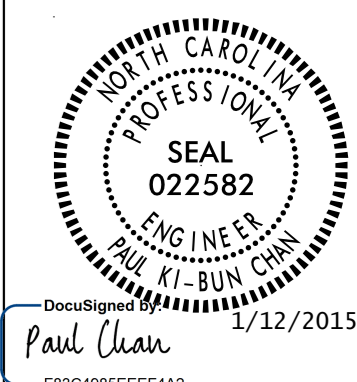


**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**



PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

NOTES

- 1 WHERE NOT NOTED, PLACE ROADWAY LIGHT STANDARDS 12' FROM EDGE OF TRAVEL LANE, OR 10' BEHIND CURB, WHICHEVER IS GREATER. PLACE POST TOP LIGHT STANDARD 3' BEHIND SIDEWALK.
- 2 INSTALL JUNCTION BOXES IN BEST ALIGNMENT WITH THE CIRCUITRY.
- 3 USE SCALED DIMENSIONS FOR STANDARDS NOT LOCATED WITH STATION NUMBERS.
- 4 AT THESE LOCATIONS PROVIDE 2" ELECTRICAL DUCT IN ACCORDANCE WITH NEC REQUIREMENTS FOR AN APPROVED RACEWAY. SEE TABLE C THIS SHEET.
- 5 TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 6 TYPE PC30 JUNCTION BOXES ARE 30" L X 17" W X 18" H.
- 7 TYPE PC36 JUNCTION BOXES ARE 36" L X 24" W X 18" H.

ROADWAY STANDARDS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS", ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD DRAW	DESCRIPTION
1405.01	STANDARD FOUNDATION
1409.01	ELECTRICAL DUCT
1410.01	FEEDER CIRCUIT
1411.01	ELECTRICAL JUNCTION BOXES

PERFORM ALL WORK IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2012, AND PROJECT SPECIAL PROVISIONS TITLED "REST AREA LIGHTING."

SCOPE OF WORK

PROVIDE REST AREA LIGHTING BY INSTALLING POST TOP STANDARDS WITH MAX. 50 WATT LED LUMINAIRES, ROADWAY DAVIT STYLE LIGHT STANDARDS WITH MAX. 215 WATT LED LUMINAIRES WITH FOUNDATIONS, UNDERGROUND CIRCUITRY IN CONDUIT, JUNCTION BOXES AND CONTROL SYSTEM.

DESIGN CRITERIA

- 2005 AASHTO "ROADWAY LIGHTING DESIGN GUIDE"
- 2014 NATIONAL ELECTRICAL CODE
- 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 5TH EDITION, AND LATEST INTERIM SPECIFICATIONS VALID AT THE TIME OF LETTING.
- 2011 AASHTO ROADSIDE DESIGN GUIDE

LEGEND

- PROPOSED LIGHT STANDARD TYPE DAVIT 35' MH WITH 6' ARM 70 MPH WIND SPEED WITH TYPE RDW 215W MAX LED LUMINAIRE IES DISTRIBUTION: MEDIUM, CUTOFF, TYPE III
- PROPOSED POST TOP STANDARD 15' MH, 70 MPH WIND SPEED WITH TYPE PT 50W (MAX.) LED LUMINAIRE IES DISTRIBUTION: CUTOFF TYPE V.
- CS-A PROPOSED CONTROL SYSTEM INSIDE ELECTRICAL ROOM. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E-2
- JB1 PROPOSED ELECTRICAL JUNCTION BOX SEE DETAILS & TABLE B, THIS SHEET
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (6) SEE TABLE A, THIS SHEET
- PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE C, 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
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

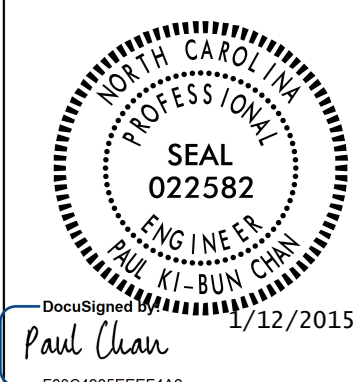
NUMBER	LOCATION	TYPE		SHEET
JB1	-L2- STA 18+45, RT		PC18	E3
JB2	-L1- STA 31+88, RT		PC30	E3
JB3	CLOSE TO CONTROL SYSTEM	PC36		E3
JB4	-L3- STA 30+94, RT		PC30	E3
JB5	-L4- STA 17+46, RT		PC18	E3
JB6	-L1- STA 31+88, LT		PC30	E3
JB7	-L3- STA 30+94, LT		PC30	E3
JB8	-L1- STA 37+52, RT		PC18	E3
JB9	-L1- STA 37+52, LT		PC18	E3
JB10	-L3- STA 36+00, LT		PC18	E2
JB11	-L3- STA 36+00, RT		PC18	E2
TOTAL		1	4	6

LOCATION	RACEWAY	SHEET	TYPE					
			JACKED (JA) FEET			BURIED (BD) FEET		
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 2"	SIZE 3"	SIZE 4"
-L1- STA 31+88		E3						66
-L1- STA 31+88	JB6 - JB2	E3				86		
-L2- STA 18+53		E3					61	
-L3- STA 30+94		E3						66
-L3- STA 30+94	JB7 - JB4	E3				86		
-L4- STA 17+46		E3					26	
-L1- STA 37+52		E3					26	
-L3- STA 36+00		E2					26	
TOTAL						172	139	132

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: SKS DATE: 1/9/15
 CHECKED BY: PKC DATE: 1/9/15

02/03/98
 12-JAN-2015 09:07
 R:\Lighting\Electrical\Lighting Design\Plan Sheet\K4908-Rdy-LE_PSH-E1.dgn
 AT RD261582
 sksaha

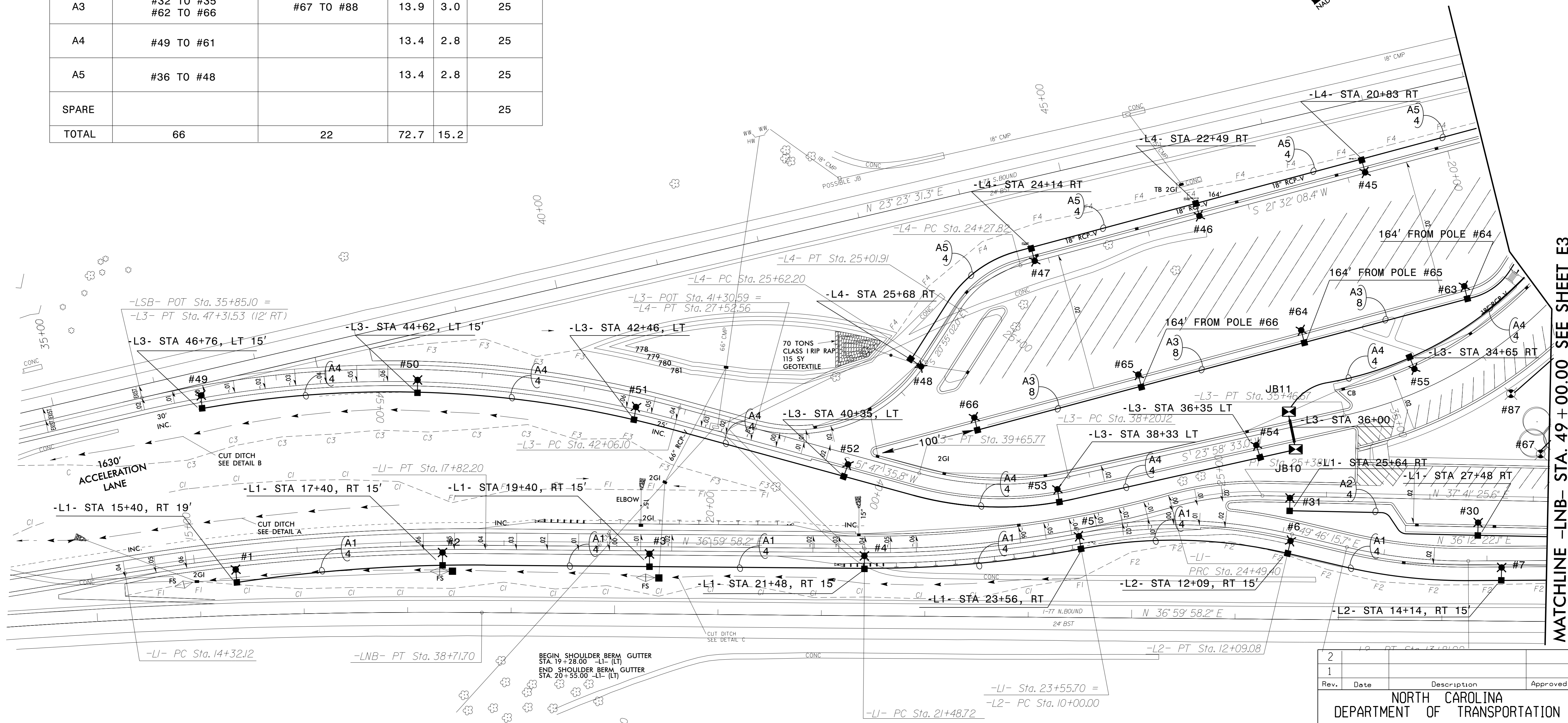
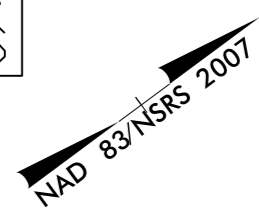


USE FOR LIGHTING CONSTRUCTION ONLY

LOAD SCHEDULE
ELECTRICAL ROOM INSIDE BUILDING

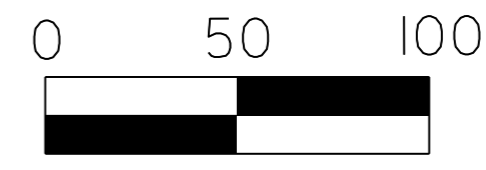
208V PHASE TO PHASE		CONTROL SYSTEM "A"			
CIRCUIT ID	SINGLE ARM 1 @ 215W MAX LED	POST TOP 1 @ 50W MAX LED	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
A1	#1 TO #15		15.5	3.2	25
A2	#16 TO #31		16.5	3.4	25
A3	#32 TO #35 #62 TO #66	#67 TO #88	13.9	3.0	25
A4	#49 TO #61		13.4	2.8	25
A5	#36 TO #48		13.4	2.8	25
SPARE					25
TOTAL	66	22	72.7	15.2	

SEE SHEET "E1" FOR
LEGEND & △ NOTES

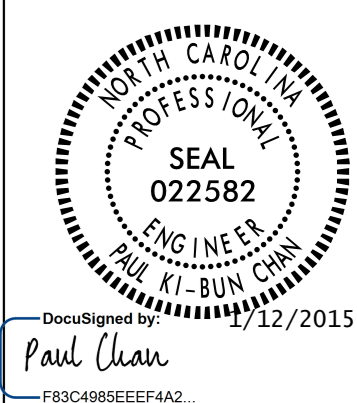


MATCHLINE -LNB- STA: 49 + 00.00 SEE SHEET E3

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-77 REST AREA ON Sheet 1 of 3 IREDELL COUNTY			
Drawn By:	SKS	Approved By:	PKC
Dwg No.:			

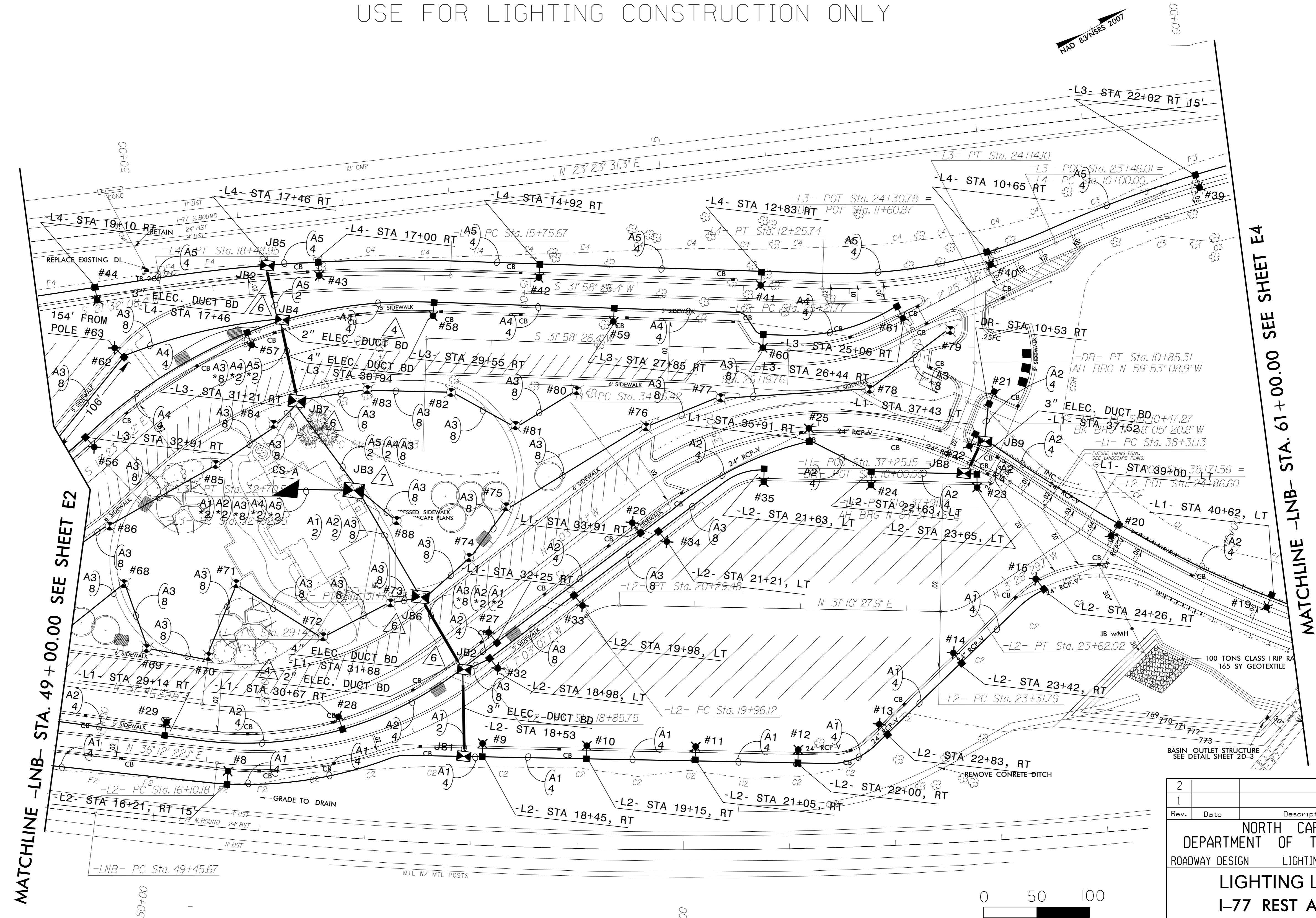


I2-JAN-2015 09:10
 R:\Lighting\Lighting Design\Plan Sheet\K4908_Rdy_LE_PSH_E2.dgn
 sks
 02/03/98



SEE SHEET "E1" FOR
LEGEND & △ NOTES

USE FOR LIGHTING CONSTRUCTION ONLY



Rev.	Date	Description	Approved
2			
1			

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

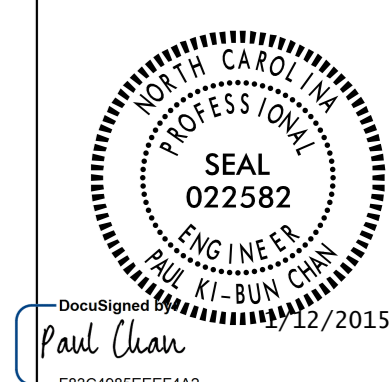
LIGHTING LAYOUT
I-77 REST AREA ON
Sheet 2 of 3

IREDELL COUNTY

Drawn By:	SKS	Approved By:	PKC	Dwg No.:	
-----------	-----	--------------	-----	----------	--

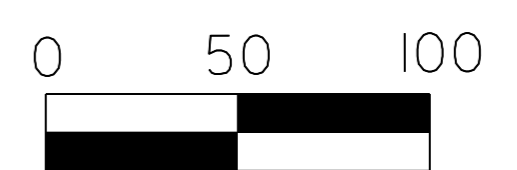
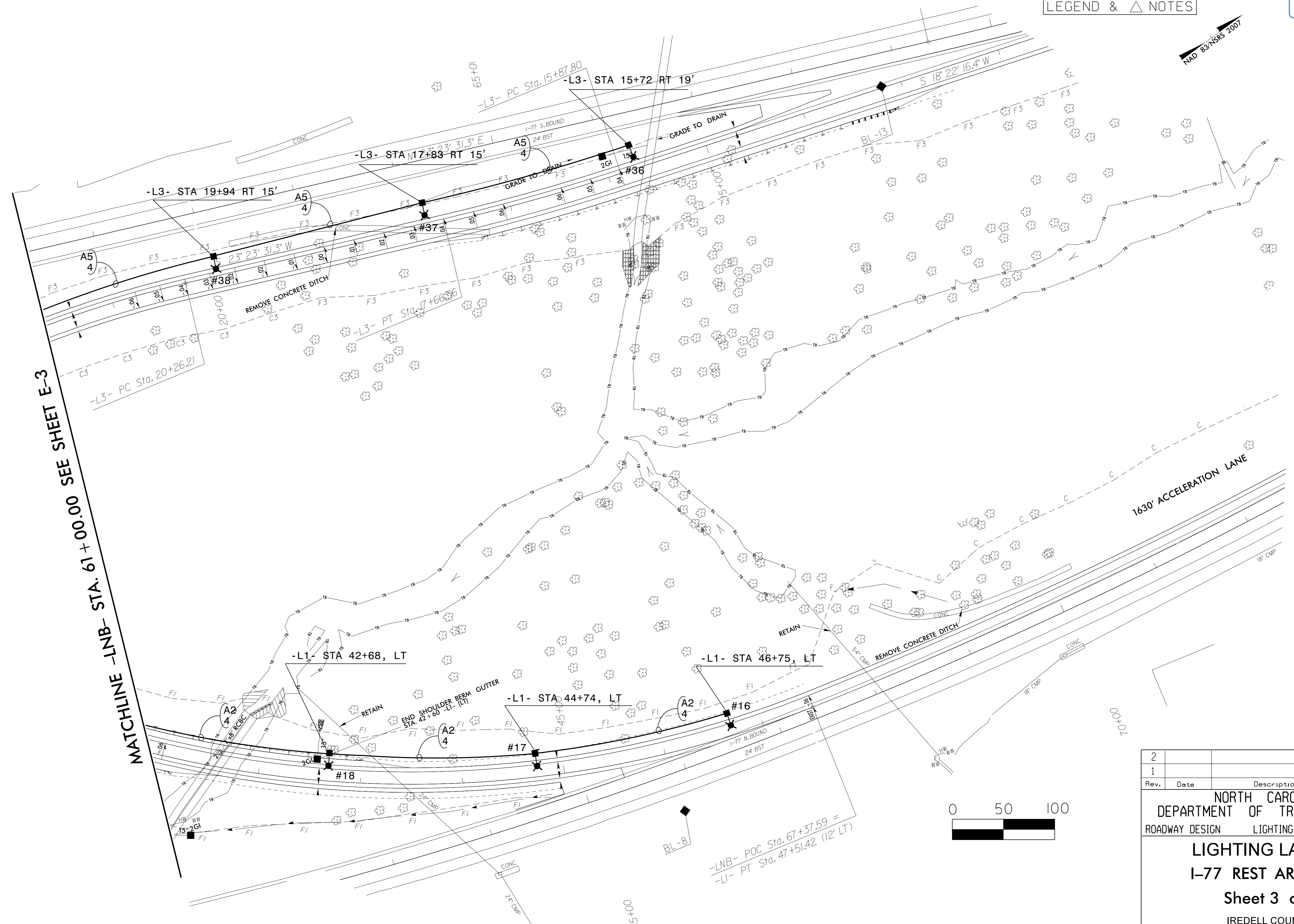
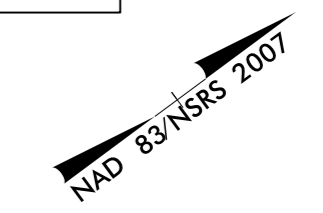
I2-JAN-2015 09:14
K:\Lighting\Lighting Design\Plan Sheet\K4908_Rdy_LE_PSH_E3.dgn
skans

02/03/98



USE FOR LIGHTING CONSTRUCTION ONLY

SEE SHEET "E1" FOR
LEGEND & △ NOTES

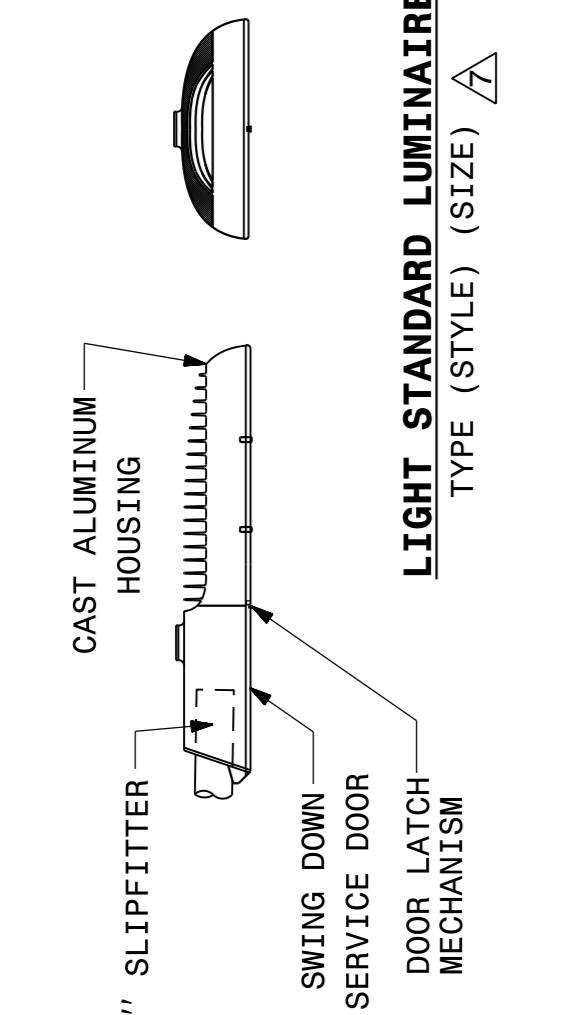


2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-77 REST AREA ON Sheet 3 of 3 IREDELL COUNTY			
Drawn By:	SKS	Approved By:	PKC
Dwg No.:			

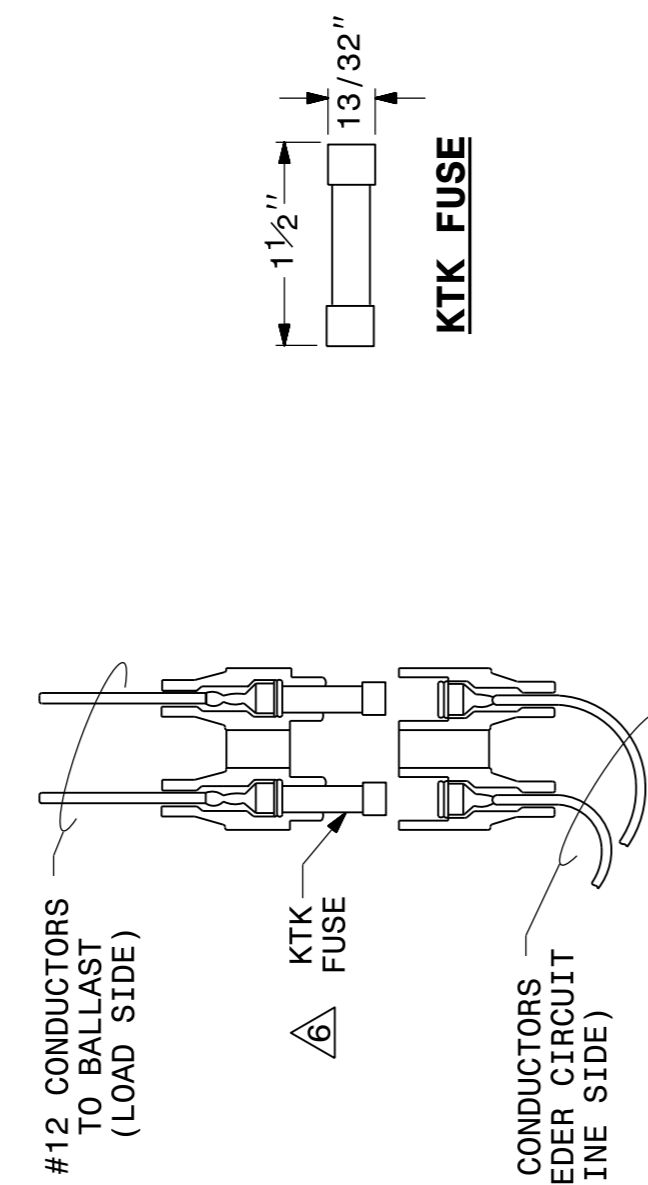
I:\Projects\2015\0918\electrical\Lighting Design\1406D01_Sheet.k-4906.L.E.psh.E5.rdy.Lum.and.cs.dgn
 2/12/2015 2:12:28 PM

LUMINAIRE CHARACTERISTICS			
SPEC TYPE	COLOR TEMP	MAX. DRIVE CURRENT (mA)	MINIMUM INITIAL LUMENS
215W (MAX) LED FIXTURE	3500K-4500K	1050	13,990
		WARRANTY	
		10 YEAR	

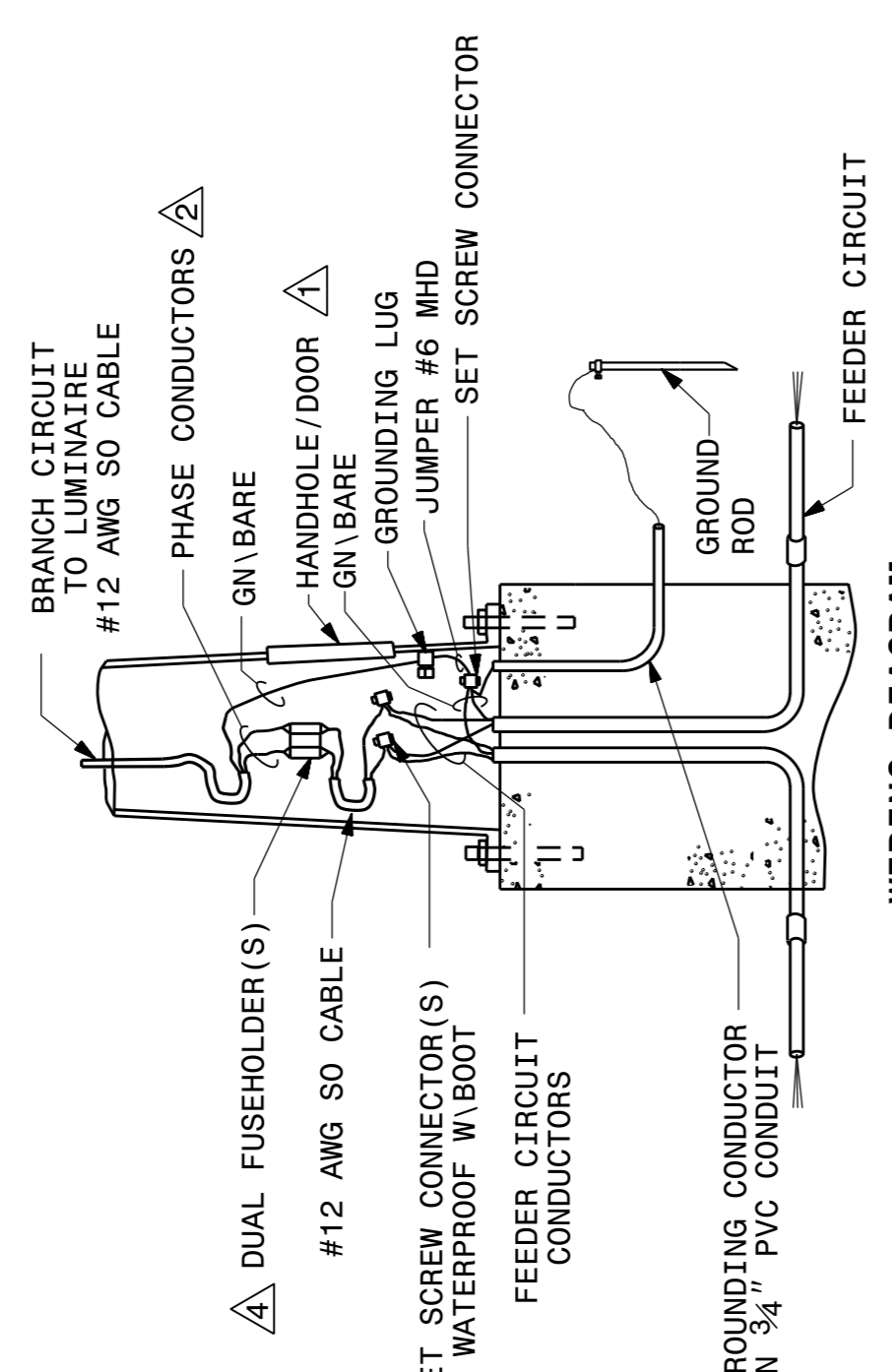
NOTES
 PROVIDE ACCESS TO FUSEHOLDERS FROM HANDHOLE OR TRANSFORMER BASE.
 SEE STANDARD SPECIFICATIONS SECTION 1400-4F FOR WIRING METHODS. USE TAPE OR HEAT SHRINK TO COLOR CONDUCTORS TO MATCH PHASE COLOR (RED/BLACK/BLUE).
 MAKE SPLICES IN ACCORDANCE WITH SECTION 1400-4(F) OF THE STANDARD SPECIFICATIONS.
 BREAKAWAY FUSEHOLDERS REQUIRED AT ALL BREAKAWAY LIGHT STANDARDS.
 SEE LIGHTING LAYOUT PLANS FOR NUMBER AND SIZE OF FEEDER CIRCUITS REQUIRED AT EACH LIGHT STANDARD.
 SEE STANDARD SPECIFICATIONS SECTION 1400-2E FOR FUSEHOLDERS.
 INSERT STYLE AND SIZE FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED LUMINAIRES.



LIGHT STANDARD LUMINAIRE
TYPE (STYLE) (SIZE)

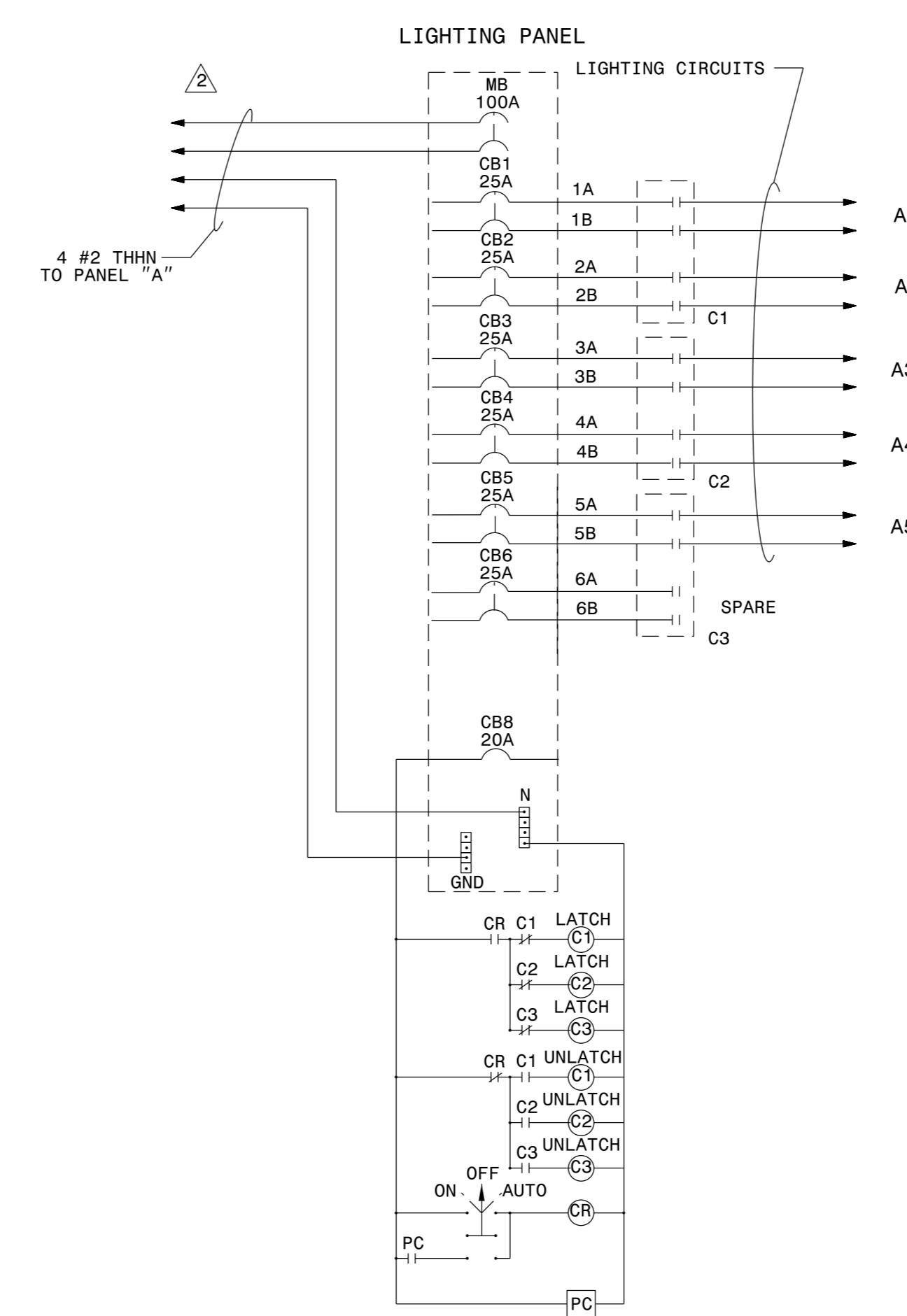


FUSEHOLDER

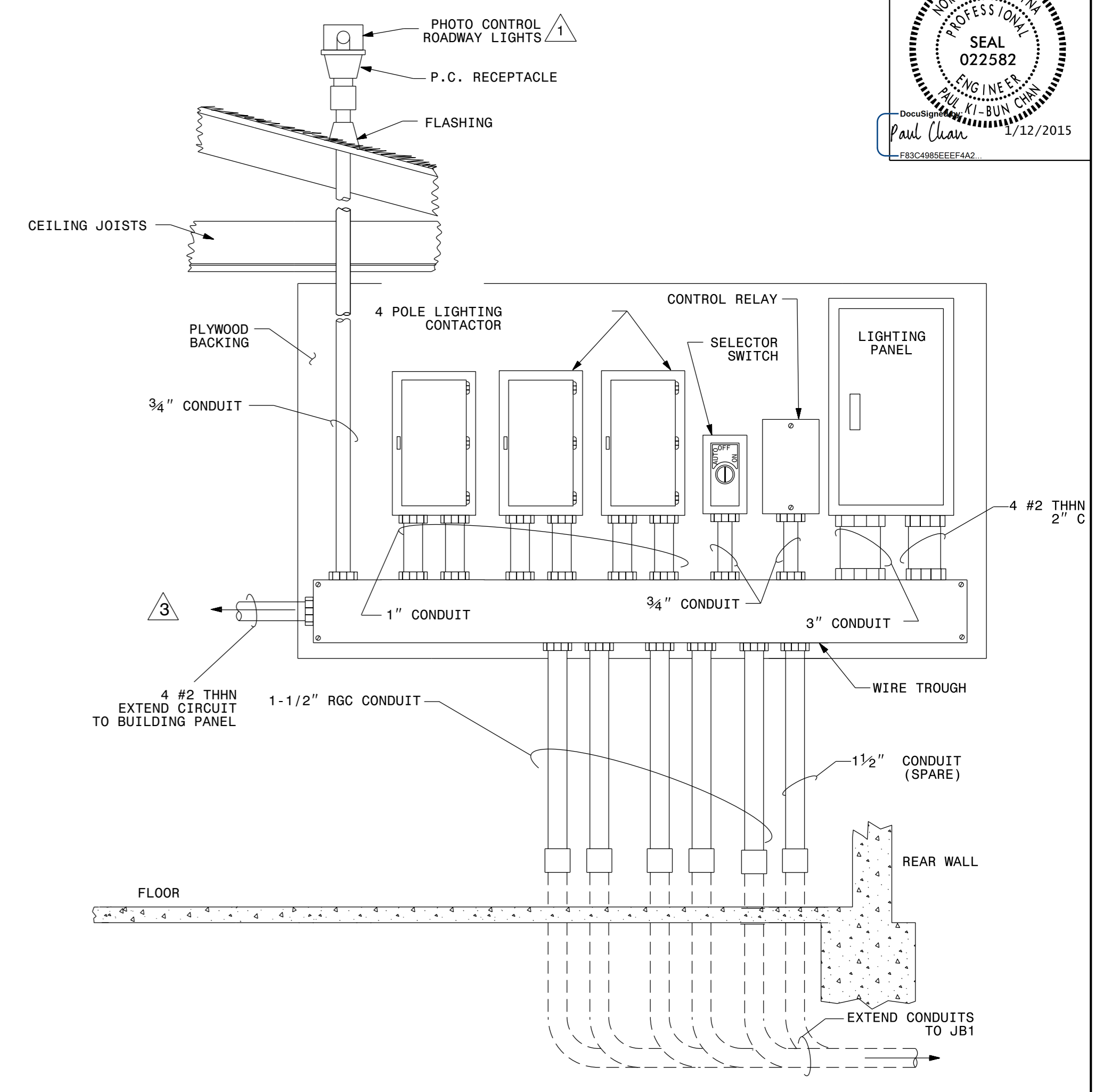


WIRING DIAGRAM
@ BASE OF LIGHT STANDARD

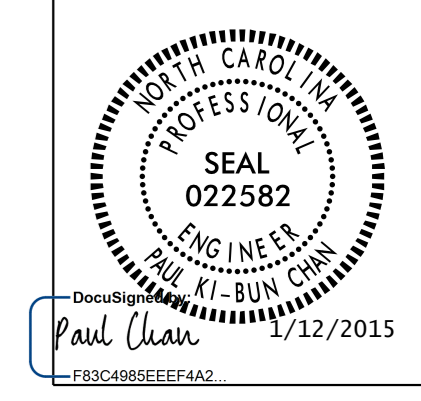
USE FOR LIGHTING CONSTRUCTION ONLY

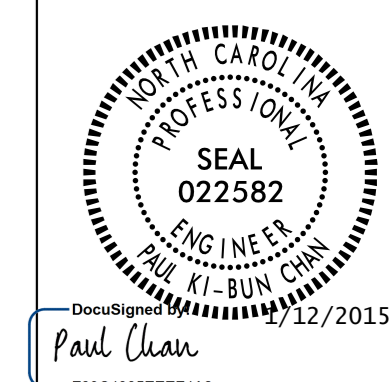


- NOTES**
- 1 LOCATE PHOTO CELL IN AN UNSHADED AREA ON THE ROOF.
 - 2 INSTALL ONE 100 AMP, 2 POLE BREAKER FOR LIGHTING PANEL SERVICE ADDED TO PANEL "A" UNDER OTHER CONTRACT PAY ITEM.
 - 3 EXTEND CIRCUIT TO PANEL "A". CONNECTION TO PANEL "A" BY OTHERS.

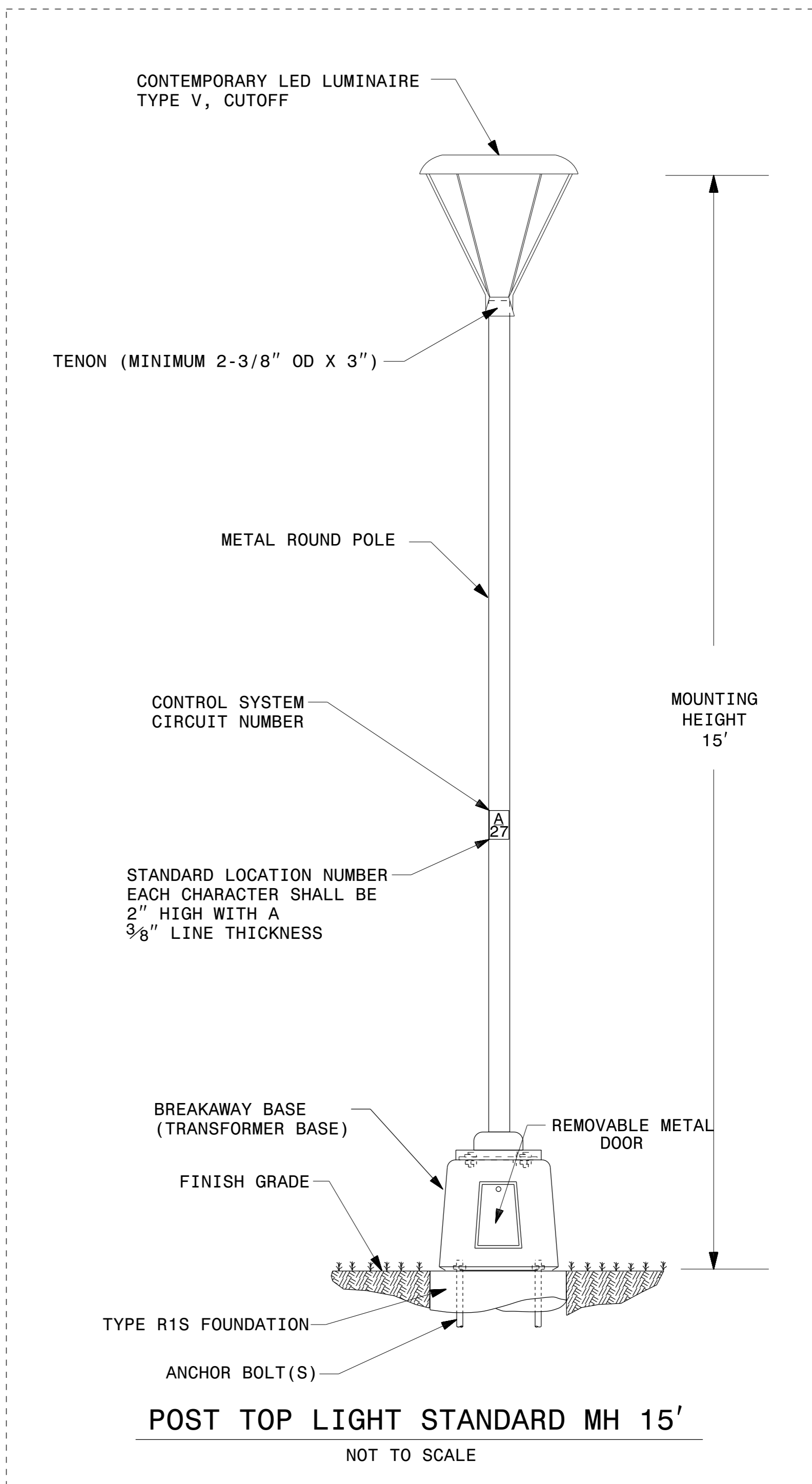
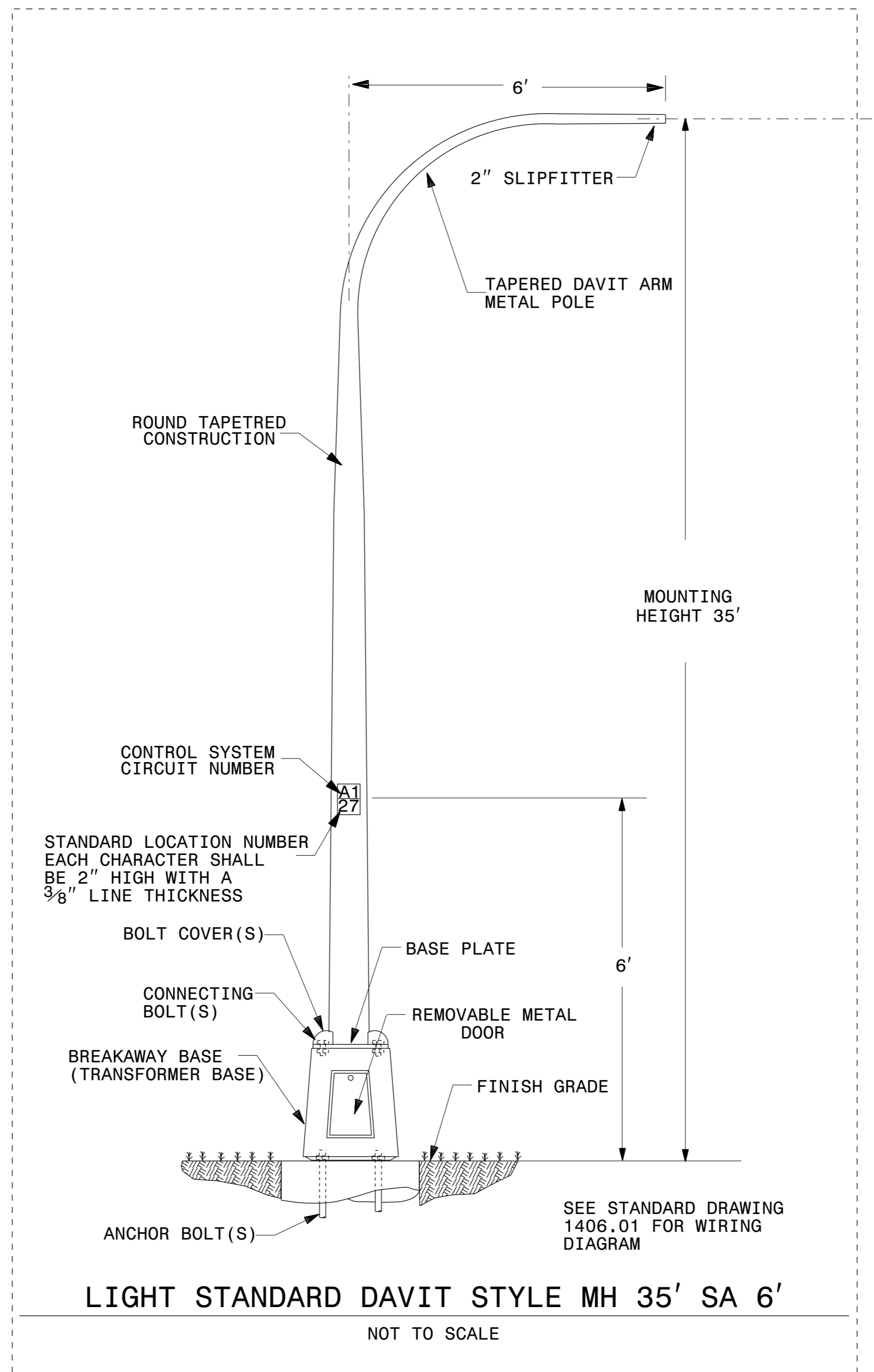


2			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES LIGHTING/ELECTRICAL SECTION ROADWAY LUMINAIRES AND CONTROL SYSTEM DETAILS REST AREA SCHEMATIC AND EQUIPMENT LAYOUT IREDELL COUNTY			
Drawn By:	SKS	Checked by:	PKC
		Approved By:	





USE FOR LIGHTING CONSTRUCTION ONLY



02/03/98
12-JAN-2015 09:22
r:\ical\Lighting Design\Plan_Sheet\k4908_LE_psh_E6_lgt_std_details.dgn
skaha AT RD261582

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES LIGHTING/ELECTRICAL SECTION LIGHT STANDARDS DETAILS I-77 REST AREA IN NEW LOCATION IREDELL COUNTY			
Drawn By:	SKS	Approved By:	PKC
		Dwg No.:	