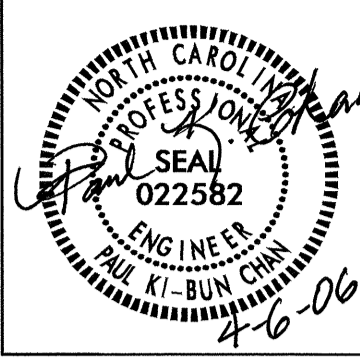
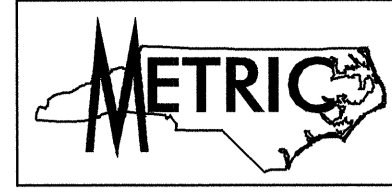


PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION



NOTES

- 1 LOCATE ALL JUNCTION BOXES OUTSIDE CLEAR ZONE AND IN AN AREA UNLIKELY TO BE USED BY TRAFFIC.
- 2 TYPE PC18 JUNCTION BOXES ARE 457mm L X 305mm W X 457mm H.
- 3 LOCATE ALL BORE PITS OUTSIDE THE CLEAR ZONE AS DEFINED IN THE 2002 AASHTO ROADSIDE DESIGN GUIDE OR AS DIRECTED BY THE ENGINEER.
- 4 LOCATE PROPOSED ELECTRICAL DUCT BENEATH RAMPS FOR BEST ALIGNMENT OF CIRCUITS.
- 5 AT THESE LOCATIONS, PROVIDE ELECTRICAL DUCT IN ACCORDANCE WITH NEC REQUIREMENTS FOR AN APPROVED RACEWAY FOR ELECTRICAL CIRCUITS. SEE TABLE "C".
- 6 LOCATE PROPOSED CONTROL SYSTEM IN AN AREA ACCESSIBLE FOR MAINTENANCE VEHICLES AND OUTSIDE THE CLEAR ZONE AS DEFINED BY THE 2002 AASHTO ROADSIDE DESIGN GUIDE.
- 7 TYPE PC24 JUNCTION BOXES ARE 610mm L X 330mm W X 457mm H.

SCOPE OF WORK

PROVIDE ROADWAY LIGHTING BY PROVIDING AND INSTALLING HIGH PRESSURE SODIUM LUMINAIRES ON 30.5m HIGH MOUNT STANDARDS, INCLUDING UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

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 STANDARDS AS APPEAR IN THE REFERENCED DETAIL SHEETS AND THE "NCDOT ROADWAY STANDARD DRAWINGS - METRIC", ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION RALEIGH, N.C., DATED JANUARY 2002 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD NO.	TITLE
1401.01	HIGH MOUNT STANDARD
1402D01	HIGH MOUNT FOUNDATION
1403.01	HIGH MOUNT LUMINAIRE
1407.01	ELECTRIC SERVICE POLE AND LATERAL
1408D01	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 JANUARY 2002.

LEGEND

- PROPOSED 30.5M HIGH MAST STANDARD W/ HM FOUNDATION & (6) HM LUMINAIRES 750W HPS MEDIUM, CUTOFF, TYPE V DISTRIBUTION, 110 MPH WINDSPEED
- PROPOSED CONTROL SYSTEM. BREAKER SIZES SHOWN IN LOAD SCHEDULE, SHEET E2
- PROPOSED ELECTRICAL JUNCTION BOX TYPE PC18 SEE DETAILS & TABLE B, THIS SHEET
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (6) SEE TABLE A, THIS SHEET
- PROPOSED SERVICE POLE AND LATERAL 9.1m CLASS 4 3#1/0 USE CONDUCTORS TS 2 CONDUIT
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED
- PROPOSED ELECTRICAL DUCT SIZE TS 2, TS 3 OR TS 4 TYPE (JA) OR (BD) LOCATION: SEE TABLE C, THIS SHEET

TS 2, TS 3 OR TS4 ELEC. DUCT JA & BD

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

NUMBER	LOCATION	TYPE	SHEET
JB1	38+72 -Y6- 141M LT	PC24	E2
JB2	38+70 -Y6- 103M LT	PC24	E2
JB3	39+05 -Y6- 74M LT	PC24	E2
JB4	38+26 -Y6- 73M LT	PC18	E2
JB5	37+36 -Y6- 60M LT	PC18	E2
JB6	40+08 -Y6- 38M LT	PC18	E2
JB7	40+09 -Y6- 39M RT	PC18	E2
JB8	40+80 -Y6- 54M RT	PC18	E2
JB9	39+15 -Y6- 70M RT	PC18	E2
TOTALS		6	3

LOCATION	RACEWAY	SHEET	TYPE JACKED (JA)			TYPE BURIED (BD)		
			SIZE TS 2	SIZE TS 3	SIZE TS 4	SIZE TS 2	SIZE TS 3	SIZE TS 4
-Y6- NB EXIT RAMP	JB1 - JB2	E2				40		
-Y6- NB EXIT RAMP		E2			13			
40+09 -Y6-	JB6 - JB7	E2				77		
40+09 -Y6-		E2			69			
NC62 EAST OF -Y6-		E2		28				
NC62 WEST OF -Y6-		E2		33				
TOTALS				61	82	117		

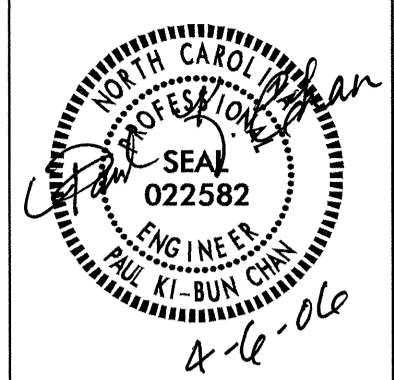
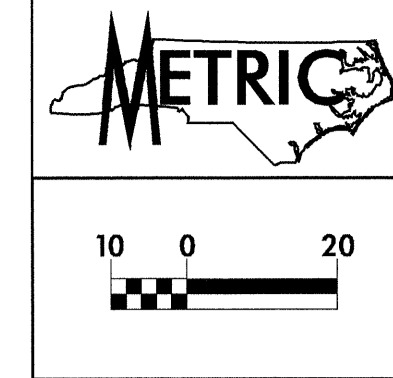
TRADE SIZE	METRIC	ENGLISH
1/2	16mm	1/2"
3/4	21mm	3/4"
1	27mm	1"
1.5	41mm	1 1/2"
2	53mm	2"
3	78mm	3"

ABBREVIATIONS

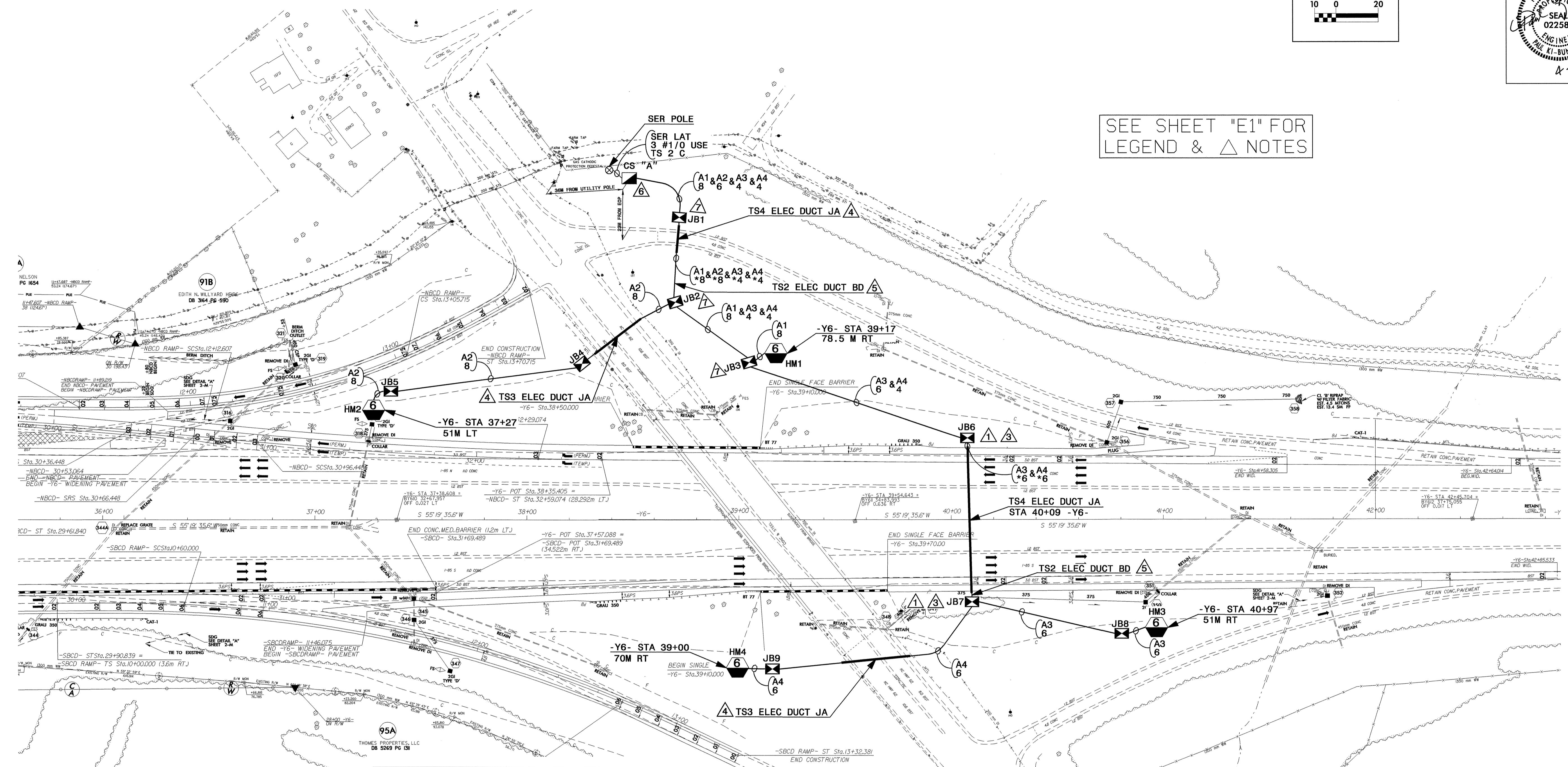
- BD BURIED
- LT LIGHT
- JA JACKED
- MH MOUNTING HEIGHT
- Ø PHASE
- SER LAT SERVICE LATERAL
- PVC PVC SCHEDULE 40 CONDUIT
- RGC RIGID GALVANIZED STEEL CONDUIT
- C CONDUIT
- CKT CIRCUIT
- N NEUTRAL
- G GROUND
- TS TRADE SIZE
- HM HIGH MAST

02/03/98

USE FOR LIGHTING CONSTRUCTION ONLY



SEE SHEET "E1" FOR LEGEND & △ NOTES



LOAD SCHEDULE
I-85/NC62 SW QUAD
1Ø, 3W, 240/480 VAC CONTROL SYSTEM "A"

CKT	HIGH MAST	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
A1	HM1	10.6	5.1	15
A2	HM2	10.6	5.1	15
A3	HM3	10.6	5.1	15
A4	HM4	10.6	5.1	15
SPARE	--	--	--	15
TOTAL	4	42.4	20.4	

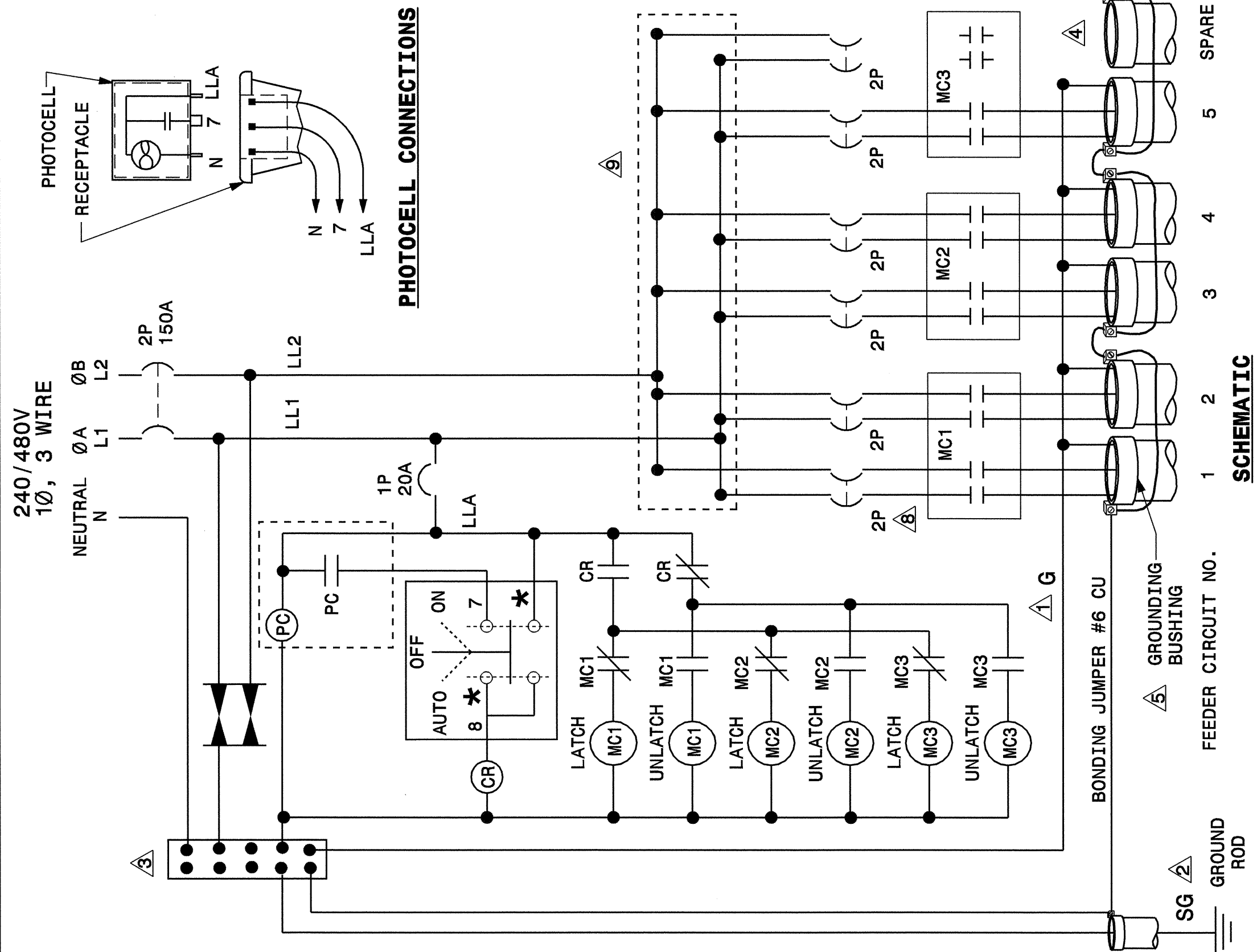
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Rev.	Date	Description	Approved	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I85/NC62 INTERCHANGE GUILFORD COUNTY				
Drawn By	Approved By	Dwg No.		
RGH				

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

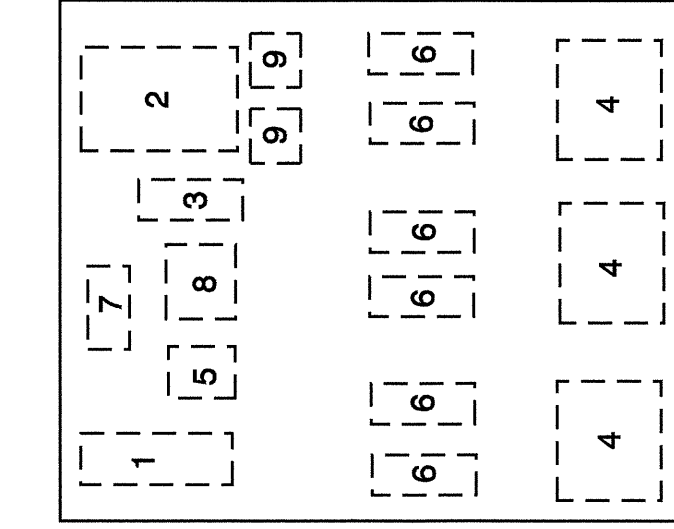
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ENGLISH STANDARD DRAWING FOR
LIGHT CONTROL SYSTEM
 SCHEMATIC



SHEET 1 OF 3
1408D01

SCHEMATIC



INTERIOR PANEL
 COMPONENT LAYOUT

#	QTY	DESCRIPTION	SPECIFICATIONS
1	1	NEUTRAL BAR	
2	1	SERVICE CIRCUIT BREAKER	2P, 480V, 150A
3	1	CONTROL CIRCUIT BREAKER	1P, 240V, 20A
4	3	MECHANICALLY HELD CONTACTORS	4P, 480V, 60A W/240V COIL
5	1	CONTROL RELAY W/NC & NO CONTACT	240V, 10A, W/240V COIL
6	6	FEEDER CIRCUIT BREAKERS	2P, 480V, 50A MAX
7	1	LIGHTNING ARRESTER	
8	1	SELECTOR SWITCH (ON-OFF-AUTO)	240V, 10A
9	2	POWER DISTRIBUTION LUGS OR BLOCKS	
		MOUNTING BRACKETS OR SCREW STUDS	

SHEET 1 OF 3
1408D01

STATE OF NORTH CAROLINA
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 RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
LIGHT CONTROL SYSTEM
 SCHEMATIC

- 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 FEEDER CIRCUITS NOT SHOWN ON THE PLANS SHALL NOT BE INSTALLED, BUT CONDUIT SHALL BE INSTALLED AND CAPPED.
 - 5 INSTALL A GROUNDING BUSHING ON EACH CONDUIT. CONNECT BONDING JUMPER AS REQUIRED BY NEC.
 - 6 SEE 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 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.

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

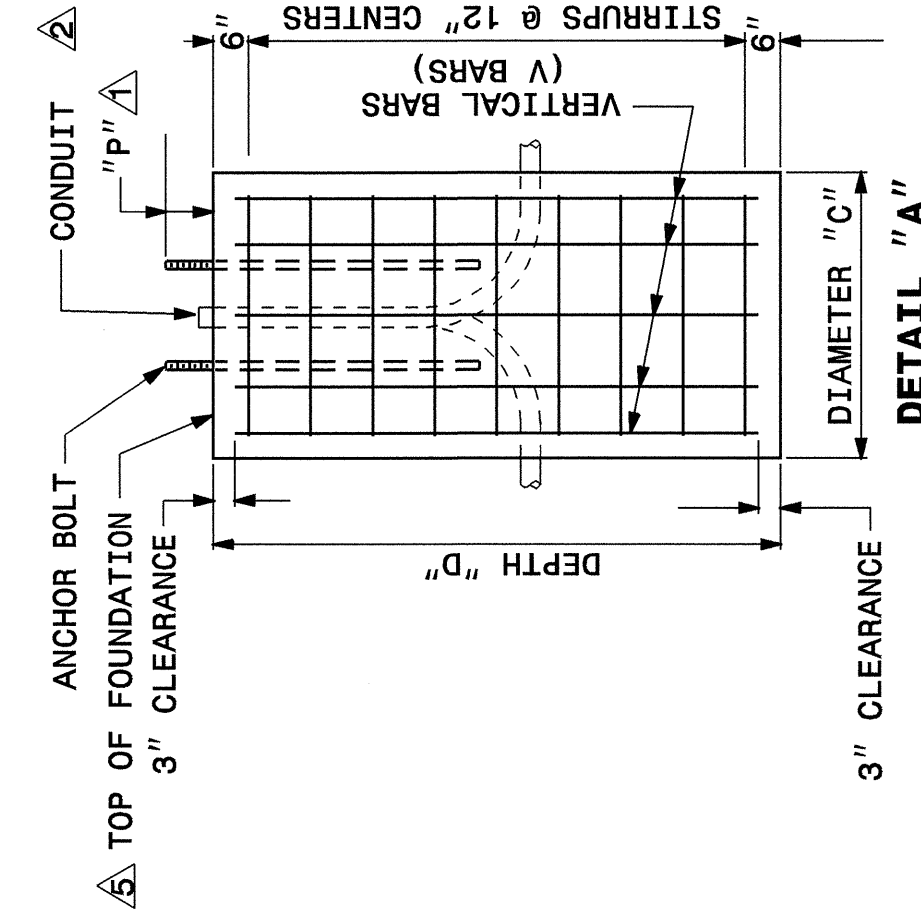
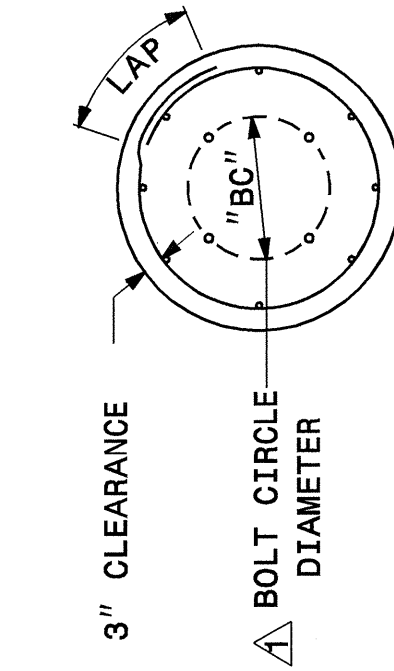
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ENGLISH STANDARD DRAWING FOR
HIGH MOUNT FOUNDATION

TABLE OF FOUNDATION DIMENSIONS AND QUANTITIES

HEIGHT OF HIGH MOUNT FT	WIND VELOCITY MPH														
	90					110					130				
	DEPTH "D" FT	V BARS QTY	REINF. * STEEL LBS	CONCRETE CY	CONCRETE CY	DEPTH "D" FT	V BARS QTY	REINF. * STEEL LBS	CONCRETE CY	CONCRETE CY	DEPTH "D" FT	V BARS QTY	REINF. * STEEL LBS	CONCRETE CY	CONCRETE CY
80	12	8	306	4.3	4.3	13	8	331	4.6	4.6	15	8	382	5.3	5.3
100	13	8	413	6.1	6.1	15	8	477	7.0	7.0	16	8	509	7.4	7.4
120	15	8	557	8.2	8.2	16	8	636	9.4	9.4	18	8	716	10.6	10.6

* INCLUDES STIRRUPS AND VERTICAL BARS (V BARS)



- NOTES**
- 1 ANCHOR BOLTS CONFORM NUMBER, SIZE, AND LENGTH OF ANCHOR BOLTS, BOLT CIRCLE DIAMETER "BC", AND ANCHOR BOLT PROJECTION TO APPROVED HIGH MOUNT STANDARD DRAWINGS.
 - 2 CONDUITS MATCH ORIENTATION, QUANTITY, TYPE AND SIZE OF CONDUITS TO THE LAYOUT SHEETS. STIRRS 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".

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY ANUPAM SHAH P.E., 028979, ON OCTOBER 12, 2005.

SHEET 1 OF 1
1402D01

Rev.	Date	Description	Approved
2			
1			

NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

LIGHTING DETAILS
 LIGHT CONTROL SYSTEM
 SCHEMATIC
 HIGH MOUNT FOUNDATION

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

