STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLAN LEGEND

Town, County, State
Property Lines
R/W Lines-Existing
R/W Lines-Proposed
Culvert-Existing
Culvert Proposed
Curbing — Existing — Proposed
Type 1
Type 3
Type 5
Outline of Bodies of Water
Exposed Bedrock
Buildings
Trees — Conifer — Deciduous
Tree Line
Clearing Limit Line
Railroad

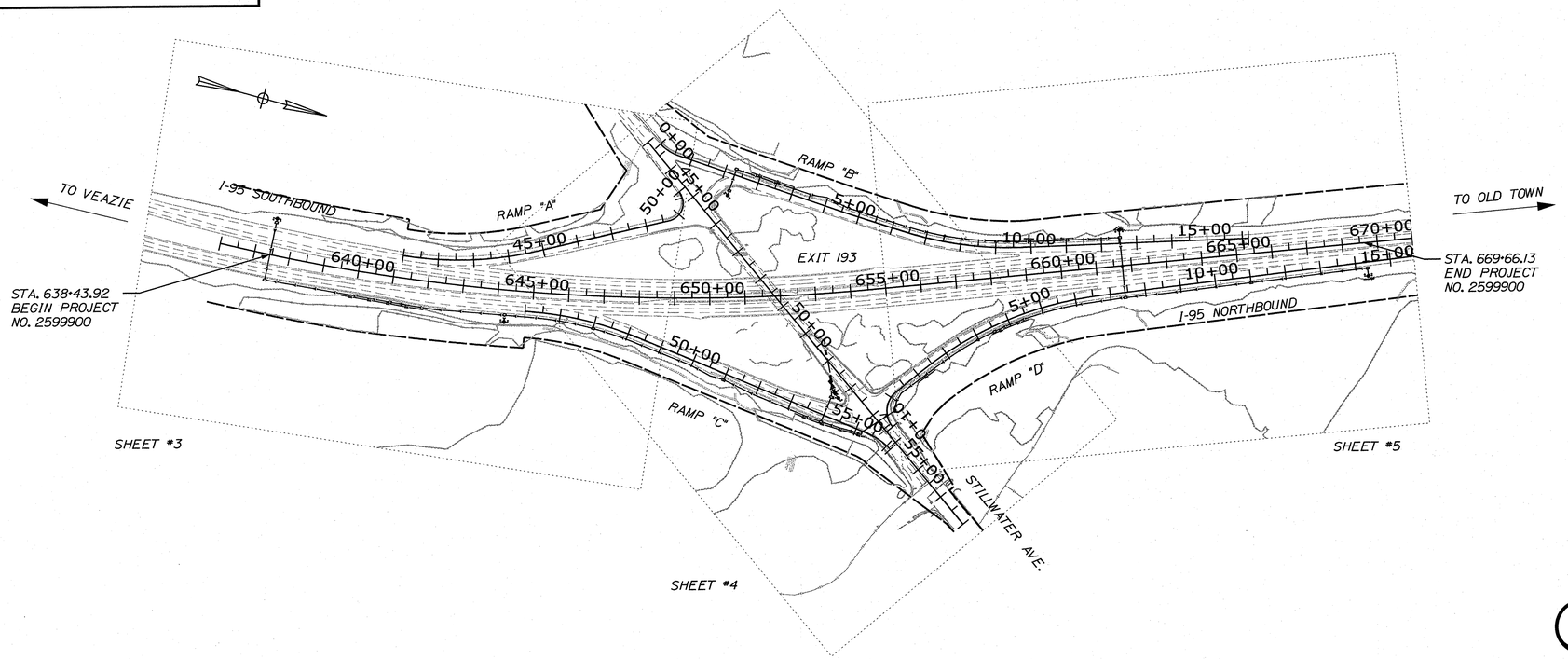
Catch Basins — Existing ■ Proposed
Manholes — Existing ● Proposed
Proposed Underdrain
Proposed Ditch
Existing Ditch
Utility Poles — Existing ♦ Proposed
Fire Hydrants — Existing ◉ Proposed
Existing Water Line
Existing San. Sewer
Existing San. Sewer Manhole
Guardrail-Existing
Guardrail-Proposed
Guardrail-Cable, Other
Centerline-Existing
Centerline-Proposed 10+00
Travelway-Existing
Travelway-Proposed

Boring HB-XXX-###
Pavement Core PC-#
Test Pit TP-XXX-###

Probe P-#.#X
#.# = Depth
X = W (Weathered Rock)
R (Refusal)
NR (No Refusal)

INDEX OF SHEETS

ORONO
PENOBSCOT COUNTY
I-95 AT EXIT 193
FEDERAL PROJECT NO.: 2599900
HIGHWAY LIGHTING



LAYOUT SCALE

200 0 200 400

Scale in Feet

Stantec

PROJECT LOCATION:	ORONO - INTERSTATE 95 AT EXIT 193
PROGRAM AREA:	MULTIMODAL
SCOPE OF WORK:	HIGHWAY LIGHTING - HIGH MAST POLES, LOWERING DEVICES, FOUNDATIONS, CONDUIT, LED LUMINAIRES, WIRING AND INCIDENTALS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE 12-11-23
COMMISSIONER:
CHIEF ENGINEER: DATE 12-11-2023

STATE OF MAINE JOSEPH R. HOWE NO. 10420 REGISTERED PROFESSIONAL ENGINEER

joseph R. Howe — SIGNATURE
10420 — P.E. NUMBER
12/5/2023 — DATE

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	JOSEPH HOWE
CONSULTANT	STANTEC
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

WIN 025999.00 FEDERAL PROJECT NO. 2599900

ORONO
I-95 EXIT 193
TITLE SHEET

SHEET NUMBER
1
OF 11

Filename: ...\00\multimode\MSTA_Title.dgn Username: johowe Division: HIGHWAY Date:12/5/2023

GENERAL NOTES:

1. SCOPE OF WORK - INSTALL HIGHWAY LIGHTING AS SHOWN ON THESE PLANS. FURNISH AND INSTALL NEW POWER SERVICE, METER, LIGHTING CONTROL CABINET, EXISTING SERVICE DISCONNECT, CONDUIT, FOUNDATIONS, HIGH MAST POLES, LOWERING DEVICES (IF REQUIRED), HIGH MAST LED LUMINAIRES, WIRING, VIDEO CAMERA SYSTEM, AND RELATED HARDWARE.

2. EXISTING INTERCHANGE LIGHTING SHALL REMAIN ACTIVE UNTIL THE NEW LIGHTING SYSTEM IS APPROVED BY MAINEDOT TO BE ACTIVATED.

3. EXISTING LIGHT POLES, LUMINAIRES, CONTROL CABINET, JUNCTION BOXES, AND ELECTRICAL SERVICE SHALL BE REMOVED AFTER ACTIVATION OF THE NEW SYSTEM. PAYMENT FOR REMOVAL AND DISPOSAL OF POLES, LUMINAIRES, CONTROL CABINET, JUNCTION BOXES, AND ELECTRICAL SERVICE WILL BE INCIDENTAL TO ITEM 634.160. THE DELIVERY OF POLES TO MAINEDOT IS INCIDENTAL TO ITEM 634.160. EXISTING FOUNDATIONS SHALL BE REMOVED AS DIRECTED. PAYMENT FOR REMOVAL OF FOUNDATIONS WILL BE MADE UNDER ITEM 626.36. ABANDON EXISTING CONDUIT.

4. EXISTING LIGHT POLES SHALL BE DELIVERED TO THE MAINEDOT PAINT WAREHOUSE AT 170 LEIGHTON ROAD, AUGUSTA. THE DELIVERY OF POLES TO MAINEDOT IS INCIDENTAL TO ITEM 634.160. ALL OTHER EXISTING LIGHTING ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE RESIDENT AT LEAST TWO BUSINESS DAYS PRIOR TO DELIVERING THE EXISTING LIGHT POLES TO MAINEDOT FOR COORDINATION WITH THE PAINT WAREHOUSE.

5. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO ENSURE AWARENESS OF SITE CONDITIONS THAT COULD AFFECT THE BID.

6. INSTALL NEW 120V/240V SINGLE PHASE SERVICE.

7. THE WIRE IN CONDUITS SHALL BE CONTINUOUS WITH NO SPLICES BETWEEN POLES. JUNCTION BOXES SHOWN ON THE PLANS ARE SHOWN IN APPROXIMATE LOCATIONS AND ARE INTENDED FOR USE ONLY AS PULL BOXES FOR WIRE PULLING ACCESS. ACTUAL NUMBER AND LOCATIONS MAY VARY AND SHALL BE SUBJECT TO APPROVAL OF THE RESIDENT PRIOR TO INSTALLATION.

8. CONDUIT UNDER PAVEMENT SHALL BE HYDRAULICALLY JACKED OR DIRECTIONAL BORED TO AT LEAST TEN FEET BEYOND THE EDGE OF PAVEMENT. CONDUIT INSTALLED UNDER PAVEMENT WILL BE PAID UNDER ITEM 626.251 FOR THE PAVEMENT WIDTH PLUS 20 FEET. NO TRENCHING ACROSS PAVED ROADWAY LANES OR SHOULDERS WILL BE ALLOWED. MINIMUM BURIAL DEPTH FOR ALL CONDUIT SHALL BE 36 INCHES.

9. THE CONTRACTOR SHALL FIELD VERIFY POLE LOCATIONS TO AVOID NATURAL AND BUILT SITE FEATURES THAT WOULD CONFLICT WITH PROPER INSTALLATION OF POLE FOUNDATIONS.

10. NO PROPOSED ALTERNATIVE LUMINAIRES WILL BE CONSIDERED UNLESS THE MANUFACTURER AND MODELS ARE APPROVED IN ADVANCE BY MAINEDOT'S CHIEF ELECTRICIAN. PRE-APPROVED MANUFACTURERS AND LUMINAIRES FOR THIS PROJECT INCLUDE:

    HOLOPHANE HIGH MAST HMLED4
    CONTACT: MARK FOWLER
    ACUITY BRANDS LIGHTING, INC.
    (207 582-5106
    MARK.FOWLER@ACUITYBRANDS.COM

    MUSCO TLC-LED-400
    CONTACT: ZACH SCHROCK
    MUSCO LIGHTING, LLC
    (603) 703-9879
    ZACH.SCHROCK@MUSCO.COM

    MUSCO TLC-LED-400 FIXTURES, IF USED SHALL HAVE DRIVERS FACTORY ADJUSTED TO LOWER WATTAGE TO CLOSELY APPROXIMATE THE REQUIRED ILLUMINATION LEVELS AND DISTRIBUTION UNIFORMITY PER THE FOLLOWING DESIGN CRITERA: OFF-RAMPS ILLUMINATED TO MINIMUM 0.6FC AVERAGE, WITH 4:1 UNIFORMITY PER AASHTO GL-7 AND INTERSECTIONS AT STILLWATER TO MINIMUM 0.8FC AVERAGE, WITH 3:1 UNIFORMITY PER IES RP-8-22 WITH 0.764 LLF.

11. DESIGN OF FOUNDATIONS ARE BASED ON ESTIMATED LOADING CONDITIONS AND ARE SUBJECT TO CHANGE BASED ON THE DESIGN OF THE ABOVE GROUND COMPONENTS AND THE ACTUAL LOADING CONDITIONS AT THE TOP OF EACH FOUNDATION SUBMITTED BY THE CONTRACTOR IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034. ANY INCREASE IN FOUNDATION SIZE BASED ON SUBMITTED LOADING CONDITIONS SHALL BE PAID FOR AT THE UNIT PRICE BID BY CONTRACTOR. ANY REDUCTION IN FOUNDATION SIZE SHALL BE TO THE BENEFIT OF THE DEPARTMENT AT THE UNIT PRICE BY THE CONTRACTOR.

12. LIGHT POLE THICKNESSES SHALL MEET THE MINIMUM THICKNESS PER THE MAINEDOT STANDARD SPECIFICATIONS.

13. BUSHINGS SHALL BE INSTALLED ON ALL CONDUIT TERMINATORS.

14. PULL WIRE SHALL BE INSTALLED IN ALL CONDUIT.

15. ALL CONDUIT THREADS SHALL HAVE A THREAD SEALANT, COLOR - RED.

16. PAYMENT UNDER ITEM 626.21, ITEM 626.251, AND ITEM 626.22 WILL INCLUDE BUSHINGS, FITTINGS, PULL WIRE, AND OTHER NECESSARY HARDWARE RELATED TO THE CONDUIT.

17. PAYMENT FOR ITEM 634.160 - HIGHWAY LIGHTING WILL INCLUDE; ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO PROVIDE A FULLY FUNCTIONING HIGHWAY LIGHTING SYSTEM EXCEPT THOSE ITEMS TO BE PAID UNDER OTHER RELATED BID ITEMS IN THE CONTRACT.

18. METAL FRAMES AND COVERS OF JUNCTION BOXES SHALL BE GROUNDED. PAYMENT FOR GROUNDING WILL BE INCIDENTAL TO ITEM 626.11.

19. ALL EXPOSED RIGID CONDUIT FITTINGS AND HARDWARE SHALL BE GALVANIZED, EXCEPT NON-CONDUCTIVE BUSHINGS FOR CONNECTION OF RIGID METAL CONDUIT TO ALUMINUM CABINETS.

20. UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL FURNISH TO MAINEDOT A SET OF AS-BUILT PLANS FOR FUTURE REFERENCE AND SYSTEM MAINTENANCE.

21. LIGHTING FIXTURES SHALL BE IES FULL CUT-OFF AND BUG RATING WITH ZERO UPLIGHT (UO) LIGHT EMITTING DIODE (LED) LUMINAIRES. LED MODULES SHALL BE IP66 RATED.

22. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF WORK. BASIC DESIGN CONCEPTS INDICATED ARE TO BE EITHER FOLLOWED OR BETTERED. WORK IS INTENDED TO INCLUDE ITEMS NECESSARY FOR PROPER OPERATION AND COMPLETION OF THE LIGHTING SYSTEM. FIELD VERIFY ALL LOCATIONS, ELEVATIONS, AND DIMENSIONS.

23. THE NEW POWER SERVICE, CONTROL CABINETS, AND METER DISCONNECTS AND ENCLOSURES SHALL BE PAID FOR UNDER ITEM 634.160 - HIGHWAY LIGHTING. THE SERVICE CABINET, DISCONNECT ENCLOSURE AND OTHER ENCLOSURES FOR ELECTRICAL COMPONENTS SHALL BE MARKED WITH ARC FLASH HAZARD LABELS, INDICATION TYPE 1, 2, 3, OR 4 AND THE APPROPRIATE PPE REQUIRED.

24. ALL LIGHT BASE FOUNDATIONS SHALL HAVE A GROUND ROD, LOCATED IN OR IMMEDIATELY ADJACENT TO THE FOUNDATION, THAT IS BONDED TO THE POLE GROUNDING CONDUCTOR. PAYMENT FOR THE GROUND ROD SHALL BE INCLUDED IN ITEM 634.160 - HIGHWAY LIGHTING.

25. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH VERSANT POWER AND MAINEDOT FOR LOCATION OF NEW ELECTRICAL SERVICE AND MAKE ARRANGEMENTS FOR PROVIDING NEW 120/240V ELECTRICAL SERVICE "ES".

26. OPERATION OF LIGHTING TO BE BY PHOTOCELL LOCATED AT ELECTRICAL SERVICE CONTROL CABINET, AIMED NORTH.

27. HIGH MAST POLES SHALL BE GALVANIZED STEEL AND HAVE A MINUMUM OF SIX ANCHOR BOLTS.

28. SNUG-TIGHT CONDITION OF ANCHOR BOLTS SHALL BE DEFINED AS BETWEEN 20 AND 30 PERCENT OF THE VERIFICATION TORQUE VALUE DETERMINED BY THE FORMULA IN FHWA PUBLICATION NHI 05-036. ADDITIONAL TIGHTENING BEYOND SNUG-TIGHT CONDITION SHALL BE DONE IN ACCORDANCE WITH SECTION 643.05 OF THE STANDARD SPECIFICATIONS.

29. NEW POWER SERVICE CONDUIT REQUIRED BETWEEN THE POWER SOURCE AND THE METER SHALL BE RIGID METAL CONDUIT.

30. SECONDARY CIRCUIT WIRING SHALL BE STRANDED COPPER XHHW-2.

31. A MAXIMUM OF 270° IN TOTAL BENDS WILL BE PERMITTED IN A SINGLE RUN OF CONDUIT.

32. LIGHTS SHALL BE FUSED AT BASE WITH Y-TYPE FUSE KIT FYC STYLE AND 10 AMP FUSE (OR SIZED PER MANUFACTURER'S RECOMMENDATIONS) FOR BREAKER.

33. CIRCUIT CONDUCTORS INCLUDING NEUTRAL CONDUCTOR SHALL BE CLEARLY IDENTIFIED BY CORROSION RESISTANT TAGS INDICATING CIRCUIT NUMBER AND PANEL SOURCES AT EVERY POLE BASE AND HANDHOLE.

34. UTILIZE APPROVED DUAL-RATED PARALLEL TAP CONNECTOR WITH INSULATED COVER FOR TAPS AT POLE BASE.

35. UTILIZE APPROVED DUAL-RATED PARALLEL TAP WATERTIGHT CONNECTOR, SUITABLE FOR DIRECT BURIAL IN JUNCTION BOXES AND POLE BASES.

36. THE LUMINAIRES, INCLUDING LEDS, DRIVERS, AND ASSOCIATED COMPONENTS SHALL BE WARRANTIED FOR TEN YEARS FROM THE DATE OF INSTALLATION. ALL COSTS ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT DURING THIS PERIOD SHALL BECOME THE RESPONSIBILITY OF THE EQUIPMENT MANUFACTURER. SUCH COSTS MAY INCLUDE BUT ARE NOT LIMITED TO LABOR COSTS, EQUIPMENT REPLACEMENT, CRANE OR LIFT EQUIPMENT RENTAL, REMOVAL AND REINSTALLATION OF GUARDRAIL IF REQUIRED FOR ACCESS, SLOPE REPAIRS IF DISTURBED FOR LIGHTING MAINTENANCE ACCESS, AND TRAFFIC CONTROL.

37. EACH HIGH MAST LIGHT STANDARD SHALL HAVE A LUMINAIRE LOWERING DEVICE SYSTEM FURNISHED AND INSTALLED, HOLOPHANE HMS TYPE 05 LOWERING DEVICE SYSTEM OR APPROVED EQUAL COMPATIBLE WITH THE APPROVED LUMINAIRES. SYSTEM SHALL INCLUDE A PORTABLE ELECTRIC POWER UNIT (ONE FOR ALL HIGH MAST POLES) WITH REMOTE CONTROL FOR OPERATION OF THE LOWERING SYSTEM. WINCH ASSEMBLY SHALL BE INTERNAL TO POLE, UNLESS OTHERWISE APPROVED BY THE MAINEDOT CHIEF ELECTRICIAN.

38. DRIVERS, FUSES AND OTHER ELECTRICAL COMPONENTS REQUIRED FOR LUMINAIRES, IF NOT ATTACHED TO A LOWERING DEVICE FOR MAINTENANCE ACCESS, SHALL BE CONTAINED IN A NEMA 3R ENCLOSURE ATTACHED TO THE HIGH MAST POLE AT A HEIGHT NOT TO EXCEED TEN FEET FROM FINISHED GRADE OF THE SLOPE AT THE BASE TO THE BOTTOM OF THE ENCLOSURE.

39. PAYMENT UNDER ITEM 634.207 - HIGH MAST LIGHT STANDARD, SHALL INCLUDE THE LUMINAIRE LOWERING DEVICE SYSTEM IF A LOWERING DEVICE SYSTEM IS REQUIRED.

40. NEW BURIED CONDUIT SHALL BE 3" MINIMUUM, PVC SCHEDULE 40, EXCEPT CONDUIT UNDER PAVEMENT SHALL BE SCHEDULE 80 OR GREATER RATING.

41. ALL FIXTURES SHALL BE GASKETED AND HAVE SURGE PROTECTION AND A DOUBLE FUSE KIT. ALL FIXTURES SHALL BE AS SHOWN ON THE LIGHTING SCHEDULE.

42. LOCATION OF THE WOOD POLES SHALL BE DETERMINED IN THE FIELD SUBJECT TO APPROVAL OF THE RESIDENT.

43. FURNISH AND INSTALL VIDEO CAMERA SYSTEM INCLUDING AXIS Q6074-E PTZ NETWORK CAMERAS (TWO TOTAL) WITH 60W HEATER ON THE NEW WOOD POLE FOR REMOTE MONITORING OF I-95 NORTHBOUND AND SOUTHBOUND LANES, NORTH AND SOUTH OF STILLWATER AVENUE.

44. ATTACH LOCKABLE NEMA 4X ENCLOSURE TO THE NEW WOOD POLE AT A NOMINAL 4 FOOT MOUNTING HEIGHT AND INSTALL CABLE MODEM, POWER OVER ETHERNET (POE) INJECTOR AND SWITCH, BREAKER AND ALL OTHER NECESSARY INCIDENTAL COMPONENTS. CAMERAS AND ALL OTHER ELECTRONIC COMPONENTS SHALL BE SURGE PROTECTED.

45. INSTALL METALLIC CONDUIT AT THE RISER ON THE POLE FOR PROTECTION OF CAMERA, COMMUNICATIONS, AND POWER CONDUCTORS.

46. INSTALL COAXIAL CABLE COMMUNICATIONS DROP FROM POWER SOURCE POLE CABINET. INSTALL COAXIAL CABLE FOR TRANSMISSION OF VIDEO COMMUNICATIONS FROM CAMERAS.

47. COAXIAL CABLE SHALL BE RG11/U QUAD-SHIELD CABLE WITH NOMINAL IMPEDANCE OF 75 OHMS. CABLE SHALL BE RATED FOR OUTDOOR INSTALLATION. CABLE INSTALLATION SHALL INCLUDE ETHERNET-OVER-COAX ADAPTERS AS NEEDED TO SUPPORT ACCEPTABLE TRANSMISSION OF DATA TO AND FROM CAMERAS.

48. COMMUNICATIONS CABLE FROM NEMA 4X ENCLOSURE ON THE NEW WOOD POLE TO CAMERAS SHALL BE SHIELDED CAT6 CABLE, OUTSIDE RATED.

49. INSTALL CAMERAS AT AN APPROVED HEIGHT TO OPTIMIZE VISIBILITY OF I-95 NORTHBOUND AND SOUTHBOUND TRAFFIC WITHOUT OBSTRUCTION BY TRAFFIC ON STILLWATER AVENUE OR BY AERIAL UTILITY CONDUCTORS CROSSING I-95.

50. CLEAR OR TRIM TREES AND BRUSH AS DIRECTED ALONG THE SIDE OF I-95 NORTHBOUND FOR VISIBILTY OF I-95 TRAFFIC AND NORTHBOUND ON AND OFF RAMP TRAFFIC. PAYMENT FOR CLEARING AND TRIMMING SHALL BE INCIDENTAL TO ITEM 634.160 - HIGHWAY LIGHTING.

51. NATURAL RESOURCES WHICH MEET THE DEFINITION OF WATERS OF THE UNITED STATES ARE SHOWN ON THE PLANS AS PEM/PSS/PFO LINE STYLES. PERMANENT FILL OR TEMPORARY WORK WITHIN THESE AREAS IS NOT PERMITTED AND SHOULD BE AVOIDED. ANY WORK IN THOSE AREAS DETERMINED TO BE REQUIRED BY THE CONTRACTOR REQUIRES A PERMIT FROM THE U.S. ARMY CORPS OF ENGINEERS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE.

52. EXISTING GUARDRAIL WILL BE ALLOWED TO BE TEMPORARILY REMOVED FOR ACCESS FOR INSTALLATION OF POLES AND FOUNDATIONS BEHIND GUARDRAIL. APPROPRIATE TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE USED AT AREAS OF GUARDRAIL REMOVAL. LENGTH OF GUARDRAIL REMOVED SHALL BE THE MINIMUM NECESSARY FOR ACCESS. GUARDRAIL SHALL BE RESET AS SOON AS PRACTICABLE. PAYMENT FOR GUARDRAIL REMOVAL AND RESETTING WILL BE MADE UNDER ITEM 606.366.

53. CURING BOXES AND ALL REQUIRED CONCRETE LABOR, MATERIALS, AND EQUIPMENT WILL BE CONSIDERED INCIDENTAL TO PAYMENT UNDER SECTION 626 FOUNDATION ITEMS.

54. IF STRUCTURAL ROCK IS ENCOUNTERED DURING INSTALLATION OF FOUNDATIONS, PAYMENT FOR EXCAVATION AND DOWELING REINFORCING INTO ROCK SHALL BE CONSIDERED INCIDENTAL TO FOUNDATION ITEMS.

55. STATIONING SHOWN IS APPROXIMATE AND MAY BE ADJUSTED BY THE RESIDENT IN THE FIELD IN CONSULTATION WITH THE ENGINEER. LIGHTING PLANS WERE DEVELOPED FROM A COMBINATION OF AERIAL IMAGING, AS-BUILT PLANS, AND LIMITED SURVEY.

56. PLANS ARE DEVELOPED USING THE 1983 MAINE STATE COORDINATE SYSTEM EAST ZONE.

57. WHEN INSTALLING HIGH MAST LUMINAIRES, CONTRACTOR SHALL OPEN THE LUMINAIRE, UNFASTEN, AND ROTATE THE OPTIC ASSEMBLY TO PROVIDE ALIGNMENT OF ASYMMETRIC DISTRIBUTIONS TO THE ROADWAY. CONTRACTOR MUST POINT THE ARROW OF THE "STREET SIDE", AS LABELED ON THE OPTIC ASSEMBLY DIRECTLY TOWARD THE HIGHWAY.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

25999.00

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE · JOSEPH R. HOWE · NO. 10420 · REGISTERED PROFESSIONAL ENGINEER

Joseph R. Howe — SIGNATURE

10420 — P.E. NUMBER

12/5/2023 — DATE

PROJ. MANAGER	A. GONNEAU	BY	DATE
DESIGN-DETAILED	DPH	AFS	2/23
CHECKED-REVIEWED	MLC	JRH	2/23
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

ORONO
I-95 EXIT 193

GENERAL NOTES

SHEET NUMBER

2

OF 11

STREET LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	DESCRIPTION OR SIZE	MOUNTING	COLOR	LIGHT SOURCE						VOLTAGE	TOTAL WATTS
						TYPE	LUMENS	CCT(K)	CRI	EPA	BUG		
A	HOLOPHANE	HMLED4-P3-40K-MVOLT-HGR-NAS-AO-DFD	HIGH MAST - NAS	CENTERING RING	GRAY	LED	62728	4000	70	3.11	X-O-X	240	429
B	HOLOPHANE	HMLED4-P3-40K-MVOLT-HGR-MAW-AO-DFD-SH / HMLED4DI20	HIGH MAST - MAW 120HHS	CENTERING RING	GRAY	LED	60613	4000	70	3.11	X-O-X	240	429
C	HOLOPHANE	HMLED4-P3-40K-MVOLT-HGR-NAS-AO-DFD-SH / HMLED4DI80	HIGH MAST - NAS 180HHS	CENTERING RING	GRAY	LED	53187	4000	70	3.11	X-O-X	240	429
RING	HOLOPHANE	TOP LATCHING, CENTER ARM WITH INTERNAL WINCH											
80 POLE		ROUND TAPERED STEEL, GALVANIZED, HANDHOLE, CIRCUIT BREAKER, S.S. 3/16" DIA. HOISTING CABLES & S.S. 1/4" DIA. WINCH CABLE, LIGHTNING ARRESTOR IN POLE BASE, AND LIGHTNING ROD	80 FT ROUND TAPERED POLE	CONCRETE	GALV								
110 POLE		ROUND TAPERED STEEL, GALVANIZED, HANDHOLE, CIRCUIT BREAKER, S.S. 3/16" DIA. HOISTING CABLES & S.S. 1/4" DIA. WINCH CABLE, LIGHTNING ARRESTOR IN POLE BASE, AND LIGHTNING ROD	110 FT ROUND TAPERED POLE	CONCRETE	GALV								

NOTES:

1. A SUBSTITUTE PRODUCT SHALL BE CONSIDERED EQUAL TO THE PRODUCT IDENTIFIED IF:
   (1) IT IS AT LEAST EQUAL IN QUALITY, DURABILITY, APPEARANCE, STRENGTH AND DESIGN;
   (2) IT WILL PERFORM AT LEAST EQUALLY THE FUNCTION IMPOSED BY THE GENERAL DESIGN FOR THE WORK BEING CONTRACTED FOR OR THE MATERIAL BEING PURCHASED; AND
   (3) IT CONFORMS SUBSTANTIALLY, TO THE DETAILED REQUIREMENTS FOR THE IDENTIFIED PRODUCT.

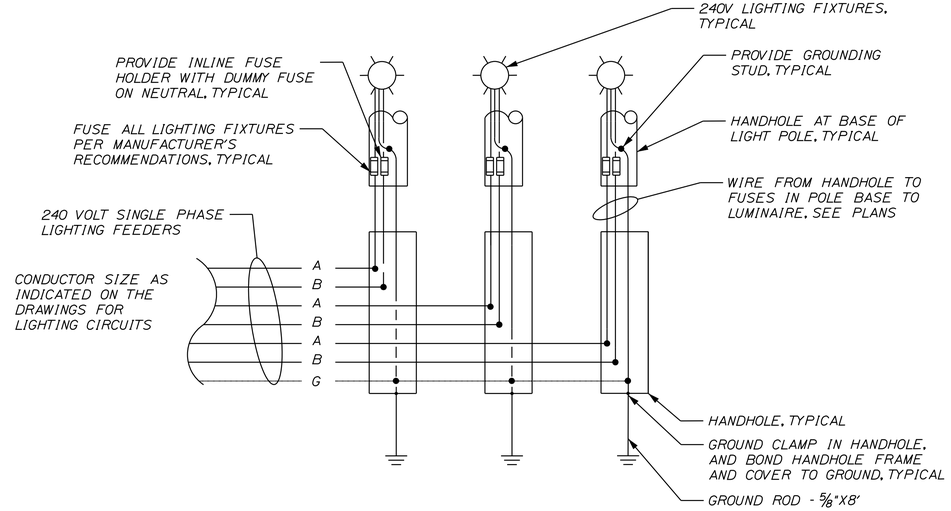
CONDUIT & CONDUCTOR SCHEDULE

KEY	CONDUIT SIZE	FOR FIXTURES	FOR SERVICE	FOR GROUND	FOR COMMUNICATION
A	3"	2#8		1#8G	
AC	3"	2#8,2#4		1#4G	
B	3"	2#6		1#6G	
BC	3"	2#6,2#4		1#4G	
B2C	3"	4#6,2#4		1#4G	
C	3"	2#4		1#4G	
D	3"				RG-11
E	3"		3#2	1#8G	

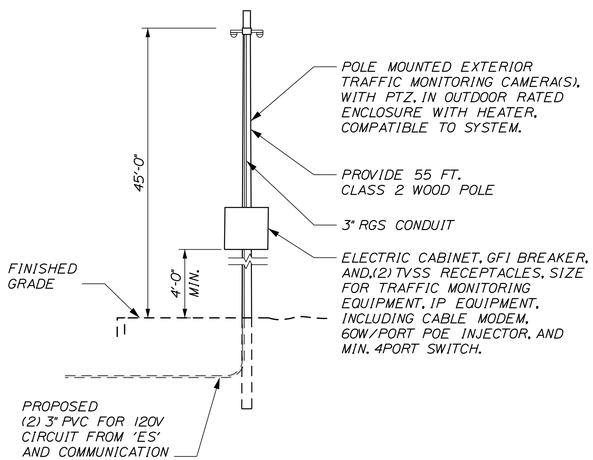
PANEL - ES

100A, 120/240V, 1 PHASE, 3 WIRE, 10 KAIC RATED PANEL

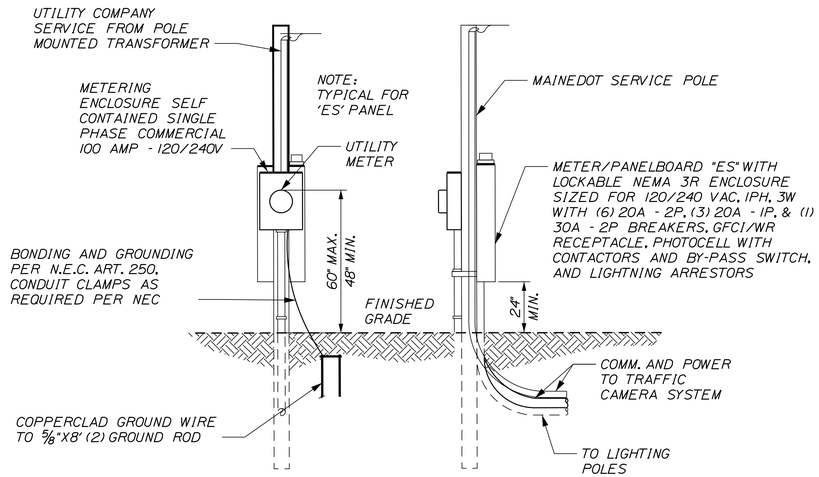
CKT #	BREAKER	POLE	DESCRIPTION	LOAD
1,3	20A	2	LTS - HM - 1	860
5,7	20A	2	LTS - HM - 2	860
9,11	20A	2	LTS - HM - 4	860
2,4	20A	2	LTS - HM - 3	860
6,8	20A	2	LTS - HM - 5	860
10,12	20A	2	LTS - HM - 6	860
14,16	30A	2	SPD	
13	20A	1	LTS & RECP	244
15	20A	1	CONTROLS	500
17	20A	1	VIDEO CAMERA SYSTEM	500
			TOTAL CONNECTED LOAD	6404
			AMPERES	27
			MAIN BREAKER	60A, 2P



240 VOLT - 1PH CIRCUITING ONE LINE DIAGRAM



VIDEO CAMERA SYSTEM POLE



FRONT VIEW SIDE VIEW

SERVICE PANEL AND METER "ES" DETAIL

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

25999.00

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE JOSEPH R. HOWE NO. 10420 LICENSED PROFESSIONAL ENGINEER

Joseph R. Howe

P.E. NUMBER	10420	
SIGNATURE		
DATE	12/5/2023	

PROJ. MANAGER	A. CORNEJO	
DESIGN-DETAILED	DPH	AFS 2/23
CHECKED-REVIEWED	MLC	JRH 2/23
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

ORONO
I-95 EXIT 193

LIGHTING DETAILS

SHEET NUMBER
3
OF 11

Filename: ...\multimode\MSTA_Typicals.dgn Division: HIGHWAY Username: johowe Date:12/5/2023

LEGEND:

- AXIS PTZ CAMERA (2)
- CONTROL CABINET AND SERVICE
- OHU — OVERHEAD UTILITY - POWER AND COMMUNICATION
- E — PROPOSED CONDUIT
- JUNCTION BOX
- C — DENOTES, CONDUIT AND WIRE SIZES
- HIGH MAST POLE, LUMINAIRE AND FOUNDATION, HEIGHT AS NOTED LUMINAIRE TYPE AND NUMBER AS NOTED.
- DIRECTION OF LUMINAIRE. SEE GENERAL NOTE 60 (ADJUST IN FIELD TO MATCH PLANS)

6
STA 638+43.92, 103.52' LT
N: 449217.9981
E: 934710.5952
110' HIGH MAST POLE
LUMINAIRE A(2)
ES-10.12

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

STATION 42+00.00 RAMP "A" =
STATION 642+19.44, 62.51' LT I-95 MEDIAN

I-95 SOUTHBOUND

I-95 NORTHBOUND

℄ I-95 MEDIAN

℄ RAMP "A"

STATION 46+00.00 RAMP "C" =
STATION 645+80.23, 55.62' RT I-95 MEDIAN

℄ RAMP "C"

HORIZONTAL DIRECTIONAL DRILLING UNDER ROADWAY

JB-18 JB-17 JB-16 JB-15 JB-19

5
STA 645+23.37, 90.32' RT
N: 449914.3885
E: 934822.5726
110' HIGH MAST POLE
LUMINAIRE C(2)
ES-6.8

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

NOTE:

1. PLANS ARE DEVELOPED USING THE 1983 MAINE STATE COORDINATE SYSTEM EAST ZONE.
2. DO NOT IMPACT WETLANDS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

25999.00

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE · JOSEPH R. HOWE · NO. 10420 · REGISTERED PROFESSIONAL ENGINEER

Joseph R. Howe — SIGNATURE

10420 — P.E. NUMBER

12/5/2023 — DATE

	BY	DATE
A. GORNEAU		
DESIGN-DETAILED	DPH	2/23
CHECKED-REVIEWED	MLC	2/23
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		
PROJ. MANAGER		

ORONO
I-95 EXIT 193

PLANS

SHEET NUMBER

4

OF 11

LEGEND:

- AXIS PTZ CAMERA (2)
- CONTROL CABINET AND SERVICE
- OHU — OVERHEAD UTILITY - POWER AND COMMUNICATION
- E — PROPOSED CONDUIT
- JUNCTION BOX
- C — DENOTES CONDUIT AND WIRE SIZES
- HIGH MAST POLE, LUMINAIRE AND FOUNDATION. HEIGHT AS NOTED LUMINAIRE TYPE AND NUMBER AS NOTED.
- DIRECTION OF LUMINAIRE, SEE GENERAL NOTE 60 (ADJUST IN FIELD TO MATCH PLANS)

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

STATION 0+00 RAMP "B" = STATION 44+26.59, 24.00' LT STILLWATER AVENUE

TBM = TOP OF SOUTHEASTERLY BOLT ON I-95 SOUTH SIGN BASE ELEV. = 159.29' (NAVD 88)

HORIZONTAL DIRECTIONAL DRILLING UNDER ROADWAY

4
STA 46+59.29, 78.24' LT
N: 450433.0086
E: 934310.6954
80' HIGH MAST POLE
LUMINAIRE B(2)
ES-9,11

STATION 50+69.05 RAMP "A" = STATION 45+64.10, 22.00' RT STILLWATER AVENUE

STATION 49+63.28 STILLWATER AVENUE = STATION 652+84.46 I-95 MEDIAN

STA. 52+00.00, 28.31', RT
INSTALL NEW 40' WOOD SERVICE POLE AND GUY WIRE. MOUNT STREET LIGHTING CABINET "ES" TO POLE

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

HORIZONTAL DIRECTIONAL DRILLING UNDER THE ROADWAY

EXISTING TRANSFORMER

PROPOSED UTILITY POLE MOUNTED TRANSFORMER FOR ELECTRICAL SERVICE 'ES' AND COMMUNICATIONS CONNECTION (BY OTHERS)

STA. 52+82.44, 39.60', RT
INSTALL NEW 55' WOOD POLE AND MOUNT AXIS PTZ CAMERA, CONTROLLER, AND SERVICE LINE FOR LIGHTING. MOUNT COMMUNICATION CABINET TO POLE.

STATION 0+10.43 RAMP "D" = STATION 54+60.85, 22.00' LT STILLWATER AVENUE

STATION 57+13.86 RAMP "C" = STATION 55+05.60, 24.00' RT STILLWATER AVENUE

REMOVE EXISTING LUMINAIRE ON TRAFFIC MAST ARM POLE. PROVIDE CAP AT TOP OF POST.

REMOVE EXISTING LIGHTING SERVICE AND SERVICE POLE

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

3
STA 53+00.00, 45.00', RT
N: 450885.6512
E: 934780.6060
80' HIGH MAST POLE
LUMINAIRE B(2)
ES-2,4

HORIZONTAL DIRECTIONAL DRILLING UNDER THE ROADWAY

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

NOTE:

1. PLANS ARE DEVELOPED USING THE 1983 MAINE STATE COORDINATE SYSTEM EAST ZONE.
2. DO NOT IMPACT WETLANDS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

25999.00

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE — JOSEPH R. HOWE NO. 10420 — LICENSED PROFESSIONAL ENGINEER

Joseph R. Howe — SIGNATURE

10420 — P.E. NUMBER

12/5/2023 — DATE

PROJ. MANAGER	A. GORNEAU		
DESIGN-DETAILED	DPH	AFS	2/23
CHECKED-REVIEWED	MJC	JRH	2/23
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

ORONO
I-95 EXIT 193

PLANS

SHEET NUMBER

5

OF 11

Filename: ...\00\multimode\MSTA_Plan3.dgn Username: johowe Division: HIGHWAY Date:12/5/2023

LEGEND:

- AXIS PTZ CAMERA (2)
- CONTROL CABINET AND SERVICE
- OHU — OVERHEAD UTILITY - POWER AND COMMUNICATION
- E — PROPOSED CONDUIT
- JUNCTION BOX
- C — DENOTES. CONDUIT AND WIRE SIZES
- HIGH MAST POLE. LUMINAIRE AND FOUNDATION. HEIGHT AS NOTED LUMINAIRE TYPE AND NUMBER AS NOTED.
- DIRECTION OF LUMINAIRE. SEE GENERAL NOTE 60 (ADJUST IN FIELD TO MATCH PLANS)

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

2
STA 13+51.15, 37.97' LT
N: 451529.2662
E: 934113.2325
110' HIGH MAST POLE
LUMINAIRE A(2)
ES-5.7

HORIZONTAL DIRECTIONAL DRILLING UNDER ROADWAY

STATION 17+17.22 RAMP "B" =
STATION 666+37.49, 44.00' LT I-95 MEDIAN

RAMP "B" 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

JB-10 JB-9

I-95 SOUTHBOUND

656+00 657+00 658+00 659+00 660+00 661+00 662+00 663+00 664+00 665+00 666+00 667+00 668+00 669+00 670+00

℄ I-95 MEDIAN

I-95 NORTHBOUND

RAMP "D" 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

JB-6 JB-7 JB-8

℄ RAMP "D"

REMOVE EXISTING LIGHT STANDARD, LUMINAIRE, AND FOUNDATION

RAMP "D" 2+00 3+00 4+00 5+00

JB-5

APPROX. EXISTING ELECTRICAL CONDUIT LOCATION

STA 15+32.89, 38.73' RT
N: 452245.8599
E: 934052.4537
110' HIGH MAST POLE
LUMINAIRE A(2)
ES-1.3

JB-4

STA 52+82.44, 39.60' RT
INSTALL NEW 55' WOOD POLE
AXIS PTZ CAMERA, CONTROLLER
SERVICE LINE FOR LIGHTING
COMMUNICATION CABINET TO

HORIZONTAL DIRECTIONAL DRILL UNDER THE ROADWAY

NOTE:

1. PLANS ARE DEVELOPED USING THE 1983 MAINE STATE COORDINATE SYSTEM EAST ZONE.
2. DO NOT IMPACT WETLANDS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

25999.00

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE — JOSEPH R. HOWE NO. 10420 — LICENSED PROFESSIONAL ENGINEER

Joseph R. Howe

SIGNATURE	
P.E. NUMBER	10420
DATE	12/5/2023

BY	DATE	A. GORNEAU
AFS	2/23	PROJ. MANAGER
JRH	2/23	DESIGN-DETAILED
		CHECKED-REVIEWED
		DESIGN2-DETAILED2
		DESIGN3-DETAILED3
		REVISIONS 1
		REVISIONS 2
		REVISIONS 3
		REVISIONS 4
		FIELD CHANGES

DPH
MJC

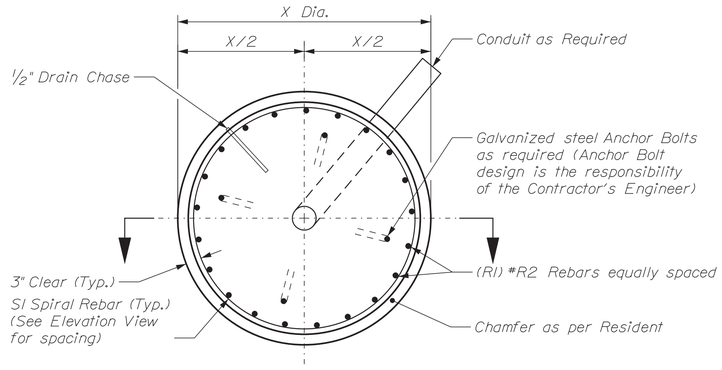
ORONO
I-95 EXIT 193

PLANS

SHEET NUMBER

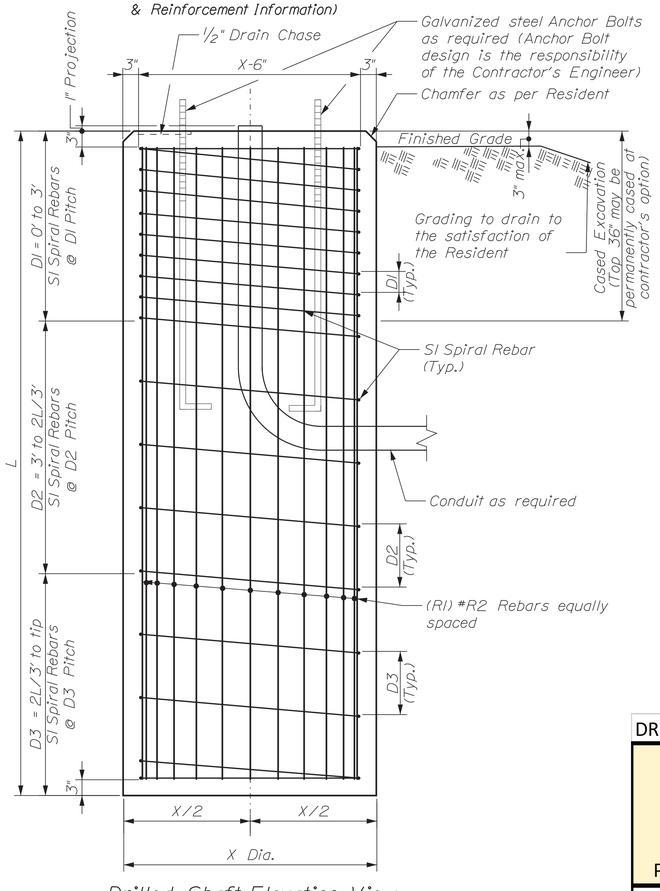
6

OF 11



Drilled Shaft Plan View

Not to Scale (See Table above for Drilled Shaft Dimensions & Reinforcement Information)



Drilled Shaft Elevation View

Not to Scale (See Table for Drilled Shaft Dimensions & Reinforcement Information)

LIGHT POLE 1, 2, 3, 4, 5 & 6

(1) Sta. 15+32.89, 38.73' Rt.
(2) Sta. 13+51.15, 37.97' Lt.
(3) Sta. 53+00.00, 45.0' Rt.
(4) Sta. 46+59.29, 78.24' Lt.
(5) Sta. 645+23.37, 90.32' Rt.
(6) Sta. 638+43.92, 103.52' Lt.

NOTES:

1. All reinforcing steel is to be grade 60 and conform to MaineDOT Standard Specification requirements along with any project specific Supplementals or Special Provisions.
2. All rebar shall have 3" cover unless otherwise noted.
3. Should there be a discrepancy between these Details and actual observed field conditions report it to the Resident immediately.
4. Do not proceed with dependent work until any such discrepancy is resolved to the satisfaction of the Resident.
5. Concrete to be Class LP with f'c = 5,000 PSI.
6. Foundation sizes are designed based on estimated loading conditions and are subject to change based on the design of the above-ground components and the actual loading conditions at the top of each foundation submitted by the Contractor in accordance with Standard Specification Section 626.034. Any increase in foundation size based on the submitted loading conditions shall be paid for at the unit price bid by the Contractor. Any reduction in foundation size shall be to the benefit of the Department at the unit price bid by the Contractor.
7. The Contractor's above-ground pole designer shall include a summary table of the LRFD axial (kips), shear (kips), moment (ft-kips), and torsion (ft-kips) loads at the top of each foundation (base of pole) for the service I, strength I, and extreme I limit states. The summary table shall be presented at the beginning of the submittal package and shall include the unique pole locations. Submittals without this load summary table for each structure will be rejected without review of other information in the submittal.

DRILLED SHAFT FOUNDATIONS

		Drilled Shaft Dimensions		Reinforcing Steel			Spiral Bar Spacing		
		X	L	R1	R2	S1	D1 (in)	D2 (in)	D3 (in)
Pole No.	Station and Offset	Diameter (feet)	Length (feet)	Longitudinal Rebars Quantity	Longitudinal Rebars Size	Spiral Rebars Size	0 to 3 ft	3 ft to 2L/3 ft	2L/3 ft to tip
1	15+32.89, 38.73 feet Right	4.0	16.0	21	#9	#5	4	12	12
2	13+51.15, 37.97 feet Left	4.0	10.0	21	#9	#5	4	4	12
3	53+00.00, 45.0 feet Right	4.0	9.0	21	#9	#5	4	4	12
4	46+59.29, 78.24 feet Left	4.0	9.0	21	#9	#5	4	4	12
5	645+23.37, 90.32 feet Right	4.0	10.0	21	#9	#5	4	4	12
6	638+43.92, 103.52 feet Left	4.0	10.0	21	#9	#5	4	4	12

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2599900

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE ★ Kathleen Maguire 7120 ★ LICENSED PROFESSIONAL ENGINEER

SIGNATURE
7120
P.E. NUMBER
11/17/2023
DATE

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED	T. WHITE	NOV 2023
DESIGN2-DETAILED2	K.MAGUIRE	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

ORONO
I-95 EXIT 193

LIGHT POLE FOUNDATIONS

SHEET NUMBER
7
OF 11

6
STA 638+43.92, 103.52' LT
N: 449217.9981
E: 934710.5952
110' HIGH MAST POLE
LUMINAIRE A(2)

PC = S

T = 194.23'
E = 18.69'

REMOVE EXISTING LIGHT
STANDARD, LUMINAIRE,
AND FOUNDATION

STA 638+43.92
113.5223'

HB-0R0-106

JB-19

STA 42+53.56
15.8095'

STA 642+19.44
62.5084'

STATION 42+00.00 RAMP "A" =
STATION 642+19.44, 62.51' LT I-95 MEDIAN

42+00
43+00
44+00
45+00

I-95 SOUTHBOUND

638+00
639+00
640+00
641+00
642+00
643+00
644+00
645+00

℄ I-95 MEDIAN

STATION 46+00.00 RAMP "C" =
STATION 645+80.23, 55.62' RT I-95 MEDIAN

I-95 NORTHBOUND

JB-18
JB-17
JB-16

HB-0R0-105

STA 645+23.38
96.9810'

LEGEND
BORING

PLAN
25 0 25 50
Scale of Feet

5
STA 645+23.37, 90.32' RT
N: 449914.3885
E: 934822.5726
110' HIGH MAST POLE
LUMINAIRE C(2)

STA 645+2
90.3237'

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2599900

WIN
25999.00

HIGHWAY PLANS

STATE OF MAINE ★ ENGINEER ★ PROFESSIONAL
Kathleen Maguire
7120
LICENSED

SIGNATURE
7120
P.E. NUMBER
11/17/2023
DATE

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED	K.MAGUIRE	NOV 2023
DESIGN2-DETAILED2	T. WHITE	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

ORONO
I-95 EXIT 193

BORING LOCATION PLAN

SHEET NUMBER
8
OF 11

Filename: ...\00\GEOTECH\MSTA\002_BLP1.dgn Division: GEOTECH Username: Kate.Maguire Date:11/17/2023

2
STA 13+51.15, 37.97' LT
N: 451529.2662
E: 934113.2325
110' HIGH MAST POLE
LUMINAIRE A(2)

STA 13+51.15
37.9703'

STA 662+73.96
101.4174'

HB-ORO-102

HORIZONTAL
DIRECTIONAL DRILLING
UNDER ROADWAY

POE = STA. 17+1

STATION 17+17.22 RAMP "B" =
STATION 666+37.49, 44.00' LT I-95 MEDIAN

STA 666+37.49
44.0038'

JB-9

JB-6

JB-7

JB-8

B

BC

RAMP B

I-95 SOUTHBOUND

I-95 NORTHBOUND

I-95 MEDIAN

N17°32'33.03"W

N20°35'44.00"W

N22°18'49.86"W

3+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00
663+00
664+00
665+00
666+00
667+00
668+00
669+00

140
150

REMOVE EXISTING LIGHT
STANDARD, LUMINAIRE,
AND FOUNDATION

STA 11+12.94
13.3343'

STA 15+32.89, 38.73' RT
N: 452245.8599
E: 934052.4537
110' HIGH MAST POLE
LUMINAIRE A(2)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2599900

WIN
25999.00

HIGHWAY PLANS

STATE OF MAINE ★ ENGINEER ★ PROFESSIONAL
Kathleen Maguire
7120
LICENSED

SIGNATURE
7120
P.E. NUMBER
11/17/2023
DATE

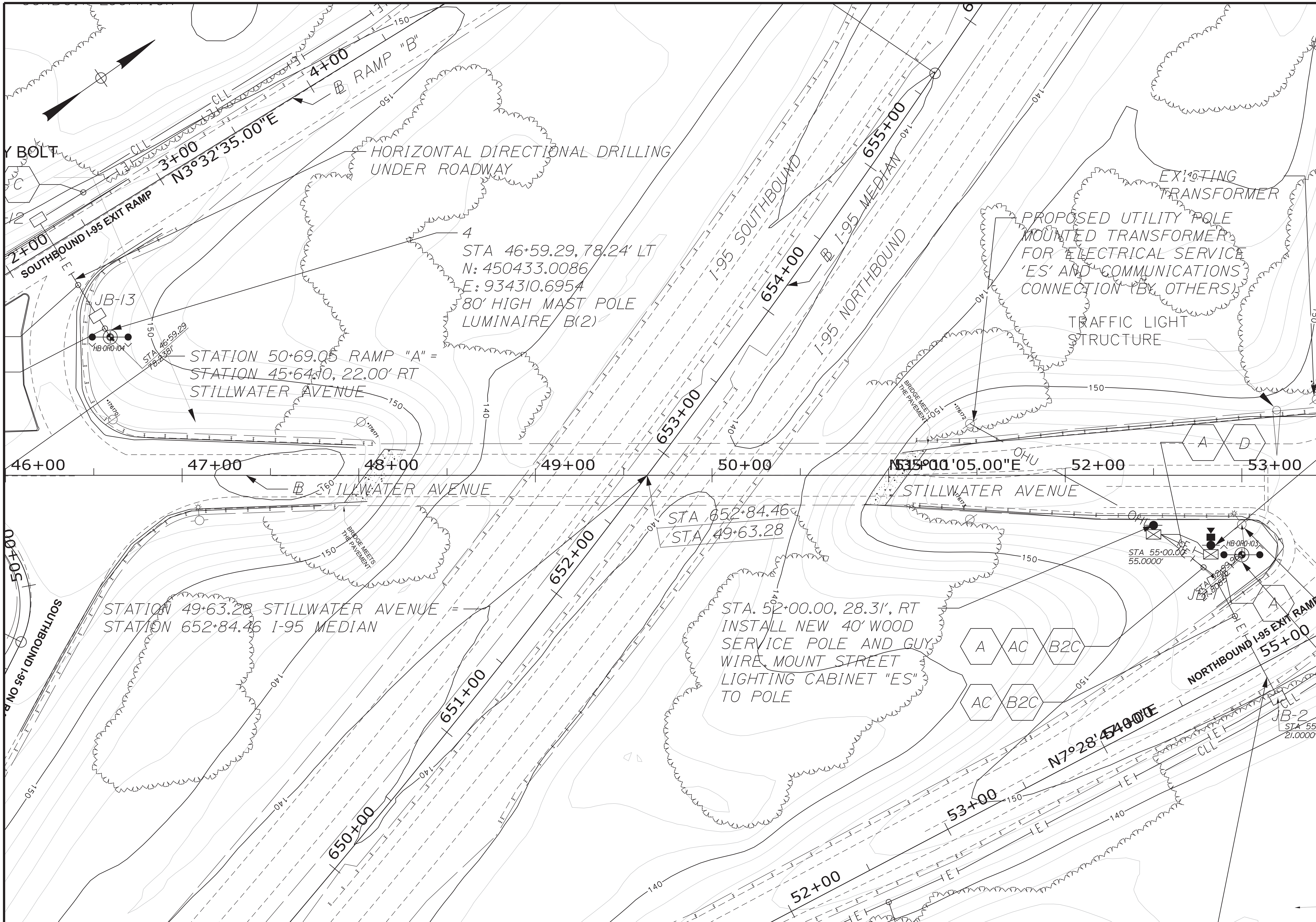
	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	K.MAGUIRE	NOV. 2023
CHECKED-REVIEWED	T. WHITE	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

ORONO
I-95 EXIT 193

BORING LOCATION PLAN

SHEET NUMBER
9
OF 11

Filename: ...\00\GEOTECH\MSTA\003_BLP2.dgn Division: GEOTECH Username: Kate.Maguire Date:11/17/2023



HORIZONTAL DIRECTIONAL DRILLING UNDER ROADWAY
B RAMP "B"
N3°32'35.00"E
SOUTHBOUND I-95 EXIT RAMP
4
STA 46+59.29, 78.24' LT
N: 450433.0086
E: 934310.6954
80' HIGH MAST POLE LUMINAIRE B(2)
JB-13
HB-ORO-104
STATION 50+69.05 RAMP "A" = STATION 45+64.10, 22.00' RT STILLWATER AVENUE
I-95 SOUTHBOUND
B I-95 MEDIAN
I-95 NORTHBOUND
EXISTING TRANSFORMER
PROPOSED UTILITY POLE MOUNTED TRANSFORMER FOR ELECTRICAL SERVICE 'ES' AND COMMUNICATIONS CONNECTION (BY OTHERS)
TRAFFIC LIGHT STRUCTURE
BRIDGE MEETS THE PAVEMENT
46+00
47+00
48+00
49+00
50+00
52+00
53+00
B STILLWATER AVENUE
STILLWATER AVENUE
STA 652+84.46
STA 49+63.28
HB-ORO-103
STA 55+00.00 55.0000'
STATION 49+63.28 STILLWATER AVENUE = STATION 652+84.46 I-95 MEDIAN
STA. 52+00.00, 28.31', RT INSTALL NEW 40' WOOD SERVICE POLE AND GUY WIRE. MOUNT STREET LIGHTING CABINET "ES" TO POLE
NORTHBOUND I-95 EXIT RAMP
SOUTHBOUND I-95 ON RAMP
JB-2
STA 55+00 21.0000'
650+00
651+00
652+00
653+00
654+00
655+00

Date:11/17/2023 Username: Kate.Maguire Division: GEOTECH Filename: ...\00\GEOTECH\MSTA\004_BLP3.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2599900

WIN 25999.00

HIGHWAY PLANS

STATE OF MAINE Kathleen Maguire 7120 LICENSED PROFESSIONAL ENGINEER

SIGNATURE		
P.E. NUMBER	7120	
DATE	11/17/2023	

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED		
DESIGN2-DETAILED2	K. MAGUIRE	NOV 2023
DESIGN3-DETAILED3	T. WHITE	NOV 2023
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

ORONO
I-95 EXIT 193

BORING LOCATION PLAN

SHEET NUMBER
10
OF 11

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-101

Driller:	S.W.Cole	Elevation (ft.):	144.0	Auger ID/OD:	2.5/6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/6/20231 08:00-09:00	Drilling Method:	Hollow Stem Auger	Core Barrel:	N/A
Boring Location:	15+32.9, 38.7 ft Rt.	Casing ID/OD:	N/A	Water Level(*):	None Observed

Hammer Efficiency Factors 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions:
D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; WC = Water Content, percent; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0								143.8		TOPSOIL: sod & grass. 0.2	
	1D	24/20	0.00 - 2.00	1/1/2/2	3	5	HSA			1D (0.2-2.0 ft bgs.) Olive-brown, moist, medium stiff, fine to medium Sandy SILT, with roots. (Fill).	
5								140.5		3.5	
	2D	24/24	5.00 - 7.00	4/5/8/8	13	20				Olive-brown, moist, very stiff, fine Sandy SILT, trace clay.	
10								134.0		10.0	
	3D	24/24	10.00 - 12.00	2/2/3/3	5	8				Grey, wet, medium stiff, Clayey-SILT, trace fine sand.	
								130.0		14.0	
15	4D	24/24	15.00 - 17.00	2/1/2/2	3	5				Grey, wet, medlun stiff, Clayey-SILT.	
										Similar to above, except very soft.	
20	5D	24/24	20.00 - 22.00	WOR/WOH/WOR/WOR	---					Push AW Rods to 26.8 ft bgs., (Firm).	
							AW				
								117.2		Bottom of Exploration at 26.8 feet below ground surface. NO REFUSAL 26.8	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: HB-ORO-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-101A

Driller:	S.W.Cole	Elevation (ft.):	144.0	Auger ID/OD:	Hollow Stem 2.5/6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	N/A
Date Start/Finish:	11/7/20231 08:00-09:00	Drilling Methods:	Cased Wash Boring	Core Barrel:	N/A
Boring Location:	TBD	Casing ID/OD:	NW-3"	Water Level(*):	None Observed

Hammer Efficiency Factors 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							HSA			Varies only, no material descriptions given.	
5											
10											
	MV		10.00 - 10.10	Would Not Push			OPEN HOLE			Failed 55x110 mm vane attempt.	
15											
	V1		15.63 - 16.00	Su=714/223 psf						55x110 mm vane raw torque Readings: V1: 16.0/5.0 ft-lbs. V2: 22.0/5.0 ft-lbs	
	V2		16.63 - 17.00	Su=982/223 psf							
20											
	V3		20.63 - 21.00	Su=714/134 psf						55x110 mm vane raw torque Readings: V3: 16.0/3.0 ft-lbs. V4: 14.0/3.0 ft-lbs	
	V4		21.63 - 22.00	Su=625/134 psf							
								122.0		Bottom of Exploration at 22.0 feet below ground surface. 22.0	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: HB-ORO-101A

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-102

Driller:	S.W.Cole	Elevation (ft.):	139.8	Auger ID/OD:	2.5/6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/7/20231 09:00-10:00	Drilling Methods:	Hollow Stem Auger	Core Barrel:	N/A
Boring Location:	13+51.2, 38.0 ft Lt.	Casing ID/OD:	N/A	Water Level(*):	None Observed

Hammer Efficiency Factors 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/20	0.00 - 2.00	1/1/2/2	3	5	HSA	139.8		Dilve- wet, loose, Silty fine to medium SAND. with roots. (Fill). 3.0	
5	2D	24/22	5.00 - 7.00	4/5/8/15	13	20		136.8		Brown, moist, medium dense, Silty fine to coarse Sand. 9.0	
10	3D	24/20	10.00 - 12.00	9/11/17/20	28	42		130.8		Dilve, moist, hard, fine to coarse Sandy SILT, trace clay. 14.0	
15	4D	24/18	15.00 - 17.00	8/15/15/16	30	46		125.8		Grey, moist, dense, Silty fine to coarse SAND, trace gravel. (Till).	
20	5D	24/19	20.00 - 22.00	10/12/13/13	25	38				Similar to above.	
								117.8		Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL 22.0	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: HB-ORO-102

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-103

Driller:	S.W.Cole	Elevation (ft.):	155.6	Auger ID/OD:	2.5/6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/6/20231 09:00-10:00	Drilling Methods:	Hollow Stem Auger	Core Barrel:	N/A
Boring Location:	53+00, 45.0 ft Rt.	Casing ID/OD:	N/A	Water Level(*):	None Observed

Hammer Efficiency Factors 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/9	0.00 - 2.00	2/7/17/10	24	36	HSA	155.4		TOPSOIL: sod & grass. 0.2	
										1D (0.2-2.0 ft bgs.) Brown, moist, dense, Silty, fine to coarse SAND. little gravel. (Fill).	
5	2D	24/16	5.00 - 7.00	16/15/13/14	28	42				Brown, moist, dense, Gravelly fine to coarse SAND, little silt. (Fill).	
10	3D	24/10	10.00 - 12.00	20/22/16/15	38	58				Similar to above.	
								141.6		14.0	
15	4D	24/18	15.00 - 17.00	10/8/8/10	16	24				Brown, moist, very stiff, fine Sandy SILT, little clay.	
								137.6		18.0	
20	5D	24/17	20.00 - 22.00	20/21/23/26	44	67				Brown, wet, very dense, fine to coarse SAND, little silt.	
								133.6		Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL 22.0	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: HB-ORO-103

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-104

Driller:	S.W.Cole	Elevation (ft.):	154.1	Auger ID/OD:	2.5/6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/6/20231 13:00-14:00	Drilling Method:	Hollow Stem Auger	Core Barrel:	N/A
Boring Location:	46+59.3, 78.2 ft Lt.	Casing ID/OD:	N/A	Water Level(*):	18.0 ft bgs.

Hammer Efficiency Factors 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/10	0.00 - 2.00	2/2/5/6	7	11	HSA	153.9		TOPSOIL: sod & grass. 0.2	
										1D (0.2-2.0 ft bgs.) Brown, wet, medium dense, fine to coarse SAND. some gravel. little silt. (Fill).	
5	2D	24/9	5.00 - 7.00	5/5/5/6	10	15				Similar to above. (Fill).	
10	3D	24/6	10.00 - 12.00	5/7/7/5	14	21				Similar to above, except wet. (Fill).	
								140.6		13.5	
15	4D	24/24	15.00 - 17.00	4/4/7/7	11	17				Grey-brown, wet, very stiff, Clayey-SILT, trace fine sand.	
								135.6		18.5	
20	5D	24/18	20.00 - 22.00	2/2/2/2	4	6				Brown, wet, loose, fine to medium SAND. some silt.	
								132.1		Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL 22.0	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: HB-ORO-104

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-105

Driller:	S.W.Cole	Elevation (ft.):	139.9	Auger ID/OD:	2.5/6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/6/20231 10:15-11:00	Drilling Methods:	Hollow Stem Auger	Core Barrel:	N/A
Boring Location:	645+23.4, 90.3 ft Rt.	Casing ID/OD:	N/A	Water Level(*):	None Observed

Hammer Efficiency Factor 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/11	0.00 - 2.00	1/2/2/2	4	6	HSA	139.7		TOPSOIL: sod & grass. 0.2	
										1D (0.2-2.0 ft bgs.) Brown, moist, loose, Silty fine to medium SAND. (Fill).	
5	2D	24/18	5.00 - 7.00	4/5/7/9	12	18		136.4		3.5 Brown, wet, medium dense, fine to medium SAND. little silt.	
10	3D	24/16	10.00 - 12.00	14/21/18/18	39	59		130.9		9.0 Grey, wet, dense, fine to coarse SAND. little gravel. little silt.	
								125.4		14.5	
15	4D	24/15	15.00 - 17.00	12/14/19/22	33	50				Grey, wet, dense, fine to coarse SAND. some gravel. little silt.	
20	5D	24/10	20.00 - 22.00	13/15/15/12	30	46				Similar to above.	
								117.9		Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL 22.0	
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1 — Boring No.: HB-ORO-105

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Interstate 95, Exit 193 Lighting
Location: Orono, Maine
WIN: 25999.00

Boring No.: HB-ORO-106

Driller:	S.W.Cole	Elevation (ft.):	160.0	Auger ID/OD:	Hollow Stem 2.5-6.75"
Operator:	Kevin	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	Diedrich D-50	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/6/20231 11:45-13:00	Drilling Methods:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	638+43.9, 103.5 ft Lt.	Casing ID/OD:	NW-3"	Water Level(*):	None Observed

Hammer Efficiency Factors 0.91 — Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions: D = Split Spoon Sample; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MU = Unsuccessful Thin Wall Tube Sample Attempt; V = Field Vane Shear Test; MV = Unsuccessful Field Vane Shear Test Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; MOH = Weight of 140lb. Hammer; PP = Pocket Penetrometer; MOR/C = Weight of Rods or Casing; MOP = Weight of One Person; q_p = Peak/Remolded Field Vane Undrained Shear Strength (psf); $\tau_{uf\,(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_u = Unconfined Compressive Strength (tsf); N-uncorrected = Raw Field SPT N-value; Hammer Efficiency Factor = Rig Specific Annual Calibration Value; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; q_p = Pocket Torvane Shear Strength (psf); WC = Water Content, percent; LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Pocket Penetrometer Strength or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/11	0.00 - 2.00	2/3/2/2	5	8	HSA	159.8		TOPSOIL: sod & grass. 0.2	
										1D (0.2-2.0 ft bgs.) Brown, moist, loose, Silty fine to coarse SAND. trace gravel. with roots. (Fill).	
5	2D	24/20	5.00 - 7.00	3/4/5/7	9	14		157.0		3.0 Brown, moist, medium dense, fine Sandy-SILT. trace clay.	
10	3D	24/20	10.00 - 12.00	3/5/5/6	10	15		151.0		9.0 Brown, wet, medium dense, fine to medium SAND. some silt.	
								146.0		14.0	
15	4D	24/12	15.00 - 17.00	12/10/15/16	25	38				Grey, moist, medium dense, fine to coarse SAND. some gravel. little silt.	
20	5D R1	4.8/4.8 60/48	20.00 - 20.40 20.40 - 25.40	50(4.8") RQD = 0%	---		4SD NQ-2	139.6		950 blows for 0.4 ft. 20.4 Top of Bedrock at Elev. 139.6 ft. R1: Bedrock: Calcareous sandstone, interbedded sandstone and impure limestone. (Vassalboro Formation). Rock Quality = Very Poor R1: Core Times (minsec): 20.4-21.4 ft (4:30) 21.4-22.4 ft (3:04) 22.4-23.4 ft (3:45) 23.4-24.4 ft (3:58) 24.4-25.4 ft (4:01) 80% Recovery	
								134.6		Bottom of Exploration at 25.4 feet below ground surface. 25.4	
30											

Remarks:

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Page 1 of 1 — Boring No.: HB-ORO-106

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2599900
WIN 25999.00
HIGHWAY PLANS

STATE OF MAINE ★ ENGINEER ★ Kathleen Maguire 7120 LICENSED PROFESSIONAL

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED	T.WHITE	NOV 2023
DESIGN2-DETAILED2	K.MAGUIRE	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
7120
P.E. NUMBER
11/17/2023
DATE

ORONO
I-95 EXIT 193

BORING LOGS

SHEET NUMBER
11
OF 11