

NOTES

- 1 AT THESE LOCATIONS, PROVIDE ELECTRICAL DUCT IN ACCORDANCE WITH NEC REQUIREMENTS FOR AN APPROVED RACEWAY FOR ELECTRICAL CIRCUITS. SEE TABLE "B"
2 INSTALL ALL BORE PITS OUTSIDE THE CLEAR ZONE, AS DEFINED BY THE 2011 AASHTO ROADSIDE DESIGN GUIDE OR AS DIRECTED BY THE ENGINEER.
3 LOCATE ALL JUNCTION BOXES OUTSIDE CLEAR ZONE AND IN AN AREA UNLIKELY TO BE USED BY TRAFFIC.
4 LOCATE PROPOSED CONTROL SYSTEM IN AN AREA ACCESSIBLE FOR MAINTENANCE VEHICLES AND OUTSIDE OF CLEAR ZONE AS DEFINED BY THE 2011 AASHTO ROADSIDE DESIGN GUIDE.
5 INSTALL RIGID GALVANIZED CONDUIT (RGC) ABOVE GROUND, AND POLYVINYL CHLORIDE (PVC) SCHEDULE 40 CONDUIT UNDERGROUND, EXCEPT AS MODIFIED ON THESE PLANSHEETS OR IN APPLICABLE SECTIONS OF THE ROADWAY STANDARD DRAWINGS FOR THIS PROJECT.
6 ALL IN GROUND JUNCTION BOXES SHALL BE 18" HIGH AND ALL FORMED OPENINGS SHALL BE 6" HIGH, UNLESS OTHERWISE NOTED.
7 CONTRACTOR SHALL RECORD THE GPS COORDINATES OF EACH JUNCTION BOX WITHIN 3' ACCURACY, IN THE JUNCTION BOX SUMMARY, TABLE C. PROVIDE A COPY OF THE JUNCTION BOX SUMMARY WITH THESE COORDINATES TO THE LIGHTING ENGINEER DURING PROJECT INSPECTION.
8 POLE NUMBERING CONVENTION: CONTROL SYSTEM-POLE #-CKT # (A-3-2). JUNCTION BOXES SHOWN NEAR LIGHT STANDARDS (LSJB & HMJB) ARE SHOWN FOR CLARITY. THESE JUNCTION BOXES ARE TO BE USED AS A TEE POINT FOR CIRCUITRY TO THE STANDARD, AND SHALL BE INSTALLED FOR BEST ALIGNMENT OF CIRCUITRY WHILE MAINTAINING THE OFFSETS SHOWN IN TABLE "C". SEE STANDARD DRAWINGS 1401.01 AND 1406.01 FOR INSTALLATION DETAILS.
9 SERVICE POLE SHALL NOT BE INSTALLED PRIOR TO COORDINATION WITH THE LOCAL UTILITY. PROVIDE PROOF OF COORDINATION AND PROOF OF NEED TO THE ENGINEER AFTER CONSULTING WITH THE LOCAL UTILITY. THE SERVICE POLE MAY BE DELETED FROM THE CONTRACT IF NOT REQUIRED. REFER TO ARTICLE 1407-3 OF THE 2024 NCDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.
10 WHERE A CURRENT TRANSFORMER (CT) CABINET IS REQUIRED, THE CT CABINET AND ASSOCIATED HARDWARE IS INCIDENTAL TO THE PAY ITEM FOR THE LIGHTING CONTROL PANEL.
11 WHERE IT IS NOTED (BY LEGEND OR A DELTA NOTE) THAT EXISTING LIGHTING IS TO BE REMOVED, EXISTING FOUNDATIONS, CONDUIT AND CONDUCTOR MAY BE REMOVED OR ABANDONED. SEE ARTICLE 1400-10 OF THE STANDARD SPECIFICATIONS. REFER TO LIGHTING SPECIAL PROVISIONS.
12 SEE BRIDGE CONDUIT DETAIL SHEET E6
13 ADD A STUB OF DUCT HERE TO EXTEND CURRENT DUCT TO THE ADJACENT JUNCTION BOX AS SHOWN.
14 REMOVE AND DISPOSE OF CONTROL PANEL.
15 INSTALL LIGHTING POLES BEHIND RETAINING WALL. INSTALL SHORTER POLES SUCH THAT MOUNTING HEIGHT IS UNIFORM WITH REST OF PROJECT.
16 JB9 IS TO BE ABANDONED. INSTALL JBB2 WITHIN CONCRETE OF NEW BULB-OUT AND CONNECT TO CONTROL SYSTEM "B".
17 CONTRACTOR SHALL INTERCEPT EXISTING 1.5" CONDUIT, CONNECT NEW 1.5" CONDUIT TO EXISTING 1.5" CONDUIT, AND INSTALL NEW CONDUCTOR, SIZED AS SHOWN BETWEEN TERMINATION POINTS.
18

PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

LEGEND

- PROPOSED 120' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX & 8 HM LED LUMINAIRES. 560W MAX, 54,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V. MAXIMUM BUG RATING 5-0-5.
PROPOSED 100' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX & 6 HM LED LUMINAIRES. 560W MAX, 54,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V. MAXIMUM BUG RATING 5-0-5.
PROPOSED 80' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX & 8 HM LED LUMINAIRES. 335W MAX, 27,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V. MAXIMUM BUG RATING 5-0-5.
EXISTING 100' HIGH MAST POLE TO BE LEFT IN PLACE.
EXISTING 100' HIGH MAST POLE TO BE REMOVED.
PROPOSED LIGHT STANDARD TYPE MTLT IS 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, JUNCTION BOX & 150W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION:TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
EXISTING SINGLE ARM LIGHT STANDARD TO BE LEFT IN PLACE.
EXISTING SINGLE ARM LIGHT STANDARD TO BE REMOVED AND DISPOSED OF, UNLESS OTHERWISE NOTED IN A DELTA NOTE. ABANDON OR REMOVE FOUNDATION.
EXISTING TWIN ARM LIGHT STANDARD TO BE LEFT IN PLACE.
PROPOSED CONTROL SYSTEM WITH JUNCTION BOX. SEE PLANS FOR BREAKER SIZES.
EXISTING CONTROL SYSTEM, LEAVE IN PLACE UNLESS SPECIFIED OTHERWISE.
EXISTING ELECTRICAL JUNCTION BOX TO BE LEFT IN PLACE, UNLESS OTHERWISE NOTED.
PROPOSED ELECTRICAL JUNCTION BOX. SIZED AS SHOWN IN TABLE C, SHEETS E-1A-E-1D.
EXISTING ELECTRICAL JUNCTION BOX, TO BE REMOVED.

ROADWAY STANDARDS

THE FOLLOWING ROADWAY ENGLISH STANDARDS AS APPEAR IN "NCDOT ROADWAY STANDARD DRAWINGS", ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

Table with 2 columns: STD NO. and TITLE. Lists standards such as 1401.01 HIGH MOUNT STANDARD, 1402.01 HIGH MOUNT FOUNDATION, etc.

ALL WORK SHALL BE IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2024.

SCOPE OF WORK

PLACE ROADWAY LIGHTING SYSTEM INTO SERVICE BY PROVIDING AND INSTALLING LIGHT STANDARDS WITH LIGHT EMITTING DIODE LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

DESIGN CRITERIA

- 0.6 AVERAGE FOOTCANDLE ON TRAVEL LANES
4:1 AVERAGE TO MINIMUM UNIFORMITY RATIO ON TRAVEL LANES
2024 AASHTO ROADWAY LIGHTING DESIGN GUIDE
2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 6TH EDITION AND LATEST INTERIM SPECIFICATIONS VALID AT THE TIME OF LETTING (HANDHOLE SHAFT DIAMETER REQUIREMENT AND HANDHOLE PLACEMENT REQUIREMENT WAIVED)
FATIGUE CATEGORY II SHALL BE USED IN DESIGN
DESIGN HIGH MOUNT SUPPORT FOR BASIC WIND SPEED OF 90 MPH
DESIGN HIGH MOUNT STANDARD FOUNDATION FOR BASIC WIND SPEED OF 90 MPH. ANY CONTRACTOR-DESIGNED SITE SPECIFIC FOUNDATION DESIGN SHALL BE DESIGNED FOR THE SAME WIND SPEED
2020 NATIONAL ELECTRICAL CODE
2011 AASHTO ROADSIDE DESIGN GUIDE

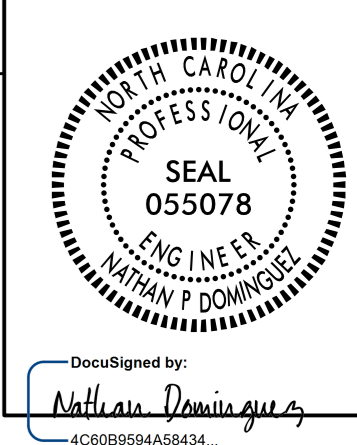
TABLE "A" CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE. Table with 3 columns: PLAN SYMBOL, DESCRIPTION, CONTRACT ITEM. Lists conductor and conduit specifications for various circuit types.

ABBREVIATIONS

Table of abbreviations: BD BURIED, LT LIGHT, TL TRENCHLESS, MH MOUNTING HEIGHT, etc.

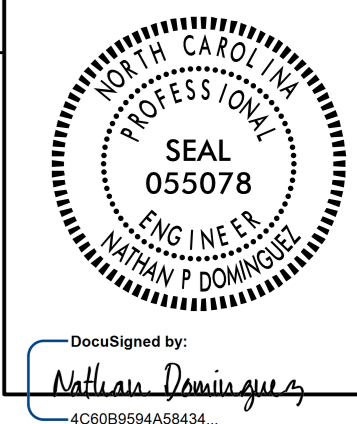
- 1 REFERENCE TO CORRESPONDING NOTE AS NUMBERED.
PROPOSED FEEDER CIRCUIT. CONTROL SYSTEM (A), CIRCUIT NUMBER (1), PLAN SYMBOL (6). SEE TABLE A, THIS SHEET.
PROPOSED 30' CLASS 4 SERVICE POLE AND LATERAL 3 #1/0 USE 2" CONDUIT
PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (TL) OR (BD) LOCATION: SEE TABLE B, SHEET E-1A.
2", 3" OR 4" ELEC. DUCT TL & BD
EXISTING ELECTRICAL DUCT SIZE 2", 3" OR 4"
EXISTING FEEDER CIRCUIT, TO BE RETAINED.
EXISTING FEEDER CIRCUIT, TO BE ABANDONED.
PROPOSED FORMED OPENING.

COMPUTED BY: MSQ DATE:
CHECKED BY: RGH DATE:



02/03/98

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12/21/2023

TABLE "C" JUNCTION BOX AND FORMED OPENINGS SUMMARY

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "A"												GPS LOCATION		
			TYPE, PAY ITEM & SIZE												LAT/LONG		
			IN GROUND			LIGHT STANDARD			HIGH MAST			CONTROL SYSTEM	FORMED OPENING	FORMED OPENING			
IG18 18"X12"	IG30 30"X17"	IG36 36"X24"	LS18 18"X12"	LS30 30"X17"	LS36 36"X24"	HM18 18"X12"	HM30 30"X17"	HM36 36"X24"	CS36 36"X24"	F012 12"X10"	F018 18"X12"						
E-2	JBA1	-Y5RPA- STA. 26+70, 34' LT	X														
E-2	A-11-4JB	5' FROM LIGHT STANDARD SA A-11-4JB				X											
E-2	A-12-4JB	5' FROM LIGHT STANDARD SA A-12-4JB				X											
E-2	A-13-4JB	5' FROM LIGHT STANDARD SA A-13-4JB				X											
E-2	A-14-4JB	5' FROM LIGHT STANDARD SA A-14-4JB				X											
E-2	A-15-4JB	5' FROM LIGHT STANDARD SA A-15-4JB				X											
E-2	FOA2	-Y5RPA- STA. 20+96											X				
E-2	FOA3	-Y5RPA- STA. 18+30											X				
CSA TOTALS			1			5							2				

TABLE "C" CONTINUED ON NEXT PAGE

TABLE "B" ELECTRICAL DUCT SUMMARY (ESTIMATED LENGTH IN FEET)

CONTROL SYSTEM "A"			TYPE														
LOCATION	RACEWAY	SHEET	TRENCHLESS (TL) FEET				BURIED (BD) FEET										
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"	SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"							
-Y5RPA- STA. 26+70		E-2		70													
CSA TOTALS				70													

TABLE "B" CONTINUED ON NEXT PAGE

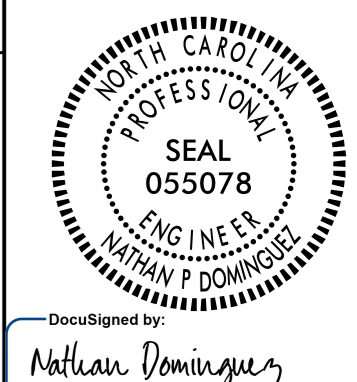
SEE SHEET "E-1" FOR LEGEND & NOTES

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01/04/2024

**TABLE "C" (CONTINUED)
JUNCTION BOX AND FORMED OPENINGS SUMMARY**

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "B"													GPS LOCATION		
			TYPE, PAY ITEM & SIZE													LAT/LONG		
			IN GROUND			LIGHT STANDARD			HIGH MAST			CONTROL SYSTEM	FORMED OPENING	FORMED OPENING				
IG18 18"X12"	IG30 30"X17"	IG36 36"X24"	LS18 18"X12"	LS30 30"X17"	LS36 36"X24"	HM18 18"X12"	HM30 30"X17"	HM36 36"X24"	CS36 36"X24"	F012 12"X10"	F018 18"X12"							
E-3	JBB1	-Y_WB- STA. 12+20, 78' LT	X															
E-3	FOB2	-Y- STA. 91+24														X		
E-3	B-18-2JB	5' FROM LIGHT STANDARD SA B-18-2JB				X												
E-3	B-19-2JB	5' FROM LIGHT STANDARD SA B-19-2JB				X												
E-3	B-21-3JB	5' FROM LIGHT STANDARD SA B-21-3JB				X												
E-3	CSBJB	2' FROM CONTROL SYSTEM "B"											X					
CSB TOTALS			1			3							1		1			

TABLE "C" CONTINUED ON NEXT PAGE

**TABLE "B"
ELECTRICAL DUCT SUMMARY
(ESTIMATED LENGTH IN FEET)**

CONTROL SYSTEM "B"			TYPE											
LOCATION	RACEWAY	SHEET	TRENCHLESS (TL) FEET				BURIED (BD) FEET							
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"	SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"				
-Y- STA. 91+24	JBB2 TO CSBJB	E-3			95			115						
-Y_EB- STA. 14+61		E-3							30					
CSB TOTALS					95			115	30					

TABLE "B" CONTINUED ON NEXT PAGE

SEE SHEET "E-1" FOR
LEGEND & NOTES

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JUNCTION BOX AND FORMED OPENINGS SUMMARY


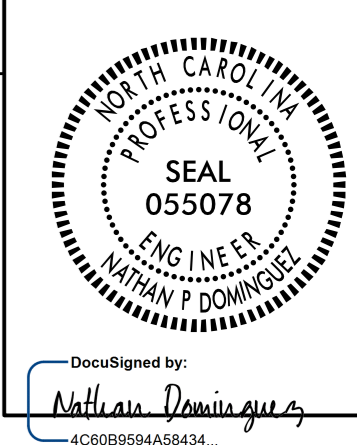
SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "X"											GPS LOCATION 		
			TYPE, PAY ITEM & SIZE													
			IN GROUND			LIGHT STANDARD			HIGH MAST			CONTROL SYSTEM	FORMED OPENING		FORMED OPENING	LAT/LONG
IG18 18"X12"	IG30 30"X17"	IG36 36"X24"	LS18 18"X12"	LS30 30"X17"	LS36 36"X24"	HM18 18"X12"	HM30 30"X17"	HM36 36"X24"	CS36 36"X24"	F012 12"X10"	F018 18"X12"					
E-4	CSXJB	2' FROM CSXJB											X			
E-4	JBX1	-RPC- STA. 32+52, 25' LT	X													
E-4	JBX3	-RPC- STA. 15+59, 66' LT	X													
E-4	JBX8	-RPC- STA. 27+13, 37' RT	X													
E-4	JBX9	-RPC- STA. 30+00, 42' RT	X													
E-4	JBX10	-RPC- STA. 35+51, 42' RT	X													
E-4	JBX15	-L1_EB- STA. 71+17, 30' LT	X													
E-4	JBX16	-L1_EB- STA. 71+17, 38' RT	X													
E-4	JBX17	-RPDB- STA. 19+93, 35' LT	X													
E-4	JBX18	-RPDB- STA. 19+93, 34' RT	X													
E-5	JBX19	-L1_WB- STA. 62+75, 30' LT	X													
E-4	JBX20	-L1_EB- STA. 69+20, 37' RT	X													
E-5	JBX22	-RPD- STA. 24+18, 16' LT	X													
E-4	HMX-8-2JB	10' FROM HIGH MAST HMX-8-2							X							
E-4	X-1-1JB	5' FROM LIGHT STANDARD SA X-1-1				X										
E-4	X-2-1JB	5' FROM LIGHT STANDARD SA X-2-1				X										
E-4	X-3-1JB	5' FROM LIGHT STANDARD SA X-3-1				X										
E-4	X-4-1JB	5' FROM LIGHT STANDARD SA X-4-1				X										
E-4	X-5-1JB	5' FROM LIGHT STANDARD SA X-5-1				X										
E-4	X-6-1JB	5' FROM LIGHT STANDARD SA X-6-1				X										
E-4	X-7-4JB	5' FROM LIGHT STANDARD SA X-7-4				X										
E-5	X-9-3JB	5' FROM LIGHT STANDARD SA X-9-3				X										
E-5	X-10-3JB	5' FROM LIGHT STANDARD SA X-10-3				X										
E-5	X-11-3JB	5' FROM LIGHT STANDARD SA X-11-3				X										
E-5	X-12-3JB	5' FROM LIGHT STANDARD SA X-12-3				X										
E-5	X-13-3JB	5' FROM LIGHT STANDARD SA X-13-3				X										
E-5	X-14-3JB	5' FROM LIGHT STANDARD SA X-14-3				X										
E-5	X-15-3JB	5' FROM LIGHT STANDARD SA X-15-3				X										
E-5	X-16-3JB	5' FROM LIGHT STANDARD SA X-16-3				X										
E-5	X-17-4JB	5' FROM LIGHT STANDARD SA X-17-4				X										
E-5	X-18-4JB	5' FROM LIGHT STANDARD SA X-18-4				X										
E-5	X-19-4JB	5' FROM LIGHT STANDARD SA X-19-4				X										
E-5	X-20-4JB	5' FROM LIGHT STANDARD SA X-20-4				X										
E-5	X-21-4JB	5' FROM LIGHT STANDARD SA X-21-4				X										
E-5	X-22-4JB	5' FROM LIGHT STANDARD SA X-22-4				X										
E-5	X-23-4JB	5' FROM LIGHT STANDARD SA X-23-4				X										
E-5	X-24-4JB	5' FROM LIGHT STANDARD SA X-24-4				X										

TABLE "C" CONTINUED ON SHEET E1-D.

PROJECT REFERENCE NO. 1-2513AA/AB SHEET NO. E-1C

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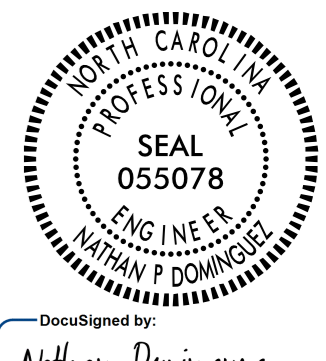


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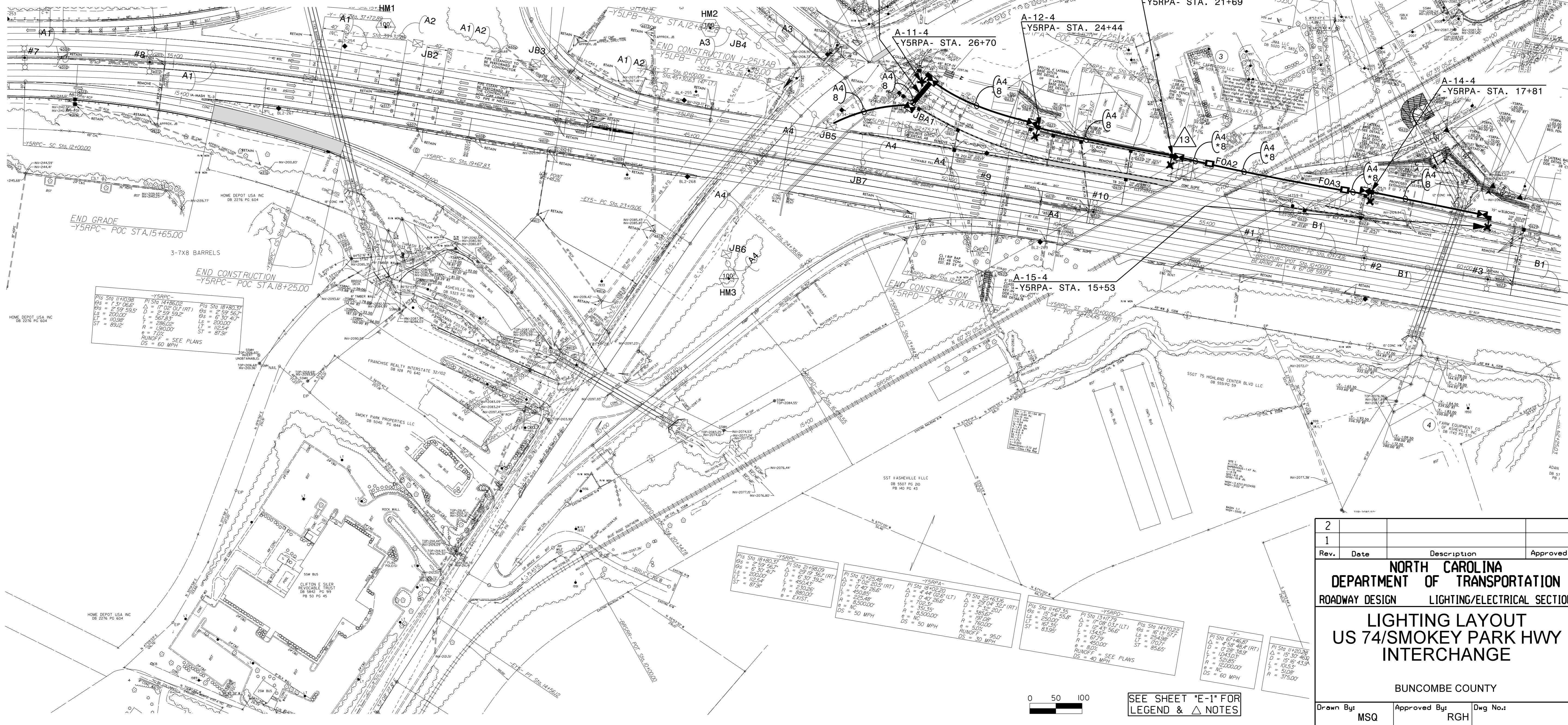
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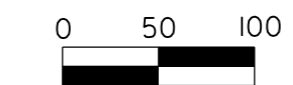
LOAD SCHEDULE AT INTERSECTION NORTH OF BRIDGE, US 74/SMOKEY PARK HIGHWAY INTERCHANGE										
EXISTING						PROPOSED				
CONTROL SYSTEM "A"						CONTROL SYSTEM "A"				
1Ø, 3W, 240/480 VAC	45' TWIN ARMS 2 @ 120W LED LUMINAIRES		100' HIGH MAST W/ 6 475W LED LUMINAIRES		BREAKER SIZE (AMPS)	1Ø, 3W, 240/480 VAC	45' TWIN ARMS 2 @ 120W LED LUMINAIRES		100' HIGH MAST W/ 6 475W LED LUMINAIRES	
CIRCUIT ID			AMPS @ 480V	KW LOAD		45' SINGLE ARMS 1 @ 150W MAX. LED LUMINAIRES			AMPS @ 480V	KW LOAD
A1	1, 2, 3, 4, 5, 6, 7, 8		4.0	1.9	15		1, 2, 3, 4, 5, 6, 7, 8		4.0	1.9
A2			5.9	2.9	15				5.9	2.9
A3			5.9	2.9	15				5.9	2.9
A4	9, 10		6.9	3.3	20	A-11, A-12, A-13 A-14, A-15	9, 10		8.5	4.1
SPARE					20					
TOTAL	20 ON 10 POLES		22.7	11.0		5 ON 5 POLES	20 ON 10 POLES	18 ON 3 POLES	28.8	13.8

EXISTING LIGHTING INSTALLED AS HPS UNDER I-4401 (LET DATE 4/19/05).
UPGRADED TO LED BY A BRADY/TRANE GUARANTEED ENERGY SAVINGS CONTRACT IN 2018/2019. NO CHANGES REQUIRED TO EXISTING BREAKERS.



2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT US 74/SMOKEY PARK HWY INTERCHANGE BUNCOMBE COUNTY			
Drawn By:	MSQ	Approved By:	RGH
Dwg No.:			

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msquadr1



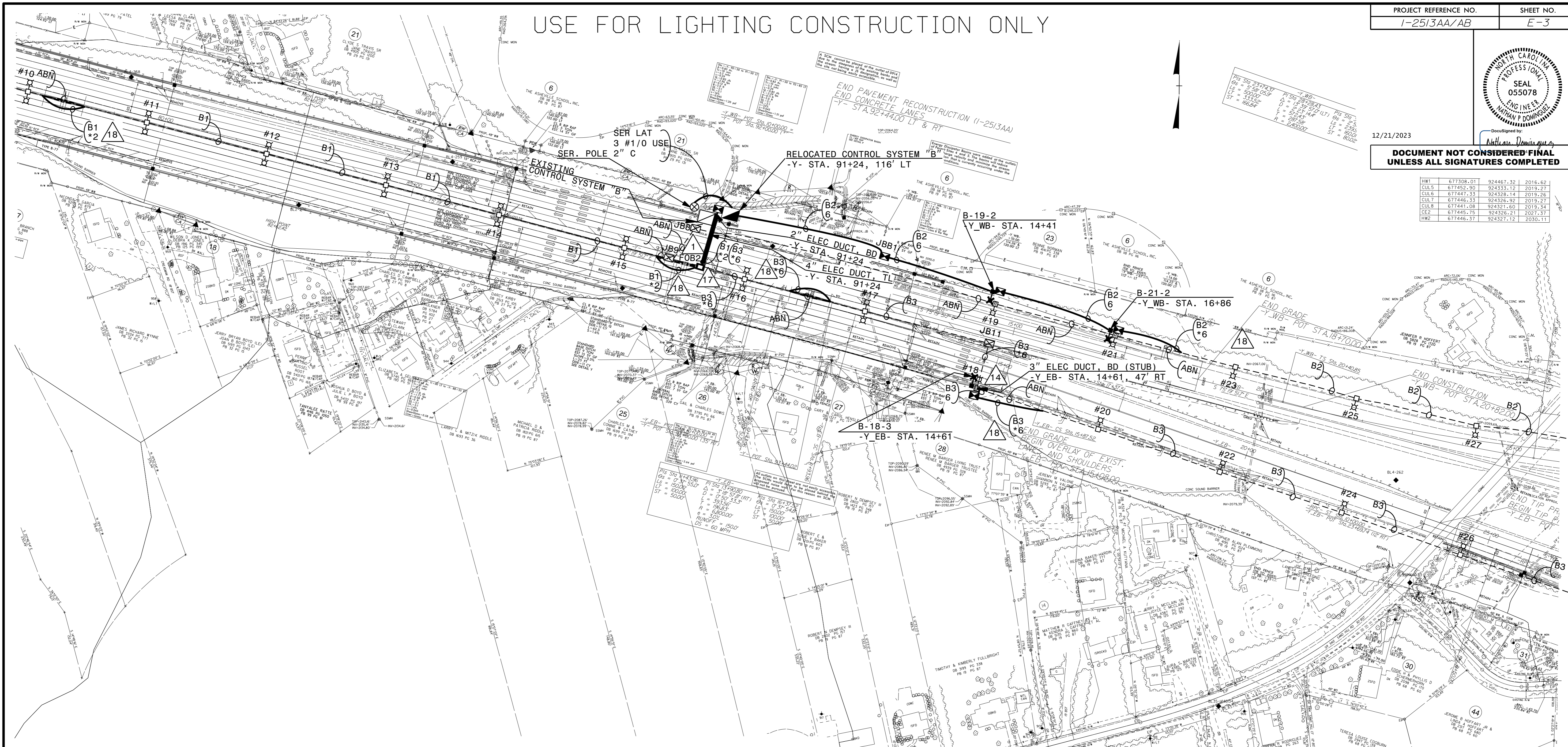
SEE SHEET "E-1" FOR
LEGEND & NOTES

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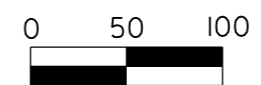
HW1	677308.01	924467.32	2016.62
CUL5	677452.90	924333.12	2019.27
CUL6	677447.33	924328.14	2019.26
CUL7	677446.33	924326.92	2019.27
CUL8	677441.08	924321.60	2019.34
CE2	677445.75	924326.21	2027.37
HW2	677446.37	924327.12	2030.11



LOAD SCHEDULE AT I-40 N.B., EAST OF MONTGOMERY ST DEAD-END

EXISTING						PROPOSED					
1Ø, 3W, 240/480 VAC						1Ø, 3W, 240/480 VAC					
CONTROL SYSTEM "B"						CONTROL SYSTEM "B"					
CIRCUIT ID	45' SINGLE ARM 1 @ 120W LED LUMINAIRES	45' TWIN ARMS 2 @ 120W LED LUMINAIRES	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)	45' SINGLE ARM 1 @ 120W LED LUMINAIRES	45' TWIN ARMS 2 @ 120W LED LUMINAIRES	45' SINGLE ARM 1 @ 150W MAX. LED LUMINAIRES	AMPS @ 480V	KW LOAD	
B1		1-15	7.5	3.6	25		1-15		7.5	3.6	
B2	19, 21, 23, 25, 27, 29, 31, 33, 34, 35		2.5	1.2	15	23, 25, 27, 29, 31, 33, 34, 35		B-19, B-21	2.6	1.3	
B3	18, 20, 22, 24, 26, 28, 30, 32	16, 17	3.0	1.4	15	20, 22, 24, 26, 28, 30, 32	16, 17	B-18	3.1	1.5	
SPARE					25						
TOTAL	18 ON 18 POLES	34 ON 17 POLES	13.0	6.2		15 ON 15 POLES	34 ON 17 POLES	3 ON 3 POLES	13.2	6.4	

EXISTING LIGHTING INSTALLED AS HPS UNDER I-4401 (LET DATE 4/19/05). UPGRADED TO LED BY A BRADY/TRANE GUARANTEED ENERGY SAVINGS CONTRACT IN 2018/2019. NO CHANGES REQUIRED TO EXISTING BREAKERS.



SEE SHEET "E-1" FOR LEGEND & Δ NOTES

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-40/I-26 INTERCHANGE WEST OF SAND HILL RD			
BUNCOMBE COUNTY			
Drawn By:	MSQ	Approved By:	RGH
Dwg No.:			

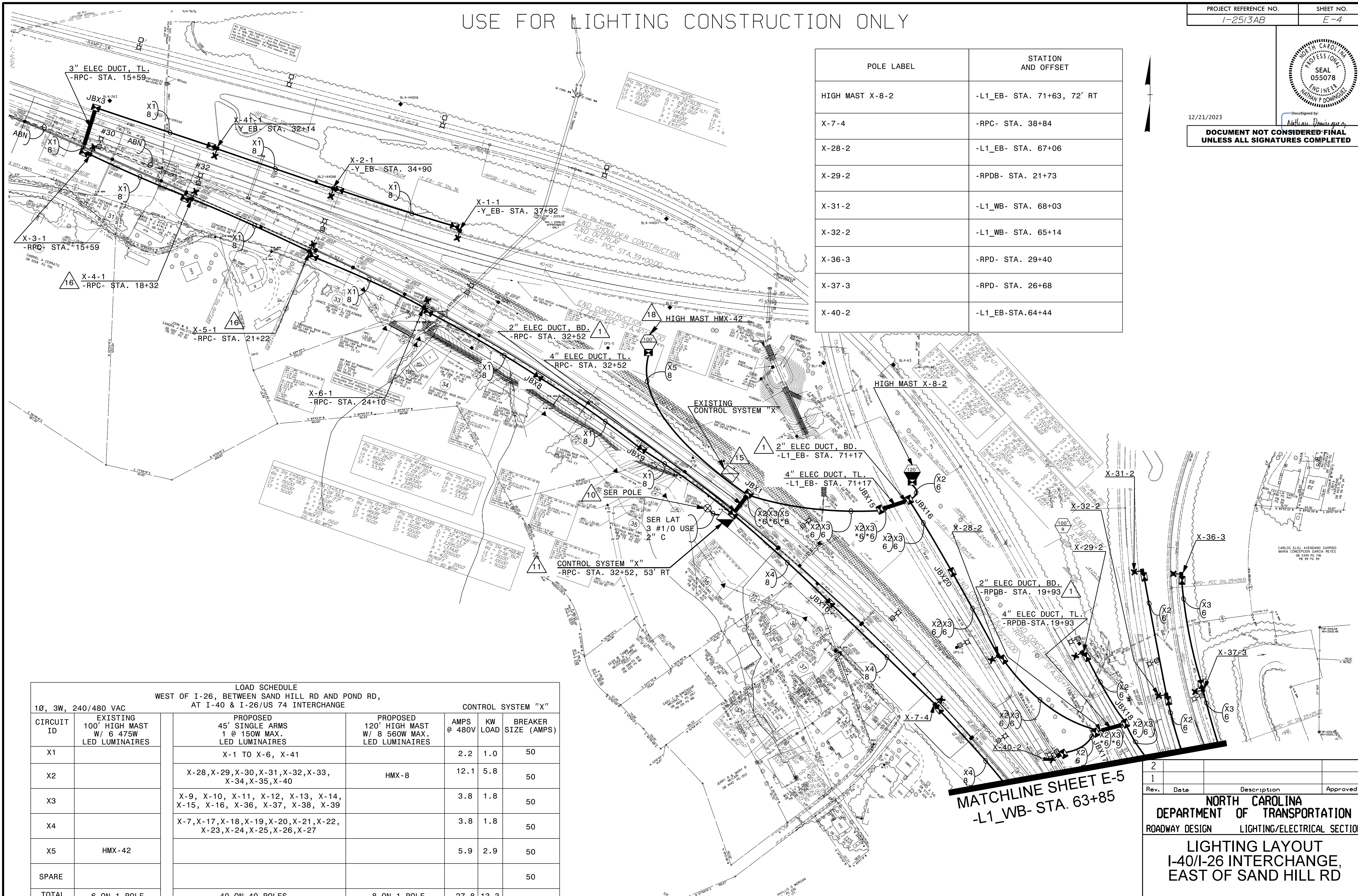
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USE FOR LIGHTING CONSTRUCTION ONLY



12/21/2023
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

POLE LABEL	STATION AND OFFSET
HIGH MAST X-8-2	-L1_EB- STA. 71+63, 72' RT
X-7-4	-RPC- STA. 38+84
X-28-2	-L1_EB- STA. 67+06
X-29-2	-RPDB- STA. 21+73
X-31-2	-L1_WB- STA. 68+03
X-32-2	-L1_WB- STA. 65+14
X-36-3	-RPD- STA. 29+40
X-37-3	-RPD- STA. 26+68
X-40-2	-L1_EB- STA. 64+44



LOAD SCHEDULE WEST OF I-26, BETWEEN SAND HILL RD AND POND RD, AT I-40 & I-26/US 74 INTERCHANGE						
1Ø, 3W, 240/480 VAC		CONTROL SYSTEM "X"				
CIRCUIT ID	EXISTING 100' HIGH MAST W/ 6 475W LED LUMINAIRES	PROPOSED 45' SINGLE ARMS 1 @ 150W MAX. LED LUMINAIRES	PROPOSED 120' HIGH MAST W/ 8 560W MAX. LED LUMINAIRES	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
X1		X-1 TO X-6, X-41		2.2	1.0	50
X2		X-28, X-29, X-30, X-31, X-32, X-33, X-34, X-35, X-40	HMX-8	12.1	5.8	50
X3		X-9, X-10, X-11, X-12, X-13, X-14, X-15, X-16, X-36, X-37, X-38, X-39		3.8	1.8	50
X4		X-7, X-17, X-18, X-19, X-20, X-21, X-22, X-23, X-24, X-25, X-26, X-27		3.8	1.8	50
X5	HMX-42			5.9	2.9	50
SPARE						50
TOTAL	6 ON 1 POLE	40 ON 40 POLES	8 ON 1 POLE	27.8	13.3	

EXISTING LIGHTING INSTALLED AS HPS UNDER I-4401 (LET DATE 4/19/05).
 UPGRADED TO LED BY A BRADY/TRANE GUARANTEED ENERGY SAVINGS
 CONTRACT IN 2018/2019.

MATCHLINE SHEET E-5
 -L1_WB- STA. 63+85

SEE SHEET "E-1" FOR
 LEGEND & Δ NOTES

I5-NOV-2023 14:16:16 C:\Users\mmsquod1\OneDrive\Lighting Design\12513AB\PSH_E4.dgn mmsquod1 - At 9:00:39 AM

2
1

Rev.	Date	Description	Approved

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

LIGHTING LAYOUT I-40/I-26 INTERCHANGE, EAST OF SAND HILL RD

BUNCOMBE COUNTY

Drawn By: MSQ Approved By: RGH Dwg No.:

MATCHLINE SHEET E-4
-L1_WB- STA. 63+85

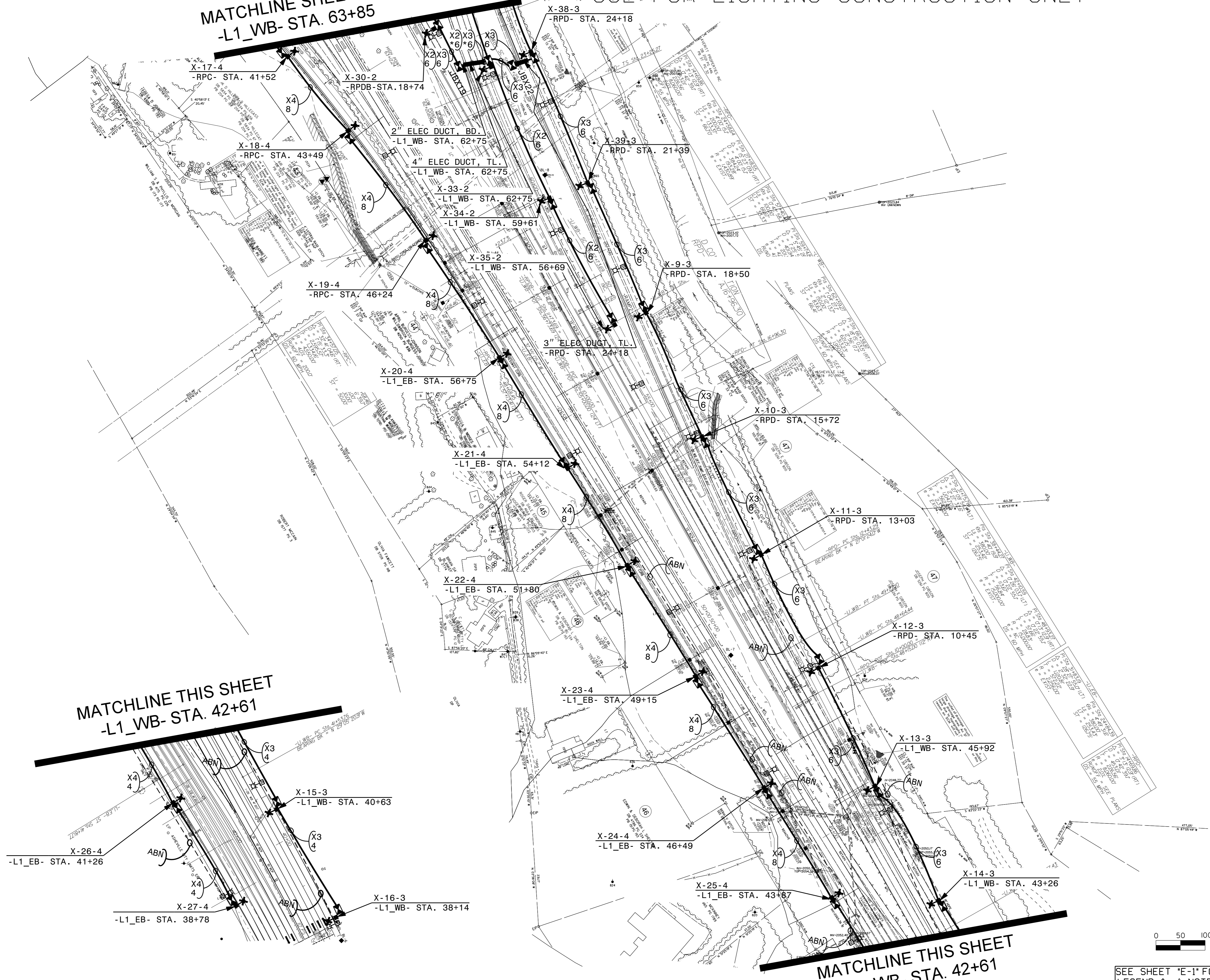
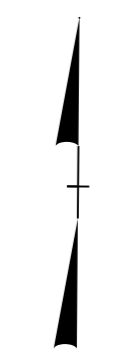
USE FOR LIGHTING CONSTRUCTION ONLY

PROJECT REFERENCE NO. 1-2513AB SHEET NO. E-5



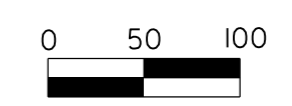
12/21/2023
Designed by: Nathan Dominguez

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



MATCHLINE THIS SHEET
-L1_WB- STA. 42+61

MATCHLINE THIS SHEET
-L1_WB- STA. 42+61



SEE SHEET "E-1" FOR
LEGEND & Δ NOTES

2-DEC-2023 11:34 AM C:\Users\jmsquadr1\OneDrive\Lighting Design\12513AB\PSH_E5.dgn

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-40/I-26 INTERCHANGE, NORTH OF POND RD			
BUNCOMBE COUNTY			
Drawn By:	MSQ	Approved By:	RGH
		Dwg No.:	

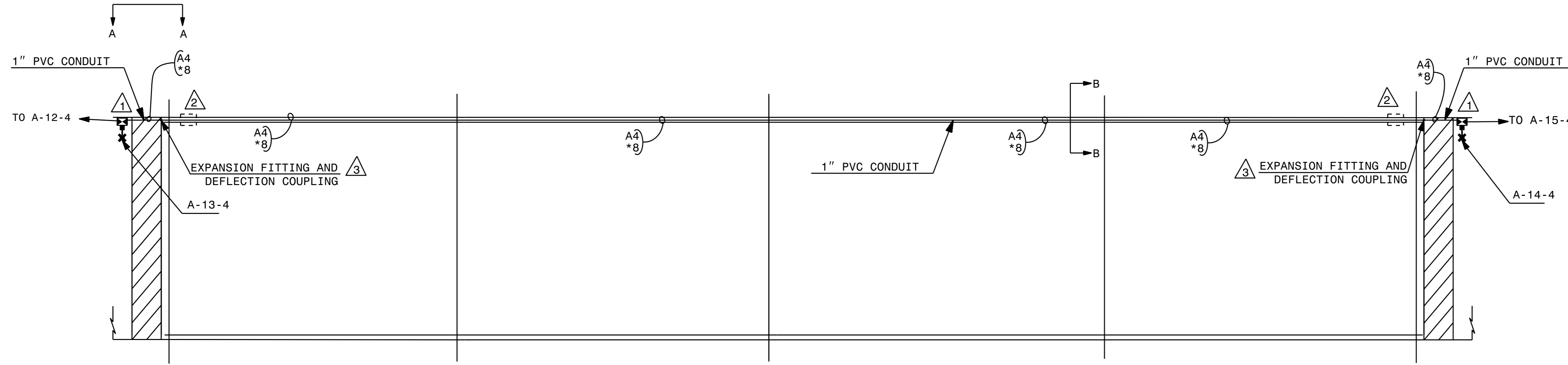
USE FOR LIGHTING CONSTRUCTION ONLY



NTS

12/21/2023

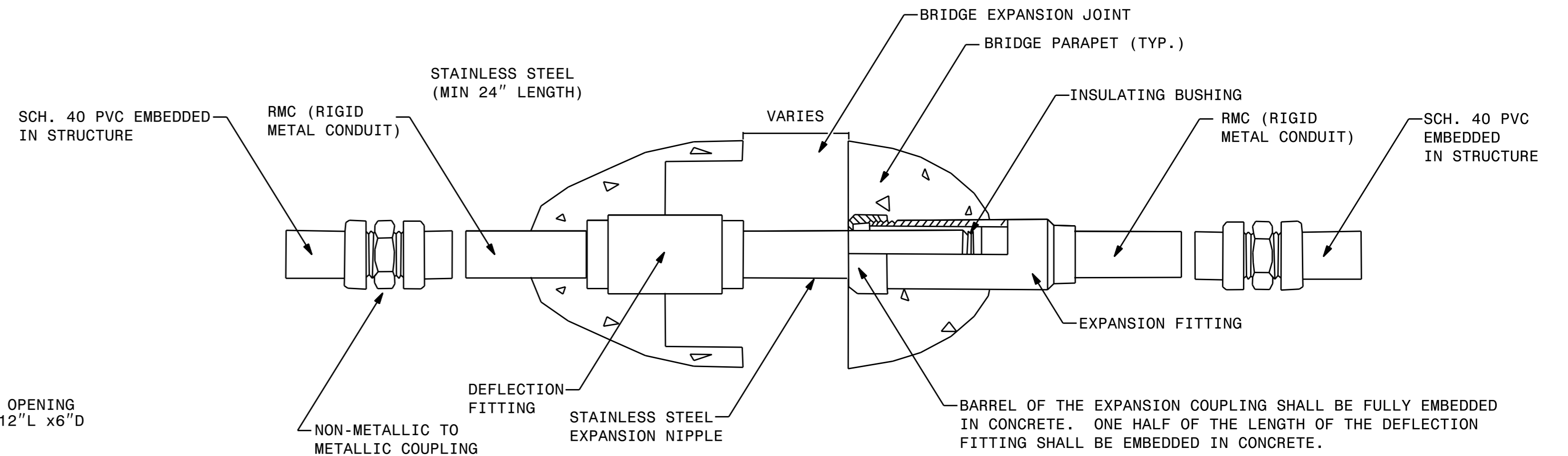
DESIGNED BY: Nathan P. Dominguez
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



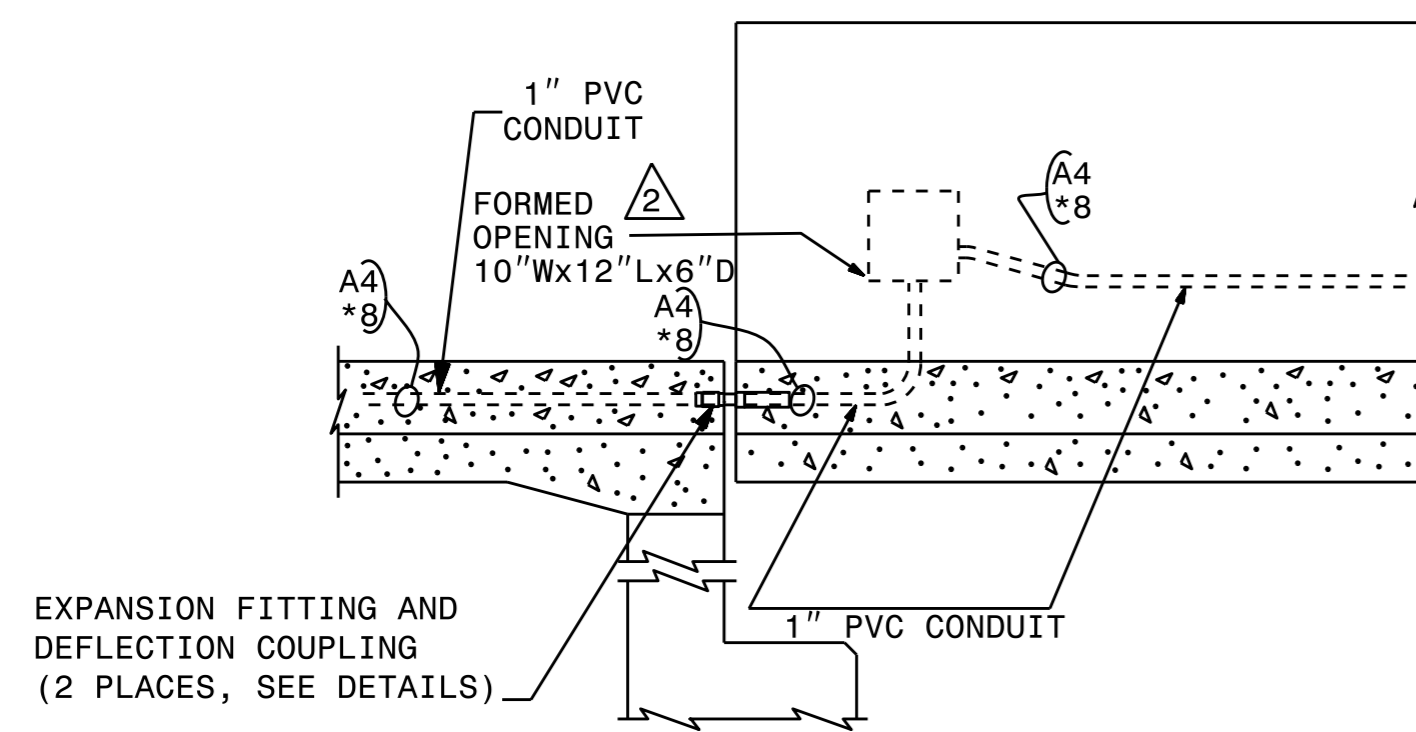
CONDUIT SYSTEM LAYOUT

NOTES

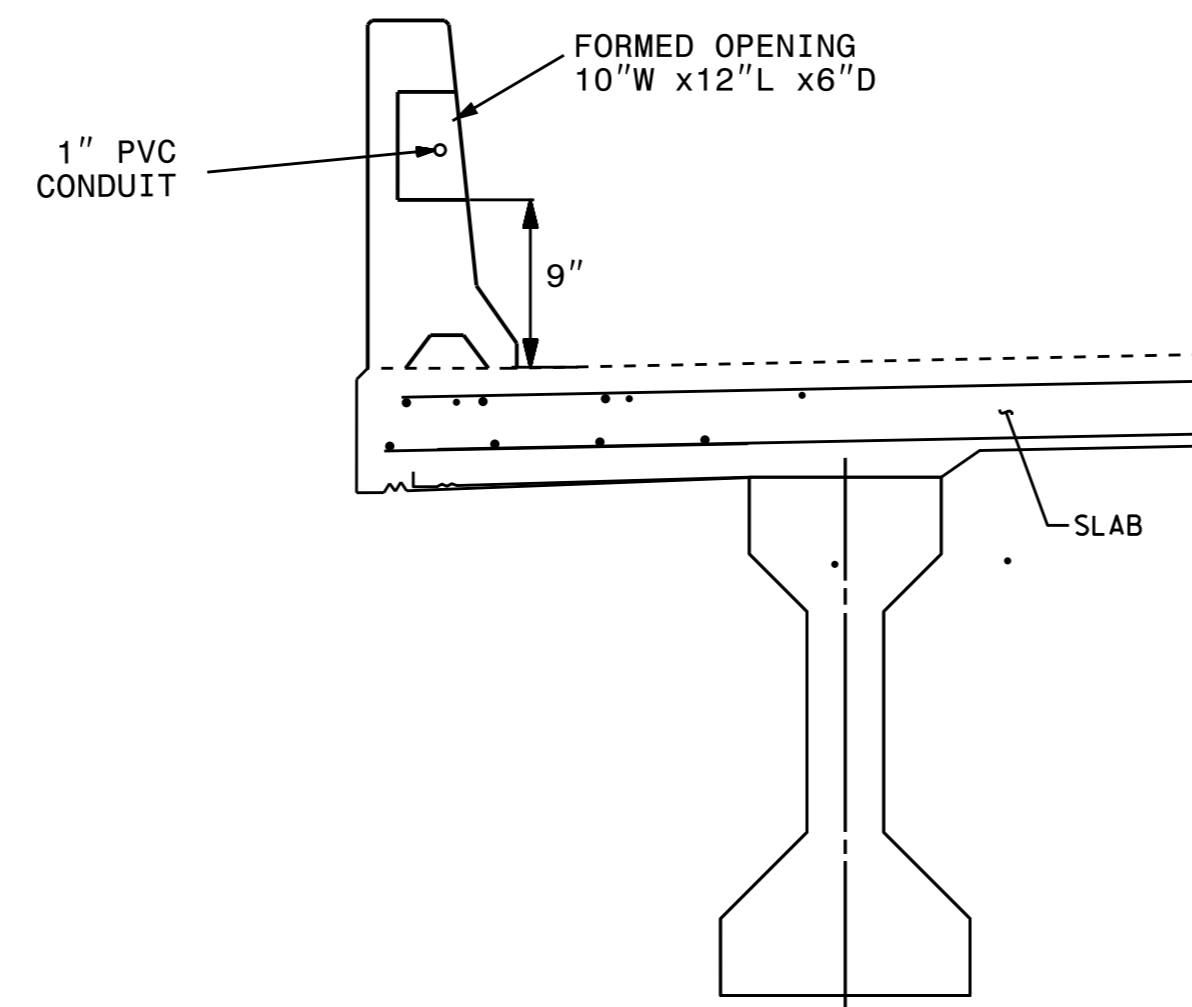
- 1 TYPE LS18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 2 FORMED OPENINGS ARE 10" W X 12" L X 6" H. SEE DETAILS ON SHEET E-7.
- 3 PROVIDE EXPANSION FITTINGS AT ALL BRIDGE EXPANSION JOINTS AND WHERE APPROACH SLAB MEETS INTEGRAL END BENT.
- 4 BARREL OF THE EXPANSION COUPLING SHALL BE FULLY EMBEDDED IN CONCRETE. ONE HALF OF THE LENGTH OF THE DEFLECTION FITTING SHALL BE EMBEDDED IN CONCRETE.



EXPANSION/DEFLECTION COUPLINGS DETAIL



VIEW A-A



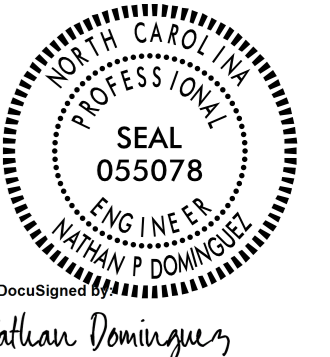
VIEW B-B

2			
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION BRIDGE CONDUIT SYSTEM US 74/SMOKEY PARK HWY INTERCHANGE BUNCOMBE COUNTY			
Drawn By:	MSQ	Approved By:	RGH
Dwg No.:			

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 msquad1 At RD-329139L

USE FOR LIGHTING CONSTRUCTION ONLY

PROJECT REFERENCE NO. 1-2513AA/AB SHEET NO. E-7



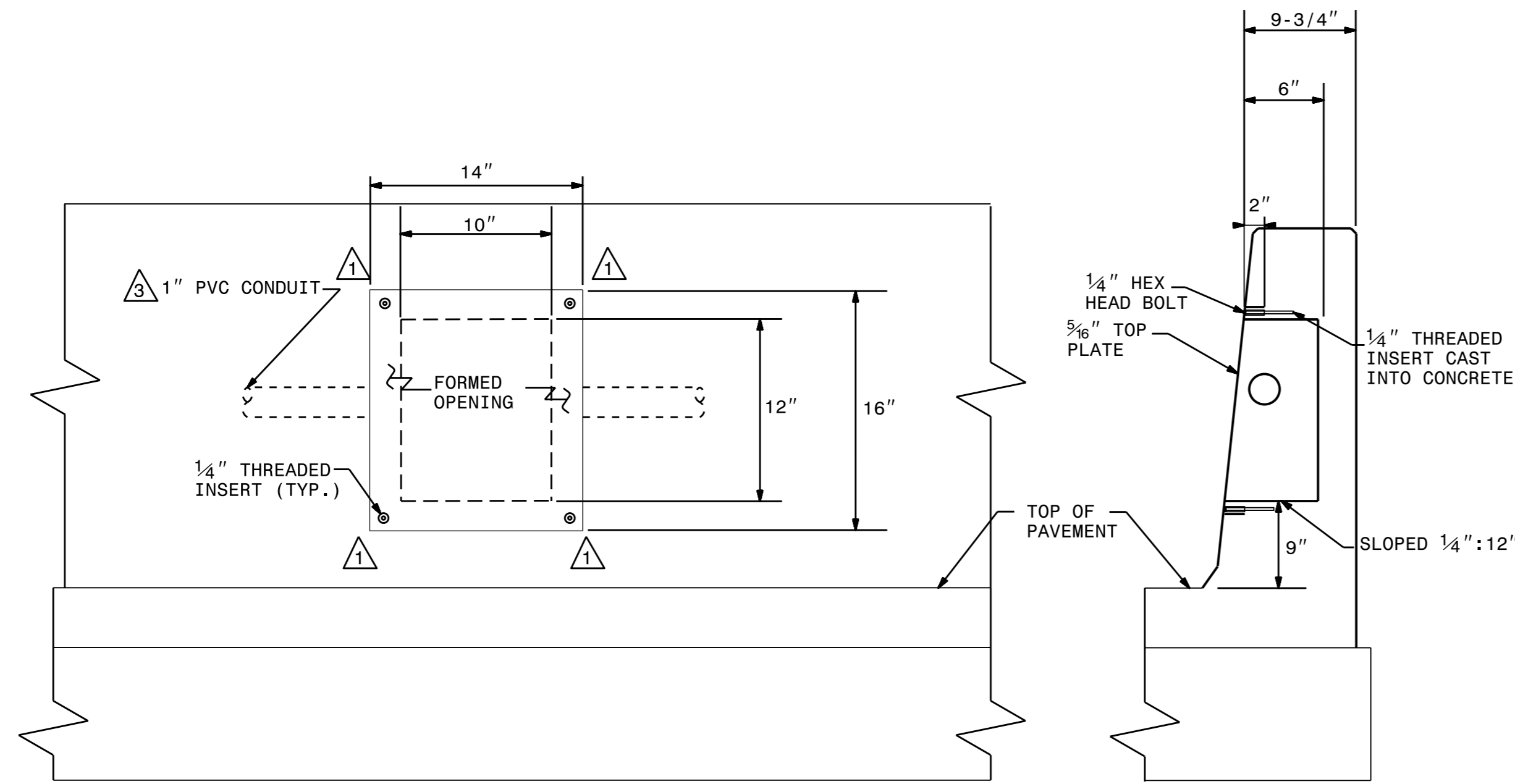
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01/04/2024

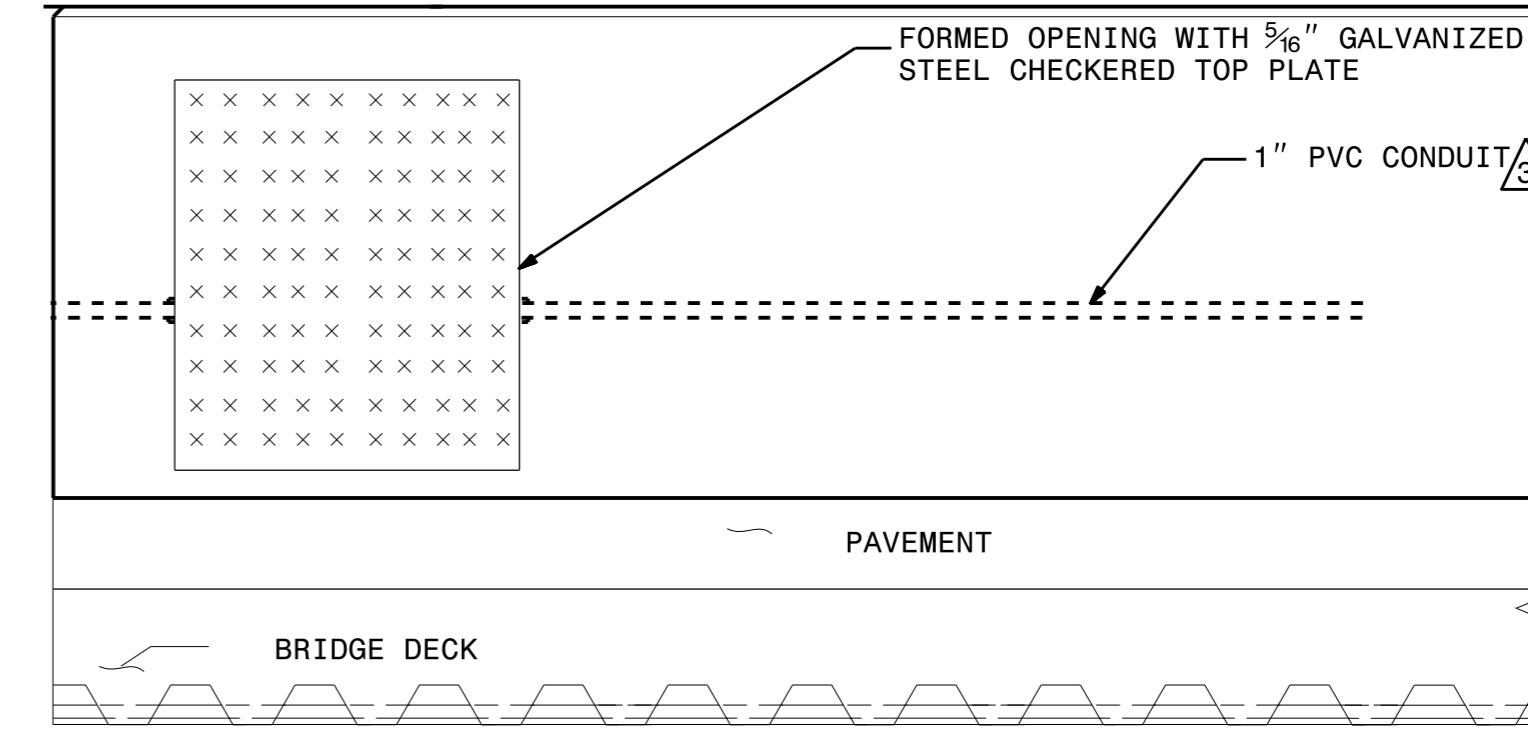
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

△ NOTES

- 1 △ THREADED INSERTS SHOULD BE 1-1/2" FROM EDGE OF FORMED OPENING.
- 2 △ RECESS BARRIER WALL SO THAT FACE OF TOP PLATE IS FLUSH WITH BARRIER AFTER PLATE IS INSTALLED. TOP PLATE SHALL BE 5/16" GALVANIZED STEEL.
- 3 △ INSTALL CONDUIT WITH A MINIMUM 2" CONCRETE COVER FROM FACE OF BARRIER.
- 4 △ CONDUIT PROJECTION SHALL BE APPROXIMATELY 1-1/2" INTO FORMED OPENING.
- 5 △ INSTALL CONDUIT BUSHINGS ON ALL CONDUIT TERMINATIONS WITHIN THE FORMED OPENING.



FORMED OPENING INSTALLATION DETAILS



FORMED OPENING INSTALLATION LOCATION
VIEW FROM ROADWAY

04-JAN-2024 16:09 R:\Lighting\12513_LE_PSH_E7.dgn msquod1 At RD-329139L

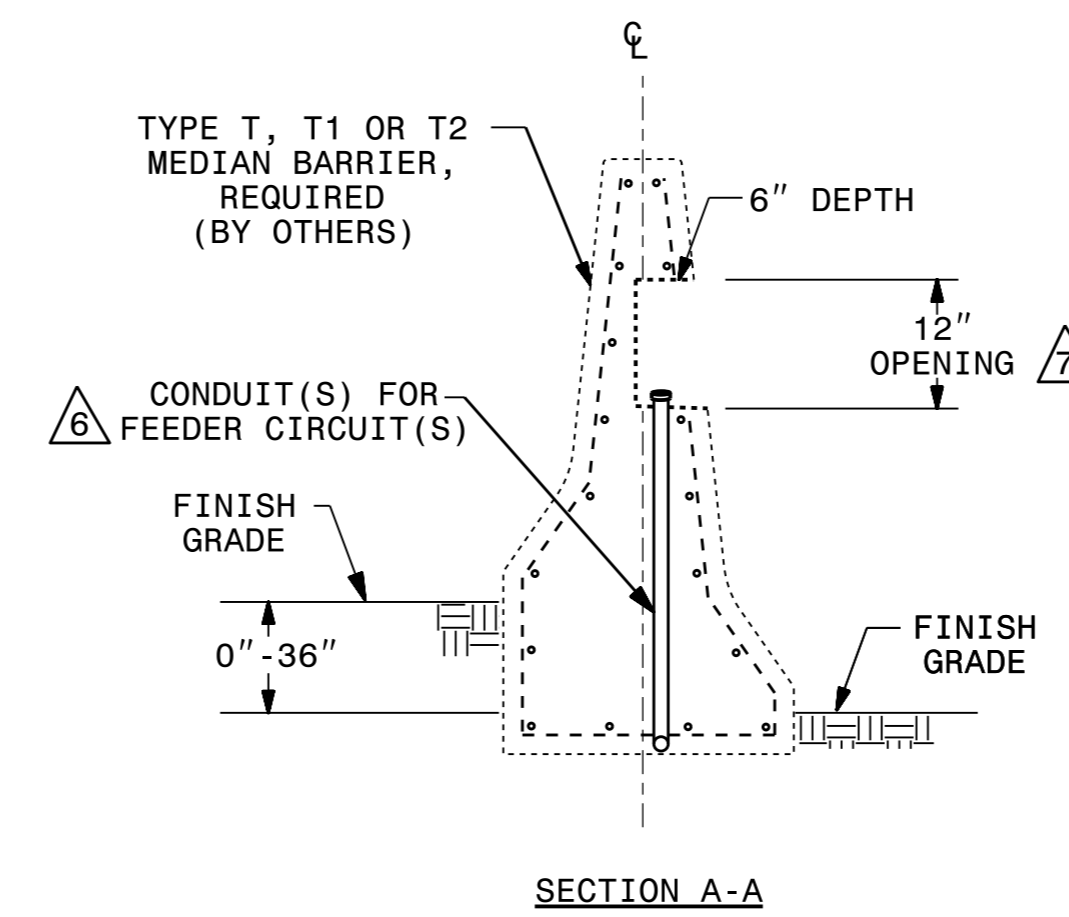
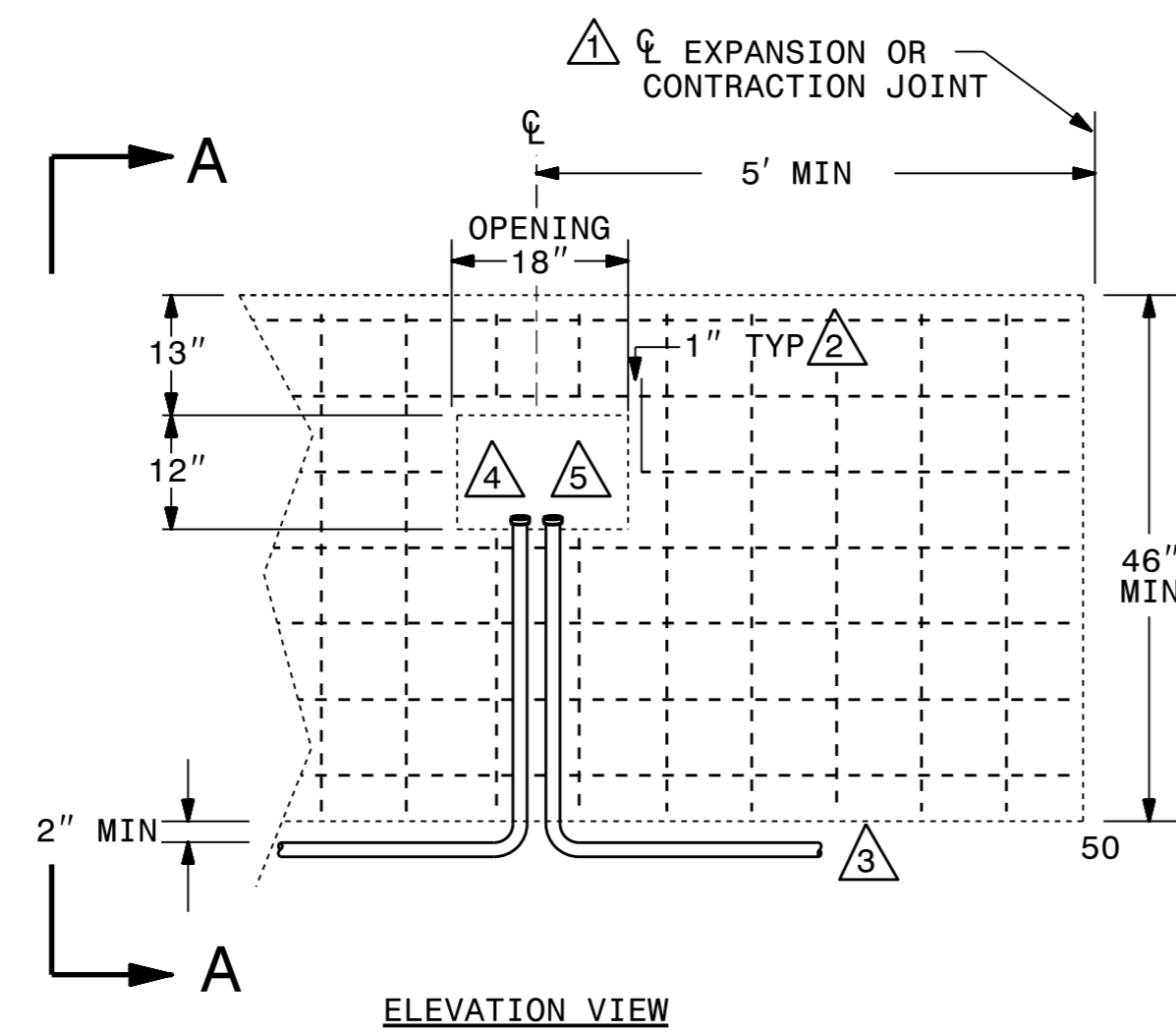
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION BRIDGE CONDUIT SYSTEM US 74/SMOKEY PARK HWY INTERCHANGE BUNCOMBE COUNTY			
Drawn By:	MSQ	Approved By:	RGH
		Dwg No.:	



NTS

01/04/2024

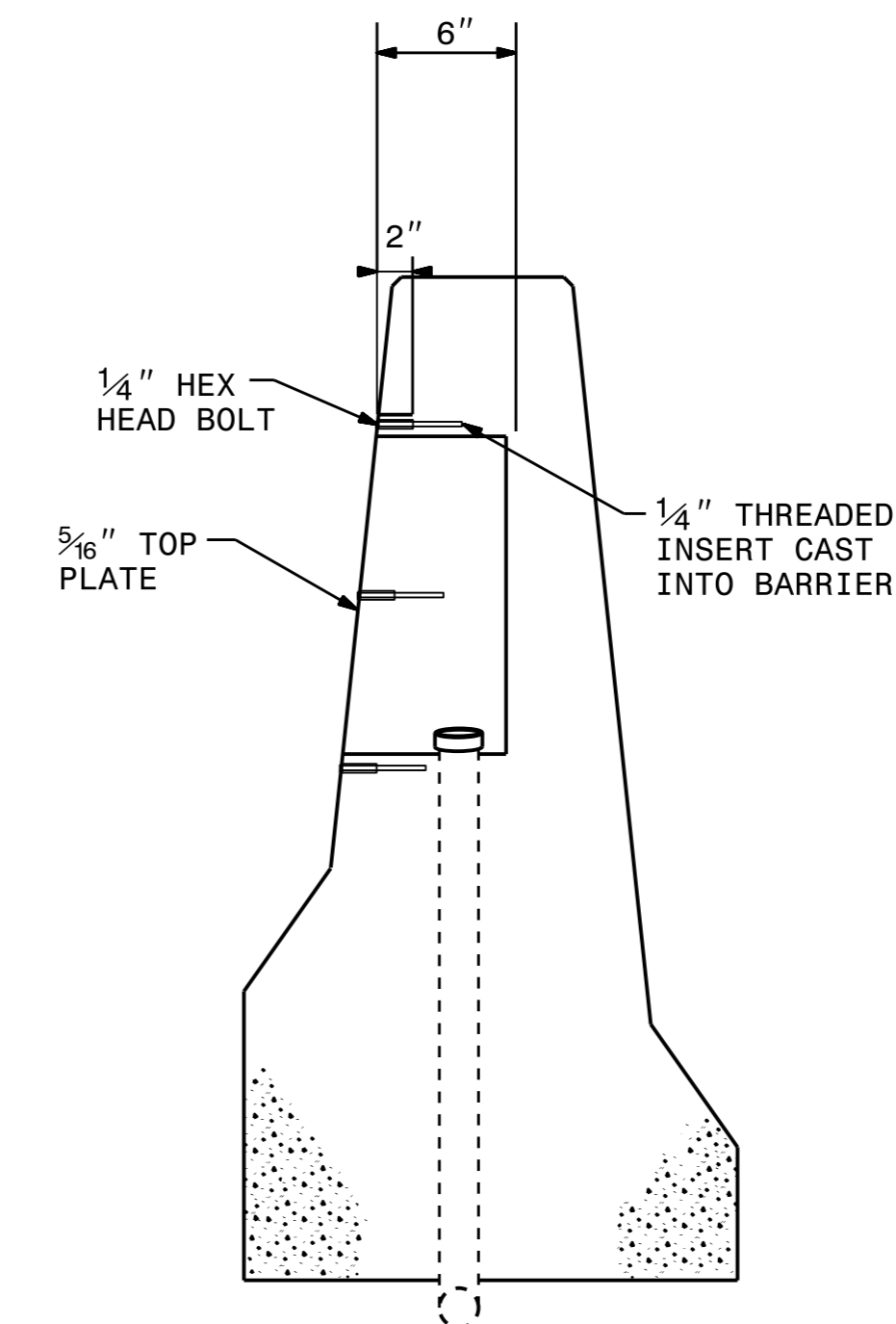
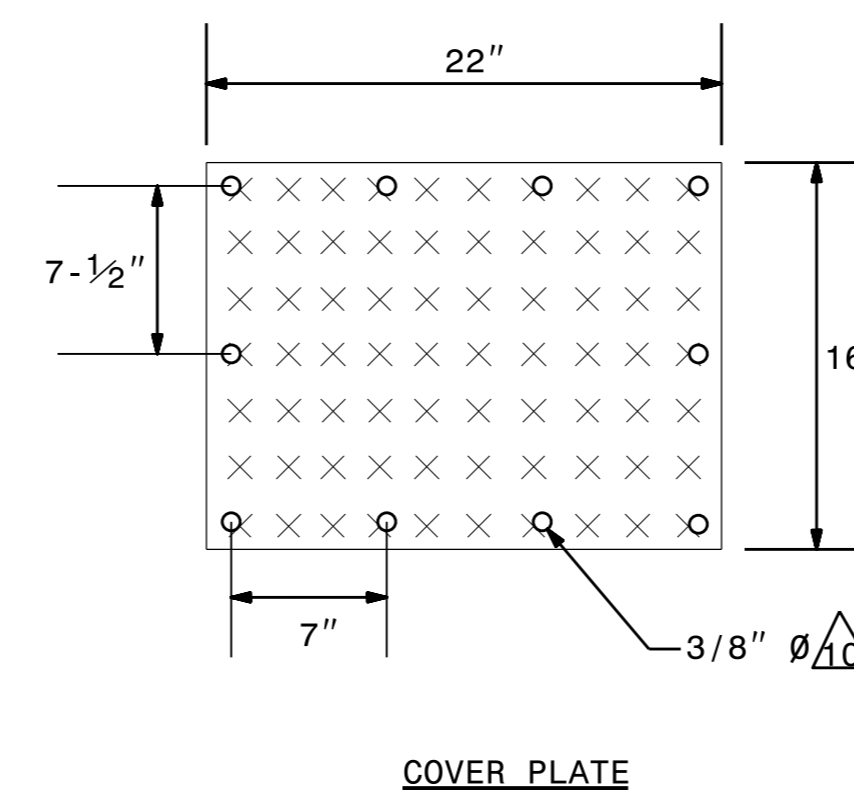
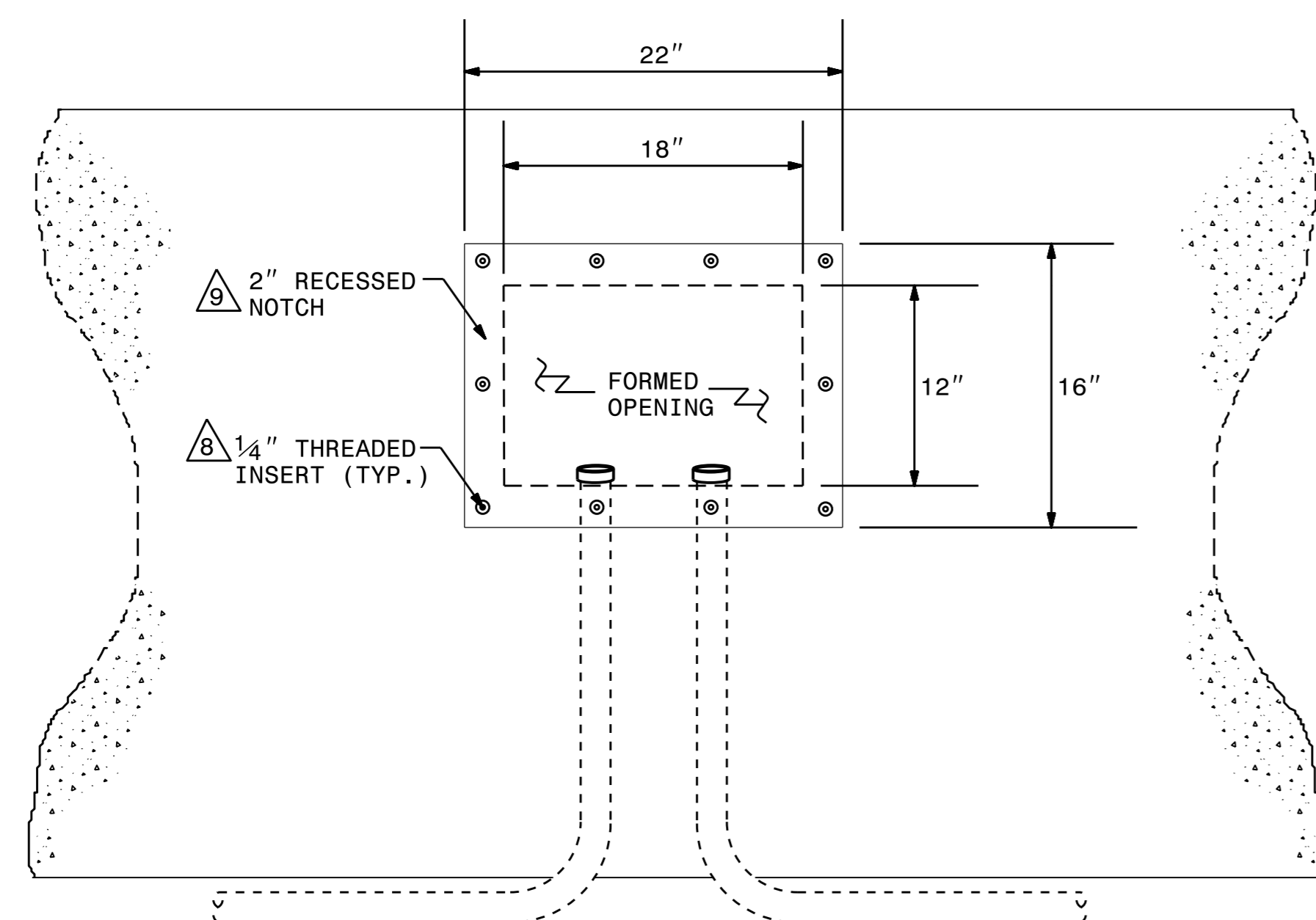
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



MEDIAN BARRIER FORMED OPENING DETAILS

NOTES

- 1 FORMED OPENINGS ARE 18" W X 12" L X 6" H.
- 2 CUT VERTICAL AND HORIZONTAL BARS AS SHOWN LEAVING 1", TYPICAL, BETWEEN BAR AND FORMED OPENING.
- 3 FEEDER CIRCUIT CONDUIT MAY BE INSTALLED IN THE BOTTOM OF MEDIAN BARRIER. TOP OF CONDUIT MUST BE A MINIMUM OF 2" BELOW FINISHED GRADE.
- 4 CONDUIT PROJECTION SHALL BE APPROXIMATELY 1-1/2" INTO FORMED OPENING.
- 5 INSTALL CONDUIT BUSHINGS ON ALL CONDUIT TERMINATIONS WITHIN THE FORMED OPENING.
- 6 POSITION OPENING TO ALLOW FOR A MINIMUM 2" CONCRETE COVER.
- 7 SLOPE THE BOTTOM OF THE FORMED OPENING WITH A 1/4":12" FALLOUT FOR WATER DRAINAGE.
- 8 THREADED INSERTS SHALL BE 1-1/2" FROM THE EDGE OF THE FORMED OPENING.
- 9 CONSTRUCT A RECESSED NOTCH IN BARRIER WALL SO THAT FACE OF TOP PLATE IS FLUSH WITH BARRIER AFTER PLATE IS INSTALLED. TOP PLATE SHALL BE 3/16" GALVANIZED STEEL WITH A CHECKERED FINISH.
- 10 FIELD DRILL 3/8" HOLES IN COVER PLATE TO ALIGN WITH THREADED INSERTS PLACED DURING BARRIER WALL FABRICATION.



FORMED OPENING COVER PLATE AND INSERT DETAILS

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION MEDIAN BARRIER FORMED OPENING DETAILS ON I-40, NEAR KELLY DR, W OF I-40/I-26 INTERCHANGE BUNCOMBE COUNTY			
Drawn By:	MSQ	Approved By:	RGH
Dwg No.:			