

MAINE TURNPIKE AUTHORITY ADDENDUM NO. 2

CONTRACT 2018.03

EXIT 44 SOUTHBOUND ON RAMP IMPROVEMENTS
MILE 44.3

The following changes are made to the Proposal, Specifications, and Plans.

PROPOSAL

- Proposal Sheets P-5 to P-9 are deleted and replaced with sheets P-5 to P-9 attached to this Addendum No. 2. The revision to these sheet adds the item 626.223 Horizontal Directional Drilled Conduit and revises the quantities for items 626.122 Quazite Junction Box (18x11) and 626.22 Non-Metallic Conduit.

SPECIAL PROVISIONS

- SECTION 626 FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING, AND SIGNALS, is added as an attachment to this Addendum No. 2.

PLANS

- Plan Sheet 2 of 64, ESTIMATED QUANTITIES AND EARTHWORK SUMMARY, has been deleted in its entirety and replaced with Plan Sheet 2 of 64, included in this Addendum No. 1.
- Plan Sheet 20 of 64, LIGHTING AND COMMUNICATION DETAILS 2, has been deleted in its entirety and replaced with Plan Sheet 20 of 64, included in this Addendum No. 1.
- Plan Sheet 23 of 64, GENERAL PLAN 3, has been deleted in its entirety and replaced with Plan Sheet 23 of 64, included in this Addendum No. 1.

ATTACHMENTS

- Proposal Sheets (5)
- Special Provisions (3)
- Plans (3)

The total number of pages included with this addendum is thirteen (13).

All bidders are requested to acknowledge the receipt of the Addendum No. 2 by signing the next page and faxing this sheet to Nate Carll, Purchasing Department, (207) 871-7739. Bidders are also required to acknowledge receipt of this Addendum No. 2 on Page P-10 of the bid package.

Acknowledgment of the receipt of Addendum No. 2 (13 pages)

Business Name

Print Name and Title

Signature

Date
February 12, 2018

Very truly yours,

MAINE TURNPIKE AUTHORITY

Purchasing Manager
Maine Turnpike Authority

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
618.14	SEEDING METHOD NUMBER 2	Unit	54				
618.141	SEEDING METHOD NUMBER 3	Unit	30				
619.1201	MULCH - PLAN QUANTITY	Unit	84				
619.1202	TEMPORARY MULCH	Lump Sum	1				
620.58	EROSION CONTROL GEOTEXTILE	Square Yard	330				
626.122	QUAZITE JUNCTION BOX (18X11)	Each	17				
626.22	NON-METALLIC CONDUIT	Linear Foot	3,700				
626.223	HORIZONTAL DIRECTIONAL DRILLED CONDUIT	Linear Foot	100				
626.31	18 INCH DIAMETER FOUNDATION	Each	6				
626.32	24 INCH DIAMETER FOUNDATION	Each	16				
626.33	30 INCH DIAMETER FOUNDATION	Each	2				
626.36	REMOVE OR MODIFY CONCRETE FOUNDATION	Each	11				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
627.681	TEMPORARY 6 INCH PAINTED PAVEMENT MARKING LINE - YELLOW OR WHITE	Linear Foot	4,950				
627.73	TEMPORARY 6 INCH PAVEMENT MARKING TAPE	Linear Foot	18,050				
627.731	TEMPORARY 6 INCH BLACK PAVEMENT MARKING TAPE	Linear Foot	14,100				
627.744	6" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	Linear Foot	14,900				
627.77	REMOVING EXISTING PAVEMENT MARKING	Square Foot	500				
627.812	TEMPORARY RAISED PAVEMENT MARKERS	Each	500				
627.94	PAVEMENT MARKING TAPE	Linear Foot	200				
627.941	PAVEMENT MARKING TAPE - DOTTED WHITE LANE LINE, 6-INCH WIDTH	Linear Foot	600				
627.944	PAVEMENT MARKINGS - RECESSED TAPE - WORDS, ARROWS AND STOP BARS	Square Foot	160				
629.05	HAND LABOR, STRAIGHT TIME	Hour	30				
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	Hour	20				
631.11	AIR TOOL (INCLUDING OPERATOR)	Hour	20				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	Hour	30				
631.14	GRADER (INCLUDING OPERATOR)	Hour	30				
631.171	TRUCK - SMALL (INCLUDING OPERATOR)	Hour	30				
631.22	FRONT END LOADER (INCLUDING OPERATOR)	Hour	30				
631.36	FOREPERSON	Hour	30				
631.51	BUCKET TRUCK	Hour	20				
631.52	SCISSOR LIFT	Hour	20				
634.051	REMOVE AND STACK LIGHT STANDARD	Each	3				
634.160	HIGHWAY LIGHTING	Lump Sum	1				
634.175	REPLACEMENT LED FIXTURE, INSTALLED	Each	3				
634.208	REMOVE AND RESET LIGHT STANDARD	Each	4				
634.231	CONVENTIONAL LIGHT STANDARD WITH LED FIXTURE	Each	10				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
645.105	REMOVE AND STACK SIGN	Each	4				
645.161	BREAKAWAY DEVICE SINGLE POLE	Each	4				
645.271	REGULATORY, WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGNS, TYPE I	Square Foot	102				
645.289	STEEL H-BEAM POLES	Pound	792				
645.501	REMOVE AND RESET MAINLINE SIGN NO. 1	Each	1				
645.502	REMOVE AND RESET MAINLINE SIGN NO. 2	Each	1				
652.30	FLASHING ARROW	Each	2				
652.312	TYPE III BARRICADES	Each	5				
652.33	DRUM	Each	150				
652.34	CONE	Each	50				
652.35	CONSTRUCTION SIGNS	Square Foot	910				
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	Lump Sum	1				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
BROUGHT FORWARD:							
652.39	PORTABLE LIGHT TOWER	Each	2				
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	Each	2				
652.45	TRUCK MOUNTED ATTENUATOR	Cal. Day	90	\$200	00	\$18,000	00
652.451	AUTOMATED TRAILER MOUNTED SPEED LIMIT SIGN	Cal. Day	90	\$75	00	\$6,750	00
656.632	30" TEMPORARY SILT FENCE	Linear Foot	5,800				
656.60	TEMPORARY BERMS	Linear Foot	100				
656.62	TEMPORARY SLOPE DRAINS	Linear Foot	100				
659.10	MOBILIZATION	Lump Sum	1				
TOTAL:							

SPECIAL PROVISION

SECTION 626

FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS (Horizontal Directional Drilled Conduit)

Description

Horizontal Directional Drilling (HDD) method shall be used for installation of non-metallic conduit for highway lighting, toll systems and traffic signals when specified on the project plans or approved by the Resident. It shall include furnishing of all materials, site preparation, equipment setup, pilot bore, conduit pulling through the drilled bore, installation of pull wire and fittings, site restoration, and incidental work necessary to satisfactorily install conduit at the required locations and depths.

Materials

Conduit for Horizontal Directional Drilling shall meet requirements of Section 715.03 for non-metallic conduit. Non-metallic conduit to be installed under roadways shall be Schedule 80 or greater. Non-metallic conduit to be installed in other locations shall be Schedule 40 or greater. Conduit sections shall be joined by methods suitable for installation by HDD. Joined conduit sections must have adequate strength and flexibility to withstand the installation stresses and overburden pressures without compromising the structural stability of the conduit wall. Conduit must be able to meet the bend radius required for the proposed installation. Conduit sections shall be joined in a manner resulting in the inner surfaces being flush and even.

Construction

Prior to commencing HDD work, the Contractor shall submit a drilling work plan to the Resident for approval addressing the following, at minimum:

- Profile of the proposed bore plotted at a scale appropriate for the crossing and acceptable to the Resident;
- HDD site layout including entry and exit points;
- Drilling fluid management plan, including drilling fluid types and specifications, cleaning and recycling equipment to be used, estimated flow rates, procedures for minimizing drilling fluid escape, and the method and location for final disposal of waste drilling fluids. Material safety data sheets shall be provided for all drilling fluid additives that will be used;
- Conduit storage and handling details;
- Summary of assembly and installation procedures to be used;
- Material safety data sheets of any other potentially hazardous substances to be used;
- Response plans for possible problems that may be encountered;
- Documentation and certification of the ability of the proposed conduit to withstand installation stresses and pressures.

The HDD drill rig and auxiliary pieces of equipment shall be appropriate for the diameter and length of conduit being installed. The power system shall provide sufficient pressure to power the drilling operations with a hydraulic system free from leakage. The directional drilling machine shall be anchored as necessary to stabilize it against excessive dislocation.

In order to minimize friction and prevent collapse of the bore hole, a soil stabilizing agent (drilling fluid) may be introduced into the annular bore space from the front end of the drill head to create a slurry. The drilling fluids shall be selected or designed for the site's specific soil and ground water conditions. The drilling fluid mixing system shall be self-contained and closed with sufficient size to mix and deliver drilling fluid to the drill head. The mixing system shall continually agitate the drilling fluid during drilling operations. The fluids delivery system shall be capable of pumping drilling fluid with sufficient volume and pressure from the mixing tank through the drill rods to the drill head.

Alignment of the bore shall be accomplished by proper orientation of the drill head as it is pushed through the ground by the drill rig. Orientation and tracking of the drill head shall be determined by using an acceptable tracking system from a transmitter located within the drill head. The HDD guidance system shall be capable of locating and tracking the drill head continuously and accurately both horizontally and vertically during the pilot bore. All equipment shall be properly calibrated before commencing the directional drilling operation.

Borehole diameter relative to the conduit diameter shall be minimized to limit potential damage from soil displacement, settlement, and heaving. When necessary, the pilot borehole may be enlarged by back reaming to accommodate conduit larger than the pilot borehole size. Back reaming may be accomplished ahead of or at the same time as pulling the conduit through the pilot borehole. The back-reamer shall be sized to create a large enough borehole to allow cuttings to transfer from the face of excavation to the surface with minimum soil displacement.

Escaping slurry or drilling fluids shall be confined at the ground surface during pull back or drilling. All drilling fluids shall be disposed of or recycled in a manner acceptable to the Maine Department of Environmental Protection. Upon completion of the HDD operation, the work site shall be cleaned of all excess slurry or spoils. Any damage caused by heaving, settlement, separation of pavement, escaping drilling fluid, or other damage from the directional drilling operation shall be repaired by the Contractor to the satisfaction of the Resident.

At the completion of the HDD conduit installation, the Contractor shall provide to the Resident marked up plans noting location, depth, and material type of all conduit installed by the Horizontal Directional Drilling method.

Method of Measurement

Horizontal Directional Drilled Conduit will be measured by the number of linear feet of conduit in place and accepted by the Resident.

Basis of Payment

Payment will be made for the total number of linear feet of Horizontal Directional Drilled Conduit and accepted at the contract price per linear foot. Payment shall include the cost of furnishing and installing the conduit; site preparation and restoration of drilling entry and exit points; removal of excavated material and drilling spoils; removal and disposal of drilling fluids and excess slurry; pull wire, fittings, grounding and bonding; test cleaning of conduit interior; and all other materials, labor, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item

Pay Unit

626.223

Horizontal Directional Drilled Conduit

Linear Foot

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.15	REMOVING MAWHOLE OR CATCH BASIN	2	EA
202.202	REMOVING PAVEMENT SURFACE	2,700	SY
202.206	REMOVING RUMBLE STRIPS	3,800	LF
203.20	COMMON EXCAVATION	7,600	CY
203.24	COMMON BORROW	300	CY
203.25	GRANULAR BORROW	3,275	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	1,125	CY
304.14	AGGREGATE BASE COURSE - TYPE A	1,050	CY
403.207	HOT MIX ASPHALT, 19.0 MM NOMINAL MAXIMUM SIZE	2,225	TON
403.208	HOT MIX ASPHALT, 12.5 MM (POLYMER MODIFIED)	950	TON
403.21	HOT MIX ASPHALT - SHIM	300	TON
403.213	HOT MIX ASPHALT, 12.5 MM NOMINAL MAXIMUM SIZE, BASE	850	TON
409.15	BITUMINOUS TACK COAT APPLIED	740	GAL
419.30	SAWING BITUMINOUS PAVEMENT	3,200	LF
470.08	BERM DROPOFF CORRECTION - GRINDINGS	150	TON
526.306	TEMPORARY CONCRETE BARRIER TYPE I - SUPPLIED BY AUTHORITY (2,900 LF)	1	LS
527.343	WORK ZONE CRASH CUSHIONS - TL-3	2	UNIT
603.175	18 INCH REINFORCED CONCRETE PIPE - CLASS III	24	LF
604.09	CATCH BASIN TYPE BI	2	EA
606.13	31"W-BEAM GUARDRAIL - MIDWAY SPLICE (7' STEEL POSTS, 8' OFFSET BLOCKS, SINGLE FACED)	825	LF
606.131	31"W-BEAM GUARDRAIL - MIDWAY SPLICE (8' STEEL POSTS, 8' OFFSET BLOCKS, SINGLE FACED)	200	LF
606.1351	TERMINAL END - ANCHORED END - 31"W-BEAM GUARDRAIL	1	EA
606.2652	TERMINAL END - REMOVE AND STACK	1	EA
606.352	REFLECTORIZED FLEXIBLE GUARDRAIL DELINEATOR	17	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	4	EA
606.356	UNDERDRAIN DELINEATOR POST	25	EA
606.3561	DELINEATOR POST - REMOVE AND RESET	10	EA
606.791	GUARDRAIL - 350 FLARED TERMINAL - 31"W-BEAM GUARDRAIL	1	EA
606.82	GUARDRAIL - REMOVE AND STACK EXISTING CRASH END	1	EA
610.08	PLAIN RIPRAP	5	CY
610.16	HEAVY RIP RAP	385	CY
610.18	STONE DITCH PROTECTION	10	CY
610.181	TEMPORARY STONE CHECK DAM	100	CY
613.319	EROSION CONTROL BLANKET	2,550	SY
615.07	LOAM	1,100	CY
618.14	SEEDING METHOD NUMBER 2	54	UNIT
618.141	SEEDING METHOD NUMBER 3	30	UNIT
619.1201	MULCH - PLAN QUANTITY	84	UNIT
619.1202	TEMPORARY MULCH	1	LS
620.58	EROSION CONTROL GEOTEXTILE	330	SY
626.122	QUAZITE JUNCTION BOX (8X11)	17	EA
626.22	NON-METALLIC CONDUIT	3,700	LF
626.223	HORIZONTAL DIRECTIONAL DRILLED CONDUIT	100	LF
626.31	18" INCH DIAMETER FOUNDATION	6	EA
626.32	24 INCH DIAMETER FOUNDATION	16	EA
626.33	30 INCH DIAMETER FOUNDATION	2	EA
626.36	REMOVE OR MODIFY CONCRETE FOUNDATION	11	EA
627.681	TEMPORARY 6 INCH PAINTED PAVEMENT MARKING LINE - YELLOW OR WHITE	4,950	LF
627.73	TEMPORARY 6 INCH PAVEMENT MARKING TAPE	18,050	LF
627.731	TEMPORARY 6 INCH BLACK PAVEMENT MARKING TAPE	14,100	LF
627.744	6" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	14,900	LF
627.77	REMOVING EXISTING PAVEMENT MARKING	500	SF
627.812	TEMPORARY RAISED PAVEMENT MARKERS	500	EA
627.94	PAVEMENT MARKING TAPE	200	LF
627.944	PAVEMENT MARKING TAPE ^{1/2} " x ^{1/2} " DOTTED WHITE LANE LINE, 6-INCH WIDTH	600	LF
629.05	PAVEMENT MARKINGS - RECESSED TAPE - WORDS, ARROWS AND STOP BARS	160	SF
631.0	HAND LABOR, STRAIGHT TIME	30	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	20	HR
631.11	AIR TOOL (INCLUDING OPERATOR)	20	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	30	HR
631.14	GRADER (INCLUDING OPERATOR)	30	HR
631.171	TRUCK - SMALL (INCLUDING OPERATOR)	30	HR
631.22	FRONT END LOADER (INCLUDING OPERATOR)	30	HR
631.36	FOREPERSON	30	HR
631.51	BUCKET TRUCK	20	HR
631.52	SCISSOR LIFT	20	HR
634.051	REMOVE AND STACK LIGHT STANDARD	3	EA
634.160	HIGHWAY LIGHTING	1	LS
634.175	REPLACEMENT LED FIXTURE, INSTALLED	3	EA
634.208	REMOVE AND RESET LIGHT STANDARD	4	EA
634.231	CONVENTIONAL LIGHT STANDARD WITH LED FIXTURE	10	EA
645.105	REMOVE AND STACK SIGN	4	EA
645.161	BREAKAWAY DEVICE SINGLE POLE	4	EA
645.271	REGULATORY WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGNS, TYPE I	102	SF
645.289	STEEL H-BEAM POLES	792	LB

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
645.501	REMOVE AND RESET MAINLINE SIGN NO. 1	1	EA
645.502	REMOVE AND RESET MAINLINE SIGN NO. 2	1	EA
652.30	FLASHING ARROW	2	EA
652.312	TYPE III BARRICADES	5	EA
652.33	DRUM	150	EA
652.34	CONE	50	EA
652.35	CONSTRUCTION SIGNS	910	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.39	PORTABLE LIGHT TOWER	2	EA
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	2	EA
652.45	TRUCK MOUNTED ATTENUATOR	90	CD
652.451	AUTOMATED TRAILER MOUNTED SPEED LIMIT SIGN	90	CD
656.632	30" TEMPORARY SILT FENCE	5,800	LF
656.60	TEMPORARY BERMS	100	LF
656.62	TEMPORARY SLOPE DRAINS	100	LF
659.10	MOBILIZATION	1	LS

EARTHWORK SUMMARY

COMMON EXCAVATION FOR ESTIMATE

COMMON EXCAVATION (FROM CROSS SECTIONS)
GRUBBING IN FILL
MUCK EXCAVATION (FROM CROSS SECTIONS)
PAVEMENT SALVAGE IN FILL
TOTAL COMMON EXCAVATION

5,866
760
889
0

7,515

ITEM 203.20 - COMMON EXCAVATION

EST 7,800

FILL FOR BORROW CALCULATIONS

COMMON FILL (FROM CROSS SECTIONS)
GRUBBING IN FILL
BACKFILL CATCH BASIN REMOVAL
MUCK EXCAVATION
TOTAL FILL

1,527
760
18
889

3,194

AVAILABLE COMMON EXCAVATION FOR BORROW CALCULATIONS

(1) TOTAL COMMON EXCAVATION DEDUCTIONS:
GRUBBING IN CUT
GRUBBING IN FILL
MUCK EXCAVATION
PAVEMENT REMOVAL
TOTAL DEDUCTIONS

1,350
760
889
1,296

4,295

TOTAL AVAILABLE COMMON EXCAVATION (1) MINUS (2)
TOTAL AVAILABLE NON-ROCK EXCAVATION

3,220
3,220

COMPUTATION OF GRANULAR BORROW FOR ESTIMATE

GRANULAR BORROW TO REPLACE MUCK
GRANULAR BORROW IN LOW WET AREAS
GRANULAR BORROW TO UPGRADE EXCAVATION
GRANULAR BORROW TO MAINTAIN TRAFFIC
GRANULAR BORROW FOR UNDERCUTTING
GRANULAR BORROW =

889
0
0
0
0

889 x 1.00 =

889

COMPUTATION FOR COMMON BORROW FOR ESTIMATE

(3) TOTAL FILL

TOTAL AVAIL. NON-ROCK EXCAV. 3,220 x 0.90 = 2,898
(4) TOTAL AVAILABLE EXCAVATION = 2,898

BORROW NEEDED = TOTAL FILL MINUS TOTAL AVAILABLE EXCAVATION

296

Scale: _____

Designed by: _____

By Date By Date By Date

LEM 2/18 LEM 2/18 LEM 1/22/18

Checked LEM 1/22/18

In Charge of GAE 1/22/18

STANTEC CONSULTING SERVICES INC.
482 PAYNE ROAD
SCARBOROUGH, ME 04074
TEL (207) 887-3448
FAX (207) 883-3376

THE GOLD STAR MEMORIAL HIGHWAY

MAINE TURNPIKE

EXIT 44
SOUTHBOUND ON RAMP IMPROVEMENTS
ESTIMATED QUANTITIES
AND EARTHWORK SUMMARY

CONTRACT: 2018.03

SHEET NUMBER: 2 OF 64

CALCULATION SUMMARY

PROJECT: ROADWAY LIGHTING CALCULATIONS

RAMP LABEL	CONFLICT AREA	AVG ILLUMINANCE	UNITS Fc	CALC TYPE	MAX	MIN	AVG/MIN	MAX/MIN
		0.65	Fc		1.7	0.24	2.71	7.21

- GENERAL NOTES: LIGHTING**
- THERE SHALL BE AN INDIVIDUAL PHOTOCELL FOR EACH LUMINAIRE.
 - LIGHTING FIXTURES SHALL BE IES FULL CUTOFF, LIGHT EMITTING DIODE (LED) FIXTURES, IES DISTRIBUTION TYPE 2, 3 OR 4, AS NOTED IN THE LUMINAIRE SCHEDULE.
 - ALL FIXTURES SHALL BE GASKETED AND HAVE SURGE PROTECTION AND A DOUBLE FUSE KIT. ALL FIXTURES SHALL BE GRAY. IF DIFFERENT FIXTURES ARE PROPOSED, THEY SHALL BE IES FULL CUTOFF OR CUTOFF, TYPE 3 IES DISTRIBUTION TYPE AS NOTED IN THE LUMINAIRE SCHEDULE. LED LUMINAIRES, B.U.G. RATINGS SHALL BE EQUAL TO OR BETTER THAN THE DESIGNED FIXTURES. THE CONTRACTOR MUST DEMONSTRATE THAT THE PROPOSED FIXTURES WILL REASONABLY EQUAL THE LIGHT LEVELS AND DISTRIBUTIONS SHOWN ON THE PLANS, IN THE OPINION OF MTA.
 - EVALUATION OF ALTERNATIVE LED LUMINAIRES THAT MAY BE PROPOSED BY THE CONTRACTOR FOR SUBSTITUTION WILL REQUIRE SUBMITTAL OF THE FOLLOWING, AT MINIMUM: IES LM-79-08 ABSOLUTE TESTING REPORT FOR THE PROPOSED ALTERNATIVE LUMINAIRE; IES LM-80-15 TESTING REPORT FOR LED CHIPS TO BE USED IN THE ALTERNATIVE LUMINAIRE, DOCUMENTING TESTING FOR A MINIMUM OF 8500 HOURS; IES TM-2-11 REPORT FOR PROJECTED LONG TERM LUMEN MAINTENANCE, INCLUDING INCREMENTAL LUMEN DEPRECIATION TABLE AT 25 DEGREES CELSIUS TO A MINIMUM OF 50,000 HOURS; IES PHOTOMETRIC FILE FROM THE MANUFACTURER FOR THE PROPOSED ALTERNATIVE LUMINAIRE; PHOTOMETRIC PLOT OVERLAIN ON THE LAYOUT OF PROJECT, SHOWING LIGHT CONTOURS, ILLUMINATION STATISTICS FOR EACH OF THE LIGHTING GROUPS, AND VALUE OF LIGHT LOSS FACTOR USED IN THE ANALYSIS; VALUES OF LLD, LDD, BALLAST FACTOR AND OTHER FACTORS USED FOR CALCULATION OF THE ASSUMED LIGHT LOSS FACTOR; SPECIFICATION DATA REGARDING OPTICS, CHROMATIC COLOR TEMPERATURE, DRIVER, SURGE PROTECTION, HOUSING AND GASKETING.
 - CONDUIT SHALL BE 2" MINIMUM PVC SCHEDULE 40, CONDUIT UNDER PAVEMENT SHALL BE SCHEDULE 80, UNLESS INSTALLED IN RIGID UNDER PAVEMENT DUCT SLEEVE. MINIMUM BURIAL DEPTH FOR CONDUIT SHALL BE 36".
 - A JUNCTION BOX SHALL BE INSTALLED AT EACH POLE. THE WIRING IN CONDUITS SHALL BE CONTINUOUS BETWEEN JUNCTION BOXES.
 - UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL FURNISH TO MTA A SET OF AS-BUILT PLANS FOR FUTURE REFERENCE AND SYSTEM MAINTENANCE.
 - ALL LIGHT BASES SHALL HAVE A GROUND ROD LOCATED ADJACENT TO THE POLE THAT IS BONDED TO THE GROUNDING CONDUCTOR. PAYMENT FOR THE GROUND ROD SHALL BE INCLUDED IN LIGHT POLE ITEM.
 - LIGHTING SERVICE PANEL SHALL BE MARKED WITH ARC FLASH HAZARD TYPE 1, 2, 3 OR 4 AND THE APPROPRIATE PPE REQUIRED.
 - BREAKAWAY DEVICES FOR LIGHT POLES SHALL CONFORM TO THE LATEST VERSION OF "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" AND NCHRP REPORT 350. THE BREAKAWAY DEVICE SHALL BE DESIGNED SO THAT THE ANCHOR BOLTS WILL NOT BEND WHEN A VEHICLE HITS THE POLE. A FRANGIBLE COUPLING SUCH AS TRANSPO POLE-SAFE 5000 SERIES (WITH A FEMALE ANCHOR), THE MANITOBA SAFETY BASE WITH REACTION PLATE, OR APPROVED EQUAL SHALL BE USED. BREAKAWAY DEVICES SHALL BE INSTALLED ON ALL POLES EXCEPT THOSE LOCATED ON BARRIERS.
 - WIRE SHALL BE STRANDED COPPER XHHW-2, SIZE AS NOTED IN THE CONDUIT SUMMARIES.
 - FOUNDATIONS SHALL BE PRECAST 24 INCH DIAMETER BY 7' HEIGHT FOUNDATIONS.
 - LIGHT POLES THAT ARE REMOVED SHALL BE CAREFULLY REMOVED AND DELIVERED TO THE MTA SIGN SHOP AT MM 58.3 NB. WHEN REMOVING LIGHT POLES, REMOVE ALL EXISTING CONDUCTORS ASSOCIATED WITH THE LIGHT POLE. WHEN REMOVING HANDHOLES, REMOVE ALL CONDUCTORS IN CONDUITS ENTERING THE HANDHOLE BACK TO NEAREST HANDHOLE OR LIGHTING UNIT TO REMAIN AND ABANDON THE EMPTY CONDUIT IN PLACE. PRIOR TO CONDUCTOR REMOVAL, CONTRACTOR SHALL TEST THAT CIRCUITS THAT SERVICE EXISTING LOADS ARE NOT AFFECTED BY REMOVAL.
 - EXISTING INTERCHANGE LIGHTING IS INTENDED TO REMAIN OPERATIONAL UNTIL NEW LIGHTING IS ACTIVATED. IF NECESSARY TO REMOVE OR DEACTIVATE ANY LUMINAIRE BEFORE NEW LIGHTING IS ACTIVATED, WHEN APPROVED BY THE RESIDENT, TEMPORARY LIGHTING SHALL BE USED TO MAINTAIN ILLUMINATION AND WILL BE PAID UNDER ITEM NO. 652.39 PORTABLE LIGHT TOWER.
 - AT EACH POLE, CONTRACTOR SHALL PROVIDE 18" OF EXTRA WIRE SLACK TO REMOVE THE FUSE HOLDERS FROM THE HANDHOLE TO REPLACE FUSES.
 - PROVIDE LABELS ON ALL POLES INCLUDING RELOCATED LIGHT POLES.
 - EXISTING LIGHTING CONDUIT MAY CONTAIN ASBESTOS MATERIALS. REMOVAL OF THIS SHALL BE INCIDENTAL TO ITEM NO. 634.051. REMOVAL SHALL BE IN COMPLIANCE WITH ALL RELATED ENVIRONMENTAL REGULATIONS.
 - ALL REMOVED AND RESET LIGHT STANDARDS SHALL HAVE BREAKAWAY BASES.

ROADWAY LUMINAIRE SCHEDULE

LABEL	CATALOG NUMBER	DESCRIPTION	MINIMUM LUMENS	LIGHT LOSS FACTOR	MAXIMUM WATTS
A	SEE SPECIFICATIONS FOR CATALOG NUMBER.	LED COBRAHEAD, 4000K CCT, IES TYPE 3 DISTRIBUTION	17000	0.67	133

CONDUIT SUMMARY

WIRE SIZE: 3*2, 1*2-GND STRANDED COPPER XHHW-2, 120V 3-WIRE

STATION	POLE	BREAKAWAY	SOUTHBOUND LIGHTING CIRCUIT A		REMARKS
			DISTANCE	DESCRIPTION	
LOAD CENTER (GORHAM RD., EXISTING CIRCUIT 1A AND 1B (STA 174+20 RT 295 SB))	N/A	N/A	90		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 173+83 RT SB ON RAMP	142	EXISTING	60		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 173+84 LT SB ON RAMP - EXISTING HANDHOLE	EX HH	N/A	250		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 171+33 LT SB ON RAMP	141	EXISTING	250		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 168+83 LT SB ON RAMP	140	EXISTING	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 166+83 LT SB ON RAMP - RELOCATED EX LP 139	139	RELOC. EXIST	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 164+83 LT SB ON RAMP	138	YES	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 162+83 LT SB ON RAMP - RELOCATED EX LP 137	137	RELOC EXIST	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 160+83 LT SB ON RAMP - RELOCATED EX LP 136	136	RELOC EXIST	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 158+83 LT SB ON RAMP - RELOCATED EX LP 135	135	RELOC EXIST	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 156+83 LT SB ON RAMP	134	YES	200		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2154+80 LT MAINE TURNPIKE	133	YES	220		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2152+60 LT MAINE TURNPIKE	132	YES	196		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2150+64 LT MAINE TURNPIKE	131	YES	211		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2148+53 LT MAINE TURNPIKE	130	YES	211		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2146+42 LT MAINE TURNPIKE	129	YES	211		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2144+31 LT MAINE TURNPIKE	128	YES	211		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2142+20 LT MAINE TURNPIKE	127	YES	212		NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED
STA 2140+08 LT MAINE TURNPIKE	126	YES			NEW CONDUIT AND CONDUCTORS TYP UNLESS NOTED

	STANTEC CONSULTING SERVICES INC. 482 PAYNE ROAD SCARBOROUGH, ME 04074 TEL (207) 887-3448 FAX (207) 883-3376	THE GOLD STAR MEMORIAL HIGHWAY	SOUTHBOUND ON RAMP IMPROVEMENTS LIGHTING AND COMMUNICATION DETAILS 2
Designed by:		EXIT 44	
Scale:		CONTRACT: 2018.03	
CONSULTANT PROJECT MANAGER: GREG EDWARDS, PE		SHEET NUMBER: DET-5	
By Date By Date By Date TFD 1/22/18 Checked LEM 1/22/18 Drawn PJP 1/22/18 In Charge of CGAE 1/22/18		20 OF 64	

