

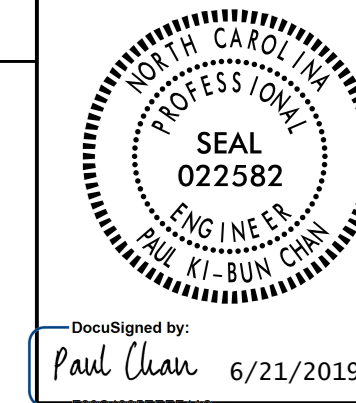
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PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

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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 JUNCTION BOXES SHALL BE 18" 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 AT MANY LOCATIONS ON SHEET E2, THE SYMBOLOGY ON THE PLANS APPEARS TO SHOW THE LIGHT STANDARD, JUNCTION BOX AND/OR THE FEEDER CIRCUIT OUTSIDE OF THE RIGHT-OF-WAY. THE CONTRACTOR SHALL INSTALL ALL LIGHTING EQUIPMENT IN THE GRASSY STRIP BETWEEN THE BACK OF CURB AND INSIDE OF THE RIGHT-OF-WAY.
- 9 PROVIDE FLAG POLE LIGHT AND CONNECTION TO LIGHT. COORDINATE INSTALLATION AND AIMING OF FLAG POLE LIGHT WITH PRIME CONTRACTOR.
- 10 FOR LIGHTS INSIDE OF REST AREA, INSTALL LIGHT STANDARDS 10' FROM EDGE OF TRAVEL LANE, 6' BEHIND CURB OR 3' BEHIND SIDEWALK.
- 11 USE SCALED DIMENSIONS FOR LIGHT STANDARDS NOT LOCATED WITH STATION NUMBERS.
- 12 REMOVE ALL EXISTING LIGHT STANDARDS AT THE EXISTING REST AREAS. DELIVER STANDARDS AND LUMINAIRES TO THE DIVISION STORAGE LOCATION. SEE PROJECT SPECIAL PROVISIONS. ABANDON OR REMOVE ALL EXISTING UNDERGROUND LIGHTING CIRCUITRY AT THE EXISTING REST AREA LOCATIONS.

SCOPE OF WORK

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

DESIGN CRITERIA

- 0.8 AVERAGE FOOTCANDLE ON TRAVEL LANES
- 4:1 AVERAGE TO MINIMUM UNIFORMITY RATIO ON TRAVEL LANES
- 0.3 MAXIMUM VEILING LUMINANCE
- 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 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
- 2017 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
1404.01	LIGHT STANDARDS
1405.01	STANDARD FOUNDATION
1407.01	ELECTRIC SERVICE POLE AND LATERAL LIGHT CONTROL SYSTEM (USE ATTACHED DETAIL SHEET 1408D01 IN LIEU OF STANDARD DRAWING 1408.01, SHEETS 1 & 2 FOR TYPE RW CONTROL SYSTEM.)
1408.01	
1409.01	ELECTRICAL DUCT
1410.01	FEEDER CIRCUITS
1411.01	ELECTRICAL JUNCTION BOXES
1412.01	UNDERPASS LIGHTING

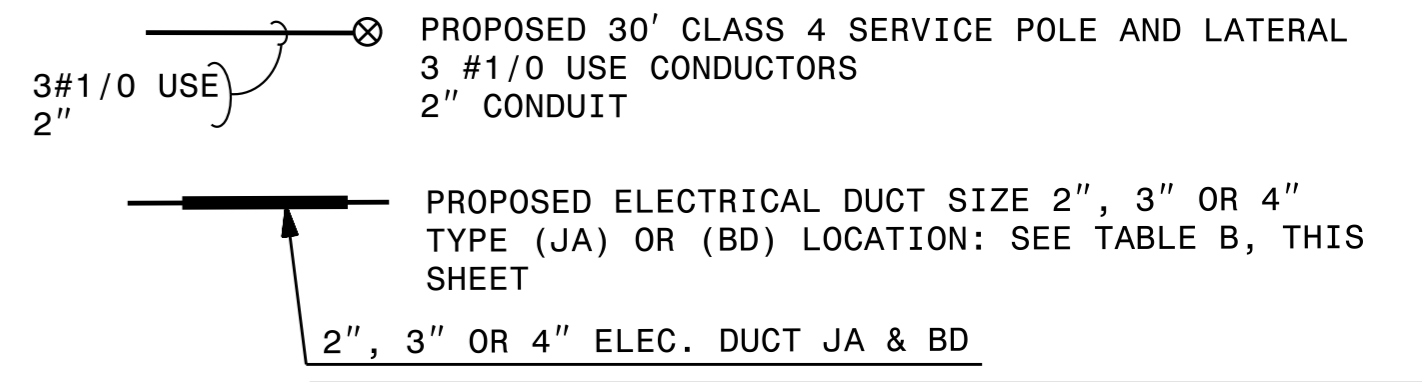
ALL WORK SHALL BE IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2018.

LEGEND

- PROPOSED 100' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX (HMxxJB) & (6) HM LED LUMINAIRES 560W MAX, 54,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V. MAXIMUM BUG RATING 5-0-5. SEE TABLE C, SHEET E1A.
- PROPOSED 80' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX (HMxxJB) & (8) HM LED LUMINAIRES 335W MAX, 27,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V MAXIMUM BUG RATING 5-0-5. SEE TABLE C, SHEET E1A.
- PROPOSED LIGHT STANDARD TYPE MTLT 35' WITH 6' DAVIT ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2 & 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE III. 80 MPH WIND SPEED. MAXIMUM BUG RATING 3-0-3. SEE TABLE C, SHEET E1A. AT THESE LOCATIONS, INSTALL A GROUND ROD NEAR THE POLE INSTEAD OF IN A JUNCTION BOX AS SHOWN IN THE STANDARD DRAWINGS.
- PROPOSED LIGHT STANDARD TYPE MTLT 35' WITH 6' DAVIT ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, JUNCTION BOX (SAXxJB) & 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION:TYPE III. 80 MPH WIND SPEED. MAXIMUM BUG RATING 3-0-3. SEE TABLE C, SHEET E1A.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, JUNCTION BOX (SAXxJB) & 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION:TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3. 80 MPH WIND SPEED. SEE TABLE C, SHEET E1A.
- EXISTING SINGLE ARM LIGHT STANDARD LOCATED AT EXISTING REST AREA. STANDARD TO BE REMOVED AND DELIVERED IN GOOD CONDITION TO DIVISION STORAGE LOCATION. ABANDON OR REMOVE FOUNDATION.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' TWIN ARMS. INCLUDES STANDARD FOUNDATION IN MEDIAN BARRIER WITH 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
- EXISTING TWIN ARM LIGHT STANDARD LOCATED AT EXISTING REST AREA. STANDARD TO BE REMOVED AND DELIVERED IN GOOD CONDITION TO DIVISION STORAGE LOCATION. ABANDON OR REMOVE FOUNDATION.
- PROPOSED POST TOP LIGHT STANDARD, 80 MPH WIND SPEED, 15' MOUNTING HEIGHT. INCLUDES STANDARD FOUNDATION TYPE R1S & 100W MAX. LED POST TOP LUMINAIRE. IES DISTRIBUTION:TYPE V. MAXIMUM BUG RATING 3-0-3. SEE TABLE C, SHEET E1A. AT THESE LOCATIONS, INSTALL A GROUND ROD NEAR THE POLE INSTEAD OF IN A JUNCTION BOX AS SHOWN IN THE STANDARD DRAWINGS.
- EXISTING POST TOP LIGHT STANDARD LOCATED AT EXISTING REST AREA. STANDARD TO BE REMOVED AND DELIVERED IN GOOD CONDITION TO DIVISION STORAGE LOCATION. ABANDON OR REMOVE FOUNDATION.
- PROPOSED CONTROL SYSTEM WITH JUNCTION BOX (CSxJB). BREAKER SIZE SHOWN IN LOAD SCHEDULE. SEE SHEET(S) E2.
- JB1 PROPOSED ELECTRICAL JUNCTION BOX SEE DETAILS & TABLE C, SHEET E1A.
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED.
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (6) 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, THIS SHEET

PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM	
8	2 #8 Ø 1 #10G 1.5" P	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 - 8 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*8	2 #8 Ø 1 #10G	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR	2 - 8 W/G FEEDER CIRCUIT
6	2 #6 Ø 1 #8G 1.5" P	2 AWG SIZE 6 CONDUCTOR (BK & RD) 1 AWG SIZE 8 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 - 6 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*6	2 #6 Ø 1 #10G	2 AWG SIZE 6 CONDUCTOR (BK & RD) 1 AWG SIZE 8 GROUNDING CONDUCTOR	2 - 6 W/G FEEDER CIRCUIT
4	2 #4 Ø 1 #6G 1.5" P	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 - 4 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*4	2 #4 Ø 1 #6G	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR	2 - 4 W/G FEEDER CIRCUIT
2	2 #2 Ø 1 #4G 1.5" P	2 AWG SIZE 2 CONDUCTOR (BK & RD) 1 AWG SIZE 4 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 - 2 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*2	2 #2 Ø 1 #4G	2 AWG SIZE 2 CONDUCTOR (BK & RD) 1 AWG SIZE 4 GROUNDING CONDUCTOR	2 - 2 W/G FEEDER CIRCUIT

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: RGH
 CHECKED BY:
 DATE: 6/21/19
 DATE: 6/21/2019

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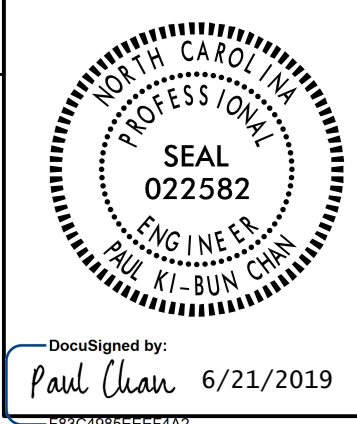


TABLE "C" JUNCTION BOX SUMMARY

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "D"												GPS LOCATION LAT/LONG
			IGJB			LSJB			HMJB			CSJB	BRJB	SWJB	
			SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE			
			18"x12"	30"x17"	36"x24"	18"x12"	30"x17"	36"x24"	18"x12"	30"x17"	36"x24"	36"x24"	18"x12"	18"x12"	
E2	JBD1	-Y10RPC- STA. 20+70, 65' RT	X												
E2	JBD2	-Y10RPC- STA. 20+70, 55' LT	X												
E2	JBD3	-L- STA. 671+58, 85' RT	X												
E2	JBD4	-L- STA. 671+58											X		
E2	JBD5	-Y10RPD- STA. 28+00, 50' LT		X											
E2	JBD6	-Y10RPD- STA. 28+00, 40' RT		X											
E2	JBD7	-L- STA. 680+25, 90' RT	X												
E2	JBD8	-L- STA. 677+85, 90' LT	X												
E2	JBD9	-Y10RPD- STA. 25+20, 30' RT	X												
E2	JBD10	-L- STA. 686+72											X		
E2	D-1-1JB	10' FROM HIGH MAST D-1-1							X						
E2	D-2-2JB	10' FROM HIGH MAST D-2-2							X						
E2	D-3-3JB	10' FROM HIGH MAST D-3-3							X						
E2	CSDJB	2' FROM CONTROL SYSTEM D										X			
E2	D-9-2JB	5' FROM SINGLE ARM D-9-2											X		
E2	D-10-2JB	5' FROM SINGLE ARM D-10-2											X		
E2	D-12-2JB	5' FROM SINGLE ARM D-12-2											X		
E2	D-11-2JB	5' FROM SINGLE ARM D-11-2											X		
E2	D-4-4JB	10' FROM HIGH MAST D-4-4							X						
E2	D-5-5JB	10' FROM HIGH MAST D-5-5							X						
CSD TOTALS			6	2	0	0	0	4	5	0	0	1	2	0	

TABLE "C" CONTINUED ON NEXT PAGE

TABLE "B" 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"
-L- STA. 671+58		E2		140						
-Y10RPC- STA. 20+10	JBD1 - JBD2	E2			90		115			
-L- STA. 680+25	JBD7 - D-4-4JB	E2			150		180			
-Y10RPD- STA. 28+00	JBD5 - JBD6	E2			60		85			
-Y10- STA. 338+50	D-10-2JB - D-12-2JB	E2			120		150			
-L- STA. 686+72		E2		75						
CSD TOTALS				215	420		530			

TABLE "B" CONTINUED ON NEXT PAGE

SEE SHEET "E1" FOR LEGEND & Δ NOTES

02/03/98

TABLE "C" (CONTINUED)
JUNCTION BOX SUMMARY


CONTROL SYSTEMS "E" AND "W" AT REST AREAS														GPS LOCATION 		
SHEET	LABEL	LOCATION AND OFFSET	IGJB SIZE			LSJB SIZE			HMJB SIZE			CSJB SIZE	BRJB SIZE	SWJB SIZE	LAT/LONG	
			18"X12"	30"X17"	36"X24"	18"X12"	30"X17"	36"X24"	18"X12"	30"X17"	36"X24"	36"X24"	18"X12"	18"X12"		
E4	JBE1	NEAR EASTBOUND BUILDING UTILITY ROOM			X											
E4	JBE2	-L4- STA. 16+75, 45' LT			X											
E4	JBE3	-L4- STA. 16+75, 20' RT	X													
E4	JBE4	NEAR POLE #24E		X												
E4	JBE5	NEAR FLAG POLE	X													
E4	JBE6	-L3- STA. 15+35, 45' RT	X													
E4	JBE7	-L3- STA. 15+35, 50' LT	X													
E4	#1EJB	5' FROM SINGLE ARM #1E				X										
E4	#2EJB	5' FROM SINGLE ARM #2E				X										
E4	#3EJB	5' FROM SINGLE ARM #3E				X										
E5	#10EJB	5' FROM SINGLE ARM #10E				X										
E5	#11EJB	5' FROM SINGLE ARM #11E				X										
E5	#12EJB	5' FROM SINGLE ARM #12E				X										
E5	#13EJB	5' FROM SINGLE ARM #13E				X										
E6	#1WJB	5' FROM SINGLE ARM #1W				X										
E6	#2WJB	5' FROM SINGLE ARM #2W				X										
E6	#3WJB	5' FROM SINGLE ARM #3W				X										
E6	#4WJB	5' FROM SINGLE ARM #4W				X										
E7	JBW1	NEAR SOUTHBOUND BUILDING UTILITY ROOM			X											
E7	JBW2	-L1- STA. 20+50, 60' RT		X												
E7	JBW3	NEAR POLE #28W			X											
E7	JBW4	-L2- STA. 16+98, 50' RT		X												
E7	JBW5	NEAR FLAGPOLE	X													
E7	JBW6	-L2- STA. 16+98, 50' LT	X													
E7	#13WJB	5' FROM SINGLE ARM #13W				X										
E7	#14WJB	5' FROM SINGLE ARM #14W				X										
E7	#15WJB	5' FROM SINGLE ARM #15W				X										
CSE AND CSW TOTALS			6	3	4	14										
PROJECT GRAND TOTALS			12	5	4	14	0	4	5	0	0	1	2	0		


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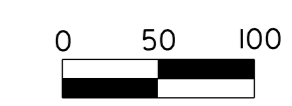
TABLE "B" (CONTINUED)
ELECTRICAL DUCT SUMMARY
(ESTIMATED LENGTH IN FEET)

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"
-L4- STA. 16+75	JBE2 - JBE3	E4					70		50	
-L3- STA. 15+35		E4						85		
-L2- STA. 16+98		E7						85		
-L1- STA. 20+50	JBW1 - JBW2	E7					105		90	
CSE AND CSW TOTALS							175	170	140	
PROJECT GRAND TOTALS				215	420		705	170	140	

SEE SHEET "E1" FOR
LEGEND &  NOTES

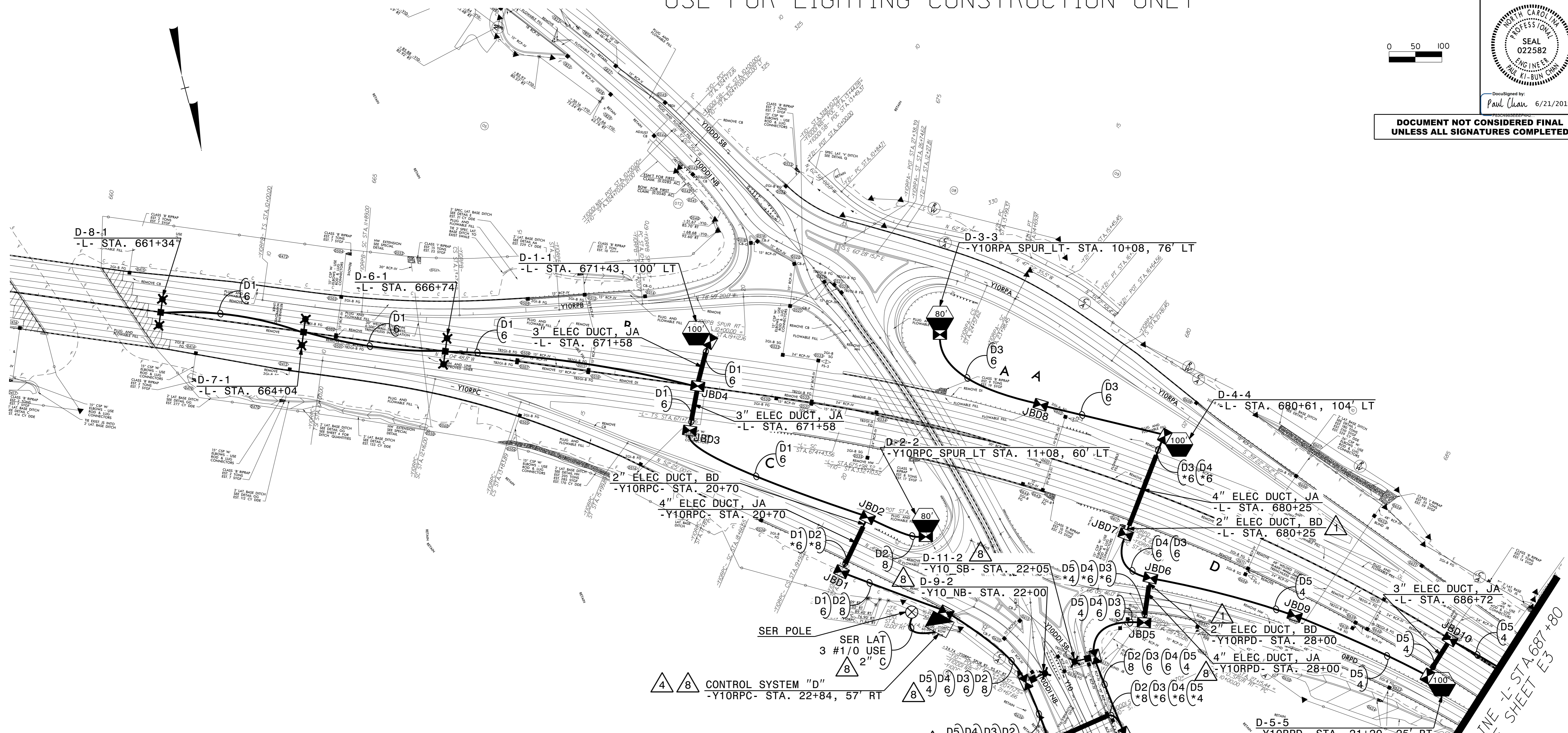
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LOAD SCHEDULE							
I-26/US 25 INTERCHANGE, SE QUAD							
1Ø, 3W, 240/480 VAC				CONTROL SYSTEM "D"			
CIRCUIT ID	SINGLE ARM 1 @ 285W MAX. LED	TWIN ARM 2 @ 285W MAX. LED	80' HIGH MAST W/ 8 335W MAX. LED LUMINAIRES	100' HIGH MAST W/ 6 560W MAX. LED LUMINAIRES	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
D1		D-6 TO D-8		D-1	10.6	5.1	15
D2	D-9 TO D-12		D-2		8.0	3.8	15
D3			D-3		5.6	2.7	15
D4				D-4	7.0	3.4	15
D5		D-13 TO D-15		D-5	10.6	5.1	15
SPARE							15
TOTAL	4	6	2	3	41.8	20.1	

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Rev.	Date	Description	Approved
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1			

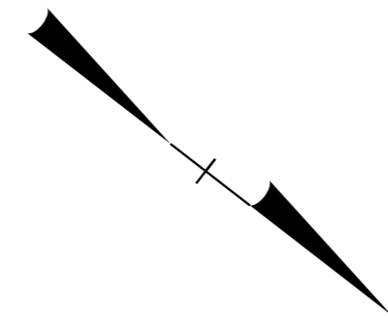
**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**
ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

LIGHTING LAYOUT
I-26/US 25 (ASHEVILLE HWY.)
INTERCHANGE
(SHEET 1 OF 2)
HENDERSON COUNTY

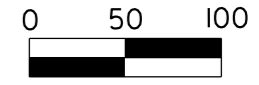
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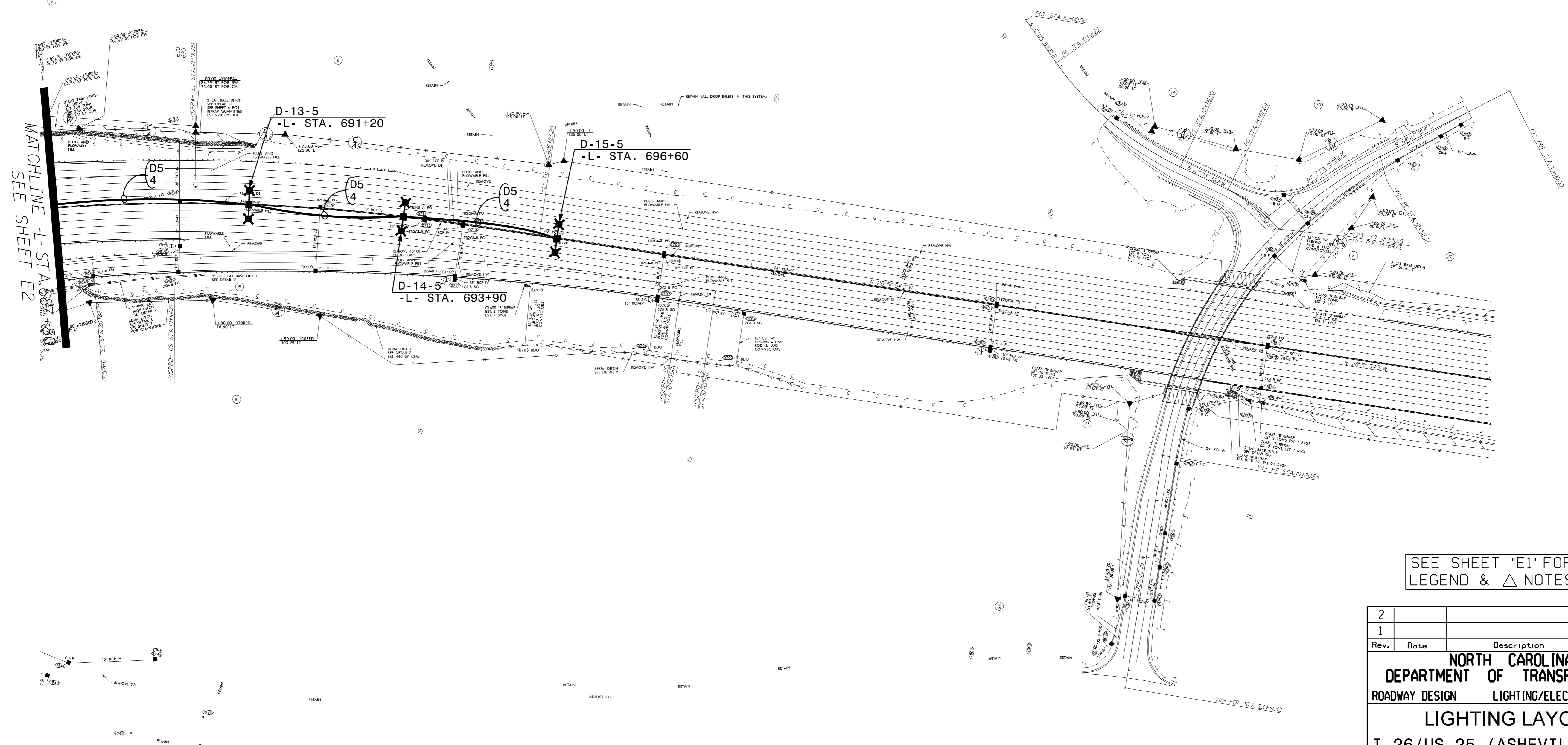


PROJECT REFERENCE NO. 1-4400BB&C SHEET NO. E3



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MATCHLINE -L- STA. 687+00 SEE SHEET E2

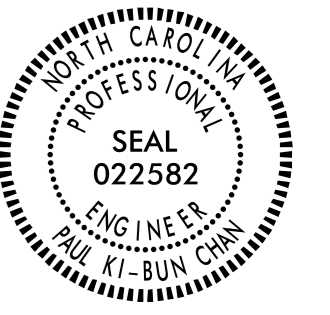
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-26/US 25 (ASHEVILLE HWY.) INTERCHANGE (SHEET 2 OF 2) HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	PC
		Dwg No.:	

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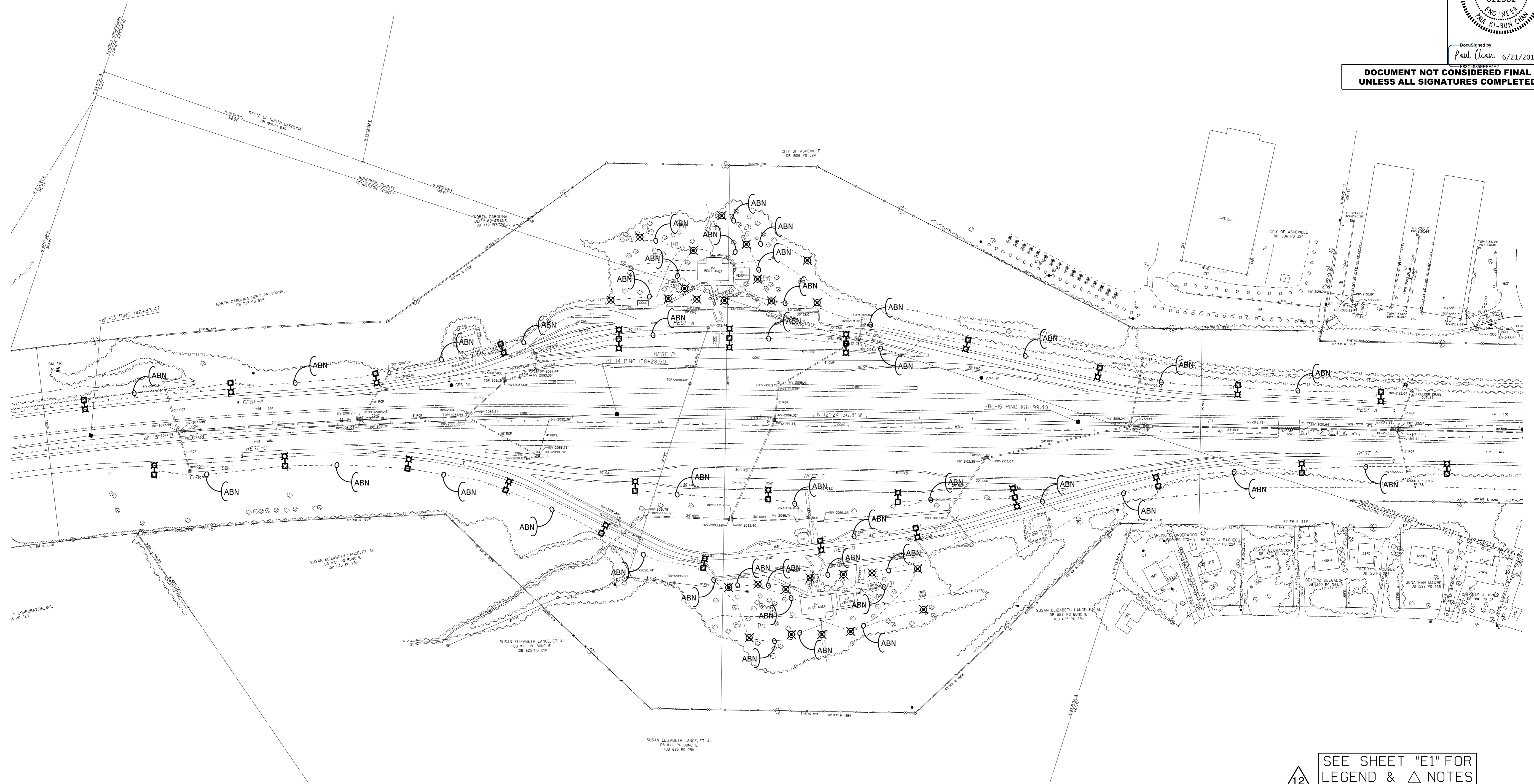
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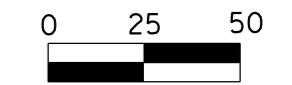
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1			
Rev.	Date	Description	Approved
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Drawn By:	RGH	Approved By:	PC
Dwg No.:			

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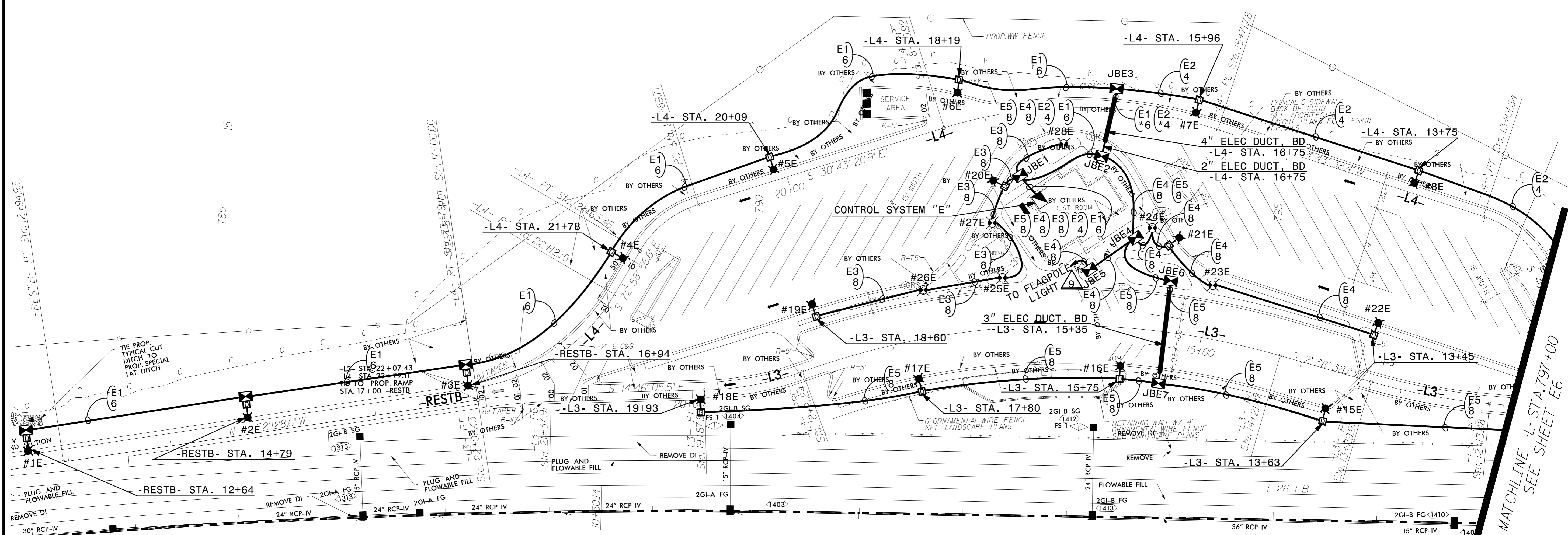
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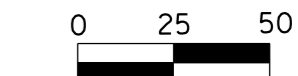


LOAD SCHEDULE I-26 EAST BOUND REST AREA BUILDING						
1Ø, 3W, 120/240 VAC			CONTROL SYSTEM "E"			
CIRCUIT ID	SINGLE ARM @ 285W MAX. LED	POST TOP @ 100W MAX. LED	FLAG POLE @ 100W MAX. LED	AMPS @ 240V	KW LOAD	BREAKER SIZE (AMPS)
E1	#1E - #6E			7.2	1.7	15
E2	#7E - #13E			8.4	2.0	15
E3	#19E, #20E	#25E - #28E		4.0	1.0	15
E4	#21E, #22E	#23E, #24E	FP1	3.9	0.9	15
E5	#14E - #18E			6.0	1.4	15
SPARE						15
TOTAL	22	6	1	29.5	7.0	

SEE SHEET "E1" FOR LEGEND & Δ NOTES

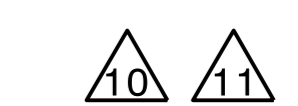
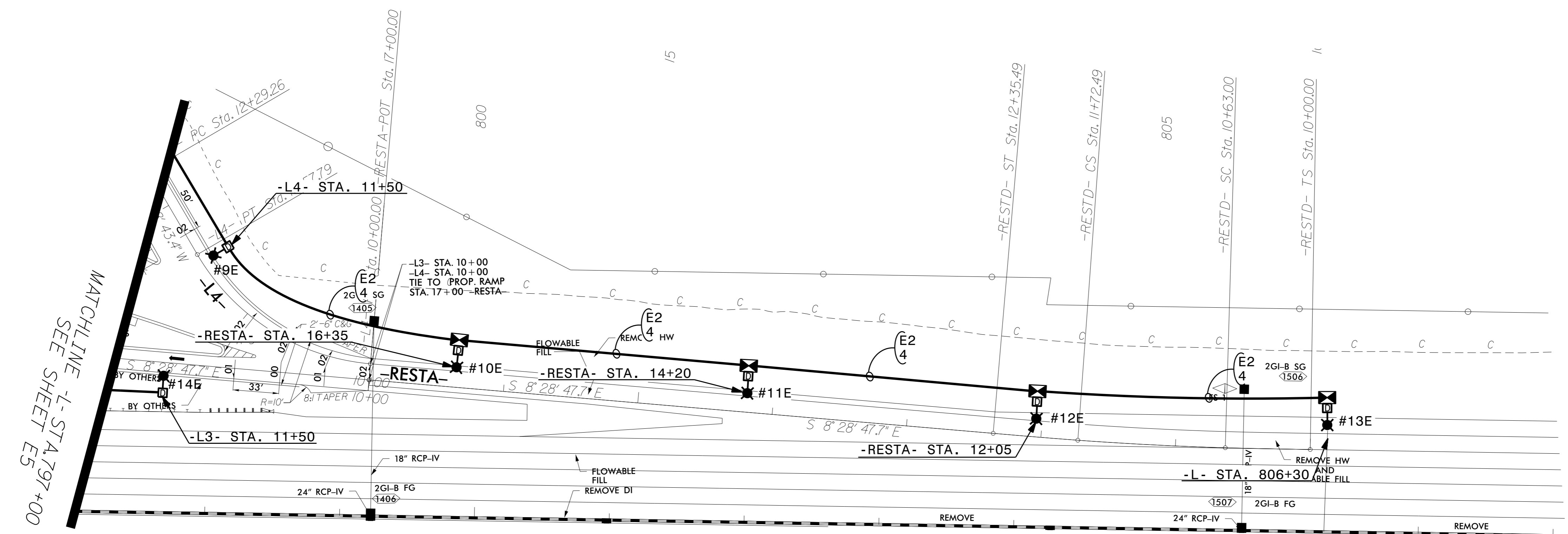
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-26 EAST BOUND REST AREA (SHEET 1 OF 2) HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	PL
Dwg No.:			

2-JUN-2019 11:34 R:\Lighting\Lighting Design\Lighting Files\I4400C_LE_PSH_E5.dgn rghal AT RD-303048L



DocuSigned by:
Paul Chan 6/21/2019

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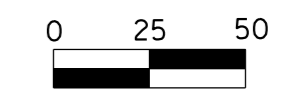


SEE SHEET "E1" FOR
LEGEND & △ NOTES

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-26 EAST BOUND REST AREA (SHEET 2 OF 2) HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	pl
		Dwg No.:	

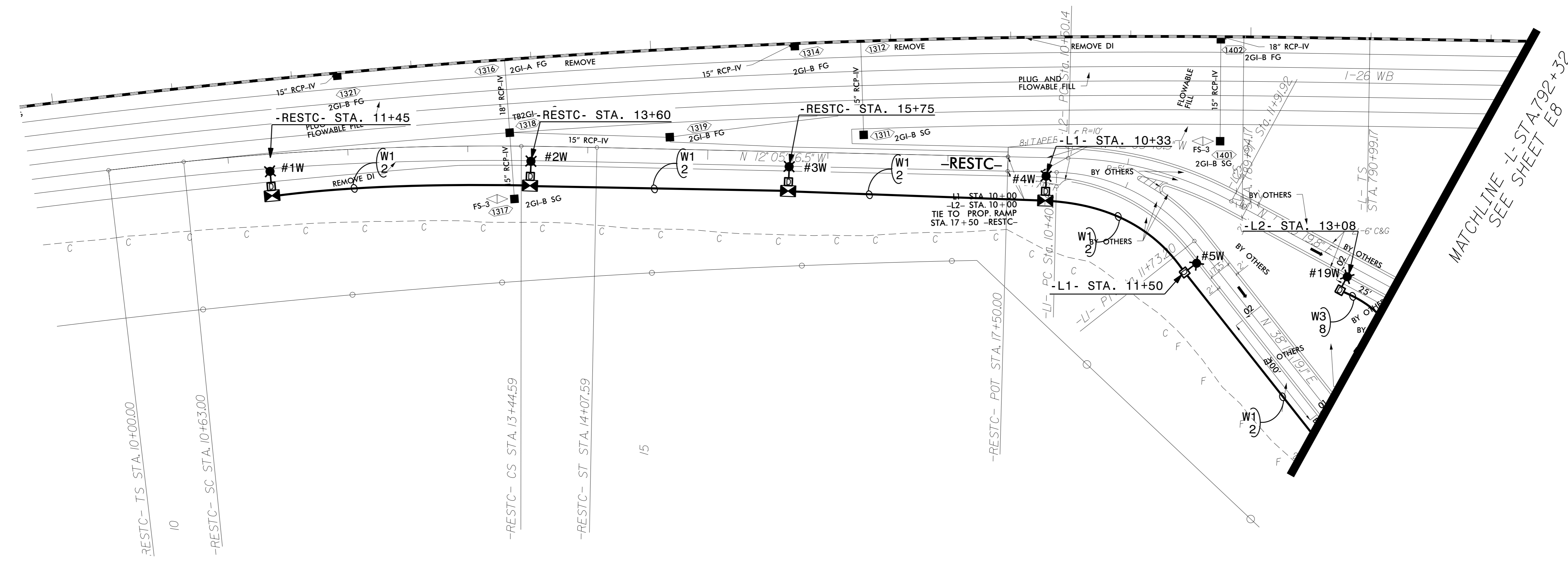
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USE FOR LIGHTING CONSTRUCTION ONLY

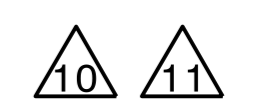


Designed by:
Paul Chan
6/21/2019

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MATCHLINE
L- STA. 792+32
SEE SHEET E8



SEE SHEET "E1" FOR
LEGEND & △ NOTES

2			
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Rev.	Date	Description	Approved

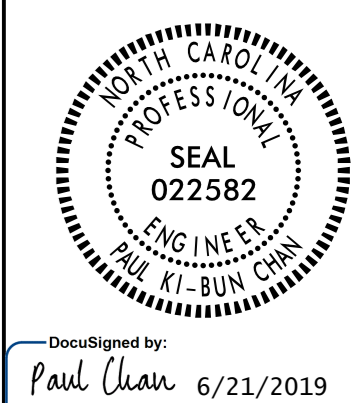
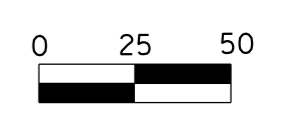
**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**
ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

LIGHTING LAYOUT
I-26 WEST BOUND REST AREA
(SHEET 1 OF 2)

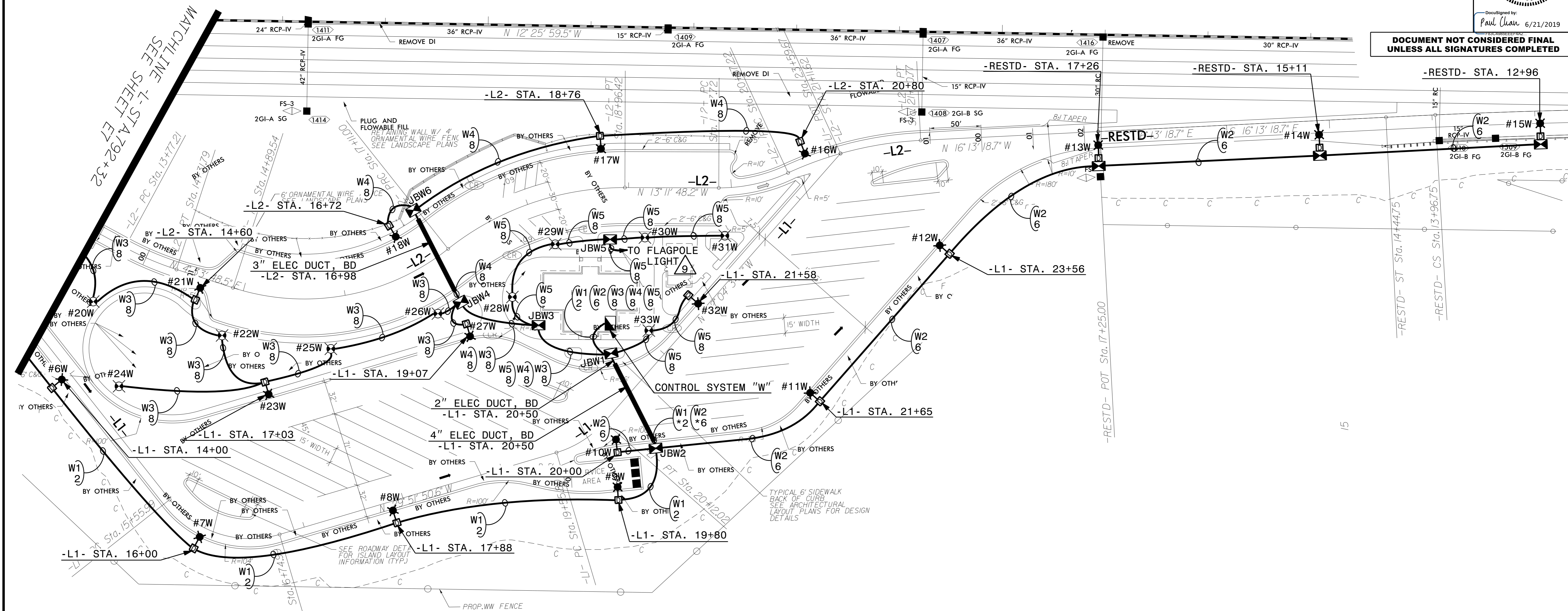
HENDERSON COUNTY
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Approved By: [Signature]
Dwg No.:

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LOAD SCHEDULE
I-26 WEST BOUND REST AREA BUILDING

CIRCUIT ID	1Ø, 3W, 120/240 VAC			CONTROL SYSTEM "W"		
	SINGLE ARM 1 @ 285W MAX. LED	POST TOP 1 @ 100W MAX. LED	FLAG POLE 1 @ 100W MAX. LED	AMPS @ 240V	KW LOAD	BREAKER SIZE (AMPS)
W1	#1W - #9W			10.8	2.6	15
W2	#10W - #15W			7.2	1.7	15
W3	#19W, #21W, #23W, #27W	#20W, #22W, #24W - #26W		5.6	1.3	15
W4	#16W - #18W			3.6	0.9	15
W5	#32W	#28W - #31W, #33W	FP2	4.2	1.0	15
SPARE						15
TOTAL	23	10	1	31.4	7.5	

SEE SHEET "E1" FOR LEGEND & △ NOTES

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-26 WEST BOUND REST AREA (SHEET 2 OF 2) HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	[Signature]
Dwg No.:			

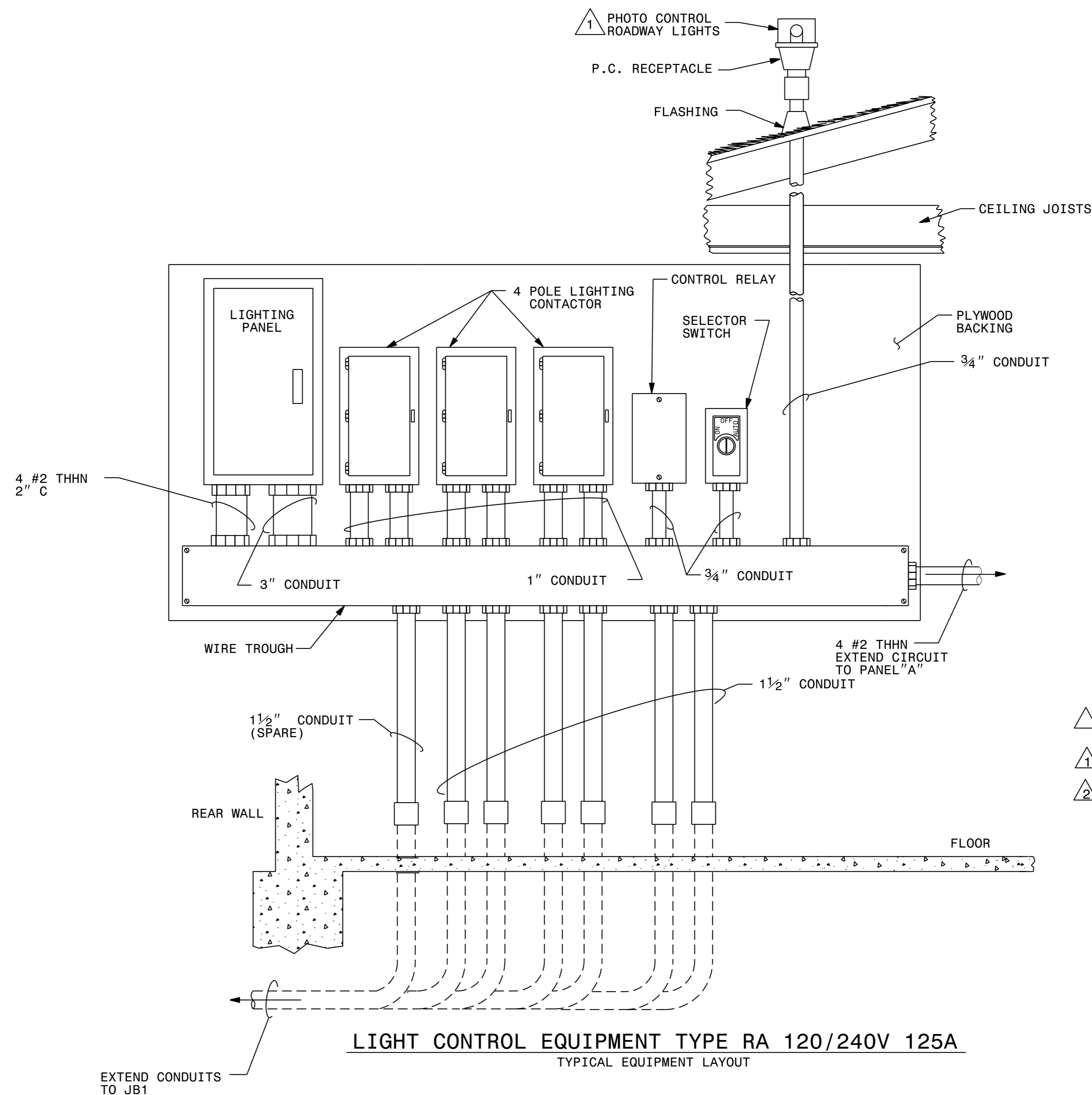
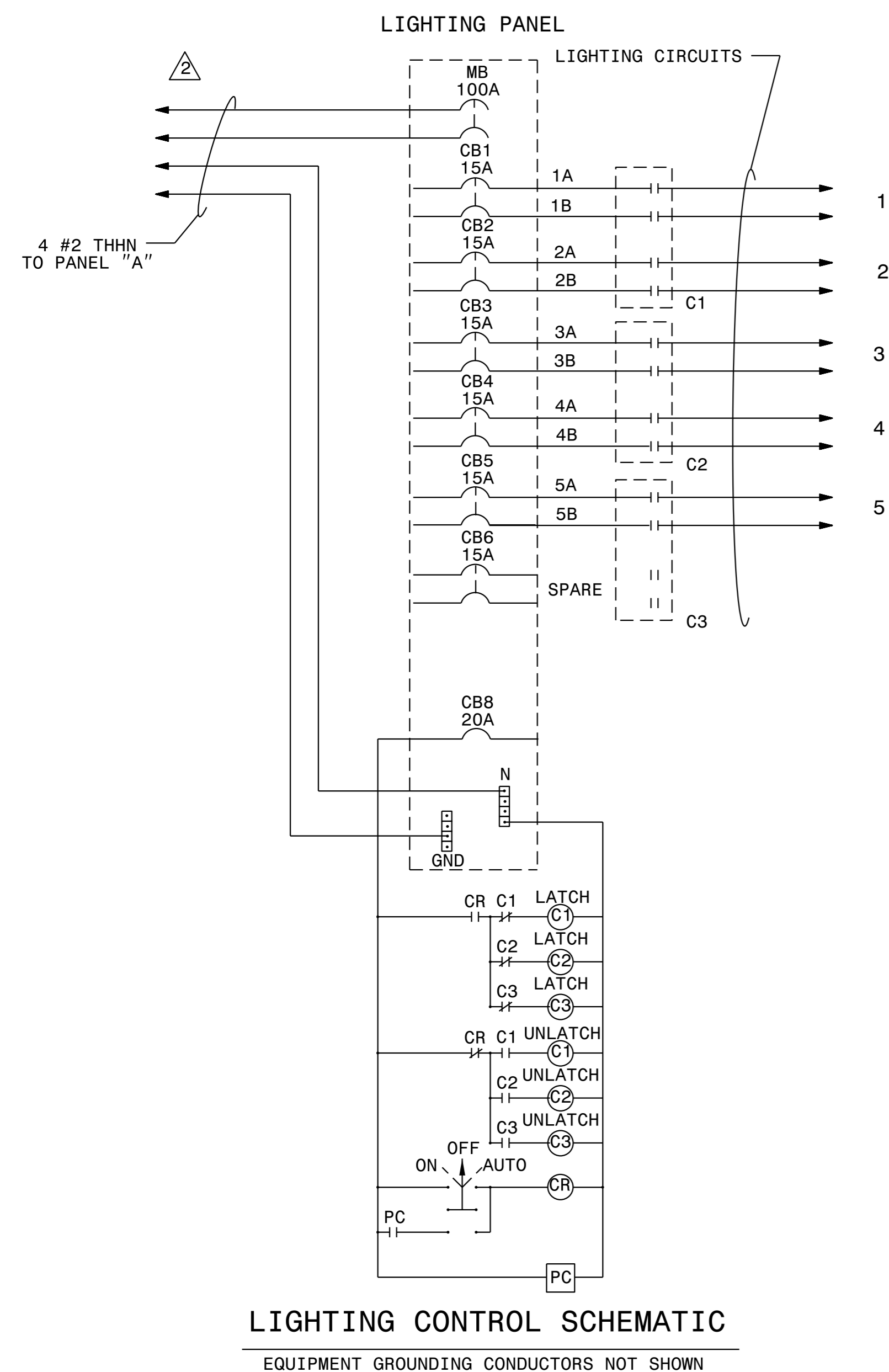
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- NOTES**
- 1 LOCATE PHOTO CELL IN AN UNSHADED AREA ON THE ROOF.
 - 2 INSTALL ONE 100 AMP, 2 POLE BREAKER FOR LIGHTING PANEL SERVICE ADDED TO PANEL "A" UNDER OTHER CONTRACT PAY ITEM.

REST AREA SCHEMATIC AND EQUIPMENT LAYOUT

2			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES LIGHTING/ELECTRICAL SECTION LIGHTING DETAILS I-26 REST AREA CONTROL PANEL HENDERSON COUNTY			
Drawn By:	Checked by:	Approved By:	
RGH	pc		

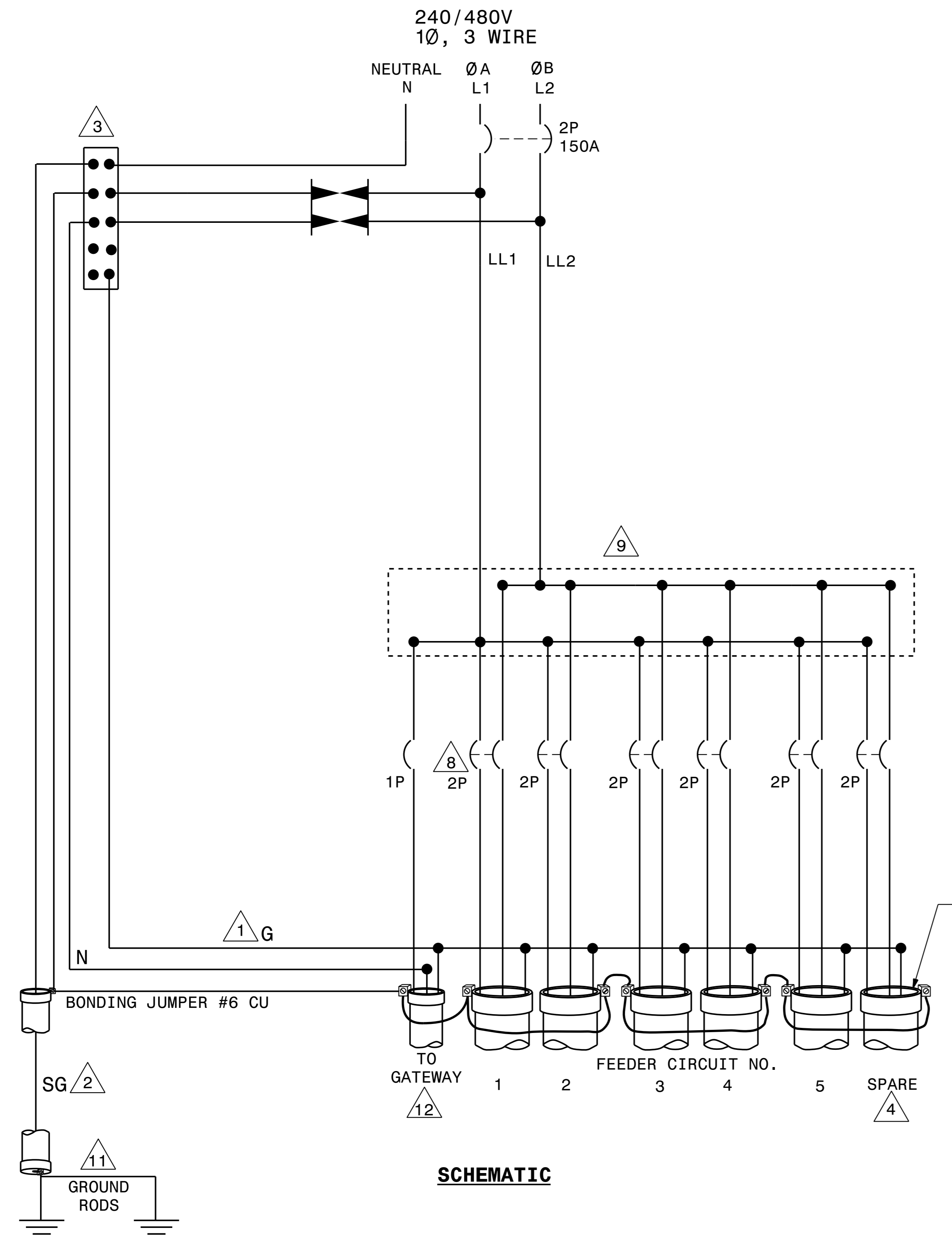
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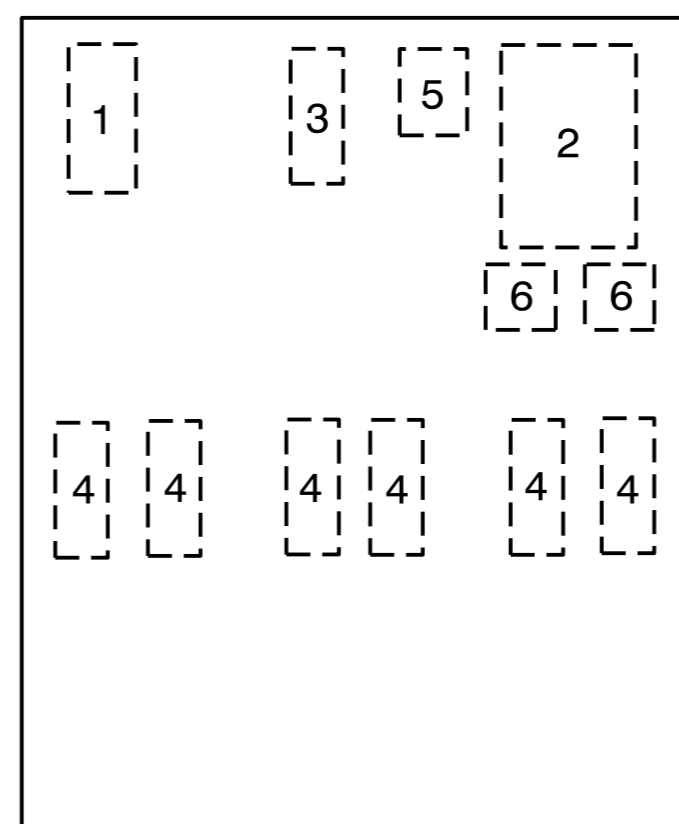


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SCHEMATIC



INTERIOR PANEL COMPONENT LAYOUT



- NOTES**
- 1 EQUIPMENT GROUNDS (G) SHALL BE SIZED ACCORDING TO CIRCUIT DESCRIPTION. SEE PLANS.
 - 2 SYSTEM GROUND (SG) SHALL BE CONTINUOUS FROM THE NEUTRAL BAR TO THE GROUNDING ELECTRODE (GROUND ROD).
 - 3 THE NEUTRAL BAR SHALL BE BONDED TO THE PANEL.
 - 4 INSTALL 6 FEEDER CIRCUIT CONDUITS AS SHOWN. UNUSED CONDUIT SHALL BE CAPPED IN THE CONTROL SYSTEM JUNCTION BOX.
 - 5 INSTALL A GROUNDING BUSHING ON EACH METAL CONDUIT. CONNECT BONDING JUMPER AS REQUIRED BY NEC.
 - 6 SEE STANDARD DRAWING 1408.01 SHEET 3 OF 3 FOR ENCLOSURE.
 - 7 THE CONTROL SYSTEM MUST BE LABELED "SUITABLE FOR USE AS SERVICE EQUIPMENT." REFER TO STANDARD SPECIFICATION 1408-2 FOR OTHER REQUIREMENTS.
 - 8 SEE PLANS FOR LIGHTING CIRCUIT BREAKER SIZES.
 - 9 PROVIDE MULTI-TAP LOAD LUGS OR POWER DISTRIBUTION BLOCKS.
 - 10 PROVIDE MANUFACTURER SUPPLIED MOUNTING BRACKETS OR SCREW STUDS PERMANENTLY ATTACHED TO THE BACK PANEL, FOR MOUNTING COMPONENTS.
 - 11 PROVIDE AND INSTALL A CONDUIT CHOKE ON THE UNDERGROUND END OF THE 3/4" RGS SYSTEM GROUND CONDUIT.
 - 12 INSTALL #12 THWN CONDUCTOR FROM ENCLOSURE TO GATEWAY.

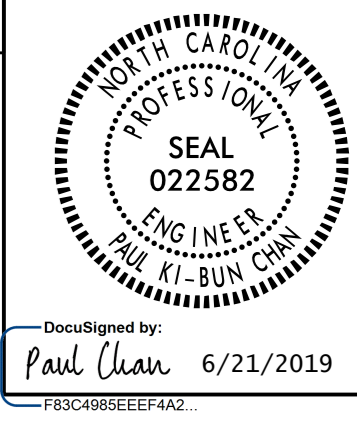
COMPONENT LIST			
#	QTY	DESCRIPTION	SPECIFICATIONS
1	1	NEUTRAL BAR	
2	1	SERVICE CIRCUIT BREAKER	2P, 480V, 150A
3	1	GATEWAY CIRCUIT BREAKER	1P, 240V, 15A
4	**	FEEDER CIRCUIT BREAKERS	2P, 480V, 50A MAX
5	1	TYPE 1 SURGE PROTECTION DEVICE	20,000A RATED
6	2	POWER DISTRIBUTION LUGS OR BLOCKS	
		MOUNTING BRACKETS OR SCREW STUDS	

**PROVIDE THE NUMBER OF BREAKERS SHOWN IN THE LOAD SCHEDULE ON THE PLANS. INCLUDE SPARE BREAKER AS WELL.

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION CONTROL SYSTEM DETAILS 1408D01, SHEET 1 CONTROL SYSTEM SCHEMATIC (US 25 INTERCHANGE) HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	[Signature]
Dwg No.:			

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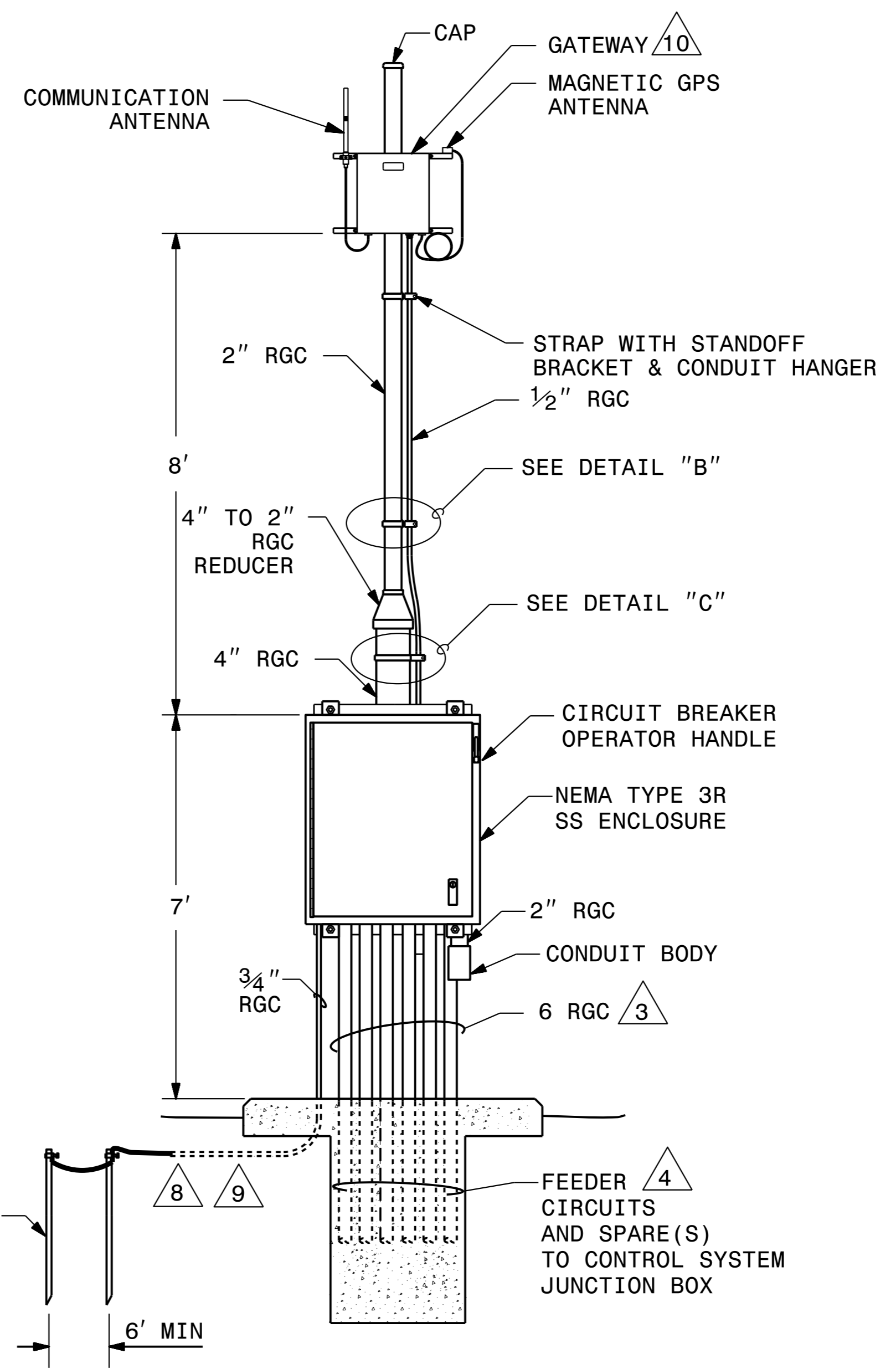
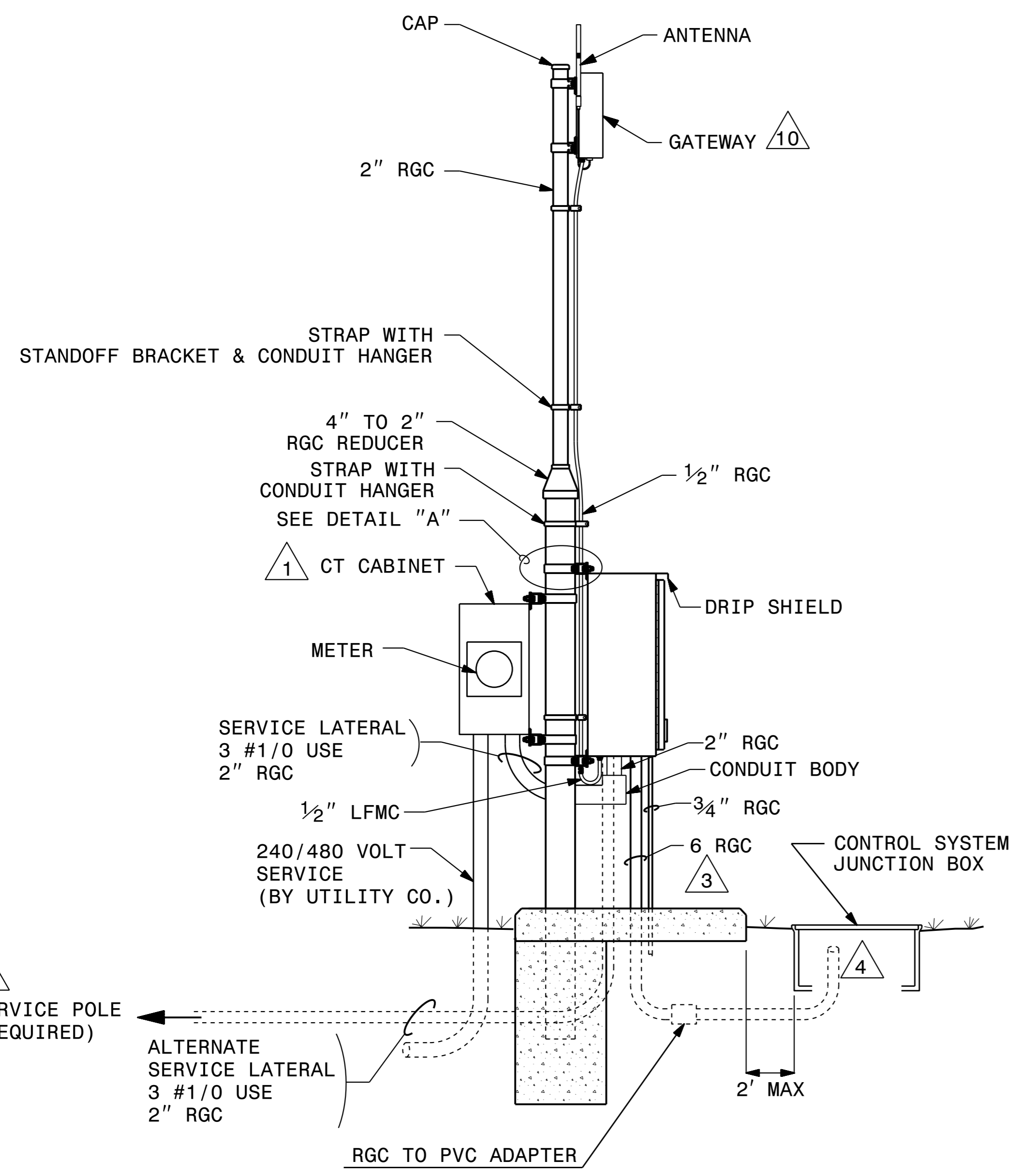
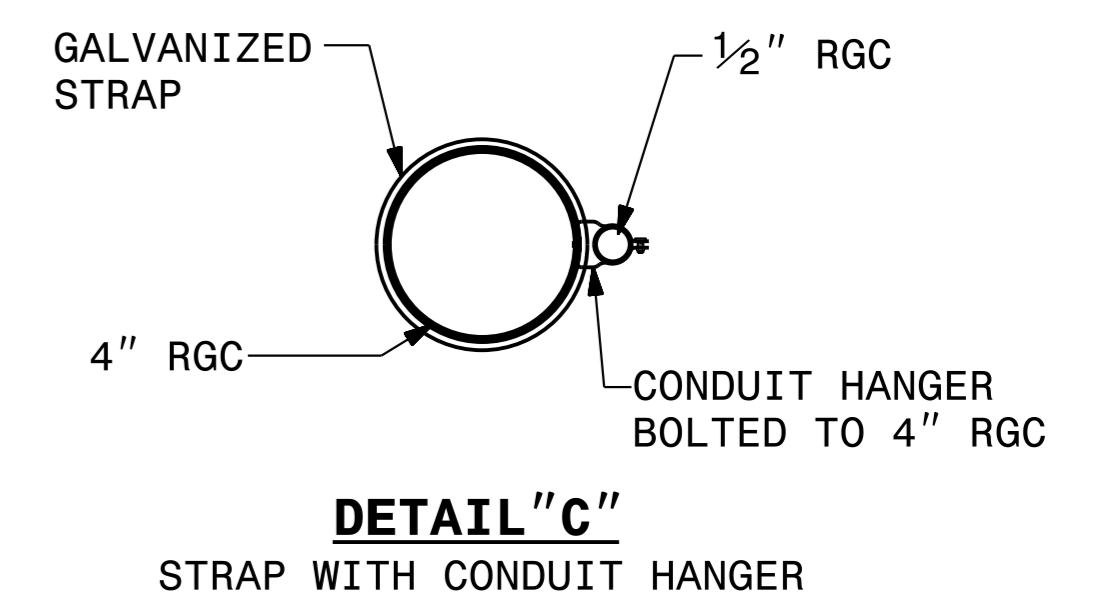
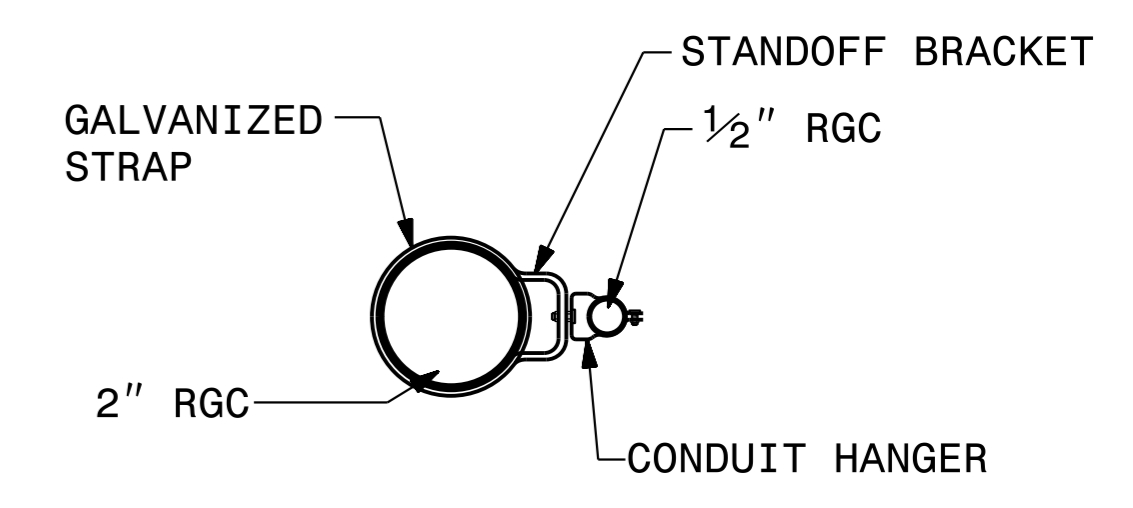
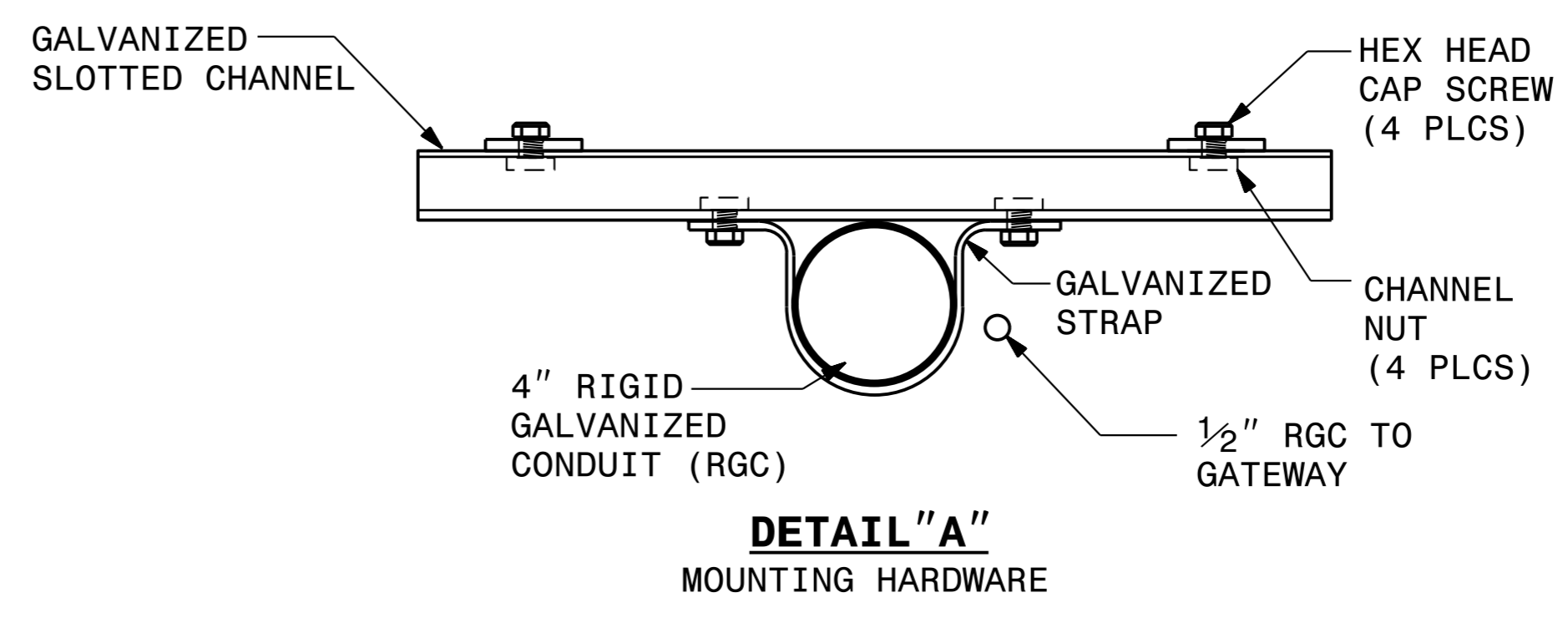


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NOTES

- 1 CURRENT TRANSFORMER (CT) CABINET AND METER MAY BE MOUNTED ON SERVICE POLE OR BACK OF CONTROL ENCLOSURE.
- 2 SEE SECTION 1407 OF THE STANDARD SPECIFICATIONS FOR SERVICE POLE AND SERVICE LATERAL.
- 3 SEE PLANS FOR SIZE OF CONDUITS AND/OR ELECTRICAL DUCT.
- 4 STUB FEEDER CIRCUIT CONDUITS INTO JUNCTION BOX. CAP UNUSED CONDUITS. FEEDER CIRCUITS MUST BE MINIMUM 30" BELOW GRADE
- 5 SEE SECTION 1411 OF THE STANDARD SPECIFICATIONS FOR JUNCTION BOX INSTALLATION.
- 6 ALL ABOVE GROUND CIRCUITRY TO BE INSTALLED IN RIGID GALVANIZED CONDUIT. UNDERGROUND FEEDER CIRCUITS TO BE INSTALLED IN SCH 40 PVC CONDUIT.

- 7 TOP OF GROUND ROD(S) SHALL BE NO MORE THAN FOUR INCHES BELOW GRADE TO ALLOW FOR EASE OF INSPECTION BY DEPARTMENT OF INSURANCE, OFFICE OF STATE FIRE MARSHAL PERSONNEL.
- 8 INSTALL A CONDUIT GROUND CHOKE AND BOND THE EQUIPMENT GROUNDING CONDUCTOR TO THE END OF THE 3/4" CONDUIT UNDERGROUND PER NEC ARTICLE 250.64E.
- 9 GROUNDING ELECTRODE CONDUCTOR 3/4" CONDUIT SHALL NOT TERMINATE BELOW THE CONCRETE FOUNDATION PAD.
- 10 STRAP GATEWAY TO 2" RGC USING STEEL BANDS PREINSTALLED ON GATEWAY ENCLOSURE.



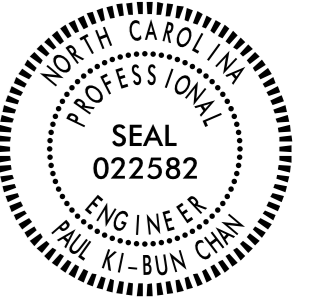
ASSEMBLY

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

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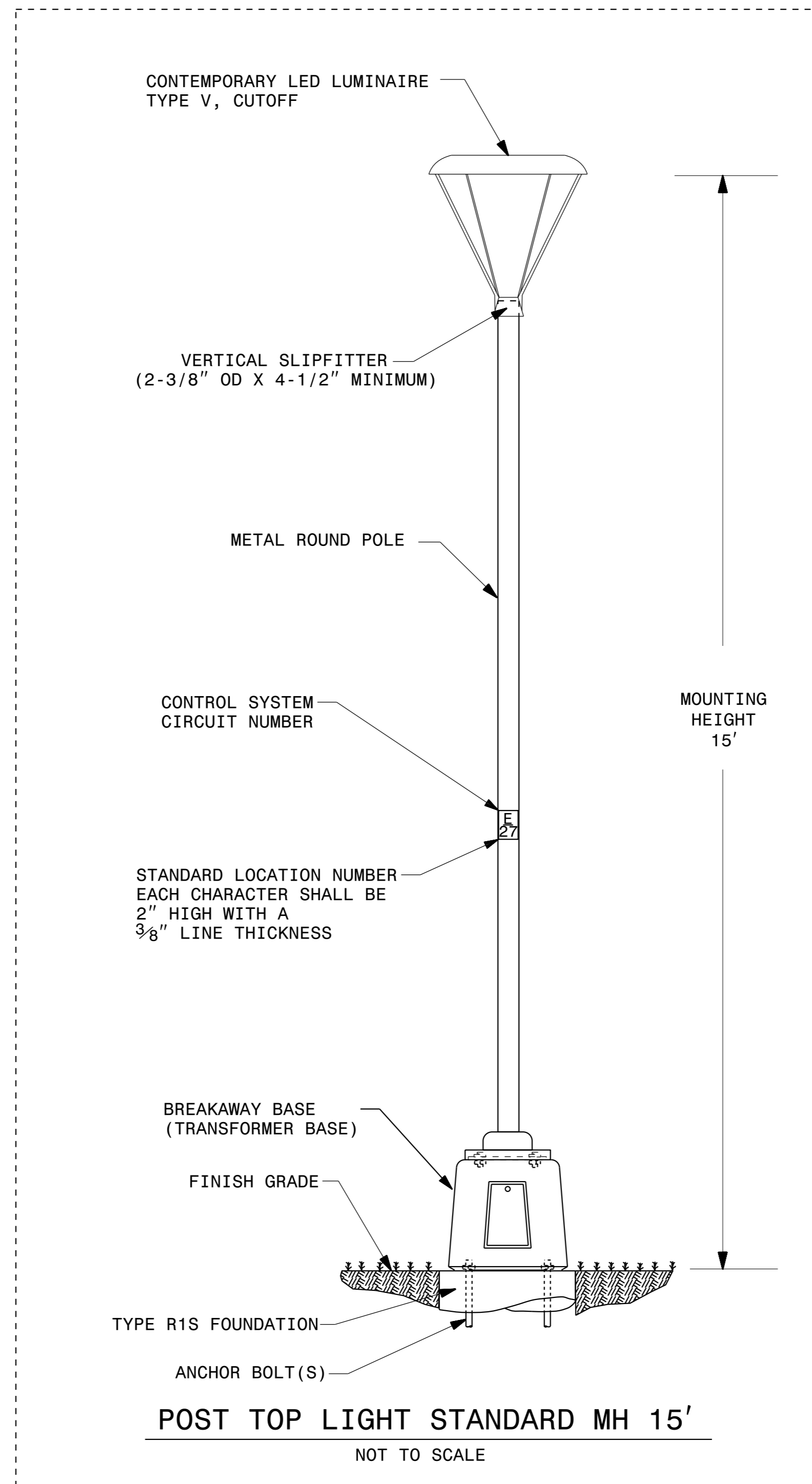
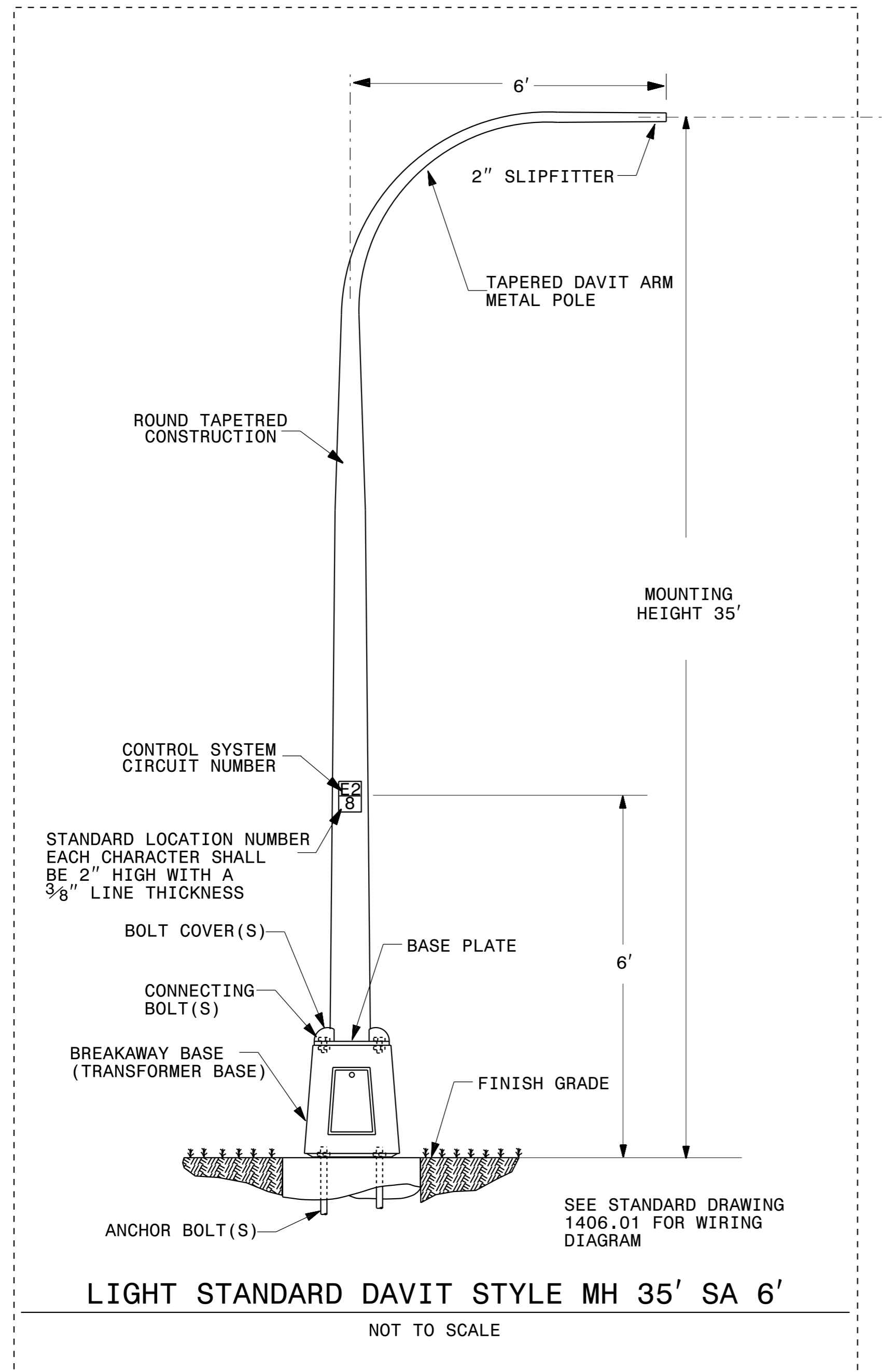
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PROJECT REFERENCE NO. 1-4400BB&C	SHEET NO. E12
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Paul Chan 6/21/2019

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NOTE: ALL DAVIT AND POST TOP LIGHT POLES SHALL BE UL LISTED IN THE "LUMINAIRE POLES" CATEGORY

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHT STANDARDS DETAILS I-26 REST AREAS HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	PL

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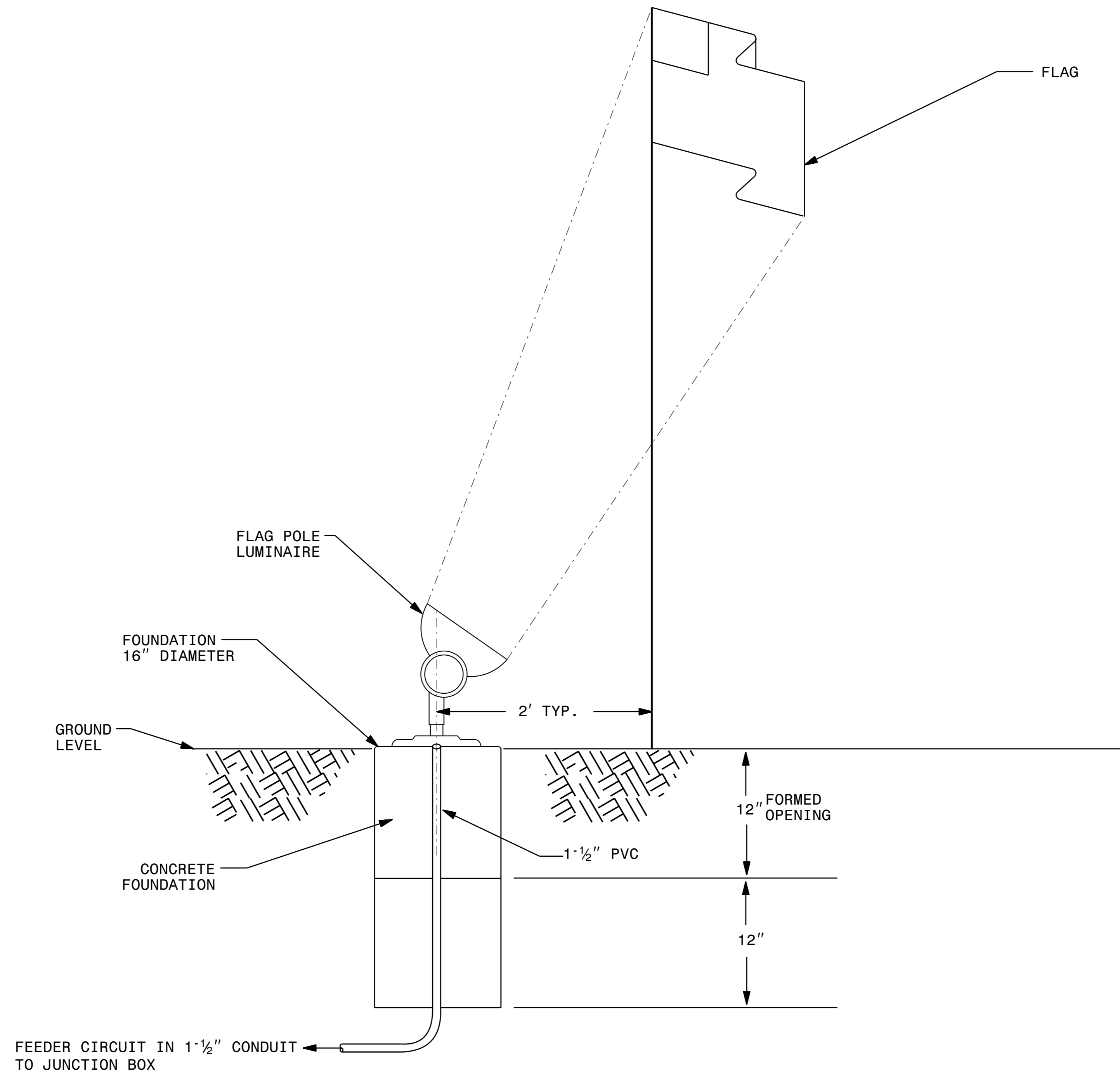
PROJECT REFERENCE NO. I-4400BB&C	SHEET NO. E13
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NTS



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Paul Chan 6/21/2019

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FLAG POLE LIGHT DETAILS

SEE SHEET "E1" FOR
LEGEND & △ NOTES

2			
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT REST AREA FLAG POLE LUMINAIRE PLACEMENT DETAILS HENDERSON COUNTY			
Drawn By:	RGH	Approved By:	Paul Chan

21-JUN-2019 12:47
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