

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 NOTE REMOVED
- 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 NOTE REMOVED.
- 7 TYPE PC30 JUNCTION BOXES ARE 30" L X 17" W X 18" H.
- 8 TYPE PC36 JUNCTION BOXES ARE 36" L X 24" W X 18" H.
- 9 CONTINUE CIRCUITRY TO JUNCTION BOX LABELED 'SITE LIGHTING.' SEE FACILITIES DESIGN SHEET E3.
- 10 RUN ITS POWER CONDUCTORS IN SAME TRENCH AS SITE LIGHTING. DO NOT STUB ITS POWER CIRCUITS IN SITE LIGHTING JUNCTION BOX OR VICE -VERSA.
- 11 CONTINUE CIRCUITRY TO JUNCTION BOX LABELED 'ITS/POWER.' SEE FACILITIES DESIGN SHEET E3.
- 12 TWO 120V PHASES REQUIRED AT THIS LOCATION. USE DOUBLE POLE CIRCUIT BREAKER IN THIS DISCONNECT ASSEMBLY. SEE SHEET LE13 FOR DISCONNECT DETAILS.
- 13 LOCATION OF DISCONNECTS FOR ITS EQUIPMENT IS APPROXIMATE. ADJUST AS NECESSARY IN THE FIELD TO INSTALL DISCONNECT AS CLOSE AS POSSIBLE TO EQUIPMENT.
- 14 INSTALL JUNCTION BOX LIDS LABELED "LIGHTING" OR "ITS POWER" AS APPROPRIATE.

SCOPE OF WORK

THIS PROJECT INCLUDES THE FOLLOWING AT A NEW WEIGH STATION ON I-85 IN GASTON COUNTY:

THE MANUFACTURING, FURNISHING, INSTALLATION, TESTING, TRAINING AND SERVICING FOR AN OPERATING HYDRO STATIC SCALE SYSTEM

THE INSTALLATION OF A ROADWAY LIGHTING SYSTEM INCLUDING PROVIDING AND INSTALLING 100' HIGH MOUNT STANDARDS & 35' SINGLE ARM ROADWAY LIGHT STANDARDS, BOTH EQUIPPED WITH LIGHT EMITTING DIODE LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES

PROVIDING POWER TO SELECT INTELLIGENT TRANSPORTATION SYSTEM COMPONENTS AS SHOWN ON THE PLANS.

DESIGN CRITERIA

LIGHTING
2005 AASHTO ROADWAY LIGHTING DESIGN GUIDE
2011 AASHTO ROADSIDE DESIGN GUIDE

STRUCTURAL
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
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

ELECTRICAL
2011 NATIONAL ELECTRICAL CODE
WEIGHING
NIST HANDBOOK 44, 2013, "SPECIFICATIONS, TOLERANCES, AND OTHER TECHNICAL REQUIREMENTS FOR WEIGHING AND MEASURING DEVICES."

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 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD NO.	TITLE
1402.01	HIGH MOUNT FOUNDATION
1404.01	LIGHT STANDARDS (USE DETAIL DRAWING 1404D01, SHEET 1 IN LIEU OF STANDARD DRAWING 1404.01, SHEET 1. SEE SHEET LE8.)
1405.01	STANDARD FOUNDATION
1409.01	ELECTRICAL DUCT
1410.01	FEEDER CIRCUITS
1411.01	ELECTRICAL JUNCTION BOXES

ALL LIGHTING WORK SHALL BE IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2012.

LEGEND

- PROPOSED 100' HIGH MAST STANDARD W/ HM FOUNDATION & (6) HM LUMINAIRES 14 LED MODULE, MEDIUM, CUTOFF, TYPE V
- PROPOSED LIGHT STANDARD TYPE MTL5 35' WITH 6' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, LIGHT STANDARD JUNCTION BOX & 200W (MAX) LED ROADWAY LUMINAIRE. IES DISTRIBUTION: MEDIUM, CUTOFF, TYPE II
- 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 DISCONNECT FOR ITS EQUIPMENT. SEE SHEET LE12 FOR DETAILS.
- PROPOSED ELECTRICAL DUCT SIZED AS SHOWN, TYPE (JA) OR (BD) LOCATION: SEE TABLE C, THIS SHEET

PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM	
2N	3 #2 Ø 1 #2N 1 #4G 2" P	3 AWG SIZE 2 PHASE CONDUCTOR (BK, RD, BE) 1 AWG SIZE 2 NEUTRAL CONDUCTOR 1 AWG SIZE 4 GROUNDING CONDUCTOR 2" PVC CONDUIT	4 - 2 W/G FEEDER CIRCUIT IN 2" CONDUIT
*2N	3 #2 Ø 1 #2N 1 #4G	3 AWG SIZE 2 PHASE CONDUCTOR (BK, RD, BE) 1 AWG SIZE 2 NEUTRAL CONDUCTOR 1 AWG SIZE 4 GROUNDING CONDUCTOR	4 - 2 W/G FEEDER CIRCUIT
1N	3 #1 Ø 1 #1N 1 #2G 2" P	3 AWG SIZE 1 PHASE CONDUCTOR (BK, RD, BE) 1 AWG SIZE 1 NEUTRAL CONDUCTOR 1 AWG SIZE 2 GROUNDING CONDUCTOR 2" PVC CONDUIT	4 - 1 W/G FEEDER CIRCUIT IN 2" CONDUIT
*1N	3 #1 Ø 1 #1N 1 #2G	3 AWG SIZE 1 PHASE CONDUCTOR (BK, RD, BE) 1 AWG SIZE 1 NEUTRAL CONDUCTOR 1 AWG SIZE 2 GROUNDING CONDUCTOR	4 - 1 W/G FEEDER CIRCUIT
2/ON	3 #2/0 Ø 1 #2/ON 1 #1/0 G 3" P	3 AWG SIZE 2/0 PHASE CONDUCTOR (BK, RD, BE) 1 AWG SIZE 2/0 NEUTRAL CONDUCTOR 1 AWG SIZE 1/0 GROUNDING CONDUCTOR 3" PVC CONDUIT	4 - 2/0 W/G FEEDER CIRCUIT IN 3" CONDUIT
*2/ON	3 #2/0 Ø 1 #2/ON 1 #1/0 G	3 AWG SIZE 2/0 PHASE CONDUCTOR (BK, RD, BE) 1 AWG SIZE 2/0 NEUTRAL CONDUCTOR 1 AWG SIZE 1/0 GROUNDING CONDUCTOR	4 - 2/0 W/G FEEDER CIRCUIT

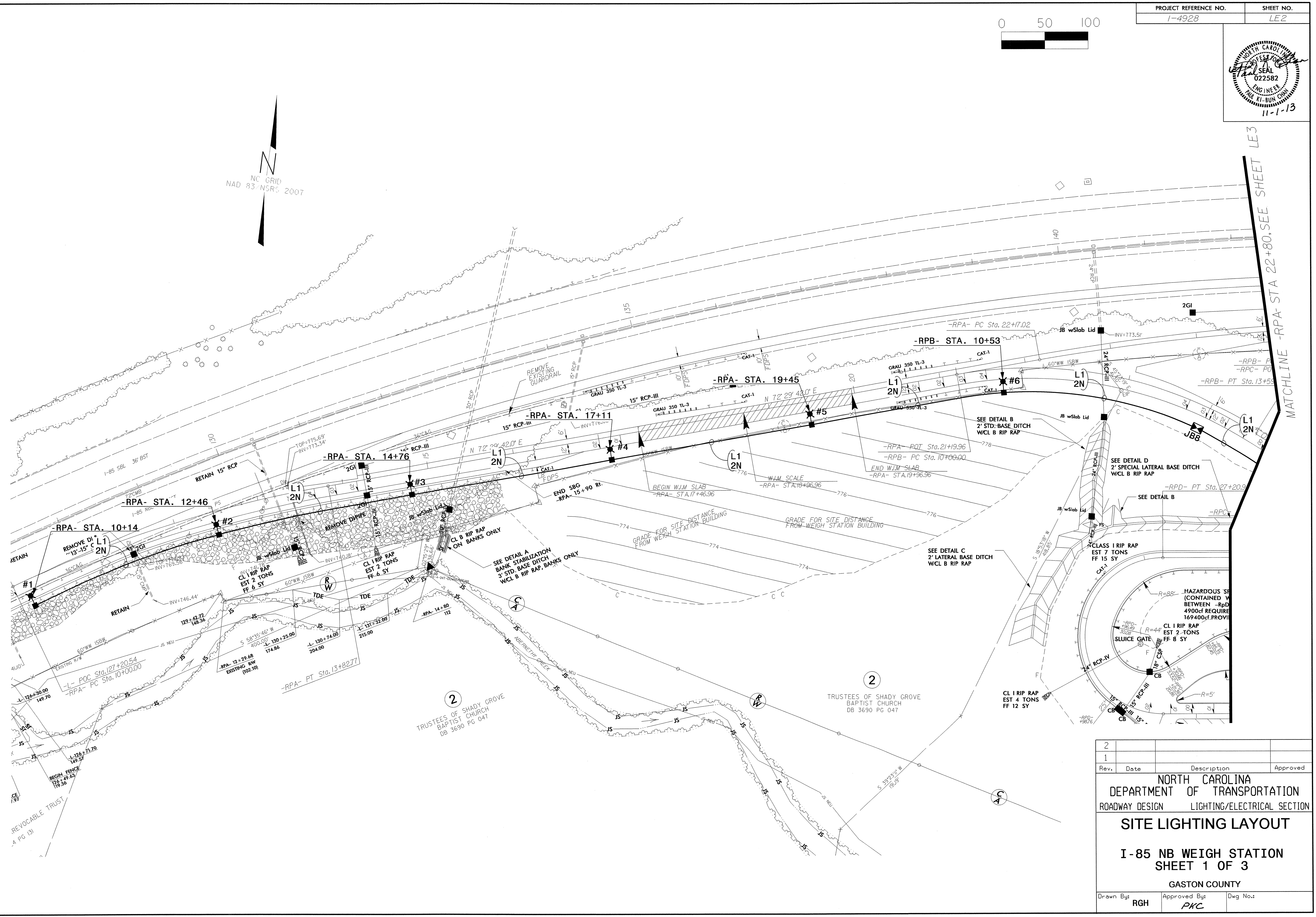
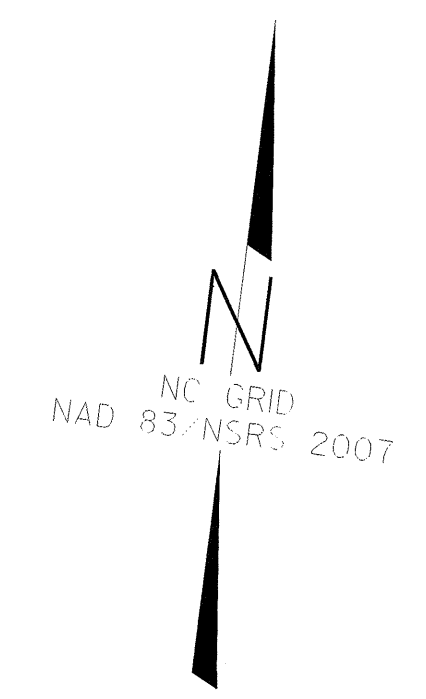
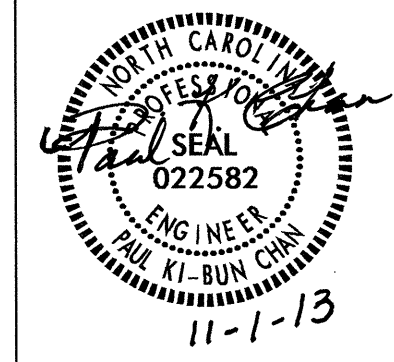
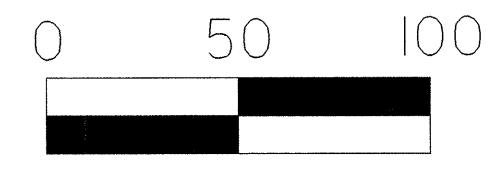
SITE LIGHTING JUNCTION BOX SUMMARY			
NUMBER	LOCATION	TYPE	SHEET
JB1	INCLUDED IN FACILITIES DESIGN PLANS		PC36 E3
JB2	-RPC- STA. 16+91, 36' RT		PC36 LE3
JB3	-RPC- STA. 16+29, 67' RT		PC36 LE3
JB4	-RPC- STA. 13+06, 67' RT		PC36 LE3
JB5	-RPC- STA. 13+06, 35' LT		PC30 LE3
JB6	-RPC- STA. 29+24, 24' RT		PC30 LE3
JB7	-RPC- STA. 29+24, 17' LT		PC30 LE3
JB8	-RPB- STA. 12+96, 27' RT		PC30 LE2
JB9	-RPD- STA. 13+95, 47' RT		PC30 LE3
JB10	-RPD- STA. 13+88, 17' LT		PC30 LE3
JB11	-RPD- STA. 12+79, 20' LT		PC30 LE3
ITS POWER JUNCTION BOX SUMMARY			
JB1	INCLUDED IN FACILITIES DESIGN PLANS		PC36 E3
JB2	-RPB- STA. 20+62, 44' LT		PC36 LE5
JB3	-RPB- STA. 17+59, 41' LT		PC36 LE5
JB4	-RPB- STA. 14+84, 19' LT		PC36 LE5
JB5	-RPB- STA. 13+34, 17' LT		PC30 LE5
JB6	-RPC- STA. 10+94, 25' RT		PC36 LE5
JB7	-RPB- STA. 13+34, 28' RT		PC30 LE5
JB8	-RPB- STA. 10+71, 27' RT		PC30 LE5
JB9	-RPA- STA. 20+23, 30' RT		PC30 LE5
JB10	-RPA- STA. 20+23, 19' LT		PC30 LE5
JB11	-RPC- STA. 17+42, 37' RT		PC30 LE5
TOTALS		13	9

LOCATION	RACEWAY	SHEET	TYPE					
			JACKED (JA) FEET			BURIED (BD) FEET		
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 3"	SIZE 4"	SIZE 6"
SITE LIGHTING ELECTRICAL DUCT								
-RPC- STA. 16+92		E3						35
-RPC- STA. 16+92	JB1 - JB2	E3					110	
-RPD- STA. 13+89		E3					50	
-RPC- STA. 13+08		E3					60	
-RPD- STA. 29+24		E3					25	
ITS POWER ELECTRICAL DUCT								
-RPB- STA. 21+09		E5						135
-RPB- STA. 20+58		E5						90
-RPB- STA. 20+58	JB1 - JB2	E5				100		
-RPB- STA. 14+81		E5						40
-RPB- STA. 14+81	JB4 - JB6	E5				65		
-RPA- STA. 20+23		E5						25
TOTALS						165	245	325

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

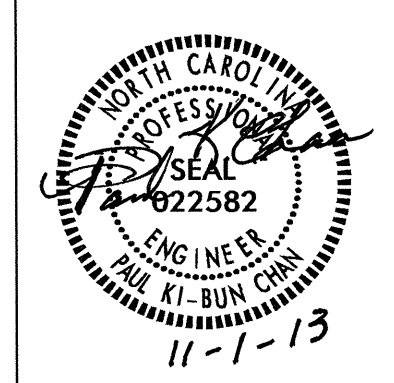
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION SITE LIGHTING LAYOUT I-85 NB WEIGH STATION SHEET 1 OF 3 GASTON COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

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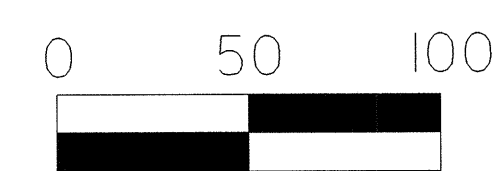
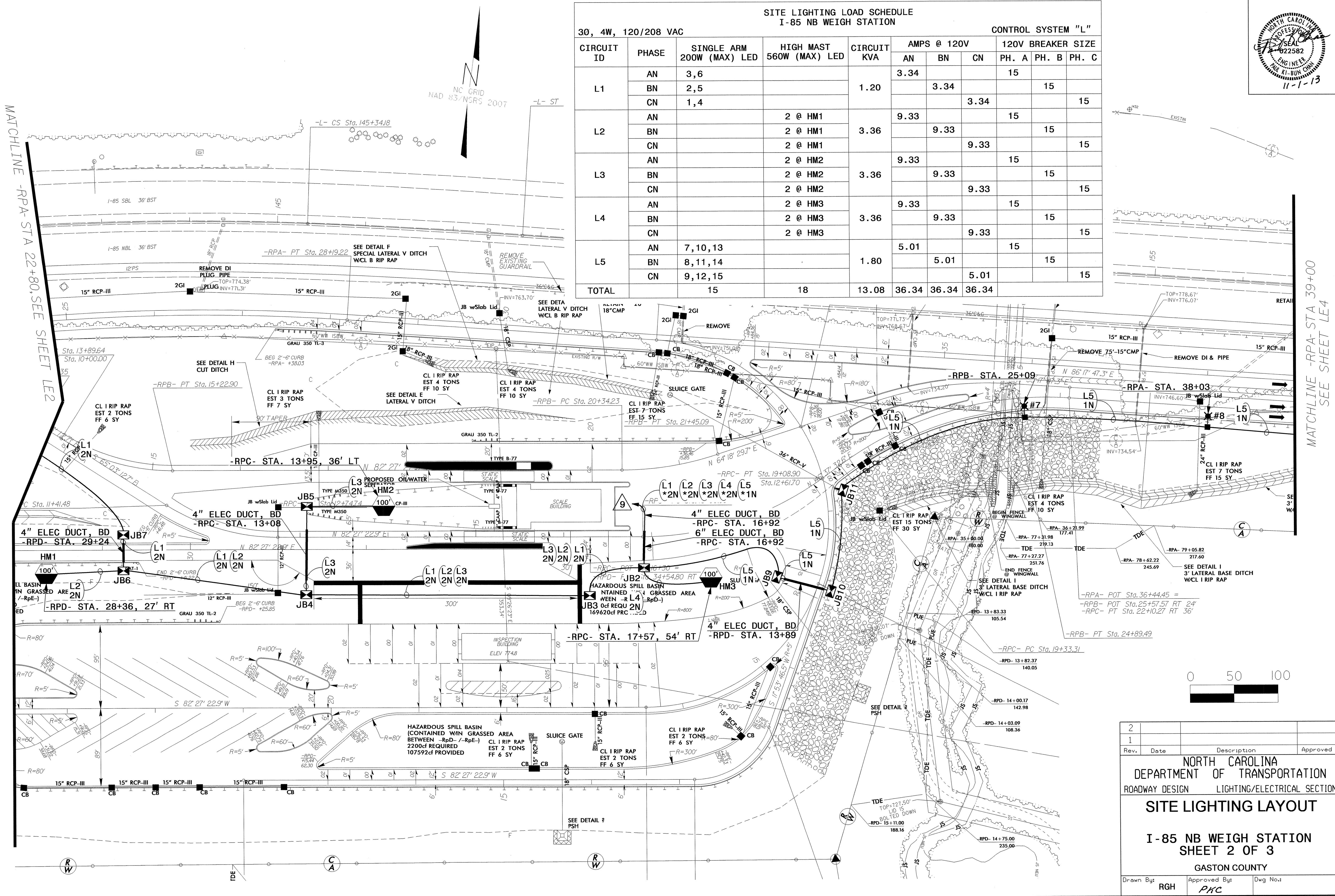


SITE LIGHTING LOAD SCHEDULE
I-85 NB WEIGH STATION

CIRCUIT ID	PHASE	SINGLE ARM 200W (MAX) LED	HIGH MAST 560W (MAX) LED	CIRCUIT KVA	AMPS @ 120V			120V BREAKER SIZE			
					AN	BN	CN	PH. A	PH. B	PH. C	
L1	AN	3,6		1.20	3.34			15			
	BN	2,5				3.34			15		
	CN	1,4					3.34			15	
L2	AN		2 @ HM1	3.36	9.33	9.33		15			
	BN		2 @ HM1							15	
	CN		2 @ HM1						9.33		15
L3	AN		2 @ HM2	3.36	9.33	9.33		15			
	BN		2 @ HM2							15	
	CN		2 @ HM2						9.33		15
L4	AN		2 @ HM3	3.36	9.33	9.33		15			
	BN		2 @ HM3							15	
	CN		2 @ HM3						9.33		15
L5	AN	7,10,13		1.80	5.01	5.01		15			
	BN	8,11,14								15	
	CN	9,12,15							5.01		15
TOTAL		15	18	13.08	36.34	36.34	36.34				

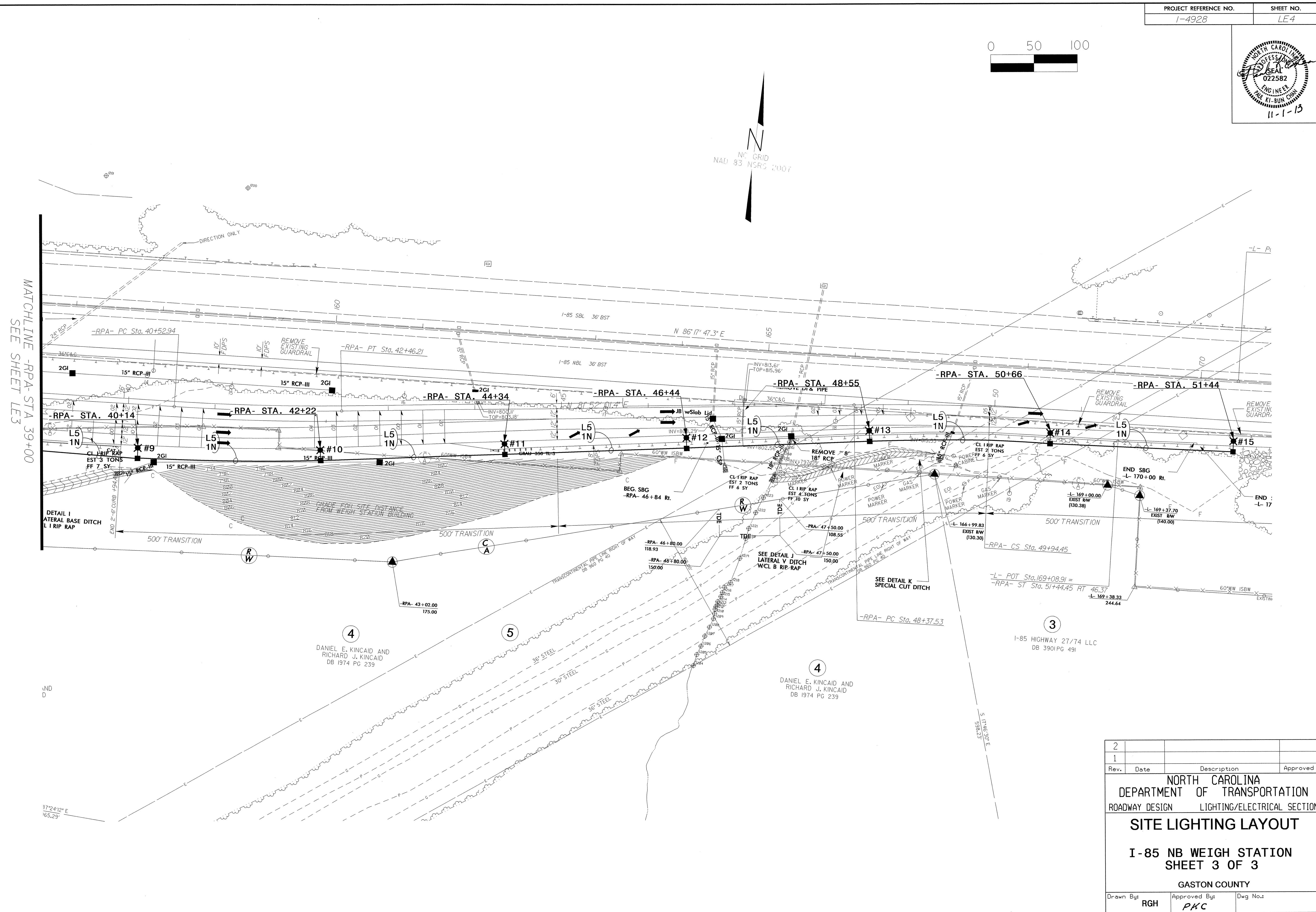
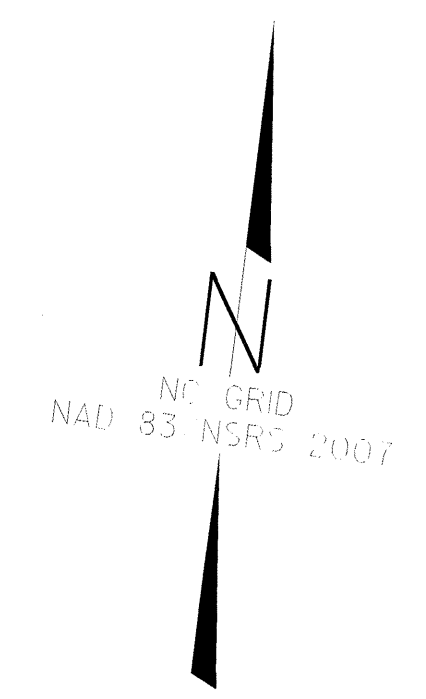
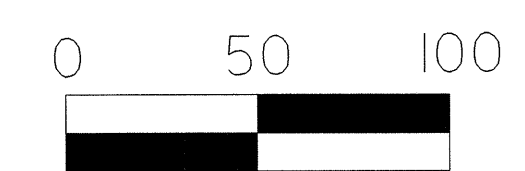
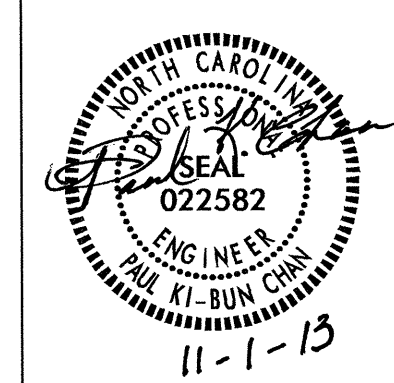
MATCHLINE -RPA- STA 22+80, SEE SHEET LE2

MATCHLINE -RPA- STA 39+00 SEE SHEET LE4



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Rev.	Date	Description	Approved
<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION</p> <p>SITE LIGHTING LAYOUT</p> <p>I-85 NB WEIGH STATION SHEET 2 OF 3</p> <p>GASTON COUNTY</p>			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

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MATCHLINE -RPA- STA. 39+00 SEE SHEET LE-3

DETAIL I
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L1 RIP RAP

37°24'12\"/>

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DANIEL E. KINCAID AND
RICHARD J. KINCAID
DB 1974 PG 239

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DANIEL E. KINCAID AND
RICHARD J. KINCAID
DB 1974 PG 239

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I-85 HIGHWAY 27/74 LLC
DB 3901 PG 491

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ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

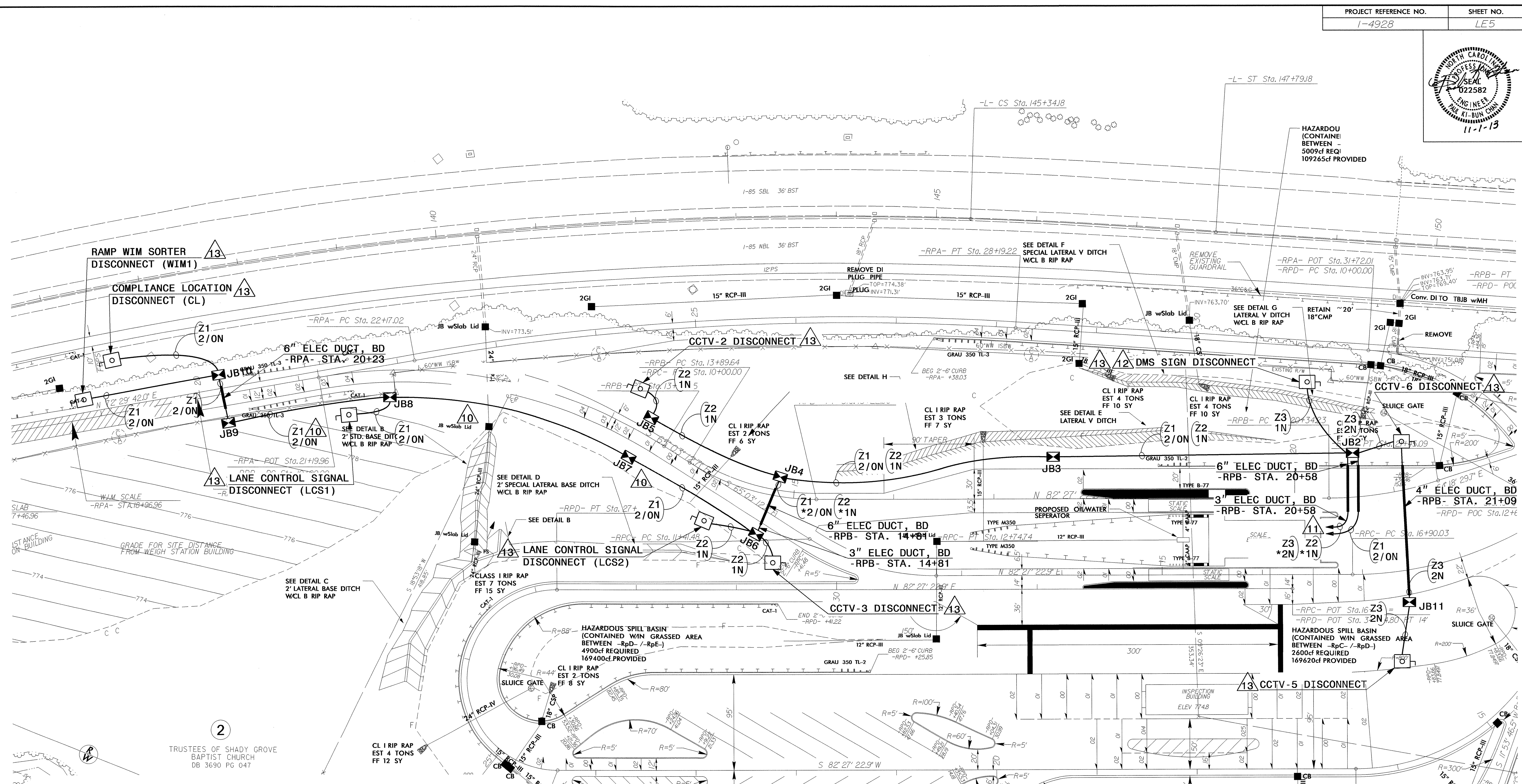
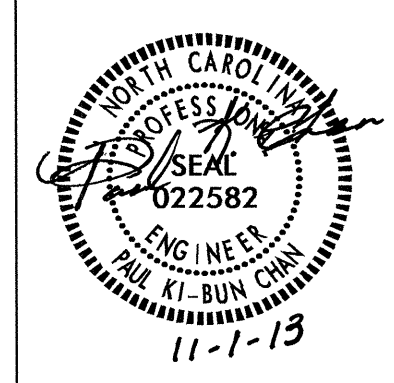
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**I-85 NB WEIGH STATION
SHEET 3 OF 3**

GASTON COUNTY

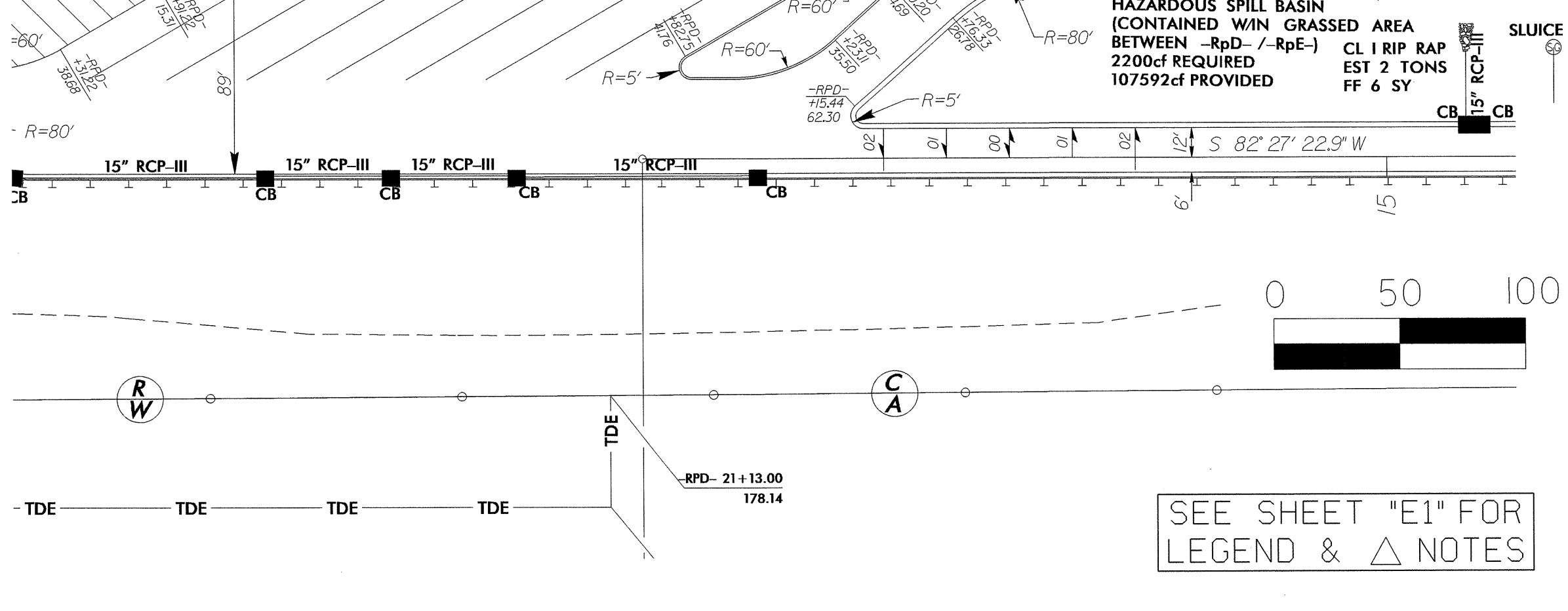
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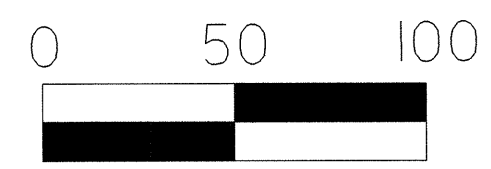


ITS EQUIPMENT LOAD SCHEDULE
I-85 NB WEIGH STATION

CIRCUIT ID	PHASE	CONNECTED LOAD	CIRCUIT KVA	AMPS @ 120V			120V BREAKER SIZE		
				AN	BN	CN	PH. A	PH. B	PH. C
Z1	AN	RAMP WIM SORTER	6.36	18.0			25		
	BN	COMPLIANCE LOCATION			17.0			25	
	CN	LANE USE CONTROL SIGNAL #1				18.0			25
Z2	AN	STANDALONE CCTV-2	6.24	17.0			25		
	BN	STANDALONE CCTV-3			17.0			25	
	CN	LANE USE CONTROL SIGNAL #2				18.0			25
Z3	AN	DMS SIGN, 120/240V	9.58	46.0			60		
	BN	SEE SHEET LE13					DOUBLE POLE		
	CN	STANDALONE CCTV-5 & CCTV-6					34.0		
TOTAL			22.18	58	57	70			



SEE SHEET "E1" FOR LEGEND & Δ NOTES



2
1
Rev. Date Description Approved

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ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

**ITS EQUIPMENT
ELECTRICAL LAYOUT**
I-85 NB WEIGH STATION

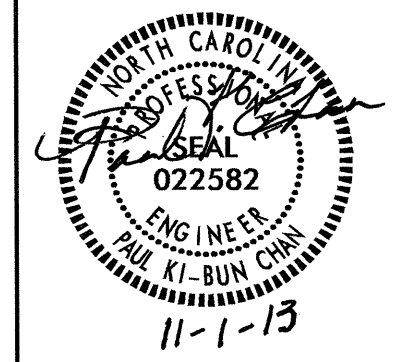
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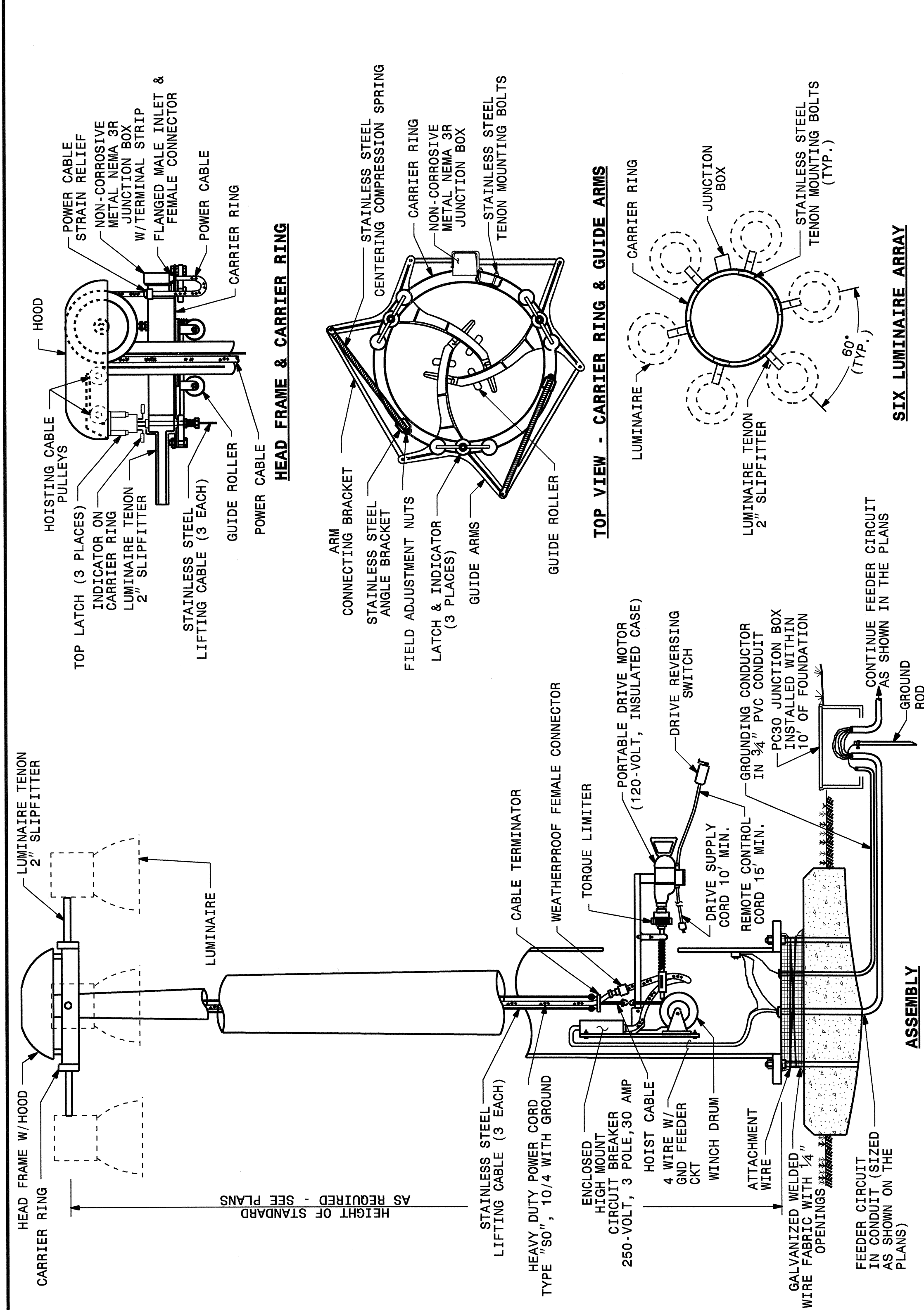


STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT STANDARD
 ASSEMBLY

SHEET 1 OF 2
1401D01



STATE OF NORTH CAROLINA
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 RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT STANDARD
 ASSEMBLY

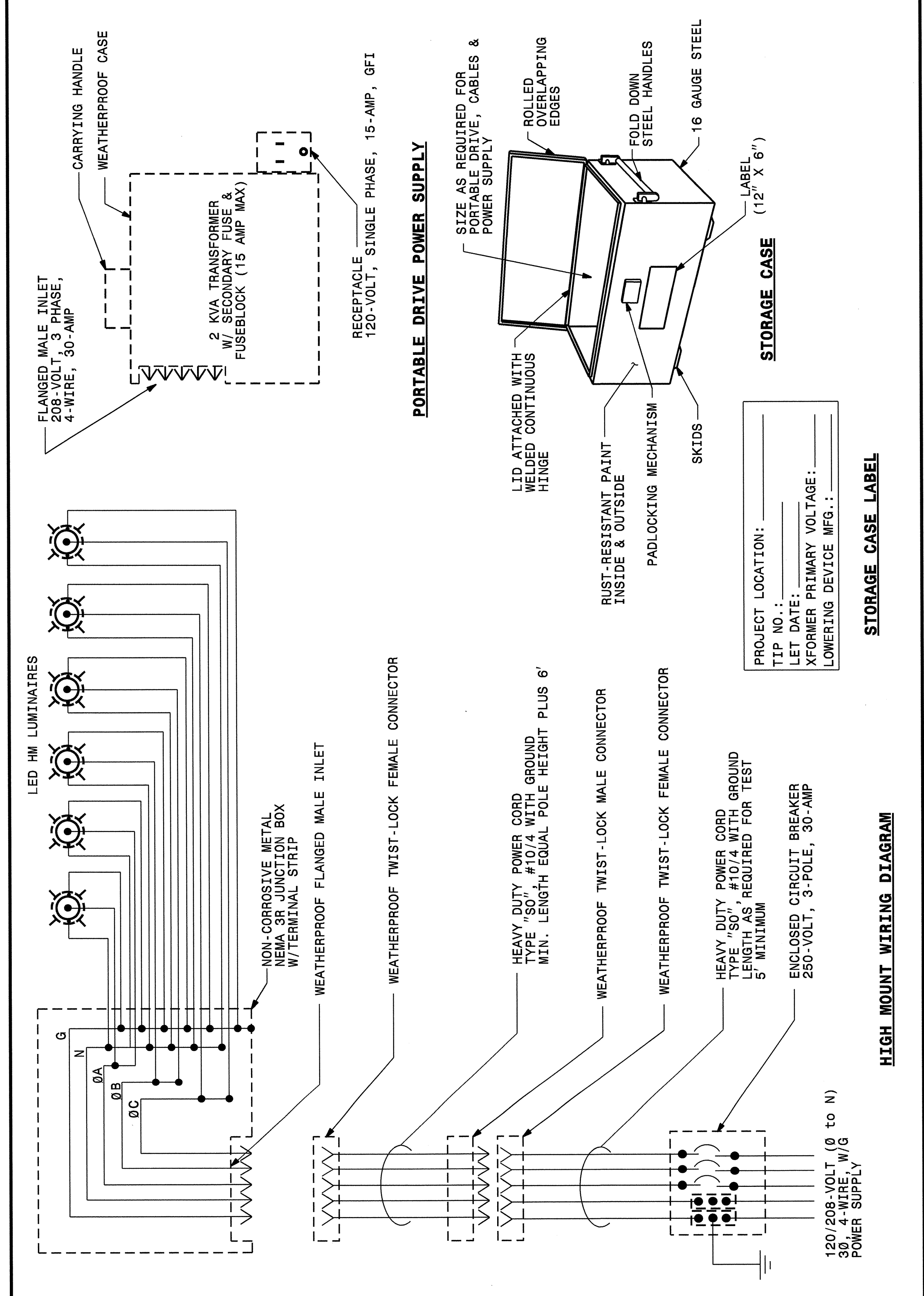
SHEET 1 OF 2
1401D01

STATE OF NORTH CAROLINA
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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT STANDARD
 WIRING DIAGRAM

SHEET 2 OF 2
1401D01



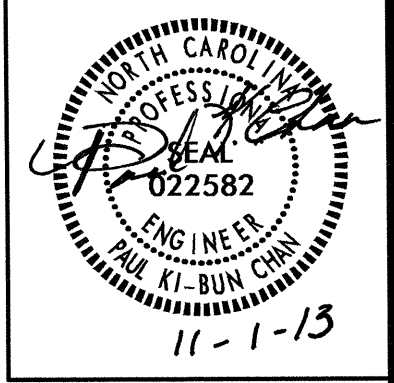
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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT STANDARD
 WIRING DIAGRAM

SHEET 2 OF 2
1401D01

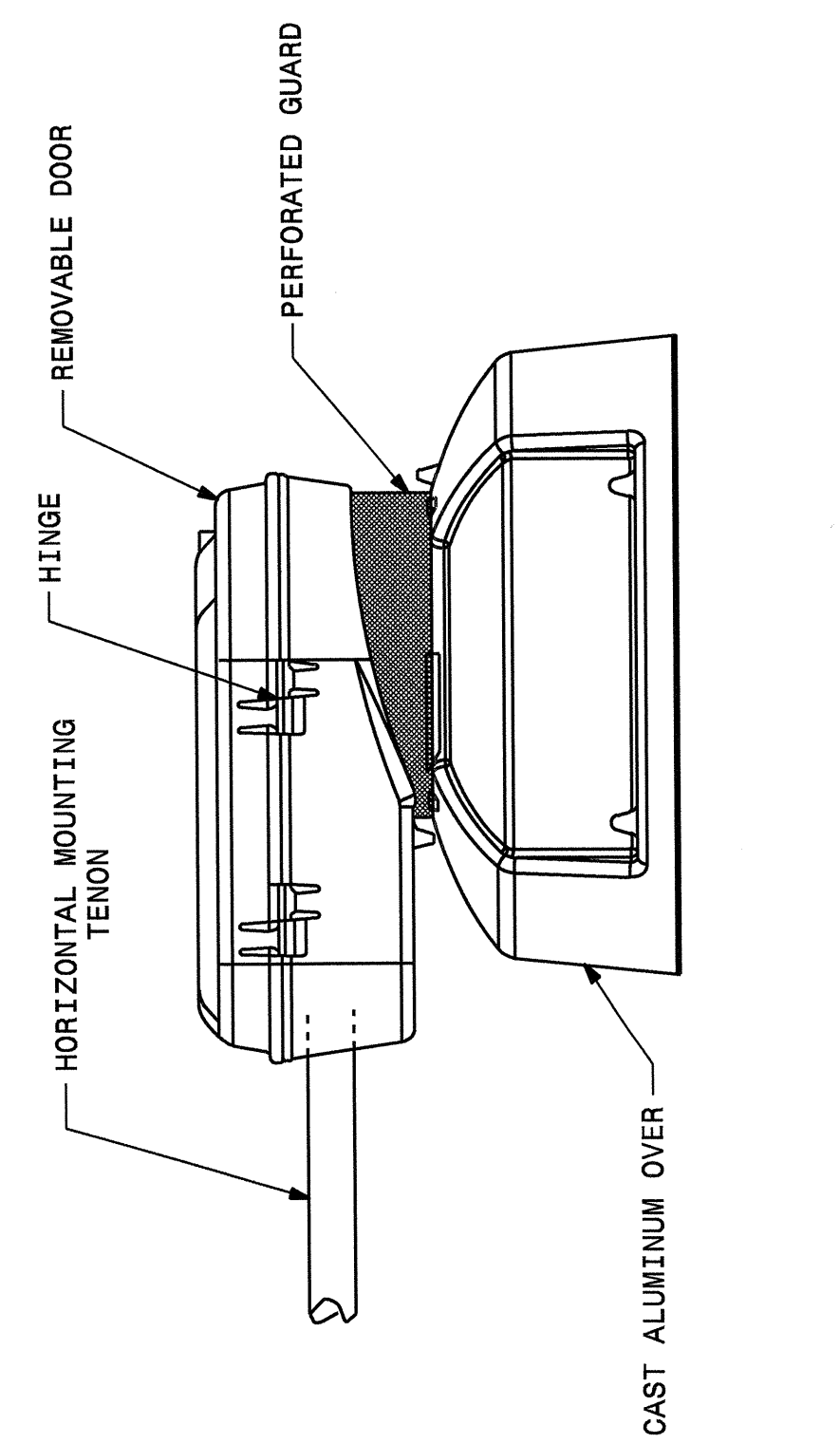
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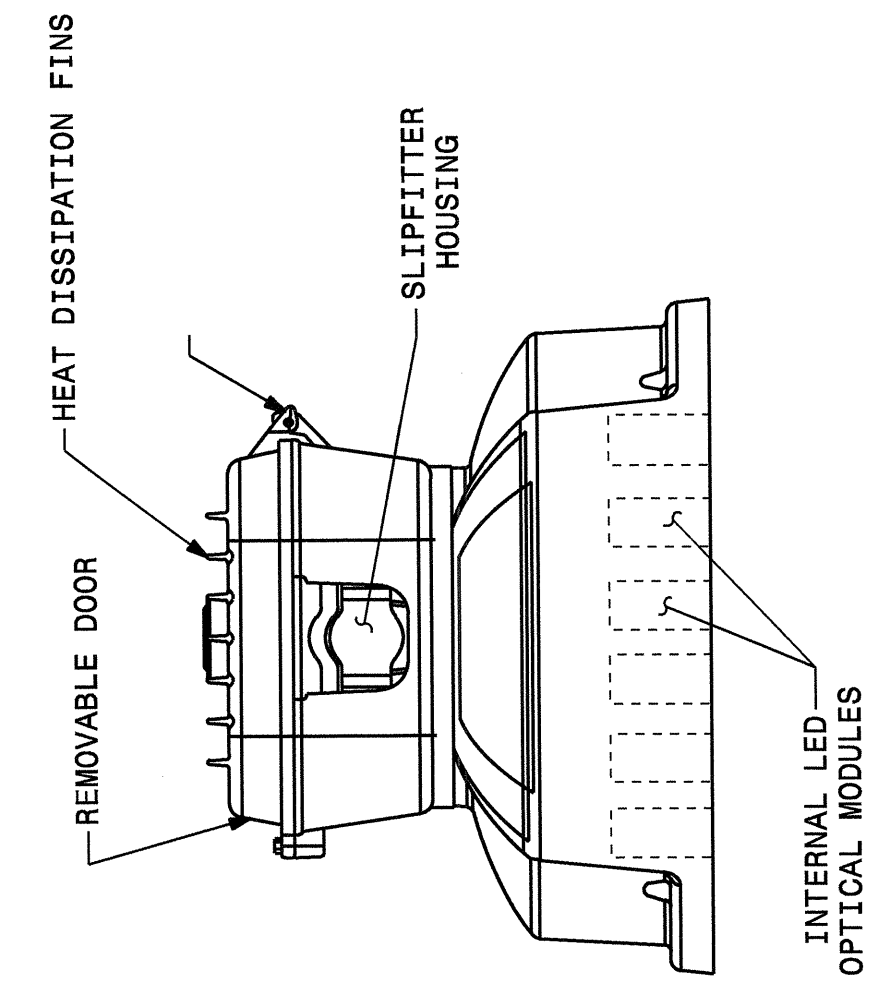
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT LUMINAIRES
AND LED MODULES

SHEET 1 OF 1
1403D01



△ NOTES
△ SEE PLANS FOR WATTAGE AND IES DISTRIBUTION



LED LUMEN PACKAGES △					
NUMBER OF LED MODULES	COLOR TEMP	L70 RATING (HOURS)	MAXIMUM WATTAGE	MINIMUM INITIAL LUMENS	MINIMUM WARRANTY
7	5000K	>100,000	300	22,000	5 YEAR
11	5000K	>100,000	450	34,900	5 YEAR
14	5000K	>100,000	575	41,900	5 YEAR

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT LUMINAIRES
AND LED MODULES

SHEET 1 OF 1
1403D01

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION HIGH MOUNT LED LUMINAIRE DETAILS I-85 NB WEIGH STATION GASTON COUNTY Drawn By: RGH Approved By: PKC Dwg No.:			

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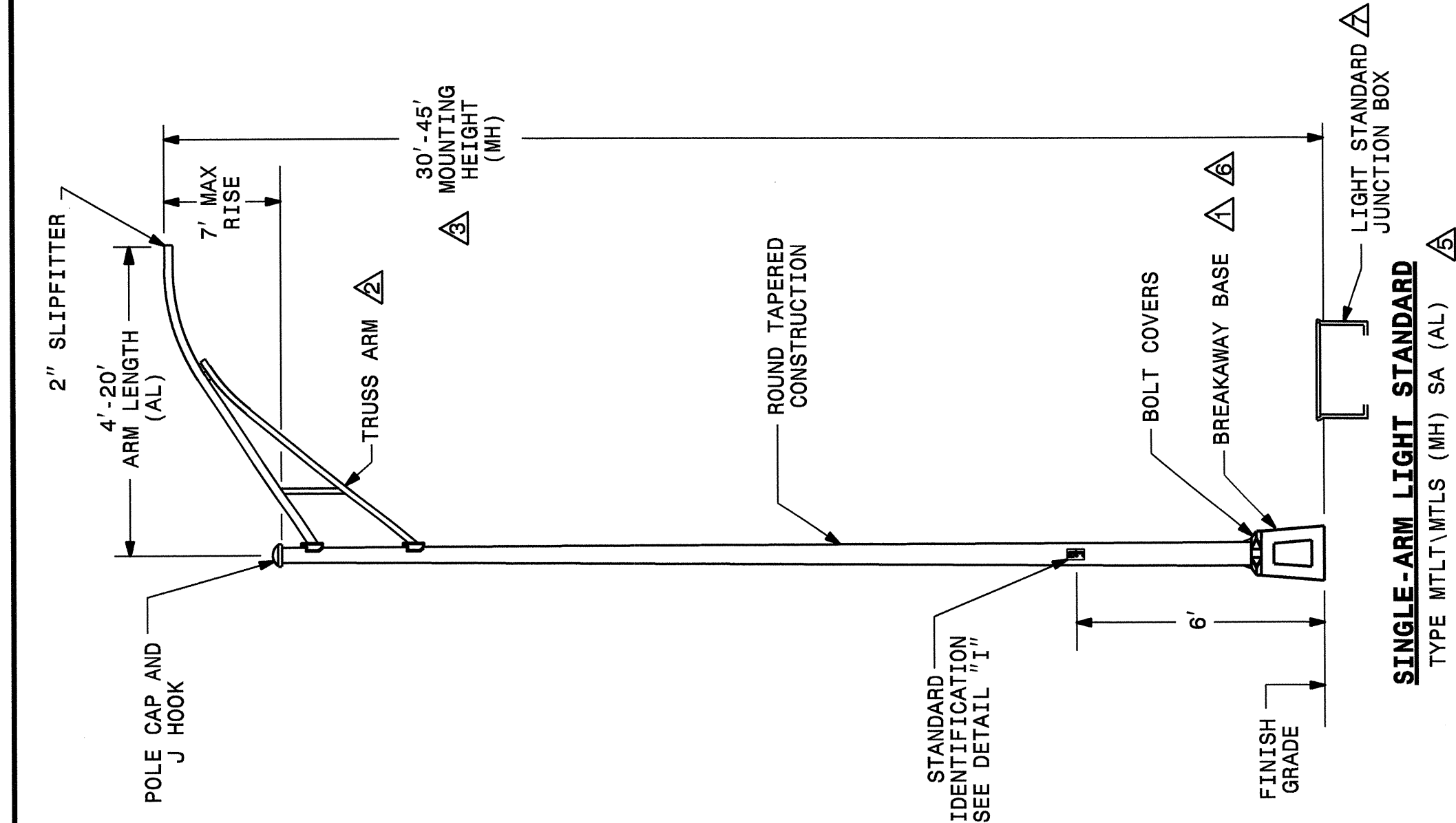
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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

1-12

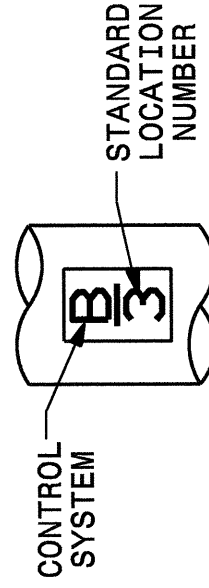
ENGLISH STANDARD DRAWING FOR
LIGHT STANDARDS
 SINGLE-ARM

SHEET 1 OF 3
1404D01

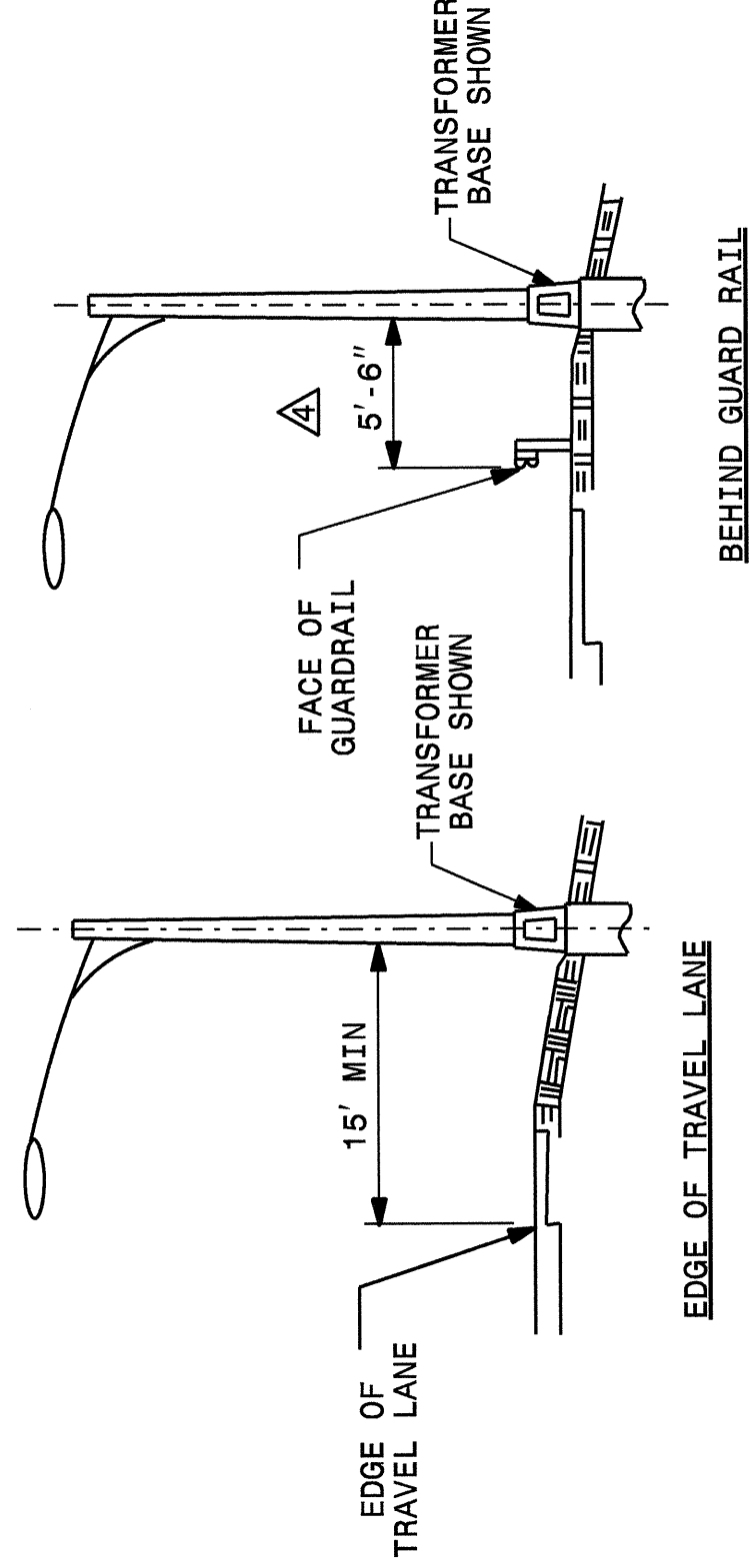


NOTES

- TRANSFORMER BASE SHOWN. OTHER BASES MEETING FASTENING REQUIREMENTS MAY BE PROVIDED AT APPROVAL BY THE ENGINEER. SEE "BASE DETAILS" ON SHEET 2 OF 3.
- SINGLE-MEMBER ARMS MAY BE PROVIDED IN LIEU OF TRUSS ARMS, WHEN SPECIFIED ARM LENGTH IS 8' OR LESS AND MOUNTING HEIGHT IS 35' OR LESS.
- MOUNTING HEIGHT INCLUDES BREAKAWAY BASE FOR LIGHT STANDARDS WITH TRANSFORMER BASES. SEE "BASE DETAILS" ON SHEET 2 OF 3.
- STANDARD PLACEMENT MAY BE REDUCED TO 3'-6" BEHIND FACE OF GUARDRAIL WHEN POSTS ARE SPACED 3'-1 1/2", OR WHERE SPEED LIMIT IS LESS THAN 55 MPH.
- INSERT MOUNTING HEIGHT (MH) AND ARM LENGTH (AL) FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED SINGLE-ARM LIGHT STANDARDS.
- LIGHT STANDARDS MOUNTED ON BRIDGE OUTRIGGERS OR BEHIND RETAINING/BARRIER WALLS DO NOT REQUIRE BREAKAWAY BASES.
- PROVIDE PC30 JUNCTION BOX WITHIN 2' OF SINGLE ARM FOUNDATION. SEE DETAIL SHEET 1406D01 FOR WIRING DETAILS.



DETAIL 'I'
 3" HIGH CHARACTERS
 WITH 3/8" THICK LINES



STANDARD PLACEMENT

SHEET 1 OF 3
1404D01

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

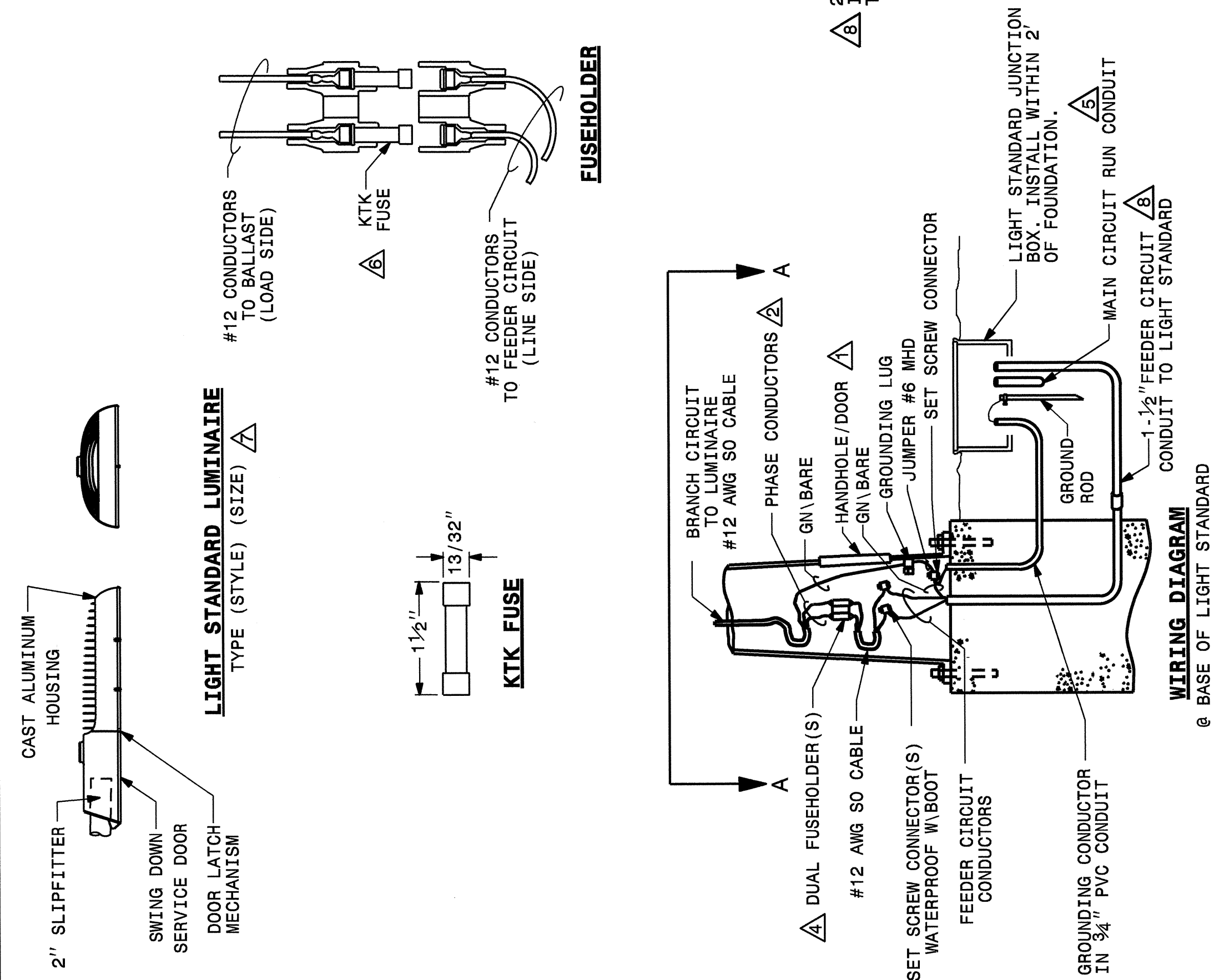
ENGLISH STANDARD DRAWING FOR
LIGHT STANDARDS
 SINGLE-ARM

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
LIGHT STANDARD LUMINAIRES

SHEET 1 OF 1
1406D01



LUMINAIRE CHARACTERISTICS

SPEC	COLOR TEMP	MAX. DRIVE CURRENT (mA)	L70 RATING (HRS.)	MINIMUM INITIAL LUMENS	WARRANTY
TYPE	4000K-4500K	540	70,000	14,500	5 YEAR
200W (MAX) LED FIXTURE					

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.
- MAIN CIRCUIT RUN SHALL CONTAIN 3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR AND 1 GROUND CONDUCTOR ALL IN CONDUIT & SIZED AS SHOWN IN THE PLANS.
- SEE STANDARD SPECIFICATIONS SECTION 1400-2E FOR FUSEHOLDERS.
- INSERT STYLE AND SIZE FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED LUMINAIRES.
- FEEDER CIRCUIT CONDUIT FROM LIGHT STANDARD JUNCTION BOX TO LIGHT STANDARD SHALL CONTAIN 1 PHASE CONDUCTOR, 1 NEUTRAL CONDUCTOR AND 1 GROUND CONDUCTOR IN 1-1/2" CONDUIT AND SIZED AS SHOWN ON THE PLANS. SEE PLANS FOR PROPER PHASE CONNECTION.

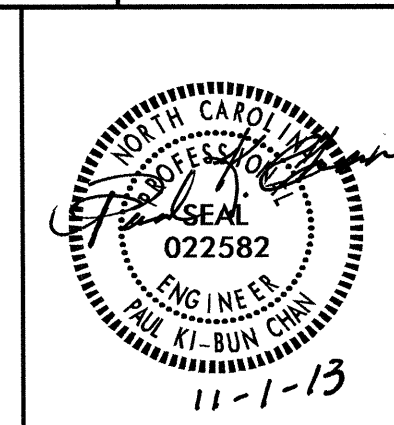
ENGLISH STANDARD DRAWING FOR
LIGHT STANDARD LUMINAIRES

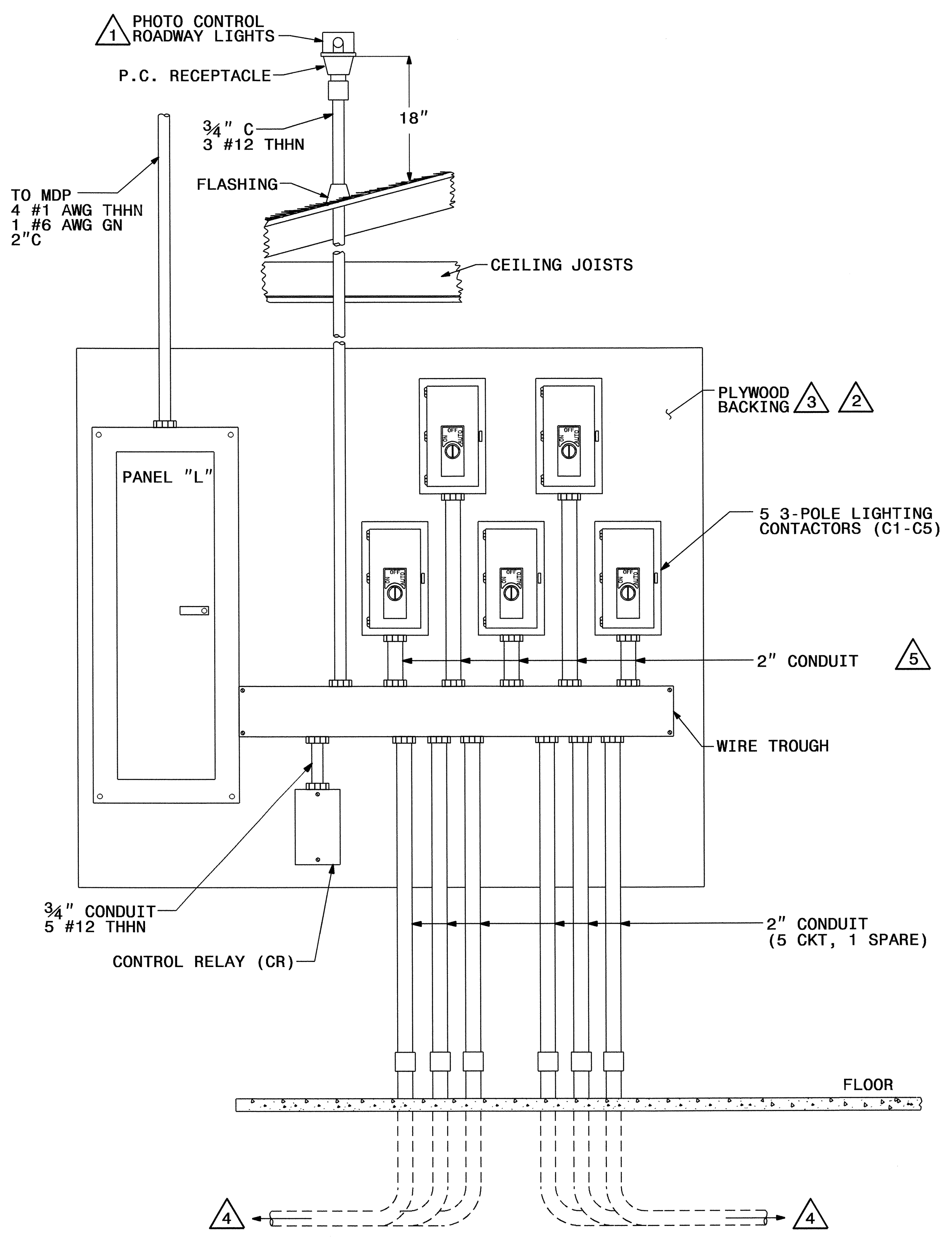
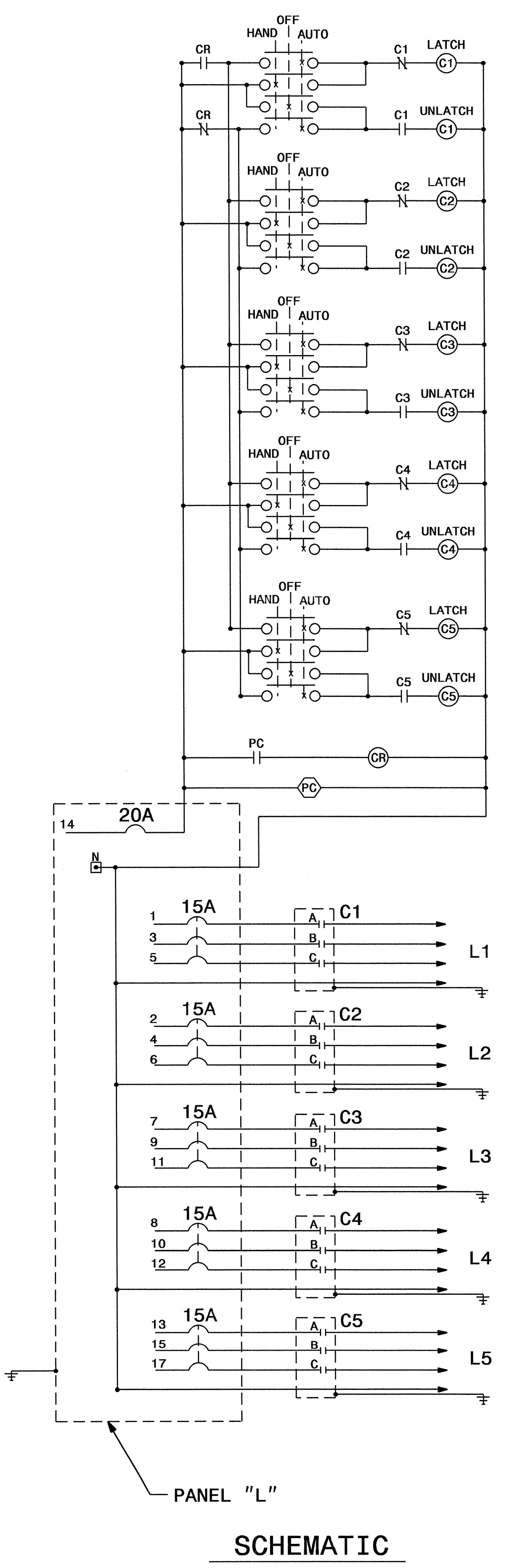
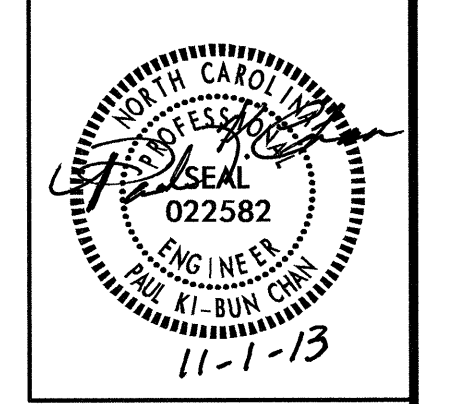
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

SHEET 1 OF 1
1406D01

2			
1			
Rev.	Date	Description	Approved

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
 ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION
SINGLE ARM DETAILS
I-85 NB WEIGH STATION
 GASTON COUNTY
 Drawn By: RGH Approved By: PKC Dwg No.:





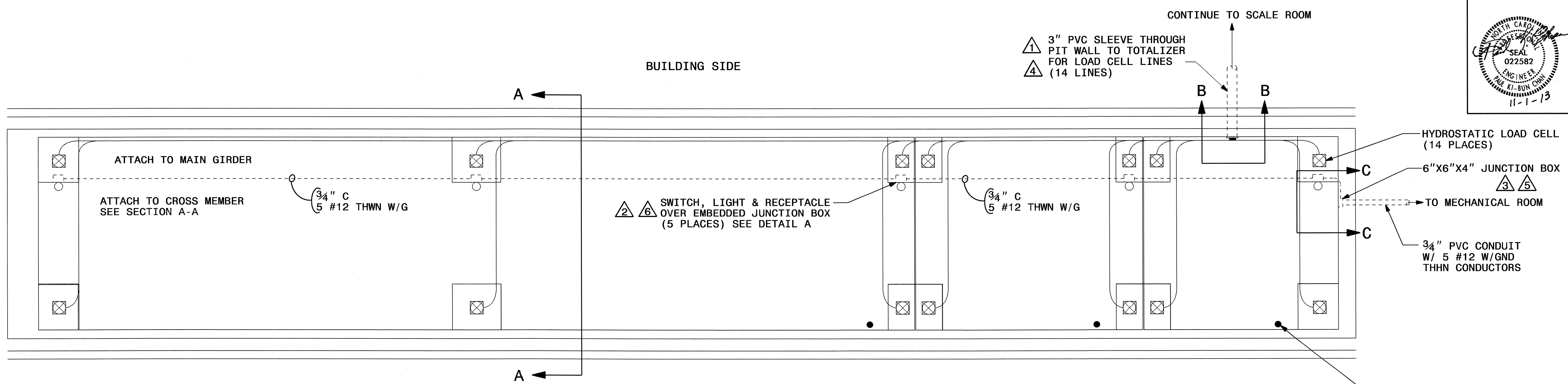
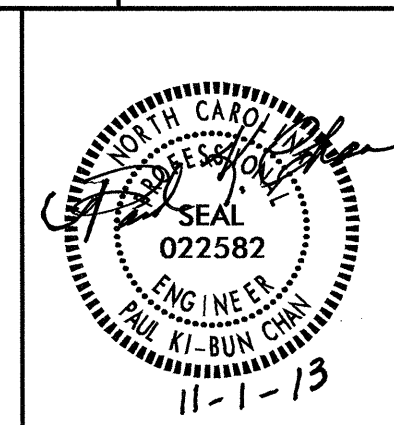
LIGHT CONTROL SYSTEM

NOTES:

- 1 MOUNT PHOTO CONTROL (PC) VERTICALLY, IN UNSHADED AREA.
- 2 SEE SHEET FACILITIES DESIGN POWER PLAN SHEET E3 FOR LOCATION OF LIGHTING CONTROL SYSTEM INSIDE BUILDING.
- 3 PROVIDE PLYWOOD BACKING FOR MOUNTING LIGHTING CONTROL SYSTEM COMPONENTS.
- 4 ROUTE CONDUITS OUTSIDE BUILDING TO JUNCTION BOX LABELED "SITE LIGHTING" AS SHOWN ON FACILITIES DESIGN POWER PLAN SHEET E3.
- 5 PROVIDE #8 AWG CONDUCTORS BETWEEN CIRCUIT BREAKERS IN PANEL "L" AND CONTACTORS C1, C2 AND C3

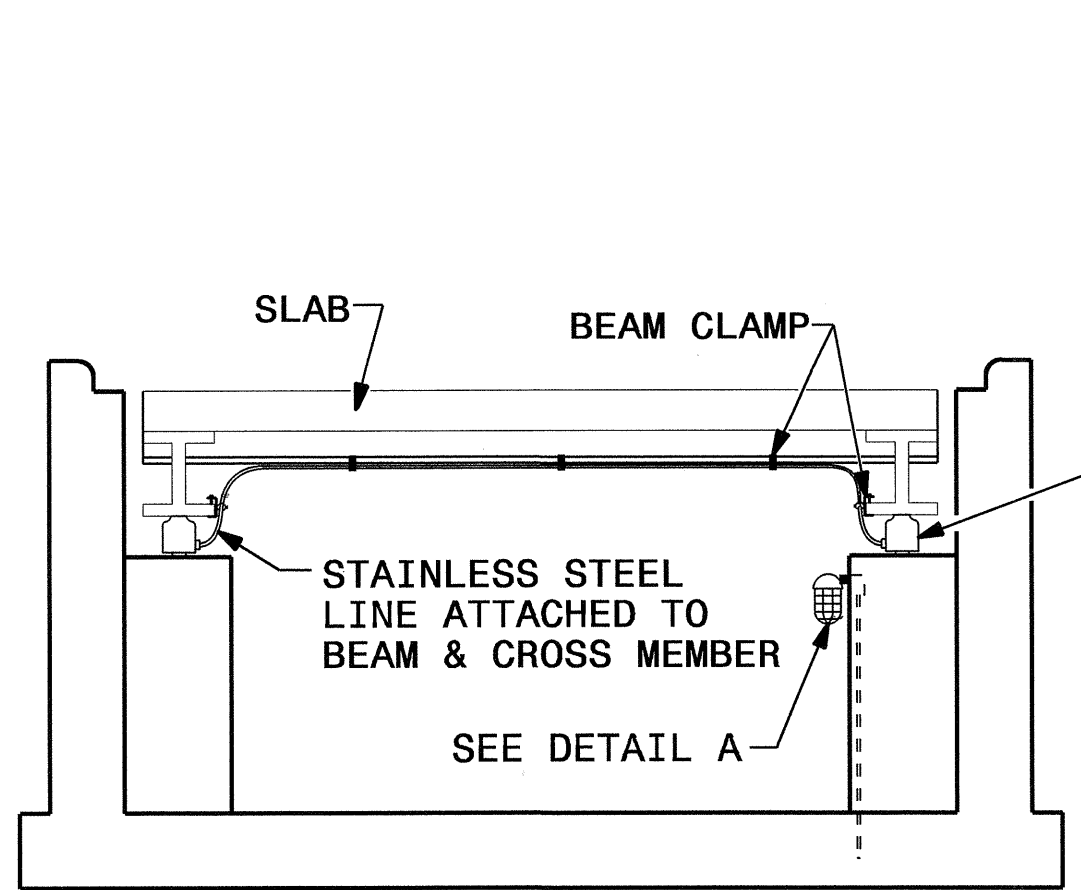
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION ROADWAY LIGHTING CONTROL SYSTEM TYPICAL DETAILS I-85 NB WEIGH STATION GASTON COUNTY			
Drawn By	RGH	Approved By	PKC
		Dwg No.	

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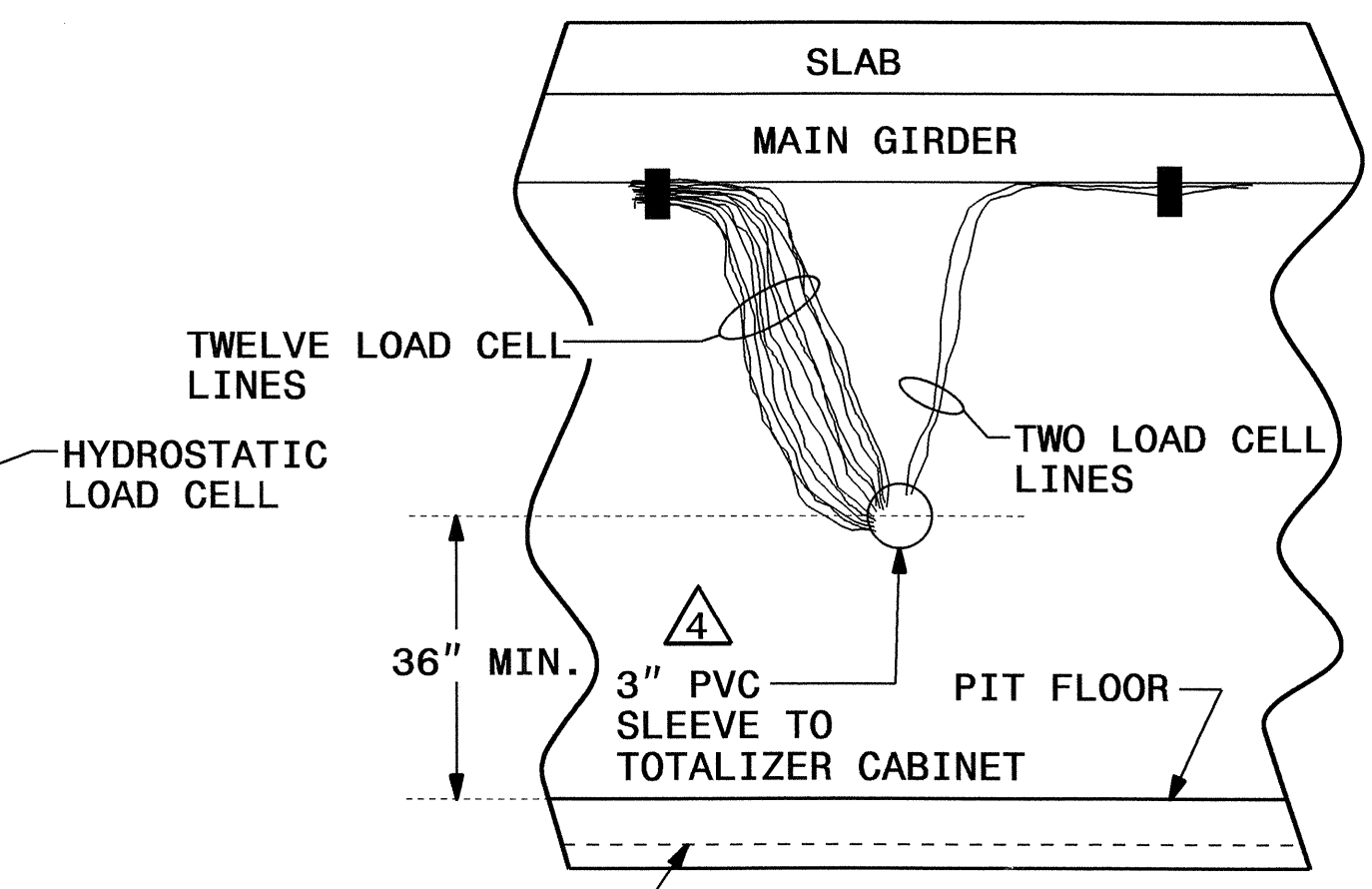


SCALE PIT ELECTRICAL LAYOUT, EAST SIDE

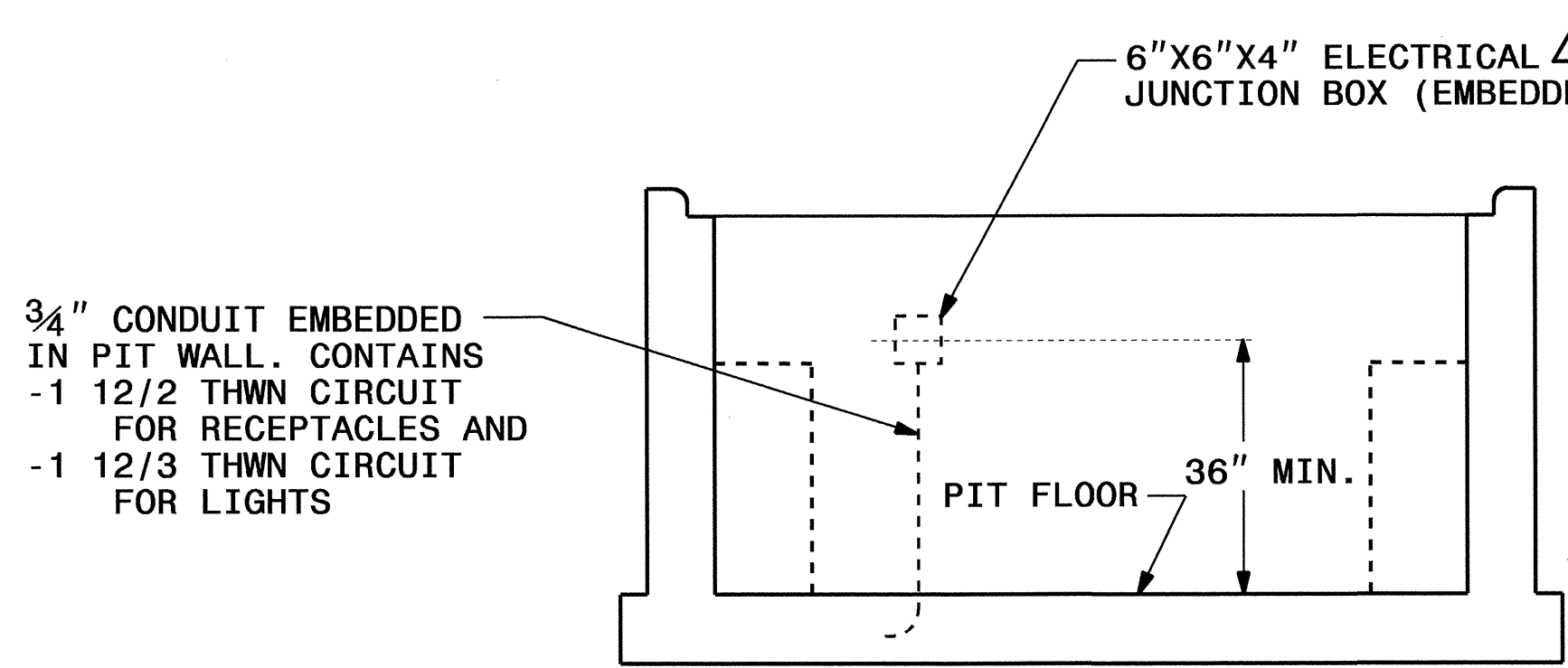
MIRROR INSTALLATION IN PIT ON WEST SIDE OF BUILDING



SECTION A-A

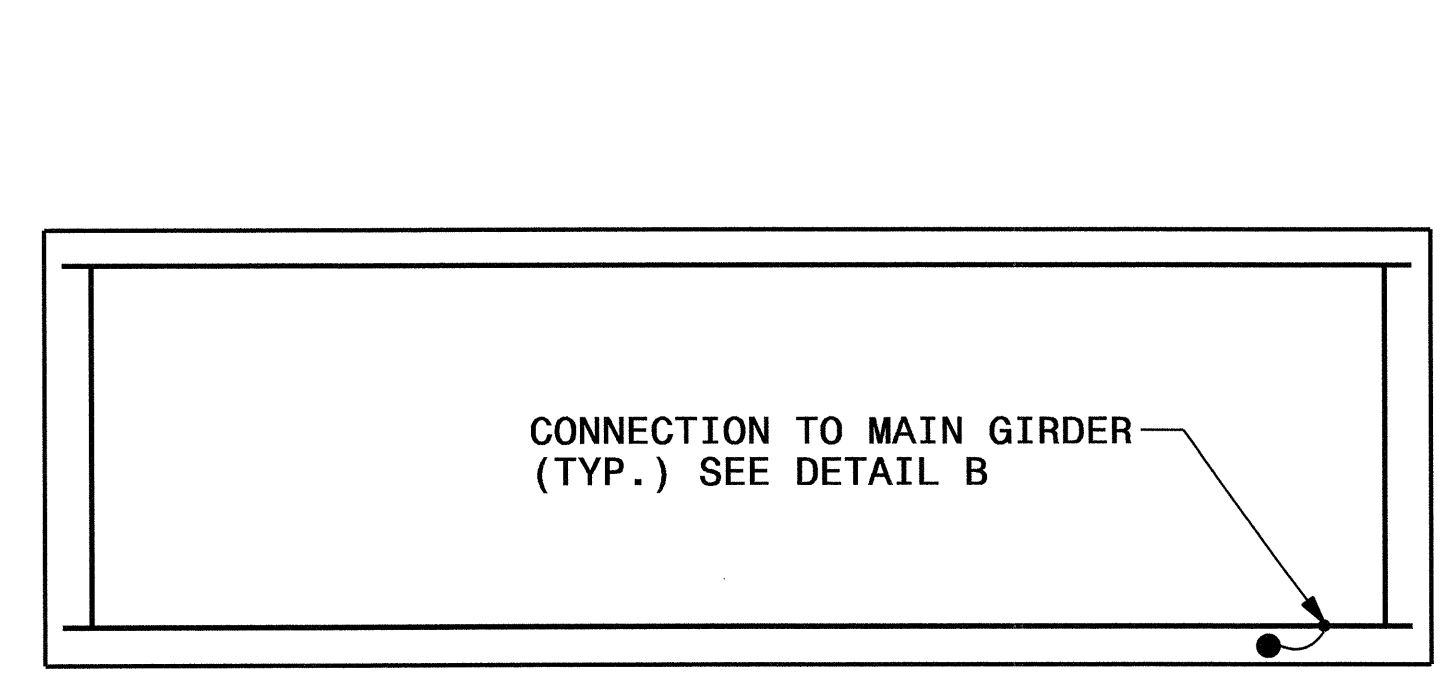


SECTION B-B

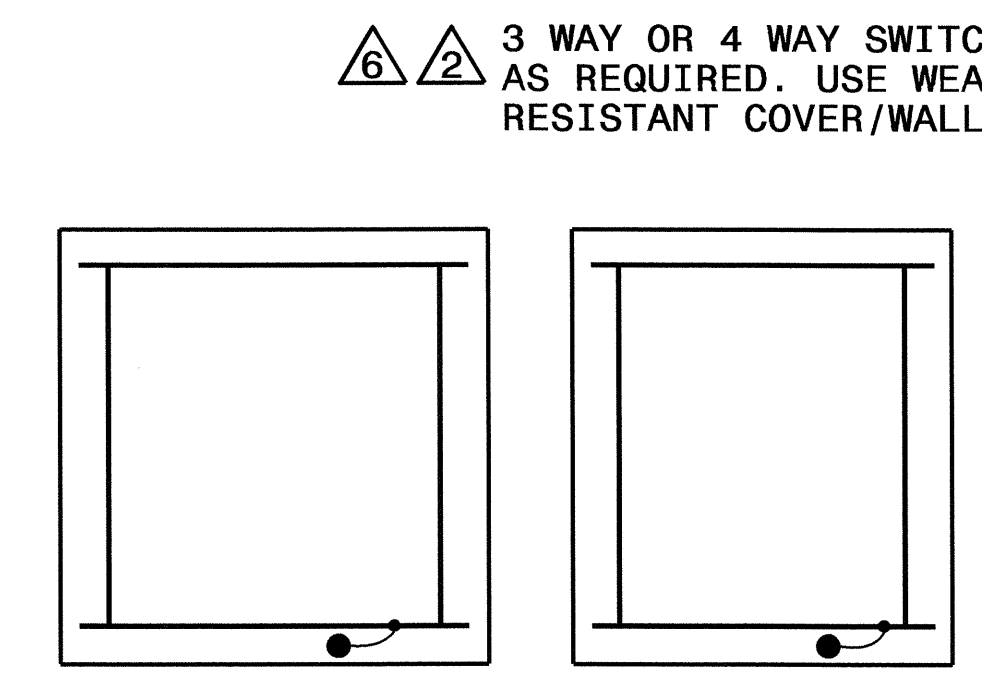


SECTION C-C
SLAB AND GIRDER NOT SHOWN

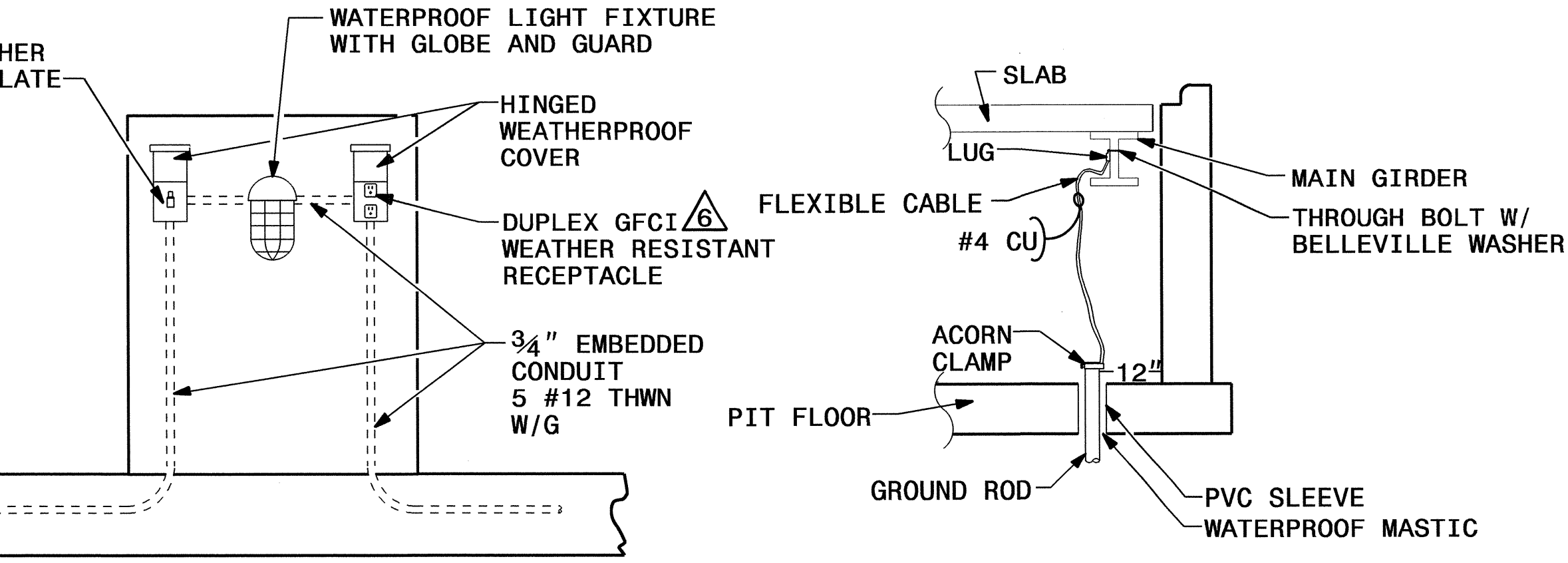
- 1 3" CONDUIT FOR HYDRAULIC LINES SHALL EXIT PIT ON BUILDING SIDE AND EXTEND INTO SCALE ROOM AS SHOWN ON SHEET LE11. SEE FACILITIES DESIGN PLANS FOR EXACT LOCATION.
- 2 PROVIDE CIRCUITRY AND SWITCHES TO OPERATE ALL LIGHTS FROM EACH SWITCH LOCATION.
- 3 PROVIDE 3/4" CONDUIT FROM PIT TO MECHANICAL ROOM. INSTALL 5 #12 W/GND THHN CONDUCTORS AND CONNECT TO PANEL "A" IN MECHANICAL ROOM.
- 4 FEED STAINLESS STEEL LOAD CELL LINES THROUGH 3" CONDUIT SLEEVE TO SUMMING TOTALIZER.
- 5 JUNCTION BOX EMBEDDED FLUSH IN PIT WALL. PROVIDE AND INSTALL GASKETED COVER.
- 6 JUNCTION BOXES USED AT LIGHT FIXTURES, RECEPTACLES AND 3-WAY/4-WAY LIGHT SWITCHES SHALL HAVE A MINIMUM CAPACITY OF 40 CUBIC INCHES AND BE EMBEDDED IN PILLAR.



GROUND ROD SYSTEM



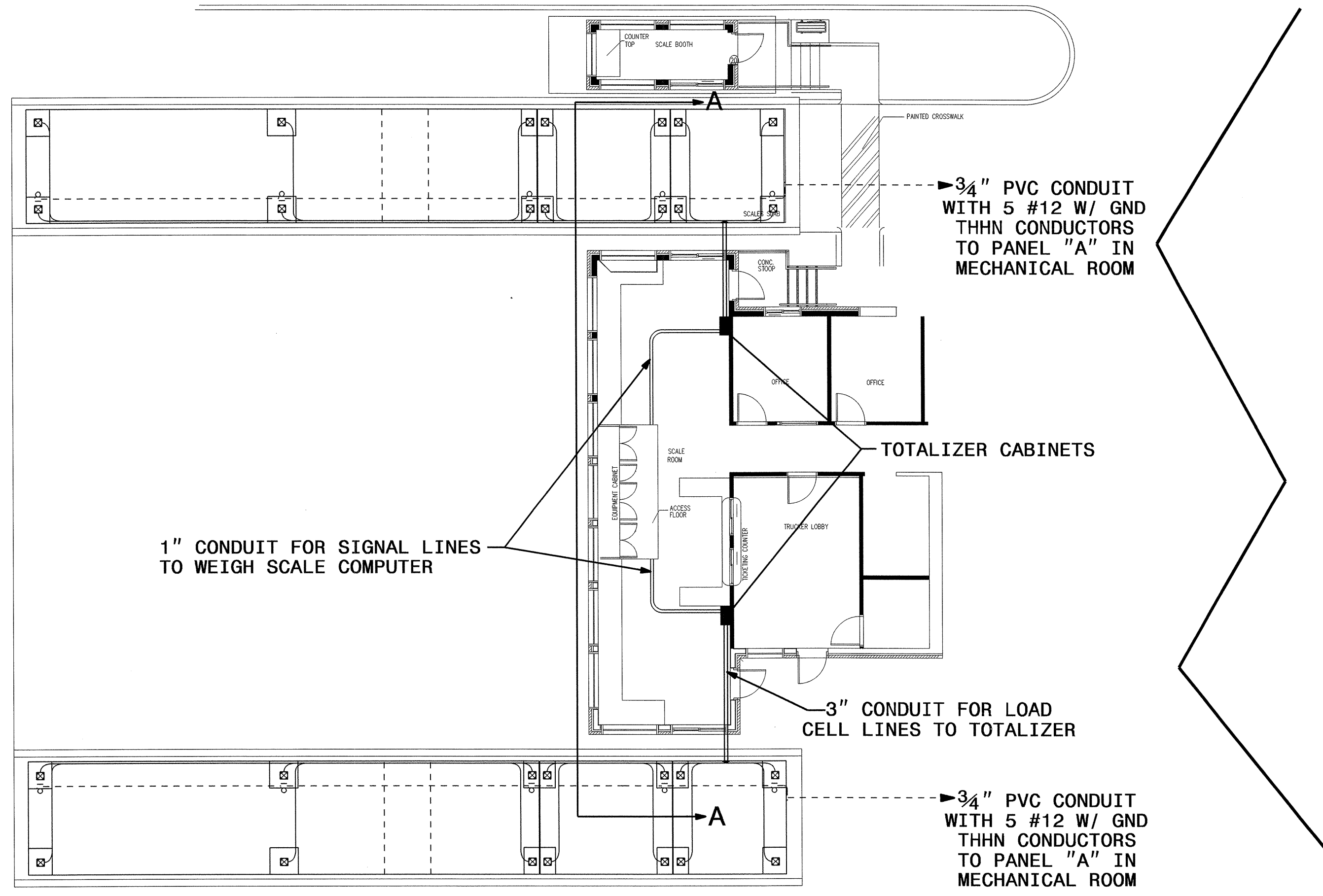
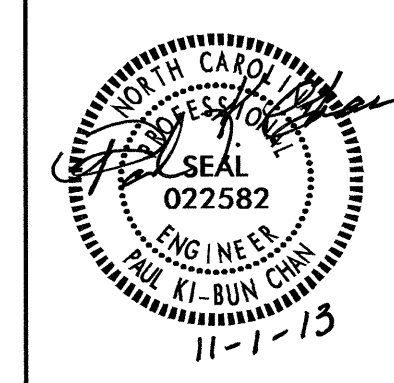
DETAIL A



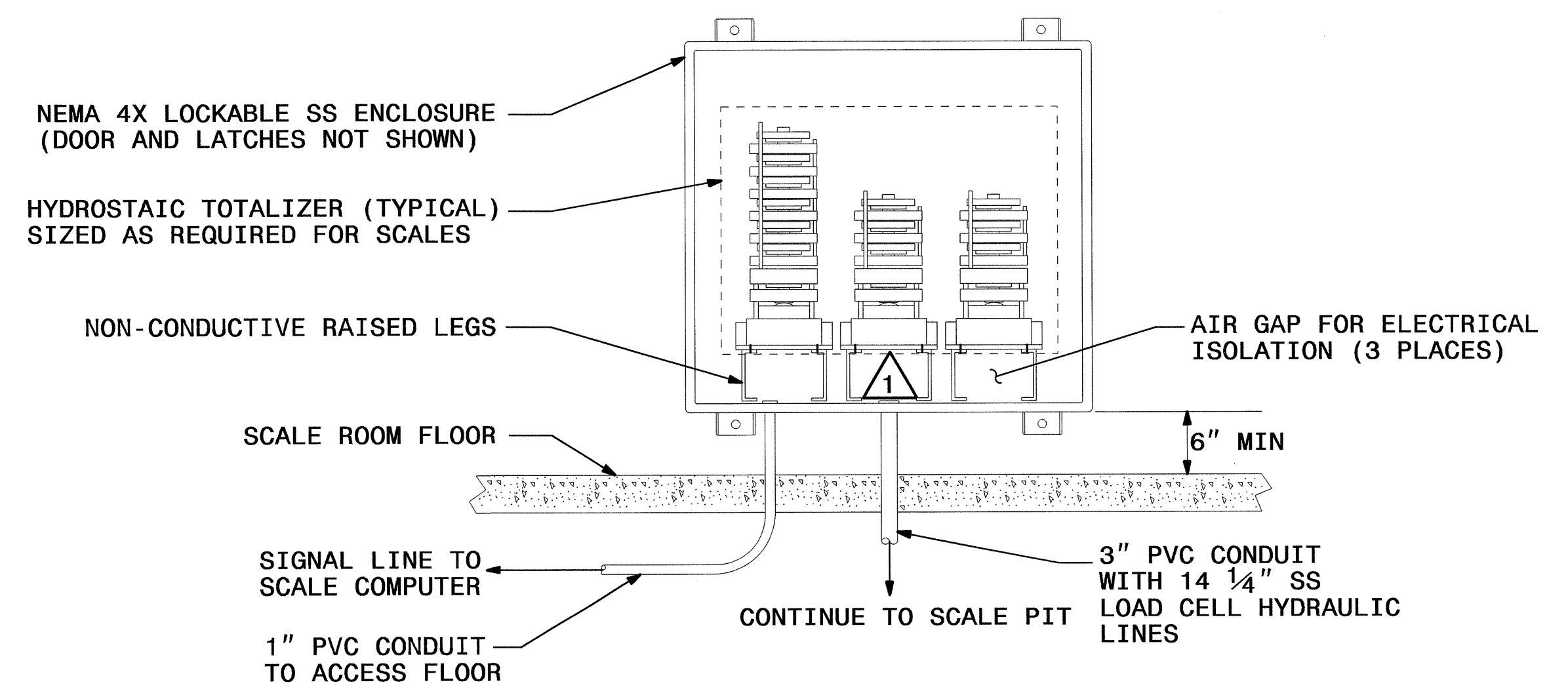
DETAIL B

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION SCALE PIT ELECTRICAL DETAILS I-85 NB WEIGH STATION GASTON COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

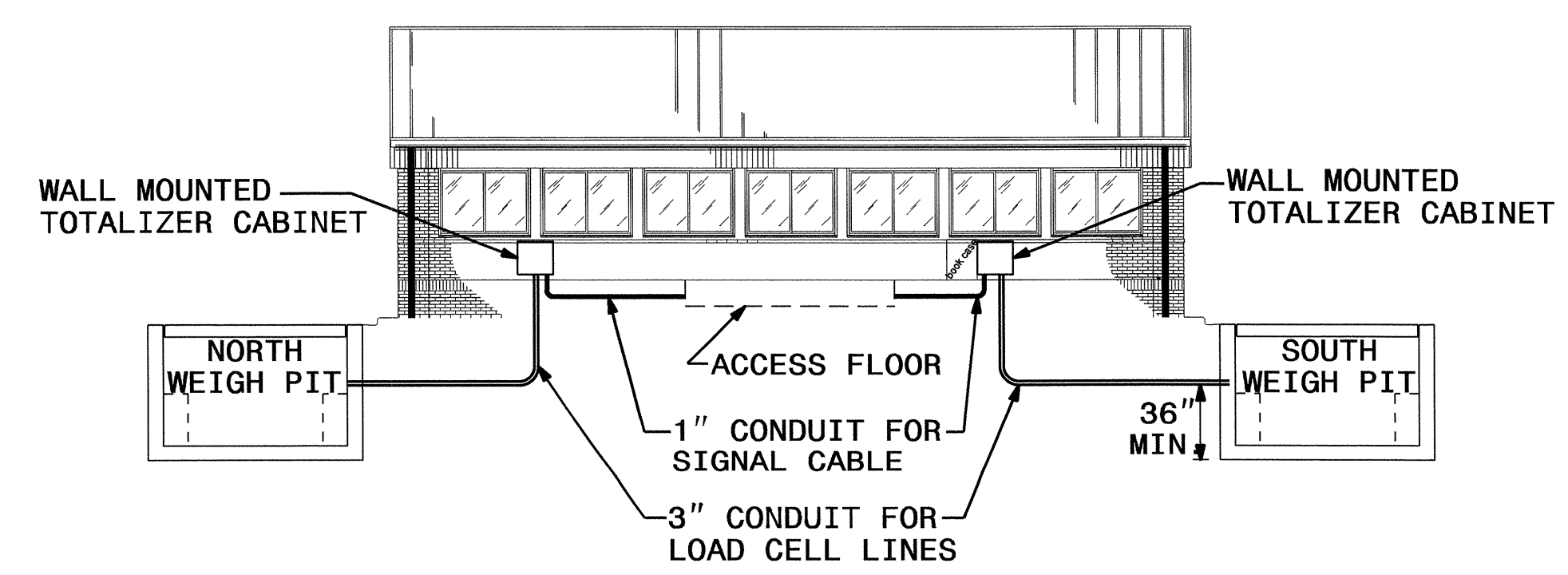
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TOTALIZER LOCATIONS IN SCALE BUILDING



LOAD CELL TOTALIZER AND CABINET ASSEMBLY



VIEW A-A
FRONT OF BUILDING

NOTES:

- 1. TRANSITION FROM 1/4" STAINLESS STEEL HYDRAULIC LINES TO NON-CONDUCTIVE LINES PRIOR TO ATTACHING LINES TO SUMMING TOTALIZERS. CONNECT PER MANUFACTURER'S RECOMMENDATIONS.
- 2. TERMINATE 1" SIGNAL CABLE CONDUIT IN ACCESS FLOOR IN FRONT OF EQUIPMENT CABINET.
- 3. SEE FACILITIES DESIGN PLANS FOR ADDITIONAL CONDUIT ROUTING DETAILS.

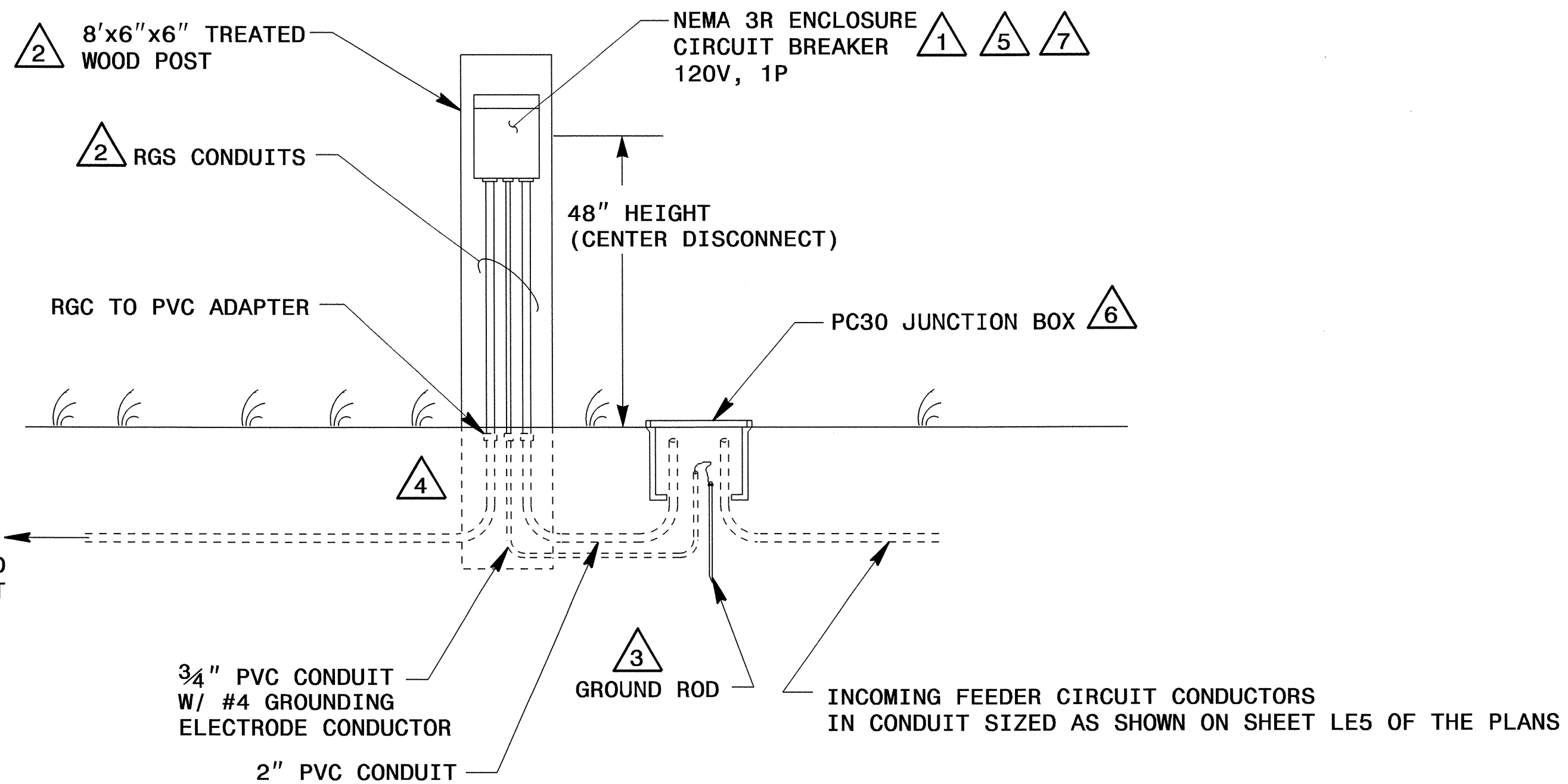
Rev.	Date	Description	Approved
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**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION**

**SUMMING TOTALIZER
DETAILS AND LOCATION
I-85 NB WEIGH STATION
GASTON COUNTY**

Drawn By: RGH	Approved By: PKC	Dwg No.:
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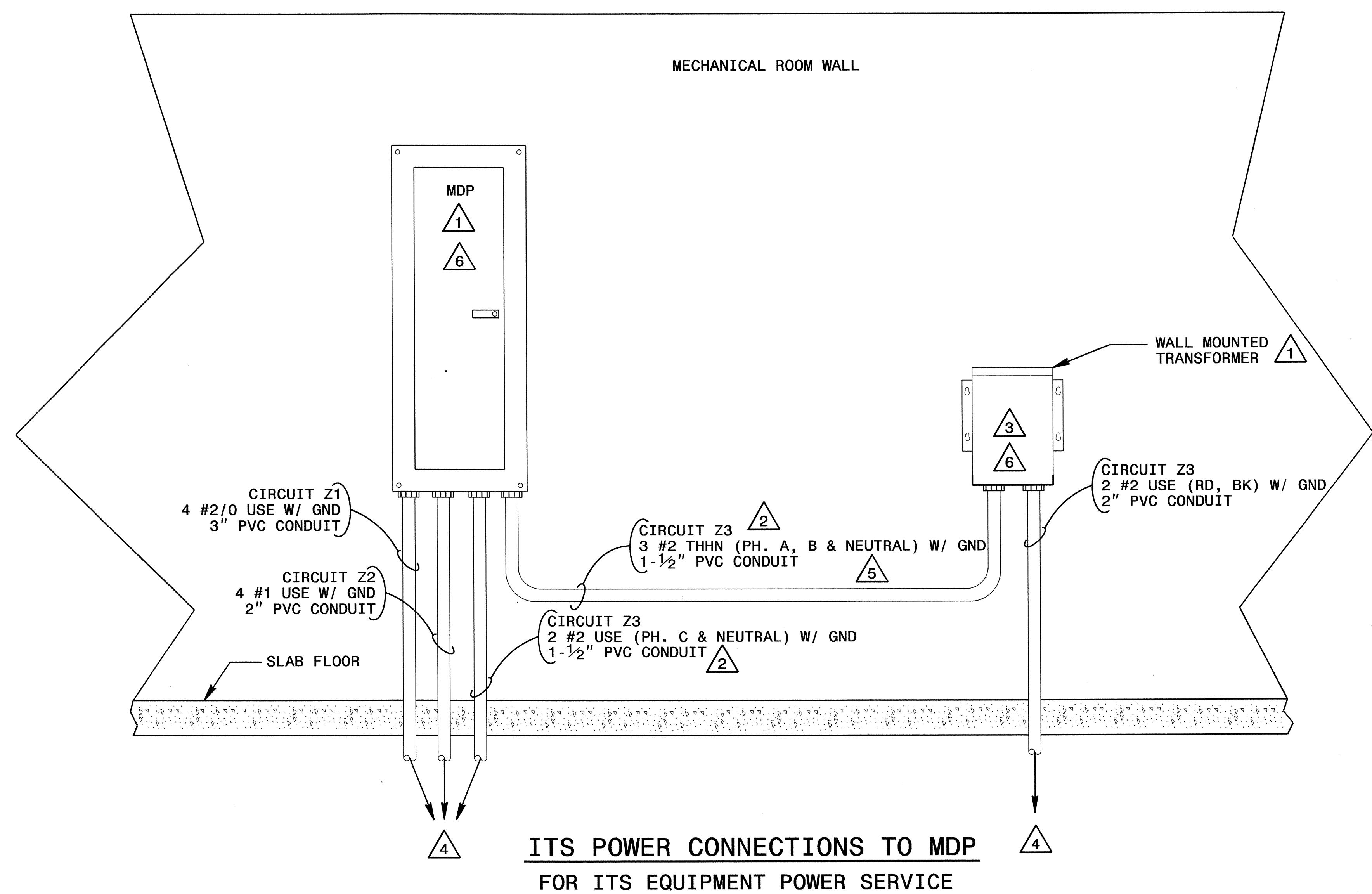
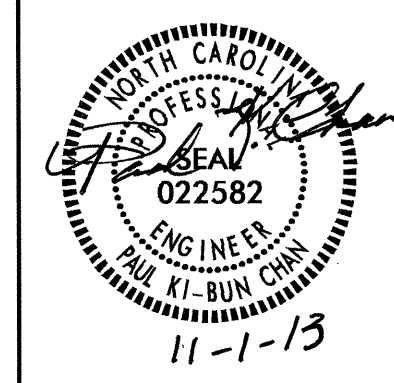
**POST MOUNTED DISCONNECT
FOR ITS EQUIPMENT POWER SERVICE**

NOTES:

- 1 SEE TABLE "DISCONNECT BREAKER SIZES" THIS SHEET FOR BREAKER SIZING. REFER TO LOAD SCHEDULE ON SHEET LE5 FOR PHASE ASSIGNMENT.
- 2 ADD TREATED WOOD PANEL TO POST AS REQUIRED TO SECURELY MOUNT CIRCUIT BREAKER ENCLOSURE. INSTALL GALVANIZED CONDUIT STANDOFFS AND BRACKETS TO POST FOR CONDUIT ATTACHMENT.
- 3 PERMANENTLY ATTACH GROUNDING CONDUCTOR TO GROUND ROD USING EXOTHERMIC WELD.
- 4 EMBED WOOD POST IN GROUND A MINIMUM OF 36". BACK FILL AND COMPACT FILL MATERIAL TO SECURE POST IN GROUND.
- 5 BOND RGS CONDUITS TO CIRCUIT BREAKER ENCLOSURE WITH GROUNDING BUSHING AND BONDING JUMPER.
- 6 INSTALL PC30 JUNCTION BOX WITHIN 2' OF WOOD POST.
- 7 USE APPROPRIATELY SIZED TERMINAL LUGS TO ATTACH OVERSIZED CONDUCTORS TO CIRCUIT BREAKER. DO NOT SNIP STRANDS OF CONDUCTOR TO FIT LUG.
- 8 USE SINGLE POLE 120V CIRCUIT BREAKERS IN ALL DISCONNECTS EXCEPT FOR DISCONNECT FOR DMS SIGN. AT DMS SIGN DISCONNECT USE DOUBLE POLE BREAKER FOR 120/240V SINGLE PHASE SERVICE TO SIGN.

DISCONNECT BREAKER SIZES 8		
EQUIPMENT	DESIGN LOAD (AMPS)	BREAKER SIZE (AMPS)
RAMP WIM SORTER	18	25
COMPLIANCE LOCATION	17	25
LANE USE CONTROL SIGNAL #1	18	25
STANDALONE CCTV-2	17	25
STANDALONE CCTV-3	17	25
LANE USE CONTROL SIGNAL #2	18	25
DMS SIGN, 120/240V	46	60
STANDALONE CCTV-5	17	25
STANDALONE CCTV-6	17	25

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION			
ITS EQUIPMENT DISCONNECT DETAILS I-85 NB WEIGH STATION			
GASTON COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			



**ITS POWER CONNECTIONS TO MDP
FOR ITS EQUIPMENT POWER SERVICE**

NOTES:

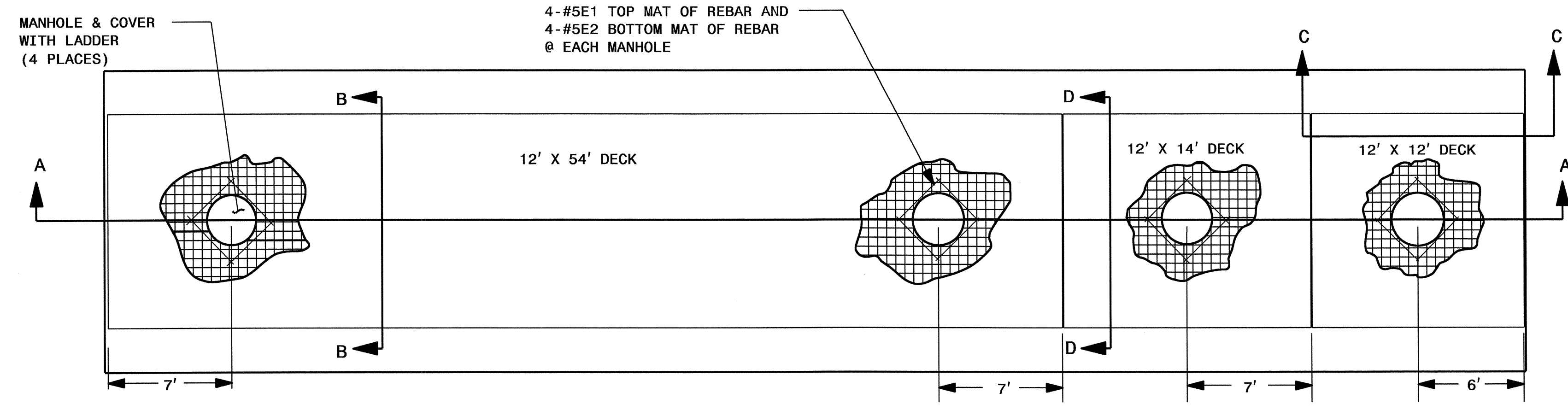
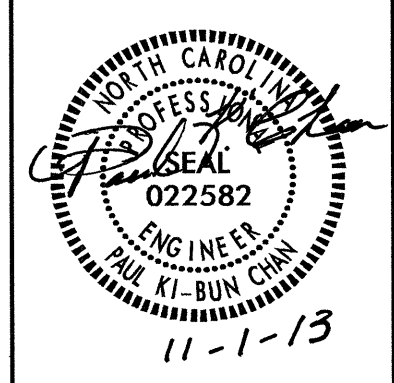
- 1 SEE FACILITIES DESIGN PLANS FOR ACTUAL MDP AND TRANSFORMER LOCATIONS.
- 2 PHASE A AND B OF CIRCUIT Z3 WILL BE FED TO TRANSFORMER FOR POWER TO PROPOSED DMS SIGN ASSEMBLY. PHASE C SHALL BE USED TO POWER CCTV-5 AND CCTV-6. SEE PLAN SHEET LE5 FOR CIRCUITRY ROUTING.
- 3 TRANSFORMER SHALL BE RATED 15KVA WITH 208V 3-PHASE PRIMARY AND 120/240V SINGLE PHASE SECONDARY.
- 4 CONTINUE CONDUIT AND CONDUCTOR TO JUNCTION BOX LABELED "ITS/POWER". SEE FACILITIES DESIGN POWER PLAN SHEET E3.
- 5 ATTACH CONDUIT USING STRAPS SPACED PER NEC SPACING REQUIREMENTS. STRAPS NOT SHOWN.
- 6 USE APPROPRIATELY SIZED TERMINAL LUGS TO ATTACH OVERSIZED CONDUCTORS TO CIRCUIT BREAKER. DO NOT SNIP STRANDS OF CONDUCTOR TO FIT LUG.

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1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION			
ITS EQUIPMENT MDP AND TRANSFORMER CONNECTIONS I-85 NB WEIGH STATION GASTON COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

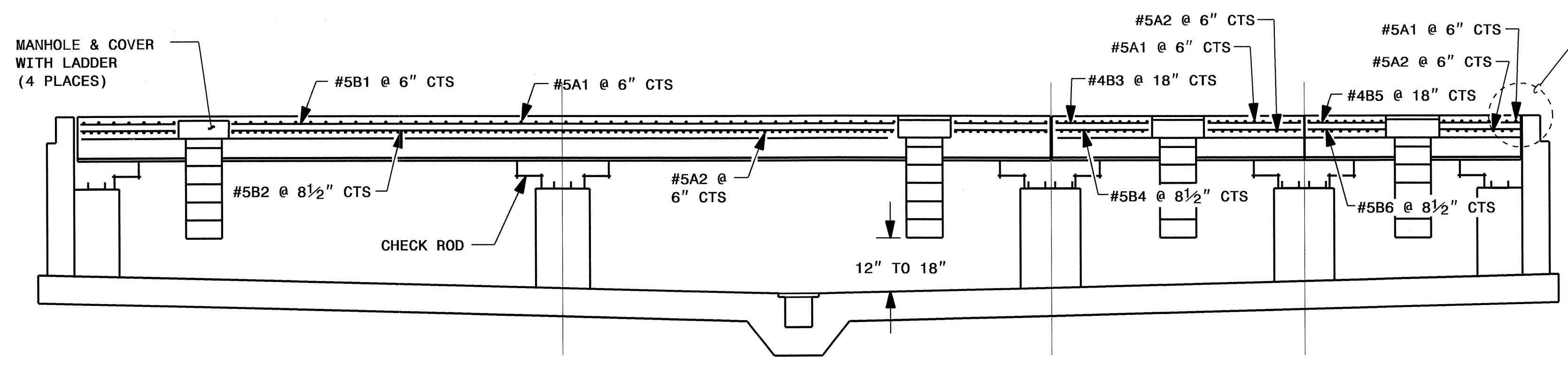
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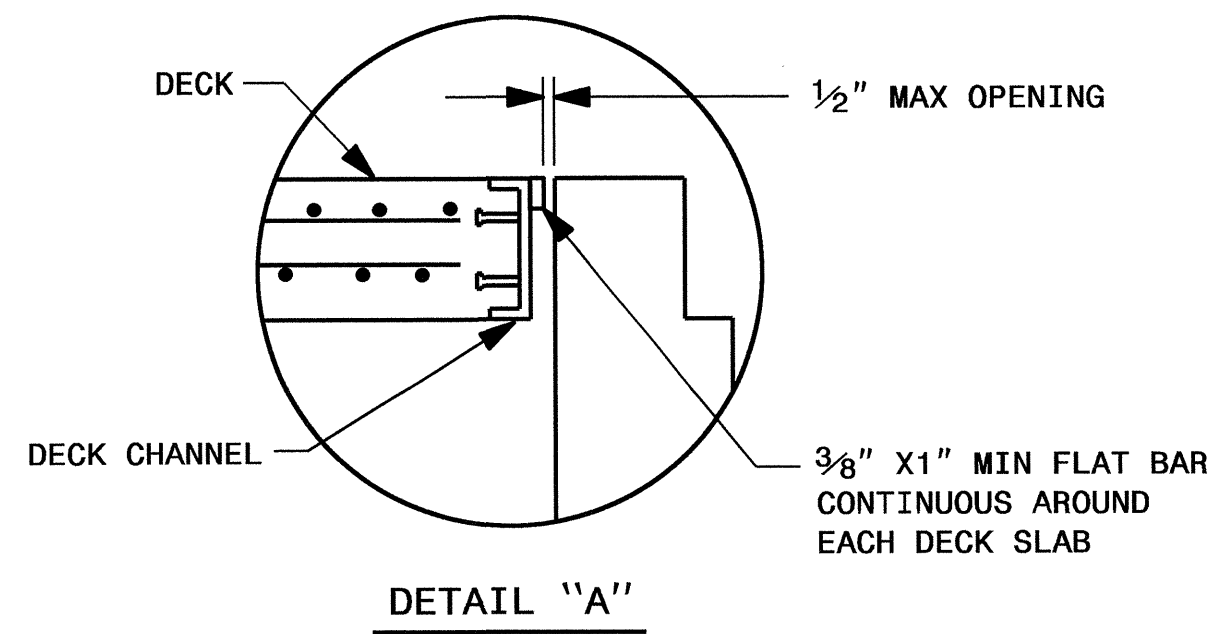
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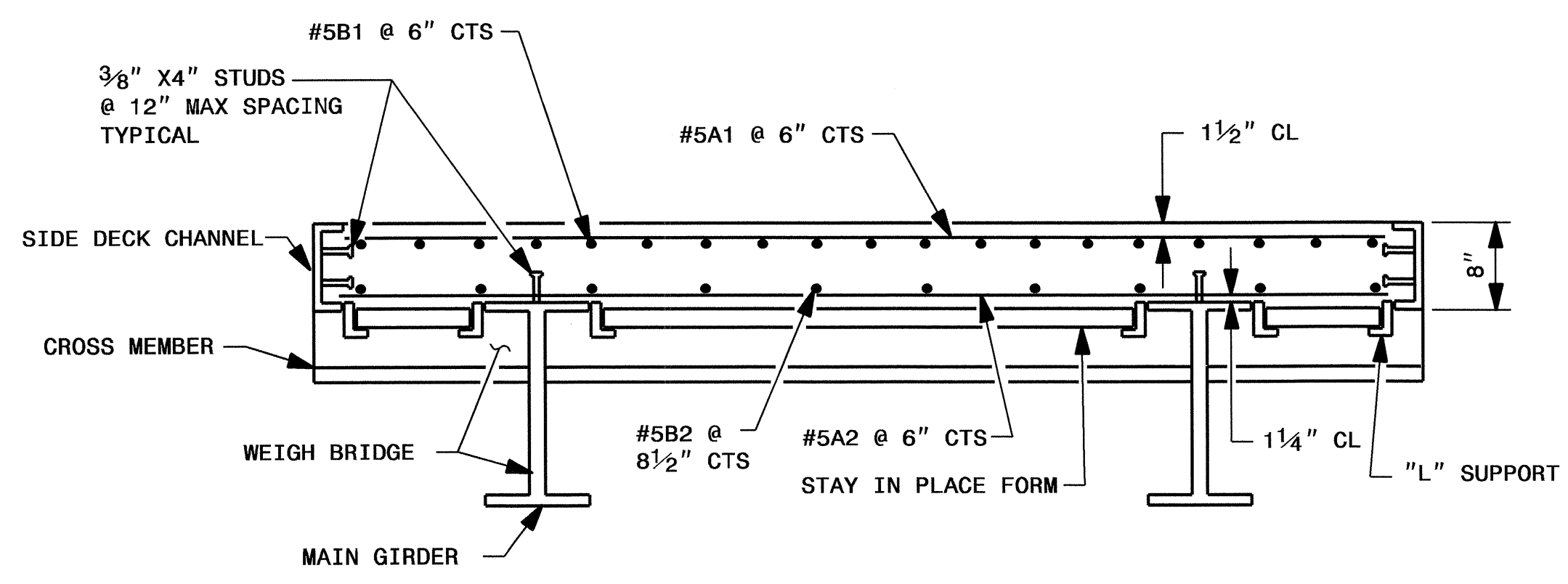
SCALE DECK LAYOUT



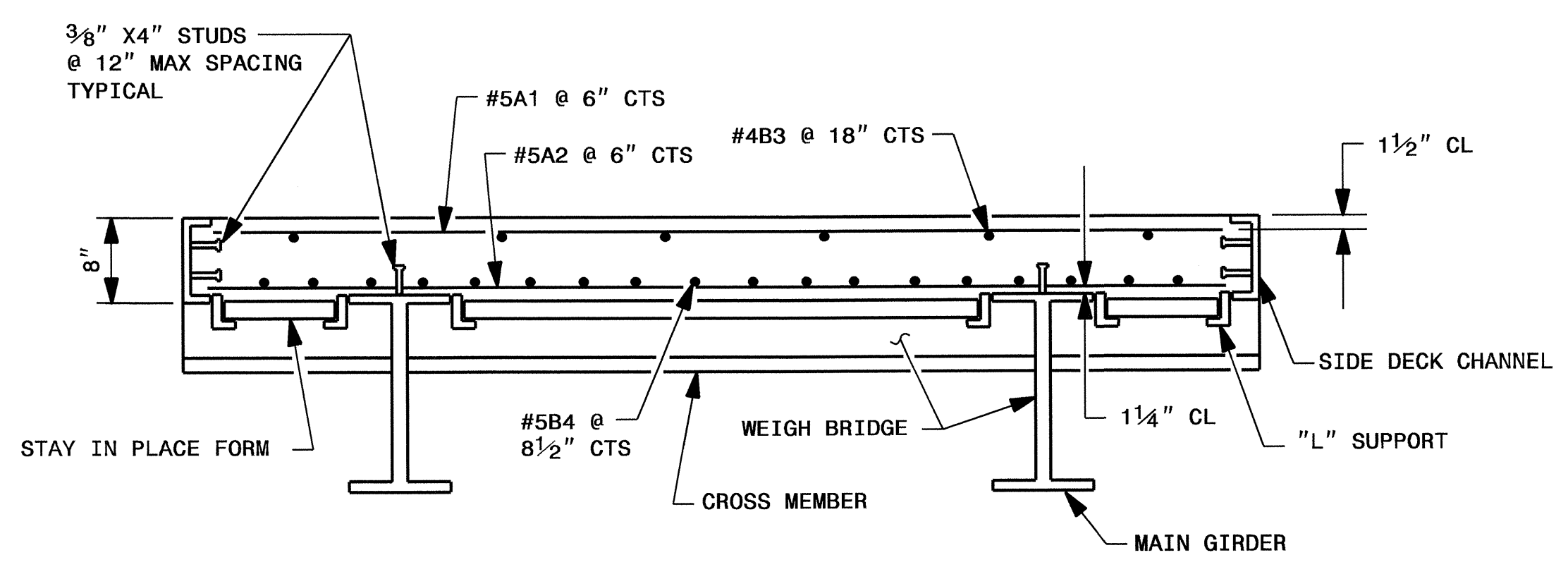
SECTION A-A



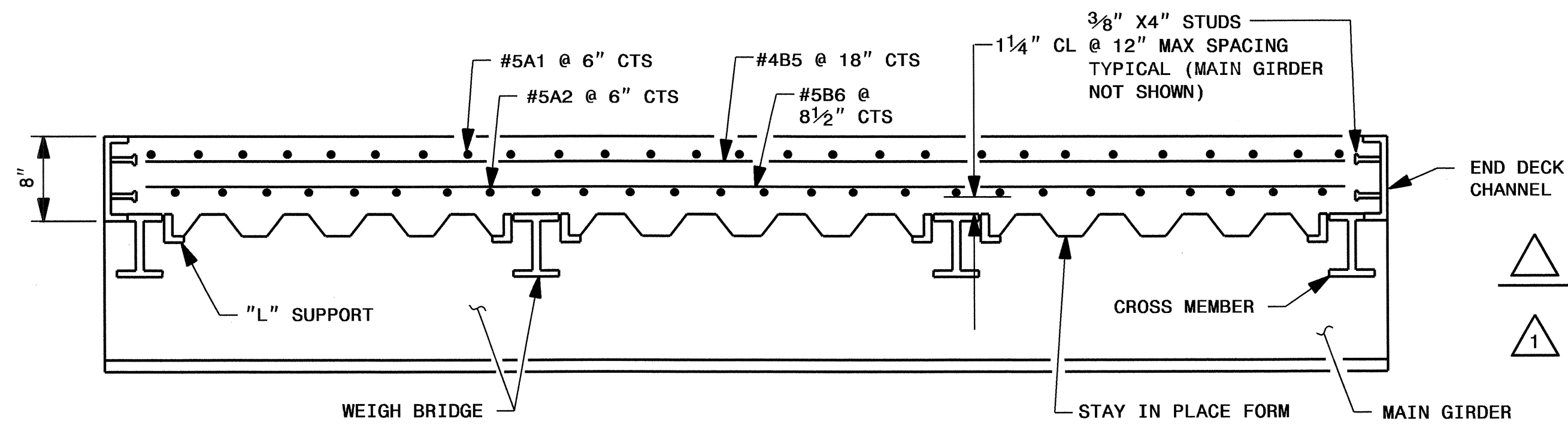
DETAIL "A"



SECTION B-B



SECTION D-D



SECTION C-C

NOTES

- 1 SCALE DRAWINGS ARE GENERAL AND SUBJECT TO MODIFICATION TO FIT SCALE MANUFACTURER'S EQUIPMENT. CONSTRUCTION SHALL CONFORM TO APPROVED SHOP DRAWINGS. SHOP DRAWINGS SHALL SHOW SCALE EQUIPMENT AND SCALE PIT DETAILS. WORK ON PITS SHALL NOT PROCEED UNTIL THE ENGINEER RETURNS APPROVED SHOP DRAWINGS TO THE CONTRACTOR.

REINFORCING BAR SCHEDULE					
FOR 12' X 54' DECK					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	108	#5	STR	11'-6"	1295
A2	108	#5	STR	11'-6"	1295
* B1	24	#5	STR	53'-6"	1339
B2	17	#5	STR	53'-6"	949
* E1	8	#5	STR	4'-0"	33
E2	8	#5	STR	4'-0"	33
REINFORCING STEEL					LBS. 2277
* EPOXY COATED REINFORCING STEEL					LBS. 2667
CLASS AA CONCRETE					C.Y. 16.0

REINFORCING BAR SCHEDULE					
FOR 12' X 14' DECK					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	28	#5	STR	11'-6"	336
A2	28	#5	STR	11'-6"	336
* B3	9	#4	STR	13'-6"	81
B4	17	#5	STR	13'-6"	239
* E1	4	#5	STR	4'-0"	17
E2	4	#5	STR	4'-0"	17
REINFORCING STEEL					LBS. 592
* EPOXY COATED REINFORCING STEEL					LBS. 434
CLASS AA CONCRETE					C.Y. 4.2

REINFORCING BAR SCHEDULE					
FOR 12' X 12' DECK					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	24	#5	STR	11'-6"	288
A2	24	#5	STR	11'-6"	288
* B5	9	#4	STR	11'-6"	69
B6	17	#5	STR	11'-6"	204
* E1	4	#5	STR	4'-0"	17
E2	4	#5	STR	4'-0"	17
REINFORCING STEEL					LBS. 509
* EPOXY COATED REINFORCING STEEL					LBS. 374
CLASS AA CONCRETE					C.Y. 3.6

	BILL OF MATERIAL		
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
12' X 54' DECK	16.0	2277	2667
12' X 14' DECK	4.2	592	434
12' X 12' DECK	3.6	509	374
TOTAL	23.8	3378	3475

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION STATIC SCALE DECKS I-85 NB WEIGH STATION GASTON COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

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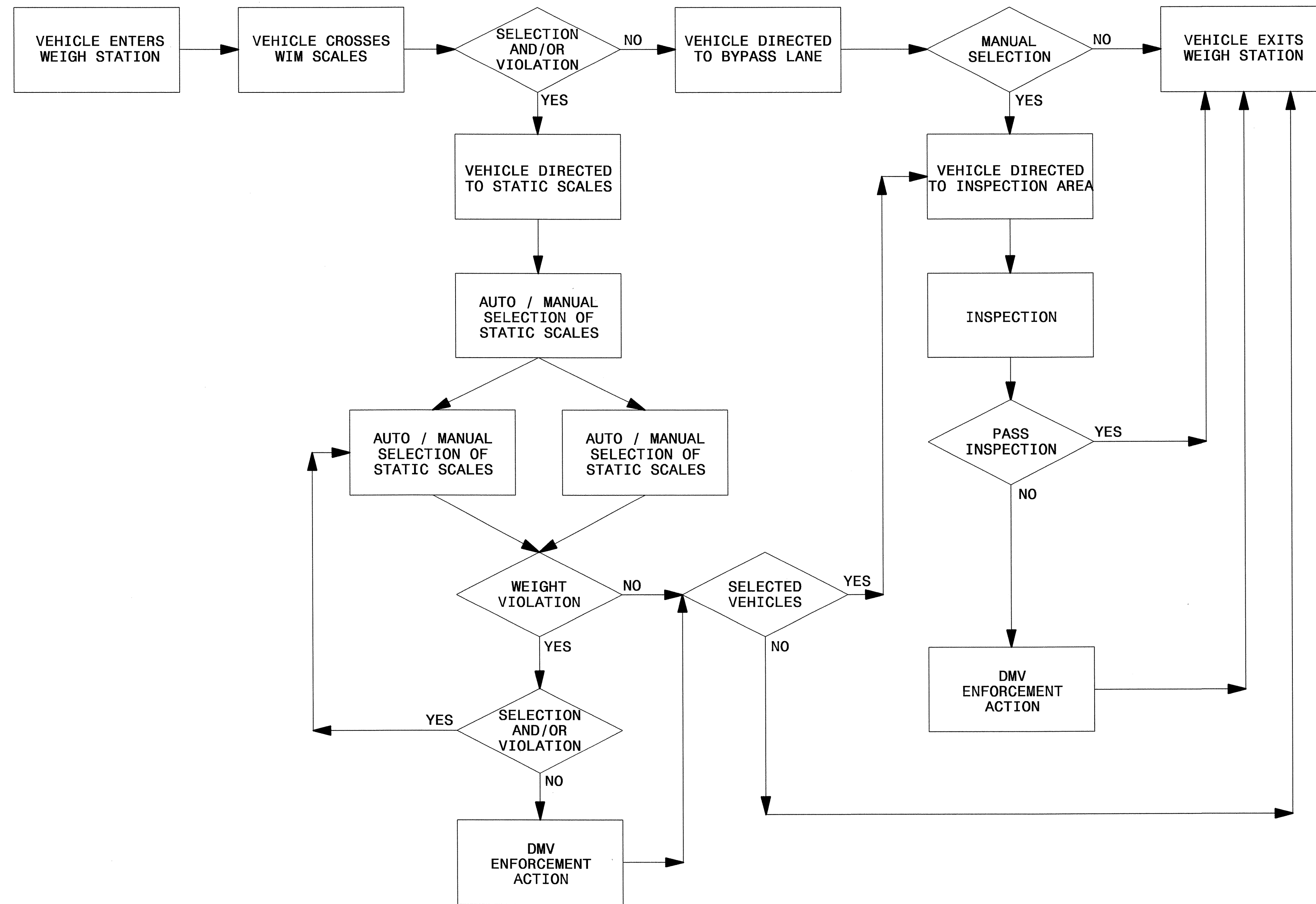
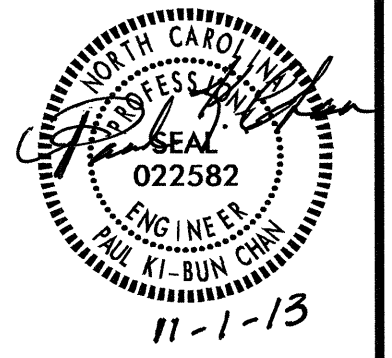


FIGURE 1, VEHICLE FLOW CHART

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION VEHICLE FLOW CHART I-85 NB WEIGH STATION GASTON COUNTY			
Drawn By:	RGH	Approved By:	PKC
		Dwg No.:	