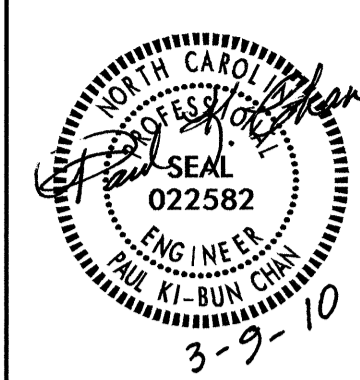


PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION



NOTES

- 1 AT THESE LOCATIONS, PROVIDE ELECTRICAL DUCT IN ACCORDANCE WITH NEC EQUIRMENTS 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 LOCATE PROPOSED CONTROL SYSTEM IN AN AREA ACCESSIBLE FOR MAINTENANCE VEHICLES AND OUTSIDE OF CLEAR ZONE AS DEFINED BY THE 2002 AASHTO ROADSIDE DESIGN GUIDE.
- 5 TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 6 TYPE PC36 JUNCTION BOXES ARE 36" L X 24" W X 18" H.
- 7 GUARDRAIL REQUIRED AT THIS LOCATION. SEE ROADWAY PLANS FOR GUARDRAIL PLACEMENT.

SCOPE OF WORK

PLACE ROADWAY LIGHTING SYSTEM INTO SERVICE BY PROVIDING AND INSTALLING HIGH MOUNT STANDARDS WITH HIGH PRESSURE SODIUM LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

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
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
1401.01	HIGH MOUNT STANDARD
1402.01	HIGH MOUNT FOUNDATION
(USE ATTACHED DETAIL SHEET 1402D01 IN LIEU OF STANDARD DRAWING 1402.01 SHEET 2)	
1403.01	HIGH MOUNT LUMINAIRES
1404.01	LIGHT STANDARDS
1407.01	ELECTRIC SERVICE POLE AND LATERAL
1408.01	LIGHT CONTROL SYSTEM
(USE ATTACHED DETAIL SHEET 1408D01 IN LIEU OF STANDARD DRAWING 1408.01 SHEET 2)	
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 100' HIGH MAST STANDARD W/ HM FOUNDATION & (4) HM LUMINAIRES 400W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED 80' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 400W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED 100' HIGH MAST STANDARD W/ HM FOUNDATION & (6) HM LUMINAIRES 750W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED 120' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 750W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED CONTROL SYSTEM WITH PC36 JUNCTION BOX. BREAKER SIZE SHOWN IN LOAD SCHEDULES. SEE SHEET E5 FOR DETAILS
- PROPOSED ELECTRICAL JUNCTION BOX SEE DETAILS & TABLE B, THIS SHEET
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED

DESIGN CRITERIA

- 2005 AASHTO ROADWAY LIGHTING DESIGN GUIDE
- 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 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 110 MPH. ANY CONTRACTOR-DESIGNED SITE SPECIFIC FOUNDATION DESIGN SHALL BE DESIGNED FOR THE SAME WIND SPEED
- 2008 NATIONAL ELECTRICAL CODE
- 2002 AASHTO ROADSIDE DESIGN GUIDE

TABLE "B" JUNCTION BOX SUMMARY

NUMBER	LOCATION	TYPE	SHEET
CONTROL SYSTEM "A"			
JB1	INSIDE -64LOOPA-	PC36	E2
JB2	-L- STA 285+86, 68' LT	PC36	E2
JB3	-64LOOPA- STA 12+21, 32' LT	PC18	E2
JB4	-64LOOPA- STA 12+21, 22' RT	PC18	E2
JB5	-L- STA 291+10, 60' LT	PC18	E2
JB6	-L- STA 292+50, 60' LT	PC18	E2
JB7	-L- STA 294+40, 60' LT	PC18	E2
JB8	-L- STA 284+30, 60' LT	PC18	E2
JB9	-L- STA 281+70, 130' LT	PC18	E2
JB10	-L- STA 281+19, 64' LT	PC18	E2
JB11	-L- STA 279+10, 94' LT	PC18	E2
JB12	-L- STA 285+86, 66' RT	PC18	E2
JB13	-L- 288+00, 171' RT	PC18	E2
JB14	-L- 283+80, 63' RT	PC18	E2
JB15	-64RAMPC- 20+10, 192' LT	PC18	E2
CONTROL SYSTEM "B"			
JB1	-RAMPB3- STA 22+25, 25' LT	PC36	E3
JB2	-RAMPB3- STA 20+05, 30' RT	PC18	E3
JB3	-RAMPB3- STA 19+26, 25' LT	PC18	E3
JB4	-RAMPB3- STA 15+57, 35' LT	PC18	E3
JB5	-RAMPB3- STA 15+57, 35' RT	PC18	E3
JB6	-L2- STA 352+23, 48' LT	PC18	E3
JB7	-L3- STA 365+91, 96' RT	PC36	E3
JB8	-L3- STA 369+58, 107' RT	PC36	E3
JB9	-L2- STA 368+65, 76' LT	PC18	E3
JB10	-L2- STA 370+28, 60' LT	PC18	E3
JB11	-L2- STA 371+74, 71' LT	PC18	E3
JB12	-RAMPD4- STA 17+35, 33' LT	PC18	E3
JB13	-RAMPD4- STA 17+17, 35' LT	PC18	E3
JB14	-RAMPD4- STA 13+36, 40' LT	PC18	E3
CONTROL SYSTEM "C"			
JB1	-RAMPA5- STA 21+40, 44' RT	PC36	E4
JB2	-RAMPA5- STA 21+40, 22' LT	PC36	E4
JB3	-RAMPA5- STA 20+25, 20' LT	PC18	E4
JB4	-RAMPA5- STA 17+87, 20' LT	PC18	E4
JB5	-L1- STA 36+40, 75' LT	PC18	E4
JB6	-L1- STA 29+88, 66' RT	PC18	E4
JB7	-L1- STA 29+88, 60' RT	PC18	E4
JB8	-L1- STA 28+77, 55' RT	PC18	E4
JB9	-L1- STA 27+45, 52' RT	PC18	E4
JB10	-L1- STA 24+75, 66' RT	PC18	E4
JB11	-L1- STA 22+00, 61' RT	PC18	E4
TOTALS		33	7

TABLE "A" CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE

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

TABLE "C" 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"
-64LOOPA- NEAR CSA	CSA TO JB1	E2				35		115
BETWEEN JB2 & JB8		E2	160					
-L- STA 285+86	JB2 TO JB12	E2			105		135	
BETWEEN JB12 & JB14		E2	215					
-64LOOPB- BETWEEN JB9 & JB10		E2		35				
-64LOOPB- STA 12+22		E2		35				
BETWEEN JB5 & JB8		E2	140					
-RAMPB3- STA 15+56		E3		40				
-RAMPB3- STA 20+00		E3		65				
BETWEEN CSB & JB7	CSB TO JB7	E3			80		135	
BETWEEN JB8 & JB9	JB8 TO JB9	E3			70		105	
BETWEEN JB10 & JB11	JB10 TO JB11	E3			95		145	
-RAMPD4- STA 17+35	JB12 TO JB13	E3			45		75	
-RAMPA5- STA 21+40	JB1 TO JB2	E4			30		65	
-L1- STA 29+88	JB6 TO JB7	E4			90		130	
BETWEEN JB8 & JB9	JB8 TO JB9	E4	135					
TOTALS:			650	175	515	35	790	115

EQUIVALENTS

TRADE SIZE	METRIC	ENGLISH
1/2	16mm	1/2"
3/4	21mm	3/4"
1	27mm	1"
1.5	41mm	1 1/2"
2	53mm	2"
3	78mm	3"

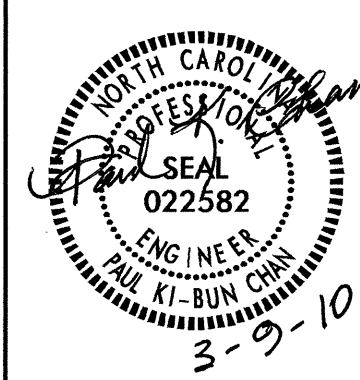
ABBREVIATIONS

BD	BURIED	PVC	PVC SCHEDULE 40 CONDUIT
LT	LIGHT	RG	RIGID GALVANIZED STEEL CONDUIT
JA	JACKED	C	CONDUIT
MH	MOUNTING HEIGHT	CKT	CIRCUIT
Ø	PHASE	N	NEUTRAL
SER LAT	SERVICE LATERAL	G	GROUND
NTS	NOT TO SCALE	HM	HIGH MAST

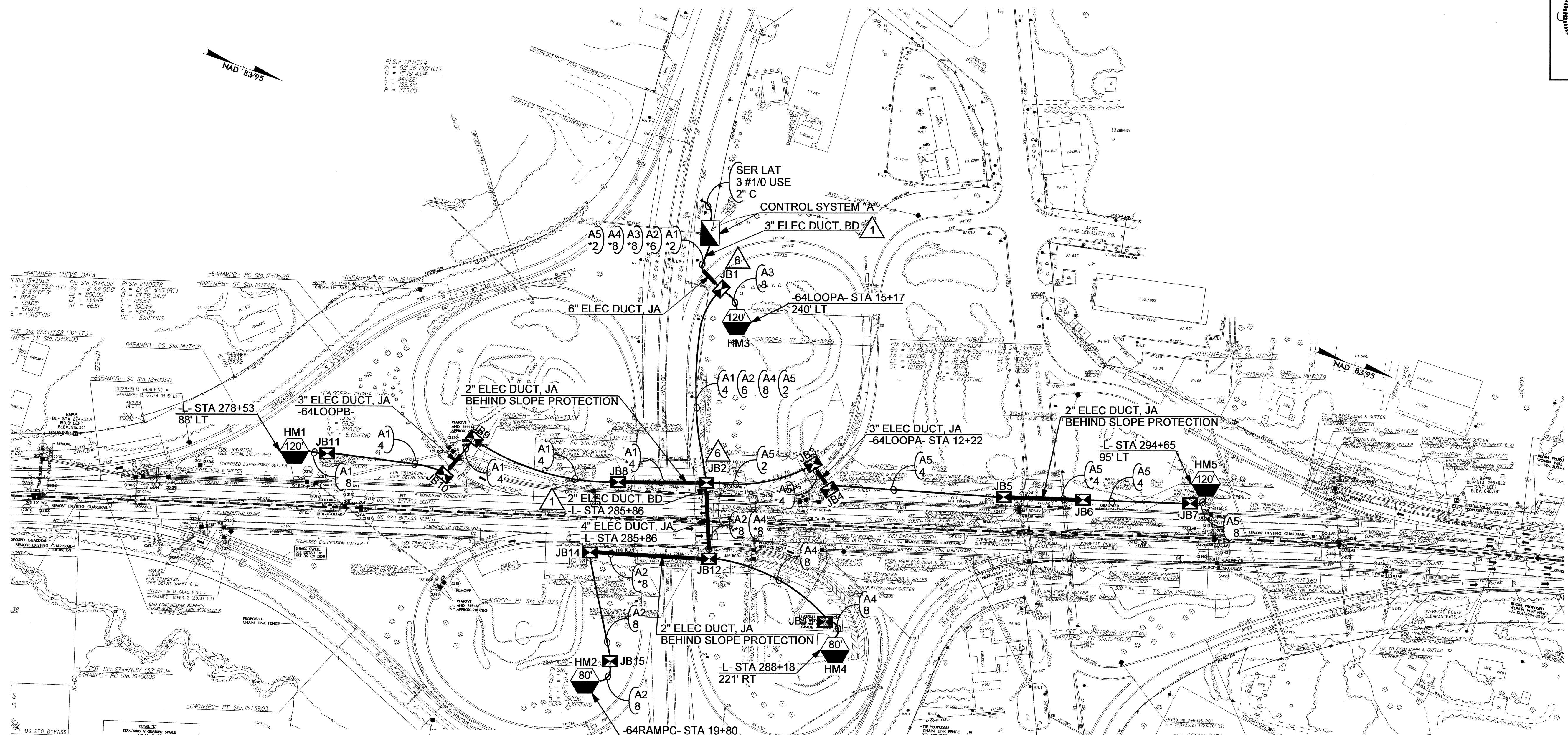
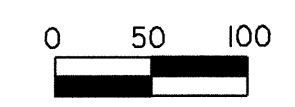
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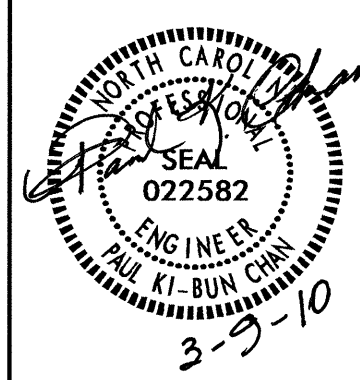
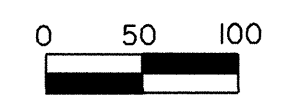
LOAD SCHEDULE
I-73/I-74 / US64/NC49W INT., NW QUAD

CKT	1Ø, 3W, 240/480 VAC		CONTROL SYSTEM "A"		
	80' HIGH MAST 8 @ 400W HPS	120' HIGH MAST 8 @ 750W HPS	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
A1		HM1	14.4	6.91	20
A2		HM2	8	3.84	15
A3		HM3	14.4	6.91	20
A4		HM4	8	3.84	15
A5		HM5	14.4	6.91	20
SPARE	-	-	-	-	20
TOTAL	2	3	59.2	28.41	

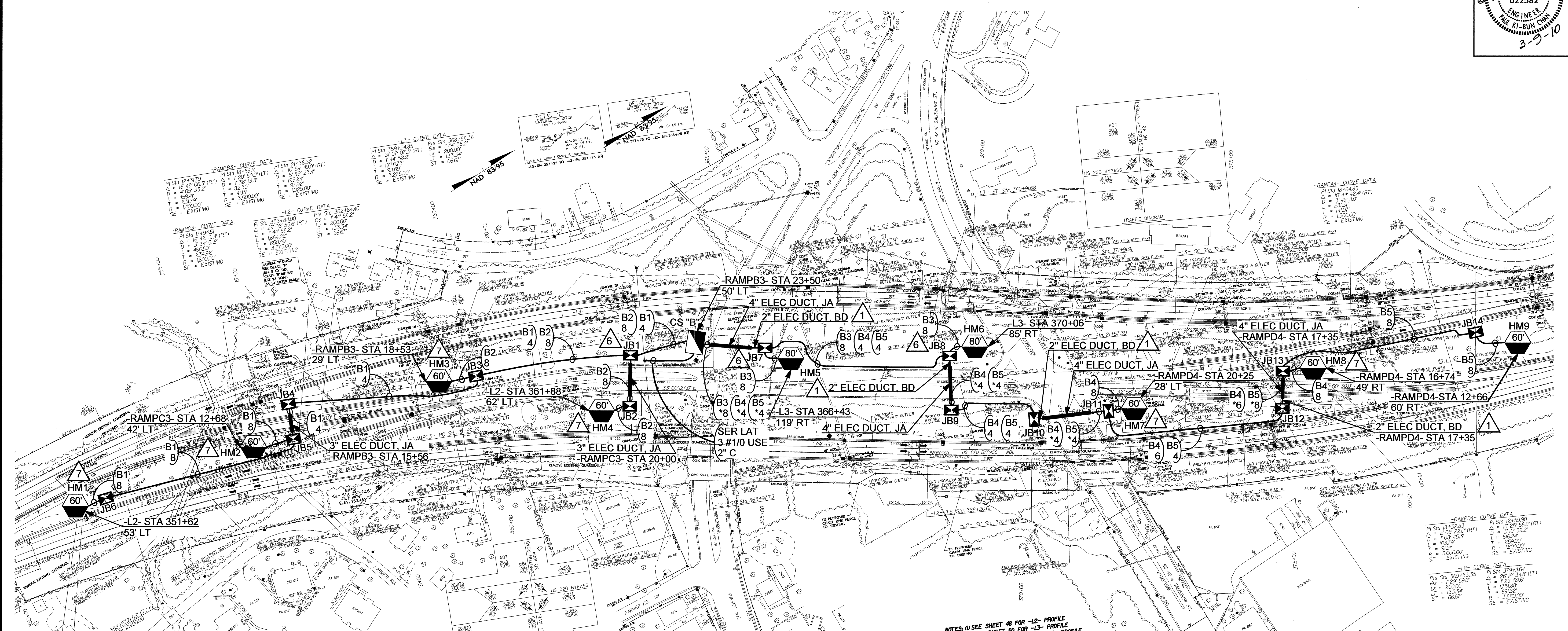
SEE SHEET "E1" FOR LEGEND & △ NOTES

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-73/I-74 / US 64 INTERCHANGE RANDOLPH COUNTY			
Drawn By:	RGH	Approved By:	[Signature]

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LOAD SCHEDULE
I-73/I-74 / NC 42W INT., RAMP B3

CKT	1Ø, 3W, 240/480 VAC		CONTROL SYSTEM "B"		
	60' HIGH MAST 6 @ 400W HPS	80' HIGH MAST 8 @ 400W HPS	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
B1	HM1, HM2		12	5.76	15
B2	HM3, HM4		12	5.76	15
B3		HM5, HM6	16	7.68	20
B4	HM7, HM8		12	5.76	15
B5	HM9		6	2.88	15
SPARE	--	--	--	--	20
TOTAL	7	2	58	27.84	

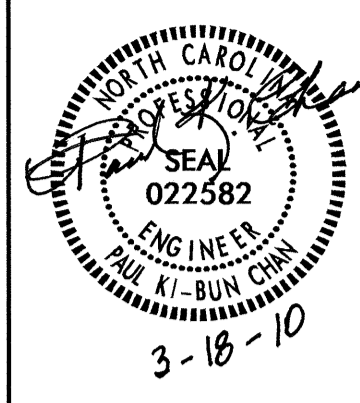
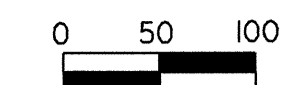
NOTES: (1) SEE SHEET 48 FOR -L2- PROFILE
(2) SEE SHEET 50 FOR -L3- PROFILE
(3) SEE SHEET 60 FOR -RAMPB- PROFILE
(4) SEE SHEET 61 FOR -RAMPD- PROFILE
(5) 30' OF SAFETY CLEARING IS REQUIRED

SEE SHEET "E1" FOR
LEGEND & △ NOTES

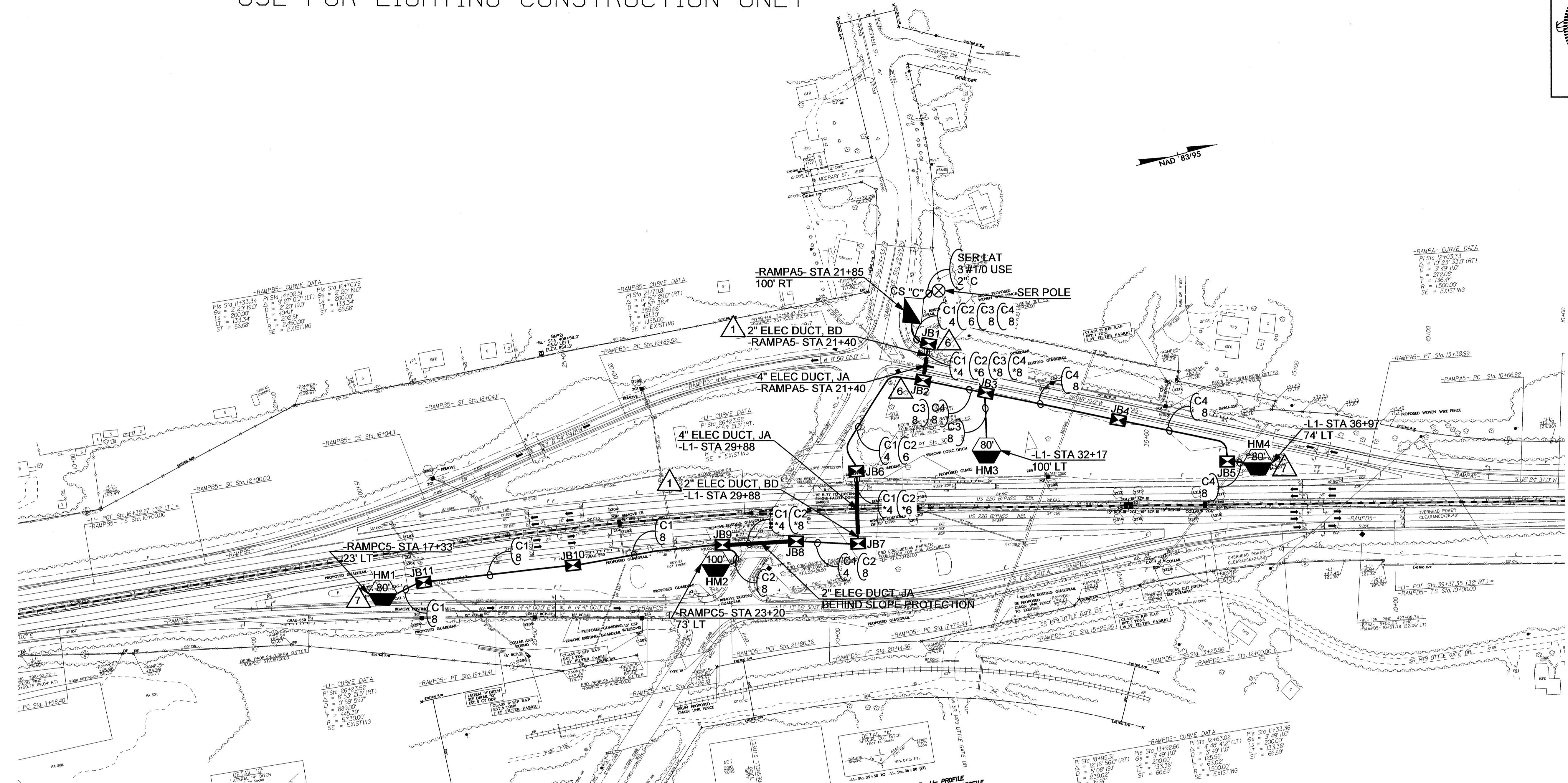
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Rev.	Date	Description	Approved
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Drawn By:	RGH	Approved By:	[Signature]
Dwg No.:			

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USE FOR LIGHTING CONSTRUCTION ONLY



LOAD SCHEDULE I-73/I-74 / PARK DR. EXT. INT. NW QUAD					
1Ø, 3W, 240/480 VAC			CONTROL SYSTEM "C"		
CKT	80' HIGH MAST 8 @ 400W HPS	100' HIGH MAST 6 @ 750W HPS	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
C1	HM1		8	3.84	15
C2		HM2	10.8	5.18	15
C3	HM3		8	3.84	15
C4	HM4		8	3.84	15
SPARE	--	--	--	--	15
TOTAL	3	1	34.8	16.7	

NOTES: (1) SEE SHEET 51 FOR "L1" PROFILE
 (2) SEE SHEET 61 FOR "RAMP5" PROFILE
 (3) SEE SHEET 62 FOR "RAMP5" PROFILE
 (4) SEE SHEET 63 FOR "RAMP5" PROFILE
 (5) SEE SHEET 63 FOR "RAMP5" PROFILE
 (6) 30' OF SAFETY CLEARING IS REQUIRED FROM EDGE OF TRAVEL LANE

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-73/I-74 / PRESNELL STREET INTERCHANGE RANDOLPH COUNTY			
Drawn By	RGH	Approved By	[Signature]
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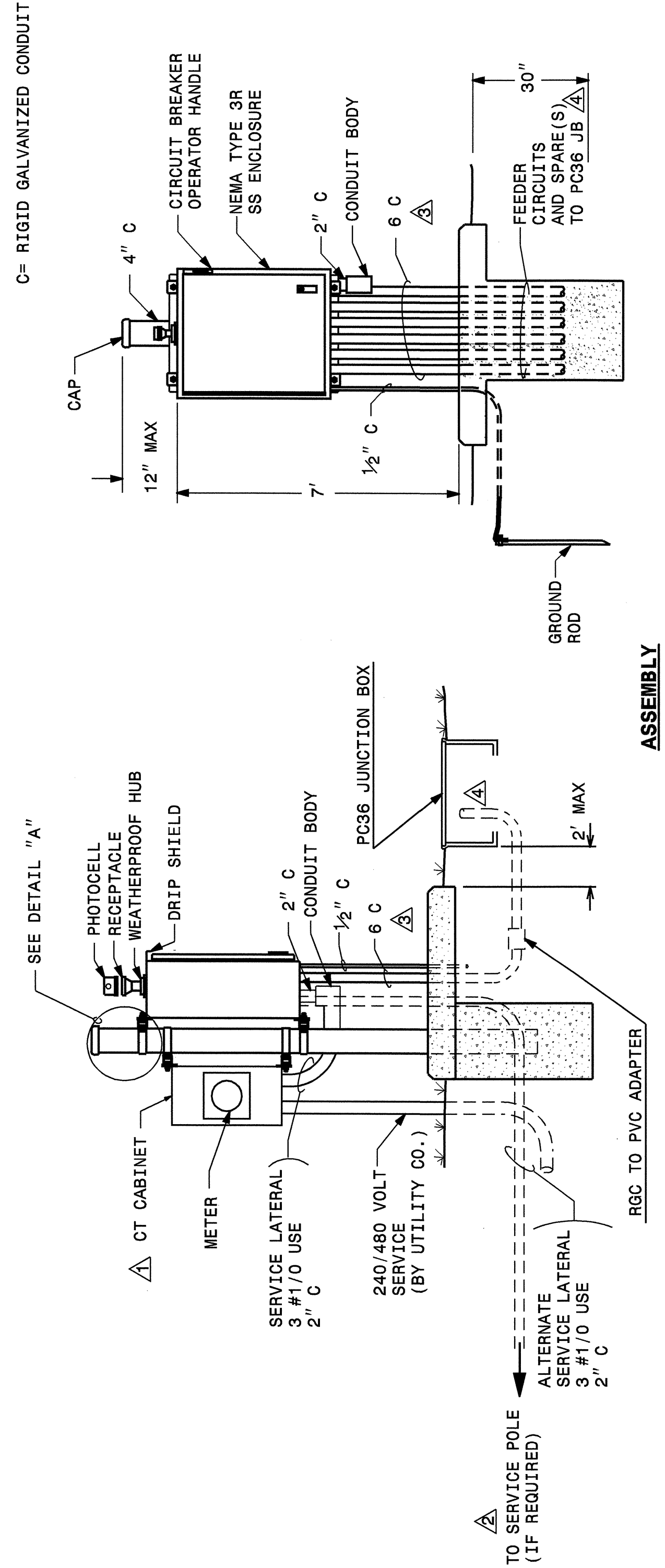
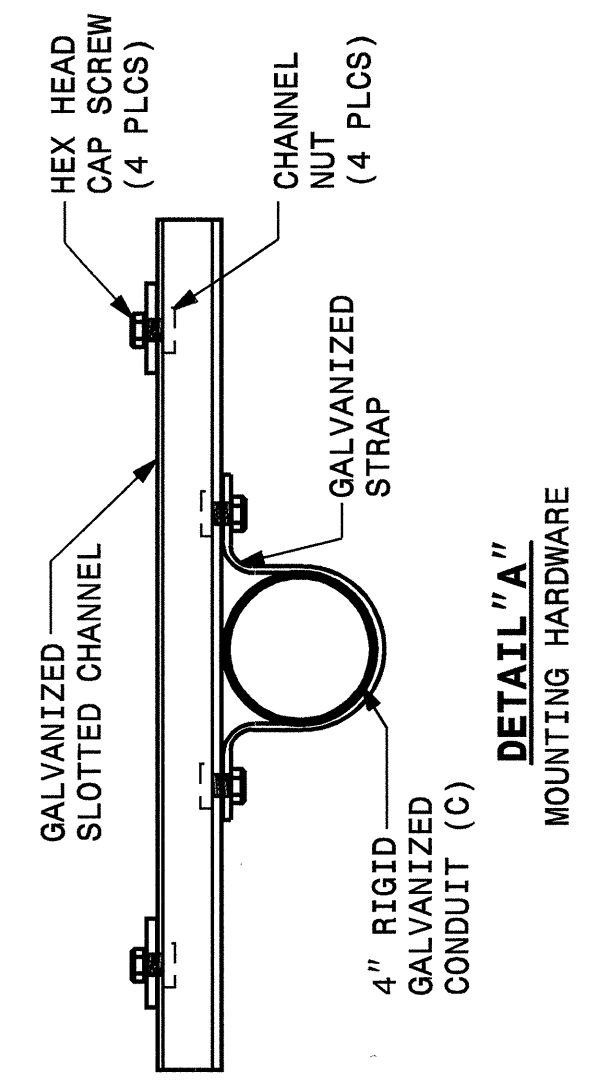
STATE OF NORTH CAROLINA
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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

7-06

ENGLISH STANDARD DRAWING FOR
LIGHT CONTROL SYSTEM
 ASSEMBLY

SHEET 2 OF 3
1408D01

- NOTES**
- △ CURRENT TRANSFORMER (CT) CABINET AND METER MAY BE MOUNTED ON SERVICE POLE OR BACK OF CONTROL ENCLOSURE.
 - △ SEE SECTION 1407 OF THE STANDARD SPECIFICATIONS FOR SERVICE POLE AND SERVICE LATERAL.
 - △ SEE PLANS FOR SIZE OF CONDUITS AND/OR ELECTRICAL DUCT.
 - △ STUB FEEDER CIRCUIT CONDUITS INTO JUNCTION BOX. CAP UNUSED CONDUITS. FEEDER CIRCUITS MUST BE MINIMUM 30" BELOW GRADE.
 - △ SEE SECTION 1411 OF THE STANDARD SPECIFICATIONS FOR JUNCTION BOX INSTALLATION.



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ENGLISH STANDARD DRAWING FOR
LIGHT CONTROL SYSTEM
 ASSEMBLY

SHEET 2 OF 3
1408D01

STATE OF NORTH CAROLINA
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 RALEIGH, N.C.

7-06

ENGLISH STANDARD DRAWING FOR
LIGHT CONTROL SYSTEM
 ASSEMBLY

SHEET 2 OF 3
1408D01

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

7-06

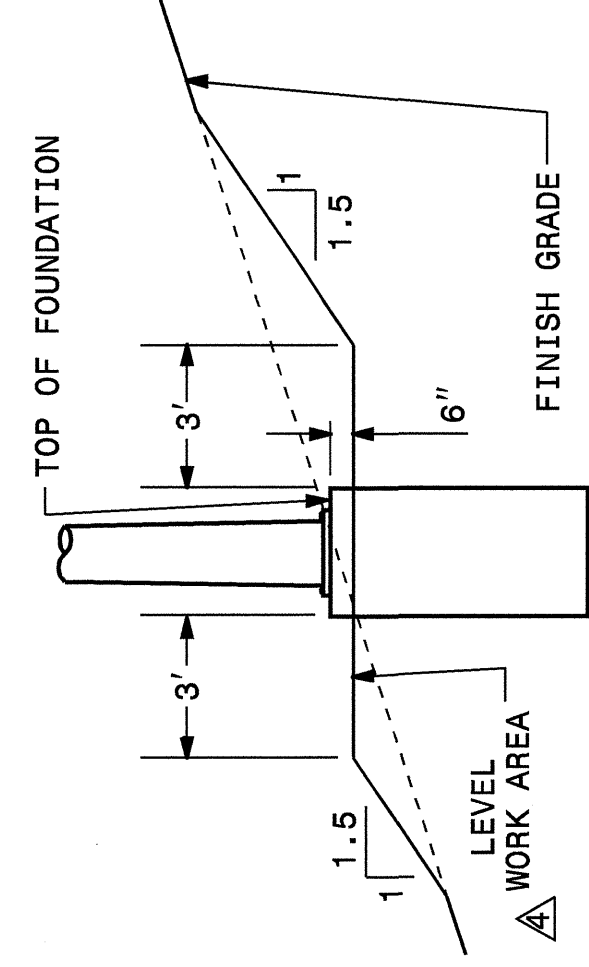
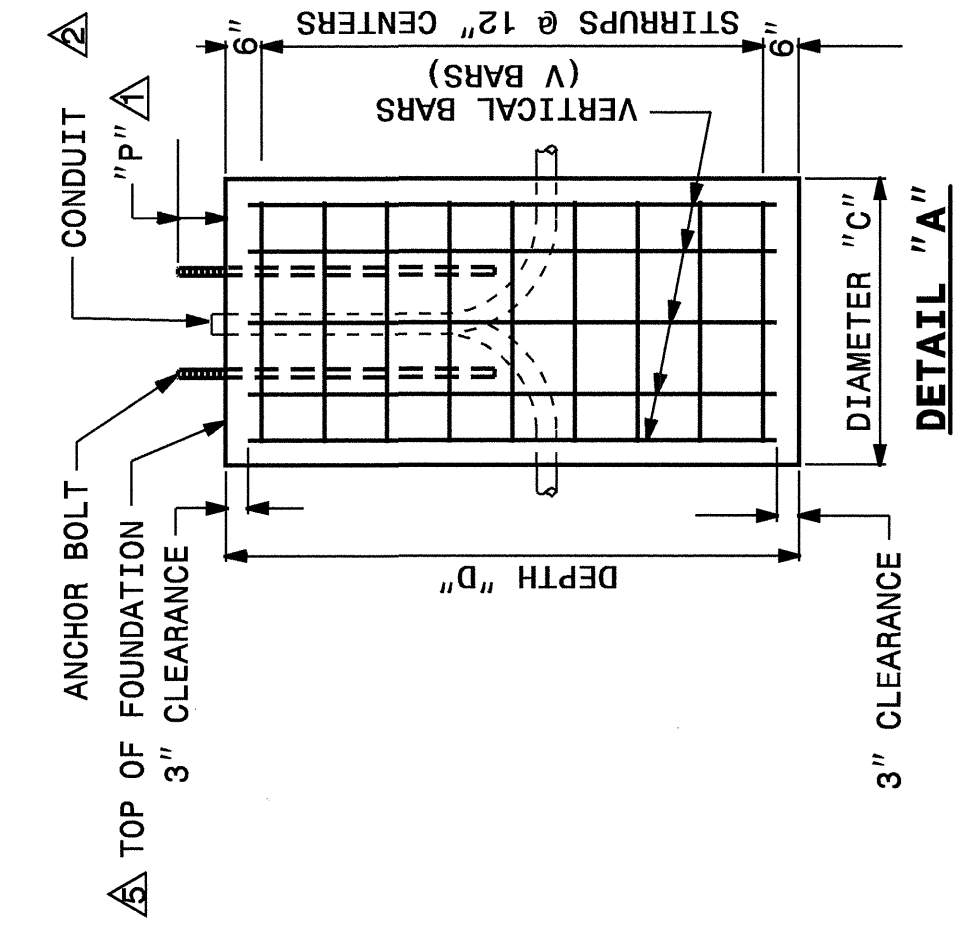
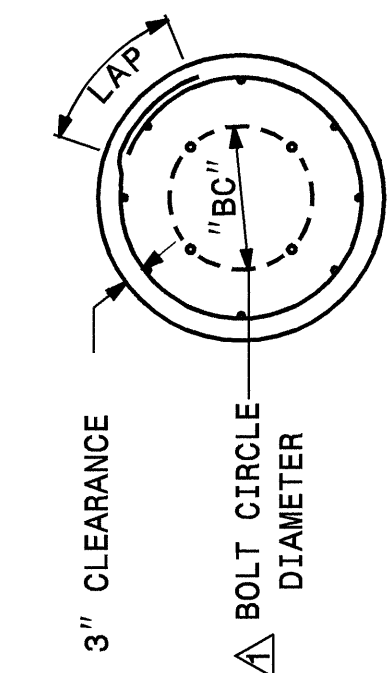
ENGLISH STANDARD DRAWING FOR
HIGH MOUNT FOUNDATION

SHEET 1 OF 1
1402D01

TABLE OF FOUNDATION DIMENSIONS AND QUANTITIES

HEIGHT OF HIGH MOUNT FT	STIRRUPS		CONCRETE		REINFORCING STEEL		DEPTH "D" FT		CONCRETE		REINFORCING STEEL		DEPTH "D" FT		CONCRETE		REINFORCING STEEL		
	DIAMETER "C" FT	LAP-FT	SIZE	QTY	CY	LBS	SIZE	QTY	CY	LBS	SIZE	QTY	CY	LBS	SIZE	QTY	CY	LBS	
																			WIND VELOCITY MPH
60	3.5	1.0	#3	8	3.9	280	#8	8	3.9	12	8	#8	8	4.3	13	8	#8	8	4.6
80	3.5	1.0	#3	8	4.3	306	#8	8	4.3	13	8	#8	8	4.6	15	8	#8	8	5.3
100	4.0	1.0	#3	8	6.1	413	#8	8	6.1	15	8	#9	8	7.0	16	8	#9	8	7.4
120	4.5	1.0	#3	8	8.2	557	#8	8	8.2	16	8	#10	8	9.4	18	8	#10	8	10.6

* INCLUDES STIRRUPS AND VERTICAL BARS (V BARS)



- NOTES**
- △ ANCHOR BOLTS CONFORM NUMBER, SIZE, AND LENGTH OF ANCHOR BOLTS, BOLT CIRCLE DIAMETER "BC", AND ANCHOR BOLT PROJECTION "P" TO APPROVED HIGH MOUNT STANDARD DRAWINGS.
 - △ CONDUITS MATCH ORIENTATION, QUANTITY, TYPE, AND SIZE OF CONDUITS TO THE LAYOUT SHEETS. STUB AND CAP ONE SPARE CONDUIT AT EACH FOUNDATION. PROJECT CONDUIT A MAXIMUM OF 2" ABOVE TOP OF FOUNDATION. PLACE CONDUIT 30" BENEATH FINISH GRADE.
 - △ DIMENSIONS & QUANTITIES DIMENSIONS AND QUANTITIES OF CONCRETE AND REINFORCING STEEL ARE GIVEN FOR THE PURPOSE OF OBTAINING BID PRICES ONLY. SEE STANDARD SPECIFICATIONS SECTION 1402, FOR OTHER STRUCTURAL REQUIREMENTS.
 - △ WORK AREA PROVIDE A LEVEL WORK AREA AROUND EACH FOUNDATION. CUT/FILL SLOPES MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
 - △ ELEVATION SET TOP OF FOUNDATION AT 6" ABOVE LEVEL WORK AREA. SEE DETAIL "B".

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

7-06

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT FOUNDATION

SHEET 1 OF 1
1402D01

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION			
SPECIAL DETAILS LIGHTING			
Drawn By:	RGH	Approved By:	[Signature]
Dwg No.:			

USE FOR LIGHTING CONSTRUCTION ONLY

