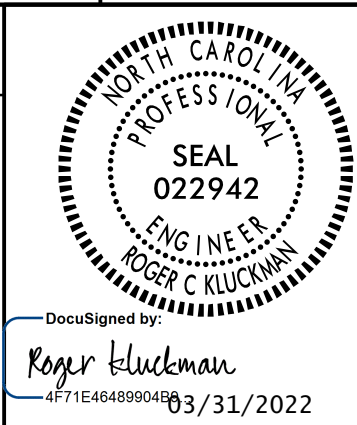


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PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

NOTES

- 1 AT THESE LOCATIONS, PROVIDE ELECTRICAL DUCT IN ACCORDANCE WITH NEC REQUIREMENTS FOR AN APPROVED RACEWAY FOR ELECTRICAL CIRCUITS. SEE TABLE "C".
- 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 BARRIER RAIL AND SIDEWALK JUNCTION BOXES SHALL BE 6" HIGH, UNLESS OTHERWISE NOTED.
- 7 CONTRACTOR SHALL RECORD THE GPS COORDINATES OF EACH JUNCTION BOX 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).
- 9 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.
- 10 CLEAR AND GRUB AN AREA 25' IN DIAMETER AROUND CENTER OF HIGH MAST FOUNDATION.
- 11 SEE UBO PLANS FOR INFORMATION CONCERNING REMOVAL OF SERVICE POINTS.

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

- 0.8 AVERAGE FOOTCANDLE ON TRAVEL LANES
- 4:1 AVERAGE TO MINIMUM UNIFORMITY RATIO ON TRAVEL LANES
- 2018 AASHTO ROADSIDE 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 110 MPH
- DESIGN HIGH MOUNT STANDARD FOUNDATION FOR BASIC WIND SPEED OF 130 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

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 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD NO.	TITLE
1401.01	HIGH MOUNT STANDARD
1402.01	HIGH MOUNT FOUNDATION
1403.01	HIGH MOUNT LED LUMINAIRES
1404.01	LIGHT STANDARDS
1405.01	STANDARD FOUNDATION
1406.01	LIGHT STANDARD LUMINAIRES
1407.01	ELECTRIC SERVICE POLE AND LATERAL
1408.01	LIGHT CONTROL SYSTEM
1409.01	ELECTRICAL DUCT
1410.01	FEEDER CIRCUITS
1411.01	ELECTRICAL JUNCTION BOXES

ALL WORK SHALL BE IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2018.

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 LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, JUNCTION BOX & 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' TWIN ARMS. INCLUDES STANDARD FOUNDATION IN MEDIUM BARRIER WITH 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
- PROPOSED CONTROL SYSTEM WITH JUNCTION BOX. SIZE OF BREAKERS AS SHOWN IN LOAD SCHEDULE. SEE SHEETS E-3 AND E-5.
- EXISTING SINGLE ARM LIGHT STANDARD TO BE REMOVED. REUSE, ABANDON OR REMOVE FOUNDATION.
- PROPOSED ELECTRICAL JUNCTION BOX. SEE TABLE C, SHEET E-1A AND E-1B, FOR DETAILS AND TYPE.
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED.
- PROPOSED FEEDER CIRCUIT. CONTROL SYSTEMS (A) CIRCUIT NUMBER (1) PLAN SYMBOL (8). SEE TABLE A, THIS SHEET.
- PROPOSED 30' CLASS 4 SERVICE POLE AND LATERAL 3 #1/0 USE CONDUCTORS 2" CONDUIT
- PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE B, SHEET E-1A AND E-1B.
- SERVICE POINT TO BE REMOVED.

TABLE "A"
CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE

PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
8	2 #8 Ø 1 #10G 1.5" P	2 - 8 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*8	2 #8 Ø 1 #10G	2 - 8 W/G FEEDER CIRCUIT
6	2 #6 Ø 1 #8G 1.5" P	2 - 6 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*6	2 #6 Ø 1 #10G	2 - 6 W/G FEEDER CIRCUIT
4	2 #4 Ø 1 #6G 1.5" P	2 - 4 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*4	2 #4 Ø 1 #6G	2 - 4 W/G FEEDER CIRCUIT
2	2 #2 Ø 1 #4G 1.5" P	2 - 2 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*2	2 #2 Ø 1 #4G	2 - 2 W/G FEEDER CIRCUIT

ABBREVIATIONS

BD	BURIED	PVC	PVC SCHEDULE 40 CONDUIT
LT	LIGHT	RGC	RIGID GALVANIZED STEEL CONDUIT
JA	JACKED	C	CONDUIT
MH	MOUNTING HEIGHT	CKT	CIRCUIT
Ø	PHASE	N	NEUTRAL
SER LAT	SERVICE LATERAL	G	GROUND
IGJB	IN GROUND JUNCTION BOX	HM	HIGH MAST
LED	LIGHT EMITTING DIODE	LSJB	LIGHT STANDARD JUNCTION BOX
HMJB	HIGH MAST JUNCTION BOX	CSJB	CONTROL SYSTEM JUNCTION BOX

COMPUTED BY: SAM DATE: 12/17/21
CHECKED BY: RHG DATE: 12/17/21

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TABLE "C" (CONTINUED)
 JUNCTION BOX SUMMARY

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "N"											GPS LOCATION		
			TYPE, PAY ITEM & SIZE											LAT/LONG		
			IN GROUND			LIGHT STANDARD			HIGH MAST			CONTROL SYSTEM	BARRIER RAIL		SIDE WALK	
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"	BR18 18"X12"	SW18 18"X12"					
E-3	JBN1	-Y5RPD- STA 21+72 LT 41'	X													
E-3	JBN2	-Y5RPD- STA 21+72 RT 54'	X													
E-3	JBN3	-L- STA 624+42, RT 85	X													
E-3	JBN4	-L- STA 624+42											X			
E-3	JBN5	-Y5- STA 44+23 LT 47'	X													
E-3	JBN6	-Y5- STA 44+23 RT 52'	X													
E-2	JBN7	-Y5RPC- STA 24+51 RT 41'	X													
E-2	JBN8	-Y5RPC- STA 24+51 LT 46'	X													
E-2	JBN9	-L- STA 611+13 RT 108'	X													
E-2	JBN10	-L- STA 607+90 RT 97'	X													
E-2	JBN11	-L- STA 607+90											X			
E-2	JBN12	-L- STA 607+90 LT 92'	X													
E-3	HMN-5-1JB	10' FROM HIGH MAST HMN-5-1							X							
E-2	HMN-6-2JB	10' FROM HIGH MAST HMN-6-2							X							
E-2	HMN-7-3JB	10' FROM HIGH MAST HMN-7-3							X							
E-3	CS-NJB	2' FROM CONTROL SYSTEM-'N'										X				
CS-N TOTALS			10						3			1	2			

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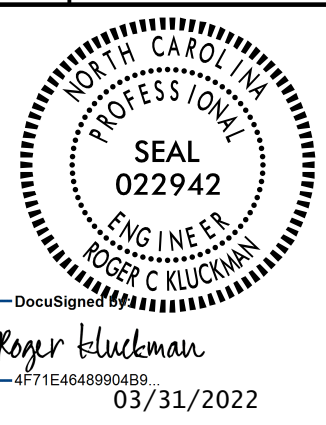


TABLE "B" (CONTINUED)
 ELECTRICAL DUCT SUMMARY
 (ESTIMATED LENGTH IN FEET)

LOCATION	RACEWAY	SHEET	TYPE							
			JACKED (JA) FEET				BURIED (BD) FEET			
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"	SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"
-Y5- STA 44+23	JBN5-JBN6	E-2, E-3			90		105			
-Y5RPC- STA 24+51	JBN7-JBN8	E-2			60		90			
-Y5RPD- STA 21+72	--	E-3		60						
-L- STA 624+42	--	E-3		80						
-L- STA 620+66	--	E-3		155						
-L- STA 607+90	--	E-2		80						
-L- STA 607+90	--	E-2		80						
--	--									
--	--									
--	--									
--	--									
--	--									
--	--									
CS-N TOTALS				455	150		195			

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TABLE "C" (CONTINUED)
 JUNCTION BOX SUMMARY

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "P"											GPS LOCATION		
			TYPE, PAY ITEM & SIZE											LAT/LONG		
			IN GROUND			LIGHT STANDARD			HIGH MAST			CONTROL SYSTEM	BARRIER RAIL		SIDE WALK	
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"	BR18 18"x12"	SW18 18"x12"					
E-5	JBP1	-Y1BRPB- STA 26+49 RT 26'	X													
E-5	JBP2	-Y1B- STA 26+67 RT 43'	X													
E-5	JBP3	-Y1B- STA 26+67 LT 52'	X													
E-6	JBP4	-L- STA 712+46 LT 89	X													
E-6	JBP5	-L- STA 712+46											X			
E-4	JBP6	-L- STA 702+07 LT 94	X													
E-4	JBP7	-L- STA 699+19 LT 91	X													
E-4	JBP9	-L- STA 691+64 RT 87	X													
E-4	JBP10	-L- STA 691+64											X			
E-5	JBP11	-L- STA 699+19 RT 106	X													
E-5	JBP12	-Y1B- 31+87 RT 40	X													
E-5	JBP13	-Y1B- 31+87 LT 40	X													
E-5	JBP14	-Y1BRPC- 23+51 LT 25	X													
E-5	JBP15	-Y1BRPC- 23+51 RT 47	X													
E-5	HMP-4-2JB	10' FROM HIGHMAST HMP-4-2								X						
E-5	HMP-9-3JB	10' FROM HIGHMAST HMP-9-3								X						
E-5	HMP-10-4JB	10' FROM HIGHMAST HMP-10-4								X						
E-5	P-1-1JB	5' FROM SINGLE ARM P-1-1				X										
E-5	P-2-1JB	5' FROM SINGLE ARM P-2-1				X										
E-5	P-3-1JB	5' FROM SINGLE ARM P-3-1				X										
E-5	P-15-3JB	5' FROM SINGLE ARM P-15-3				X										
E-5	CSJB	2' FROM CONTROL SYSTEM 'P' '										X				
CS-P TOTALS			12			4				3			1	2		
GRAND TOTALS (TIP#: I-5987B)			22			4				6			2	4		

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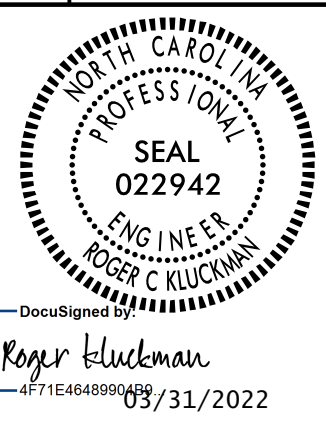
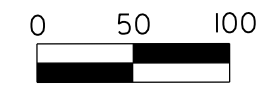
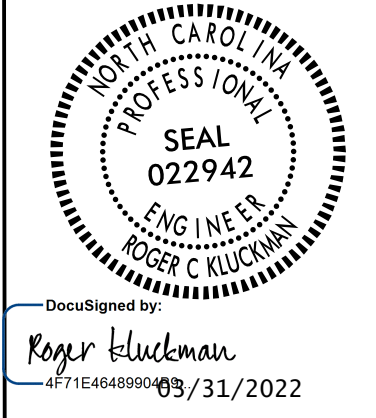


TABLE "B" (CONTINUED)
 ELECTRICAL DUCT SUMMARY
 (ESTIMATED LENGTH IN FEET)

LOCATION	SHEET	TYPE							
		JACKED (JA) FEET				BURIED (BD) FEET			
		SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"	SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"
-Y1BRPB- STA 26+49	--	E-5	50						
-Y1B- STA 26+67		E-5	65						
-L- STA 712+46	--	E-6	80						
-L- STA 699+19	JBP7 - JBP11	E-5		155		200			
--	--								
-L- STA 691+64		E-4	60						
-Y1B- STA 31+87		E-5	60						
-Y1BRPC- STA 23+51		E-5	50						
CS-P TOTALS			365	155		200			
PROJECT I-5987B GRAND TOTALS			820	305		395			

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EXISTING POLES TO BE REMOVED		SHEET
SINGLE ARM	#1F, #2F, #3F, #4F, #5F, #6F, #13F, #14F, #15F, #16F, #17F, #18F, #19F	E-3
	#7F, #8F, #9F, #10F, #11F, #12F, #20F, #21F, #22F, #23F, #24F	E-2

NOTE: THERE ARE NO VISIBLE NUMBERS ON THE POLES. THESE POLE NUMBERS ARE ASSIGNED ARBITRARILY.



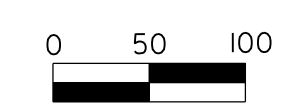
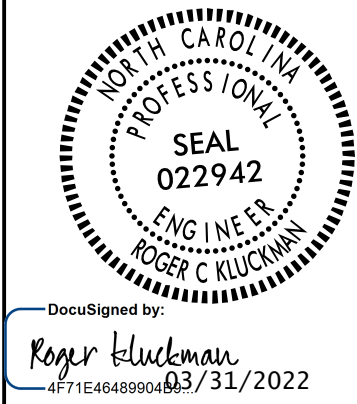
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Rev.	Date	Description	Approved
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Drawn By:	SAM	Approved By:	RGH
Dwg No.:			

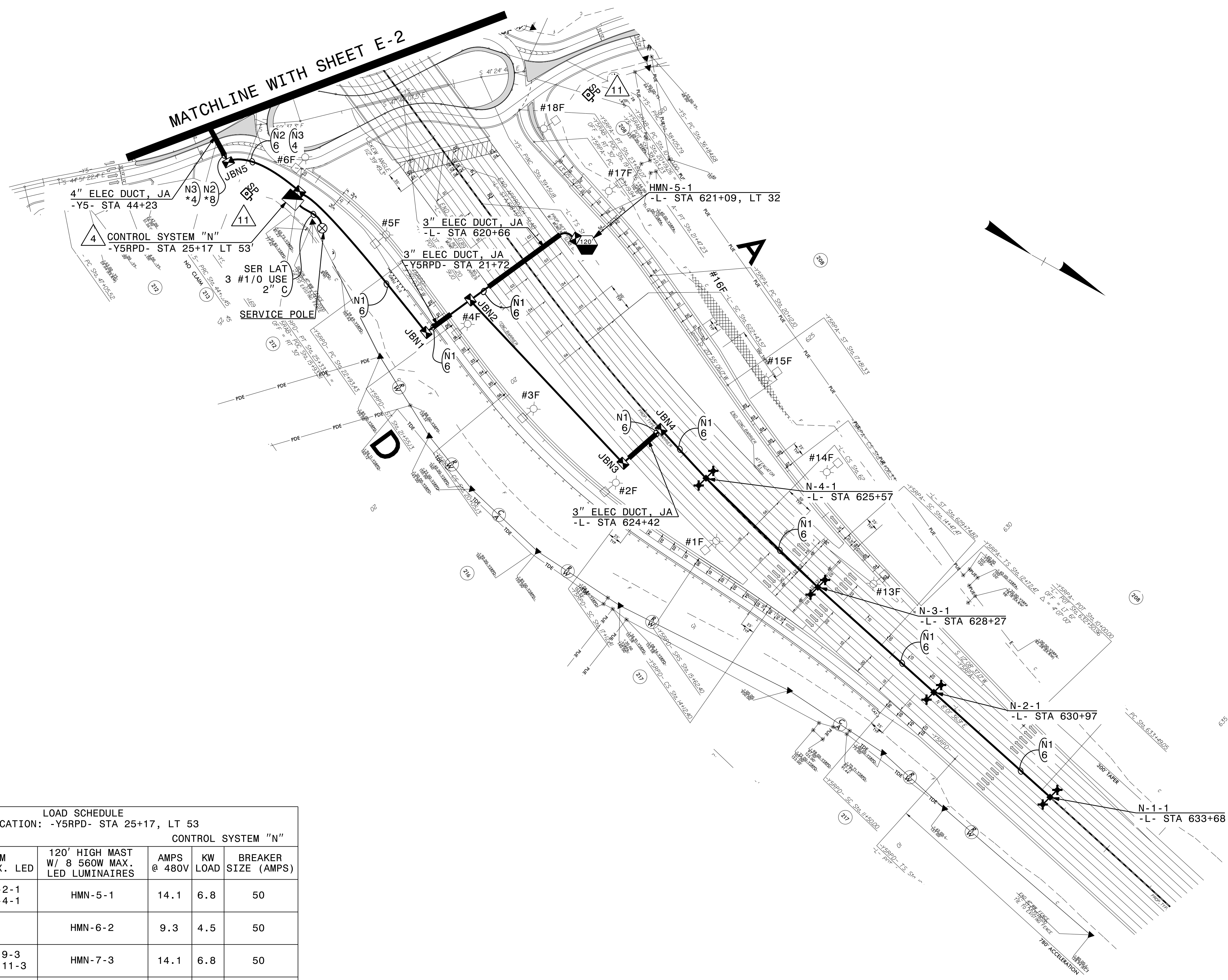
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MATCHLINE WITH SHEET E-3

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LOAD SCHEDULE
CS LOCATION: -Y5RPD- STA 25+17, LT 53
CONTROL SYSTEM "N"

CIRCUIT ID	TWIN ARM 2 @ 285W MAX. LED	120' HIGH MAST W/ 8 560W MAX. LED LUMINAIRES	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
N1	N-1-1, N-2-1 N-3-1, N-4-1	HMN-5-1	14.1	6.8	50
N2	--	HMN-6-2	9.3	4.5	50
N3	N-8-3, N-9-3 N-10-3, N-11-3	HMN-7-3	14.1	6.8	50
--	--	--	--	--	--
--	--	--	--	--	--
SPARE	--	--	--	--	50
TOTAL	8	3	37.5	18.1	

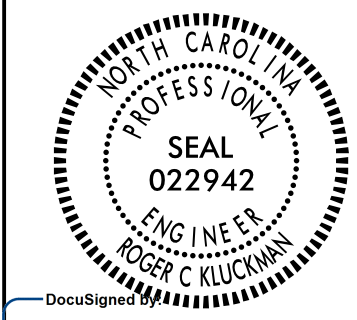
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PROJECT REFERENCE NO. U-5987B SHEET NO. E-4



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 Roger Kluckman
 471E46489904B03/31/2022

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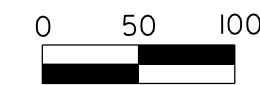
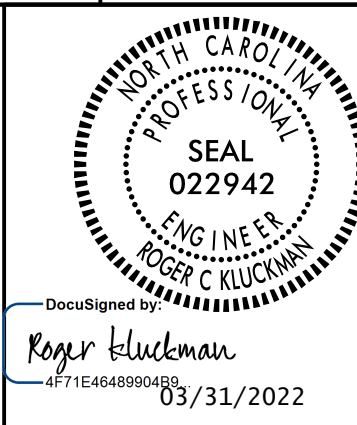
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**NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION**
 ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

LIGHTING LAYOUT
 I-95/US 301 INTERCHANGE
 (EXIT 33)
 ROBESON COUNTY

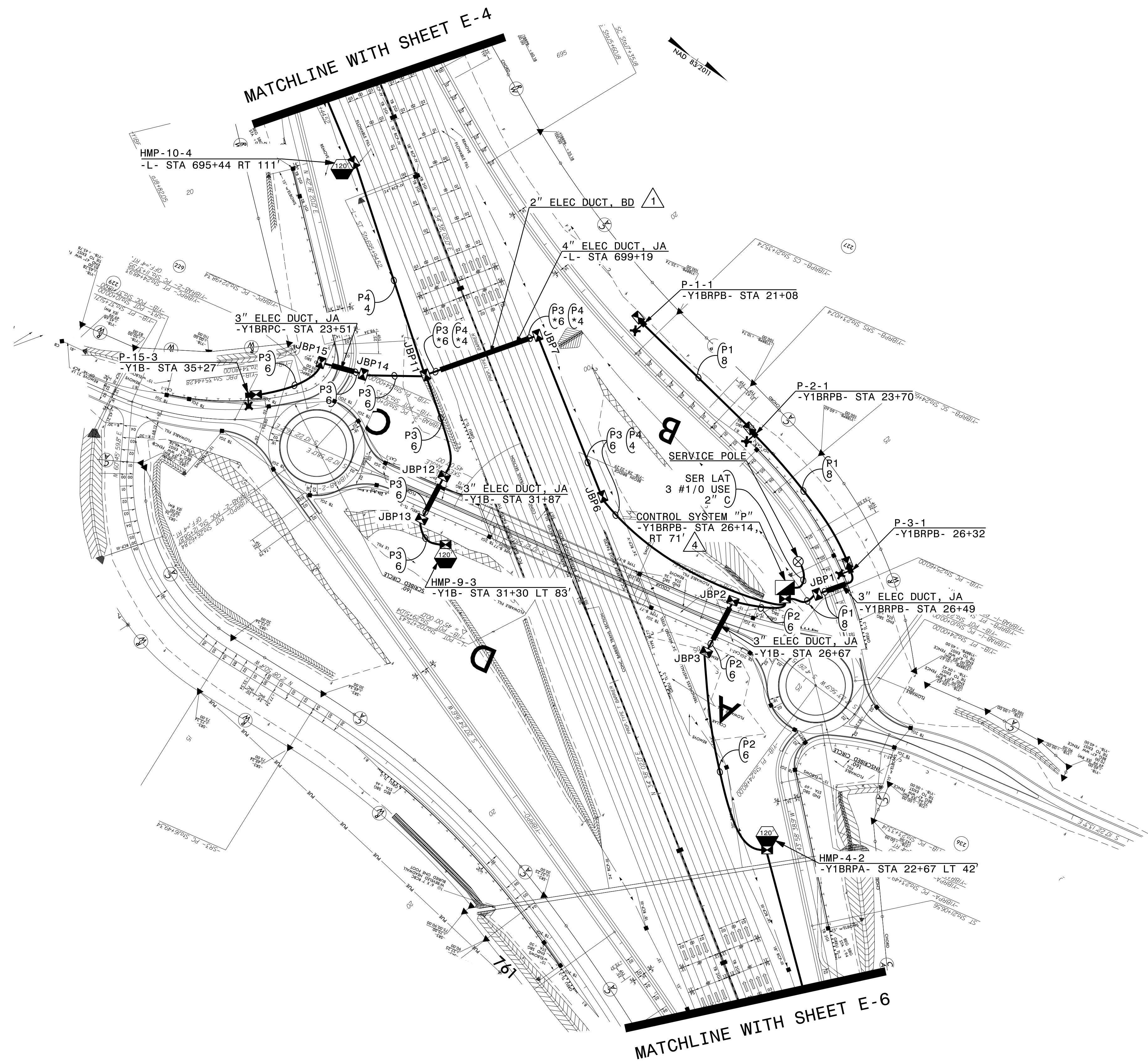
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LOAD SCHEDULE
CS LOCATION: -Y1BRPB- STA 26+14, RT 71
CONTROL SYSTEM "P"

CIRCUIT ID	LOAD SCHEDULE		120' HIGH MAST W/ 8 560W MAX. LED LUMINAIRES	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
	SINGLE ARM 1 @ 285W MAX. LED	TWIN ARM 2 @ 285W MAX. LED				
P1	P-1-1, P-2-1 P-3-1	--	--	1.8	0.9	50
P2	--	P-5-2, P-6-2 P-7-2, P-8-2	HMP-4-2	14.1	6.8	50
P3	P-15-3	--	HMP-9-3	9.9	4.8	50
P4	--	P-11-4, P-12-4 P-13-4, P-14-4	HMP-10-4	14.1	6.8	50
--	--	--	--	--	--	--
SPARE	--	--	--	--	--	50
TOTAL	4	8	3	39.9	19.3	

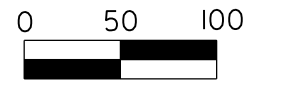
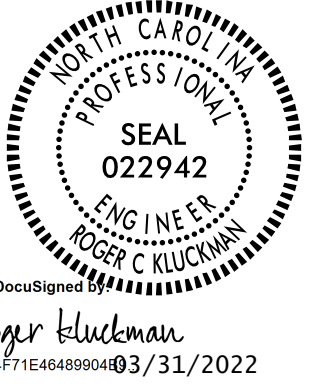
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Dwg No.:			

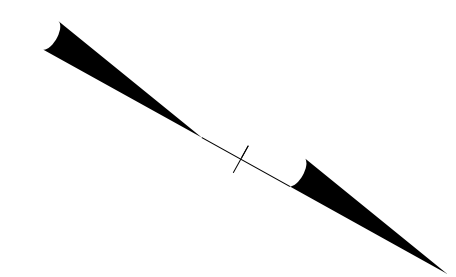
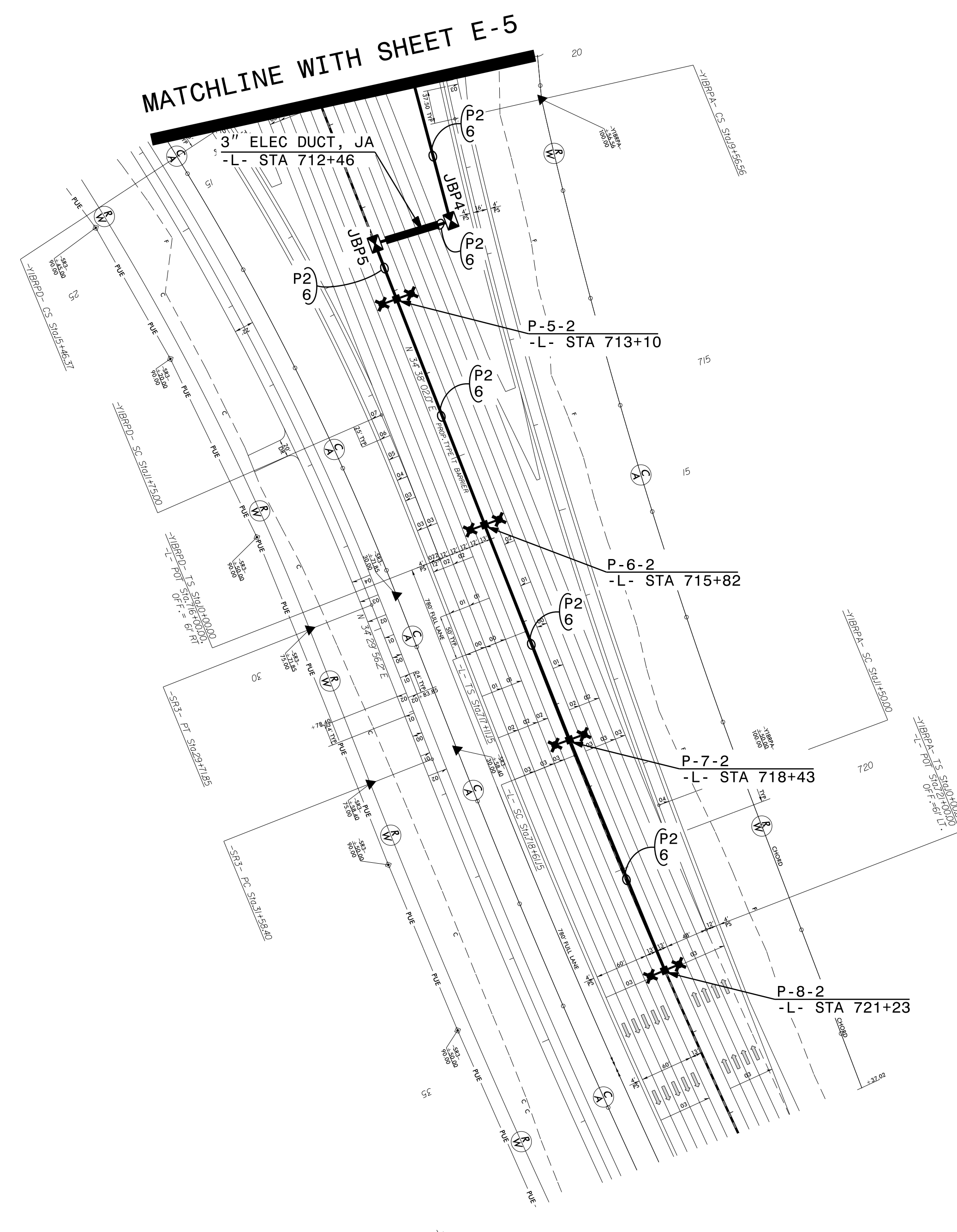
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PROJECT REFERENCE NO. U-5987B	SHEET NO. E-6
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-95/US 301 INTERCHANGE (EXIT 33) ROBESON COUNTY			
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