

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



BRUNSWICK CUMBERLAND COUNTY INTERSTATE 295 FEDERAL PROJECT NO. 2435900 HIGHWAY LIGHTING

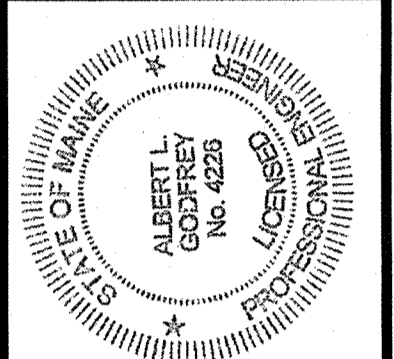
PLAN LEGEND

Town, County, State	-----	Catch Basins	▣ Existing	▣ Proposed
Property Lines	-----	Manholes	○ Existing	● Proposed
R/W Lines-Existing	-----	Proposed Underdrain	-----	
R/W Lines-Proposed	-----	Proposed Ditch	-----	
Culvert-Existing	-----	Existing Ditch	-----	
Culvert Proposed	-----	Utility Poles	◇ Existing	◆ Proposed
Curbing	Existing Proposed	Fire Hydrants	⊙ Existing	⊙ Proposed
Type 1	-----	Existing Water Line	-----	
Type 3	-----	Existing San. Sewer	-----	
Type 5	-----	Existing San. Sewer Manhole	⊙	
Outline of Bodies of Water	-----	Guardrail-Existing	-----	
Exposed Bedrock	-----	Guardrail-Proposed	-----	
Buildings	-----	Guardrail-Cable, Other	-----	
Trees	Conifer Deciduous	Centerline-Existing	-----	
Tree Line	-----	Centerline-Proposed	-----	
Clearing Limit Line	-----	Travelway-Existing	-----	
Railroad	-----	Travelway-Proposed	-----	
Boring	HB-XXX-###	Probe	P-#. #X	
Pavement Core	● PC-#		## = Depth	
Test Pit	▣ TP-XXX-###		X = W (Weathered Rock)	
			R (Refusal)	
			NR (No Refusal)	

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STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>		3-20-21
CHIEF ENGINEER: <i>[Signature]</i>		3-20-21

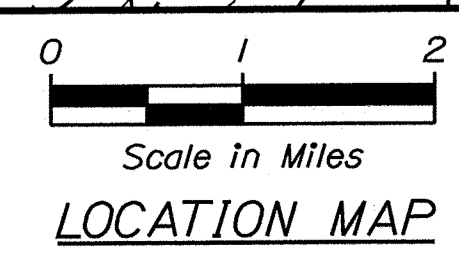
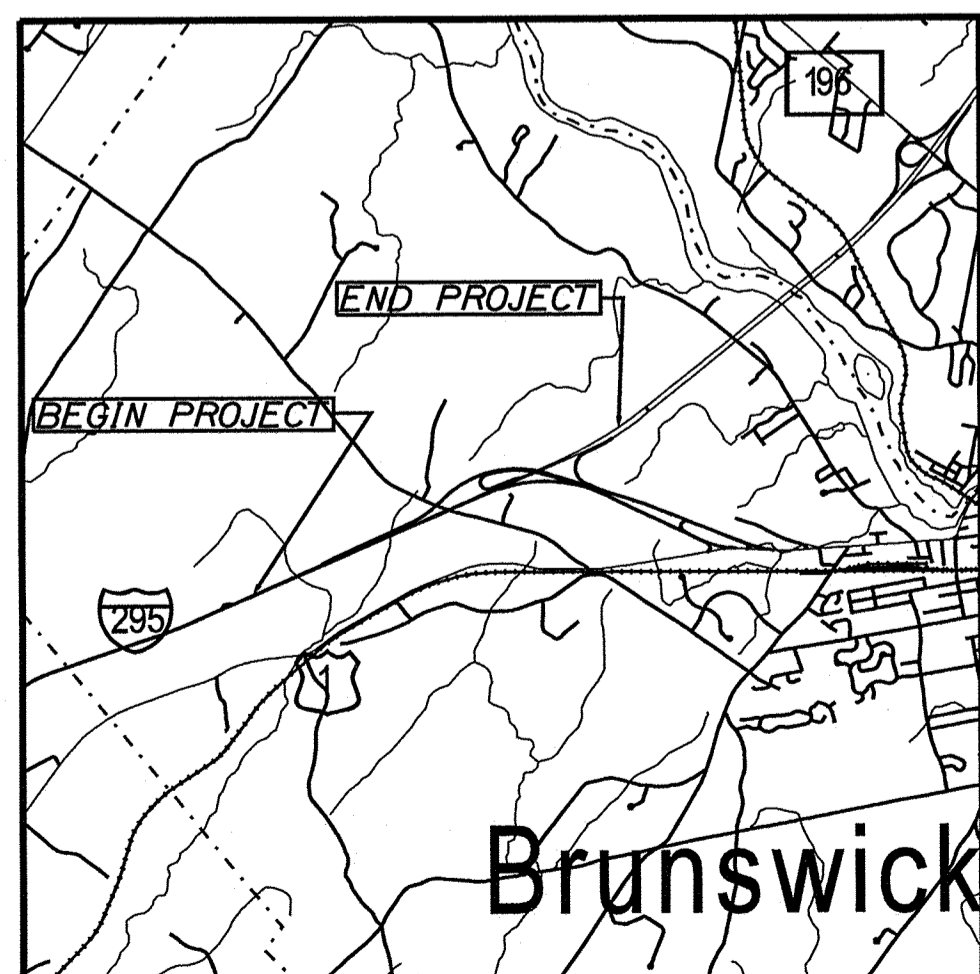
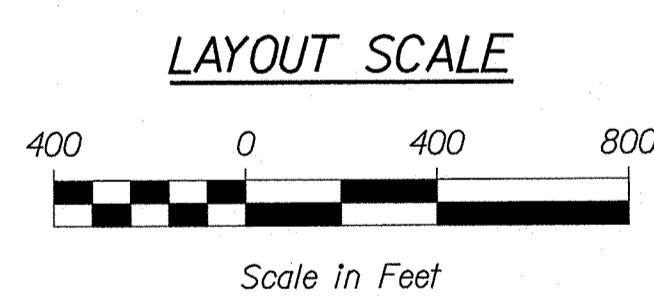
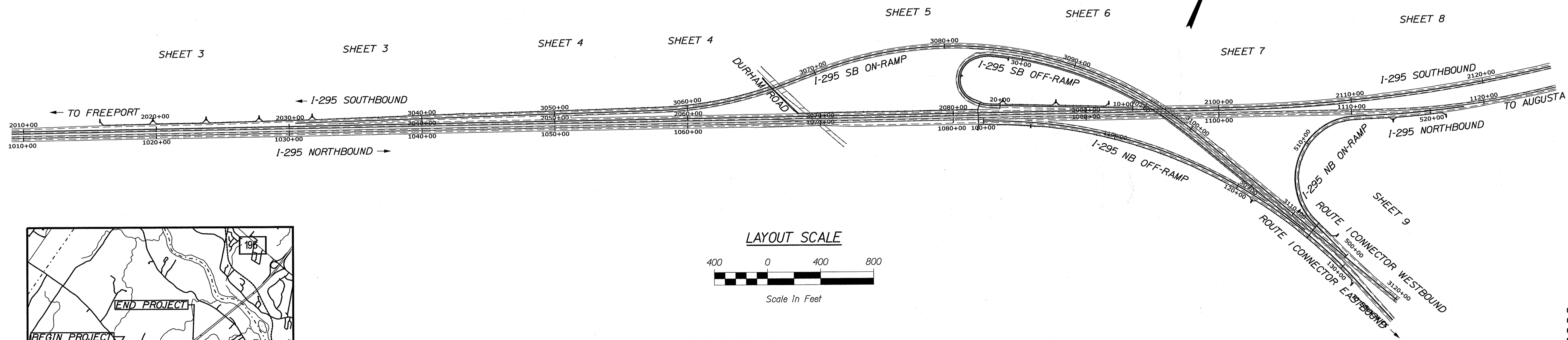


<i>[Signature]</i>	SIGNATURE
4226	P.E. NUMBER
1/22/21	DATE

MULTIMODAL	PROJECT INFORMATION
J. DOSTIE	PROJECT MANAGER
A. GODFREY	DESIGNER
TERRA MAGNA SERVICES, INC.	CONSULTANT
	PROJECT RESIDENT
	CONTRACTOR
	PROJECT COMPLETION DATE

BRUNSWICK
INTERSTATE 295
TITLE SHEET

SHEET NUMBER
1
OF 22



PROJECT LOCATION:	BRUNSWICK, INTERSTATE 295 AT EXIT 28
PROGRAM AREA:	MULTIMODAL PROGRAM
SCOPE OF WORK:	HIGHWAY LIGHTING - HIGH MAST POLES, LOWERING DEVICES, FOUNDATIONS, CONDUIT, LED LUMINAIRES, WIRING AND INCIDENTALS

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Division: HIGHWAY

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CONSTRUCTION NOTES - HIGHWAY LIGHTING

- 1. SCOPE OF WORK - INSTALL HIGHWAY LIGHTING AS SHOWN ON THESE PLANS. FURNISH AND INSTALL NEW POWER SERVICE, LIGHTING CONTROL CABINET, SERVICE DISCONNECT ENCLOSURE, CONDUIT, FOUNDATIONS, HIGH MAST POLES, LOWERING DEVICES (IF REQUIRED), HIGH MAST L.E.D. LUMINAIRES, WIRING, 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 AND POWER SERVICE SHALL BE REMOVED AFTER ACTIVATION OF THE NEW SYSTEM. PAYMENT FOR REMOVAL AND DISPOSAL OF POLES, LUMINAIRES, CONTROL CABINET AND POWER SERVICE WILL BE INCIDENTAL TO THE CONTRACT. EXISTING FOUNDATIONS SHALL BE REMOVED AS DIRECTED. PAYMENT FOR REMOVAL OF FOUNDATIONS WILL BE MADE UNDER ITEM 626.36. ABANDON EXISTING CONDUIT.
- 4. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO APPLICABLE PROVISIONS OF THE MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD DETAILS, NATIONAL ELECTRICAL CODE (N.E.C.) AND ANY REQUIREMENTS OF THE POWER COMPANY.
- 5. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO ENSURE AWARENESS OF SITE CONDITIONS THAT COULD AFFECT THE BID.
- 6. THE CONTRACTOR SHALL FIELD VERIFY POLE LOCATIONS TO AVOID NATURAL AND BUILT SITE FEATURES THAT WOULD CONFLICT WITH PROPER INSTALLATION OF POLE FOUNDATIONS.
- 7. INSTALL SERVICE AND MULTI CIRCUIT CONTROL CABINET AS SHOWN ON THESE PLANS AND IN THE STANDARD DETAILS. THE CONTRACTOR ALSO SHALL INSTALL A METER DISCONNECT IN A SEPARATE NEMA 3R ENCLOSURE. CABINET AND DISCONNECT ENCLOSURE SHALL BE LOCKABLE. THE SERVICE CABINET, DISCONNECT ENCLOSURE AND OTHER ENCLOSURES FOR ELECTRICAL COMPONENTS SHALL BE MARKED WITH ARC HAZARD TYPE 1, 2, 3 OR 4 AND THE APPROPRIATE PPE REQUIRED.
- 8. ALL LIGHTING CIRCUITS ARE TO BE PHOTOCCELL ACTIVATED BY PHOTOCCELL ON CONTROL CABINET.
- 9. LIGHTING FIXTURE VOLTAGE SHALL BE 240 VOLTS. INSTALL NEW 240V SERVICE.
- 10. LIGHTING FIXTURES SHALL BE IES FULL CUTOFF, LIGHT EMITTING DIODE (LED) FIXTURES. LED MODULES SHALL BE IP65 OR IP66 RATED.
- 11. ALL FIXTURES SHALL BE GASKETED AND HAVE SURGE PROTECTION AND A DOUBLE FUSE KIT. ALL FIXTURES SHALL BE GRAY. THE LIGHTING LAYOUT WAS DONE USING HOLOPHANE HIGH MAST HMLE4 LUMINAIRES.

CATALOG NUMBERS:

HMLE4 P2 40K MVOLT HGR MAS AO DFD, 32 LUMINAIRES ON SIXTEEN 90 FOOT POLES (MEDIUM ASYMMETRIC DISTRIBUTION)

HMLE4 P3 40K MVOLT HGR MAS AO DFD, 4 LUMINAIRES ON TWO 100 FOOT POLES (MEDIUM ASYMMETRIC DISTRIBUTION)

LED COLOR TEMPERATURE FOR FIXTURES INSTALLED SHALL BE 4000K. IF DIFFERENT FIXTURES ARE PROPOSED, THEY SHALL BE IES FULL CUTOFF, MEDIUM ASYMMETRIC DISTRIBUTION, LED LUMINAIRES. THE CONTRACTOR MUST DEMONSTRATE THAT THE PROPOSED FIXTURES WILL REASONABLY EQUAL THE LIGHT LEVELS AND DISTRIBUTIONS SHOWN ON THE PLANS, IN THE OPINION OF MAINEDOT.

- 12. 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 FIXTURES FOR THIS PROJECT INCLUDE:

HOLOPHANE HIGH MAST HMLE4
CONTACT: MARK FOWLER
ACUITY BRANDS LIGHTING, INC.
(207) 582-5106
MARK.FOWLER@ACUITYBRANDS.COM

MUSCO TLC-LED-400
CONTACT: ZACK SCHROCK
MUSCO LIGHTING, LLC
(603) 703-9879
ZACK.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 SHOWN ON THE PROJECT PLANS.

- 13. OTHER MANUFACTURERS AND MODELS MAY BE CONSIDERED FOR USE ON THIS PROJECT. EVALUATION BY MAINEDOT OF ALTERNATIVE LED LUMINAIRES THAT MAY BE PROPOSED BY THE CONTRACTOR FOR SUBSTITUTION WILL REQUIRE SUBMITTAL OF THE FOLLOWING,

AT MINIMUM:

IES LM-79-19 ABSOLUTE TESTING REPORT FOR THE PROPOSED ALTERNATIVE LUMINAIRE;

IES LM-80-20 TESTING REPORT FOR LED CHIPS TO BE USED IN THE ALTERNATIVE LUMINAIRE, DOCUMENTING TESTING FOR A MINIMUM OF 8500 HOURS;

IES TM-21-19 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, OVERLAID ON THE LAYOUT OF THE LUMINAIRE LOCATIONS FOR THIS SPECIFIC 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.

- 14. 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.

- 15. HIGH MAST POLES SHALL BE GALVANIZED STEEL AND HAVE A MINIMUM OF SIX ANCHOR BOLTS. 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 643.04 OF THE MAINEDOT STANDARD SPECIFICATIONS

- 16. PROPOSED HIGH MAST LIGHT STANDARDS THAT REQUIRE A LUMINAIRE LOWERING DEVICE SYSTEM FOR FIXTURE MAINTENANCE AND REPLACEMENT SHALL HAVE A LOWERING DEVICE SYSTEM FURNISHED AND INSTALLED ON EACH HIGH MAST POLE. THE LOWERING DEVICE SYSTEM SHALL BE HOLOPHANE HMS TYPE 05 LOWERING DEVICE SYSTEM OR APPROVED EQUAL COMPATIBLE WITH THE APPROVED LUMINAIRES. THE LOWERING DEVICE SYSTEM SHALL INCLUDE A PORTABLE ELECTRIC POWER UNIT (ONE FOR ALL WIN 24359.00 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.

- 17. 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 FINISH GRADE OF THE SLOPE AT THE BASE OF THE POLE TO THE BOTTOM OF THE ENCLOSURE.

- 18. POWER SERVICE CONDUIT FROM THE POWER SOURCE TO THE METER SHALL BE RIGID METAL CONDUIT. NEW BURIED CONDUIT SHALL BE 2 INCH MINIMUM DIAMETER. REQUIREMENT OF LARGER CONDUIT SIZE SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH CONDUIT FILL REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. ALL CONDUIT IN THE HIGHWAY RIGHT OF WAY SHALL BE SCHEDULE 80 UNLESS CONCRETE-ENCASED. IF SCHEDULE 40 PVC CONDUIT ENCASED IN CONCRETE IS USED, CONCRETE ENCASUREMENT WILL BE INCIDENTAL TO PAYMENT FOR CONDUIT.

- 19. 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.

- 20. BUSHINGS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.

- 21. PULL WIRE SHALL BE INSTALLED IN ALL CONDUIT.

- 22. ALL CONDUIT THREADS ARE TO BE RED-HEADED.

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

- 24. SECONDARY CIRCUIT WIRING SHALL BE COPPER STRANDED XHHW-2. ALL WIRING SHALL BE NO. 8 AWG OR LARGER WIRE SIZE. WIRE SIZES NOTED ON THE PLANS ARE APPROXIMATE. FINAL WIRE SIZING SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE WITH N.E.C. REQUIREMENTS BASED ON ELECTRICAL LOADS OF ACTUAL ELECTRICAL COMPONENTS TO BE INSTALLED.

- 25. 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.

- 26. INSTALL SPARE 2-INCH CONDUIT FROM POWER SOURCE TO CABINET, FROM CABINET TO JB7, AND FROM JB7 TO JB9. CAP EXPOSED ENDS TO PREVENT INTRUSION OF MOISTURE OR RODENTS. PAYMENT WILL BE MADE UNDER ITEM 626.22, EXCEPT CONDUIT UNDER PAVEMENT AND EXTENDING TO 20 FEET BEYOND THE EDGE OF PAVEMENT WILL BE PAID UNDER ITEM 626.251.

- 27. ALL LIGHT POLES SHALL BE BONDED TO THE GROUNDING CONDUCTOR.

- 28. METAL FRAMES AND COVERS OF JUNCTION BOXES SHALL BE GROUNDED. PAYMENT FOR GROUNDING WILL BE INCIDENTAL TO ITEM 626.II.

- 29. ALL FOUNDATIONS FOR HIGH MAST LIGHT POLES SHALL HAVE A GROUND ROD LOCATED IN OR ADJACENT TO THE FOUNDATION THAT IS BONDED TO THE GROUNDING CONDUCTOR. PAYMENT FOR GROUND RODS SHALL BE INCLUDED IN ITEM 634.160, HIGHWAY LIGHTING.

- 30. PAYMENT UNDER ITEM NO. 634.207, HIGH MAST LIGHT STANDARD, SHALL INCLUDE THE LUMINAIRE LOWERING DEVICE SYSTEM IF A LOWERING DEVICE SYSTEM IS REQUIRED.

- 31. 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.

- 32. PAYMENT UNDER 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.

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

- 34. CLEARING IS NOT ANTICIPATED TO BE REQUIRED FOR THIS PROJECT. ANY CLEARING OR TRIMMING OF BRUSH OR TREE LIMBS THAT MAY BE DETERMINED IN THE FIELD BY THE RESIDENT TO BE REQUIRED SHALL BE KEPT TO A MINIMUM AND WILL BE INCIDENTAL TO THE CONTRACT.

- 35. STATIONING SHOWN FOR LIGHTING RELATED ITEMS IS APPROXIMATE AND MAY BE ADJUSTED BY THE RESIDENT IN THE FIELD IN CONSULTATION WITH THE ENGINEER.

- 36. TEMPORARY FILL FOR CROSSING OF DITCHES WILL BE ALLOWED FOR EQUIPMENT ACCESS TO CONSTRUCT FOUNDATIONS AND TO ERECT HIGH MAST POLES. TEMPORARY PIPES SHALL BE INSTALLED IN TEMPORARY FILLS TO MAINTAIN DITCH FLOW. UPON COMPLETION OF WORK ON FOUNDATIONS AND ERECTION OF POLES REQUIRING FILL FOR ACCESS, TEMPORARY FILLS AND PIPE SHALL BE REMOVED. DITCHES SHALL BE LOAMED AND SEEDED WITH METHOD NO. 2, AND MULCHED. PAYMENT FOR WORK AND MATERIALS FOR TEMPORARY FILLS, REGRADING AS DIRECTED FOR TEMPORARY FILL PLACEMENT AND REMOVAL, REROUTING OF DITCH LINES AROUND FOUNDATIONS, REGRADING AROUND FOUNDATIONS TO MEET FOUNDATION EXPOSURE LIMITATIONS, AND REPAIR OF SOIL DISTURBANCE WILL BE INCIDENTAL TO THE CONTRACT.

- 37. 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.

- 38. 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.

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

STATE OF MAINE	DEPARTMENT OF TRANSPORTATION	2435900	WIN	024359.00	HIGHWAY PLANS
BRUNSWICK		INTERSTATE 295		CONSTRUCTION NOTES	
SHEET NUMBER		2		OF 22	

CONDUIT SUMMARY

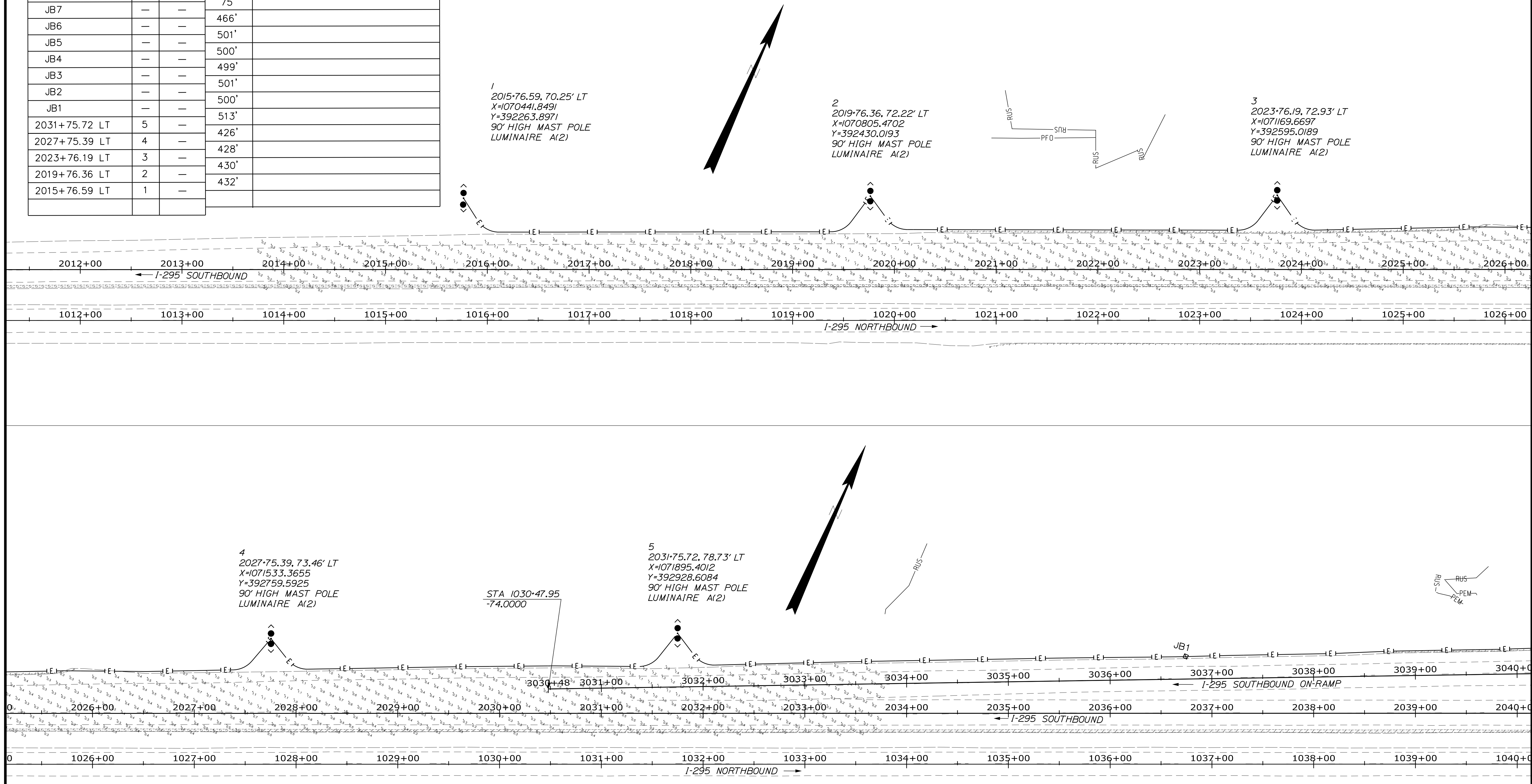
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Station	Pole	Breakaway	Distance	Remarks 12.30 AMPS
Control Cabinet Durham Road	—	—	75'	
JB7	—	—	466'	
JB6	—	—	501'	
JB5	—	—	500'	
JB4	—	—	499'	
JB3	—	—	501'	
JB2	—	—	500'	
JB1	—	—	513'	
2031+75.72 LT	5	—	426'	
2027+75.39 LT	4	—	428'	
2023+76.19 LT	3	—	430'	
2019+76.36 LT	2	—	432'	
2015+76.59 LT	1	—		

Date: 1/28/2021

Username: common

Division: HIGHWAY

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
024359.00
WIN
24359.00
HIGHWAY PLANS

PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	ALG	JLE	1-21
CHECKED-REVIEWED	ALG	JLE	1-21
DESIGN DETAILED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BRUNSWICK
I-295 EXIT 28
LIGHTING PLANS

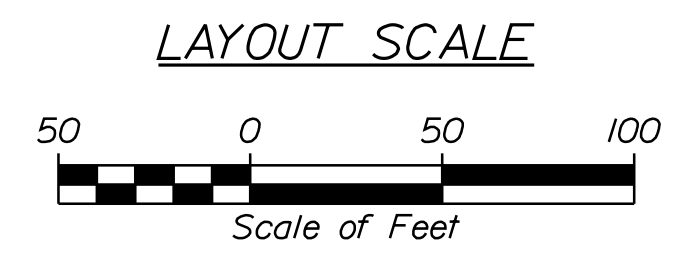
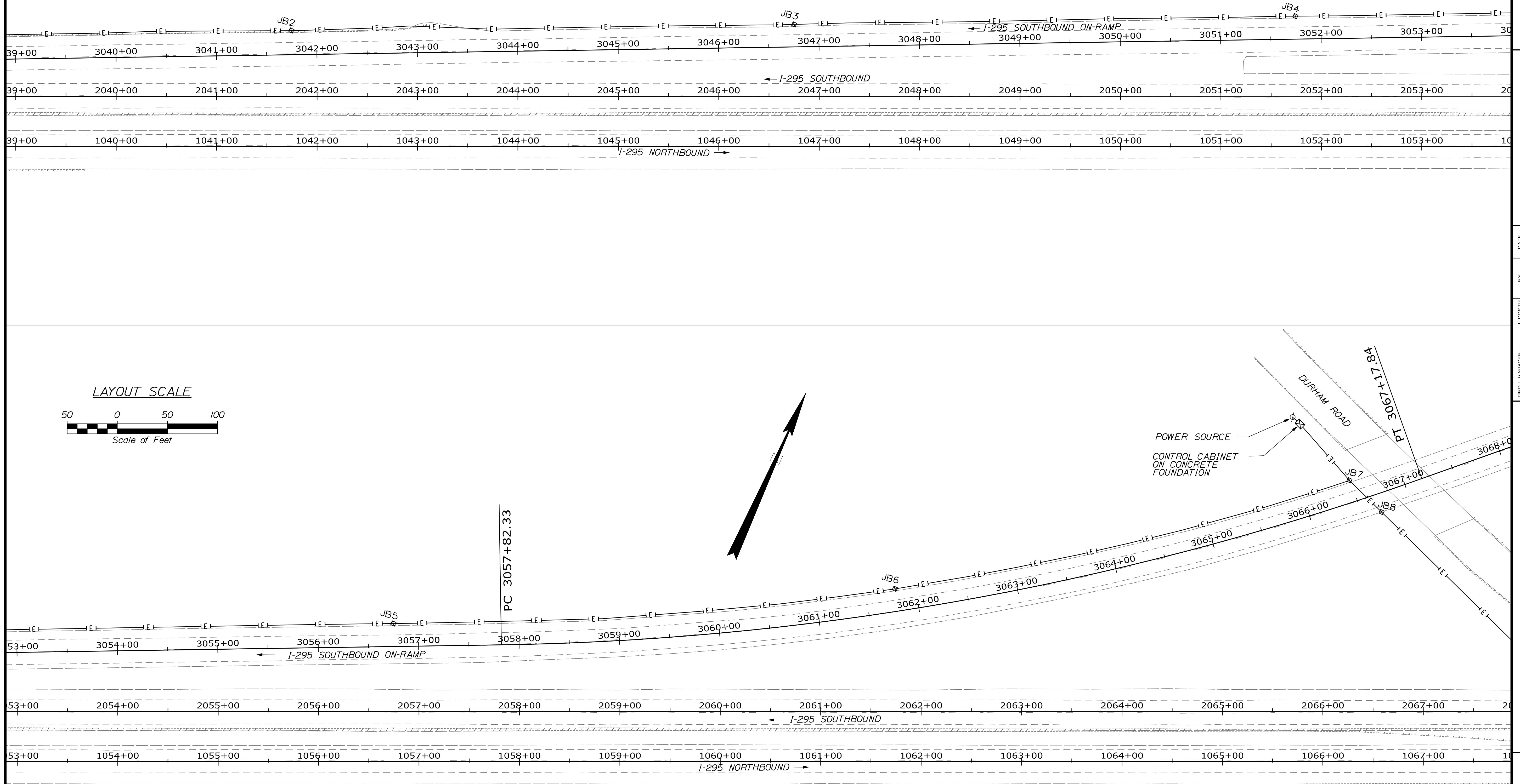
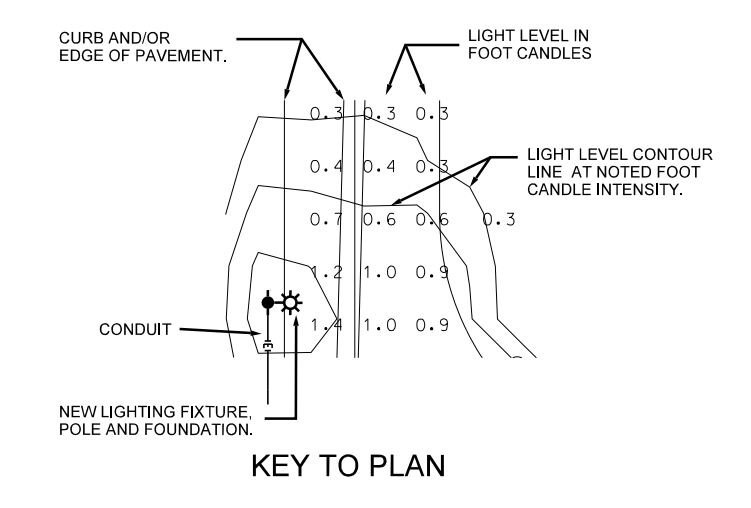
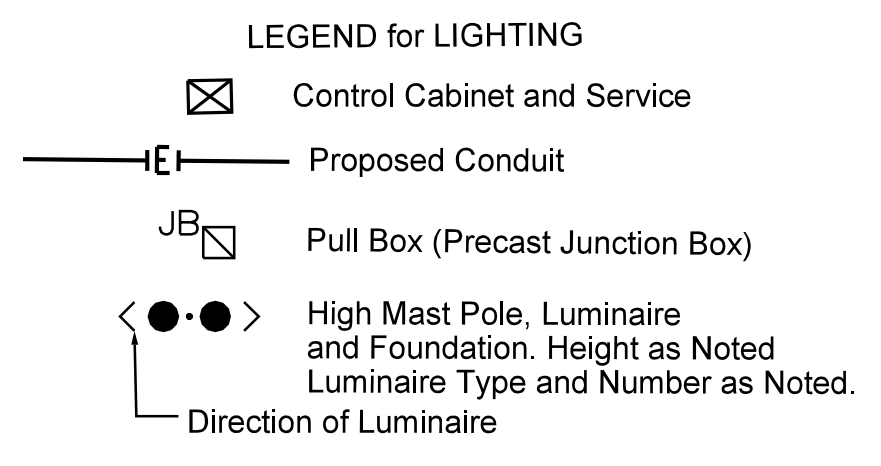
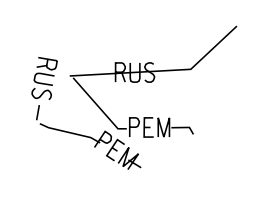
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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
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WIN
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HIGHWAY PLANS


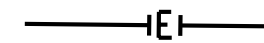


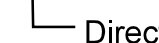
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DESIGN-DETAILED	ALG	DESIGN-DETAILED	ALG
REVISIONS 1		REVISIONS 1	
REVISIONS 2		REVISIONS 2	
REVISIONS 3		REVISIONS 3	
REVISIONS 4		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES	

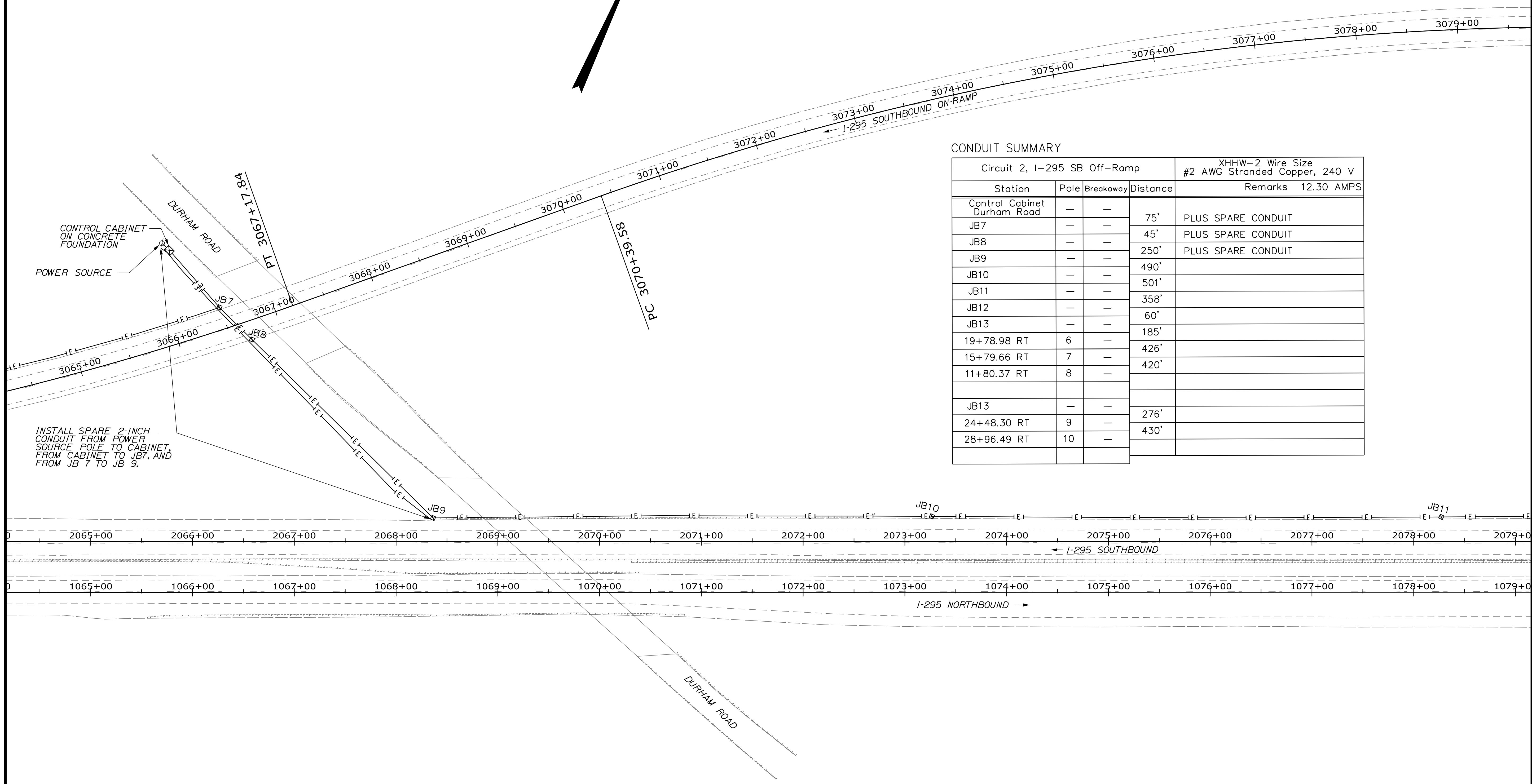
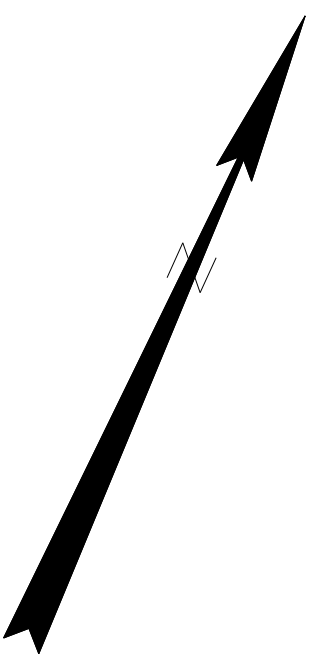
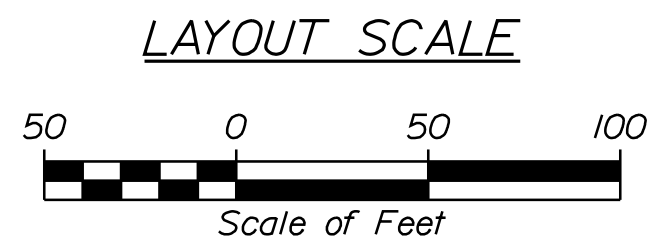
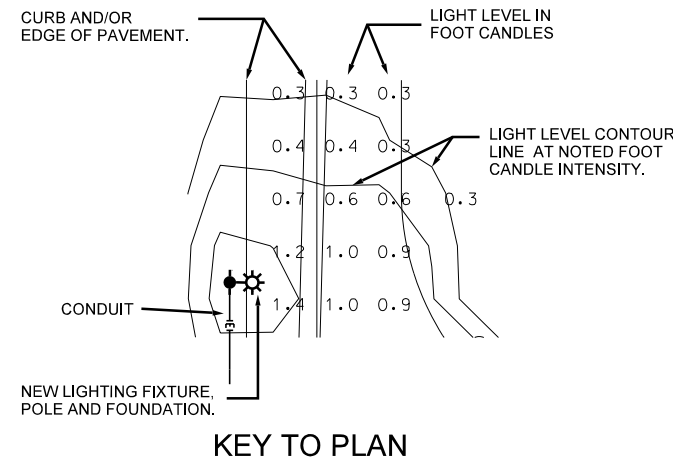
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	1/22/21
	DATE

BRUNSWICK
I-295 EXIT 28
LIGHTING PLANS

SHEET NUMBER
4
OF 22

LEGEND for LIGHTING

-  Control Cabinet and Service
-  Proposed Conduit
-  Pull Box (Precast Junction Box)
-  High Mast Pole, Luminaire and Foundation. Height as Noted
Luminaire Type and Number as Noted.
-  Direction of Luminaire



CONDUIT SUMMARY

Circuit 2, I-295 SB Off-Ramp				XHHW-2 Wire Size #2 AWG Stranded Copper, 240 V
Station	Pole	Breakaway	Distance	Remarks 12.30 AMPS
Control Cabinet Durham Road	-	-	75'	PLUS SPARE CONDUIT
JB7	-	-	45'	PLUS SPARE CONDUIT
JB8	-	-	250'	PLUS SPARE CONDUIT
JB9	-	-	490'	
JB10	-	-	501'	
JB11	-	-	358'	
JB12	-	-	60'	
JB13	-	-	185'	
19+78.98 RT	6	-	426'	
15+79.66 RT	7	-	420'	
11+80.37 RT	8	-		
JB13	-	-	276'	
24+48.30 RT	9	-	430'	
28+96.49 RT	10	-		

Date: 3/6/2021

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Division: HIGHWAY

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

024359.00
WIN
24359.00
HIGHWAY PLANS

PROJ. MANAGER	J. DOSTIE	BY	DATE
DESIGN DETAILED	ALG	JLE	1-21
CHECKED-REVIEWED	ALG		1-21
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BRUNSWICK
I-295 EXIT 28
LIGHTING PLANS

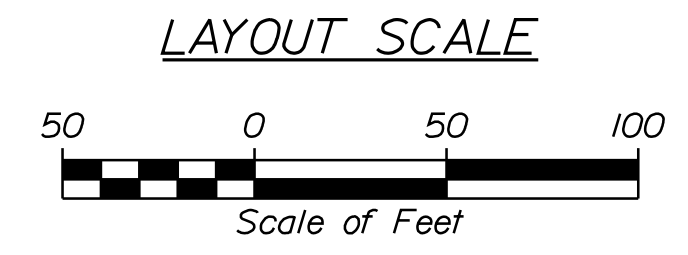
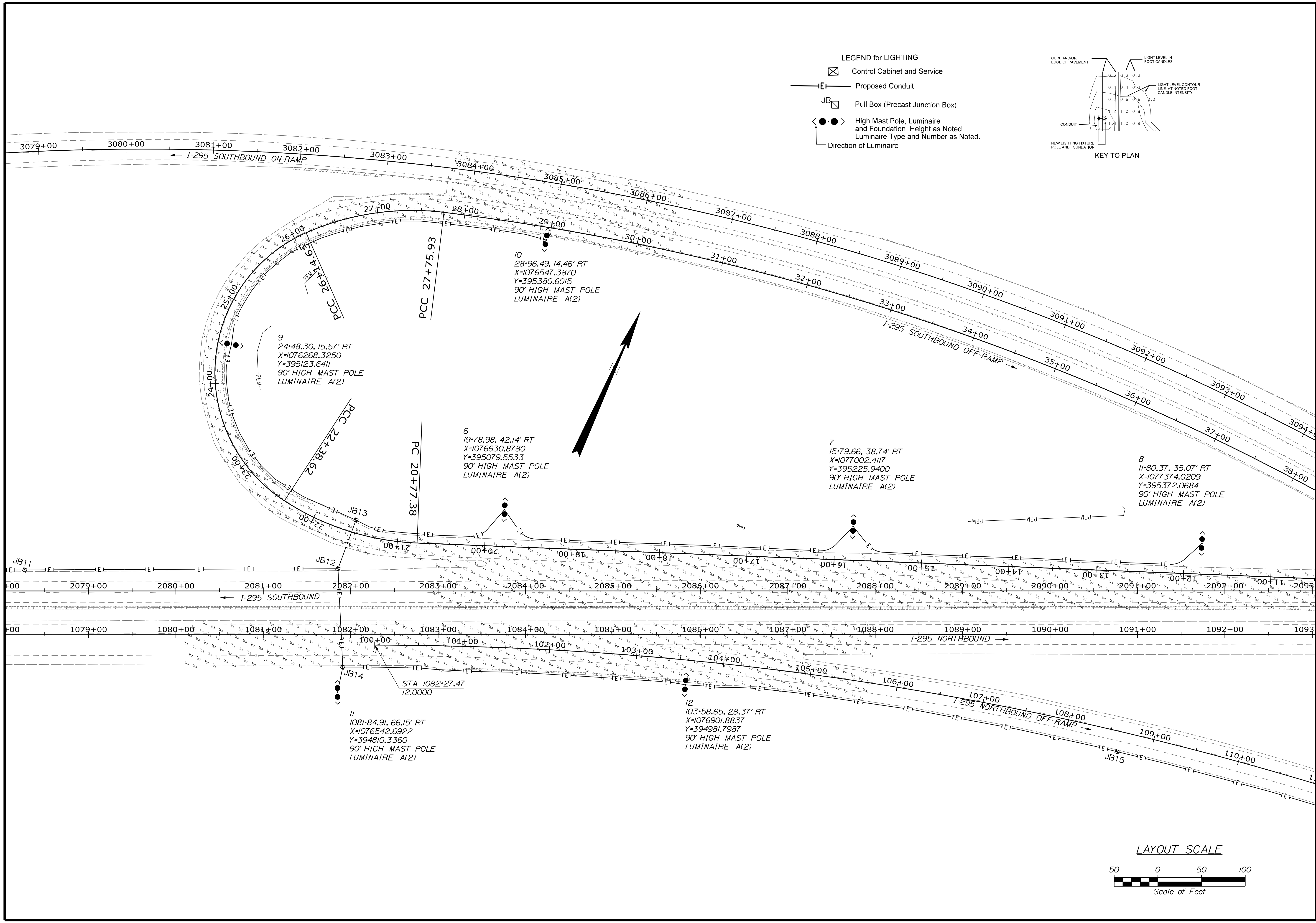
SHEET NUMBER
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Date: 3/6/2021

Username: common

Division: HIGHWAY

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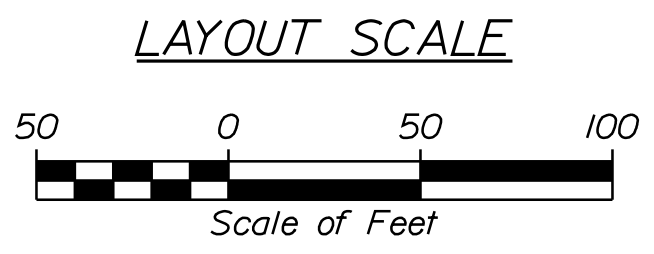
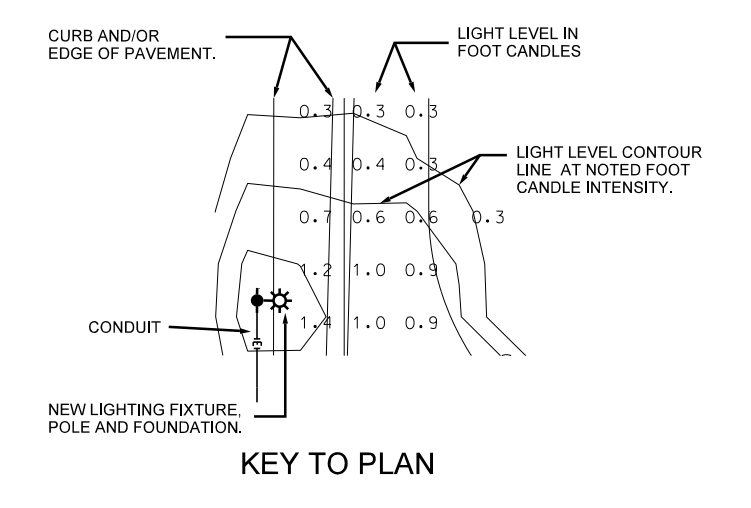
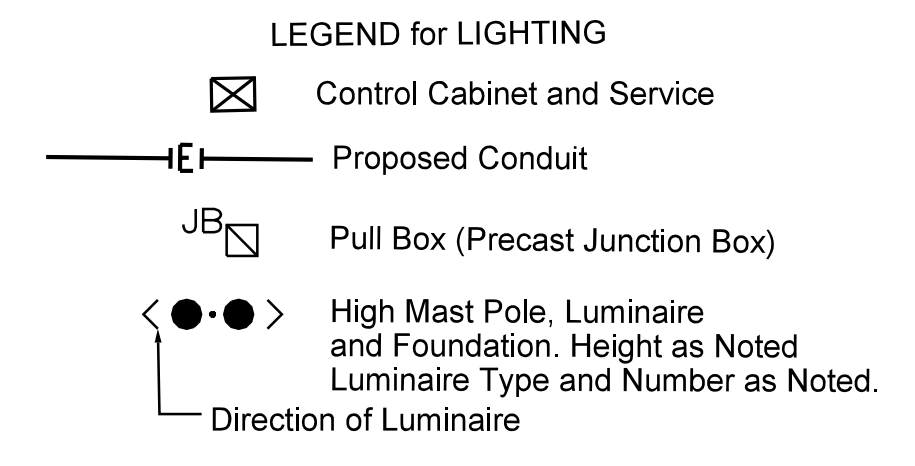
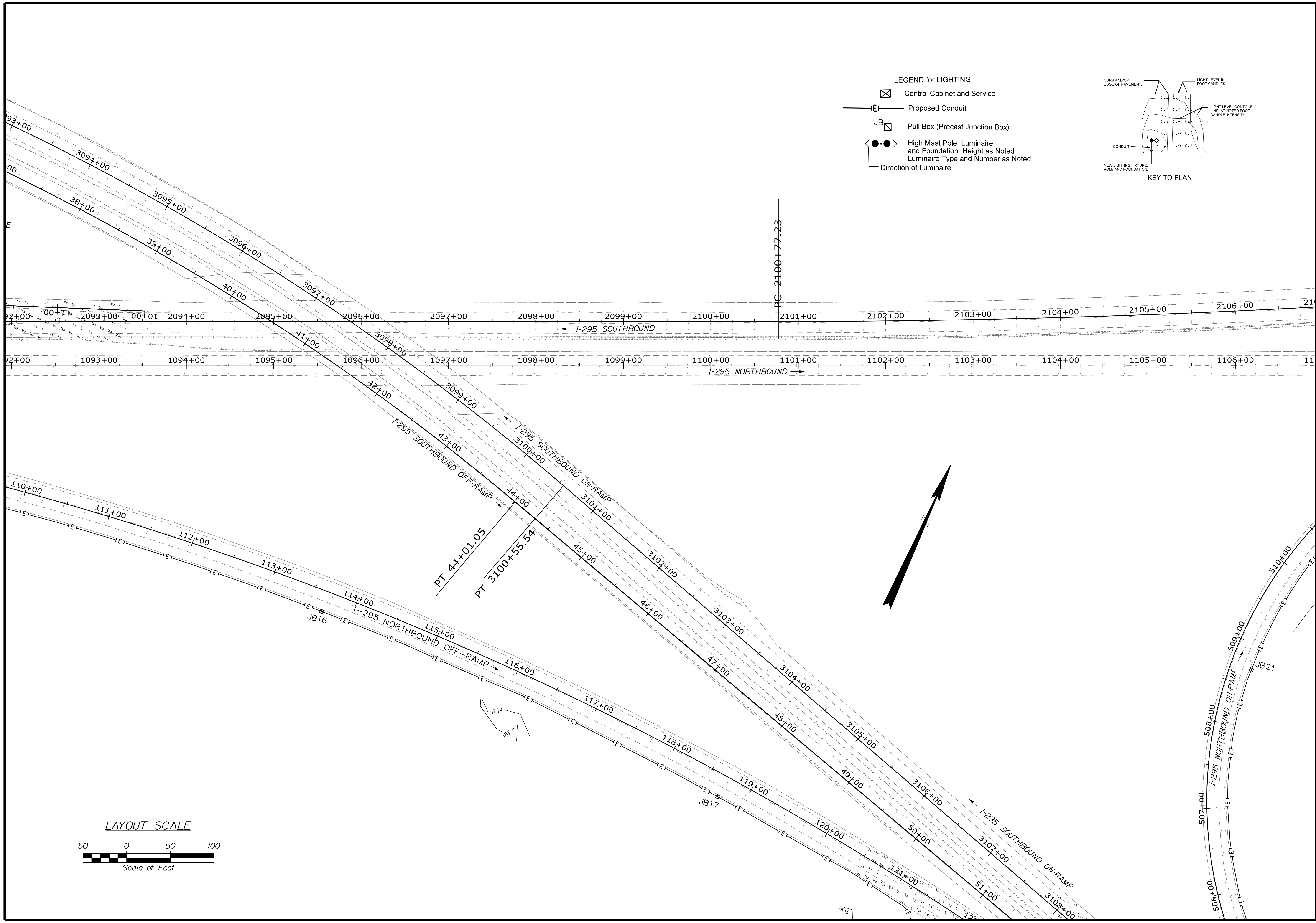
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		024359.00		WIN		243595.00		HIGHWAY PLANS	
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DESIGN-DETAILED	ALG	CHECKED-REVIEWED	ALG	DESIGN-DETAILED	ALG	DESIGN-DETAILED	ALG	REVISIONS 1	
								REVISIONS 2	
								REVISIONS 3	
								REVISIONS 4	
								FIELD CHANGES	
BRUNSWICK I-295 EXIT 28					LIGHTING PLANS				
SHEET NUMBER					6				
					OF 22				

Date: 1/28/2021

Username: common

Division: HIGHWAY

Filename: ...007_Light_Plan_05.dgn



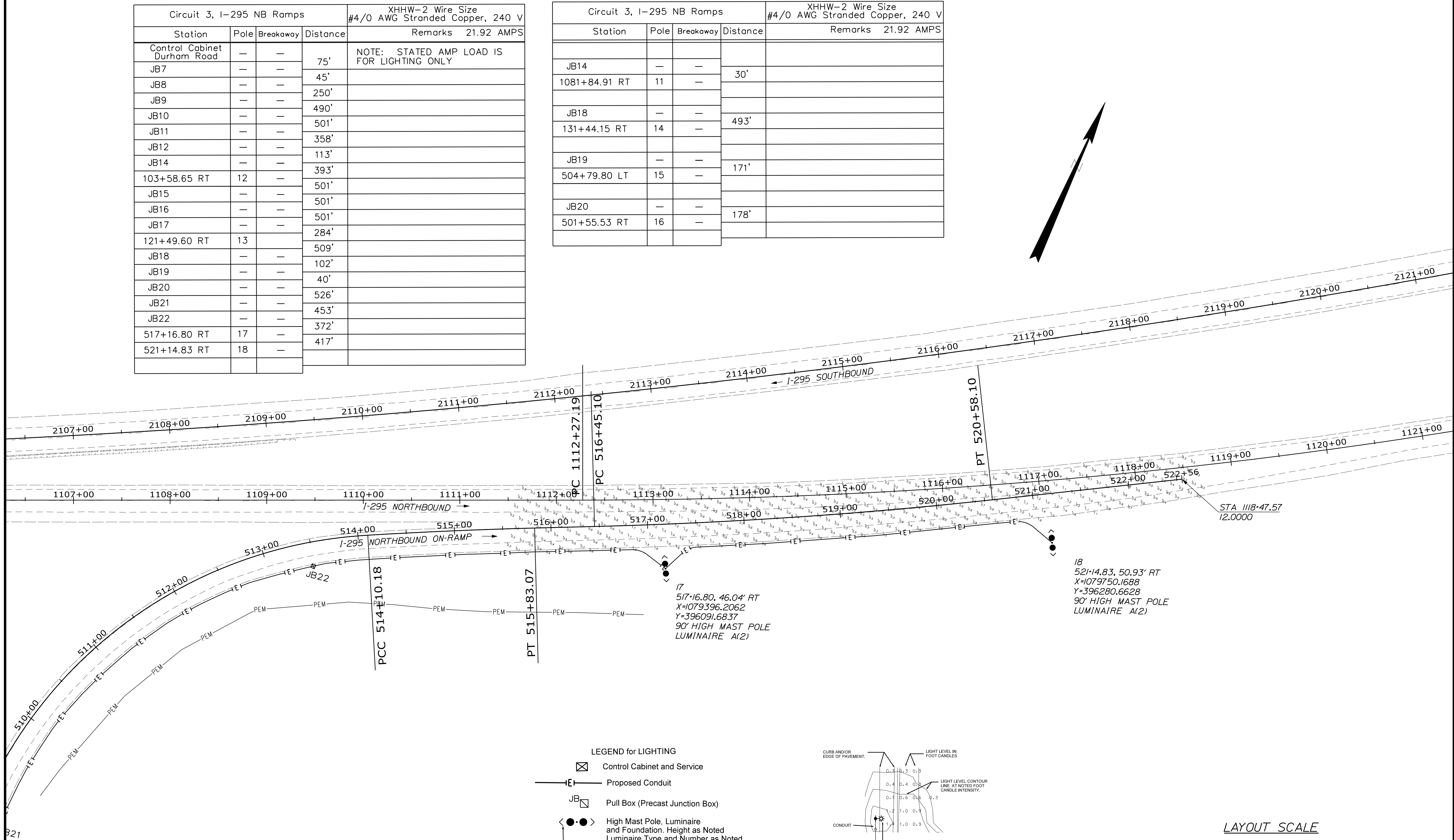
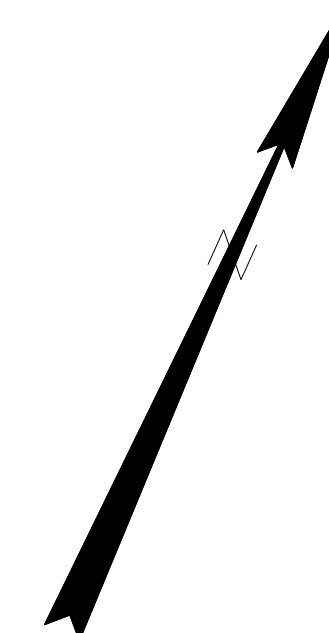
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BRUNSWICK I-295 EXIT 28		LIGHTING PLANS		SHEET NUMBER			
28		OF 22					
PROJ. MANAGER	J. DOSTE	BY	JLE	DATE	1-21	SIGNATURE	
CHECKED-REVIEWED	ALG	DATE	1-21	P.E. NUMBER	1/25/21	DATE	
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DESIGNS DETAILED		REVISIONS 3					
DESIGNS DETAILED		REVISIONS 4					
FIELD CHANGES							

CONDUIT SUMMARY

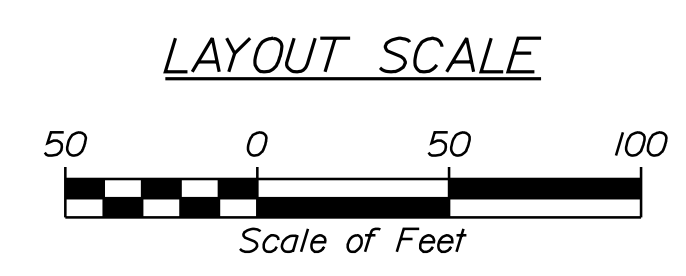
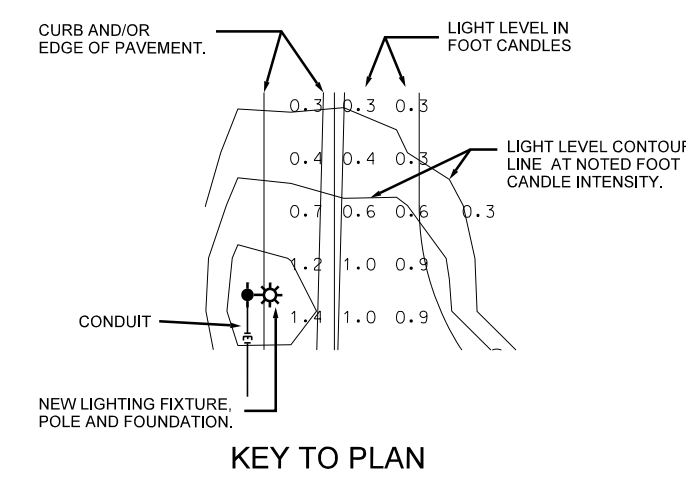
Circuit 3, I-295 NB Ramps				XHHW-2 Wire Size #4/0 AWG Stranded Copper, 240 V
Station	Pole	Breakaway	Distance	Remarks 21.92 AMPS
Control Cabinet Durham Road	—	—	75'	NOTE: STATED AMP LOAD IS FOR LIGHTING ONLY
JB7	—	—	45'	
JB8	—	—	250'	
JB9	—	—	490'	
JB10	—	—	501'	
JB11	—	—	358'	
JB12	—	—	113'	
JB14	—	—	393'	
103+58.65 RT	12	—	501'	
JB15	—	—	501'	
JB16	—	—	501'	
JB17	—	—	284'	
121+49.60 RT	13	—	509'	
JB18	—	—	102'	
JB19	—	—	40'	
JB20	—	—	526'	
JB21	—	—	453'	
JB22	—	—	372'	
517+16.80 RT	17	—	417'	
521+14.83 RT	18	—		

CONDUIT SUMMARY

Circuit 3, I-295 NB Ramps				XHHW-2 Wire Size #4/0 AWG Stranded Copper, 240 V
Station	Pole	Breakaway	Distance	Remarks 21.92 AMPS
JB14	—	—	30'	
1081+84.91 RT	11	—		
JB18	—	—	493'	
131+44.15 RT	14	—		
JB19	—	—	171'	
504+79.80 LT	15	—		
JB20	—	—	178'	
501+55.53 RT	16	—		



- LEGEND for LIGHTING**
- ☒ Control Cabinet and Service
 - |— Proposed Conduit
 - JB □ Pull Box (Precast Junction Box)
 - ● > High Mast Pole, Luminaire and Foundation. Height as Noted. Luminaire Type and Number as Noted.
 - ← Direction of Luminaire



Date: 1/28/2021

Username: common

Division: HIGHWAY

Filename: ... \008_Light_Plan_06.dgn

STATE OF MAINE
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WIN
24359.00
HIGHWAY PLANS

PROJ. MANAGER	J. DOSTIE	BY	DATE	DESIGN DETAILED	ALG	1-21	SIGNATURE	P.E. NUMBER	DATE
CHECKED-REVIEWED	ALG	JLE	1-21	DESIGN DETAILED				1/25/21	
DESIGN DETAILED				REVISIONS 1					
				REVISIONS 2					
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				REVISIONS 4					
				FIELD CHANGES					

BRUNSWICK
I-295 EXIT 28
LIGHTING PLANS

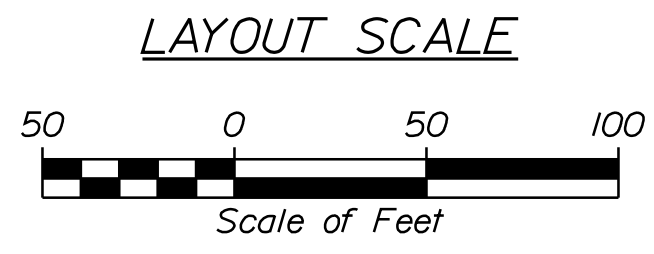
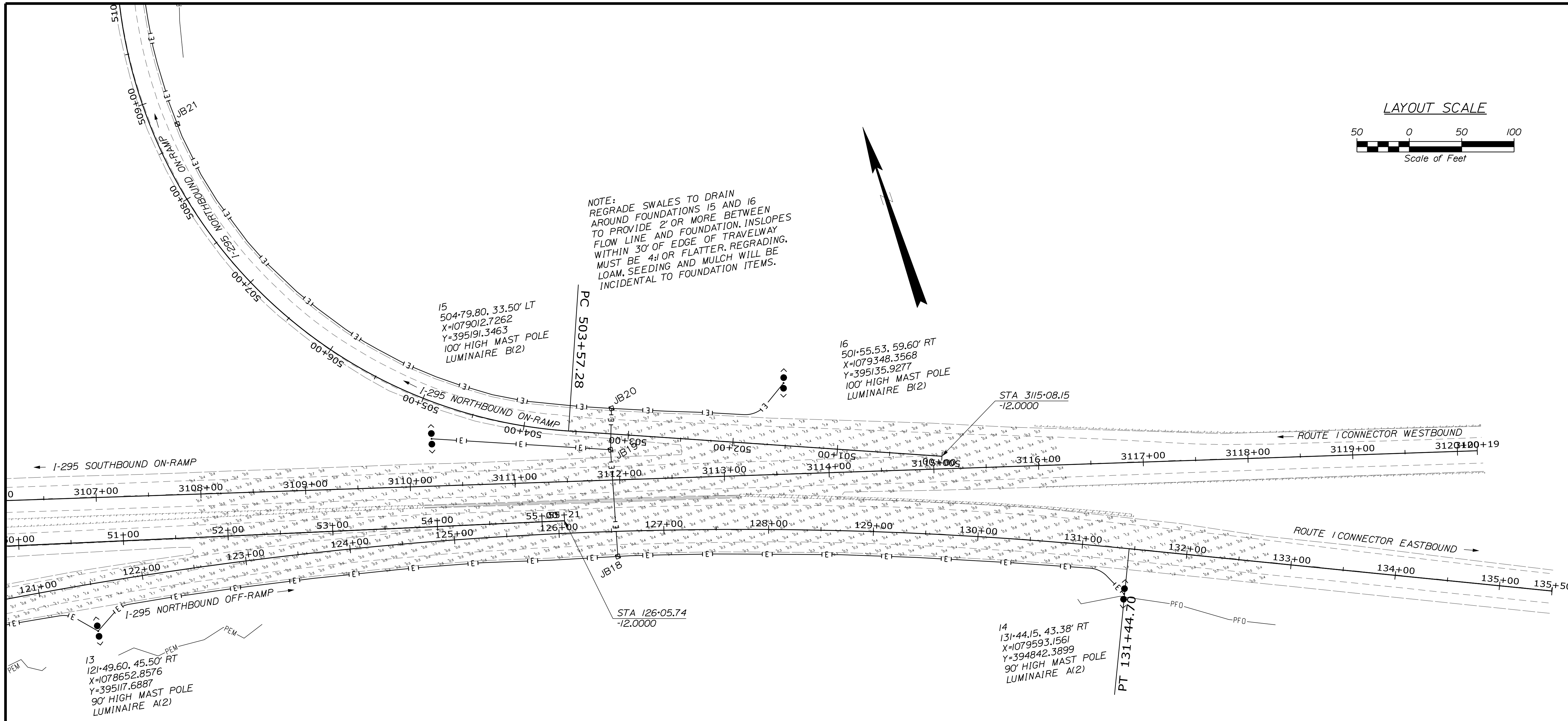
SHEET NUMBER
8
OF 22

Date: 1/28/2021

Username: common

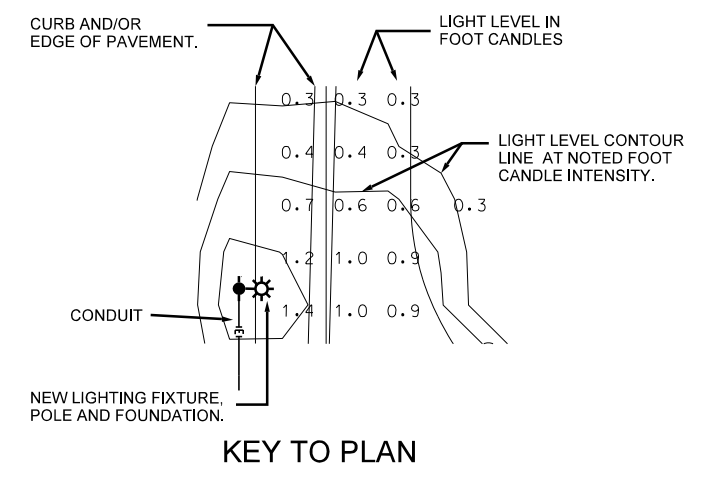
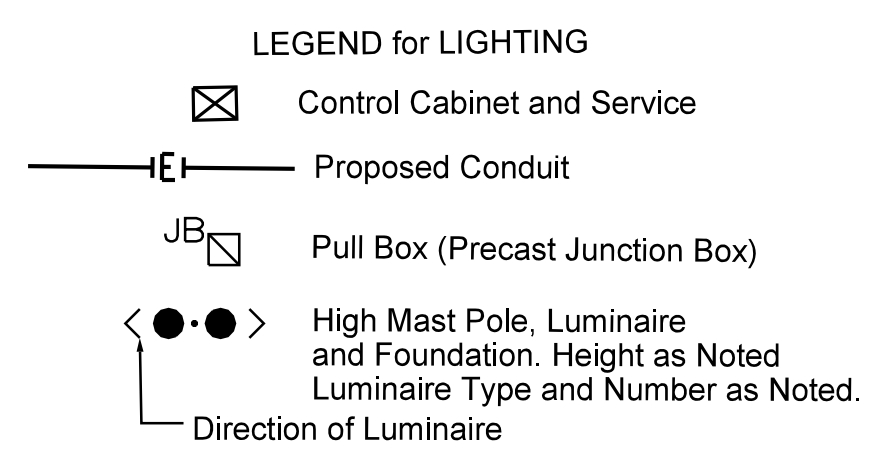
Division: HIGHWAY

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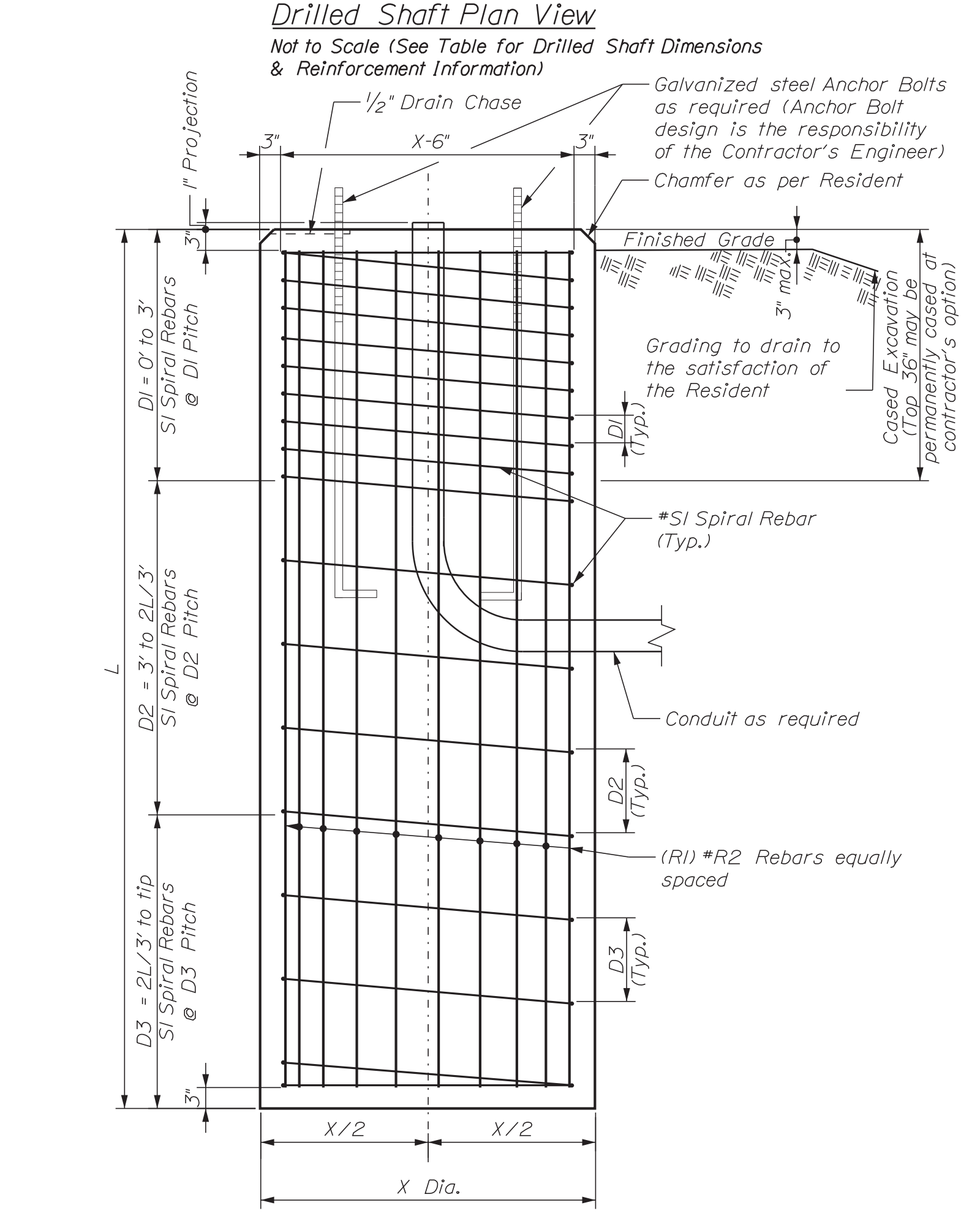
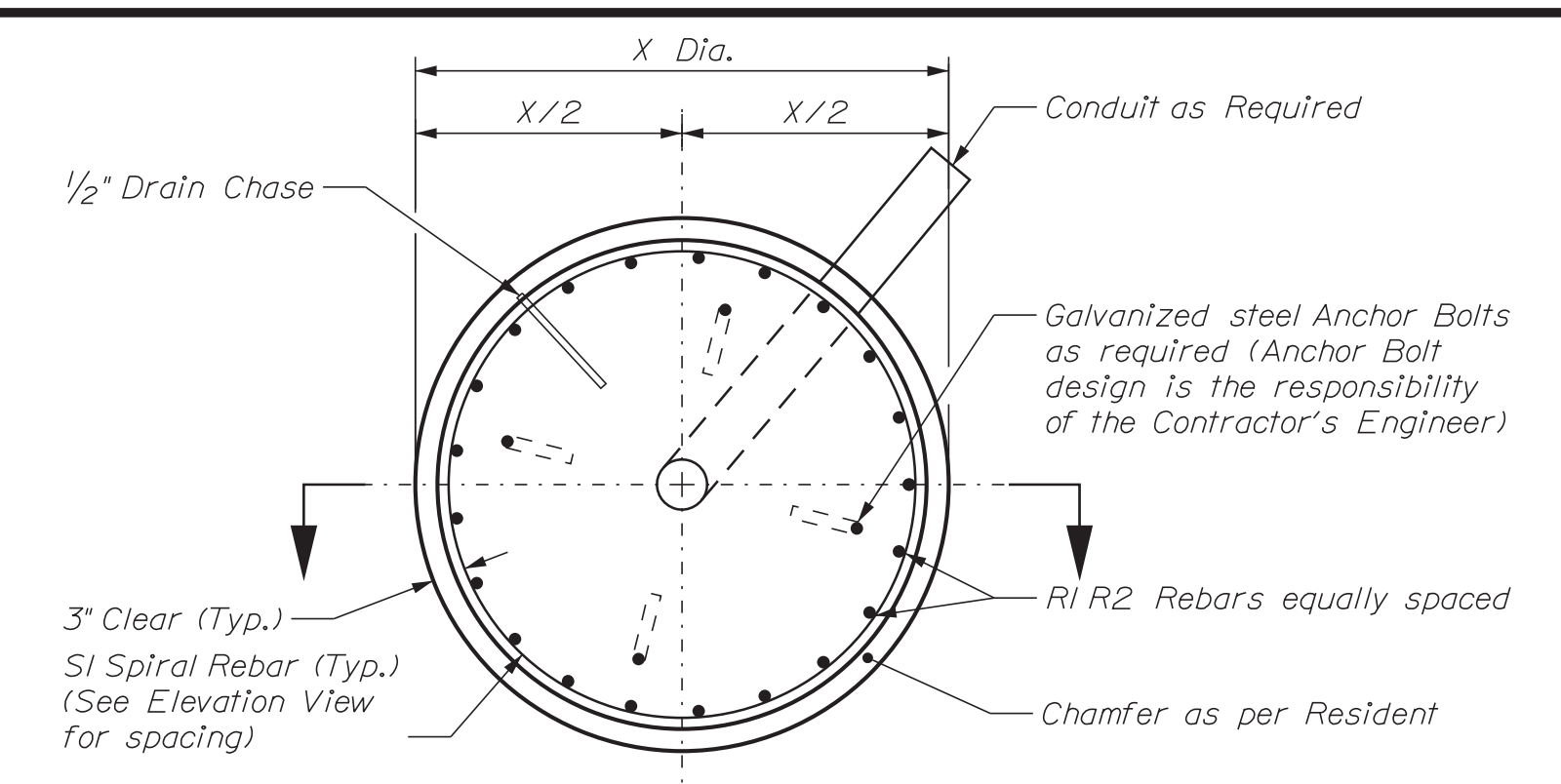
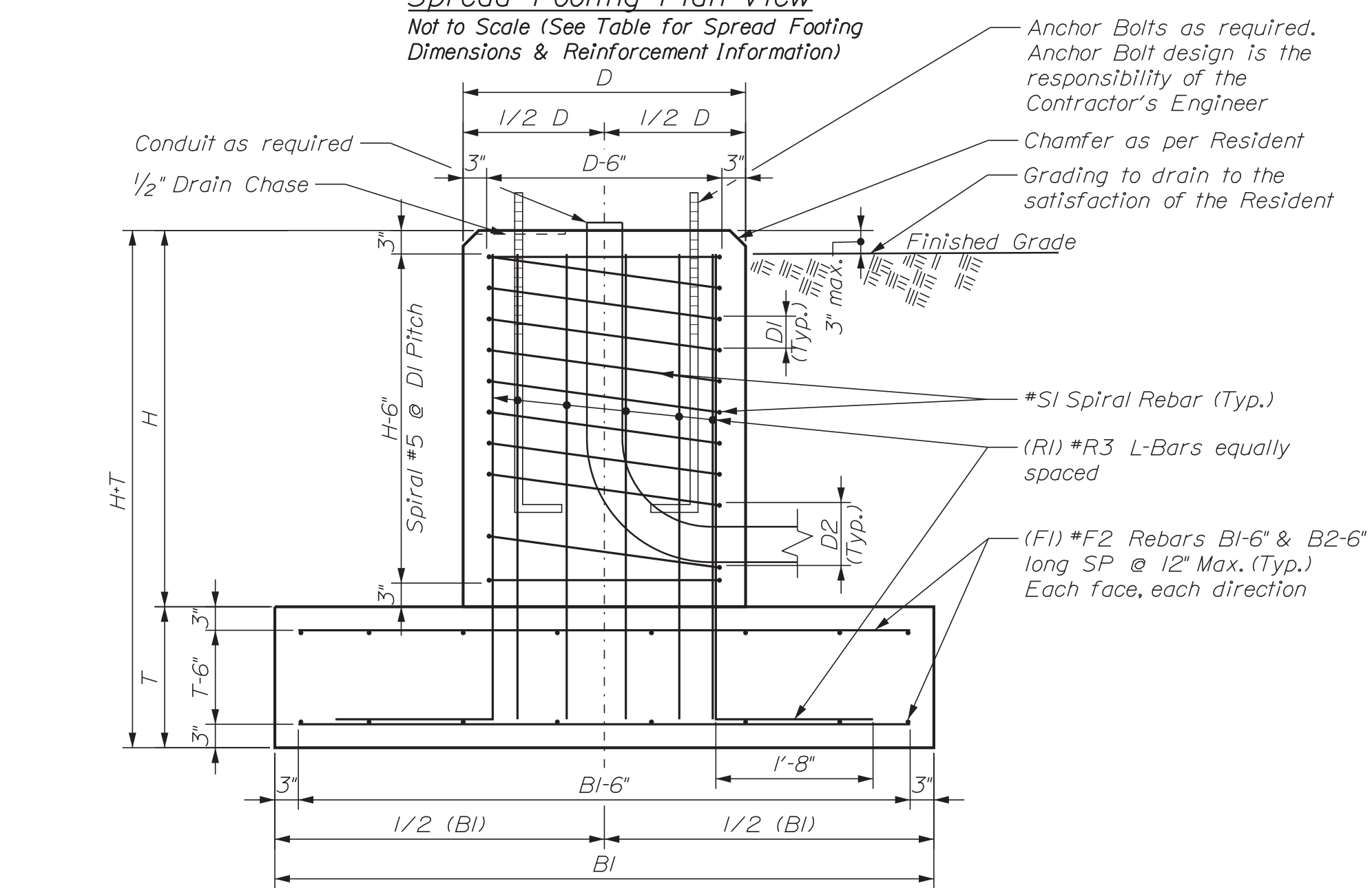
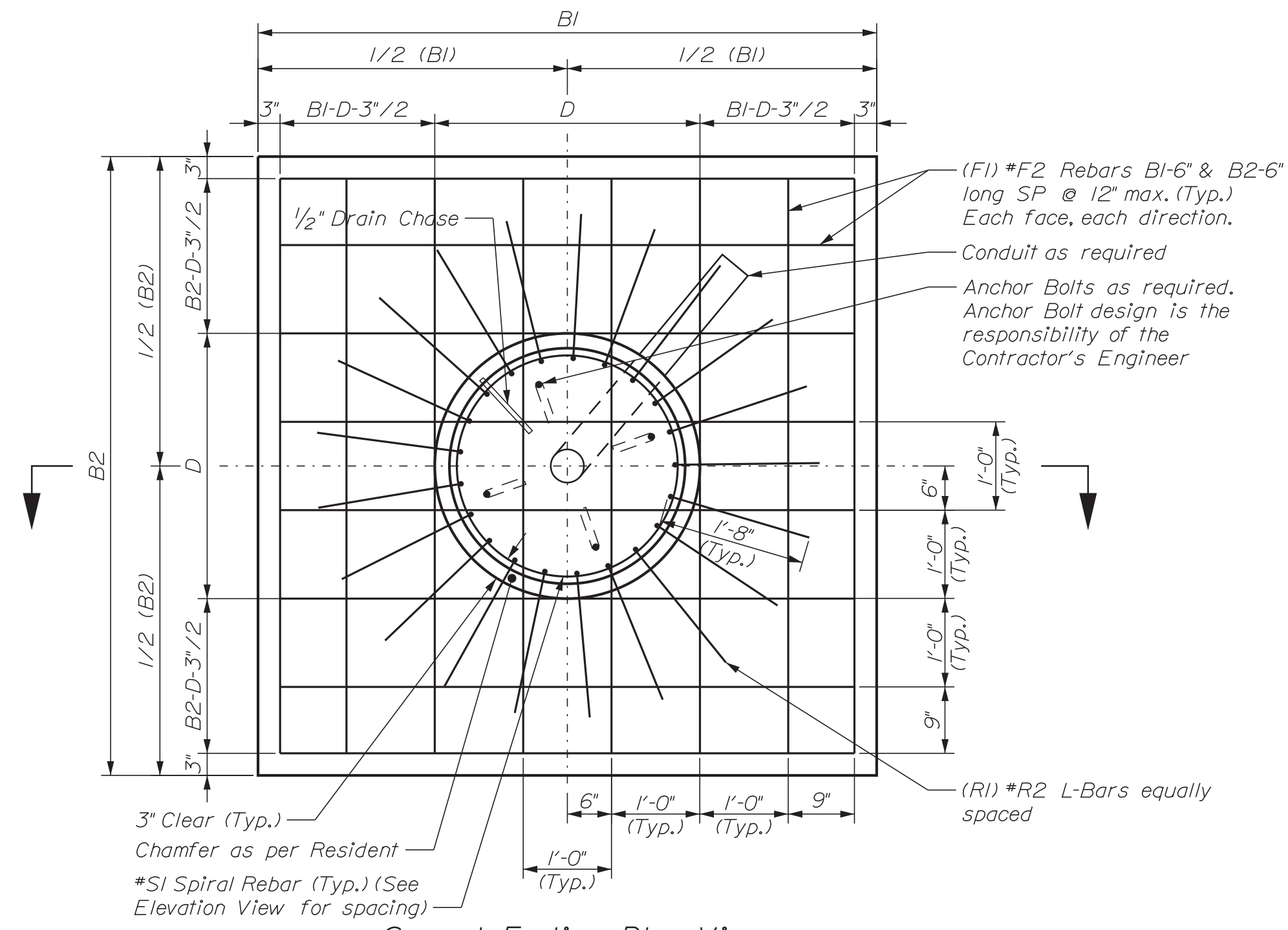


Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
⬆ ● ⬆	A	16	Holophane	HMLED4 P2 40K XXXXX MAS	HMLED4 P2 Performance Package with 4000K CCT, 70CRI, MAS Optic and no House Side Shield		2	HMLED4_P2_40K_X XXXX_MAS.ies	43066	0.85	590
⬆ ● ⬆	B	2	Holophane	HMLED4 P3 40K XXXXX MAS	HMLED4 P3 Performance Package with 4000K CCT, 70CRI, MAS Optic and no House Side Shield		2	HMLED4_P3_40K_X XXXX_MAS.ies	62363	0.85	858

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
NB Off-Ramp	+	0.8 fc	1.9 fc	0.3 fc	6.3:1	2.7:1
NB On-Ramp Merge	+	0.6 fc	1.6 fc	0.3 fc	5.3:1	2.0:1
Rte. 1 Ramp Junctions	+	0.7 fc	2.0 fc	0.3 fc	6.7:1	2.3:1
SB Off-Ramp	+	0.7 fc	1.8 fc	0.3 fc	6.0:1	2.3:1
SB On-Ramp Merge	+	0.6 fc	1.5 fc	0.2 fc	7.5:1	3.0:1



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		024359.00	WIN 24359.00	HIGHWAY PLANS
	DATE	BY	SIGNATURE	P.E. NUMBER
	1-21	JLE		1/22/21
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CHECKED-REVIEWED	ALG			
DESIGN-DETAILED				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				
BRUNSWICK I-295 EXIT 28		LIGHTING PLANS		
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OF 22				



- NOTES:**
1. All reinforcing steel shall be grade 60 and conform to MaineDOT Standard Specification requirements along with any project specific Supplementals or Special Provisions.
 2. For spread footing foundations, L-Bars shall have a Min. 1'-8" Leg.
 3. All rebar shall have 3" cover unless otherwise noted.
 4. Should there be a discrepancy between these Details and actual observed field conditions report it to the Resident immediately.
 5. Do not proceed with dependent work until any such discrepancy is resolved to the satisfaction of the Resident.
 6. Concrete to be Class LP with $f'c = 5,000$ PSI.
 7. For construction of the spread footings at High Mast Pole Nos. 15, 16, and 18 bedrock may need to be removed, Bedrock removal shall be done in accordance with Standard Specification Section 203.042.

HIGH MAST POLES 4, 15, 16 & 18
 See Table below for Station & Offsets of High Mast Poles

HIGH MAST POLES 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, & 17
 See Table below for Station & Offsets of High Mast Poles

SPREAD FOOTING FOUNDATIONS					DRILLED SHAFT FOUNDATIONS												
High Mast Pole No.	Station & Offset	Footing Dimensions			Shaft Dimensions		Reinforcing Steel - Footing			Reinforcing Steel - Shaft				Spiral Bar Spacing			
		B1	B2	T	H1	D1	F1	F2	Maximum Spacing	R1	R2	R3	S1	D1 (in)	D2 (in)	D3 (in)	
		Length (feet)	Length (feet)	Footing Height (feet)	Shaft Height (feet)	Shaft Diameter (feet)	Longitudinal Rebars Quantity	Longitudinal Rebars Size	(inches)	Longitudinal Rebars Quantity	Longitudinal Rebars Size	L-Bar Size	Spiral Rebars Size	0 to 3 ft	3 ft to 2L/3 ft	2L/3 ft to tip	
4	2027+75.39, 73.46' LT	9.5	9.5	2.0	6.0	4.0	40	#5	12	21	#9	#6	#5	4	4	4	
15	504+79.80, 33.50' LT	12.0	12.0	2.0	2.5	4.0	52	#5	12	21	#9	#6	#5	4	--	--	
16	501+55.53, 59.60' RT	12.0	12.0	2.0	2.5	4.0	52	#5	12	21	#9	#6	#5	4	--	--	
18	521+14.83, 50.93' RT	11.0	11.0	2.0	2.5	4.0	48	#5	12	21	#9	#6	#5	4	--	--	

High Mast Pole No.	Station and Offset	Drilled Shaft Dimensions		Reinforcing Steel			Spiral Bar Spacing		
		X	L	R1	R2	S1	D1 (in)	D2 (in)	D3 (in)
		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	2015+76.59, 70.25' LT	4.0	15.0	21	#9	#5	4	4	12
2	2019+76.36, 72.22' LT	4.0	14.0	21	#9	#5	4	4	12
3	2023+76.19, 72.93' LT	4.0	15.0	21	#9	#5	4	4	12
5	2031+75.72, 78.76' LT	4.0	10.0	21	#9	#5	4	4	12
6	19+78.98, 42.14' RT	4.0	10.0	21	#9	#5	4	4	12
7	15+79.66, 38.74' RT	4.0	16.0	21	#9	#5	4	12	12
8	11+80.37, 35.07' RT	4.0	15.0	21	#9	#5	4	4	12
9	24+48.30, 15.57' RT	4.0	10.0	21	#9	#5	4	4	12
10	28+96.49, 14.46' RT	4.0	10.0	21	#9	#5	4	4	12
11	1081+84.91, 66.15' RT	4.0	10.0	21	#9	#5	4	4	12
12	103+58.65, 28.37' RT	4.0	15.0	21	#9	#5	4	4	12
13	121+49.60, 45.50' RT	4.0	16.0	21	#9	#5	4	12	12
14	131+44.15, 43.38' RT	4.0	15.0	21	#9	#5	4	4	12
17	517+16.80, 46.04' RT	4.0	10.0	21	#9	#5	4	4	12

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 HIGHWAY PLANS

BRUNSWICK
 I-295 EXIT 28
 HIGH MAST LIGHTING POLE FOUNDATIONS

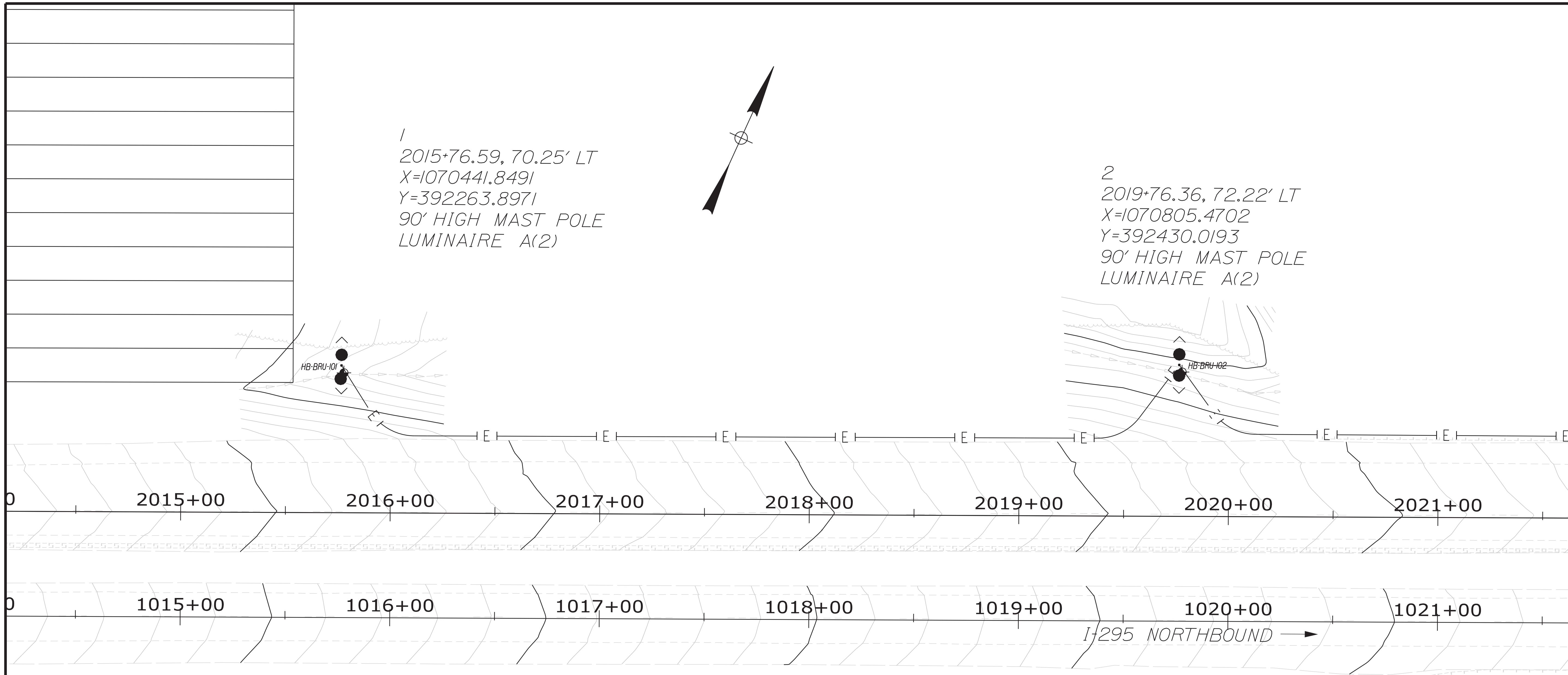
SHEET NUMBER
10
 OF 22

Date: 2/3/2021

Username: Terry.White

Division: GEOTECH






Filename: ... \00\GEOTECH\MSTAN011_BLP1.dgn





1
 2015+76.59, 70.25' LT
 X=1070441.8491
 Y=392263.8971
 90' HIGH MAST POLE
 LUMINAIRE A(2)

2
 2019+76.36, 72.22' LT
 X=1070805.4702
 Y=392430.0193
 90' HIGH MAST POLE
 LUMINAIRE A(2)

LEGEND for LIGHTING

-  Control Cabinet and Service
-  Proposed Conduit
-  Pull Box (Precast Junction Box)
-  High Mast Pole, Luminaire and Foundation. Height as Noted
Luminaire Type and Number as Noted.
-  Direction of Luminaire

LEGEND
 AS DRILLED BORING LOCATION

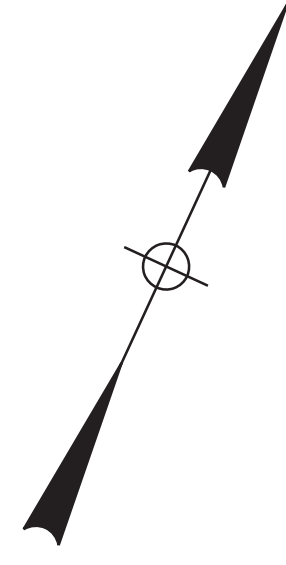
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DESIGN-DETAILED				
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REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				
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BORING LOCATION PLAN				
SHEET NUMBER				
11				
OF 22				

Date: 2/3/2021

Username: Terry.White

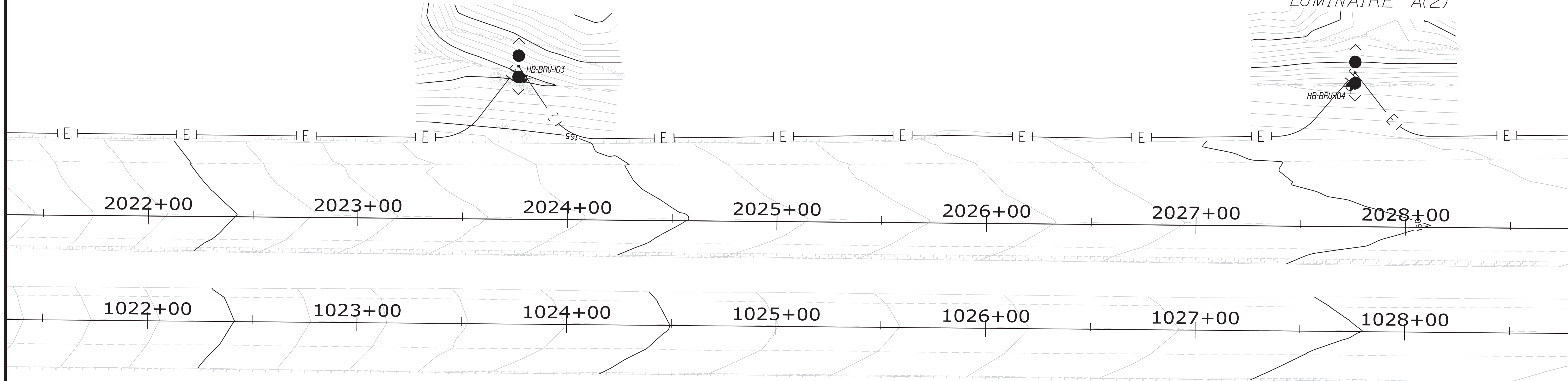
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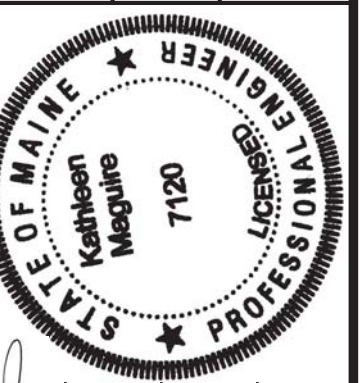


3
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 X=1071169.6697
 Y=392595.0189
 90' HIGH MAST POLE
 LUMINAIRE A(2)

4
 2027+75.39, 73.46' LT
 X=1071533.3655
 Y=392759.5925
 90' HIGH MAST POLE
 LUMINAIRE A(2)



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 2435900
 WIN
 24359.00
 HIGHWAY PLANS



SIGNATURE
 P.E. NUMBER
 DATE

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED		
CHECKED-REVIEWED		
DESIGN-DETAILED	K. MAGUIRE	JAN 2021
DESIGN-DETAILED	T. WHITE	JAN 2021
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRUNSWICK
 I-295 EXIT 28
 BORING LOCATION PLAN

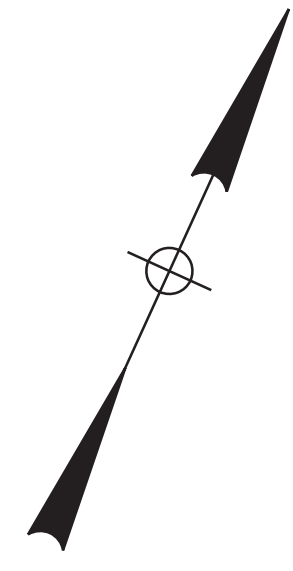
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Date: 2/3/2021

Username: Terry.White

Division: GEOTECH

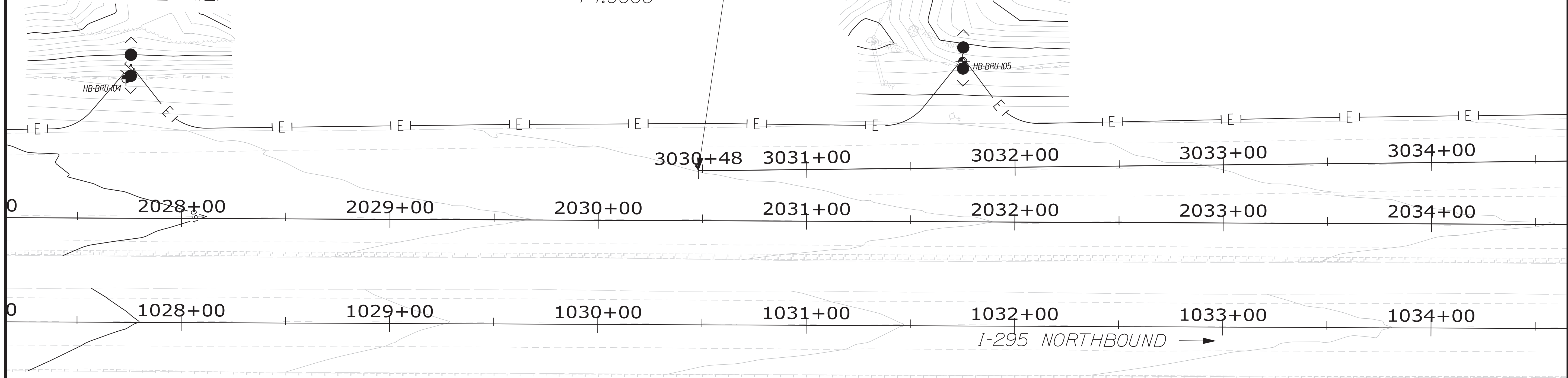
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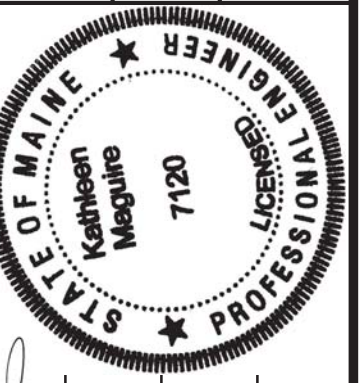
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 Y=392759.5925
 90' HIGH MAST POLE
 LUMINAIRE A(2)

5
 2031+75.72, 78.73' LT
 X=1071895.4012
 Y=392928.6084
 90' HIGH MAST POLE
 LUMINAIRE A(2)

STA 1030+47.95
 -74.0000



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 2435900
 WIN
 24359.00
 HIGHWAY PLANS



SIGNATURE
 P.E. NUMBER
 DATE

PROJ. MANAGER	BY	DATE
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CHECKED-REVIEWED		
DESIGN DETAILED	K. MAGUIRE	JAN 2021
DESIGN DETAILED	T. WHITE	7/120
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BRUNSWICK
 I-295 EXIT 28
 BORING LOCATION PLAN

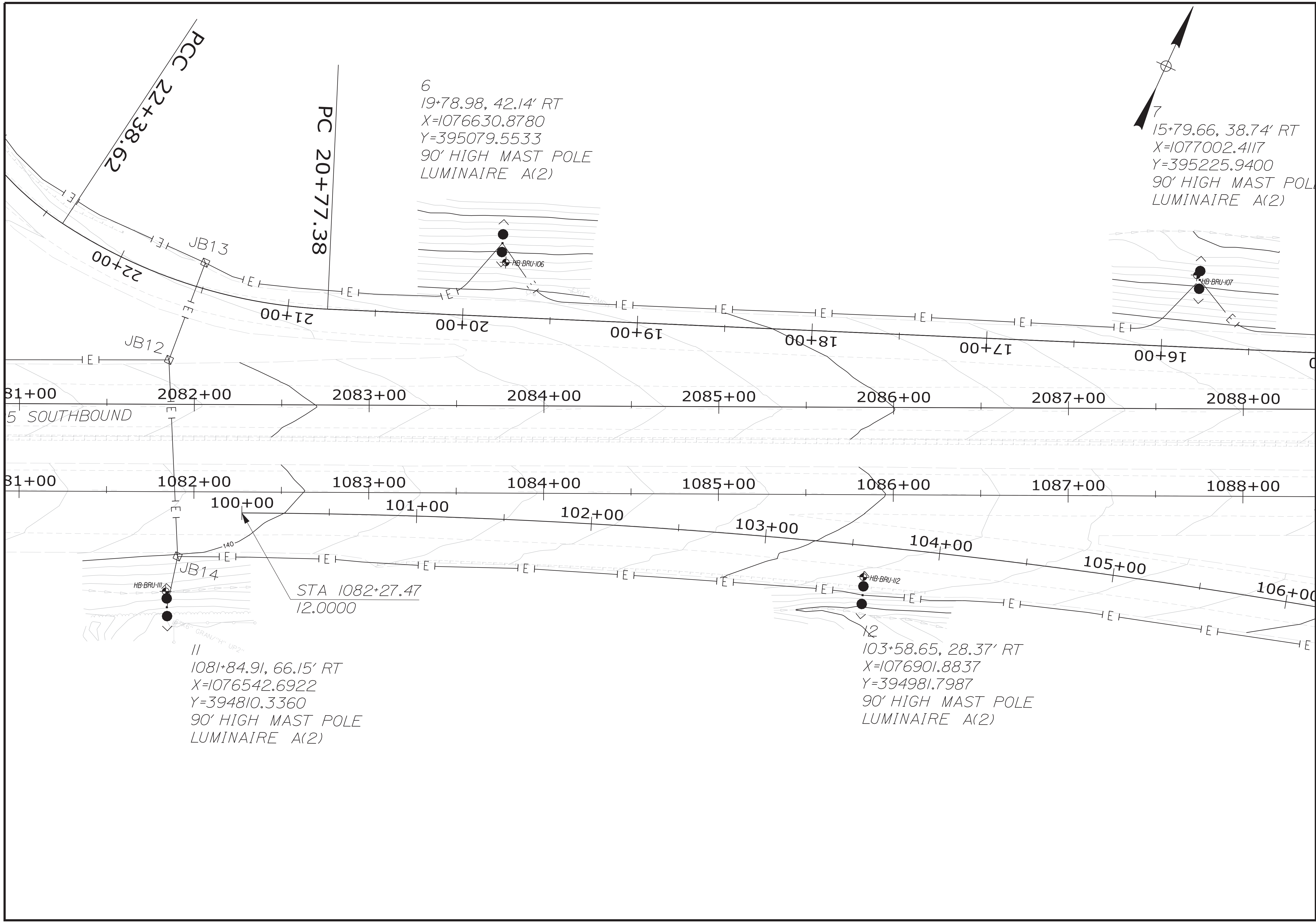
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Date: 2/3/2021

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STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 2435900
 WIN
 24359.00
 HIGHWAY PLANS



PROJ. MANAGER	DATE	BY	DATE
CHECKED-REVIEWED			
DESIGN DET AILED	JAN 2021	T. WHITE	7120
DESIGN DET AILED			
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BRUNSWICK
 I-295 EXIT 28
 BORING LOCATION PLAN

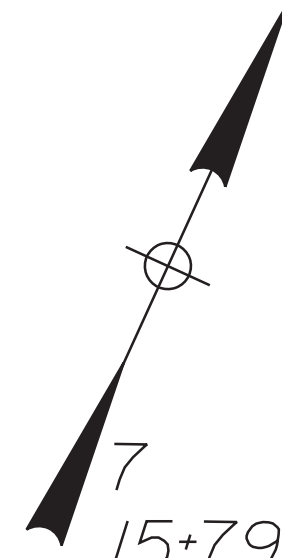
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Date: 2/3/2021

Username: Terry.White

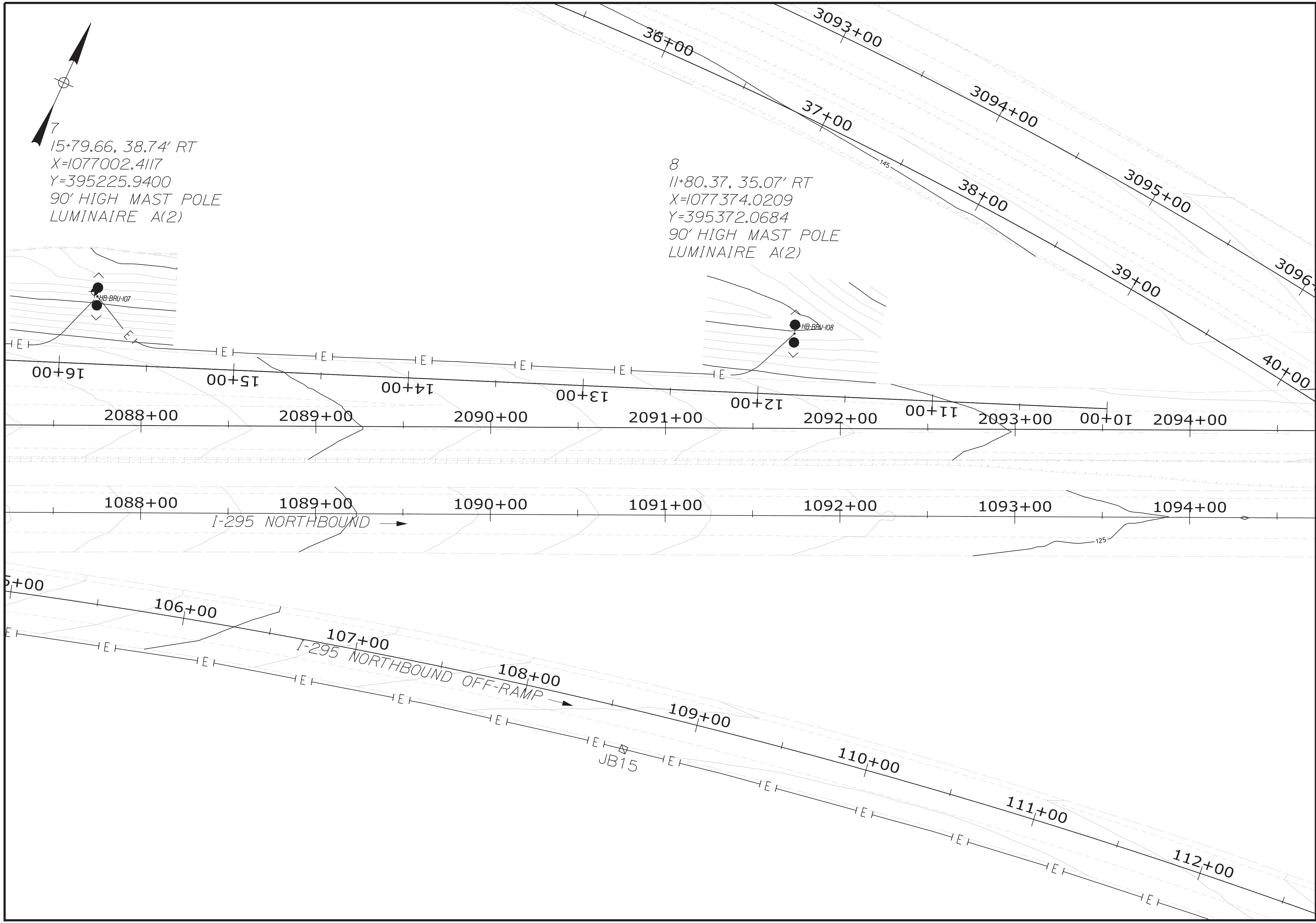
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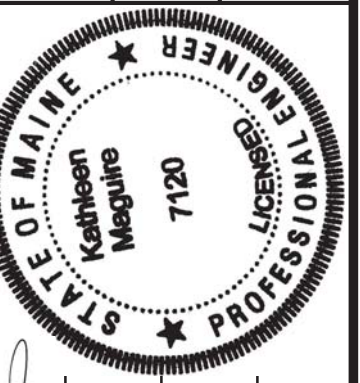


7
 15+79.66, 38.74' RT
 X=1077002.4117
 Y=395225.9400
 90' HIGH MAST POLE
 LUMINAIRE A(2)

8
 11+80.37, 35.07' RT
 X=1077374.0209
 Y=395372.0684
 90' HIGH MAST POLE
 LUMINAIRE A(2)



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 2435900
 WIN
 24359.00
 HIGHWAY PLANS

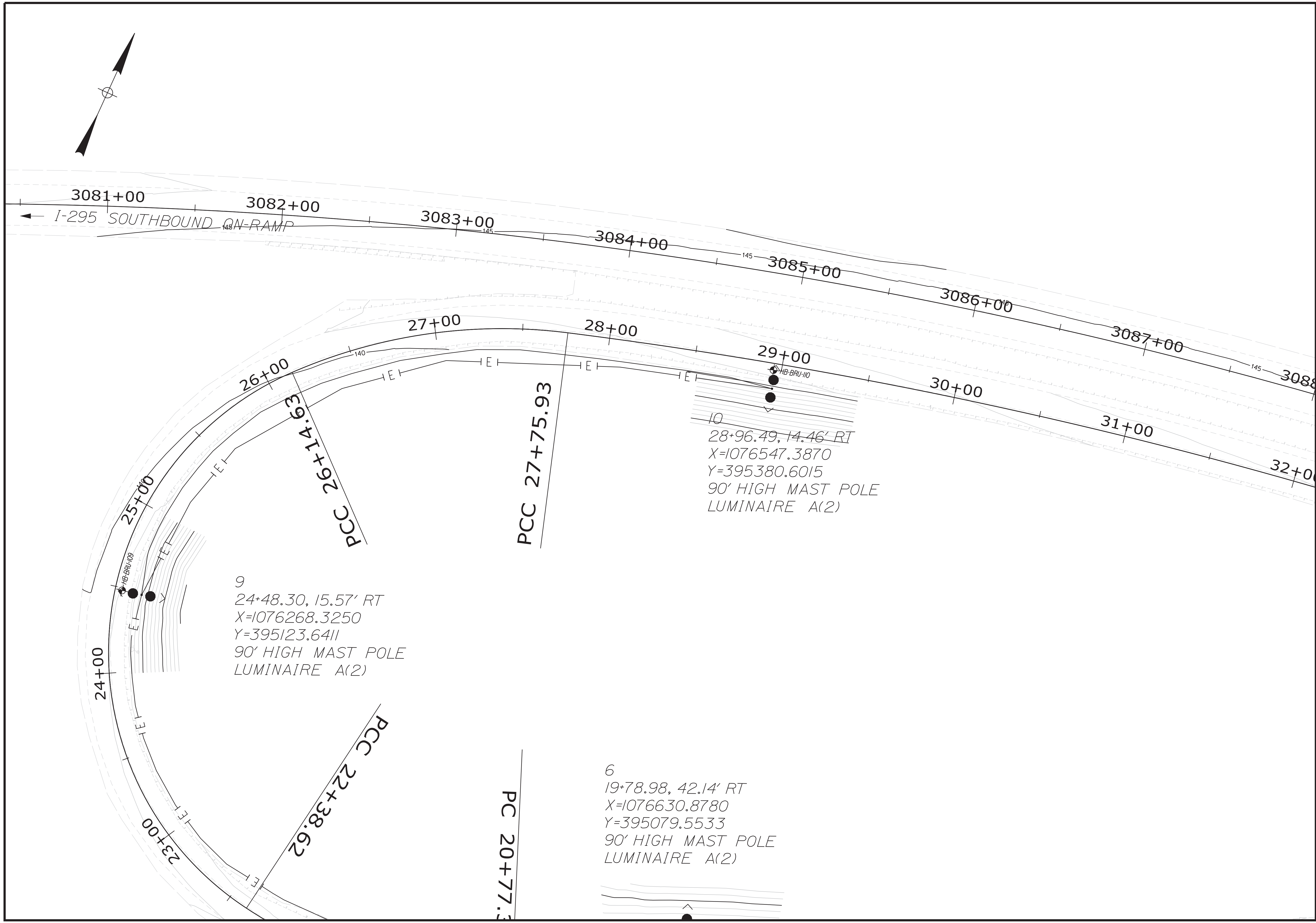



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CHECKED/REVIEWED		
DESIGNS DETAILED	K. MAGUIRE	JAN 2021
DESIGNS DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRUNSWICK
 I-295 EXIT 28
 BORING LOCATION PLAN

SHEET NUMBER
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 OF 22



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2435900	
		WIN	24359.00
HIGHWAY PLANS			

PROJ. MANAGER	BY	DATE
CHECKED-REVIEWED	T. WHITE	JAN 2021
DESIGN-REVIEWED	K. MAGUIRE	7/120
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

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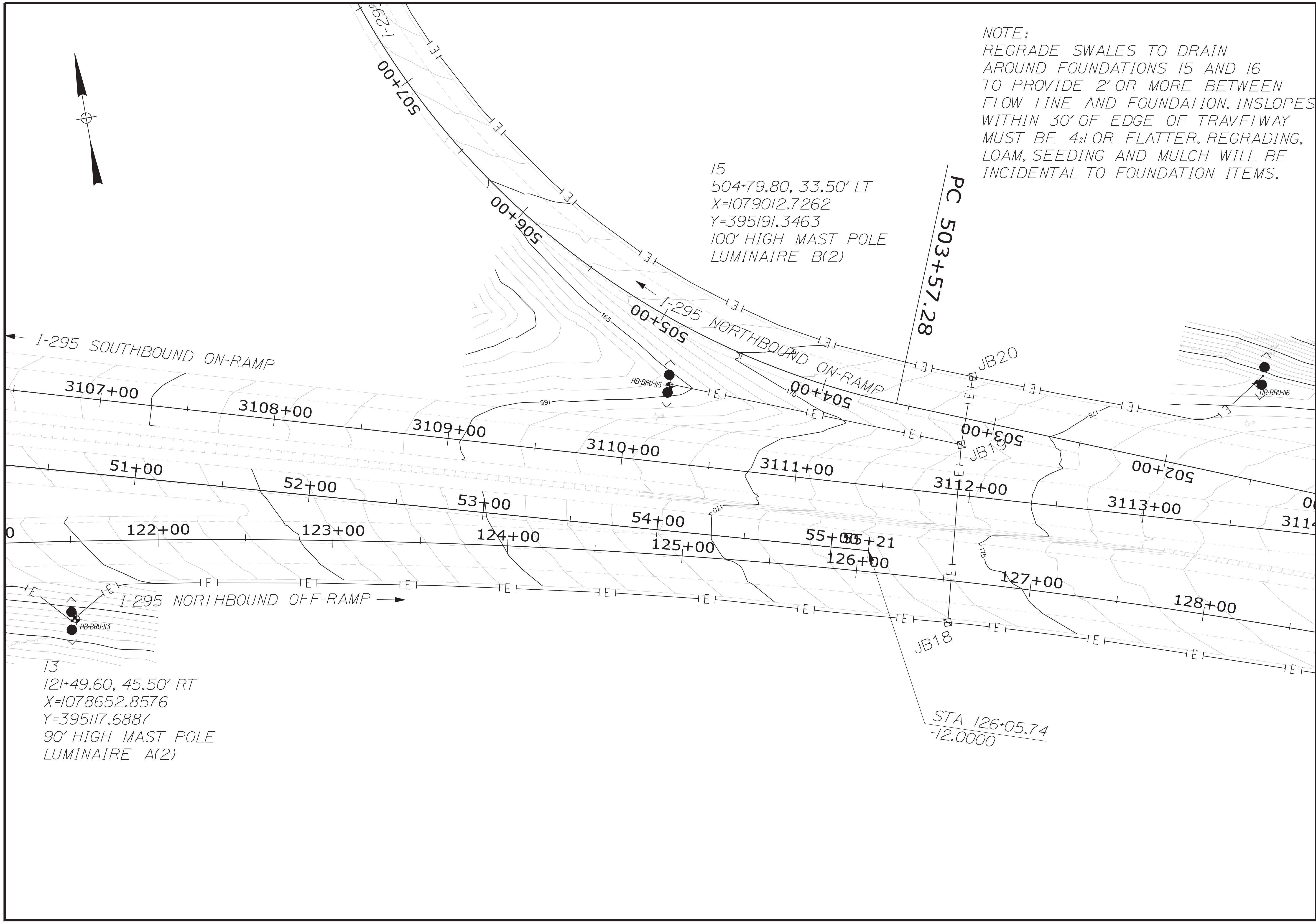
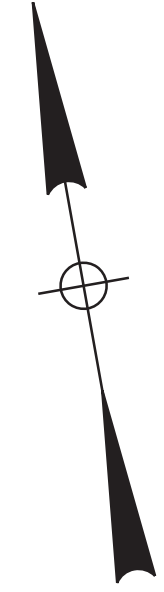
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Date: 2/3/2021

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Division: GEOTECH


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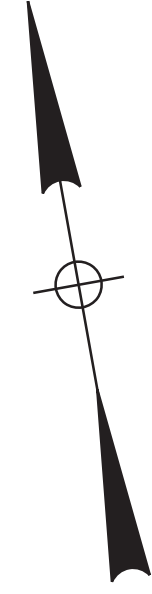
NOTE:
 REGRADE SWALES TO DRAIN
 AROUND FOUNDATIONS 15 AND 16
 TO PROVIDE 2' OR MORE BETWEEN
 FLOW LINE AND FOUNDATION. INSLOPES
 WITHIN 30' OF EDGE OF TRAVELWAY
 MUST BE 4:1 OR FLATTER. REGRADING,
 LOAM, SEEDING AND MULCH WILL BE
 INCIDENTAL TO FOUNDATION ITEMS.

15
 504+79.80, 33.50' LT
 X=1079012.7262
 Y=395191.3463
 100' HIGH MAST POLE
 LUMINAIRE B(2)

13
 121+49.60, 45.50' RT
 X=1078652.8576
 Y=395117.6887
 90' HIGH MAST POLE
 LUMINAIRE A(2)

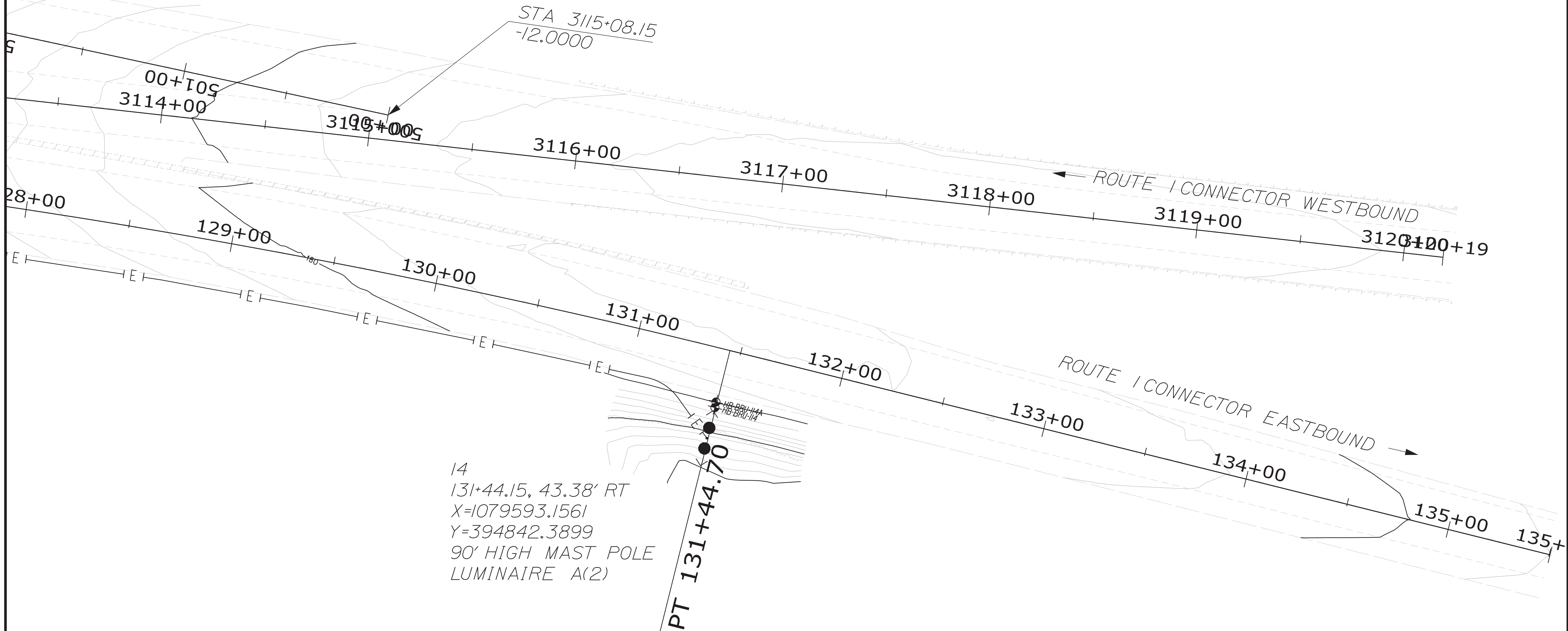
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2435900	
		HIGHWAY PLANS	
PROJ. MANAGER	BY	DATE	SIGNATURE
CHECKED-REVIEWED	T. WHITE	JAN 2021	7120
DESIGN DET AILED	K. MAGUIRE		
DESIGN DET AILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
BRUNSWICK I-295 EXIT 28		BORING LOCATION PLAN	
SHEET NUMBER		17	
		OF 22	

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 ... TRAVELWAY
 ... R. REGRADING,
 ... CH WILL BE
 ... ION ITEMS.



16
 501+55.53, 59.60' RT
 X=1079348.3568
 Y=395135.9277
 100' HIGH MAST POLE
 LUMINAIRE B(2)

HB-BRU-116



14
 131+44.15, 43.38' RT
 X=1079593.1561
 Y=394842.3899
 90' HIGH MAST POLE
 LUMINAIRE A(2)

PT 131+44.70

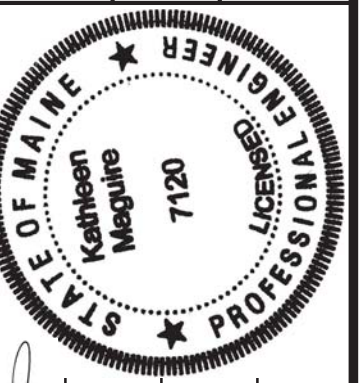
Date: 2/3/2021

Username: Terry.White

Division: GEOTECH

Filename: ... \00\GEOTECH\MSTA\018_BLP8.dgn

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 2435900
 WIN
 24359.00
 HIGHWAY PLANS

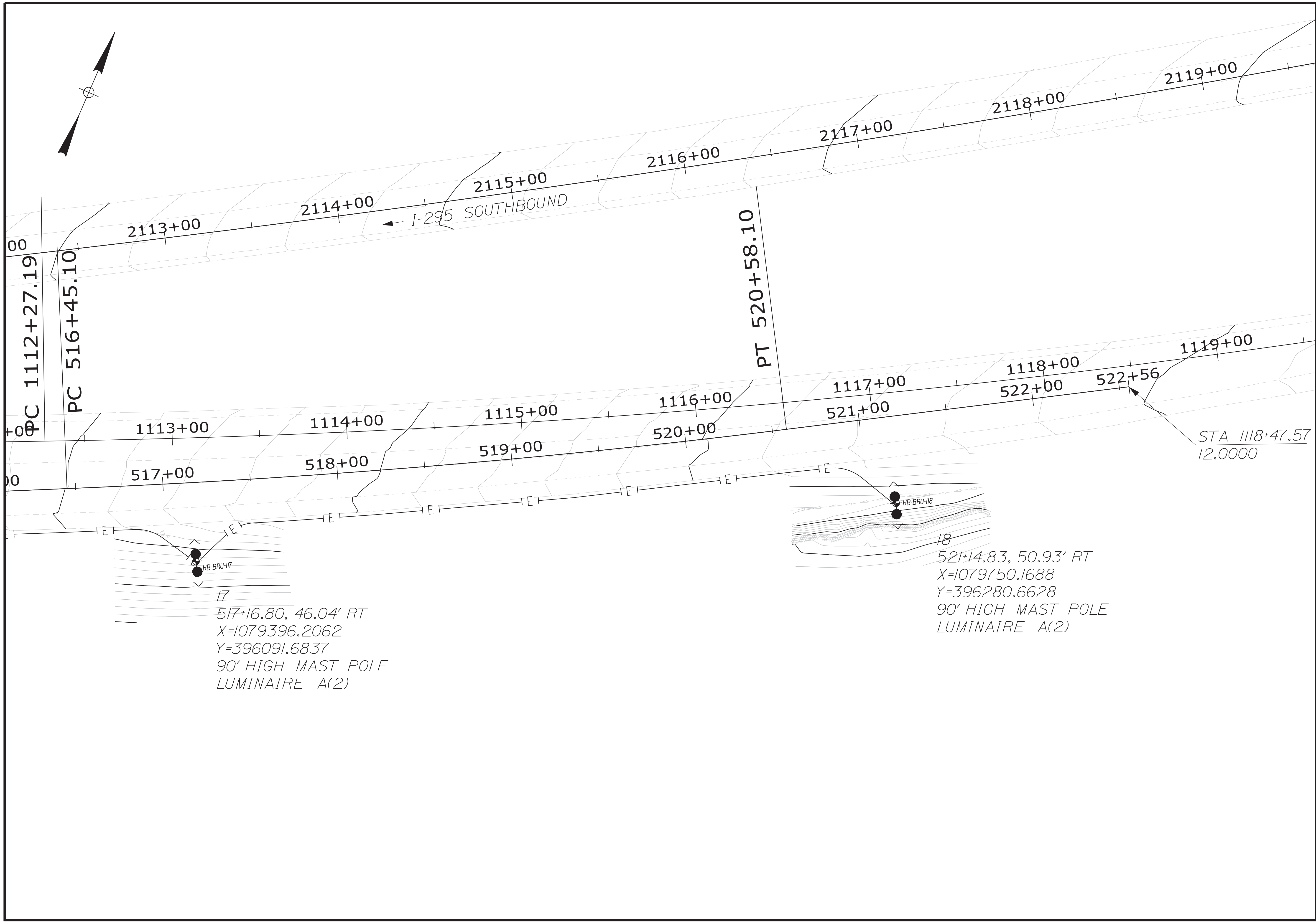


SIGNATURE
 P.E. NUMBER
 DATE

PROJ. MANAGER	BY	DATE
DESIGN DETAILED		
CHECKED/REVIEWED	T. WHITE	JAN 2021
DESIGN DETAILED	K. MAGUIRE	
DESIGN DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRUNSWICK
 I-295 EXIT 28
 BORING LOCATION PLAN

SHEET NUMBER
 18
 OF 22



517+16.80, 46.04' RT
 X=1079396.2062
 Y=396091.6837
 90' HIGH MAST POLE
 LUMINAIRE A(2)

521+14.83, 50.93' RT
 X=1079750.1688
 Y=396280.6628
 90' HIGH MAST POLE
 LUMINAIRE A(2)

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2435900 WIN 24359.00 HIGHWAY PLANS
		SIGNATURE: _____ P.E. NUMBER: 7120 DATE: 2/3/2021
BRUNSWICK I-295 EXIT 28 BORING LOCATION PLAN	PROJECT MANAGER: _____ BY: _____ DATE: _____ CHECKED/REVIEWED: _____ DESIGNED/TAILED: K.MAGUIRE DESIGNED/TAILED: T.WHITE JAN 2021 REVISIONS: 1 REVISIONS: 2 REVISIONS: 3 REVISIONS: 4 FIELD CHANGES: _____	STA 1118+47.57 12.0000
SHEET NUMBER		19
OF 22		

Maine Department of Transportation Soil/Bore Exploration Log VS CUSTOMER UNITS		Project: I-295 Exit 28 Lighting Location: Brunswick, Maine		Boring No.: HB-BRU-108 WIN: 24359.00	
Driller: S.W. Cole	Elevation (ft.): 119.7	Auger ID/OD: 5" Dia.	Operator: Lee/Culling		
Operator: Lee/Culling	Datum: NAVD88	Sampler: Standard Split Spoon	Logged By: B. Wilder		
Drilling Method: Closed Wash Boring	Rig Type: CME 850	Hammer Wt./Fall: 140#/30"	Date Start/Finish: 1/27/2021 09:00-10:30		
Boring Location: SBPFR 11402.4, 39.5 Ft Ft.	Drilling Method: New 4"	Core Barrel: N/A	Boring Location: SBPFR 2248.7, 4.0 Ft Ft.		
Home Efficiency Factor: 0.852	Home Type: Automatic	Hydraulic	Home Efficiency Factor: 0.88		
<p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p>					
Sample Information		Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rec. (ft.)	Sample Depth (ft.)	Blade / A. / In. (ft.)	Visual Description and Remarks
0.0	10/4	24/18	0.00 - 2.00	1 1/4 / 4"	Topsoil
0.2					10 (0.2-1.0 ft bgs) Brown, moist, loose, fine to coarse SAND, trace silt.
4.0					10A (1.5-2.0 ft bgs) Olive, moist, loose, fine to coarse SAND, trace gravel.
5.0	20	24/15	5.00 - 7.00	1 1/4 / 2"	Grey, wet, very soft, silty fine to coarse SAND, trace gravel.
8.0					10B (7.5-10.0 ft bgs) Grey, wet, stiff, Clayey SILT, some fine sand.
10.0	30	24/13	10.00 - 12.00	1 1/4 / 6"	
15.0	40	24/20	15.00 - 17.00	2 / 2 / 3"	Olive, wet, medium stiff, Clayey SILT, little fine sand.
18.0					10C (15.0-18.0 ft bgs) Grey, wet, very soft, Clayey SILT, trace fine sand.
20.0	50	24/24	20.00 - 22.00	Hydraulic Push	55x110 mm vane rake torque readings: V1: 19.0/4.0 ft-lb V2: 14.0/3.5 ft-lb
22.0	V2		21.00 - 22.00	Sum=425/156 psf	Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL.
<p>Stratification lines represent approximate boundaries between soil types; transitions may be gradual.</p> <p>* 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.</p>					

Maine Department of Transportation Soil/Bore Exploration Log VS CUSTOMER UNITS		Project: I-295 Exit 28 Lighting Location: Brunswick, Maine		Boring No.: HB-BRU-109 WIN: 24359.00	
Driller: MoinD07	Elevation (ft.): 138.9	Auger ID/OD: 5" Dia.	Operator: Doggett/Brooks		
Operator: Doggett/Brooks	Datum: NAVD88	Sampler: Standard Split Spoon	Logged By: B. Wilder		
Drilling Method: Closed Wash Boring	Rig Type: CME 45C	Hammer Wt./Fall: 140#/30"	Date Start/Finish: 1/27/2021 22:00-23:30		
Boring Location: SBPFR 2248.7, 4.0 Ft Ft.	Drilling Method: New 4"	Core Barrel: N/A	Boring Location: SBPFR 10347.2, 18.1 Ft Ft.		
Home Efficiency Factor: 0.88	Home Type: Automatic	Hydraulic	Home Efficiency Factor: 0.852		
<p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p>					
Sample Information		Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rec. (ft.)	Sample Depth (ft.)	Blade / A. / In. (ft.)	Visual Description and Remarks
0.0	10	24/18	1.00 - 3.00	15/14/12/25	8" HMA
0.2					Brown, damp, medium dense, fine to coarse SAND, some gravel, trace silt, (f.f.).
5.0	20	24/17	5.00 - 7.00	10/12/16/18	Similar to above.
8.0					129.9
10.0	30	24/18	10.00 - 12.00	9/11/10/9	Light brown, comp. medium dense, fine to medium SAND, trace silt, (f.f.).
15.0	40	24/22	15.00 - 17.00	8/11/11/14	Similar to above, except moist.
18.0					120.0
20.0	50	24/20	20.00 - 22.00	8/19/19/25	Brown, moist, dense, fine to coarse SAND, little gravel, little silt.
22.0	V2		21.00 - 22.00	Sum=510/179 psf	Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL.
<p>Stratification lines represent approximate boundaries between soil types; transitions may be gradual.</p> <p>* 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.</p>					

Maine Department of Transportation Soil/Bore Exploration Log VS CUSTOMER UNITS		Project: I-295 Exit 28 Lighting Location: Brunswick, Maine		Boring No.: HB-BRU-110 WIN: 24359.00	
Driller: MoinD07	Elevation (ft.): 141.2	Auger ID/OD: 5" Dia.	Operator: Doggett/Brooks		
Operator: Doggett/Brooks	Datum: NAVD88	Sampler: Standard Split Spoon	Logged By: B. Wilder		
Drilling Method: Closed Wash Boring	Rig Type: CME 45C	Hammer Wt./Fall: 140#/30"	Date Start/Finish: 1/27/2021 23:30-01:00		
Boring Location: SBPFR 2248.7, 4.0 Ft Ft.	Drilling Method: New 4"	Core Barrel: N/A	Boring Location: SBPFR 12152.3, 44.7 Ft Ft.		
Home Efficiency Factor: 0.852	Home Type: Automatic	Hydraulic	Home Efficiency Factor: 0.852		
<p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p>					
Sample Information		Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rec. (ft.)	Sample Depth (ft.)	Blade / A. / In. (ft.)	Visual Description and Remarks
0.0	10	24/19	1.00 - 3.00	5/7/12/15	8" HMA
0.2					Brown, moist, medium dense, fine to coarse SAND, little gravel, trace silt, (f.f.).
5.0	20	24/18	5.00 - 7.00	7/14/14/17	Light brown, moist, medium dense, fine to coarse SAND, trace silt, (f.f.).
8.0					137.2
10.0	30	24/20	10.00 - 12.00	6/8/12/14	Similar to above, (f.f.).
15.0	40	24/24	15.00 - 17.00	8/9/10/12	Similar to above, (f.f.).
18.0					122.2
20.0	50	24/18	20.00 - 22.00	9/10/12/10	Brown, moist, medium dense, fine to coarse SAND, little gravel, trace silt.
22.0	V2		21.00 - 22.00	Sum=513/246 psf	Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL.
<p>Stratification lines represent approximate boundaries between soil types; transitions may be gradual.</p> <p>* 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.</p>					

Maine Department of Transportation Soil/Bore Exploration Log VS CUSTOMER UNITS		Project: I-295 Exit 28 Lighting Location: Brunswick, Maine		Boring No.: HB-BRU-111 WIN: 24359.00	
Driller: S.W. Cole	Elevation (ft.): 136.1	Auger ID/OD: N/A	Operator: Sam/Matt		
Operator: Sam/Matt	Datum: NAVD88	Sampler: Standard Split Spoon	Logged By: B. Wilder		
Drilling Method: Closed Wash Boring	Rig Type: Mobile B-55	Hammer Wt./Fall: 140#/30"	Date Start/Finish: 1/26/2021 20:30-22:30		
Boring Location: NB 108144.3, 57.1 Ft Ft.	Drilling Method: New 4"	Core Barrel: N/A	Boring Location: NBPFR 10347.2, 18.1 Ft Ft.		
Home Efficiency Factor: 0.852	Home Type: Automatic	Hydraulic	Home Efficiency Factor: 0.852		
<p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p>					
Sample Information		Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rec. (ft.)	Sample Depth (ft.)	Blade / A. / In. (ft.)	Visual Description and Remarks
0.0	10	24/14	0.00 - 2.00	1 1/3 / 3"	Topsoil
0.2					10 (0.2-2.0 ft bgs) Brown, moist, loose, fine to medium SAND, little silt.
4.0					132.1
5.0	20	24/5	5.00 - 7.00	8/9/9/10	Brown, wet, medium dense, fine to coarse SAND, some gravel, trace silt.
8.0					128.1
10.0	30	24/14	10.00 - 12.00	6/8/11/12	Brown, wet, medium dense, fine to coarse SAND, trace gravel, trace silt.
15.0	40	24/13	15.00 - 17.00	20/23/19/23	Brown, wet, dense, gravelly fine to coarse SAND, trace silt, occasional small cobble.
18.0					122.4
20.0	50	24/16	20.00 - 22.00	16/18/23/30	Similar to above.
22.0	V2		21.00 - 22.00	Sum=531/246 psf	Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL.
<p>Stratification lines represent approximate boundaries between soil types; transitions may be gradual.</p> <p>* 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.</p>					

Maine Department of Transportation Soil/Bore Exploration Log VS CUSTOMER UNITS		Project: I-295 Exit 28 Lighting Location: Brunswick, Maine		Boring No.: HB-BRU-112 WIN: 24359.00	
Driller: S.W. Cole	Elevation (ft.): 133.8	Auger ID/OD: 5" Dia.	Operator: Lee/Matt		
Operator: Lee/Matt	Datum: NAVD88	Sampler: Standard Split Spoon	Logged By: B. Wilder		
Drilling Method: Closed Wash Boring	Rig Type: Mobile B-53	Hammer Wt./Fall: 140#/30"	Date Start/Finish: 1/26/2021 22:45-01:30		
Boring Location: NBPFR 10347.2, 18.1 Ft Ft.	Drilling Method: New 4"	Core Barrel: N/A	Boring Location: NBPFR 10347.2, 18.1 Ft Ft.		
Home Efficiency Factor: 0.852	Home Type: Automatic	Hydraulic	Home Efficiency Factor: 0.852		
<p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p>					
Sample Information		Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rec. (ft.)	Sample Depth (ft.)	Blade / A. / In. (ft.)	Visual Description and Remarks
0.0	10	24/19	1.00 - 3.00	19/15/15/16	8" HMA
0.2					Brown, damp, medium dense, fine to coarse SAND, little gravel, trace silt.
5.0	20	24/16	5.00 - 7.00	6/10/9/7	Brown, wet, medium dense, fine to coarse SAND, some gravel, little silt.
8.0					130.3
10.0	30	24/15	10.00 - 12.00	1/11/4/8	Olive brown, wet, medium stiff, Clayey SILT, little fine sand.
15.0	40	24/14	15.00 - 17.00	1/11/2/3	Olive, wet, soft, Clayey SILT, trace fine sand.
18.0					115.3
20.0	50	24/12	20.00 - 22.00	Hydraulic Push	Grey, wet, very soft, Clayey SILT.
22.0	V2		21.00 - 22.00	Sum=530/223 psf	55x110 mm vane rake torque readings: V1: 19.5/5.0 ft-lb V2: 17.0/4.0 ft-lb
<p>Stratification lines represent approximate boundaries between soil types; transitions may be gradual.</p> <p>* 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.</p>					

Maine Department of Transportation Soil/Bore Exploration Log VS CUSTOMER UNITS		Project: I-295 Exit 28 Lighting Location: Brunswick, Maine		Boring No.: HB-BRU-113 WIN: 24359.00	
Driller: S.W. Cole	Elevation (ft.): 148.0	Auger ID/OD: 5" Dia.	Operator: Lee/Culling		
Operator: Lee/Culling	Datum: NAVD88	Sampler: Standard Split Spoon	Logged By: B. Wilder		
Drilling Method: Closed Wash Boring	Rig Type: CME 850	Hammer Wt./Fall: 140#/30"	Date Start/Finish: 1/27/2021 10:30-10:30		
Boring Location: NBPFR 12152.3, 44.7 Ft Ft.	Drilling Method: New 4"	Core Barrel: N/A	Boring Location: NBPFR 12152.3, 44.7 Ft Ft.		
Home Efficiency Factor: 0.852	Home Type: Automatic	Hydraulic	Home Efficiency Factor: 0.852		
<p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p> <p>Soil/Bore Exploration Log VS CUSTOMER UNITS</p>					
Sample Information		Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rec. (ft.)	Sample Depth (ft.)	Blade / A. / In. (ft.)	Visual Description and Remarks
0.0	10	24/17	0.00 - 2.00	1/2/2/2	Topsoil
0.2					10 (0.2-2.0 ft bgs) Light brown, moist, loose, fine to coarse SAND, little silt.
5.0	20	24/19	5.00 - 7.00	1/2/2/2	Olive brown, wet, very soft, Clayey SILT, some fine sand, with organics.
8.0					144.5
10.0	30	24/20	10.00 - 12.00	2/3/4/3	Grey brown, wet, loose, silty fine SAND, trace clay.
15.0	40	24/24	15.00 - 17.00	WDH/WDH/WDH	Grey, wet, very soft, Clayey SILT, trace fine sand.
18.0					134.5
20.0	50	24/18	20.00 - 22.00	Hydraulic Push	Grey, wet, very soft, Clayey SILT, some fine sand.
22.0	V2		21.00 - 22.00	Sum=513/223 psf	55x110 mm vane rake torque readings: V1: 11.5/5.0 ft-lb V2: 11.0/5.0 ft-lb
<p>Stratification lines represent approximate boundaries between soil types; transitions may be gradual.</p> <p>* 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.</p>					

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2435900
WIN
24359.00

BRUNSWICK
I-295 EXIT 28
BORING LOGS

SHEET NUMBER
21
OF 22

DATE: JAN 2021
SIGNATURE: T. WHITE
P.E. NUMBER: 7120
DATE: 2/3/2021

DESIGN REVIEWED: K. MAGUIRE
DESIGN DETAILER: T. WHITE
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

PROJ. MANAGER: [Signature]
ENGINEER: [Signature]

