment will be made under:

Pay Item		Pay Unit
801.1331	6" Sewer Force Main	Lump Sum

SPECIAL PROVISION

SECTION 822

WATER SERVICE SUPPLY LINES

(Ductile Iron Water Piping)
(Valves)

822.01 Description

The following paragraphs are added:

This work shall consist of installing ductile iron pipe and fittings in reasonably close conformity with the lines and grades shown on the plans or established. The installation shall include the assembly of all components and materials shown on the plans or as directed.

In addition to these Specifications, all the materials, construction methods and details, testing and approvals shall conform, as applicable, to the requirements of the Kennebunk, Kennebunkport and Wells Water District (District) and to AWWA C600 and the Maine Plumbing Code.

822.02 Materials

The following paragraphs are added:

All waterworks material shall meet the requirements of the Kennebunk, Kennebunkport and Wells Water District.

Push-on-Joint, Ductile-Iron Pipe: AWWA C150 and AWWA C151, minimum Special Thickness Class 52, with push-on-joint bell and plain-spigot or mechanical joint ends and rubber gaskets in accordance with AWWA C111, acceptable manufacturers per the District's requirements, and encased in a polyethylene sleeve tube type system per AWWA C105.

Mechanical-Joint, Ductile-Iron Fittings: AWWA C153 ductile-iron compact pattern, cement-lined, ductile iron glands, Cor-Ten hardware, and acceptable manufacturers per the District's requirements. All fitting joints shall include restraining devices.

Lining: Double cement mortar lining and sealing-coating for ductile iron pipe and fittings per AWWA C104.

Fittings Glands, Gaskets, and Bolts: AWWA C111, ductile iron glands, rubber gaskets, and Cor-Ten hardware.

Mechanical joint restraint systems shall be from a manufacturer acceptable to the District and shall be for compatible with the pipe size and material being connected.

Solid Sleeve Couplings: per AWWA C219, ductile iron, sleeve-type coupling, long body, same size as, with pressure rating at least equal to and ends compatible with, piping to be joined. Couplings shall have an interior and exterior coating per AWWA C210 or AWWA C213.

Couplings used to connect proposed piping to existing piping shall include joint restraining devices. All couplings, adapters and other devices necessary to complete the work shall be specifically manufactured for the purpose of the intended use, and shall be approved for use by the Resident.

Pipe trench bedding material shall be a granular sand per the District's requirements.

Warning tape shall be a detectable tape made of solid blue film with continuously printed back-letter caption: CAUTION -- WATER LINE BURIED BELOW." The warning tape shall be acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.

822.03 General

The following paragraphs are added:

This work shall be done with as little interruption of the water service as possible. Ample notification (5 days minimum) shall be given to the District, Kennebunk Fire Department and the Authority before any disruption of water service.

The Contractor shall not operate any water related appurtenances, including but not limited to valves, hydrants and service lines, without a District representative present.

Temporary shutdown of water service to the service area facilities will only be allowed to occur on a Tuesday or Wednesday between the hours of 12:00 AM (midnight) and 5:00 AM on days when construction is permitted. The Contractor shall schedule its operations during temporary shutdowns such that all the work will be complete and the water system can satisfactorily be re-activated by the time required.

822.05 Water Pipe

The following paragraphs are added:

Water piping shall be installed with 5 feet of cover. If the piping must be installed with less than 5 feet of cover, the Contractor shall notify the Resident immediately. Pipe trench excavation shall be of sufficient depths and widths to permit the installation of the work to the lines, grades and dimensions as detailed on the Plans or as otherwise specified, except that the width of the trench at the top of the pipe shall not exceed 36 inches.

Water piping shown to be on a curve alignment shall be done so by slightly deflecting each pipe length a similar amount. The maximum deflection allowed shall be 50% of the pipe manufacturer's recommended maximum deflection. Along the curved alignment length, the piping shall be assembled in a straight alignment initially, both horizontally and vertically, before deflection is made. Inserting the plain end of a full length of pipe into a bell under deflected conditions is not acceptable. The trench should be excavated wider than normal to allow for straight line assembly before deflection. For mechanical joint pipe, bolts should be hand tightened before the length of pipe is deflected.

Install water system restraint for tees, plugs and caps, bends, crosses, valves, hydrant branches and connections to existing piping. All joints for pipe fittings, valves, couplings and adapters shall be restrained with ductile iron retainer glands or other District approved system. In addition, all pipe joints within 50-feet either side of a fitting or valve shall be restrained.

Install ductile-iron water piping according to AWWA C600. After the new piping has been placed, tested, cleaned and disinfected, the pipe shall be connected to the existing piping, as shown on the Plans. All connections to existing piping shall be done in accordance with recognized plumbing practices. Necessary couplings, fittings, and adapters shall be furnished as required.

AWWA Gate Valves: Comply with AWWA C600. Install each underground valve with stem pointing up and with valve box.

Connect new water piping to existing water piping as shown on the Plans. Connections to existing distribution piping shall be made by cutting-in new fittings and pipe with solid sleeve couplings. Utilize transition couplings, adapters and other devices, as may be necessary to complete the connection work. Location of existing main water service shut-off valves has not been verified. Water-tight closure of existing valves is not guaranteed.

Portions of the existing site water piping is reported to be asbestos-cement material. Unless otherwise noted or directed, the Contractor shall assume that all existing site water piping is asbestos-cement material. Making connections to this asbestos-cement piping shall be performed in a manner, and using techniques, that protects worker and environment safety and health, and complies with all local, state and federal requirements for working with this type material. As required, the Contractor shall utilize trained and certified personnel when making these connections. Removed asbestos-cement pipe shall be transported and disposed of in a legal manner. This work is described in Section 625, “Water Service Supply Lines (Removal of Asbestos-Cement Pipe)”.

Install continuous underground warning tape during backfilling of trench for underground water-service piping. Locate below finished grade, directly over piping.

Testing and disinfection of the new water piping will be performed by the District. The Contractor shall coordinate these tasks with the District, giving ample advance notices and facilitating access to the facilities for the District.

Contractor shall prepare and furnish the District with as-built plans and information of the installed new waterworks, including details, field notes and ties.

822.06 Method of Measurement

Ductile Iron Pipe will be measured by the linear foot, measured along the centerline of the pipe. No deduction in measured pipe length will be made for the length occupied by fittings, couplings and valves.

Iron pipe Fittings will be measured by the pound, based on manufacturer’s catalog or product data sheets.

822.07 Basis of Payment

The accepted quantity of ductile iron pipe will be paid for at the contract unit price per linear foot, for each kind of pipe, of the type, class and size designated, complete in place. This payment will be full compensation for furnishing and installing all necessary pipe, fittings, couplings, restrained joints, connecting to existing systems, polyethylene encasement, excavation, excavation support, dewatering, bedding, backfill, compaction, warning tape and all labor, equipment and tools incidental to the work.

The accepted quantity of iron pipe fittings will be paid for at the contract unit price per pound, complete in place. This payment will be full compensation for furnishing and installing fittings, other couplings, thrust restraint systems, and all materials, labor, equipment and tools incidental to the work.

Payment will be made under:

Pay Item		Pay Unit
822.3408	8-Inch Ductile Iron Water Pipe	Linear Foot
823.2432	8-Inch Ductile Iron Pipe Fittings	Pound

SPECIAL PROVISION

SECTION 823

WATER SERVICE

(Fittings)

822.01 Description

The following paragraphs are added:

This work shall consist of installing gate valves in reasonably close conformity with the lines and grades shown on the plans or established. The installation shall include the assembly of all components and materials shown on the plans or as directed.

In addition to these Specifications, all the materials, construction methods and details, testing and approvals shall conform, as applicable, to the requirements of the Kennebunk, Kennebunkport and Wells Water District (District) and to AWWA C600 and the Maine Plumbing Code.

822.02 Materials

The following paragraphs are added:

Gate Valves: Non-rising-stem, resilient-seated gate valves per AWWA C509 or C515, minimum working pressure of 250 psig, mechanical joint ends, interior coating per AWWA C550, ductile-iron body and bonnet, with ductile-iron gate, resilient seats, bronze stem, 2-inch square stem nut and open right. Seal plate and bonnet hardware shall be Type 304 or Type 316 stainless steel. Acceptable manufacturers per the District's requirements.

Gate Valve Accessories and Specialties: Valve box top sections shall be slide-type, 36" long, and 5¼" diameter; bottom sections slide-type with bell base with bottom lip and 36" long. Valve box cover shall be 2" drop type cover to fit 7¼" opening of the top section and marked "WATER". Material shall be cast or ductile iron, bituminous coated with a minimum 4 mil dry film thickness.

822.03 General

The following paragraphs are added:

This work shall be done with as little interruption of the water service as possible. Ample notification (5 days minimum) shall be given to the District, Kennebunk Fire Department and the Authority before any disruption of water service.

The Contractor shall not operate any water related appurtenances, including but not limited to valves, hydrants and service lines, without a District representative present.

Temporary shutdown of water service to the service area facilities will only be allowed to occur on a Tuesday or Wednesday between the hours of 12:00 AM (midnight) and 5:00 AM on

days when construction is permitted. The Contractor shall schedule its operations during temporary shutdowns such that all the work will be complete and the water system can satisfactorily be re-activated by the time required.

822.07 Basis of Payment

The accepted quantity of gate valves will be paid for at the contract unit price each, complete in place. This payment will be full compensation for furnishing and installing the valve, valve box, thrust restraint systems, blocking and all materials, labor, equipment and tools incidental to the work.

Payment will be made under:

Pay Item		Pay Unit
823.325	8-Inch Gate Valve	Each

SECTION 825

WATER SERVICE SUPPLY LINES

(Food Truck Water Connection)

825.01 Description

This work shall consist of installing junction boxes, PVC pipe, non-metal water pipe and fittings in reasonably close conformity with the lines and grades shown on the plans and details or established. The complete installation shall meet all applicable State and Local codes for potable water system. The installation shall include the assembly of all components and materials shown on the plans or as directed.

825.02 Materials

All pipe and fittings shall meet the requirements of Subsection 625.

Non-Metal Water Pipe: All non-metallic pipe shall meet the requirements of Subsection 712.33

Fittings: All fittings shall be stainless steel or brass with ¾" MHT threads with a pitch of 11.5 threads per inch (TPI). The fittings should be for both the female and male connections.

Junction Box: 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 shall be polymer concrete 24x36x30 with an open bottom. All boxes shall have the word WATER stamped on the cover and have an access 1-1/2" hole to allow 3/4" hose to pass through.

Warning tape shall be a detectable tape made of solid blue film with continuously printed back-letter caption: CAUTION -- WATER LINE BURIED BELOW." The warning tape shall be acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.

825.03 Sleeve

Pipe for sleeves shall be non-metallic rigid and be laid on a firm foundation at the line and grade to drain properly. When the pipe installation is in a trench all excavating and backfilling shall be in accordance with Section 206 - Structural Excavation.

After installation of the pipe, special care shall be taken to protect the pipe from heavy hauling equipment loads, rocks or any other damage caused by the Contractor's work. All pipe broken from such causes shall be removed and replaced at the Contractor's expense.

825.04 Water Pipe

Water pipe shall be non-metallic flexible pipe, potable grade. After the sleeve has been placed, the water pipe shall be inserted into the sleeve and fittings attached.

Necessary fittings, adapters, and reducers shall be furnished as required.

825.05 Method of Measurement

Food Truck Water Connection will be measured for payment by the lump sum.

825.06 Basis of Payment

The accepted quantity of Food Truck Water Connection will be paid for at the contract lump sum price, complete in place, which payment will be compensation for furnishing and installing all necessary junction boxes, pipes, sleeves, fittings, compacted sand around the sleeve, suitable backfill for the trench, and the trench pavement (in accordance with 403.2084) and all incidental items required to complete the work.

Excavation will not be paid for separately but will be considered included in the work of the contract items.

Payment will be made under:

Item	Description	Unit
825.411	Food Truck Water Connection	Lump Sum

SPECIAL PROVISION

SECTION 827

WATER SERVICE SUPPLY LINES

(Remove Asbestos-Cement Pipe)

827.01 Description

The following paragraphs are added:

The work shall also consist of removal and disposal of existing asbestos-cement water piping as shown on the Plans or to the limits as determined by the Resident. Work shall also include connecting proposed new water piping to existing asbestos-cement water piping. The removal and disposal of asbestos-cement piping shall be by a Licensed Asbestos Abatement Contractor. The Contractor will not be allowed to remove and dispose of this material unless he is a Licensed Asbestos Abatement Contractor.

Cutovers, making connections back to the existing asbestos-cement piping, shall be performed in a manner, and using techniques, that protects worker and environment safety and health, and complies with all local, state and federal requirements for working with this type material. As required, the Contractor shall utilize trained and certified personnel when making these connections. Removed asbestos-cement pipe shall be transported and disposed of in a legal manner.

It is anticipated that some or potentially all the pipe removal operations will be done at night to minimize impacts to the traveling public and to the services provided at the travel plaza buildings. Excavation and backfilling of the trench may be done during the day if it does not impact vehicle traffic flow. See the limitations on night work hours permitted specified elsewhere herein.

The following Subsection is added:

827.05.1 Removing Asbestos-Cement Pipe

The Contractor shall excavate test pits where proposed relocated water pipe is to connect to existing to determine type, depth and location of the existing pipe and verify that the asbestos-cement removal items apply and to schedule these activities in coordination with the cutover schedule. The test pits shall be scheduled well in advance of the proposed cutover dates and times.

The Contractor shall provide a dry safe hole in accordance with OSHA standards for the asbestos-cement pipe abatement. Any open holes or test pits shall be appropriately protected with fencing or barricades as conditions require or as directed by the Resident.

The Contractor shall excavate and expose the existing asbestos-cement pipe to the full limits of the pipe to be removed plus at least an additional 1 foot on each end. The Contractor shall hand excavate around the pipe from at least 6 inches above the existing pipe down to a minimum of 6 inches below the invert of the existing pipe. The Contractor shall provide both the

Resident and the Licensed Asbestos Abatement Contractor at least 24 hours notice that he is preparing asbestos-cement pipe for removal.

The removal of the asbestos-cement pipe shall not begin until the pipe to be removed has been completely exposed and the excavation is dry and OSHA compliant for the Licensed Asbestos Abatement Contractor.

All asbestos-cement piping shall be disposed of at a licensed asbestos containing material disposal site in compliance with current EPA and Maine DEP regulations. Disposal shall be incidental to the removal item. The Contractor shall submit to the Resident the original disposal receipts acknowledging proper disposal of asbestos-cement piping prior to the payment of Removing Asbestos-Cement Pipe pay item(s).

827.06 Method of Measurement

The following paragraph is added:

Removal of Asbestos-Cement Pipe will be measured by the linear foot, measured along the centerline of the pipe.

827.07 Basis of Payment

The following paragraph is added:

The accepted quantity of asbestos-cement pipe removed will be paid for at the contract unit price per linear foot for the designated pipe size. This payment will be full compensation for complying with all regulatory requirements, permits, transportation and disposal fees, and for furnishing all necessary specialized equipment, protective measures, trained licensed personnel, making connections at cutover points, excavation, excavation support, dewatering, backfill, compaction, and all other necessary labor, equipment and tools incidental to the work.

Payment will be made under the following items:

Pay Item		Pay Unit
827.3641	Remove 8-Inch Asbestos-Cement Pipe	Linear Foot

SPECIAL PROVISION

SECTION 830

HORIZONTAL DIRECTIONAL DRILLING

(3" HDPE Conduit Installation)

The following Section is added:

830.01 Description

The work specified in this Section consists of installing an underground conduit using Horizontal Directional Drilling (HDD), also commonly referred to as guided horizontal boring. This work shall include all services, equipment, miscellaneous materials, and labor for the complete and proper installation of the underground conduit. Ledge may be encountered during the HDD process.

HDD is required within the limits of the Project where the electrical and communications HDPE conduit as shown on the Plans.

830.02 References

The following publications and/or standards may be referenced in this Specification:

DCCA Directional Crossing Contractors Association Guidelines for a Successful Directional Crossing Bid Package.

830.03 Quality Assurance

Adherence to the Specifications contained herein, or the Resident's approval of any aspect of any directional drilling operation covered by this Specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.

830.04 Submittals

The Contractor shall submit to the Resident a Directional Drilling Submittal Package for review, comment, and approval prior to the commencement of work. At a minimum, the following components shall be submitted as part of the Submittal Package:

Work Plan: The Contractor shall submit to the Resident a general work plan outlining the procedure to be used to execute the Project. The work plan should document the staging area requirements; the location and description of pits, if needed; the proposed alignment of the boring; the method used to create the bore hole; and the method used to pull the conduit through the hole. Drilling alignment shall include lines and grades, entry and exit points, and drilling angles. The proposed entry and exit angles shall be checked against the bending radius of the conduit, and the longitudinal pulling force shall be checked against the allowable strength of the conduit during

pullback. The work plan shall also include a general construction schedule and sequence in order to coordinate this activity with the overall Project. Work which may require a shoulder closure or lane closure should be noted. The two ends of the directional drilling conduit shall terminate at the junction box, whether shown on the drawings or not.

Equipment: The Contractor shall submit specifications on directional drilling equipment to ensure that the equipment will be adequate to complete the Project. Equipment used to locate and monitor the position of the drilling head shall also be provided in this submittal. Spares inventory shall be included.

Material: Include the slurry material description and material data safety sheets, and any miscellaneous materials needed to perform the work. An estimate of the volume of the slurry to be used and the location of the disposal facility shall be provided.

Personnel: Documentation of training and relevant experience of personnel shall be submitted. Indicate the number of years and/or projects that each individual has completed.

Environmental Controls: The Contractor shall indicate the environmental control devices that will be employed to ensure that no slurry or hydraulic fluids enter the drainage ditches on either side of the turnpike mainline or the interchange roadways. The manner by which slurry will be introduced and captured for proper disposal shall be outlined.

Warranty: A five-year warranty shall be provided on the work. Detailed warranty paper work shall be submitted to the engineer for record.

830.05 Drilling Equipment

The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback the conduit; a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing; a guidance system to accurately guide boring operations; and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this Project.

Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate, push, and pull conduit into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored or secured to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations.

Drill Head: The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets. The drill bit shall be equipped with a signal generator providing constant output for continuous path monitoring.

Mud Motors (if required): Mud motors shall be of adequate power to turn the required drilling tools.

Drill Pipe: Drill pipe shall be constructed of high quality tubing with threaded box and pins.

830.06 Guidance System

The guidance system shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system. The Operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.

830.07 Drilling Slurry

Mixing System: A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be sized for adequate storage of the mud. Mixing system shall continually agitate the drilling fluid during drilling operations.

Drilling Fluids: Contractor shall supply and/or arrange for connection to supply water for mixing drilling fluid. Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5 – 10 and/or as per mixing requirements of the Manufacturer. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. A bentonite based drilling slurry shall be utilized which may include polymer extenders. The slurry shall be a mixture that will harden into a stable clay substance around the outside of the conduit, leaving no voids and allowing no settlement of ground after installation. No hazardous additives may be used. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall. The slurry shall be recycled to minimize material and water requirements.

Delivery System: The mud pumping system shall have a minimum capacity to supply mud in accordance with the drilling equipment pull-back rating at a constant required pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. A berm, minimum of 12" high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage facilities.

830.08 Commencement of Work

The Submittal Package shall be approved by the Resident prior to starting work. The Resident must be notified seven (7) days in advance of starting work. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety.

Prior to any alterations to work-site, Contractor shall photograph or video tape entire work area, including entry and exit points. The Contractor shall also survey the cross-section of the

roadway for a distance of 20 feet to each side of the proposed drilling operation. Obtain grade elevations across the roadway no less than 10 in number, which shall be taken at the edge of pavements and at accessible lane lines. One (1) copy of the elevations shall be given to the Resident and one (1) copy shall remain with the Contractor for a period of one year following the completion of the Project.

Work site as indicated on the drawings, within the right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas. No construction equipment shall be located within the 10 feet of the edge of pavement without approval from the Resident.

Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If Contractor is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.

Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by Contract Documents, State, Federal and local regulations. Hydraulic fluid and slurry is not permitted to enter any drainage ditch or water feature on-site. Additional environmental protection necessary to contain any hydraulic or drilling slurry shall be put in place, including berms, liners, sump pumps, turbidity curtains, and other measures. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200 feet of any water-body or wetland.

Contractor shall adhere to all applicable State, Federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to Resident.

830.09 Drilling Procedure

The drilling alignment shall conform to the lines and grades indicated on the Drawings or as directed by the Resident. Ground entry and exit points shall be as shown on the Drawings or as approved, and angles shall not deviate by more than two degrees. Entry and exit points shall be within five feet of their intended locations. The alignment of the conduit shall remain at least 10 feet below the mainline traffic lanes and ramps at all times, and the depth of the bore head shall be monitored every 12 feet to 20 feet as dictated by traffic control. No monitoring shall be allowed in an active traffic lane. Directional bore depths less than 10 feet in areas of bedrock may be allowed but shall be approved by the Resident prior to drilling.

Pilot hole shall be drilled on bore path with no deviations greater than five percent of desired depth over a length of 100 feet. In the event that pilot does deviate from bore path more than five percent of depth in 100 feet, Contractor will notify Resident and Resident may require Contractor to pullback and re-drill from the location along bore path before the deviation.

In the event that a drilling fluid fracture, inadvertent returns, or returns loss occurs during pilot hole drilling operations, Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March Funnel and then wait another 30 minutes. If mud fracture or returns loss continues, Contractor will cease operations and notify Resident. Resident and Contractor will discuss additional options and work will then proceed accordingly.

Upon successful completion of the pilot hole, Contractor will ream bore hole to no greater than 25 percent of the outside diameter of the conduit using the appropriate tools. Contractor will not attempt to ream at one time more than the drilling equipment and mud system are designed to safely handle.

After successfully reaming bore hole to the required diameter, Contractor will pull the PVC conduit through the bore hole. In front of the conduit will be a swivel. Once pullback operations have commenced, operations must continue without interruption until conduit is completely pulled into borehole. During pullback operations, Contractor will not apply more than the maximum safe conduit pull pressure at any time. The Contractor shall not exceed the allowable bending radius of the conduit as specified by the conduit manufacturer.

In the event that conduit becomes stuck, Contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If conduit remains stuck, Contractor will notify Resident. Resident and Contractor will discuss options and then work will proceed accordingly.

In the event that the Contractor must abandon the drill hole before completion of the crossing, the Contractor will seal the hole and re-drill the crossing at no extra cost to the Authority.

830.10 Site Restoration

Following drilling operations, Contractor will demobilize equipment and restore the work site to original condition. All excavations will be backfilled and compacted to 95 percent of original density. Landscaping will be restored to original condition. All mud, cuttings, and slurry shall be properly contained, collected, and disposed of by the Contractor.

830.11 Record Keeping and Close Out

As-Builts: Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Resident at completion of the Project. A final survey of elevations shall be completed by the Contractor of the mainline and ramp cross-section which shall accompany the as-built drawings.

Owner shall have access at all times to any measuring or gauging devices used for the horizontal drilling operation, as well as any drilling logs maintained by the Contractor.

830.12 Method of Measurement

Directional drilling will be measured by the horizontal linear foot.

830.13 Basis of Payment

The accepted quantity of Horizontal Directional Drilling will be paid for at the Contract unit price per horizontal linear foot. No adjustment will be made for vertical depth or parabolic draping of the drilled hole or for encountering ledge. Payment shall be full compensation for labor, equipment and materials to complete the surveying, excavations, pits, drilling, environmental controls, installation of conduit, and site restoration. Payment shall also include full compensation

for disposing of unsuitable and surplus soils, slurry, and materials. PVC conduit will not be paid for under Horizontal Directional Drilling, but rather will be paid for under the corresponding Electrical pay item.

Payment will be made under:

Pay Item		Pay Unit
830.26	Horizontal Directional Drilling, 3-inch HDPE Conduit	Linear Foot

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART III – APPENDICES

APPENDIX A
MAINE DEP ENVIRONMENTAL PERMIT

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

IN THE MATTER OF

MAINE TURNPIKE AUTHORITY	) NATURAL RESOURCES PROTECTION ACT
Kennebunk, York County	) FRESHWATER WETLAND ALTERATION
KENNEBUNK SERVICE PLAZAS	) WATER QUALITY CERTIFICATION
L-28284-TG-A-N (approval)	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S. §§ 480-A–480-JJ, Section 401 of the Federal Water Pollution Control Act (33 U.S.C. § 1341), and Chapters 310 and 315 of Department rules, the Department of Environmental Protection has considered the application of the MAINE TURNPIKE AUTHORITY with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. History of Project: In Department Order #L-22806-NJ-A-N, dated March 16, 2006, the Department approved the reconstruction of the north bound and southbound Kennebunk Service Plazas (Plazas) at mile marker 25.5 on the Maine Turnpike (Turnpike). Each new Plaza included a 21,500 square foot building for restaurants and restrooms, new parking areas with improved traffic flow patterns, and other amenities for travelers on the Turnpike. The Plazas are located in the Town of Kennebunk.

Subsequent to the 2006 Stormwater Order, the Department issued the Site Location of Development Act General Permit (General Permit) for the Maine Turnpike Authority (DEP #L-26825-TP-A-N, effective February 29, 2016). The General Permit authorizes the Maine Turnpike Authority to construct and operate developments under its authority for which approval is required pursuant to the Site Location of Development Act, 38 M.R.S. §§481-490, after approval by the Department of a Notice of Intent, as set forth in 38 M.R.S. §486-B(3).

B. Summary: At both Plazas, the applicant proposes to separate truck and passenger vehicle parking areas and to expand parking capacity for both. The proposed expansions will require extensions of the acceleration and deceleration lanes; reconfiguration of ramps and access roads; modification of Plaza and ramp lighting, the stormwater management systems; and relocation of utilities. The proposed project will result in the creation of approximately 18 acres of new developed area, of which approximately ten acres are impervious, with the majority of the new development proposed at the north ends of each Plaza. Approximately 1.1 acres of impervious area will be redeveloped and remain as impervious area, while one acre of impervious area will be converted to landscaped area.

The proposed project is shown on a set of plans, the first of which is titled, "Kennebunk Travel Plazas, Parking Expansion," prepared by HNTB Corporation and dated March 1, 2019.

The proposed project will permanently alter 55,100 square feet (1.26 acres) of freshwater wetlands, and temporarily impact 15,510 square feet (0.36 acres) of freshwater wetlands as a result of the realignment of the southbound off-ramp and the northbound on-ramp.

C. Current Use of the Site: The approximately 48-acre parcel includes the northbound and southbound service plazas with associated parking, interchange ramps, and toll plazas for the Kennebunk interchange of the Turnpike.

D. Title, right or interest: An application must include documentation demonstrating that the applicant has title, right or interest in the property proposed to be developed or used for the project sufficient for the nature and duration of the proposed development or use. The proposed project is located within the right-of-way of the Turnpike travel corridor which includes a six-lane divided highway and the two service centers. The applicant has determined that a construction easement for a property on the west side of the project site will need to be obtained. The applicant is negotiating access rights with the property owner and expects to secure these rights prior to start of the project. In the event that these negotiations are not successful, the applicant states that it has the authority to exert the right of eminent domain, in accordance with 23 M.R.S. §1965(1)(G).

2. EXISTING SCENIC, AESTHETIC, RECREATIONAL OR NAVIGATIONAL USES:

The Natural Resources Protection Act (NRPA), in 38 M.R.S. §480-D(1), requires the applicant to demonstrate that the proposed project will not unreasonably interfere with existing scenic, aesthetic, recreational and navigational uses.

In accordance with Chapter 315, *Assessing and Mitigating Impacts to Scenic and Aesthetic Uses* (06-096 C.M.R. ch. 315, effective June 29, 2003), the applicant submitted a copy of the Department's Visual Evaluation Field Survey Checklist as Appendix A to the application along with a description of the property and the proposed project. The applicant also submitted several photographs of the proposed project site and surroundings including an aerial photograph of the project site.

The proposed project is located in the portion of the Kennebunk River watershed, which is not a scenic resource visited by the general public, in part, for the use, observation, enjoyment and appreciation of its natural and cultural visual qualities.

The Department finds that the proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses of the freshwater wetlands that will be altered.

3. SOIL EROSION:

The NRPA, in 38 M.R.S. §480-D(2), requires the applicant to demonstrate that the proposed project will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

In order to minimize sedimentation into protected natural resources, construction will be performed using a number of erosion and sedimentation control measures based on the latest version of the *Maine Department of Transportation Best Management Practices for Erosion and Sediment Control (BMPs)* and the applicant's standards and specifications (Supplemental Specification Section 656, Temporary Soil Erosion and Water Pollution Control). The applicant stated that each construction project implements a Construction Project Environmental Compliance Program, which assigns a Resident Engineer and Compliance Officer whose roles include inspection of the construction project and weekly reports of erosion and sedimentation control devices. In addition, Supplemental Specification Section 656 requires each contractor to certify that its on-site responsible party has been trained and is knowledgeable in erosion and sediment control. Supplemental Specification Section 656 also establishes an overview of preparatory activities, excavation activities, construction activities (including spill prevention and control), a post-construction work plan, and a schedule of construction activity. Periodic inspections of the overall project, including the effectiveness and condition of erosion and sediment control devices are conducted by the applicant's Permitting Coordinator/Environmental Liaison.

The Department finds that the activity will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

4. HABITAT CONSIDERATIONS:

The NRPA, in 38 M.R.S. §480-D(3), requires the applicant to demonstrate that the proposed project will not unreasonably harm significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

According to the Department's Geographic Information System database there are no mapped Essential or Significant Wildlife Habitats located at the site.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) reviewed the proposed project, and in its comments, dated September 24, 2018, stated that no records of any Essential or Significant Wildlife Habitats were found within the project site. In its comments, MDIFW noted that the Maine Endangered Species Act lists several species of bats as endangered or threatened. Because bats are likely to be found on the project site during migration and/or breeding season, MDIFW recommended that tree clearing be limited to the period when bats are not present. The applicant agreed to limit tree

clearing outside of the months of June and July, the recognized pupping season for tree-roosting bats.

During an assessment of the project site, the applicant identified a vernal pool adjacent to the proposed southbound off-ramp. The applicant conducted three inspections of the vernal pool (April 18, May 6, and May 24, 2019). Following a review of the vernal pool assessment form filed by the applicant, MDIFW determined that the vernal pool was not a significant vernal pool, as defined in the Department's Rules, *Significant Wildlife Habitat*, 06-096 C.M.R. ch. 335 (effective January 7, 2014).

No fisheries and stream protection issues were identified.

The Department finds that the activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life provided that no tree cutting is conducted during the period of June 1 and July 31.

5. WATER QUALITY CONSIDERATIONS:

The waters that are or may be affected by the proposed project are currently classified (38 M.R.S. §468(9)) as Class B. As discussed in Finding 3, the applicant proposes to use erosion and sediment control during construction to minimize impacts to water quality from siltation.

As discussed in Finding 3, the applicant proposes to use erosion and sediment control during construction to minimize impacts to water quality from siltation.

Prior to filing the application, the applicant and its consultants met with the Department to discuss treatment of stormwater from the proposed project. In accordance with the June 2017 Memorandum of Agreement for Stormwater Management Between the Maine Department of Transportation, Maine Turnpike Authority, and the Department of Environmental Protection, the applicant proposes to construct four new underdrained soil filters and a wet pond and to remove one of two existing underdrained soil filters associated with the proposed project. These stormwater BMPs are designed to be consistent with the treatment standards set forth in the Department's Chapter 500, *Stormwater Management* (06-096 C.M.R. ch.500, last amended August 12, 2015), and are expected to remove pollutants and provide some cooling of stormwater runoff, prior to discharge to adjacent wetlands.

Based on the location of the proposed project, the construction methods proposed, and project's design and the Findings above, the Department finds that the proposed project will maintain and protect existing uses and the level of water quality necessary to protect those existing uses, will protect the existing water quality of any affected waters, and will not significantly impair the viability of any existing fish populations.

6. WETLANDS AND WATERBODIES PROTECTION RULES:

The proposed project will permanently approximately alter 55,100 square feet (1.26 acres), and temporarily impact 15,510 square feet (0.36 acres) of forested, freshwater wetlands. Wetland impacts are proposed at six locations along the east side of the northbound Plaza and on-ramp, totaling 52,400 square feet, and at three locations along the west side of the southbound Plaza and off-ramp, totaling 2,710 square feet. The applicant identified temporary wetland impacts as the area between the edge of project disturbance and the placement of silt fencing and stated that any wetlands disturbed in these areas will be restored to pre-disturbance conditions and revegetated with wetland vegetation.

The applicant identified a stream that runs parallel to the west side of the Turnpike from the pedestrian bridge south and adjacent to the existing Plaza off-ramp. The unnamed stream empties into a wetland and then re-channelizes at a point further west of the Turnpike. The proposed project includes ground disturbance/vegetation removal within 75 feet of this stream. As discussed in Finding 3, the applicant will implement erosion and sedimentation controls measures that will protect the stream which are consistent with the performance standards pursuant to the *Permit by Rule Standards* 06-096 ch. 305 §2 (last amended June 8, 2012), for activities adjacent to a protected natural resource.

The *Wetlands and Waterbodies Protection Rules*, 06-096 C.M.R. ch. 310 (last amended January 26, 2009), interpret and elaborate on the NRPA criteria for obtaining a permit. The rules guide the Department in its determination of whether a project's impacts would be unreasonable. A proposed project would generally be found to be unreasonable if it would cause a loss in wetland area, functions and values and there is a practicable alternative to the project that would be less damaging to the environment. Each application for a NRPA permit that involves a freshwater wetland alteration must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist.

A. Avoidance. An applicant must submit an analysis of whether there is a practicable alternative to the project that would be less damaging to the environment and this analysis is considered by the Department in its assessment of the reasonableness of any impacts. The applicant submitted an alternatives analysis for the proposed project, dated April 4, 2019. The purpose of the project is to reconfigure the parking areas to increase capacity and provide for safety to the traveling public. The applicant determined that the no-action alternative would not meet the project purpose, and so, dismissed this alternative. Because freshwater wetlands and a stream are located adjacent to the perimeter roads and Turnpike, the applicant determined that in-fill developed area at both Plazas would be the most practicable alternative that would be least damaging to the environment. The selected alternative minimizes wetlands impacts by limiting realignment of the existing ramps and perimeter road.

The selected alternative best meets the project purpose, providing the safety, engineering, and impact minimization desired by the applicant. Given the location of the protected natural resources on the project site, impacts to freshwater wetlands cannot be avoided.

B. Minimal Alteration. In support of an application and to address the analysis of the reasonableness of any impacts of a proposed project, an applicant must demonstrate that the amount of freshwater wetlands to be altered will be kept to the minimum amount necessary for meeting the overall purpose of the project. The applicant noted that the American Association of State Highway and Transportation Organizations' roadside design guide recommends maintaining the widest possible "clear zone," an unencumbered roadside recovery area to enable vehicles that go off the road the ability to recover and return. The guide also recommended that, in the event that roadside obstructions could not be removed, then placement of guardrails would be acceptable, even as the guardrail itself would then be considered a roadside hazard. Where practicable, the applicant proposes to place side slopes at a 6H:1V or 4H:1V grade in the clear zone for the project area but will place guardrails and 3H:1V or 2H:1V side slopes adjacent to wetland areas, as needed. The location and orientation of the freshwater wetlands along the project site allow the applicant to limit impacts to the wetland edges.

C. Compensation. In accordance with Chapter 310, compensation is required for the proposed project to achieve the goal of no net loss of freshwater wetland functions and values.

The applicant submitted a functional assessment, dated January 15, 2019, that described the wetlands to be altered by the proposed project. The functional assessment documented that the primary functions and values of the forested wetlands on the west side of Turnpike are groundwater recharge-discharge, floodflow alteration, and wildlife habitat, and that the primary functions and values of the forested wetlands on the east side of Turnpike are groundwater recharge-discharge, sediment toxicant retention, and wildlife habitat.

The functional assessment noted that additional wetland functions for wetlands in the project area were generally low due to the periodic mowing and road safety maintenance programs performed by the applicant in the travel corridor. The functional assessment also noted that while these wetlands are effective at capturing sediment and pollutants that runoff the road surface and from adjacent commercial development, the elevated pollutant loading is contributing to degradation of the wetlands.

The application included a table that identified the wetland type, their functions and values, the type of impact, and a calculation of an In-Lieu Fee payment amount for the wetland impacts from the proposed project. The applicant proposes to make a contribution into the In-Lieu Fee program of the Maine Natural Resource Conservation Program in the amount of $224,848.80. Prior to the start of construction, the applicant must submit a payment in the amount of $224,848.80, payable to "Treasurer, State of Maine", and directed to the attention of the In-Lieu Fee Program Administrator at 17 State House Station, Augusta, Maine 04333.

The Department finds that the applicant has avoided and minimized stream and wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project provided that prior to project construction, the applicant submits the In-Lieu Fee payment as described above.

The Department further finds that the activity will not unreasonably harm any freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

7. OTHER NRPA STANDARDS:

The Department finds, based on the design, proposed construction methods, and location, the proposed project will not inhibit the natural transfer of soil from the terrestrial to the marine environment, will not interfere with the natural flow of any surface or subsurface waters, and will not cause or increase flooding. The proposed project is not located in a coastal sand dune system, is not a crossing of an outstanding river segment, and does not involve dredge spoils disposal or the transport of dredge spoils by water.

8. GENERAL PERMIT:

The applicant also submitted a Notice of Intent (NOI #67543) to comply with the standards and requirements of the General Permit, which was accepted by the Department on April 26, 2019, as discussed in Finding 1. Section VI.(D) of the General Permit stipulates that the NOI review period will run concurrently with the NRPA permit application review period and the length of the review period will be the same as the review period for the NRPA permit application.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. §§ 480-A–480-JJ and Section 401 of the Federal Water Pollution Control Act:

A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.

B. The proposed activity will not cause unreasonable erosion of soil or sediment.

C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine, or marine fisheries or other

aquatic life provided that prior to construction the applicant makes a contribution to the In-Lieu Fee program as described in Finding 6 and provided that no tree cutting is conducted during the period of June 1 and July 31.

E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.

F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.

G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.

H. The proposed activity is not on or adjacent to a sand dune.

I. The proposed activity is not on an outstanding river segment as noted in 38 M.R.S. § 480-P.

THEREFORE, the Department APPROVES the above noted application of the MAINE TURNPIKE AUTHORITY to expand the Kennebunk Service Plazas as described in Finding 1, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

1. Standard Conditions of Approval, a copy attached.

2. The applicant shall take all necessary measures to ensure that its activities or those of its agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.

3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

4. Within the project site, no tree cutting shall be conducted during the period of June 1 and July 31.

5. Prior to the start of construction, the applicant shall submit a payment in the amount of $224,848.80, payable to "Treasurer, State of Maine", to the attention of the In-Lieu Fee Program Administrator at 17 State House Station, Augusta, Maine 04333.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED IN AUGUSTA, MAINE, THIS 16th DAY OF September, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
For: Gerald D. Reid, Commissioner

Filed
SEP 16 2019
State of Maine
Board of Environmental Protection

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES.

RLG/L28284AN/ATS#84359

Natural Resources Protection Act (NRPA)
Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCES PROTECTION ACT, 38 M.R.S. § 480-A ET SEQ., UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.

B. Compliance With All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.

C. Erosion Control. The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.

D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.

E. Time frame for approvals. If construction or operation of the activity is not begun within four years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

F. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.

G. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.

H. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018 **Contact: (207) 287-2452**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status*. The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error*. The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested*. The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

APPENDIX B
ACOE ENVIRONMENTAL PERMITS

DEPARTMENT OF THE ARMY
GENERAL PERMIT FOR
THE STATE OF MAINE

The New England District of the U.S. Army Corps of Engineers (Corps) hereby issues a General Permit (GP) for activities subject to Corps jurisdiction in waters of the U.S. within the boundaries of the State of Maine. This GP is issued in accordance with Corps regulations at 33 CFR 320 - 332 [see 33 CFR 325.2(e)(2)]. This GP authorizes activity-specific categories of work that are similar in nature and cause no more than minimal individual and cumulative adverse environmental impacts. Refer to Page 2 for the list of activities and Appendix A for activity specific conditions of eligibility in inland and tidal waters.

I. GENERAL CRITERIA

1. In order for activities to qualify for this GP, they must meet the GP's terms and eligibility criteria (Pages 1–4), General Conditions (GC) (Pages 5 – 20), and Appendix A - Definition of Categories.

2. Under this GP, projects may qualify for the following:
   - Category 1: Category 1 Self -Verification Notification Form is required (SVNF – see Appendix B).
   - Category 2: Application to and written approval from the Corps is required (Pre-Construction Notification (PCN)). No work may proceed until written approval from the Corps is received.

If your project is ineligible for Category 1, it may qualify for Category 2 or an Individual Permit and you must submit an application (see Page 3). The thresholds for activities eligible for Categories 1 and 2 are defined in Appendix A. This GP does not affect the Corps Individual Permit review process or activities exempt from Corps regulation.

3. Prospective permittees need to read:
   a. Section II to determine if the activity requires Corps authorization.
   b. Sections III and IV to determine if the activity may be eligible for authorization under this GP, specifically whether it is eligible for Self-Verification (SV) or whether Pre-Construction Notification (PCN) is required.

4. Permittees must ensure compliance with all applicable General Conditions in Section IV. The Corps will consider unauthorized any activity requiring Corps authorization if that activity is under construction or completed and does not comply with all of the terms and conditions.

5. Project proponents are encouraged to contact the Corps with questions at any time. Pre-application meetings (see 33 CFR 325.1(b)), whether arranged by the Corps or requested by permit applicants, are encouraged to facilitate the review of projects. Pre-application meetings and/or site visits can help streamline the permit process by alerting the applicant to potentially time-consuming concerns that are likely to arise during the evaluation of their project (e.g., avoidance, minimization and compensatory mitigation requirements, historic properties, endangered species, essential fish habitat, and dredging contaminated sediments).

II. CORPS JURISDICTION/ACTIVITIES COVERED

1. Permits are required from the Corps of Engineers for the following work:

a. The construction of any structure in, over or under any navigable water of the United States (U.S.) [1], the excavating or dredging from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The Corps regulates these activities under Section 10 of the Rivers and Harbors Act of 1899. See 33 CFR 322;

b. The discharge of dredged or fill material and certain discharges associated with excavation into waters of the U.S. (e.g. sidecasting). The Corps regulates these activities under Section 404 of the Clean Water Act (CWA). See 33 CFR 323; and

c. The transportation of dredged material for the purpose of disposal in the ocean. The Corps regulates these activities under Section 103 of the Marine Protection, Research and Sanctuaries Act. See 33 CFR 324.

2. Related laws:
33 CFR 320.3 includes a list of related laws, including: Section 401 of the CWA, Section 402 of the CWA, Section 307(c) of the Coastal Zone Management (CZM) Act of 1972, The National Historic Preservation Act of 1966, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Marine Mammal Protection Act of 1972, Magnuson-Stevens Act, and Section 7(a) of the Wild and Scenic Rivers Act.

3. An activity listed below may be authorized by this GP only if that activity and the permittee satisfy all of the GP's terms and conditions. Any activity not specifically listed below may still be eligible for the GP; applicants are advised to contact the Corps for a specific eligibility determination. Category 1 and Category 2 eligibility criteria for each activity in both Inland and Tidal waters can be found in Appendix A.

1. Repair, Replacement, Expansion, and Maintenance of Authorized Structures and Fills
2. Moorings
3. Structures, Floats and Lifts
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation
6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial, Industrial, and Institutional Developments, and Recreational Facilities
9. Utility Line Activities
10. Linear Transportation Projects
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Reshaping Existing Drainage Ditches and Mosquito Management
15. Oil Spill and Hazardous Material Cleanup
16. Cleanup of Hazardous and Toxic Waste
17. Scientific Measurement Devices
18. Survey Activities
19. Agricultural Activities
20. Fish and Wildlife Harvesting, Enhancement, and Attraction Devices
21. Habitat Restoration, Establishment and Enhancement Activities
22. Previously Authorized Activities
23. Stream & Wetland Crossings
24. Aquaculture

Note: Multiple activities may be authorized in the same GP, e.g. a recreational pier (#3) with an associated mooring (#2) or a windpower facility (#13) with an associated transmission line (#9).

[1] Defined in Appendix F, Definitions and at 33 CFR 328.

III. PROCEDURES

1. State Approvals. Applicants are responsible for applying for and obtaining any of the required state or local approvals. Federal and state jurisdictions may differ in some instances. State permits may be required for specific projects regardless of the general permit category.

In order for authorizations under this GP to be valid, when any of the following state approvals or statutorily-required reviews is also required, the approvals must be obtained prior to the commencement of work in Corps jurisdiction.

- Maine Department of Environmental Protection (DEP): Natural Resources Protection Act (NRPA) permit, including permit-by-rule (PBR) and general permit authorizations; Site Location of Development Act permit; Maine Waterway Development and Conservation Act permit; and Maine Hazardous Waste, Septage, and Solid Waste Management Act license.
- Maine Department of Conservation, Agriculture & Forestry: Land Use Planning Commission (LUPC) permit.
- Maine Department of Marine Resources: Aquaculture Leases.
- Maine Department of Conservation, Bureau of Parks and Lands, Submerged Lands: Submerged Lands Lease.

NOTE: This GP may also be used to authorize projects that are not regulated by the State of Maine (e.g., certain seasonal floats or moorings).

2. How to Obtain/Apply for Authorization.

a. Category 1 (Self-Verification): Self-Verification Notification Form (SVNF) required. The SVNF is required for all SV eligible work in Maine unless otherwise stated in Appendix A. Activities that are eligible for SV are authorized under this GP and may commence without written verification from the Corps provided the prospective permittee has:

i. Confirmed that the activity will meet the terms and conditions of Category 1. Consultation with the Corps and/or other relevant federal and state agencies may be necessary to ensure compliance with the applicable general conditions (GCs) and related federal laws such as the National Historic Preservation Act (see GC 6), the Endangered Species Act (GC 8) and the Wild and Scenic Rivers Act (GC 9). Prospective permittees are encouraged to contact the Corps with SV eligibility questions. Activities not meeting the SV criteria must submit a PCN to the Corps.

ii. Submitted the SVNF (see GC 27 and Appendix B) to the Corps. **NOTE: A copy of a state permit application form may be an acceptable surrogate for the SVNF. Whichever form chosen needs to include a location map, plans, and an Official Species List for federally listed threatened or endangered species (Reference Appendix D).**

b. Category 2 (Pre-Construction Notification (PCN)): Application to and written verification from the Corps is required before work can proceed. For activities that do not qualify for SV or where otherwise required by the terms of the GP, the permittee must submit a PCN and obtain a written permit before starting work in Corps jurisdiction.

i. The Corps will coordinate review of all activities requiring PCN with federal and state agencies and federally recognized tribes, as appropriate. To be eligible and subsequently authorized, an activity must result in no more than minimal individual and cumulative effects on the aquatic environment as determined by the Corps in accordance with the criteria listed within this GP. This may require project modifications involving avoidance, minimization, or compensatory mitigation for unavoidable impacts to ensure that the net adverse effects of a project are no more than minimal.

ii. The Corps will attempt to issue a written eligibility determination within the state's review period. Regardless, work eligible for Category 2 may not proceed before Corps written approval is received.

c. All applicants for Category 2 projects must:

i. Apply directly to the Corps using the state application form or the Corps application form (ENG Form 4345[2]), and apply directly to the state (DEP, LUPC, BPL or DMR) as applicable using the appropriate state form, if the work is regulated by the Corps and the state; or

ii. Apply directly to the Corps using the Corps application form (ENG Form 4345[2]) if the work is regulated by the Corps but not the state (DEP, LUPC, BPL or DMR).

iii. Provide application information (see "Information Typically Required" in Appendix C) to help ensure the application is complete and to speed project review.

iv. Obtain an Official Species List of federally threatened or endangered species in the project area (GC 8).

v. Submit a copy of their application materials to the Maine Historic Preservation Commission (MHPC) *and* all five Indian tribes listed at Appendix E, at the same time, or before, they apply to the Corps, to be reviewed for the presence of historic, archaeological or tribal resources in the permit area that the proposed work may affect. Submittals to the Corps shall include information to indicate that this has been done (a copy of the applicant's cover letter to MHPC and tribes or a copy of the MHPC and tribal response letters is acceptable).

d. Work that is not regulated by the State of Maine, but is subject to Corps jurisdiction, may still be eligible for authorization under this GP.

e. Emergency Situations: 33 CFR 325.2(e)4 states that an "emergency" is a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures." Emergency work is subject to the same terms and conditions of this GP as non-emergency work, and similarly, must qualify for authorization under the GP; otherwise an IP is required. The Corps will work with all applicable agencies to expedite verification according to established procedures in emergency situations.

3. Individual Permits. Projects that are not authorized by this GP require an Individual Permit (IP) (33 CFR 325.5) and proponents must submit an application directly to the Corps. This GP does not affect the Corps IP review process or activities exempt from Corps regulation. For general information and application form, see the Corps website or contact the Corps (see Appendix E). The Corps encourages applicants to apply concurrently for a Corps IP and applicable state permits.

The Corps retains discretionary authority on a case-by-case basis to elevate a GP eligible project to an IP based on concerns for the aquatic environment or for any other factor of the public interest [33 CFR 320.4(a)]. Whenever the Corps notifies an applicant that an IP is required, no work in Corps jurisdiction may be conducted until the Corps issues the required authorization in writing indicating that work may proceed.

4. Enforcement/Non-Compliance. Work performed without the required Corps of Engineers permits is subject to administrative, civil, and criminal penalties. The Corps will evaluate unauthorized activities for enforcement action under 33 CFR 326.

The Corps will consider unauthorized any activity requiring Corps authorization if that activity is under construction or completed and does not comply with all of the terms and conditions of a GP or an IP. The Corps may elect to suspend enforcement proceedings if the permittee modifies his project to comply with a GP.

After considering whether a violation was knowing or intentional, and other indications of the need for a penalty, the Corps can elect to terminate an enforcement proceeding with an after-the- fact authorization under a GP, if all terms and conditions of the GP have been satisfied, either before or after the activity has been accomplished.

[2] Located at www.nae.usace.army.mil/missions/regulatory under "Forms & Publications."

IV. GENERAL CONDITIONS

To qualify for GP authorization, the prospective permittee must comply with the following general conditions, as applicable.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Minimal Direct, Secondary, and Cumulative Impacts
4. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)
5. Single and Complete Projects
6. Historic Properties
7. Corps Projects and Property
8. Federal Threatened and Endangered Species
9. Wild and Scenic Rivers
10. Navigation
11. Federal Liability
12. Utility Line Installation and Removal
13. Heavy Equipment in Wetlands or Mudflats
14. Temporary Fill
15. Restoration of Special Aquatic Sites (including wetland areas).
16. Soil Erosion, Sediment and Turbidity Controls
17. Time of Year Windows/Restrictions.
18. Aquatic Life Movements & Management of Water Flows
19. Water Quality and Coastal Zone Management
20. Floodplains and Floodways
21. Storage of Seasonal Structures
22. Spawning, Breeding, and Migratory Areas
23. Vernal Pools
24. Invasive and Other Unacceptable Species
25. Programmatic Agreements
26. Permit On-Site
27. Self-Verification Notification Form (SVNF)
28. Inspections
29. Maintenance
30. Property Rights
31. Transfer of GP Verifications
32. Modification, Suspension, and Revocation
33. Special Conditions
34. False or Incomplete Information
35. Abandonment
36. Enforcement Cases
37. Duration of Authorization
38. Previously Authorized Activities
39. Discretionary Authority
40. St. John/St. Croix Rivers.
41. National Lands
42. Essential Fish Habitat (EFH)
43. Work Site Restoration
44. Bank Stabilization
45. Stream Work & Crossings and Wetland Crossings

1. Other Permits. Permittees must obtain other federal, state, or local authorizations required by law. Applicants are responsible for applying for and obtaining all required state or local approvals. This includes, but is not limited to, the project proponent obtaining a Flood Hazard Development Permit issued by the town, if necessary. Inquiries may be directed to the municipality or to the Maine Floodplain Management Coordinator at (207) 287-8063. See http://www.maine.gov/dacf/flood/

2. Federal Jurisdictional Boundaries

a. Applicability of this GP shall be evaluated with reference to federal jurisdictional boundaries. Applicants are responsible for ensuring that the boundaries used satisfy the federal criteria defined at 33 CFR 328 "Waters of the U.S." and 33 CFR 329 "Navigable Waters of the U.S."

NOTE: Waters of the U.S. include the subcategories "navigable waters of the U.S." and "wetlands."

b. For Category 1 projects, proponents are not required to delineate the waters of the U.S. that they plan to impact, but must approximate the square footage of impacts in order to determine the review category (1 or 2 or Individual Permit). For projects filling <15,000 square feet (SF) of waters of the U.S. that do not qualify for Category 1 (e.g., vernal pool, secondary or endangered species impacts, etc.) and therefore require an application to the Corps (PCN), and for those filling ≥15,000 SF, applicants shall delineate all waters of the U.S. that will be filled (direct impacts) in accordance with the Corps of Engineers Wetlands Delineation Manual and the most recent regional supplement (see Appendix C). In addition, applicants shall approximately identify all waters of the U.S. on the property and *known* waters adjacent to the property in order for the Corps to evaluate secondary impacts. The waters of the U.S. shall be clearly shown on the project plans submitted with the application. This includes all waters of the U.S. in areas under DEP or LUPC jurisdiction regardless of whether they're shown on LUPC zoning maps.

c. On a case-by-case basis, the Corps may modify/refine the above delineation and identification requirements for waters of the U.S. See www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands for more information on delineating jurisdictional areas.

3. Minimal Direct, Secondary, and Cumulative Effects[3]

a. Projects authorized by this GP shall have no more than minimal direct, secondary and cumulative adverse environmental impacts. Category 2 applicants should provide information on secondary and cumulative impacts as stated in Appendix C. Compensatory mitigation may be required to offset unavoidable impacts (see GC 4) and to ensure that they are no more than minimal. Compensatory mitigation requirements will be determined on a case-by-case basis.

b. Secondary impacts to waterway and/or wetland areas, (e.g., areas drained, flooded, cleared, excavated or fragmented) shall be added to the total fill area when determining whether the project qualifies for Category 1 or 2. Direct, secondary and cumulative impacts are defined at Appendix A, Endnote 2 and Appendix F.

c. Site clearing, grading and construction activities in the upland habitat surrounding vernal pools ("Vernal Pool Management Areas") are secondary impacts. See GC 23 for avoidance and minimization requirements and recommendations.

d. Bank stabilization activities in tidal waters are provided at Appendix A, Page 30. Direct impacts in tidal waters from contiguous bank stabilization projects in excess of 200 linear feet (Applicant or Applicant + Abutters combined) must undergo Category 2 review.

4. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)

a. Discharges of dredged or fill material into waters of the U.S., including wetlands, shall be avoided and minimized to the maximum extent practicable through consideration of alternatives. The Corps may require compensatory mitigation of unavoidable direct and secondary impacts associated with Category 2 projects on a case-by-case basis.

b. Applicants proposing work in jurisdictional waters should consider riparian/forested buffers for stormwater management and low impact development (LID) best management practices (BMPs) to reduce

[3] Direct, secondary and cumulative effects are defined at Appendix F, Definitions and Acronyms.

impervious cover and manage stormwater to minimize secondary impacts to aquatic resources to the maximum extent practicable.[4]

c. Compensatory mitigation[5] for effects to waters of the U.S., including direct, secondary and temporal[6], may be required for permanent impacts that exceed the SV area limits, and may be required for temporary impacts that exceed the SV area limits, to offset unavoidable impacts which remain after all appropriate and practicable avoidance and minimization has been achieved and to ensure that the adverse effects to the aquatic environment are no more than minimal. Proactive restoration projects or temporary impact work with no lasting secondary effects may generally be excluded from this requirement. Refer to Appendix G.

5. Single and Complete Projects[7]

a. This GP shall not be used to piecemeal work and shall be applied to single and complete projects. When determining the review category in Appendix A (Category 1 or 2) for a single and complete project, proponents must include any permanent historic fill placed since October 1995 that is associated with that project and all currently proposed temporary and permanent impact areas.

b. A single and complete project must have independent utility[7].

c. Unless the Corps determines the activity has independent utility:

i. This GP shall not be used for any activity that is part of an overall project for which an Individual Permit is required.

ii. All components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be treated together as constituting one single and complete project.

d. For linear projects, such as power lines or pipelines with multiple crossings, the single and complete project is all crossings of a single water of the U.S. (i.e., single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies and crossings of such features cannot be considered separately. If any crossing requires a Category 2 activity, then the entire linear project shall be reviewed as one project under Category 2.

6. Historic Properties

a. No undertaking shall cause effects (defined at 33 CFR 325 Appendix C and 36 CFR 800) on properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places[8], including previously unknown historic properties within the permit area, unless the Corps or another Federal action agency has satisfied the consultation requirements of Section 106 of the National Historic Preservation Act (NHPA). The State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO) and the National Register of Historic Places can assist with locating information on: i) previously identified historic properties; and ii) areas with potential for the presence of historic resources, which may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO and/or THPO(s).

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[4] See: www.nae.usace.army.mil/missions/regulatory >> State General Permit >> Permit Resources >> Mitigation for this additional information: a) "Wetland BMP Manual - Techniques for Avoidance & Minimization," b) riparian/forested buffer BMPs, and c) LID BMPs. LID BMPs include, but are not limited to: replacing curbs and gutters with swales; using an open space design for subdivisions; using permeable, pervious or porous pavements; constructing bio-retention systems; and/or, adding a green roof or rain garden.

[5] Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at www.nae.usace.army.mil/regulatory >> Mitigation.

[6] Temporal loss: The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).

[7] Single and Complete Project and Independent Utility are defined in Appendix F - Definitions.

[8] The majority of historic properties are not listed on the National Register of Historic Places and may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO and/or THPO(s).

b. For activities eligible for SV, proponents must ensure and document that the activity will not cause effects as stated in 6(a). Proponents must submit a PCN if the authorized activity may cause effects as stated in 6(a) as soon as possible to ensure that the Corps is aware of any potential effects of the permitted activity on any historic property to ensure all Section 106 requirements are met.

c. All PCNs shall: i) show notification to the SHPO and applicable THPO(s)[9] for their identification of historic properties, ii) state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties, and iii) include any available documentation from the SHPO or THPO(s) indicating that there are or are not historic properties affected. Starting consultation early in project planning can save proponents time and money.

d. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

7. Corps Projects and Property

a. In addition to any authorization under this GP, proponents must contact the Corps Real Estate Division at (978) 318-8585 for work occurring on or potentially affecting Corps properties and/or Corps-controlled easements to initiate reviews and determine what real estate instruments are necessary to perform work. Permittees may not commence work on Corps properties and/or Corps-controlled easements until they have received any required Corps real estate documents evidencing site-specific permission to work.

b. Any proposed temporary or permanent alteration, or modification or use, including occupation, of a federal project (including but not limited to a levee, dike, floodwall, channel, anchorage, breakwater, seawall, bulkhead, jetty, wharf, pier or other work built but not necessarily owned by the United States), which would obstruct or impair the usefulness of the federal project in any manner, and/or would involve changes to the authorized federal project's scope, purpose, and/or functioning that go beyond minor modifications required for normal operations and maintenance, is not eligible for SV and requires review and approval by the Corps pursuant to 33 USC 408. Where Section 408 is applicable, a decision on a Department of the Army general permit application will not be rendered prior to the decision on a Section 408 request.

c. Any structure or work within any Corps Federal Navigation Project (FNP) or its buffer zone[10], shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys. See GC 10 for more requirements related to FNPs.

8. Federal Threatened and Endangered Species

a. No activity is authorized which: i) is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species; ii) "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed; or iii) violates the ESA.

b. **All applicants must request an Official Species List from the US Fish & Wildlife Service and must include the list in the Corps permit application. To request an Official Species List, refer to the instructions in Appendix D.**

c. For federally listed species in tidal waters, applicants should contact the National Marine Fisheries Service at: http://www.greateratlantic.fisheries.noaa.gov/protected/section7/

[9] Appendix E, 3(a)&(b). Historic Resources, provides contact information and each tribe's "area of concern."
[10] See Appendix H for a list of FNPs. The buffer zone is equal to three times the authorized depth of the FNP.

d. A PCN is required if a threatened or endangered species, a species proposed for listing as threatened or endangered, or designated or proposed critical habitat (all hereinafter referred to as "listed species or habitat"), as identified under the ESA, is present in the action area[11].

e. Federal agencies should follow their own procedures for complying with the requirements of the ESA but should coordinate that consultation with the Corps as well.

9. Wild and Scenic Rivers.[12] Any activity that occurs in the designated main stem of, within 0.25 mile up or downstream of the designated main stem of, or in tributaries within .25 miles of the designated main stem of a National Wild and Scenic River, or in "bordering and contiguous wetlands" (see Appendix A, Endnote 1) that are adjacent to the designated main stem of a National Wild and Scenic River, or that has the potential to alter flows within a river within the National Wild and Scenic River System, is not eligible for Category 1 regardless of size of the impacts. This condition applies to both designated Wild and Scenic Rivers and rivers officially designated by Congress as study rivers for possible inclusion while such rivers are in an official study status. National Wild and Scenic Rivers System segments for Maine as of October 2015 include: Allagash River beginning at Telos Dam continuing to Allagash checkpoint at Eliza Hole Rapids, approximately 3 miles upstream of the confluence with the St. John River (length = 92 miles); and 11.25 miles of the York River, in the State of Maine, from its headwaters at York Pond to the mouth of the river at York Harbor, plus its tributaries (currently under study).

10. Navigation

a. Any structure or work that extends closer to the horizontal limits of any Corps Federal Navigation Project (see Appendix H) than a distance of three times the project's authorized depth shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys. This is applicable to Category 1 and 2. Reference Appendix A, Page 28 (Moorings) and Page 29 (Structures, Floats & Lifts).

b. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.

c. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

d. A PCN is required for all work in, over or under an FNP or its buffer zone unless otherwise indicated in Appendix A. (Reference Appendix A, Endnote 13, Page 36)

11. Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest;
(c) damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit; (d) design or construction deficiencies associated with the permitted work; (e) damage claims associated with any future modification, suspension, or revocation of this permit.

12. Utility Line Installation and Removal

a. Subsurface utility lines shall remain subsurface. If it is necessary to discharge dredged or filled material not previously authorized in order to keep such utility lines buried or restore them to their original subsurface condition, a PCN and written verification from the Corps may be required (e.g., in the case of side

[11] The "Endangered Species Consultation Handbook – Procedures for Conducting Consultation and Conference Activities Under Section 7 of the ESA," defines action area as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. [50 CFR 402.02]."
[12] Additional information can be found at: http://www.rivers.gov.

casting into wetlands from utility trenches). Certain repair, replacement or maintenance activities may be eligible for Category 1 – refer to Appendix A.

b. Subsurface utility lines must be installed at a sufficient depth to avoid damage from anchors, dredging, etc., and to prevent exposure from erosion and stream adjustment. In accordance with Corps New England District Regulation NEDER 1110-1-9 (www.nae.usace.army.mil/missions/regulatory >> Useful Links and Documents), as an absolute minimum, the bottom cover associated with the initial installation of utility lines under navigable waters and navigation channels shall be 48 inches in soil or 24 inches in rock excavation in competent rock unless specified in a written determination. These minimum bottom cover requirements for pipelines and cables shall be measured from the maximum depth of dredging to the top of the utility. The maximum depth of dredging, in waterways having existing FNPs, is generally considered to be the authorized project depth plus any allowance for advanced maintenance and the allowable overdepth for dredging tolerances. In waterways that do not have existing FNPs, this depth should be taken as two feet below the existing bottom or maximum depth of proposed dredging, as applicable.

c. Aerial utility lines that cross navigable waters must meet minimum clearances. See 33CFR322.5(i).

d. For horizontal directional drilling work, returns of drilling fluids to the surface (i.e., frac-outs) are not authorized and require restoration to the maximum extent practicable in accordance with the terms and conditions of this GP. The permittee and its contractor shall have onsite and shall implement the procedures detailed in a frac-out contingency plan for monitoring drilling operations and for the immediate containment, control and recovery/removal of drilling fluids released into the environment should a discharge of material occur during drilling operations.

e. Within the context of any new installations, any abandoned or inactive utility lines should be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) should be removed or repaired to the extent practicable. A PCN and written verification from the Corps is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.

f. No work shall drain a water of the U.S. by providing a conduit for water on or below the surface. Trench plugs installed along pipelines may be effective.

13. Heavy Equipment in Wetlands or Mudflats. Operating heavy equipment other than fixed equipment (drill rigs, fixed cranes, etc.) within wetlands shall be minimized, and such equipment shall not be stored, maintained or repaired in wetlands, to the maximum extent practicable. Where construction requires heavy equipment operation in wetlands, the equipment shall either have low ground pressure (typically <3 psi), or it shall be placed on swamp/construction/timber mats (herein referred to as "construction mats" and defined at Appendix A, Endnote 4) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Dragging construction mats into position is prohibited. Other support structures that are capable of safely supporting equipment may be used with written Corps authorization (Category 2 authorization or Individual Permit). Similarly, the permittee may request written authorization from the Corps to waive use of mats during frozen, dry or other conditions. An adequate supply of spill containment equipment shall be maintained on site. Construction mats should be managed in accordance with the Construction Mat BMPs at www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Permit Resources.

14. Temporary Fill. Temporary fill that qualifies for Category 1 (e.g., <15,000 SF of combined temporary and permanent fill associated with the single and complete project) or is authorized in writing under Category 2, shall adhere to the following:

a. All temporary fill and disturbed soils shall be stabilized to prevent its eroding into waters of the U.S. where it is not authorized. Work shall include phased or staged development to ensure only areas under active development are exposed and to allow for stabilization practices as soon as practicable, typically within three calendar days after disturbance. Accelerated stabilization (the providing of temporary or permanent cover by the end of the work day to prevent erosion) shall be employed as necessary. Temporary fill must be placed in a manner that will prevent it from being eroded by expected high flows.

b. Unconfined temporary fill authorized for discharge into waters of the U.S. (e.g., temporary stream crossings) shall consist of material that minimizes impacts to water quality (e.g. washed stone, stone, etc.).

c. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Place materials in a location and manner that does not adversely impact surface or subsurface water flow into or out of the wetland. Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade. Construction mats are excluded from this requirement.

d. Temporary fill, construction mats and corduroy roads shall be entirely removed as soon as they are no longer needed to construct the authorized work. Temporary fill shall be placed in its original location or disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S. To qualify for Category 1, temporary fill placed during the: i.) growing season must be removed before the beginning of the next growing season; and ii.) non-growing season may remain throughout the following growing season, but must be removed before the beginning of the next growing season.

e. Temporary fill, construction mats and corduroy roads are considered temporary only if they are removed as soon as they are no longer needed to construct the authorized work.

f. Construction debris and/or deteriorated materials shall not be located in waters of the U.S.

15. Restoration of Special Aquatic Sites (Including Wetland Areas)

a. Temporary fills must be removed in their entirety and the affected areas restored to their pre-construction condition, function and elevation. Restoration shall typically commence no later than the completion of construction.

b. For excavated areas, "restored to pre-construction condition, function and elevation" means careful removal of existing soil and vegetation, separate topsoil and subsoil stockpiling, soil protection, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized. Plan for natural settling that will occur (the initial post-restoration elevation of the backfilled areas should be above the desired final grade as topsoil may settle by 33% to 50%), minimize compaction, and ensure that topsoil is void of gravel and subsoil. A minimum of 4 inches of topsoil should be at the surface after the soil has settled. Wetland areas temporarily disturbed shall be stabilized (e.g., seeded or planted). Seed mixes and vegetation shall include only plant species native to New England and shall not include any species listed as "Invasive and Other Unacceptable Plant Species" in the "New England District Compensatory Mitigation Guidance" (see GC 24 and refer to Appendix G). This list may be updated periodically.

c. Limit compaction to the minimum needed to promote a successful seedbed; avoid a 'fluffy' seedbed, which is susceptible to erosion until the plants get established, and a compacted topsoil layer, which is counter-productive and will lead to greater erosion susceptibility down the road. Test soils for compaction. A soil probe, auger, or shovel should be able to retrieve samples of post-restoration profile. Equipment refusal shall be considered a failure of restoration, in which case the soil should be restored through deep-ripping and/or de-compaction, or other appropriate methods, and wetland hydrology must be maintained. See the BMPs at www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Permit Resources >> Restoration.

d. In areas of authorized temporary disturbance, cut woody vegetation (trees, shrubs, etc.) shall be cut at or above ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

e. Trenches shall be constructed or backfilled so that the trench does not drain waters of the U.S. (e.g., materials or methods that create a French drain effect).

16. Soil Erosion, Sediment and Turbidity Controls

a. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, installation of sediment control barriers (i.e. silt fence, vegetated filter strips, geotextile silt fences, erosion control mixes, hay bales or other devices) downhill of all exposed areas, retention of existing vegetated buffers, application of temporary mulching during construction, and permanent seeding and stabilization shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion; of collecting sediment, suspended and floating materials; and of filtering fine sediment.

b. Temporary sediment control barriers shall be removed upon completion of work, but not until all disturbed areas are permanently stabilized. The sediment collected by these sediment barriers shall be removed and placed at an upland location and stabilized to prevent its later erosion into a waterway or wetland.

c. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date .

17. Time of Year Work Windows/Restrictions. For activities where work is authorized in streams and tidal waters that causes turbidity or sediment re-suspension or other construction related disturbances, work must be conducted during the following TOY work windows (not during the TOY restrictions) unless otherwise authorized by the Corps under Category 2 review:

	TOY Restriction (no work)	TOY Work Window (work allowed)
Non-tidal waters	Oct. 01 through Jul. 14	Jul. 15 through Sep. 30
Tidal waters	Apr. 10 through Nov. 07	Nov. 08 through Apr. 09

Alternate windows authorized under Category 2 may include species specific windows recommended by the Maine Dept. of Marine Resources and/or Maine Dept. of Inland Fisheries & Wildlife.

18. Aquatic Life Movements & Management of Water Flows

a. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Unless otherwise stated, activities impounding water in a stream require a PCN to ensure impacts to aquatic life species are avoided and minimized. All permanent and temporary crossings of waterbodies (e.g., streams, wetlands) shall be:

i. Suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species; and

ii. Properly aligned and constructed to prevent bank erosion or streambed scour both adjacent to and inside the culvert. Permanent and temporary crossings of wetlands shall be suitably culverted, spanned or bridged in such a manner as to preserve hydraulic and ecological connectivity between the wetlands on either side of the road.

b. To avoid adverse impacts on aquatic organisms, the low flow channel/thalweg shall remain unobstructed during periods of low flow, except when it is necessary to perform the authorized work.

c. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

19. Water Quality and Coastal Zone Management

a. Applicants must satisfy any conditions imposed by the state and EPA, where applicable, in their CWA § 401 Water Quality Certifications (WQC) for this GP, or in any Individual § 401 WQC. See Appendix E for state-specific contact information and to determine if any action is required to obtain a 401 WQC. The Corps may require additional water quality management measures to ensure that the authorized activity does not cause or contribute to a violation of water quality standards. All projects authorized by this GP shall be designed, constructed and operated to minimize or eliminate the discharge of pollutants.

b. Applicants must satisfy any additional conditions imposed by the state in their Coastal Zone Management (CZM) Act consistency concurrences for this GP, or in any Individual CZM consistency concurrences. The Corps may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

20. Floodplains and Floodways

a. Appropriate measures must be taken to minimize flooding to the maximum extent practicable.

b. Activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency (FEMA)-approved state and/or local floodplain management permitting requirements. Proponents may need to coordinate with FEMA and apply for a formal change to the flood insurance study products or forward a set of project plans and relevant technical documentation in a digital format to the Risk

Analysis Branch Chief, Mitigation Division, FEMA, Region 1, 99 High Street, Boston, Massachusetts 02110. Applicants should provide a copy of any documentation to the Corps along with the PCN.

c. Proponents may have to obtain a Flood Hazard Development Permit issued by the town. Inquiries may be directed to the municipality or to the Maine Floodplain Management Coordinator at (207) 287-8063. See http://www.maine.gov/dacf/flood/

21. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, aquaculture structures, etc. that are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location landward of mean high water (MHW) or ordinary high water (OHW) and not in wetlands, tidal wetlands, their substrate or on mudflats. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is waterward of MHW or OHW. Seasonal storage of structures in navigable waters, e.g., in a protected cove on a mooring, requires Corps approval and local harbormaster approval.

22. Spawning, Breeding, and Migratory Areas

a. Jurisdictional activities and impacts such as excavations, discharges of dredged or fill material, and/or suspended sediment producing activities in jurisdictional waters that provide value as fish migratory areas, fish and shellfish spawning or nursery areas, or amphibian and migratory bird breeding areas, during spawning or breeding seasons shall be avoided and minimized to the maximum extent practicable.

b. Jurisdictional activities in waters of the United States that provide value as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity (See Appendix E).

23. Vernal Pools

a. Only vernal pools that meet the current definition of waters of the U.S. are regulated by the Corps.

b. Direct and indirect adverse effects to all vernal pools (VPs), including their envelopes and critical terrestrial habitats (VP Management Areas[13]), shall be avoided and minimized to the maximum extent practicable. Site clearing, grading, and construction activities associated with a regulated activity in the VP Management Area may cause these adverse effects to the VP.

c. The State of Maine has specific protections for vernal pools.[14]

d. When any regulated activities occur within 750 feet of a vernal pool, the following management practices must be followed for all work within any VP Management Area (750' of a VP's edge) *in order to qualify for Category 1*:

i. No disturbance within the VP Depression or VP Envelope (area within 100 feet of the VP Depression's edge)[15];

ii. Maintain a minimum of 75% of the Critical Terrestrial Habitat (area within 100-750 feet of the VP Depression's edge) as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris;

iii. Maintain or restore forest corridors connecting wetlands and significant vernal pools;

iv. Minimize forest floor disturbance; and

v. Maintain native understory vegetation and downed woody debris.

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[13] The Corps VP Management Area, which includes the VP and a 750' radius from the VP's edge, is defined at Appendix A, Endnote 5.

[14] Appendix G, 10(a)-(d) provides links to the state's Significant Wildlife Habitat regulations and references that provide impact minimization measures to reference when designing projects.

[15] The no disturbance requirement in the VP envelope [see (b)(i)(1)], and (b)(i)(2), do not apply to temporary impacts associated with construction mats in previously disturbed areas of existing utility project (e.g., transmission lines, gas pipelines) or linear transportation project (e.g., roads, highways, railways, trails, airport runways and taxiways) right-of-ways provided there is a Vegetation Management Plan that avoids, minimizes and mitigates impacts to aquatic resources.

vi. Cape Cod style-curbing or no curbing options shall be used on new roads to facilitate amphibian passage. (Reference Appendix G)

e. A PCN is required for any regulated activity within 750' of a vernal pool when all work within the VP Management Area does not comply with the Category 1 requirements in (d) above. Information on directional buffers in accordance with the VP Directional Buffer Guidance document may be provided in order to demonstrate minimal impact and avoid compensation requirements (Reference Appendix G). Conservation of the un-impacted area within the VP Management Area will often be required.

f. GC 2 requires applicants to delineate or approximately identify on the project plans all waters of the U.S., which contain vernal pools.

g. GC 23(b-d) do not apply to projects that are within a municipality and meet the provisions of a Corps-approved VP Special Area Management Plan (VP SAMP) and are otherwise eligible for self-verification.

24. Invasive and Other Unacceptable Species[16]

a. The introduction or spread of invasive or other unacceptable plant or animal species on the project site or areas adjacent to the project site caused by the site work shall be avoided to the maximum extent practicable. For example, construction mats and equipment shall be thoroughly cleaned and free of vegetation and soil before and after use. The introduction or spread of invasive plant or animal species on the project site caused by the site work shall be controlled.

b. No cultivars, invasive or other unacceptable plant species may be used for any mitigation, bioengineering, vegetative bank stabilization or any other work authorized by this GP. However, non-native species and cultivars may be used when it is appropriate and specified in a written verification, such as using *Secale cereale* (Annual Rye) to quickly stabilize a site. All PCNs should explain the reason for using non-native species or cultivars.

25. Programmatic Consultations or Agreements. The Corps requirements to comply with Section 106 of the NHPA, Section 7 of the Endangered Species Act or Essential Fish Habitat conservation under the Magnuson-Stevens Act may be satisfied by a Programmatic Agreement with the Corps, New England District or another federal action agency. Any Corps, New England District Programmatic Agreements will be available on our website.

26. Permit On Site. The permittee shall ensure that a copy of this GP and any accompanying authorization letter with attached plans are at the site of the work authorized by this GP whenever work is being performed and that all construction personnel performing work which may affect waters of the U.S. are aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and subcontracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this GP. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means this entire GP and the authorization letter (including its drawings, plans, appendices and other attachments) and also includes permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or subcontract. Although the permittee may assign various aspects of the work to different contractors or subcontractors, all contractors and subcontractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire GP authorization, and no contract or subcontract shall require or allow unauthorized work in areas of Corps jurisdiction.

[16] For the purposes of this GP, plant species that are considered invasive and unacceptable are provided in Appendix G "Invasive and other Unacceptable Plant Species" of our document "Compensatory Mitigation Guidance" at www.nae.usace.army.mil/missions/regulatory >> Mitigation. Chapter 4(e) Planting is also particularly relevant. The June 2009 "Corps of Engineers Invasive Species Policy" provides policy, goals and objectives and is located at www.nae.usace.army.mil/missions/regulatory >> Invasive Species. Additional information can be found at: www.eddmaps.org/ipane.

27. Self-Verification Notification Form (SVNF). Permitees must complete and submit the SVNF provided at Appendix B to the Corps for work authorized by this GP unless otherwise noted in Appendix A. **NOTE: A copy of a state permit application form may be an acceptable surrogate for the SVNF provided either form used also include plans and an Official Species List of federally listed threatened or endangered species.**

28. Inspections. The permittee shall allow the Corps to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of this GP and any written verification. The Corps may also require post-construction engineering drawings for completed work, post-dredging survey drawings for any dredging work, or other post-construction reports. To facilitate these inspections, the permittee shall complete and return to the Corps the following forms:

- For Category 1/Self-Verification: The SVNF (see Appendix B).
- For Category 2/PCN: The a) Work-Start Notification Form and b) Compliance Certification Form, when either is provided with the authorization letter.

29. Maintenance

a. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable general conditions and activity-specific conditions to a written verification.

b. The requirement in (a) above does not include maintenance of dredging projects. Each maintenance dredging event exceeding the self-verification limits requires a new PCN unless an unexpired, written PCN or other Corps authorization specifies that the permittee may "dredge and maintain" an area for a particular time period. Self-verification or PCN maintenance dredging includes only those areas and depths previously authorized and actually dredged. Maintenance dredging with ocean or open water disposal will always require a PCN and at least Category 2 review.

c. Some maintenance activities may not be subject to regulation under Section 404 in accordance with 33 CFR 323.4(a)(2). Refer to Appendix A, Endnote 7.

30. Property Rights. This GP does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations.

31. Transfer of GP Verifications. When the structures or work authorized by this GP are still in existence at the time the property is transferred, the terms and conditions of this GP, including any special conditions, will continue to be binding on the entity or individual who received the GP authorizations, as well as the new owner(s) of the property. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps (see Appendix E for address) to validate the transfer. A copy of the GP verification must be attached to the letter, and *the letter must contain the new owner's contact information and the following statement and signature:*

"When the structures or work authorized by this GP are still in existence at the time the property is transferred, the terms and conditions of this GP, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this GP and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

32. Modification, Suspension, and Revocation. Any work authorized under this GP by self-verification or PCN may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

33. Special Conditions. The Corps may independently, or at the request of the federal resource agencies, impose other special conditions on a project authorized pursuant to this GP that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. Failure to comply with all terms and conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or an ordered restoration.

34. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under this GP and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the Corps may determine that the GP authorization is not valid; modify, suspend or revoke the authorization; and the U.S. Government may institute legal proceedings.

35. Abandonment. If the permittee decides to abandon the activity authorized under this GP, unless such abandonment is merely the transfer of property to a third party, he/she may be required to restore the area to the satisfaction of the Corps.

36. Enforcement cases. This GP does not apply to any existing or proposed activity in Corps jurisdiction associated with an ongoing Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA, as appropriate, determines that the activity may proceed independently without compromising the enforcement action.

37. Duration of Authorization. This GP expires on October 12, 2020. Activities authorized under this GP that have commenced (i.e., are under construction) or are under contract to commence before this GP expires will have until October 12, 2021 to complete the activity under the terms and conditions of the current GP.

38. Previously Authorized Activities.

a. Projects that have received authorization (Category 1 or 2) from the Corps and that were completed under the previous PGPs, nationwide permits, regional general permits or letters of permission, shall remain authorized.

b. Activities authorized pursuant to 33 CFR Part 330.3 ("Activities occurring before certain dates") are not affected by this GP.

c. Any work not commenced nor completed that was authorized in a written letter from the Corps under the GP in effect between October 12, 2010 and October 12, 2015 remains authorized subject to the terms and general conditions of this GP along with any special conditions in the authorizing written letter. Exception – if previously authorized work is not commenced and a new federally listed threatened or endangered species could be affected, the Corps must consult with the Service(s) prior to re-authorizing the work under this GP. Requests for re-authorization must include an updated Official Species list. To request an Official Species List, refer to the instructions in Appendix D.

39. Discretionary Authority. Notwithstanding compliance with the terms and conditions of this permit, the Corps retains discretionary authority to require Category 2 or Individual Permit review based on concerns for the aquatic environment or for any other factor of the public interest [33 CFR 320.4(a)]. This authority is invoked on a case-by-case basis whenever the Corps determines that the potential consequences of the proposal warrant a higher level of review based on the concerns stated above. This authority may be invoked for projects that may contribute to cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project that is not already covered by the remaining conditions of the GP and that warrants greater review. Whenever the Corps notifies an applicant that an Individual Permit may be required, the project is not authorized under this GP and no work may be conducted until an Individual Permit is obtained or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under this GP.

40. St. John/St. Croix Rivers. Work within the Saint John and Saint Croix River basins that requires approval of the International Joint Commission is not eligible for Category 1 and a PCN to the Corps is required if any temporary or permanent use, obstruction or diversion of international boundary waters could affect the natural

flow or levels of waters on the Canadian side of the line; or if any construction or maintenance of remedial works, protective works, dams, or other obstructions in waters downstream from boundary waters could raise the natural level of water on the Canadian side of the boundary.

41. National Lands. Activities that impinge upon the value of any National Wildlife Refuge, National Forest, National Marine Sanctuary, National Park or any other area administered by the National Park Service, U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service are not eligible for Category 1 and require a PCN.

42. Essential Fish Habitat (EFH). Any work in the following rivers and streams, including all tributaries to the extent that they are currently or were historically accessible for salmon migration, shall not be authorized under Category 1 of the GP and must be screened for potential impacts to EFH (see Appendix G for more information).

Androscoggin River	Aroostook River	Boyden River	Dennys River
Ducktrap River	East Machias River	Hobart Stream	Kennebec River
Machias River	Narraguagus River	Orland River	Passagassawaukeag River
Patten Stream	Penobscot River	Pleasant River	Presumpscot River
Saco River	Sheepscot River	St. Croix River	Tunk Stream
			Union River

The above does not apply to the following activities which may qualify for Category 1 work:

- Exploratory drilling and borings for bridges.
- Moorings (see Appendix A, Page 28 for Category 1 thresholds and requirements)
- Structures, floats & lifts (see Appendix A, Page 29 for Category 1 thresholds and requirements)
- Other activities specified in a programmatic agreement with NMFS.

43. Work Site Restoration

a. Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

b. Upon completion of construction, all disturbed wetland areas (the disturbance of these areas must be authorized) shall be properly stabilized. Any seed mix shall contain only plant species native to New England and shall not contain any species listed in the "Invasive and Other Unacceptable Plant Species" Appendix in the "New England District Compensatory Mitigation Guidance" (see GC 24 and refer to Appendix G). This list may be updated periodically.

c. In areas of authorized temporary disturbance, if trees are cut they shall be cut at ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

44. Bank Stabilization

a. Projects involving construction or reconstruction/maintenance of bank stabilization structures within Corps jurisdiction shall be designed to minimize environmental effects, effects to neighboring properties, scour, etc. to the maximum extent practicable.

b. Project proponents must design and construct bank stabilization projects using this sequential minimization process: avoidance of aquatic resource impacts, diversion of overland flow, vegetative stabilization, stone-sloped surfaces, and walls/bulkheads. Vertical walls/bulkheads shall only be used in situations where reflected wave energy can be tolerated.

c. Inland Water bank stabilization activities necessary for erosion prevention must meet all of the following criteria: i) No material is placed in excess of the minimum needed for erosion protection; ii) The activity is no more than 500 feet in total length along the bank(s); iii) The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark; iv) Structures angled steeper than 1H:1V and any material other than angular or sub-angular stone or fiber roll revetments require at least a Category 2 review; v) The activity does not involve discharges of dredged or fill

material into special aquatic sites; vi) No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any water of the U.S.; vii) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and viii) The activity is not a stream channelization activity.

d. Bank stabilization activities in tidal waters are provided at Appendix A, Page 30 & 31. Direct impacts in tidal waters from contiguous bank stabilization projects in excess of 200 linear feet (Applicant or Applicant + Abutters combined) must undergo Category 2 review.

45. Stream Work and Crossings & Wetland Crossings

Notes:

a. For *Stream Work and Crossings* below, conditions (a) and (b) apply to Inland Waters and Wetlands (see Appendix A, Page 1 for definition) and Navigable Waters (see Appendix A, Page 27 for definition). Conditions (c)-(l) below only apply to Inland Waters and Wetlands that are streams. All new and replacement crossings in Navigable Waters require an application to the Corps and at least a Category 2 review.

b. In-stream work in a watershed occupied by listed Atlantic salmon, Atlantic sturgeon, or shortnose sturgeon [see GC 8(b)] and some stream work such as crossings on EFH waters (see GC 42) is not eligible for Category 1.

c. "High-Quality Stream Segments" are shown at www.maine.gov/dep/gis/datamaps and may be useful in evaluating impacts to fisheries. GIS shape files are under "Other Google Earth Interactive Maps" and PDFs by county are under "DEP GIS Maps." See Appendix E for more state contact information.

Conditions for Stream Work and Crossings:

a. All permanent crossings of rivers, streams, brooks, etc. (hereon referred to as "streams") shall be suitably culverted, bridged, or otherwise designed to i) withstand and to prevent the restriction of high flows to qualify for Category 1, and ii) not obstruct the movement of or not substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity's primary purpose is to impound water to qualify for Category 1 or 2. *(NOTE: Areas of fill and/or cofferdams must be included in total waterway/wetlands impacts to determine applicability of this GP).*

b. Any work that temporarily or permanently impacts upstream or downstream flood conditions, or permanently impacts wetlands in excess of Category 1 thresholds, must be reviewed at least under Category 2. See the documents referenced in Appendix G, 8(c) and (d) for guidance.

c. New Stream Crossings. For new stream crossings to qualify for Category 1:

i. Must ensure compliance with GC 45(a) and GC 45(b) above.

ii. Shall be designed and constructed in accordance with the Corps General Stream Crossing Standards provided on Page 19 and the stream simulation document listed at Appendix G, 8(a).

d. Replacement Stream Crossings. For replacement stream crossings to qualify for Category 1:

i. Must ensure compliance with GC 45(a) and GC 45(b) above.

ii. Shall be designed and constructed in accordance with the Corps General Stream Crossing Standards provided on Page 19 and the stream simulation document listed at Appendix G, 8(a).

e. Culvert Extensions. Culvert extensions on culverts that do not meet the Corps General Stream Crossing Standards do not qualify for Category 1 and require an application to the Corps and at least Category 2 review.

f. Temporary Stream Crossings.

Note: The General Stream Crossing Standards don't apply to temporary stream crossings.

i. Temporary stream crossings or cofferdams shall be used for equipment access across streams [see Appendix G, 8(e)]. Note: Areas of fill and/or cofferdams must be included in total waterway/wetlands impacts to determine the review category in Appendix A.

ii. Temporary stream crossings shall be removed within 180 days to qualify for Category 1.

iii. Temporary stream crossings that are not spans[17] (typically culverts) must be designed in accordance with 1-6 below to qualify for Category 1. Category 2 applications should include information demonstrating 2-6 below:

1. Installed and removed during the low flow period specified in GC 45(l) below.
2. Placed on geotextile fabric or other material where practicable to ensure restoration to the original grade. Soil may not be used to construct or stabilize these structures and rock must be large enough to allow for easy removal without disrupting the streambed.
3. Designed and maintained to withstand and pass high flows. Water height should be no higher than the top of the culvert's inlet. A minimum culvert diameter of two feet is required to pass debris. Culverts must be aligned to prevent bank erosion or streambed scour.
4. Equipped with energy dissipating devices installed downstream if necessary to prevent scour.
5. Designed and maintained to prevent soil from entering the waterbody.
6. Removed upon the completion of work. Impacts to the streambed or banks requires restoration to their original condition using stream simulation methods[18].

g. Slip Lining. Work using slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe), invert lining, or resulting in decreased diameter, does not qualify for Category 1, either as new work or maintenance activities.

h. Work in Flowing Waters. To qualify for Category 1, no unconfined fill [see GC 14(b)] or excavation in flowing waters is allowed. To accomplish this:

i. Bank stabilization work below ordinary high water (OHW) shall utilize erosion controls such as inflatable cofferdams, jersey barrier, silt screen, turbidity curtain, etc. where practicable to prevent sediment input to the stream and to minimize turbidity and sedimentation impacts for sensitive life stages. Bank stabilization above OHW must utilize erosion controls.

ii. Management techniques such as temporary flume pipes, culverts, cofferdams, etc. must be used to maintain normal flows within the stream boundary's confines, or water diversions may be used immediately up and downstream of the work footprint (see Appendix A, Endnote 6) or work must be performed in the dry under no flow conditions, or under very low flow conditions following the practices in GC 45(a).

i. Minimization. In order to make the Category 2 review process more efficient and result in a faster decision, new and replacement stream crossings should be designed using the least intrusive and environmentally damaging method following this sequential minimization process: 1) spans with no stream impacts, 2) spans with stream impacts, and 3) embedded culverts with stream simulation or low-slope design.

j. Maintenance Requirements. The permittee shall maintain the work authorized herein in good condition and in conformance with the terms and general conditions of this permit to facilitate aquatic life passage as stated in GC 45(a). Culverts that develop "hanging" inlets or outlets, result in bed washout, or a stream that doesn't match the characteristics of the substrate in the natural stream channel such as mobility, slope, stability confinement will require maintenance or repair to comply with this GC. This does not apply to GC 45(f) above.

k. Maintenance and Replacement Information. An existing stream crossing must be authorized and in compliance with all conditions of its authorization(s) to qualify for maintenance not subject to regulation. See Appendix A, Endnote 7. A non-serviceable crossing is not eligible for maintenance and is therefore considered as a replacement crossing [see GC 45(d)].

l. Work Window. For projects that otherwise meet the terms of Category 1, in-stream construction work shall be conducted during the low flow period July 15 – September 30 in any year. Projects that are not to be conducted during that time period are ineligible for Category 1 and shall be screened pursuant to Category 2, regardless of the waterway and wetland fill and/or impact area.

Corps General Stream Crossing Standards (required for Category 1; *recommended* for Category 2):

a. Culverts must be embedded:

[17] For the purposes of this GP, spans are bridges, three-sided box culverts, open-bottom culverts or arches that span the stream with footings landward of bankfull width.

[18] Design and construction shall be in accordance with the stream simulation document listed at Appendix G, 8(a).

- ≥ 2 feet for box culverts and other culverts with smooth internal walls,
- ≥ 1 foot for corrugated pipe arches
- ≥ 1 foot and at least 25 percent for corrugated round pipe culverts

b. **For new crossings**, spans[17] are required to avoid or cause minimal disruption to the streambed and to meet the requirements of General Condition 45(a) and 45(b). Footings and abutments must be landward of 1.2 times bankfull width. To the greatest extent practicable, work in the stream shall be minimized, and design and construction shall allow the streambed's natural structure and integrity to remain intact. Any fill or excavation of the streambed below bankfull width other than footings, support pilings, or work specified in 45(h)ii requires Category 2 review and, unless demonstrated otherwise, stream simulation[18] to establish substrate and banks in the span structure and work area as specified in (d) and (e) below.

c. **For replacement crossings**, spans[17] are required to meet the requirements of General Condition 45(a) and 45(b). Footings and abutments shall be landward of 1.2 times bankfull width. Unless demonstrated otherwise, stream simulation[18] is required to establish substrate and banks in the span structure and work area as specified in (d) and (e) below.

d. Crossings must have a natural bottom substrate within the structure matching the characteristics of the substrate in the natural stream channel and the banks (mobility, slope, stability, confinement, grain and rock size) at the time of construction and over time as the structure has had the opportunity to pass significant flood events. To allow terrestrial passage for wildlife and prevent undermining the footings, crossings shall have a bank on both sides of the stream matching the horizontal profile of the existing stream and banks[18]. Note: Installation of substrate material within smaller culverts may not be safe or practicable. In these cases, it may be necessary to allow for natural deposition and bed development unless alternative methods are identified.

e. Crossings must be designed and constructed[18] with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows. In order to provide appropriate water depths and velocities at a variety of flows and especially low flows, it is usually necessary to reconstruct the streambed or preserve the natural channel within the structure. Otherwise, the width of the structure needed to accommodate higher flows will create conditions that are too shallow at low flows. The grain and rock size, and arrangement of streambed materials within the structure should be in accordance with (d) above. Flows could go subsurface within the structure if only large material is used without smaller material filling the voids.

Conditions for Wetland Crossings:

a. All temporary and permanent crossings of wetlands shall be suitably culverted, bridged, or otherwise designed to: i) Withstand and prevent the restriction of high flows, ii) Not obstruct the movement of or not substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the wetland, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity's primary purpose is to impound water. See Appendix E for the Maine DEP's crossing standards.

b. To qualify for Category 1, new and replacement wetland crossings that are permanent shall be culverted, spanned or bridged in such a manner as to preserve hydraulic and ecological connectivity, at its present level, between the wetlands on either side of the road. To meet this requirement, we recommend that culverts, spans or bridges be placed at least every 50 feet with an opening at least 2 feet high and 3 feet wide at ground level where practicable. Closed bottom culverts shall be embedded at least 6 inches with a natural bottom.

c. In the case of non-compliance, the permittee shall take necessary measures to correct wetland damage due to lack of hydraulic and ecological connectivity.

d. Any work that results in flooding, results in impacts to wetlands on either side of the wetland crossing in excess of Category 1 thresholds, or impacts wetland drainage from the upgradient side of the wetland crossing does not qualify for Category 1.

Robert J. Desista
Deputy Chief, Regulatory Division
For DISTRICT ENGINEER **DATE** 10/13/15

APPENDIX A: DEFINITION OF CATEGORIES		
A. INLAND WATERS AND WETLANDS	**Inland Waters and Wetlands:** Waters that are regulated under Section 404 of the Clean Water Act, including rivers, streams, lakes, ponds and wetlands, and ***excluding Section 10 Navigable Waters of the U.S. (tidal and freshwater).*** The jurisdictional limits are the ordinary high water (OHW) mark in the absence of adjacent wetlands, beyond the OHW mark to the limit of adjacent wetlands when adjacent wetlands are present, and the wetland limit when only wetlands are present. For the purposes of this GP and designated activities, fill placed in the area between the mean high water (MHW) and the high tide line (HTL), and in the bordering and contiguous wetlands[1] to tidal waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 27 below.)	
	Projects not meeting Category 1 require an application for review as a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 – 4) and General Conditions (Pages 5–20).	
ACTIVITY	**CATEGORY 1** Self-Verification Eligible **(*SVNF Required*)**	**CATEGORY 2 (*PCN Required)***
1. Repair, Replacement, Expansion, and Maintenance of Authorized Structures and Fills	Repair or maintenance of existing, currently serviceable, authorized fills with no expansion or change in use: • Conditions of the original authorization apply. • Minor deviations in fill design allowed.[7] • The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. • No effect on federally listed endangered or threatened species or critical habitat.	Replacement of non-serviceable fills, or repair/maintenance of serviceable fill, with expansion <3 acres, or with a change in use.
2. Moorings	NA – moorings in non-navigable inland waters are not subject to Corps jurisdiction. Note: Moorings placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on Page 28 below.)	NA
3. Structures, Floats & Lifts	For solid fill or crib supported structures on inland waters, <15,000 square feet (SF) of waterway and/or wetland fill, associated secondary impacts[2] , and temporary fills. • No effect on federally listed endangered or threatened species or critical habitat. • Note: Temporary or permanent structures placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 29 below.	1. Work not eligible for Category 1 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated).
4. Aids to Navigation and Temporary Recreational Structures	NA - this activity in non-navigable inland waters is not subject to Corps jurisdiction. Note: Aids to Navigation and other structures placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 30 below.)	NA

5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation	1. For regulated discharges associated with excavation, and disposal <15,000 SF inland waterway and/or wetland impacts. 2. The activity does not occur in navigable waters of the U.S. 3. Stream channelization, relocation or loss of streambed including impoundments or discharge of tailings into streams does not occur. 4. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1 2. ≥15,000 SF to <3 acres of inland waters.
6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges	NA - For discharges incidental to the construction of bridges in inland waters of the U.S. refer to Activity 23 (Stream and Wetland Crossings) and GC 45. Note: Discharges of Dredged or Fill Material Incidental to the Construction of Bridges in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 30 below.)	NA
7. Bank and Shoreline Stabilization	Inland bank stabilization <500 FT long and ≤1 CY of fill per linear foot below OHW, provided: • ≤1 cubic yard of fill per linear foot placed along the bank waterward of ordinary high water. • Work complies with the GCs (GC 44 in particular), including: o No structures angled steeper than 1H:1V allowed. Only rough-faced stone or fiber roll revetments allowed. o No in-stream work involving fill or excavation in flowing waters (see GC 45(h)). • In-water work limited to Jul 15 – Sep 30. • No work in vernal pools[5] or SAS[3]. • No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
8. Residential, Commercial, Industrial, and Institutional Developments, and Recreational Facilities	1. <15,000 SF of inland waterway and/or wetland fill and associated secondary impacts[2] (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill, and regulated discharges associated with excavation. Construction mats are considered as fill. [See GC 14] Provided: • Historic fill + proposed impact area <15,000 SF complies with GC 5, Single and Complete Projects. • No work in special aquatic sites (SAS)[4] other than wetlands. • No effect on federally listed endangered or threatened species or critical habitat. 2. For work in Vernal Pool (VP) Management Areas (includes VPs)[5]:	1. Work not eligible for Category 1. 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 3. *Mechanical clearing without grubbing or other soil disturbance >3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.* See GC 2 and Appendix C for wetland delineation

	• See GC 23 and Appendix C for VP delineation requirements. • See GC 23 to determine if work qualifies for Category 1 or 2. • See Appendix G for VP documents providing mitigation guidance.	requirements.
9. Utility Line Activities	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts[2], and temporary fills. 2. The activity does not occur in, over, or under navigable waters of the U.S. 3. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments. 4. There is no permanent change in pre-construction contours in waters of the U.S. 5. Material resulting from trench excavation is temporarily side cast into waters of the U.S. for ≤ 3 months and is placed in such a manner that it is not dispersed by currents or other forces. 6. The utility line is placed within and does not run a) parallel to, or b) along a streambed. 7. Stream channelization, relocation or loss of streambed including impoundments does not occur. 8. No effect on federally listed endangered or threatened species or critical habitat. 9. There is no discharge in SAS other than non-tidal wetlands. 10. Construction mats[4] of any area necessary to conduct activities that were previously authorized, authorized under Category 1, or not subject to regulation (see Endnote 7). Authorized construction mats must be in place for <3 months, removed immediately upon work completion, and the wetlands must be restored (see GC 43). 11. Stream crossings must comply with GC 17.	1. Work not eligible for Category 1 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 3. *Mechanical clearing without grubbing or other soil disturbance >3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.*
10. Linear Transportation Projects *(not including stream crossings)* **For stream crossings, refer to Activity 23**	1. <15,000 SF of inland waterway and/or wetland fill associated secondary impacts (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill, and regulated discharges associated with excavation. Construction mats are considered fill. (See GC 14.) Provided: • Historic fill + proposed impact area <15,000 SF and complies with GC 5 single and complete projects. • No work in special aquatic sites (SAS) other than wetlands. 2. Construction mats[4] of any area necessary to conduct activities that were previously authorized, authorized under Category 1, or not subject to regulation (see Endnote 7). Authorized construction mats must be in place for <3 months, removed immediately upon work completion, and the wetlands must be restored (see GC 43). 3. No effect on federally listed endangered or threatened species or critical habitat.	1. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 2. *Mechanical clearing without grubbing or other soil disturbance >3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.*

11. Mining Activities	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. The activity does not occur in navigable waters of the U.S. 3. Stream channelization, relocation or loss of streambed including impoundments or discharge of tailings into streams does not occur. 4. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1. 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation.
12. Boat Ramps	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1 2. >15,000 SF and < 3 acres of impact.
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects	*For land-based facilities:* 1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. Stream channelization, relocation or loss of streambed including impoundments does not occur. 3. No effect on federally listed endangered or threatened species or critical habitat. *For water-based facilities and hydropower projects:* No new facilities are eligible.	*For land-based activities:* 1. Work not eligible for Category 1. 2. >15,000 SF and < 3 acres impact. 3. *Mechanical clearing without grubbing or other soil disturbance >3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.* *For water-based facilities and hydropower projects:* > 3 acres of impact will require an IP.
14. Reshaping Existing Drainage Ditches & Mosquito Management	Not Applicable	Not Applicable
15. Oil Spill and Hazardous Material Cleanup	Jurisdictional activities required for the containment and cleanup of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) provided that the work is done in accordance with the Spill Control and Countermeasure Plan required by 40 CFR 112.3 or any existing state contingency plan and provided that the Regional Response Team (if one exists in the area) concurs with the proposed containment and cleanup action. SAS[3] must typically be restored in place at the same elevation. ***Note: SVNF or a surrogate state reporting form may be submitted after the fact.***	Work not eligible for Category 1

16. Cleanup of Hazardous and toxic waste	Specific jurisdictional activities to effect the containment, stabilization, or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements, which are performed, ordered or sponsored by a government agency with established legal or regulatory authority. SAS should be restored in place at the same elevation. • <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. • No stream channelization, relocation or loss of streambed occurs. • The project does not involve establishing new disposal sites or expanding existing sites used for the disposal of hazardous or toxic waste. • No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
17. Scientific Measurements Devices	1. Scientific measurement devices whose purpose is to measure and record scientific data, such as staff gages, water recording devices, water quality testing and improvement devices, and similar structures. This excludes any biological sampling devices. Structures may not restrict or concentrate movement of aquatic organisms. 2. No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
18. Survey Activities	1. Jurisdictional survey activities, such as core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, soil surveys, sampling, and historic resources surveys (but not recovery). Exploratory trenches must be restored in accordance with GC 43. The construction of temporary pads is authorized provided the discharge doesn't exceed 25 CY. This doesn't authorize permanent structures or the drilling and the discharge of excavated material from test wells for oil and gas exploration (the plugging of such wells is authorized). 2. No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
19. Agricultural Activities	1. For those activities subject to Corps jurisdiction[16], <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. No stream channelization, relocation, loss of streambed, or farm ponds in streams. 3. No effect on federally listed endangered or threatened species or critical habitat.	1. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 2. > 3 acres of impact will require an IP.

20. Fish and Wildlife Harvesting, Enhancement and Attraction Devices and Activities	NA - this activity in non-navigable inland waters, if not involving a discharge of dredged or fill material, is not subject to Corps jurisdiction. Note: Related structures placed in freshwater navigable waters (e.g. the upper Penobscot or Kennebec Rivers) are reviewed in the Navigable Waters section. (See B. Navigable Waters on Page 33 below.)	Not Applicable
21. Habitat Restoration, Establishment and Enhancement Activities	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. The activity is supported in writing by a local, state, or non-Corps Federal environmental agency. Water impoundments require PCN. 3. No conversion of i) a stream to wetland or vice versa, wetland to a pond or uplands, and ii) one wetland type to another. 4. No dam removal. 5. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1 2. Aquatic habitat restoration, establishment, and enhancement of wetlands and riparian areas and the restoration and enhancement of streams and other open waters with impacts of any area ≥15,000 SF, provided those activities result in net increase in overall aquatic resource functions and services.[8]
22. Previously Authorized Activities	Any work not commenced nor completed that was authorized in a written letter from the Corps under the GP in effect between October 12, 2010 and October 12, 2015. The terms and general conditions of this GP apply along with any special conditions in the written authorization.	
23. Stream & Wetland Crossings	1. River, stream and brook work and crossings: • Must comply with GC 45 in particular, including: o No slip lining [see GC 45 (g)]. o No in-stream work involving fill or excavation in flowing waters [see GC 45(h)]. o In-stream work limited to Jul 15 – Sep 30 [see GC 45 (l)]. • No work in riffles and pools[3]. • No stream relocations. • No dams or dikes[6]. • No effect on federally listed endangered or threatened species or critical habitat. • <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. Wetland crossings must comply with the particularly relevant GC 45.	Work not eligible for Category 1
24. Aquaculture (freshwater)	For land based installations, <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. • In-stream/in-water work limited to Jul 15 – Sep 30. • No effect on federally listed endangered or threatened species or critical habitat. Note: Related structures placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters, below.)	Work not eligible for Category 1

B. NAVIGABLE WATERS	**Navigable Waters of the United States**: Waters that are subject to the ebb and flow of the tide and/or the tidal and non-tidal portions of the Federally designated navigable waters (the Penobscot River, Kennebec River, and Lake Umbagog) (Section 10 Rivers and Harbors Act of 1899). The jurisdictional limits are the mean high water (MHW) line in tidal waters and the ordinary high water (OHW) mark in non-tidal portions of the federally designated navigable rivers. For the purposes of this GP, fill placed in the area between the mean high water (MHW) and the high tide line (HTL), and in the bordering and contiguous wetlands[1] to tidal waters are also reviewed in this Navigable Waters section.	
	Projects not meeting Category 1 require an application for review as a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 - 4) and General Conditions (Pages 5 - 20).	
ACTIVITY	**CATEGORY 1** Self-Verification Eligible ***(SVNF Required)***	**CATEGORY 2 (*PCN Required)***
1. Repair, Replacement, Expansion, and Maintenance of Authorized (or grandfathered) Structures and Fills	1.Repair, replacement in-kind, or maintenance[7] of existing, currently serviceable[7], authorized structures or fills: • All work is to be conducted in-the-dry, during low water. • Conditions of the original authorization apply. • No substantial expansion or change in use. • No new fill in SAS[3]. • Must be rebuilt in same footprint, however minor deviations in structure design allowed[7]. • The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage.	1. Replacement of non-serviceable structures and fills or repair/maintenance of serviceable structures or fills, with fill, replacement or expansion <1 acre, or with a change in use. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts. Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF. 3. Standard Pile Driving Conditions. Work involving piles shall adhere to one of the four methods below: • Piles installed in-the-dry during low water or in-water between Nov. 8th - Apr. 9th, or • Must be drilled and pinned to ledge, or • Vibratory hammers used to install any size and quantity of wood, concrete or steel piles, or • Impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any size, concrete piles ≤18-inches diameter, steel piles <12-inches diameter if the hammer is ≤3000 lbs and a wood cushion is used between the hammer and steel pile, and • For the methods above: o In-water noise levels shall not exceed >187dB cSEL re 1µPa or 206dB peak re 1µPa at a distance >10m from the pile being installed, and o In-water noise levels >150dB peak re 1µPa shall not exceed 12 consecutive hours on any given day and a 12 hour recovery period (i.e., in-water noise below 150dB peak re 1µPa) must be provided between work days. • Existing derelict, degraded or abandoned piles in the project area that are affected by project activities should be removed and properly disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats.

2. Moorings	1. Private, non-commercial, non-rental, single-boat moorings, provided: • Authorized by the local harbormaster/town. • Not associated with any boating facility.[11] • Boat or mooring not located in a Federal Navigation Project or buffer zone[12] other than in a Federal Anchorage[12]. Moorings in a Federal Anchorage not associated with a boating facility[11] and are not for rent. • No interference with navigation. • No new moorings located in SAS[3]. Prior to installation of moorings, a site-specific eelgrass survey should be conducted to document that eelgrass is not present. • When existing, authorized moorings in SAS[3] are going to be replaced, they should be replaced with low impact mooring technology that prevents mooring chains from resting or dragging on the bottom substrate at all tides and helical anchors, or equivalent SAS protection systems where practicable. 2. Minor relocation of previously authorized moorings, provided: • Authorized by the local harbormaster/town. • Not located in SAS[3] • No interference with navigation. • Cannot be relocated into a Federal Navigation Project[12] other than a Federal Anchorage[12] ***Note: Cat 1 eligible moorings do not require SVNF.***	1. Moorings associated with an existing boating facility[11]. An eelgrass[14] survey may be required. 2. Moorings that don't meet the terms in Category 1 and don't require an Individual Permit. This includes private moorings with no harbormaster or means of local approval. 3. Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits[13] of a Federal Channel[12]. (See Appendix H.) The buffer zone is equal to 3 times the authorized depth of that channel. 4. An IP is required for moorings within the horizontal limits[11], or with moored vessels that extend, into the horizontal limits of a Federal Navigation Project[12], except those in Federal Anchorages[12]. *For 1-4 above, siting of new individual moorings in SAS[3], including eelgrass[14], should be avoided to the maximum extent practicable. If SAS[3] cannot be avoided, plans should show elastic mooring systems that prevent mooring chains from resting or dragging on the bottom substrate at all tides and helical anchors, or equivalent SAS protection systems, where practicable. For moorings that appear to impact SAS, the Corps may require an eelgrass survey.*
3. Structures, Floats and Lifts	1. Reconfiguration of existing authorized structures shall occur in-the-dry during low water. 2. Minor relocation of <u>previously authorized</u> floats or moored floats/lobster cars, provided: • Authorized by the local harbormaster/town. • Not located in SAS[3]. • No interference with navigation. • Cannot be relocated into a Federal Navigation Project[12] other than a Federal Anchorage[12].	1. New structures or floats, including floatways/skidways, built to access waterway (seasonal and permanent). Includes both pile supported and crib supported structures. 2. Expansions to existing boating facilities[11] ***For 1 & 2 above, compliance with the following design standards is <u>not required but recommended</u>:*** • *Pile-supported structures <400 SF, with attached floats totaling <u>≤</u>200 SF.* • *Bottom anchored floats <u>≤</u>200 SF.* • *Structures are <u>≤</u>4' wide and have at least a 1:1 height:width ratio[11].* • *Floats supported a minimum of 18" above the substrate during all*

		tides. • *Structures & floats not located within 25' of any eelgrass[8].* • *Moored vessels not positioned over SAS[3].* • *The Corps may require a letter of no objection from the abutter if structure is to be within 25 feet of the property line.* • *No structure extends across >25% of the waterway width at mean low water.* • *Not located within the buffer zone of the horizontal limits[13] of a Corps Federal Navigation Project (FNP) (App. F). The buffer zone is equal to three times the authorized depth of that FNP.* 3. An Individual Permit is required for structures or floats, including floatways/skidways, located such that they and/or vessels docked or moored at them are within the horizontal limits[13] of a Corps Federal Navigation Project[12] (see App. H). 4. An Individual Permit is required for structures & floats associated with a new or previously unauthorized boating facility[11]. 5. Standard Pile Driving Conditions. Work involving piles shall adhere to one of the four methods below: • Piles installed in-the-dry during low water or in-water between Nov. 8th - Apr. 9th, or • Must be drilled and pinned to ledge, or • Vibratory hammers used to install any size and quantity of wood, concrete or steel piles, or • Impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any size, concrete piles ≤18-inches diameter, steel piles <12-inches diameter if the hammer is ≤3000 lbs and a wood cushion is used between the hammer and steel pile, and • For the methods above: o In-water noise levels shall not exceed >187dB cSEL re 1µPa or 206dB peak re 1µPa at a distance >10m from the pile being installed, and o In-water noise levels >150dB peak re 1µPa shall not exceed 12 consecutive hours on any given day and a 12 hour recovery period (i.e., in-water noise below 150dB peak re 1µPa) must be provided between work days. • Existing derelict, degraded or abandoned piles in the project area that are affected by project activities should be removed and properly disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats.

4. Aids to Navigation and Temporary Recreational Structures	1. Temporary buoys, markers, floats, etc. for recreational use during specific events, provided they are removed within 30 days after use is discontinued. 2. The placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the U.S. Coast Guard. (See 33 CFR 66, Chapter I, subchapter C)." ***Note: Cat 1 eligible aids to navigation and regulatory markers do not require SVNF.***	Work not eligible for Category 1
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation	1. Maintenance dredging[10] for navigational purposes <1,000 CY with upland disposal. Includes return water from upland contained disposal area, provided: • Proper siltation controls are used. • Dredging & disposal operation limited to Nov. 8 – Apr. 9. • No impact to SAS[3]. • No dredging in intertidal areas. • No dredging within 100' of shellfish beds. • No dredging in areas designated as Critical Habitat for Atlantic salmon [see GC 8(b) & (c)]. • For dredging in tidal waters outside of Atlantic salmon critical habitat, applicants must contact NMFS (see GC 8) to ensure no impacts to listed species such as shortnose sturgeon, Atlantic surgeon, and listed sturgeon critical habitat. • Project proponents must contact the USFWS for work on coastal beaches to ensure no impacts to piping plovers, roseate terns, rufa red knot, or their habitat [see GC 8(c)]. • No underwater blasting. 2. Maintenance dredging is not eligible for Category 1 if conducted in tidal portions of the Penobscot river upstream of a line extending from Turner Point in Castine to Moose Point (formerly Squaw Point) on Cape Jellison in Stockton Springs or in tidal portions of the Kennebec or Androscoggin Rivers upstream of a line extending from Doubling Point in Arrowsic to Hospital Point in West Bath.	1. Maintenance dredging[10] ≥1,000 CY, new dredging <25,000 CY, or projects not meeting Category 1. Includes return water from upland contained disposal areas. Disposal includes: • Upland. • Beach nourishment (above mean high water) of any area provided the dredging's primary purpose is navigation or the sand is from an upland source. • Open water & confined aquatic disposal, if Corps finds the material suitable. 2. Beach nourishment associated with dredging when the primary purpose is not navigation requires at least a Category 2 review. 3. Maintenance or new dredging[10] and/or disposal in or affecting a SAS[3] requires an Individual Permit.

6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges	1. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided the U.S. Coast Guard authorizes such discharges as part of the bridge permit or appropriate approval. 2. Causeways and approach fills are not included in this category and require Category 2 or Individual Permit authorization.	<1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.
7. Bank and Shoreline Stabilization	1. Bank stabilization projects <200 linear feet provided: • ≤1 cubic yard of fill per linear foot placed along the bank waterward of high tide line. No fill or equipment will occur in SAS[3]. • Work conducted in the intertidal zone must be conducted in-the-dry during low water. • No structures angled steeper than 1H:1V and only rough-faced stone or fiber roll revetments allowed. • No driving of piles or sheeting. 2. Bank stabilization projects in excess of 200 linear feet (Applicant or Applicant + Abutters combined) must undergo Category 2 review.	1. Work not eligible for Category 1. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.
8. Residential, Commercial, Industrial, and Institutional Developments, and Recreational Facilities	Not Eligible	1. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF. 2. Conversions of previously authorized pile supported buildings over navigable waters to residences, offices, or other non-water dependent uses require at least a Category 2 review. 3. Floating house boats or businesses on floats require Category 2 review.
9. Utility Line Activities	1. Repair or maintenance of existing, currently serviceable, authorized utilities with no expansion or change in use: • Conditions of the original authorization apply. • Trenching or filling is confined to the existing footprint. • In water work conducted between Nov 8 and Apr 9. • No new impact to SAS. 2. Particularly relevant is GC12. 3. <u>New work</u> in, over, or under navigable waters requires a PCN and Category 2 review. 4. Except for aerial utility lines, work is not eligible for Category 1 if conducted in tidal portions of the Penobscot River upstream of a line extending from Turner Point in Castine to Moose Point (formerly	1. New or replacement installations or work not otherwise eligible for Category 1. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF. 3. Particularly relevant is GC12

	Squaw Point) on Cape Jellison in Stockton Springs or in tidal	
10. Linear Transportation Projects **(Not Including Stream Crossings)**	Not eligible	<1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.
11. Mining Activities	Not Eligible	Not Eligible
12. Boat Ramps and Marine Railways	1. No new impact to SAS 2. Marine railway and boat ramp work not eligible for maintenance[7] (i.e. not currently serviceable[7]) may be replaced "in-kind" with minor deviations[7] provided: • Work is in the intertidal zone. • No fill expansion below high tide line. • Work conducted in-the-dry during low water. 3. No new boat ramps or marine railways.	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects	Not Eligible	1. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF. 2. No new impoundments.
14. Reshaping Existing Drainage Ditches and Mosquito Management	1. ≤500 linear feet of drainage ditch will be modified. The reshaping of the ditch cannot increase drainage capacity beyond the original as-built capacity nor can it expand the area drained by the ditch as originally constructed (i.e., the capacity of the ditch must be the same as originally constructed and it cannot drain additional wetlands or other waters of the U.S.). 2. No new ditches or relocation of drainage ditches constructed in waters of the U.S.; the location of the centerline of the reshaped drainage ditch must be approximately the same as the location of the centerline of the original drainage ditch. 3. No effect on federally listed endangered or threatened species or critical habitat	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.

15. Oil Spill and Hazardous Material Cleanup	Jurisdictional activities required for the containment and cleanup of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) provided that the work is done in accordance with the Spill Control and Countermeasure Plan required by 40 CFR 112.3 and any existing state contingency plan and provided that the Regional Response Team (if one exists in the area) concurs with the proposed containment and cleanup action. SAS[3] must typically be restored in place at the same elevation. ***Note: SVNF or a surrogate state reporting form may be submitted after the fact. No SVNF is required for Category 1eligible containment booms.***	Work not eligible for Category 1
16. Cleanup of Hazardous and Toxic Waste	Not eligible - except for booms placed for hazardous and toxic waste containment and absorption and prevention which are eligible for SV. ***Note: No SVNF is required for Category 1 eligible containment booms.***	Specific jurisdictional activities with impacts of any area required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Wetlands and other SAS must typically be restored in place at the same elevation to qualify.
17. Scientific Measurement Devices	Scientific measurement devices whose purpose is to measure and record scientific data, such as staff gages, water recording devices, water quality testing and improvement devices, and similar structures. Structures may not restrict or concentrate movement of aquatic organisms; no activity results in a hazard to navigation; and no activity requiring underwater blasting.	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.
18. Survey Activities	Jurisdictional survey activities such as exploratory drilling, surveying and sampling activities, excluding any biological sampling devices. Does not include any activity requiring underwater blasting, seismic exploratory operations, or oil and gas exploration and fill for roads or construction pads. No activity may result in a hazard to navigation.	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass[14] <1000 SF. • Permanent fill in SAS (excluding eelgrass[14]) <4300 SF.
19. Agricultural Activities	Not Eligible	Not Eligible

20. Fish & Wildlife Harvesting, Enhancement and Attraction Devices and Activities (Not Aquaculture)	Fish and wildlife harvesting, enhancement, and attraction devices and activities such as pound nets, crab traps, crab dredging, eel pots, lobster traps, and clam and oyster digging, and small fish attraction devices such as open water fish concentrators (sea kites, etc.). This does not authorize artificial reefs or impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster, or the use of covered oyster trays or clam racks. No activity that may result in a hazard to navigation. ***Note: A SVNF is not required for these Category 1 eligible devices and activities.***	1. Work not eligible for Category 1. 2. Impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster and new fish weirs with an impounded area $\leq$ ½ acre. For Aquaculture operations, refer to Activity 24.
21. Habitat Restoration, Establishment and Enhancement Activities	1. Cultch placement in tidal waters is eligible for SV provided there are no salt marsh or vegetated shallow impacts. 2. SAS planting and transplanting $\leq$ 100 SF in tidal waters; 3. No artificial or living reefs. 4. The activity is authorized in writing by a local, state, or non-Corps federal environmental agency. Water impoundments require PCN. 5. No conversion of i) a stream to wetland or vice versa, wetland to a pond or uplands, and ii) one wetland type to another. 6. No dam removal. 7. Shellfish habitat enhancement such as brushing the flats is eligible for Category 1, *but not the use of netting which requires Category 2 review.*	1. Work not eligible for Category 1. 2. Aquatic habitat restoration, establishment and enhancement provided those activities are proactive and result in net increases in aquatic resource functions and services.[8]
22. Previously Authorized Activities	Any work not commenced nor completed that was authorized in a written letter from the Corps under the GP in effect between October 12, 2010 and October 12, 2015. The terms and general conditions of this GP apply along with any special conditions in the written authorization.	
23. Stream & Wetland Crossings	Not Eligible	All temporary or permanent crossings of tidal navigable waters or adjacent tidal wetlands not eligible as maintenance require a PCN. GC 45 applies
24. Aquaculture	Not Eligible	Shellfish & finfish aquaculture (with the exception of Atlantic salmon and any other salmonid, or other federally listed endangered or threatened species), or other aquaculture facilities with no more than minimal individual and cumulative impacts to environmental resources or navigation. This is inclusive but not limited to cages, nets, bags, racks, long lines, fences, posts, poles, predator screening, etc. Aquaculture guidelines are provided at: www.maine.gov/dmr/aquaculture/index.htm.

Endnotes/Definitions

[1] **Bordering and Contiguous Wetlands:** A bordering wetland is immediately next to its adjacent waterbody and may lie at, or below, the ordinary high water mark (mean high water in navigable waters) of that waterbody and is directly influenced by its hydrologic regime. Contiguous wetlands extend landward from their adjacent waterbody to a point where a natural or manmade discontinuity exists. Contiguous wetlands include bordering wetlands as well as wetlands that are situated immediately above the ordinary high water mark and above the normal hydrologic influence of their adjacent waterbody. Note, with respect to the federally designated navigable rivers, the wetlands bordering and contiguous to the tidally influenced portions of those rivers are reviewed under "II. Navigable Waters."

[2] **Direct, Secondary, and Cumulative Impacts/Effects:**

Direct Impacts: The immediate loss of aquatic ecosystem within the footprint of the fill.

Secondary Impacts: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are a) fluctuating water levels in all impoundment and downstream associated with the operation of a dam, b) septic tank leaching and surface runoff from residential or commercial developments on fill, and c) leachate and runoff from a sanitary landfill located in waters of the U.S. Put another way, secondary effects are those impacts outside the footprint of the fill that arise from and are associated with the discharge of dredged or fill material, including the operation of an activity or facility associated with the discharge. Examples may include habitat fragmentation; interruption of travel corridors for wildlife (for example, for amphibians that migrate to and from seasonal or vernal pools used as breeding habitat); hydrologic regime changes; and impacts from operation and maintenance activities for constructed facilities; such as noise/lighting, storm water runoff, and road kill of wetland dependent wildlife. Using the directions contained in the guidelines, we consider the circumstances of a proposed discharge and the project of which it is a part to evaluate the scope, extent, severity, and permanence of direct, secondary, and cumulative adverse effects upon the aquatic ecosystem.

Cumulative Impacts: The extent of past, present, and foreseeable developments in the area may be an important consideration in evaluating the significance of a particular project's impacts. Although the impacts associated with a particular discharge may be minor, the cumulative effect of numerous similar discharges can result in a large impact. Cumulative impacts should be estimated only to the extent that they are reasonable and practical.

[3] **Special Aquatic Sites:** Includes wetlands and saltmarsh, mudflats, riffles and pools, and vegetated shallows (predominantly comprised of eelgrass in Maine).

[4] **Construction Mats:** Constructions, swamp and timber mats (herein referred to as "construction mats") are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they're installed temporarily or permanently.

[5] **Vernal Pools:** A vernal pool, also referred to as a seasonal forest pool, is a temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition. For the purposes of this GP, the presence of any of the following species in any life stage in any abundance level/quantity would designate the waterbody as a vernal pool: fairy shrimp, blue spotted salamanders, spotted salamanders or wood frogs. The Corps may determine during a Category 2 review that a waterbody should not be regulated as a VP based on available evidence. For the purposes of this GP, the VP Management Areas are the: Vernal Pool Depression (includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression), Vernal Pool Envelope (area within 100 FT of the VP Depression's edge) and Critical Terrestrial Habitat (area within 100-750 FT of the Vernal Pool Depression's edge). [*Note: Critical Terrestrial Habitat is defined as 100 -750 FT on page 243 of the document "Science and Conservation of Vernal Pools in Northeastern North America," Calhoun and deMaynadier, 2008, which is referenced in Appendix G, page 3, Paragraph 10(b).

[6] **Water Diversions:** Water diversions are activities such as bypass pumping or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.
[7] **Maintenance: a)** The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 – "Activities occurring before certain dates," provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification.

- Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make repair, rehabilitation, or replacement are authorized.
- Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
- No seaward expansion for bulkheads or any other fill activity is considered Category 1 maintenance.
- Only structures or fills that were previously authorized and are in compliance with the terms and condition of the original authorization can be maintained as a non-regulated activity under 33 CFR 323.4(a)(2), or in accordance with the Category 1 or 2 thresholds in Appendix A.

b) The state's maintenance provisions may differ from the Corps and may require reporting and written authorization from the state.
c) Contact the Corps to determine whether stream crossing replacements require a written application to the Corps for at least a Category 2 review.
d) Exempted Maintenance. In accordance with 33 CFR 323.4(a)(2), any discharge of dredged or fill material that may result from any of the following activities is not prohibited by or otherwise subject to regulation under Section 404 of the CWA: "Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design."
[8] **Aquatic Habitat Restoration, Establishment and Enhancement:** The Corps will decide if a project qualifies and must determine in consultation with federal and state agencies that the net effects are beneficial. The Corps may refer to Nationwide Permit 27 published in the 3/12/07 Federal Register. Activities authorized here may include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels and drainage ditches; the removal of existing drainage structures; the construction of small nesting islands in inland waters**;** the construction of open water areas; the construction of native shellfish species habitat over unvegetated bottom for the purpose of habitat protection or restoration in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.
[9] **Brushing the Flats:** The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats to enhance recruitment of soft-shell clams (*Mya arenaria*).
[10] **Maintenance Dredging:** This includes only those areas and depths previously authorized by the Corps and dredged. The Corps may require proof of authorization. Maintenance dredging typically refers to the routine removal of sediment to maintain the design depths of serviceable navigation channels, harbors, basins, marinas, boat launches, and port facilities. Maintenance dredging is conducted for navigational purposes and does not include any expansion of the previously dredged area or depth. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.
[11] **Boating Facilities:** Facilities that provide for a fee, rent, or sell mooring space, such as marinas, yacht clubs, boat clubs, boat yards, town facilities, dockominiums, etc.
[12] **Federal Navigation Projects (FNPs):** FNPs are comprised of Federal Channels and Federal Anchorages. See Appendix F for their location and contact the Corps for more information. "Horizontal Limits" is the outer edge of an FNP. "Buffer Zone" is equal to three times the authorized depth of that channel.
[13] **Horizontal Limits:** The outer edge of a Federal Navigation Project (FNP). See Appendix F and contact the Corps for information on FNP's.
[14] **Eelgrass (Zostera marina):** A type of rooted aquatic vegetation that exists in intertidal and shallow subtidal areas known as vegetated shallows. See www.nero.noaa.gov/hcd/ for eelgrass survey guidance. Note: Eelgrass surveys should be conducted be conducted between May and October unless otherwise directed.

[15] **Structures:** The height of structures shall at all points be equal to or exceed the width of the deck. For the purpose of this definition, height shall be measured from the marsh substrate to the bottom of the longitudinal support beam.

[16] **Agricultural Activities:** The Clean Water Act exempts certain discharges associated with normal farming, ranching, and forestry activities such as plowing, cultivating, minor drainage, and harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices (Section 404(f)(1)(A)). Applicants are strongly advised to contact the Corps for a determination of whether their activity is exempt or requires a permit.

US Army Corps of Engineers®
New England District

Appendix B: Self-Verification Notification Form

(for all tidal and non-tidal projects in Maine subject to Corps jurisdiction)

At least two weeks before work commences, complete **all** fields (write "none" if applicable) below or use the fillable form at www.nae.usace.army.mil/missions/regulatory.aspx. Send this form, a location map, any project plans, and an Official Species List (See GC 8) to the address noted below; fax to (207) 623-8206; or email to jay.l.clement@usace.army.mil. The two-week lead time is not required for emergency situations (see page 4 for definition). Please call (207) 623-8367 with questions.

Maine Project Office
U.S. Army Corps of Engineers
New England District
675 Western Avenue #3
Manchester, Maine 04351

State Permit Number: _____
Date of State Permit: _____
State Project Manager: _____

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Consultant/Engineer/Designer: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Wetland/Vernal Pool Consultant: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Location/Description: _____
Address, City, State & Zip: _____
Latitude/Longitude Coordinates: _____ Tax Map/Lot: _____
Waterway Name: _____
Work Description: _____

_____

Provide any prior Corps permit numbers: _____
Proposed Work Dates: Start: _____ Finish: _____

Area of wetland impact: _____ SF (leave blank if work involves structures & no fill in Navigable Waters)
Area of waterway impact: _____ SF (leave blank if work involves structures & no fill in Navigable Waters)
Area of compensatory mitigation provided: _____ SF

Work will be done under the following Appendix A categories (circle all that apply):

I. Inland Waters and wetlands: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
II. Navigable Waters: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Your name/signature below, as permittee, indicates that you accept and agree to comply with the terms, eligibility criteria, and general conditions of Category 1 of the Maine General Permit.

Permittee Printed Name: _____

Permittee Signature: _____ Date: _____

US Army Corps
of Engineers ®
New England District

Appendix C: Content of Pre-Construction Notification

In addition to the following required information, the applicant must provide additional information as the Corps deems essential to make a public interest determination including, where applicable, a determination of compliance with the Section 404(b)(1) guidelines or ocean dumping criteria. Such additional information may include environmental data and information on alternate methods and sites as may be necessary for the preparation of the required environmental documentation. For a more comprehensive checklist, go to www.nae.usace.army.mil/missions/regulatory >> Forms >> Application and Plan Guideline Checklist. Please check with the Corps for project-specific requirements.

Information required for all projects:

- Corps application form (ENG Form 4345) or appropriate state application form (see Appendix E). Forms may need to be supplemented to include the information noted below.
- Proof of notification to the SHPO and the appropriate THPOs (see Appendix E).
- Official Species List for any federally listed endangered or threatened species (Instructions at Appendix D)
- □ Drawings, sketches, or plans (detailed engineering plans and specifications are not required) that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), no larger than 11"x17", with bar scale. Wetland area impact sheets should have the highest resolution possible to show work within Corps jurisdiction (do not just reduce project overview or cut large-scale plan into quadrant sheets). Provide locus map and a plan overview of the entire property with a key index to the individual impact sheets. A locus map be on a section of color USGS topographic map is encouraged. Digital submissions are encouraged.
- □ Include:
  - □ All direct, secondary, permanent and temporary effects the project would cause, including the anticipated amount of impacts to waters of the U.S. expected to result from the activity, in acres, linear feet, or other appropriate unit of measure.
  - □ Any historic permanent fill associated with each single and complete project.
  - □ Cross-section views of all wetland and waterway fill areas and wetland replication areas.
  - □ Delineation of all wetlands, other special aquatic sites (vegetated shallows, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Use Federal delineation methods and include Corps wetland delineation data sheets (see GC 2).
  - □ MLW and MHW elevations in tidal waters. Show the HTL elevations when fill is involved. Show OHW elevation in lakes and non-tidal streams.
  - □ Existing and proposed conditions.
  - □ For vegetated shallow and eelgrass survey guidance, see www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands >> Submerged Aquatic Vegetation Survey Guidance for the New England Region.
  - □ Show all known VPs on the project site. See GC 23 for vernal pool identification requirements.
- □ Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below OHW in inland waters and below the HTL in coastal waters.

- An Official Species List of federally "listed species or critical habitat" present in the action area (see GC 8).
- A restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions (see GC 43).

Information that may be required:

- Photographs of wetland/waterway to be impacted. Photos at low tide are preferred for work in tidal waters.
- For drawings, sketches, or plans:
  - The vertical datum for all coastal projects must be in U.S. survey feet and referenced to MLLW and current tidal epochs, with a reference chart showing conversion factor to NAVD88; do not use local datum. See www.nae.usace.army.mil/missions/regulatory >> Forms and Publications >>Vertical Datum - FEMA (Jul 2007);
  - The horizontal state plane coordinates shall be in U.S. survey feet and based on the appropriate state plane coordinate system.
- For the construction of a filled area or pile or float-supported platform, the use of, and specific structures to be erected on, the fill or platform.
- For the discharge of dredged or fill material into waters of the U.S. or the transportation of dredged material for the purpose of disposing of it in ocean waters, the source of the material; the purpose of the discharge, a description of the type, composition and quantity of the material; the method of transportation and disposal of the material; and the location of the disposal site.
- For the discharge of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized. Include either a statement describing how impacts to waters of the U.S. are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts.
- Purpose and need for the proposed activity;
- Limits and coordinates of any Federal Navigation Project in the vicinity of the project area.
- Limits and coordinates of any proposed mooring field, reconfiguration zone or aquaculture activity. Provide coordinates for all corners;
- Schedule of construction/activity;
- Names and addresses of adjoining property owners;
- Location and dimensions of adjacent structures;
- List of authorizations required by other Federal, interstate, state, or local agencies for the work, including all approvals received or denials already made.
- Identification and description of potential impacts to Essential Fish Habitat (defined at VI. Definitions and Acronyms.
- Identification of potential discharges of pollutants to waters, including potential impacts to impaired waters, in the project area (see GC 19).
- Invasive Species Control Plan (see GC 24). For sample control plans, see www.nae.usace.army.mil/missions/regulatory >> Invasive Species.
- Wildlife Action Plan (WAP) maps. Contact Maine Inland Fisheries & Wildlife (Appendix E) or on line at http://www.maine.gov/ifw/wildlife/conservation/action_plan.html

Information for dredging projects that may be required:

- Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing. For projects proposing open water disposal, applicants are encouraged to contact the Corps as early as possible regarding sampling and testing protocols. Sampling and testing of sediments without such contact should not occur and if done, would be at the applicant's risk.
- The area in square feet and volume of material to be dredged below mean high water.

- Existing and proposed water depths.
- Type of dredging equipment to be used.
- Nature of material (e.g., silty sand).
- Any existing sediment grain size and bulk sediment chemistry data for the proposed or any nearby projects.
- Information on the location and nature of municipal or industrial discharges and occurrence of any contaminant spills in or near the project area.
- Shellfish survey.
- Location of the disposal site (include locus sheet).
- Identification and description of any potential impacts to Essential Fish Habitat.
- Delineation of submerged aquatic vegetation (e.g., eelgrass beds).

Information for aquaculture projects that may be required:

- Maine Aquaculture guidelines and joint Corps/Maine DMR applications may be found at: www.maine.gov/dmr/aquaculture/index.htm.
- In addition to the information required above, applications must also include:
  - Whether canopy predator nets are being used.

Appendix D: Instruction for USFWS IPaC Project Builder/Official Species List

NOTE: These instructions are subject to change by the USFWS. Users should check this GP's Corps webpage for the latest instructions or click here.

In your internet browser go to http://ecos.fws.gov/ipac/

1. Click on get started.

2. Click on enter project location.

3. Search or zoom to your project location. (You can enter an address and then zoom in with your mouse).

4. Define your area. (Select the polygon tool and click around the boundary of your project.) or (Use the draw a line tool for linear projects)

Note: You can change/select the map from Streets to Satellite or Topo in the lower left corner of the map.
5. Click finished drawing then click confirm and select continue.

6. On the next page under Tasks (lower left), select Request an official species list. The pane will open. Select "request official species list" again.

7. A new page will open. Fill in the project information blanks with the project name, brief description, project type, lead agency, and contact information. Be sure to check the box to verify this is a legitimate project. Click on Submit Official Species List Request.

8. You will be sent an e-mail with instructions to complete the request by clicking on the link provided.

9. The site will open Official Species List Request Completed. Under the Maine Ecological Services Field Office address you will see "Official Species List Document". Click on that link and your document will open. Save and or print a copy and **include the entire report with your application**.

Note, you will receive a second e-mail with the same information. You can save the link in the event you need to return to the IPaC site for an updated list.

If a period of time has passed since your initial "Official Species List" identifier number was generated, you may choose to generate an "UPDATED SPECIES LIST". To do this, return to the IPaC homepage at http://ecos.fws.gov/ipac site. In the middle of the page, click the purple "Need an updated species list" link.

On the request an "Updated Official Species List" page, complete the information in the boxes provided. You will need the project specific official consultation code generated and stated on the original official list as well as the email address entered with the original submission.

Click "Request Updated Species List". Print, or save.

Appendix E: Contacts and Tribal Areas of Interest

1. Federal

U.S. Army Corps of Engineers
Maine Project Office
675 Western Avenue #3
Manchester, ME 04351
(207) 623-8367 (phone); (207) 623-8206 (fax)

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP05–2)
Boston, MA 02109-3912
(617) 918-1589 (phone)

U.S. Fish and Wildlife Service
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
(207) 866-3344 (phone); (207) 866-3351 (fax)
(Federal endangered species)

National Marine Fisheries Service
Maine Field Office
17 Godfrey Drive Suite 1
Orono, ME 04473
(207) 866-7379 (phone); (207) 866-7342 (fax)
(Federal endangered species)

Federal Emergency Management Agency
99 High St.
Boston, MA 02110
(877) 336-2734 (phone)
(Flood Plain Management)

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930
(978) 281-9102 (phone); (978) 281-9301 (fax)
(Federal endangered species & EFH)

National Park Service
North Atlantic Region
15 State Street
Boston, MA 02109
(617) 223-5203 (phone)
(Wild and Scenic Rivers)

Commander (dpb)
First Coast Guard District
One South Street - Battery Bldg
New York, NY 10004-1466
(212) 668-7021 (phone); (212) 668-7967 (fax)
(bridge permits)

2. State of Maine

a. Department of Environmental Protection (*State permits & Water Quality Certifications*)

Division of Land Resource Regulation
Bureau of Land and Water Quality
17 State House Station
Augusta, Maine 04333
(207) 287-7688 (phone)

Southern Maine Regional Office
312 Canco Road
Portland, Maine 04103
(201) 822-6300 (phone)

Eastern Maine Regional Office
106 Hogan Road
Bangor, Maine 04401
(207) 941-4570 (phone)

Northern Maine Regional Office
1235 Central Drive - Skyway Park
Presque Isle, Maine 04769
(207) 764-0477 (phone)

b. Department of Agriculture, Conservation and Forestry

i. Maine Land Use Planning Commission (LUPC) (*State permits & Water Quality Certifications in the unorganized areas of the State*)

Augusta Office
22 State House Station
Augusta, Maine 04333-0022
(207) 287-2631 (phone); (207) 287-7439 (fax)

Greenville Regional Office
43 Lakeview Drive
P.O. Box 1107
Greenville, Maine 04441
(207) 695-2466 (phone); (207) 695-2380 (fax)

Rangeley Regional Office
133 Fyfe Road
PO Box 307
West Farmington, ME 04992
(207) 670-7493 (phone); (207) 287-7439 (fax)

Downeast Regional Office
106 Hogan Rd, Suite 8
Dorothea Dix Complex
Bangor, Maine 04401
(207) 941-4052 (phone); (207) 941-4222 (fax)

Ashland Regional Office
45 Radar Road
Ashland, ME 04732-3600
(207) 435-7963 (phone); (207) 435-7184 (fax)

East Millinocket Regional Office
191 Main Street
East Millinocket, ME 04430
(207) 746-2244 (phone); (207) 746-2243 (fax)

ii. Maine Coastal Program

Department of Agriculture, Conservation and Forestry
Bureau of Resource Information and Land Use Planning
17 Elkins Lane {physical address}
State House Station 93
Augusta, Maine 04333-0038
(207) 287-2801 (phone); (207) 287-2353 (fax)
(CZM consistency determinations)

iii. Division of Parks and Public Lands

22 State House Station
Augusta, Maine 04333
(207) 287-3061 (phone); (207) 287-6170 (fax)
(submerged lands leases)

c. Department of Marine Resources

P.O. Box 8
West Boothbay Harbor, Maine 04575
(207) 633-9500 (phone); (207) 624-6024 (fax)
(aquaculture leases)

3. Historic Properties

a. State Historic Preservation Officer (SHPO)

Mr. Kirk F. Mohney, Director

Maine Historic Preservation Commission (MHPC)
65 State House Station
Augusta, Maine 04333-0065
(207) 287-2132 (phone); (207) 287-2335 (fax)
Area of concern: The entire State of Maine

b. Tribal Historic Preservation Officers (THPOs)

Note: The area of concern for each tribe is the entire State of Maine

THPO & Environmental Planner
Houlton Band of Maliseet Indians
88 Bell Road
Littleton, Maine 04730
(207) 532-4273, x215 (phone)
(207) 532-6883 (fax)
envplanner@maliseets.com
ogs1@maliseets.com

THPO
Aroostook Band of Micmacs
7 Northern Road
Presque Isle, Maine 04769
(207) 764-1972 (phone); (207) 764-7667 (fax)
jpictou@micmac-nsn.gov

THPO
Passamaquoddy Tribe of Indians
Pleasant Point Reservation
P.O. Box 343
Perry, Maine 04667
(207) 853-2600 (phone); (207) 853-6039 (fax)
soctomah@gmail.com

THPO
Penobscot Nation
Cultural and Historic Preservation Dept.
12 Wabanaki Way
Indian Island, Maine 04468
(207) 817-7471 (phone)
chris.sockalexis@penobscotnation.org

THPO
Passamaquoddy Tribe of Indians
Indian Township Reservation
P.O. Box 301
Princeton, Maine 04668
(207) 796-2301 (phone)
(207) 796-5256 (fax); soctomah@gmail.com

4. Organizational Websites (Note – Subject to Change):

U.S. Army Corps of Engineers, N.E. District	www.nae.usace.army.mil/missions/regulatory.aspx
U.S. Army Corps of Engineers, Headquarters	See above link>>Useful Links>>Federal Agency Links
U.S. Environmental Protection Agency	www.epa.gov/owow/wetlands
National Marine Fisheries Service	www.nmfs.noaa.gov
U.S. Fish and Wildlife Service	www.fws.gov/mainefieldoffice
National Park Service	www.nps.gov/rivers/index.html
Maine Department of Environmental Protection	www.maine.gov/dep
Maine Department of Agriculture, Conservation and Forestry	www.maine.gov/acf/index.shtml
Maine Land Use Planning Commission	www.maine.gov/doc/lupc/commission/offices.shtml
Maine Department of Marine Resources	www.maine.gov/dmr/index.htm
State of Maine - Aquaculture Guidelines	www.maine.gov/dmr/aquaculture/index.htm

Appendix F: Definitions

Definitions

Attendant Features: Occurring with or as a result of; accompanying.

Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation.

Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockominiums, town facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or town mooring fields that charge an equitable user fee based on the actual costs incurred.

Brushing the Flats: The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats, or any bottom disturbance (e.g., discing, plowing, raking, etc.), to enhance recruitment of shellfish.

Buffer Zone: The buffer zone of an FNP is equal to three times the authorized depth of the FNP.

Construction mats: Constructions, swamp and timber mats (herein referred to as "construction mats") are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently

Cumulative effects: See "Direct, secondary, and cumulative effects."

Direct, secondary, and cumulative effects:

Direct Effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.

Secondary Effects: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final Section 404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are a) aquatic areas drained, flooded, fragmented, or mechanically cleared, b) fluctuating water levels in all impoundment and downstream associated with the operation of a dam, c) septic tank leaching and surface runoff from residential or commercial developments on fill, and d) leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

Cumulative Effects: The changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual 1) discharges of dredged or fill material, or 2) structures. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230(g).

Dredging:

Maintenance Dredging: Includes areas and depths previously authorized by the Corps and dredged. The Corps may require proof of authorization. Maintenance dredging typically refers to the routine removal of accumulated sediment from channel beds to maintain the design depths of navigation channels, harbors, marinas, boat launches and port facilities. Routine maintenance dredging is conducted regularly for navigational purposes (typically at least once every ten years) and does not include any expansion of the previously dredged area or depth. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS,

shellfish, etc. The main characteristics of maintenance dredging projects are variable quantities of material; soft, uncompacted soil; contaminant content possible; thin layers of material;occurring in navigation channels and harbors; repetitive activity

New Dredging: Dredging of an area or to a depth that has never been authorized by the Corps or dredged.

Dredged material & discharge of dredged material: These are defined at 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Essential Fish Habitat (EFH): This is broadly defined to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

Fill material & discharge of fill material: These are defined at 323.2(e) and (f). The term fill material is defined as material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S.

Federal anchorages, Federal channels and Federal turning basin: Refer to Appendix H for those in Maine

Federal navigation projects (FNPs): These areas are maintained by the Corps; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and are comprised of Federal Anchorages, Federal Channels and Federal Turning Basins. The buffer zone is equal to three times the authorized depth of a FNP. More information on the following FNPs is provided at www.nae.usace.army.mil/missions/navigation.aspx >> Navigation Projects.

Flume: An open artificial water channel, in the form of a gravity chute, that leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.

Frac out: During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface.

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Individual Permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

Maintenance: Regulations on maintenance are provided at 33 CFR 323.4. The following definitions are applicable:

Minor deviations: Deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environ-mental effects resulting from such repair, rehabilitation, or replacement are minimal.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Marina reconfiguration zone: A Corps-authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

Navigable waters of the U.S.: See Waters of the U.S. below.

Overall project: See "single and complete linear project" below.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
Permanent impacts: Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. Temporary impacts include waters of the U.S. that are temporarily filled, flooded, excavated, drained or mechanically cleared because of the regulated activity.
Pre-construction notification (PCN): A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by this GP. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the project proponent wants confirmation that the activity is authorized under this GP.
Secondary effects: See "Direct, secondary, and cumulative effects."
Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of this GP. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.
The overall project, for purposes of this GP, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose.
Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. For non-linear projects, the single and complete project must have independent utility (see definition).
Special aquatic sites: These include inland and saltmarsh wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes. These are defined at 40 CFR 230 Subpart E.
Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.
Temporary impacts: See permanent impacts above.
Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term 'utility line' does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
Vegetated shallows: Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass and widgeon grass (*Rupiamaritima*) in marine systems (doesn't include salt marsh) as well as a number of freshwater species in rivers and lakes. Note: These areas are also commonly referred to as submerged aquatic vegetation (SAV).
Vernal pools (VPs): For the purposes of this GP, VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). Pools usually

support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.
VP areas are:

- Depression (includes the VP depression up to the spring or fall high water mark, and includes any vegetation growing within the depression),
- Envelope (area within 100 feet of the VP depression's edge), and
- Critical terrestrial habitat (area within 100-750 feet of the VP depression's edge).

Note: See footnote to GC 23. The Corps may determine during the PCN review that a waterbody should not be designated as a VP based on available evidence.
Water diversions: Water diversions are activities such as bypass pumping (e.g., "dam and pump") or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.
Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.
Waters of the U.S. & Waters of the United States (U.S.): The term waters of the U.S. and all other terms relating to the geographic scope of jurisdiction are defined at 33 CFR 328. Also see Section 502(7) of the Federal CWA [33 USC 1352(7)]. Waters of the U.S. include jurisdictional wetlands. Not all waters and wetlands are jurisdictional. Contact the Corps with any questions regarding jurisdiction.
Navigable waters: Refer to 33 CFR 329. These waters include the following federally designated navigable waters in New England. This list represents only those waterbodies for which affirmative determinations have been made; absence from this list should not be taken as an indication that the waterbody is not navigable:

ME: All tidal waters; Kennebec River to Moosehead Lake; Penobscot River to the confluence of the East and West Branch at Medway, Maine; Lake Umbagog within the State of Maine.

Appendix G: Additional References

1. GC 2: Federal Jurisdictional Boundaries.

(a) Corps Wetlands Delineation Manual, regional supplements, and Corps Wetland Delineation Data Sheets: www.nae.usace.army.mil/missions/regulatory and then "Wetlands and Jurisdictional Limits."
(b) The USFWS publishes the 1988 National List of Plant Species that Occur in Wetlands (www.nwi.fws.gov).
The Natural Resources Conservation Service (NRCS) publishes the current hydric soil definition, criteria and lists: http://soils.usda.gov/use/hydric. For the Field Indicators for Identifying Hydric Soils in N.E., see www.neiwpcc.org/hydricsoils.asp.

2. GC 5: Single and Complete Project.

Single and complete project means the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. For example, if construction of a residential development affects several different areas of a headwater or isolated water, or several different headwaters or isolated waters, the cumulative total of all filled areas should be the basis for deciding whether or not the project will be covered by Category 1 or 2.
The ***Independent utility*** test is used to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

3. GC 8: Threatened and Endangered Species.

(a) The following NMFS site must be referenced to ensure that listed species or critical habitat are not present in the action area [GC 8(b)] or to provide information on federally-listed species or habitat [GC 8(e)]: www.nero.noaa.gov/prot_res/esp/ListE&Tspec.pdf. Contact the USFWS for information to check for the presence of listed species (see Appendix D for contact information & procedures).
(b) The Endangered Species Act Consultation Handbook – Procedures for Conducting Section 7 Consultations and Conferences, defines action area as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. [50 CFR 402.02]."

4. GC 42: Essential Fish Habitat.

As part of the GP screening process, the Corps may coordinate with NMFS in accordance with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act to protect and conserve the habitat of marine, estuarine and anadromous finfish, mollusks, and crustaceans. This habitat is termed "Essential Fish Habitat (EFH)", and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." There are EFH waters throughout inland and coastal waters in Maine. For additional information, see the EFH regulations 50 CFR 600 at www.nero.noaa.gov/hcd including the "Guide for EFH Descriptions" at www.nero.noaa.gov/hcd/list.htm. Additional information on the location of EFH can be obtained from NMFS (see Appendix D for contact information).

5. GC 4: Avoidance, Minimization and Compensatory Mitigation.

(a) See www.nae.usace.army.mil/missions/regulatory and then "Mitigation" to view the April 10, 2008 "Final Compensatory Mitigation Rule" (33 CFR 332) and related documents. The Q&A document states: "In order to reduce risk and uncertainty and help ensure that the required compensation is provided, the rule establishes a preference hierarchy for mitigation options. The most preferred option

is mitigation bank credits, which are usually in place before the activity is permitted. In-lieu fee program credits are second in the preference hierarchy, because they may involve larger, more ecologically valuable compensatory mitigation projects as compared to permittee-responsible mitigation. Permittee-responsible mitigation is the third option, with three possible circumstances: (1) conducted under a watershed approach, (2) on-site and in kind, and (3) off-site/out-of-kind.
(b) Compensatory mitigation may take the form of wetland preservation, restoration, enhancement, creation, and/or in lieu fee (ILF) for inclusion into the Natural Resources Mitigation Fund for projects in DEP and LURC territories. Avoidance of wetland impacts will reduce the ILF dollar total for applicants. The ILF compensation program was established to provide applicants with a flexible compensation option over and above traditional permittee responsible compensation projects. See the Maine ILF Agreement at www.nae.usace.army.mil/missions/regulatory, "Mitigation" and then "Maine," or www.maine.gov/dep/blwq/docstand/nrpa/ILF_and_NRCP/index.htm.

6. GCs 24, 15, and 43: Invasive Species.
(a) Information on what are considered "invasive species" is provided in our "Compensatory Mitigation Guidance" document at www.nae.usace.army.mil/missions/regulatory under "Mitigation." The "Invasive Species" section has a reference to our "Invasive Species Control Plan (ISCP) Guidance" document, located at www.nae.usace.army.mil/missions/regulatory under "Invasive Species," which provides information on preparing an ISCP.
(b) The June 2009 "Corps of Engineers Invasive Species Policy" is at www.nae.usace.army.mil/missions/regulatory under "Invasive Species" and provides policy, goals and objectives.

7. GC 44: Bank Stabilization.
This generally eliminates bodies of water where the reflected wave energy may interfere with or impact on harbors, marinas, or other developed shore areas. A revetment is sloped and is typically employed to absorb the direct impact of waves more effectively than a vertical seawall. It typically has a less adverse effect on the beach in front of it, abutting properties and wildlife. See the Corps Coastal Engineering Manual EM 1110-2-1100 at www.nae.usace.army.mil/missions/regulatory under "Useful Links and Documents" for design and construction guidance.

8. GC 45: Stream and Wetland Crossings.
(a) Projects should be designed and constructed to ensure long-term success using the most recent manual located at www.nae.usace.army.mil/missions/regulatory under "Stream and River Continuity," currently "Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings, by the U.S. Forest Service." Section 5.3.3 is of particular importance. Sections 7.5.2.3 Construction Methods and 8.2.11 Stream-Simulation Bed Material Placement both show important steps in the project construction.
(b) For more information on High-Quality Stream Segments and their components see:
- **i.** High-Quality Stream Segments are shown at www.maine.gov/dep/gis/datamaps.
- **ii.** Class A Waters or Class AA Waters:

www.mainelegislature.org/legis/statutes/38/title38sec465.html, and
www.mainelegislature.org/legis/statutes/38/title38sec467.html.
- **iii.** Outstanding river segments www.mainelegislature.org/legis/statutes/38/title38sec480-P.html.

(c) The Massachusetts Dam Removal and the Wetland Regulations offer guidance to evaluate the positive and negative impacts of culvert replacement, including the loss of upstream wetlands, which may be offset by the overall benefits of the river restoration. See www.nae.usace.army.mil/missions/regulatory and then "Stream and River Continuity."

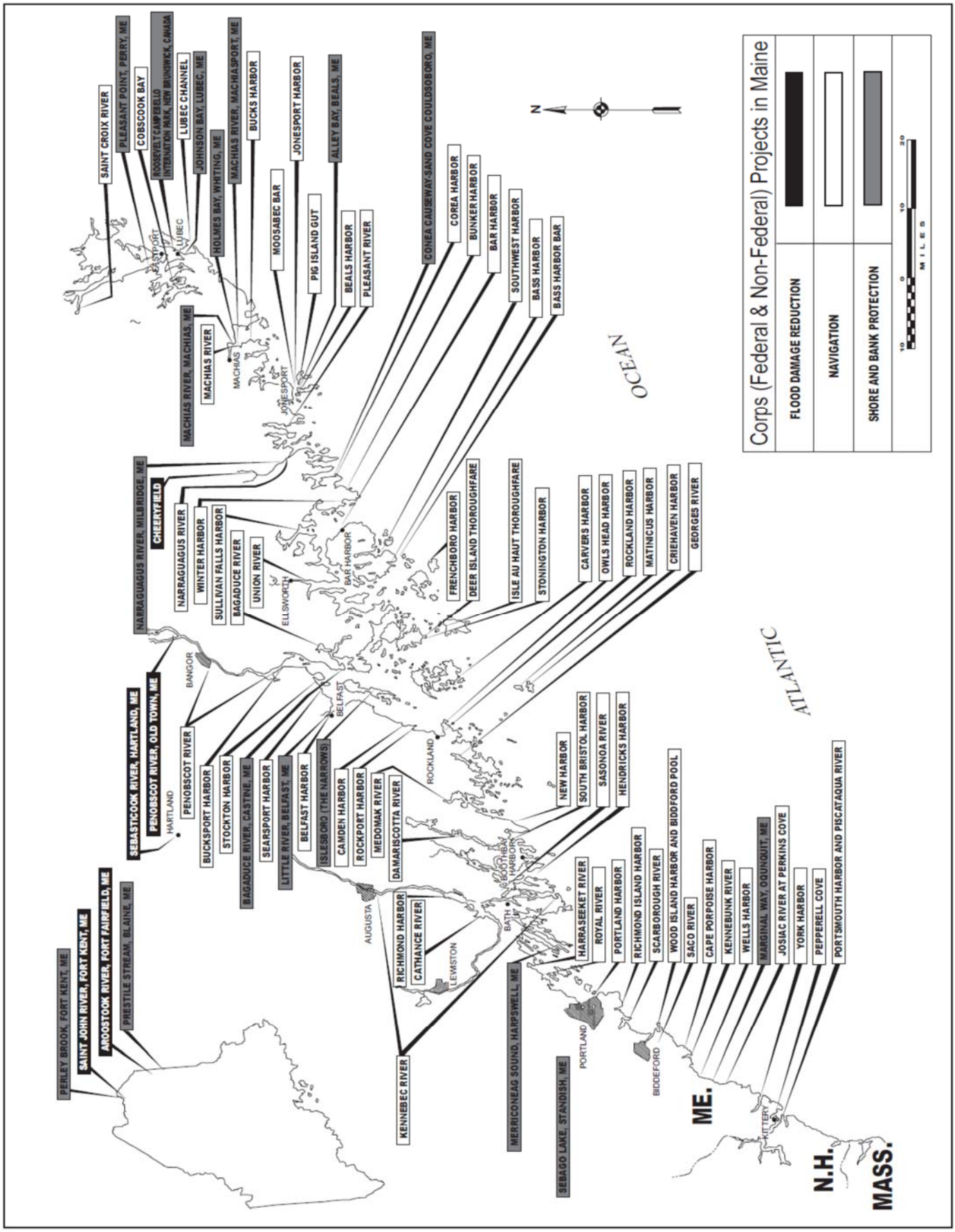
(d) The ME DOT's document "Waterway and Wildlife Crossing Policy and Design Guide for Aquatic Organism, Wildlife Habitat, and Hydrologic Connectivity," 3rd Edition, July 2008, may be used as guidance to evaluate impacts to aquatic, wildlife and surface water resources when designing, constructing, repairing and maintaining stream crossings. Note: Adherence to this DOT document does not ensure compliance with this GP. Projects must comply with the requirements of this GP including GC 45 and the Corps General Stream Crossing Standards contained therein. www.maine.gov/mdot/environmental-office-homepage/fishpassage/3rd%20edition%20-%20merged%20final%20version%207-01-08a1.pdf.
(e) GC 45(f): The Skidder Bridge Fact Sheet at www.nae.usace.army.mil/missions/regulatory under "Stream and River Continuity" may be a useful temporary span construction method.

9. GC 45: Wetland Crossings. The Maine DEP's crossing standards are at 06-096 DEP, Chapter 305: Permits by Rule, 9 & 10) Crossings (utility lines, pipes and cables). www.maine.gov/dep/blwq/rules/NRPA/2009/305/305_effective_2009.pdf

10. GC 23: Protection of Vernal Pools.
(a) The state's Significant Wildlife Habitat rules (Chapter 335, Section 9(C) "Habitat management standards for significant vernal pool habitat") are located at www.maine.gov/dep/blwq/docstand/nrpapage.htm#rule under "Rules."
(b) The following documents provide conservation recommendations:
i. Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S., Calhoun and Klemens, 2002. Chapter III, Management Goals and Recommendations, Pages 15 – 26, is particularly relevant. (Available for purchase at www.maineaudubon.org/resource/index.shtml and on Corps website*.)
ii. Science and Conservation of Vernal Pools in Northeastern North America, Calhoun and deMaynadier, 2008. Chapter 12, Conservation Recommendations section, Page 241, is particularly relevant. (Available for purchase via the internet. Chapter 12 is available on Corps website*.)
* www.nae.usace.army.mil/reg under "Vernal Pools."
(c) Cape Cod Curbing: For smaller roads and driveways, the most important design feature to consider is curbing. Granite curbs and some traditional curbing can act as a barrier to amphibian and hatchling turtle movements. Large numbers of salamanders have been intercepted in their migrations by curbs and catch basins. Use of Cape Cod curbs rather than traditional curbing may be one solution. Alternatively, where storm water management systems require more traditional curbing, it may be possible to design in escape ramps on either side of each catch basin. Cape Cod curbing is shown on Page 35 of the document cited in 10.b.i above. Bituminous material is not required; other materials such as granite are acceptable.
(d) The VP Directional Buffer Guidance document is located at www.nae.usace.army.mil/missions/regulatory under: 1) "State General Permits" and then "Maine," and 2) "Vernal Pools."

11. GC 29: Maintenance. River restoration projects that are designed to accommodate the natural dynamic tendencies of the fluvial system are maintained in accordance with the project's design objectives (Category 1) or the Corps authorization letter (Category 2). These projects are generally designed to support and implement channel assessment and management practices that recognize a stream's natural dynamic tendencies.

Appendix H: Federal Navigation Projects in Maine



APPENDIX C
SIGN DETAILS

SIGN DETAIL

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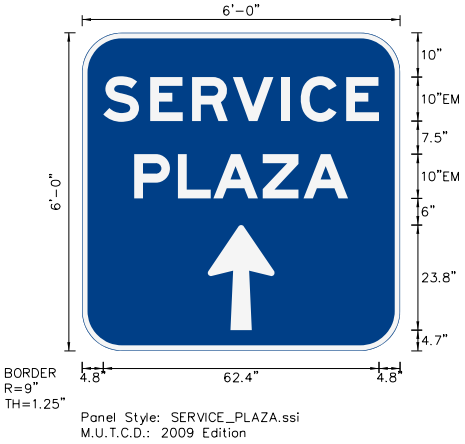

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M.U.T.C.D.: 2009 Edition

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LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
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Panel Style: SERVICE_PLAZA.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
S	E	R	V	I	C	E																EM 2000
4.8	15.4	24.9	34.1	45.1	49.5	59.8															62.4	10
P	L	A	Z	A																		EM 2000
11.8	21.7	29.7	40.9	50.1																	48.4	10

SIGN DETAIL

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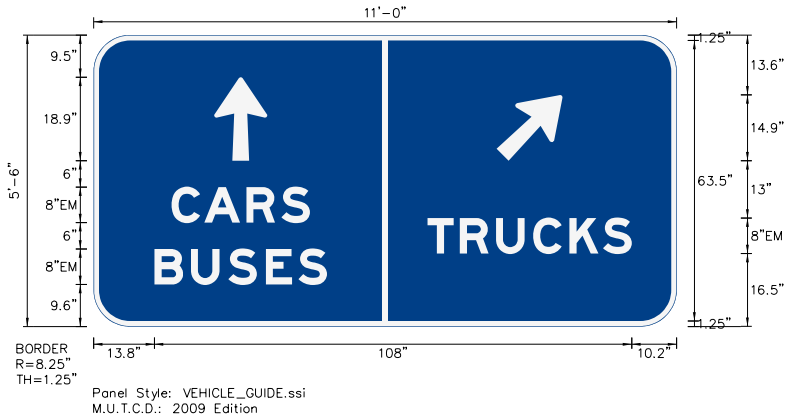

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LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
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Panel Style: VEHICLE_GUIDE.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																					LENGTH	SERIES/SIZE
C	A	R	S																			EM 2000
17.6	25.1	34.6	42.5																		31.4	8
T	R	U	C	K	S																	EM 2000
75.6	82.9	91.1	99.5	107.7	115.3																46.2	8
B	U	S	E	S																		EM 2000
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SIGN DETAIL

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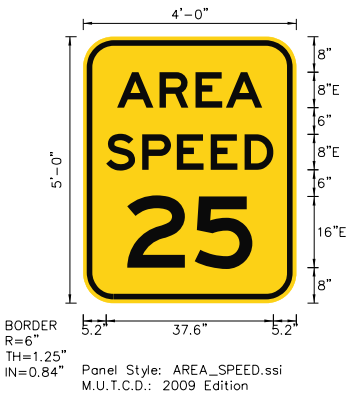

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LEGEND/BORDER	TYPE: Reflective
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SYMBOL	ROT	X	Y	WID	HT

Panel Style: AREA_SPEED.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)															LENGTH	SERIES/SIZE
A	R	E	A													E 2000
7.7	17.2	25.3	32.2												32.6	8
S	P	E	E	D												E 2000
5.2	13.3	21.1	28.7	36.3											37.6	8
2	5															E 2000
9.9	25.1														28.2	16

SIGN DETAIL

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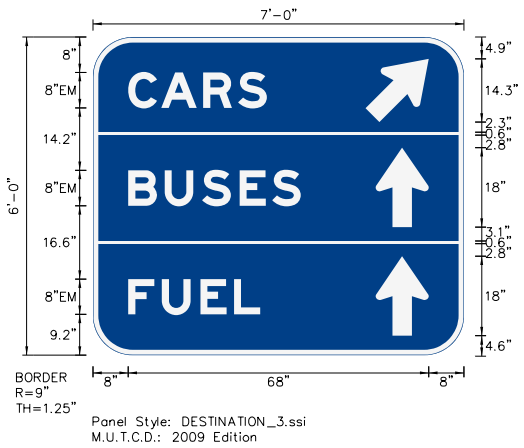

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LEGEND/BORDER	TYPE: Reflective
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SYMBOL	ROT	X	Y	WID	HT
AR_Type D	315	61.7	52.8	12	18
AR_Type D	0	64	29	12	18
AR_Type D	0	64	4.4	12	18

Panel Style: DESTINATION_3.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																				LENGTH	SERIES/SIZE
C	A	R	S																		EM 2000
8	15.4	25	32.9																	31.4	8
B	U	S	E	S																	EM 2000
8	16.2	24.7	33.2	40.6																39	8
F	U	E	L																		EM 2000
8	15.6	24.3	31.9																	29.8	8

SIGN DETAIL

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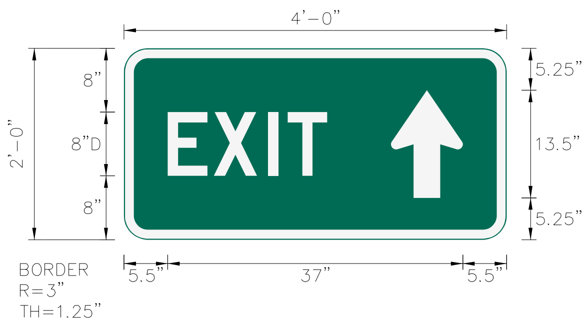

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M.U.T.C.D.: 2009 Edition

Panel Style: EXIT.ssi
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Letter locations are panel edge to lower left corner

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MOUNTING	Ground	
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LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	0	33.5	5.2	9	13.5

LETTER POSITIONS (X)

															LENGTH	SERIES/SIZE
E	X	I	T													D 2000
5.5	11.3	18.1	20.5												20	8

SIGN DETAIL

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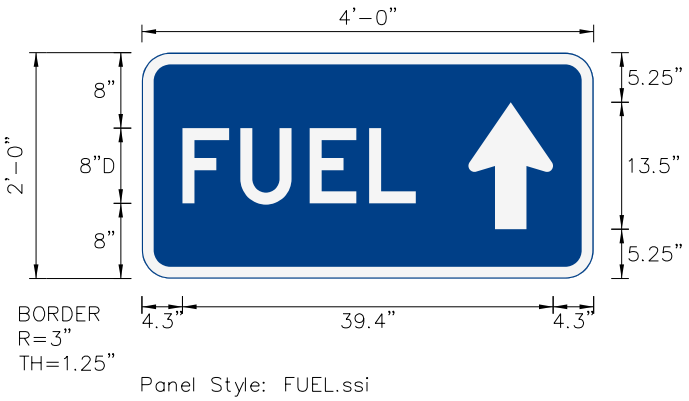

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M.U.T.C.D.: 2009 Edition

Panel Style: FUEL.ssi
Dimensions are in inches.tenths
Letter locations are panel edge to lower left corner

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LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	0	34.7	5.2	9	13.5

LETTER POSITIONS (X)

F	U	E	L												LENGTH	SERIES/SIZE
4.3	10.5	17.8	24.1												24.8	D 2000 8

SIGN DETAIL

1:20

SIGN NUMBER	GS-7	
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LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White

SYMBOL	ROT	X	Y	WID	HT
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AR_Type D	270	15	2.5	4	6

Panel Style: DOG_WALK.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

															LENGTH	SERIES/SIZE
D	O	G														D 2000
3	5.6	8.4													7.4	3
W	A	L	K													D 2000
3	5.9	8.9	11.2												10.3	3
A	R	E	A													D 2000
3	6	8.6	10.7												10.2	3

SIGN DETAIL

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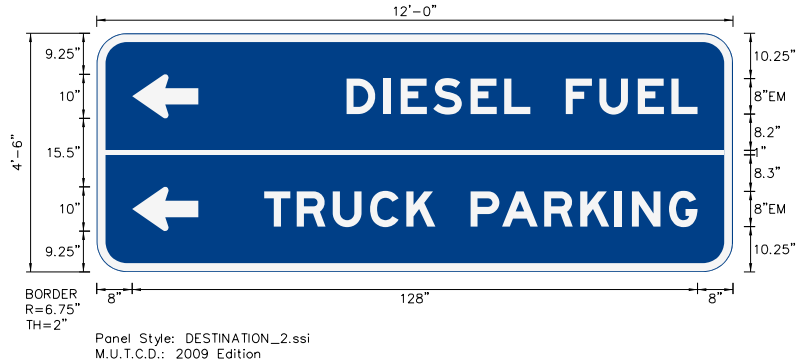

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LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	8	34.8	10	15
AR_Type D	90	8	9.3	10	15

Panel Style: DESTINATION_2.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
D	I	E	S	E	L		F	U	E	L												EM 2000
56.6	65	68.8	76.2	84.6	92.2	98.2	106.2	113.8	122.5	130.1											79.4	8
T	R	U	C	K		P	A	R	K	I	N	G										EM 2000
37.9	45.3	53.4	61.8	70.1	76.6	84.6	91.8	101.3	109.4	117.3	121.1	129.5									98.1	8

SIGN DETAIL

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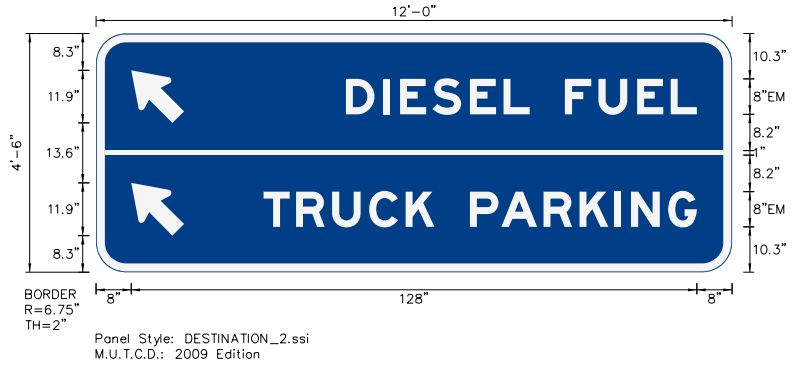

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MOUNTING	Ground	
BACKGROUND	TYPE:	Reflective
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LEGEND/BORDER	TYPE:	Reflective
	COLOR:	White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	45	8	33.8	10	15
AR_Type D	45	8	8.3	10	15

Panel Style: DESTINATION_2.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
D	I	E	S	E	L		F	U	E	L												EM 2000
56.6	65	68.8	76.2	84.6	92.2	98.2	106.2	113.8	122.5	130.1											79.4	8
T	R	U	C	K		P	A	R	K	I	N	G										EM 2000
37.9	45.3	53.4	61.8	70.1	76.6	84.6	91.8	101.3	109.4	117.3	121.1	129.5									98.1	8

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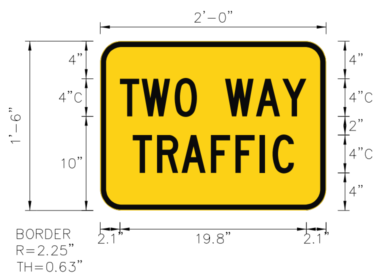

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M.U.T.C.D.: 2009 Edition

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LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

SYMBOL	ROT	X	Y	WID	HT

Panel Style: TWO_WAY.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

															LENGTH	SERIES/SIZE
T	W	O	W	A	Y											C 2000
2.1	4.4	7.9	13.3	16.5	19.3										19.8	4
T	R	A	F	F	I	C										C 2000
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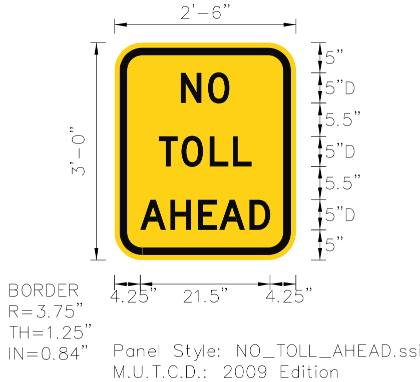

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SYMBOL	ROT	X	Y	WID	HT

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Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

															LENGTH	SERIES/SIZE
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11	15.5														8.1	5
T	O	L	L													D 2000
7.3	11.1	15.7	19.6												15.4	5
A	H	E	A	D												D 2000
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SIGN DETAIL
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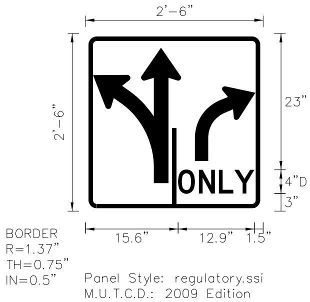

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SYMBOL	ROT	X	Y	WID	HT

Panel Style: regulatory.ssi
Dimensions are in inches.tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)															LENGTH	SERIES/SIZE
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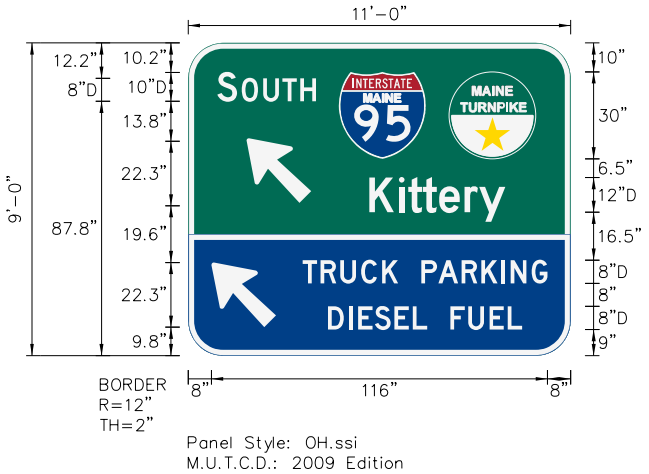

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M.U.T.C.D.: 2009 Edition

Panel Style: OH.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

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MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
M1_1	0	52	68	30	30
MTA Shield	0	90	68	30	30
AR_Type A	45	20.1	52.8	18	28.3
AR_Type A	45	8	9.8	18	28.3

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
S	O	U	T	H																		D 2000
10	18.4	25.8	32.5	38.6																	34.1	10,8
K	i	t	t	e	r	y																D 2000
62.5	72.7	76	81	86.7	95.4	100.5															46.9	12/9
T	R	U	C	K		P	A	R	K	I	N	G										D 2000
39.5	45.7	52.5	59.7	66.9	72.5	80.5	86.4	94.4	101.2	108.2	111.4	118.6									84.5	8
D	I	E	S	E	L		F	U	E	L												D 2000
48.2	55.4	58.6	64.4	71.2	77.5	82.5	90.5	96.6	104	110.3											67	8

SIGN DETAIL
1:20

SIGN NUMBER	
WIDTH x HGHT.	2'-6" x 2'-6"
BORDER WIDTH	0"
CORNER RADIUS	0"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: Reflective
	COLOR: White

SYMBOL	ROT	X	Y	WID	HT
M1_1	0	0	0	30	30

Panel Style: guide_exp_advance_a.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																				LENGTH	SERIES/SIZE
I	N	T	E	R	S	T	A	T	E												C
5.2	6.3	8.5	10.6	12.7	15	17.3	19	21.2	23.3											19.8	3.2
M	A	I	N	E																	D
11.1	13.0	15.1	15.8	17.7																7.8	2
9	5																				D
5	16.3																			20	12.5

AP-G4

SIGN DETAIL

1:80

SIGN NUMBER	GS-14
WIDTH x HGHT.	19'-0" x 14'-0"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
M1_52C	0	96	114	36	36
AR_Type A	315	99.1	16.2	24	37.8

Panel Style: guide_fwy_intermediate.ssi

Dimensions are in inches.tenths

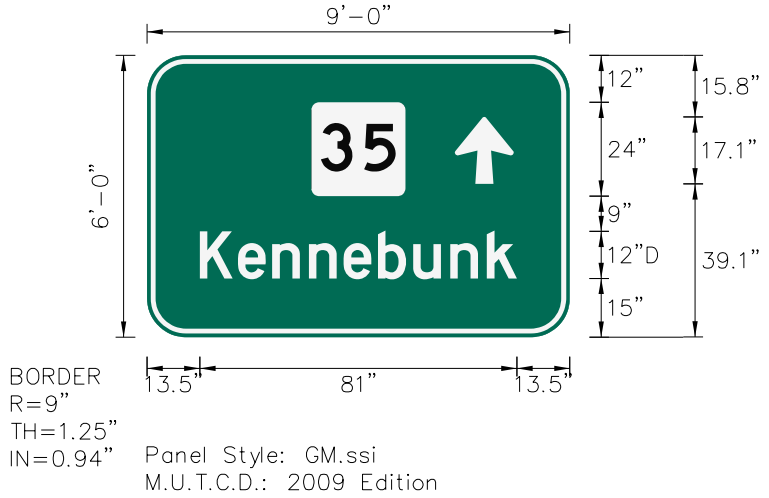
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
K	e	n	n	e	b	u	n	k														EM 2000
44.6	59.8	75.4	92.3	107.8	123.4	138.9	155.8	172.8													138.7	16/12
K	e	n	n	e	b	u	n	k	p	o	r	t										EM 2000
17.9	33.1	48.6	65.6	81.1	96.6	112.2	129.1	146.1	161.6	175.7	191.5	201.8									192.2	16/12

SIGN DETAIL

1:50



SIGN NUMBER	GS–15
WIDTH x HGHT.	9'–0" x 6'–0"
BORDER WIDTH	1.25"
CORNER RADIUS	9"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type B	0	78.6	39.2	15	17.1
M1_52B	0	42	36	24	24

Panel Style: GM.ssi

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

LENGTH SERIES/SIZE

K	e	n	n	e	b	u	n	k													D 2000
13.5	23.2	32	41.3	50.2	59	68	77.5	86.8												81	12/9