

# 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 2002 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 INTERCEPT EXISTING CIRCUITRY TO SINGLE ARM LIGHT # 12. EXTEND PROPOSED FEEDER CIRCUITS TO SINGLE ARM LIGHT #12.
- 5 REPLACE EXISTING PULLBOX WITH NEW JUNCTION BOX AT THESE NOTED LOCATIONS. EXISTING AND PROPOSED FEEDER CIRCUITS IN CONDUIT SHALL BE STUBBED-UP INSIDE.
- 6 REFER TO THE LIGHTING SECTION SPECIAL PROVISIONS FOR POLE AND CONTROL SYSTEM RELOCATION AND/OR REMOVAL.
- 7 MOUNT TRANSFORMER PANEL ON SIGN STRUCTURE FOR OVERHEAD SIGN LIGHTING. SEE SHEET E3
- 8 ROUTE CONDUIT TO TRANSFORMER PANEL ON SIGN STRUCTURE FROM JB11 AROUND BARRIER WALL.

## SCOPE OF WORK

PROVIDE ROADWAY LIGHTING BY PROVIDING AND INSTALLING HIGH PRESSURE SODIUM LUMINAIRES ON 120' HIGH MOUNT STANDARDS, INCLUDING UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES. RELOCATE OR REMOVE EQUIPMENT IN CONFLICT WITH CONSTRUCTION.

## DESIGN CRITERIA

- 2005 AASHTO ROADWAY LIGHTING DESIGN GUIDE
- 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS
- 2005 NATIONAL ELECTRICAL CODE
- 2002 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 JULY 2006 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 LUMINAIRES
1405.01	STANDARD FOUNDATION
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 JULY 2006.

## LEGEND

- PROPOSED 120' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 750W HPS, MEDIUM, CUTOFF, TYPE V, DESIGNED FOR 110 WINDSPEED.
- EXISTING 100' HIGH MAST STANDARD
- PROPOSED CONTROL SYSTEM. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E2
- EXISTING CONTROL SYSTEM TO BE REMOVED.
- ROADWAY SINGLE ARM LIGHT STANDARD TO BE RELOCATED
- EXISTING ROADWAY SINGLE ARM LIGHT STANDARD
- PROPOSED ELECTRICAL JUNCTION BOX. SEE DETAILS & TABLE B, THIS SHEET
- EXISTING ELECTRICAL PULL BOX TO BE REMOVED
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (4) SEE TABLE A, THIS SHEET
- EXISTING FEEDER CIRCUIT CONTROL SYSTEM (A) , CIRCUIT (1)
- PROPOSED ELECTRICAL DUCT SIZE 2", 3", 4" OR 6" TYPE (JA) OR (BD) LOCATION: SEE TABLE C, THIS SHEET
- 3KV TRANSFORMER PANEL FOR SIGN LIGHTING. SEE SHEET E3.

PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM	
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
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

NUMBER	LOCATION	TYPE	SHEET
JB1	27+65 -L- 270' LT	PC30	E2
JB2	27+65 -L- 90' LT	PC30	E2
JB3	27+00 -L- 27' LT	PC30	E2
JB4	23+00 -L- 60' LT	PC18	E2
JB5	23+00 -L- 60' RT	PC18	E2
JB6	17+90 -L- 50' RT	PC18	E2
JB7	27+60 -L- 175' RT	PC18	E2
JB8	31+00 -L- 115' LT	PC18	E2
JB9	27+20 -Y- 65' LT	PC18	E2
JB10	27+20 -Y- 35' RT	PC18	E2
JB11	35+40 -L- 60' LT	PC18	E2
TOTALS		8	3

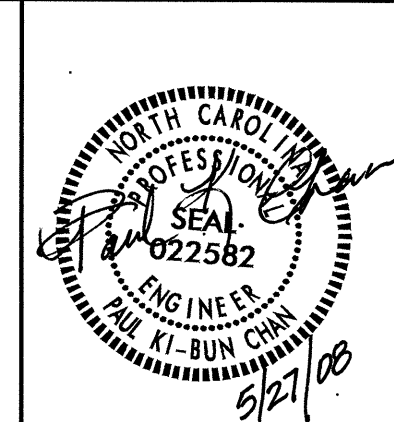
TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.  
TYPE PC30 JUNCTION BOXES ARE 30" L X 17" W X 18" H.

LOCATION	RACEWAY	SHEET	TYPE					
			JACKED (JA) FEET			BURIED (BD) FEET		
			SIZE 2"	SIZE 3"	SIZE 6"	SIZE 2"	SIZE 3"	SIZE 4"
27+20 -Y-		E2		70'				
27+00 -L-		E2		80'				
23+00 -L-		E2		110'				
27+65 -L-	JB1 - JB2	E2			65'	375'		
TOTALS				260'	65'	375'		

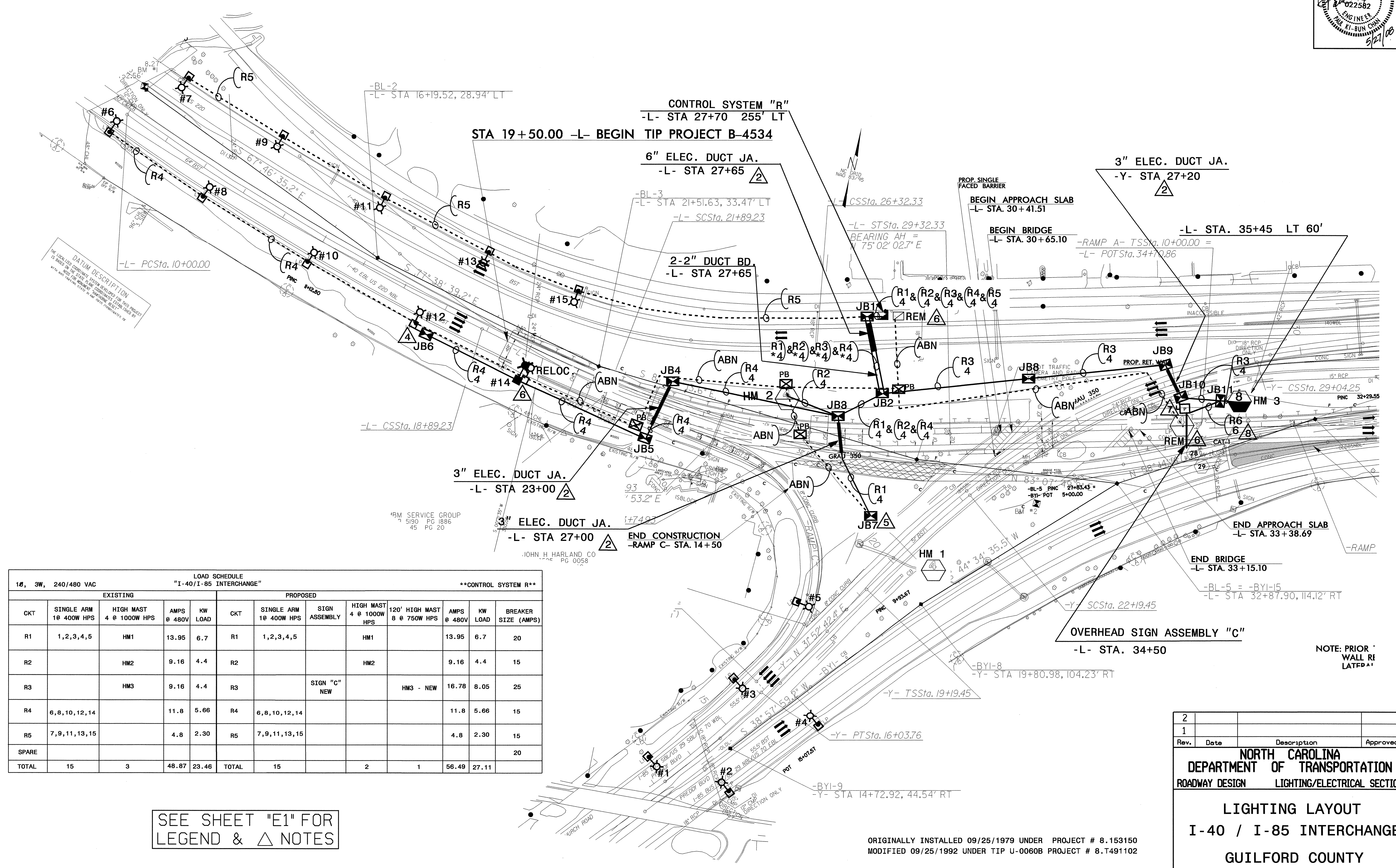
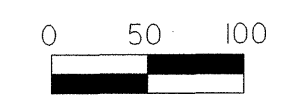
## ABBREVIATIONS

- |         |                 |     |                                |
|---------|-----------------|-----|--------------------------------|
| 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                         |
|         |                 | HM  | HIGH MAST                      |

COMPUTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED BY: *[Signature]* DATE: 5-23-08



USE FOR LIGHTING CONSTRUCTION ONLY



LOAD SCHEDULE  
"I-40/I-85 INTERCHANGE" \*\*CONTROL SYSTEM R\*\*

CKT	EXISTING				PROPOSED				BREAKER SIZE (AMPS)
	SINGLE ARM 1@ 400W HPS	HIGH MAST 4 @ 1000W HPS	AMPS @ 480V	KW LOAD	SINGLE ARM 1@ 400W HPS	SIGN ASSEMBLY	HIGH MAST 4 @ 1000W HPS	120' HIGH MAST 8 @ 750W HPS	
R1	1,2,3,4,5	HM1	13.95	6.7	R1	1,2,3,4,5	HM1		20
R2		HM2	9.16	4.4	R2		HM2		15
R3		HM3	9.16	4.4	R3	SIGN "C" NEW	HM3 - NEW	16.78 8.05	25
R4	6,8,10,12,14		11.8	5.66	R4	6,8,10,12,14		11.8 5.66	15
R5	7,9,11,13,15		4.8	2.30	R5	7,9,11,13,15		4.8 2.30	15
SPARE									20
TOTAL	15	3	48.87	23.46	TOTAL	15	2	1	56.49 27.11

SEE SHEET "E1" FOR LEGEND & △ NOTES

NOTE: PRIOR WALL RE LATERR

ORIGINALLY INSTALLED 09/25/1979 UNDER PROJECT # 8.153150  
MODIFIED 09/25/1992 UNDER TIP U-0060B PROJECT # 8.T491102

2  
1

Rev.	Date	Description	Approved

NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

LIGHTING LAYOUT  
I-40 / I-85 INTERCHANGE  
GUILFORD COUNTY

Drawn By: AB Approved By: [Signature] Dwg No.:

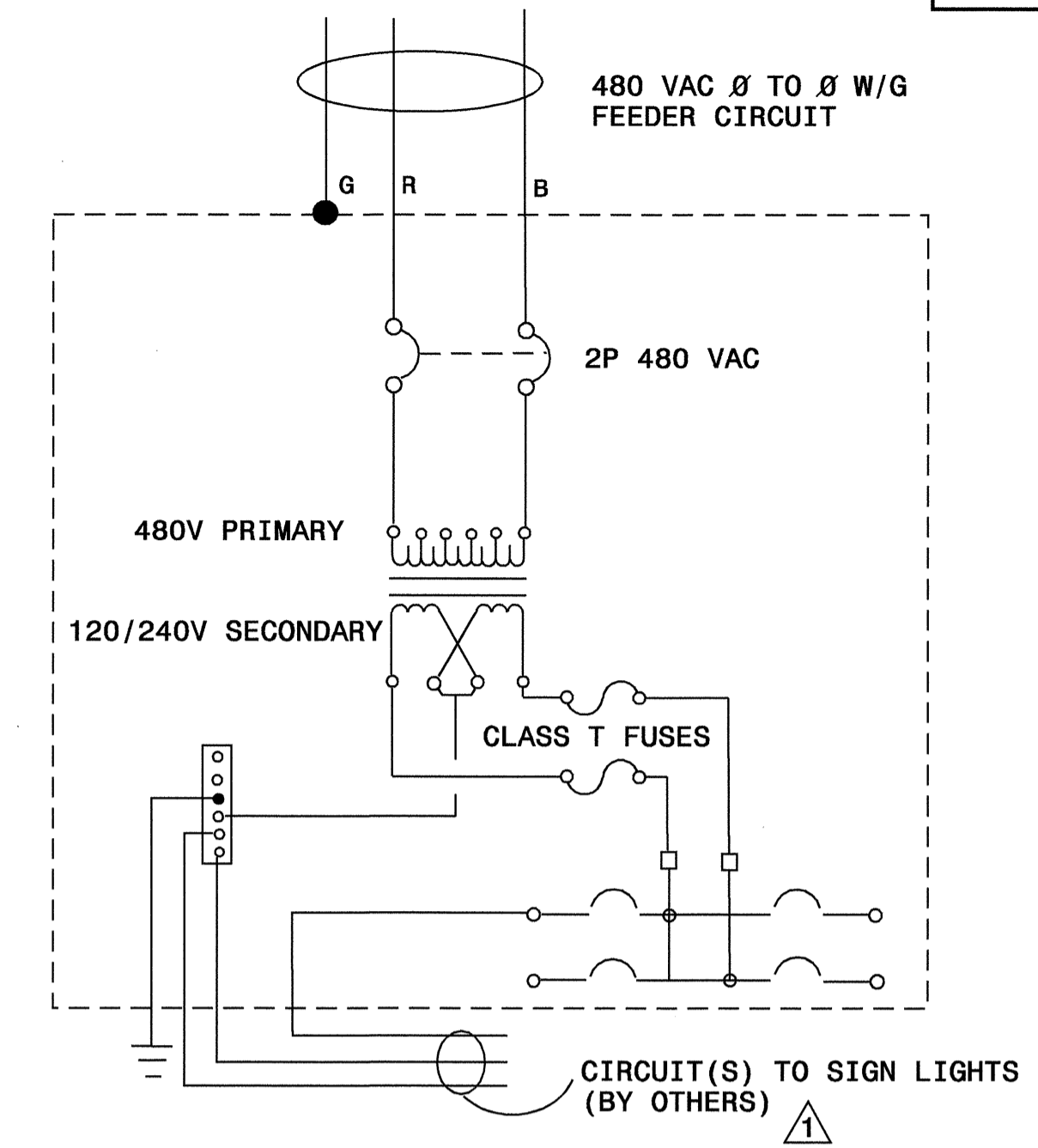
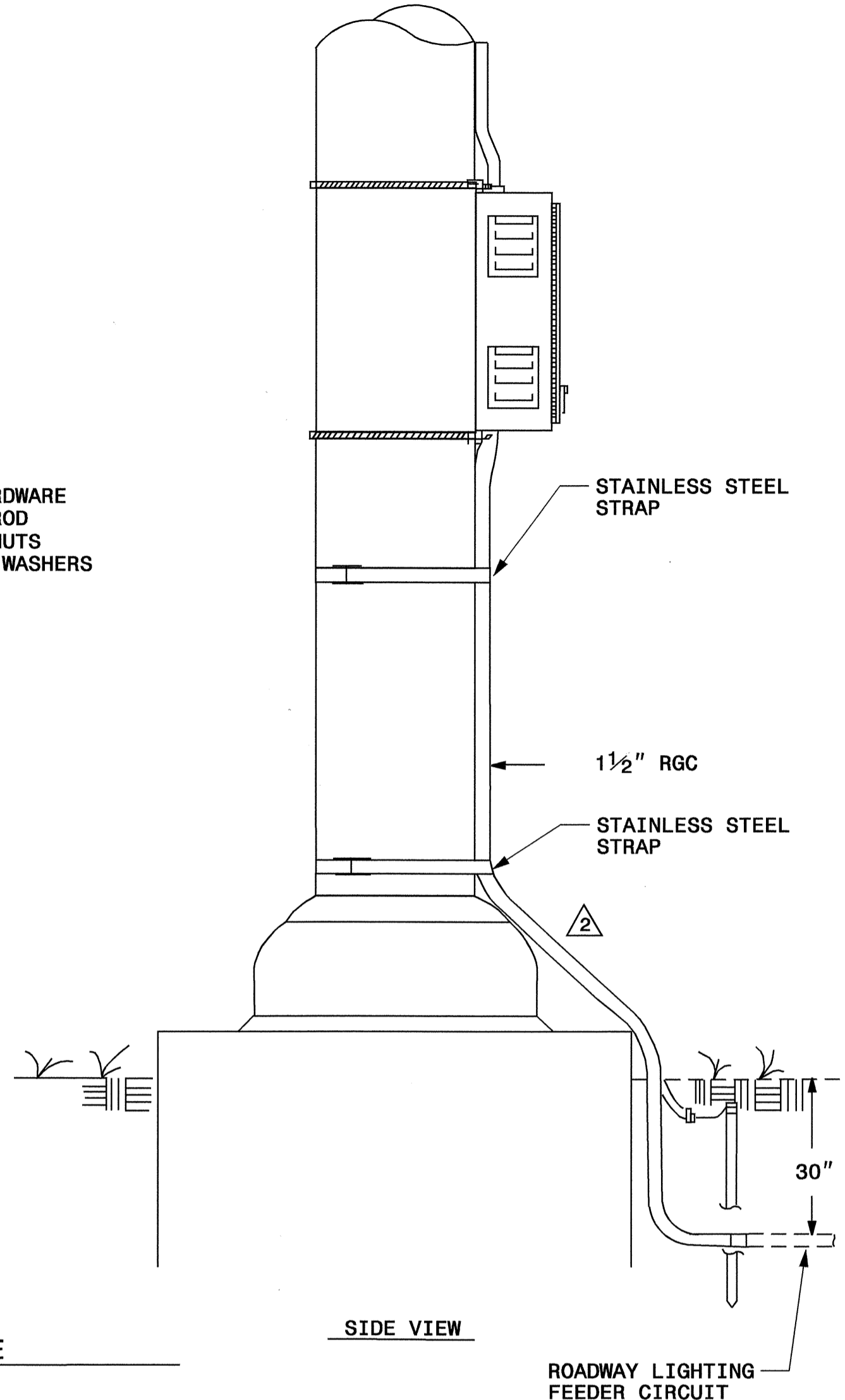
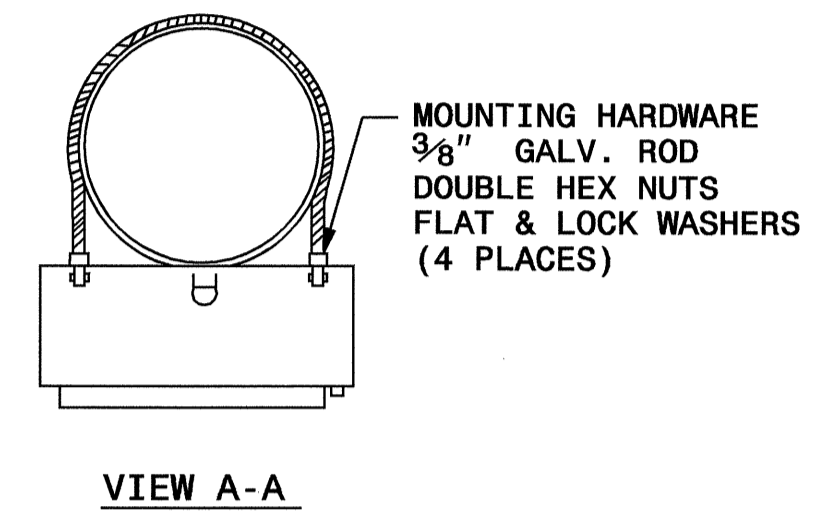
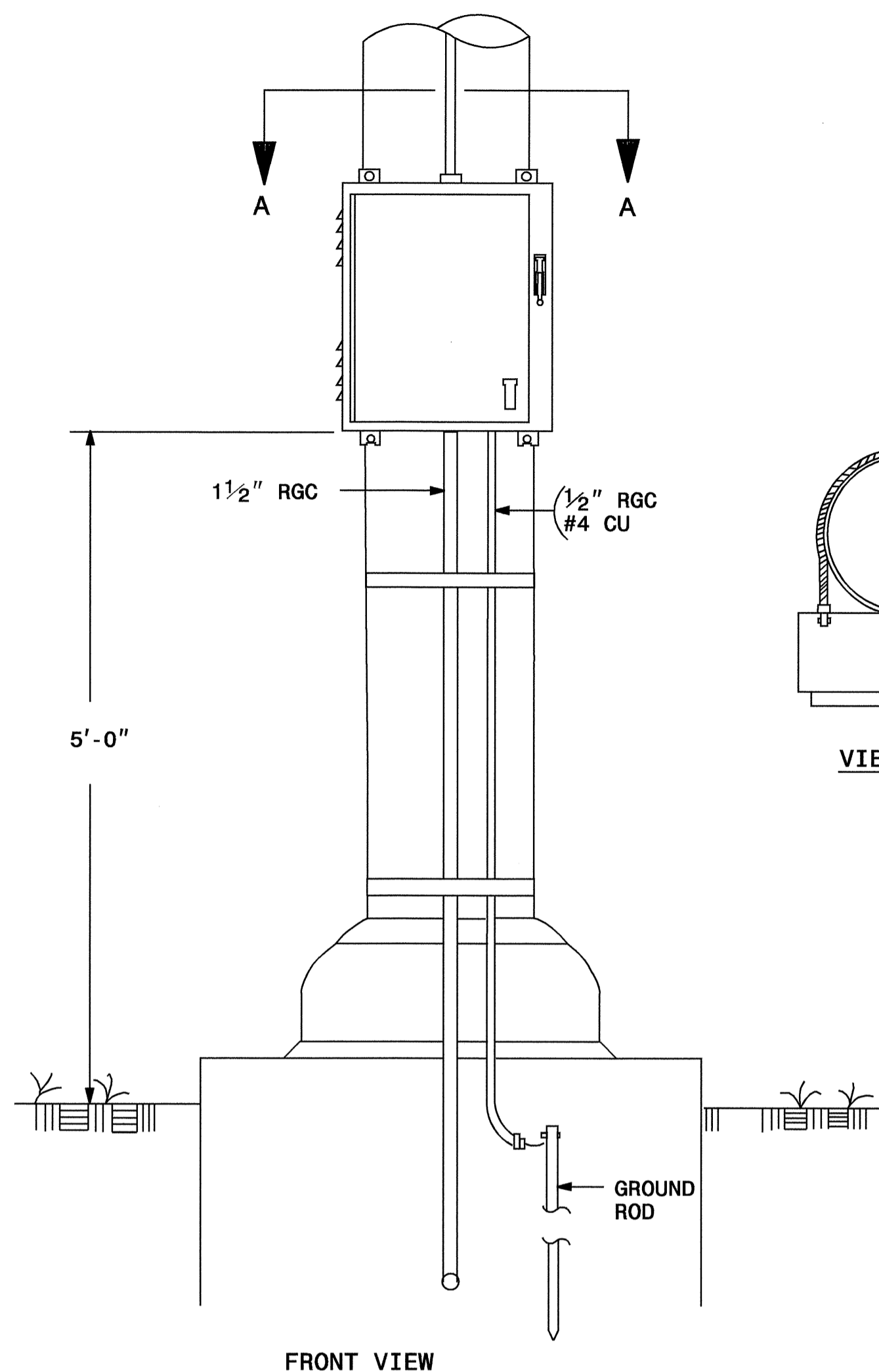
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02/03/98

NTS

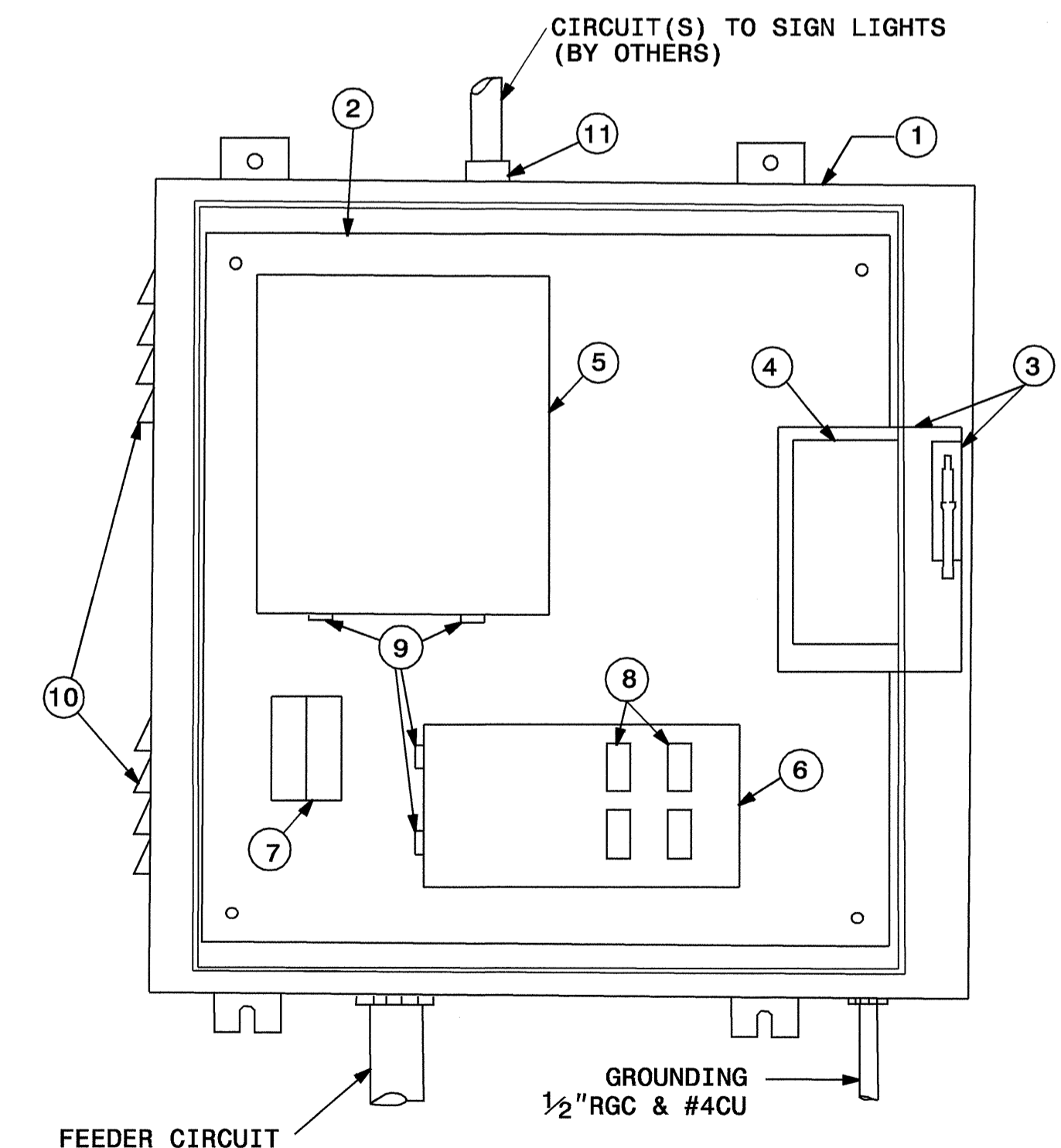
PROJECT REFERENCE NO. B-4534 SHEET NO. E3

LIGHTING  
 NORTH CAROLINA PROFESSIONAL SEAL  
 022582  
 ENGINEER  
 PAUL KI-SUN CHUNG  
 5/27/08



SCHEMATIC

- △ NOTES:
- △ SEE SIGNING PLANS FOR CONDUIT AND CIRCUITRY TO SIGN LIGHTS
  - △ CONDUIT BODIES MAY BE USED TO FACILITATE INSTALLATION
  - △ SEE LIGHTING PLANS FOR LOCATION OF EACH PANEL



COMPONENT LAYOUT  
 (SHOWN W/ DOOR REMOVED)

ITEM	QTY	DESCRIPTION	3 KVA PANEL
1	1	STAINLESS STEEL ENCLOSURE, NEMA 3R	24"X24"X10"
2	1	BACK PANEL	21"X21"
3	1	FLANGE MOUNT HANDLE MECHANISM	4"
4	1	PRIMARY CIRCUIT BREAKER 480V	2P 15A
5	1	TRANSFORMER	3 KVA
6	1	SECONDARY CIRCUIT BREAKER PANEL	2 SPACES
7	1	SECONDARY 2-POLE FUSE BLOCK, WITH FUSES	30A, CLASS T
8	AR	SECONDARY BRANCH CIRCUIT BREAKERS IP 20A	4 EA
9	AR	WIRE ENTRANCE & EXIT BUSHING	
10	2	LOUVER PLATE KITS W/FILTERS	5 5/8" X 5 1/2"
11	1	RAIN TIGHT CONDUIT FITTING	
12	1	DOOR LATCH MECHANISM 2 POINT (NOT SHOWN)	
13	AR	#6 AWG CONDUCTORS, TYPE THWN	

AR: AS REQUIRED

2			
1			
Rev.	Date	Description	Approved
<b>NORTH CAROLINA</b> <b>DEPARTMENT OF TRANSPORTATION</b> DESIGN SERVICES LIGHTING/ELECTRICAL SECTION <b>LIGHTING DETAILS</b> TRANSFORMER PANEL 480VAC TO 120VAC 3 KVA			
Drawn By:	Approved By:	Checked By:	

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