

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 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.
- 6 TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 7 AT THESE LOCATIONS USE TYPE PC36 JUNCTION BOX. MIN. SIZE 36" L X 24" W X 18" H.
- 8 LOCATE JUNCTION BOX AT STATION NUMBER SHOWN IN TABLE "B", THIS SHEET. JUNCTION BOXES SHOWN AWAY FROM HM FOR CLARITY.
- 9 REFER TO SUMMARY OF QUANTITIES ON ROADWAY PLANS FOR GUARDRAIL TO BE REMOVED AND RESET AROUND HM1, HM2, HM5 AND HM6.

SCOPE OF WORK

PROVIDE ROADWAY LIGHTING BY PROVIDING AND INSTALLING HIGH PRESSURE SODIUM LUMINAIRES ON 80' AND 60' HIGH MOUNT STANDARDS, AND WALLMOUNT UNDERPASS LUMINAIRES 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, 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
 HIGH MOUNT STANDARD FOUNDATION IS DESIGNED FOR BASIC WIND SPEED OF 90 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

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
1402D01	HIGH MOUNT FOUNDATION (USE ATTACHED DETAILS IN LEIU OF STANDARDS)
1403.01	HIGH MOUNT LUMINAIRES
1407.01	ELECTRIC SERVICE POLE AND LATERAL
1408.01	LIGHT CONTROL SYSTEM
1409.01	ELECTRICAL DUCT
1410.01	FEEDER CIRCUITS
1411.01	ELECTRICAL JUNCTION BOXES
1412.01	UNDERPASS LIGHTING

ALL WORK SHALL BE IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JULY 2006.

LEGEND

- 8 PROPOSED 80' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 400W HPS, MEDIUM, CUTOFF, TYPE V
- 4 PROPOSED 60' HIGH MAST STANDARD W/ HM FOUNDATION & (4) HM LUMINAIRES 400W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED CONTROL SYSTEM. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E2
- PROPOSED WALL MOUNT LUMINAIRE 150W HPS
- PROPOSED NEMA 3R UNDERPASS LIGHTING CIRCUIT BREAKER ENCLOSURE
- JB1 PROPOSED ELECTRICAL JUNCTION BOX TYPE PC18 SEE DETAILS & TABLE B, THIS SHEET
- 1 REFERENCE TO CORRESPONDING NOTE AS NUMBERED
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (6) SEE TABLE A, THIS SHEET
- PROPOSED SERVICE POLE AND LATERAL 30' CLASS 4 3#1/0 USE CONDUCTORS 2" CONDUIT
- 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
*8	2#8 Ø 1 #10G	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR
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
*6	2#6 Ø 1 #8G	2 AWG SIZE 6 CONDUCTOR (BK & RD) 1 AWG SIZE 8 GROUNDING CONDUCTOR
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
*4	2#4 Ø 1 #6G	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR

NUMBER	LOCATION	TYPE	SHEET
JB1	275+78 -L-, 145' RT	PC36	E2
JB2	14+80 -RPC-, 40' LT	PC36	E2
JB3	46+23 -Y6-, 10' RT	PC18	E2
JB4	49+40 -Y6-, 10' RT	PC18	E2
JB5	51+85 -Y6-, 10' RT	PC18	E2
JB6	54+00 -Y6-, 10' RT	PC18	E2
JB7	58+00 -Y6-, 10' RT	PC18	E2
JB8	60+26 -Y6-, 10' RT	PC36	E2
JB9	62+60 -Y6-, 10' RT	PC18	E2
JB10	65+85 -Y6-, 10' RT	PC18	E2
TOTALS		7	3

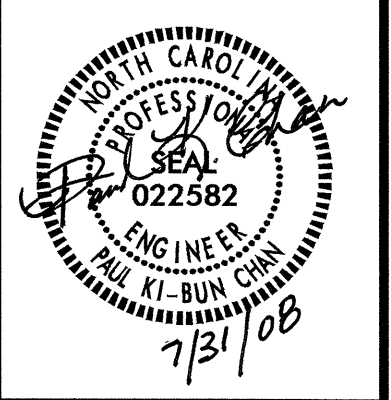
LOCATION	RACEWAY	SHEET	TYPE					
			JACKED (JA) FEET			BURIED (BD) FEET		
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 2"	SIZE 3"	SIZE 4"
14+80 -RPC-		E2						55
14+80 -RPC-	JB2 - JB8	E2				160		
60+26 -Y6-		E2						55
TOTALS						160		110

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

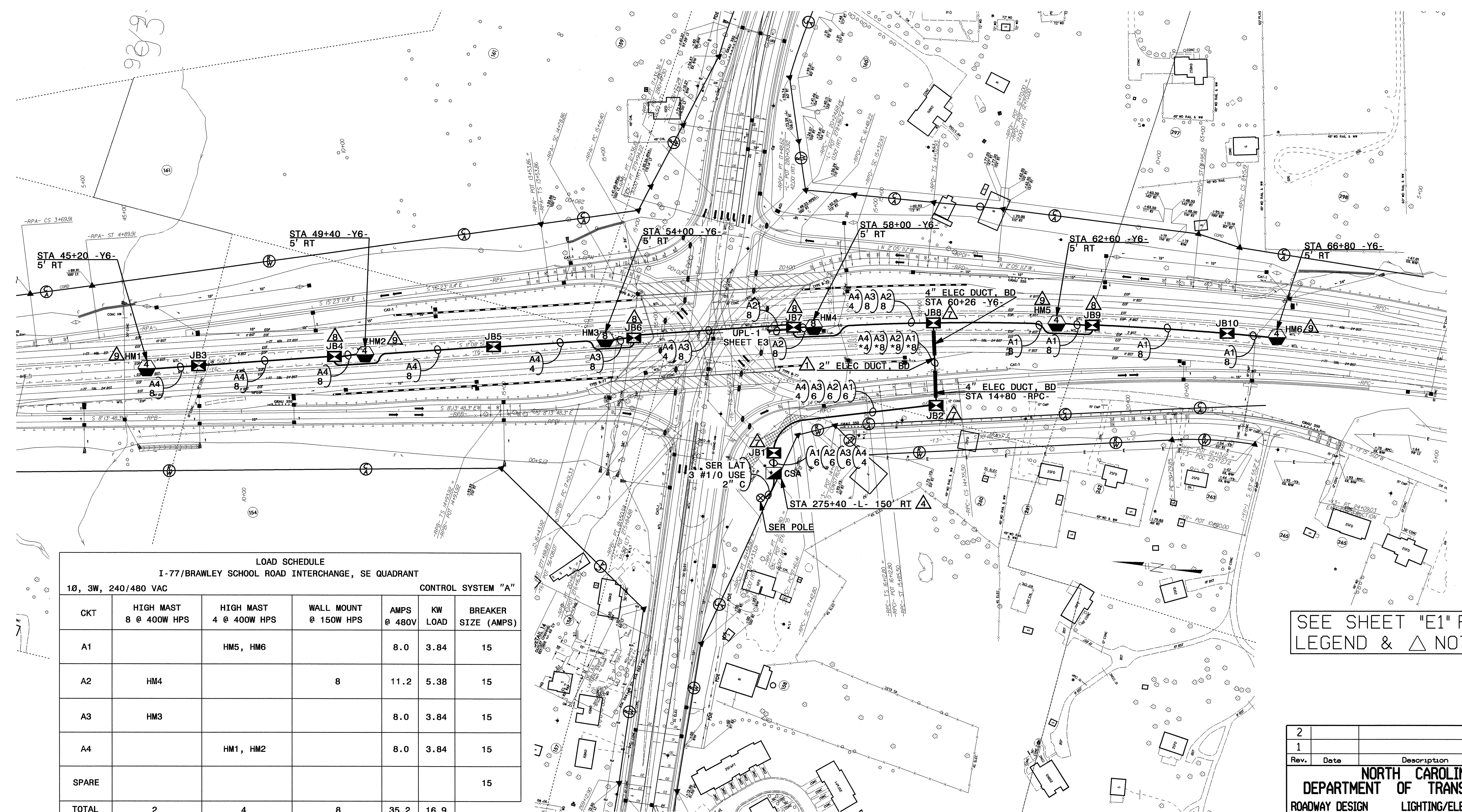
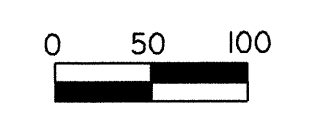
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 CHECKED BY: Jay A. Smith DATE: 9-29-08

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USE FOR LIGHTING CONSTRUCTION ONLY



LOAD SCHEDULE
I-77/BRAWLEY SCHOOL ROAD INTERCHANGE, SE QUADRANT
CONTROL SYSTEM "A"

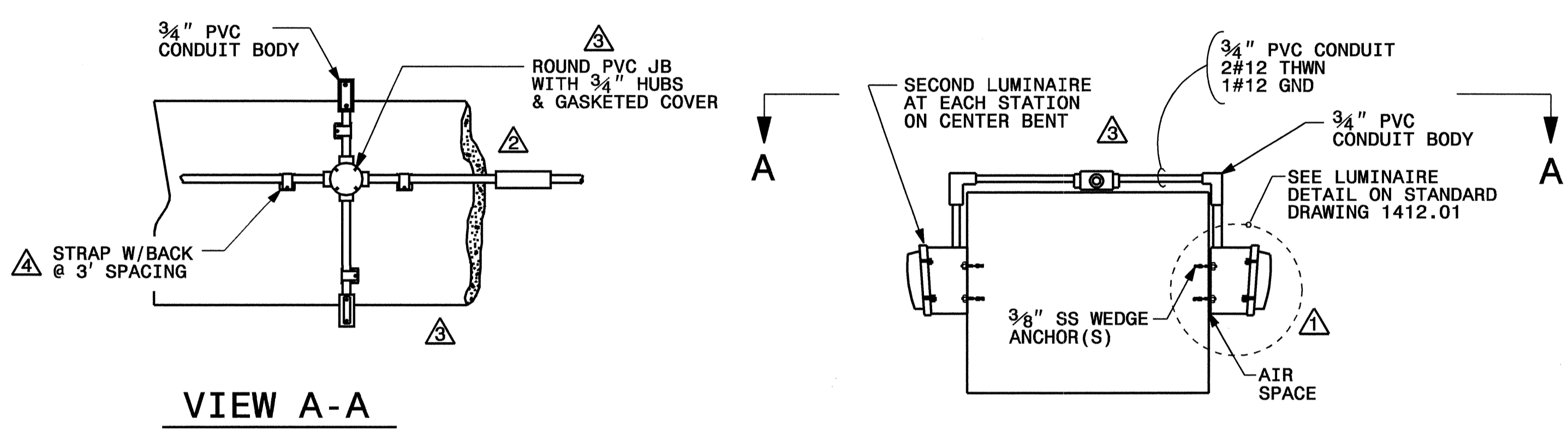
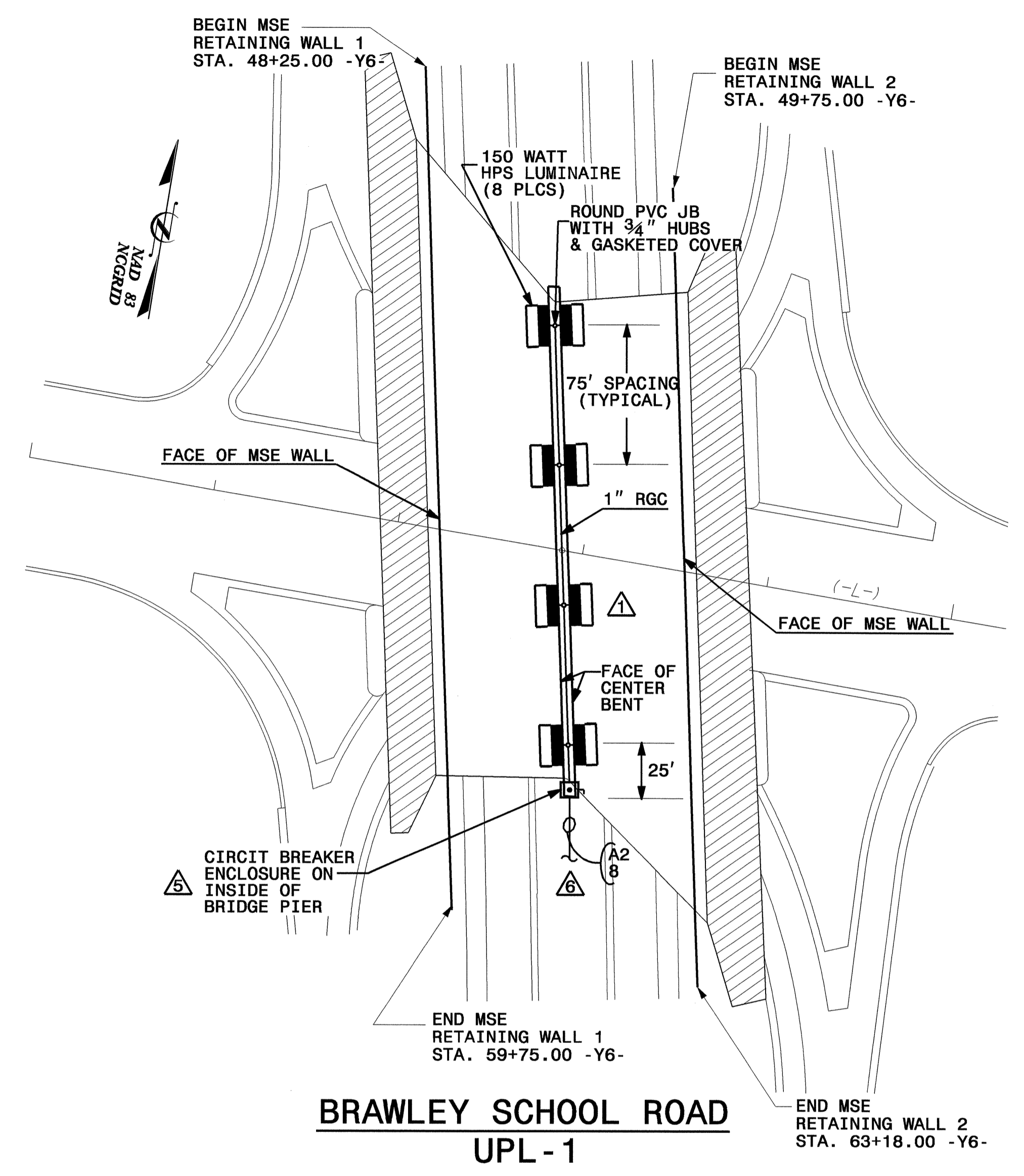
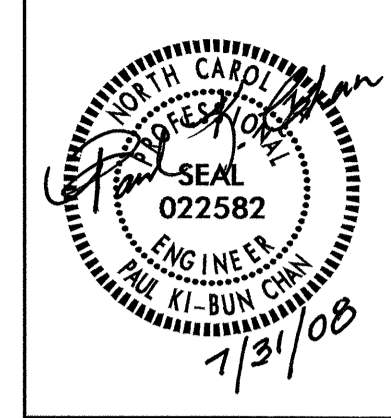
CKT	HIGH MAST 8 @ 400W HPS	HIGH MAST 4 @ 400W HPS	WALL MOUNT @ 150W HPS	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
A1		HM5, HM6		8.0	3.84	15
A2	HM4		8	11.2	5.38	15
A3	HM3			8.0	3.84	15
A4		HM1, HM2		8.0	3.84	15
SPARE						15
TOTAL	2	4	8	35.2	16.9	

SEE SHEET "E1" FOR
LEGEND & △ NOTES

2			
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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION			
LIGHTING LAYOUT I77/BRAWLEY SCHOOL ROAD INTERCHANGE IREDELL COUNTY			
Drawn By:	RGH	Approved By:	[Signature]
Dwg No.:			

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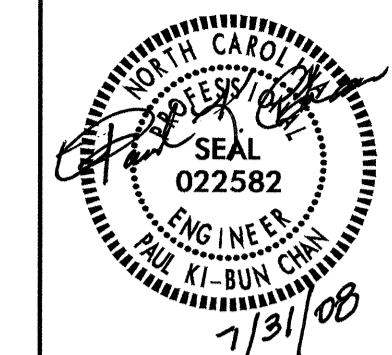


TYPE WM LUMINAIRE AND CIRCUITRY

- NOTES**
- △ MOUNT TYPE WM LUMINAIRE APPROX. 15' ABOVE ROADWAY.
 - △ PROVIDE EXPANSION FITTINGS IN EACH SECTION OF CONDUIT THAT IS GREATER THAN 20' LONG BETWEEN TERMINALS AND AT BRIDGE EXPANSION JOINTS.
 - △ ADJUST CONDUIT AND JUNCTION BOX LAYOUT TO ACCOMMODATE DIFFERENCE IN ELEVATION AT EACH SEAT BUILD-UP ON CENTER BENT.
 - △ INSTALL STRAP W/BACK AT ALL CONDUIT BODIES.
 - △ LOCATE ENCLOSURE ON CENTER BENT BRIDGE PIER.
 - △ EXTEND CIRCUIT TO JB7. SEE SHEET E2.
 - △ SEE STANDARD DRAWING 1412.01 FOR OTHER INSTALLATION DETAILS.

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES LIGHTING/ELECTRICAL SECTION			
UNDERPASS LIGHTING BRAWLEY SCHOOL ROAD			
Drawn By:	Checked by:	Approved By:	
RGH	<i>[Signature]</i>	<i>[Signature]</i>	

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

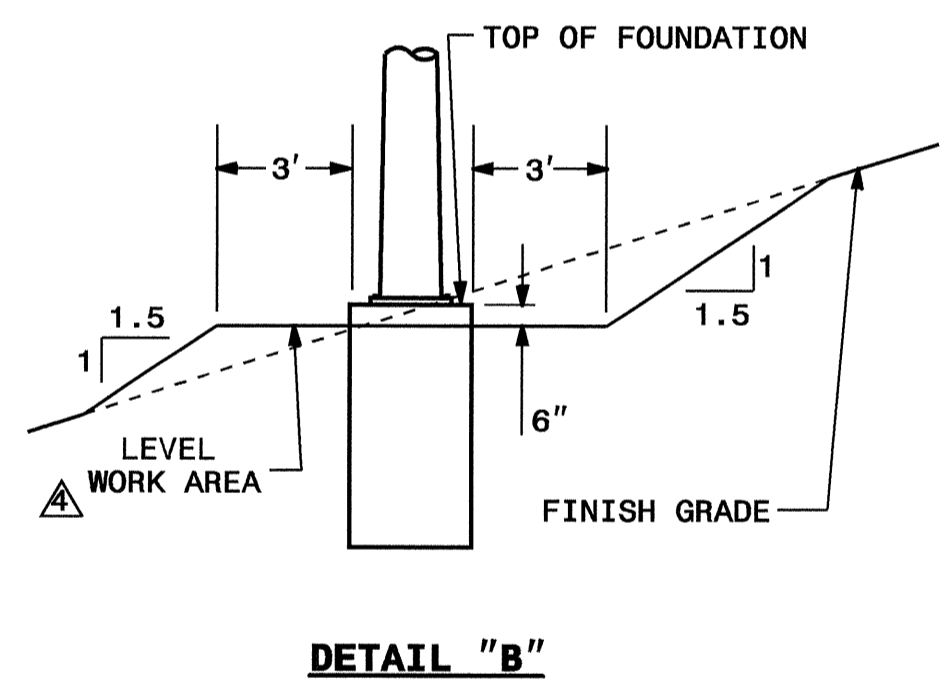
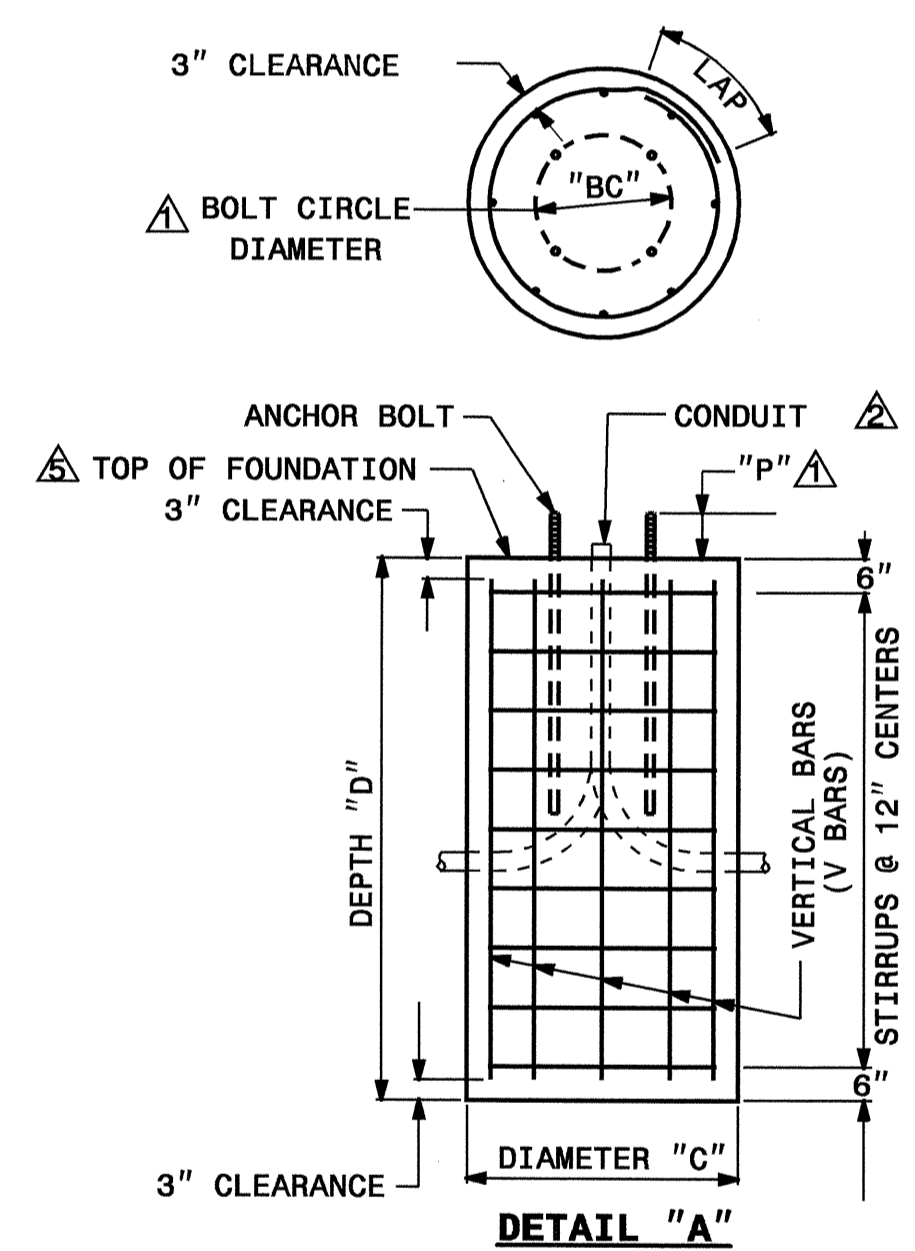
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ENGLISH STANDARD DRAWING FOR
HIGH MOUNT FOUNDATION

SHEET 1 OF 1
1402D01

TABLE OF FOUNDATION DIMENSIONS AND QUANTITIES																		
HEIGHT OF HIGH MOUNT FT	DIAMETER "C" FT	STIRRUPS		WIND VELOCITY MPH														
				90				110				130						
				DEPTH "D" FT	V BARS QTY	REINF. * STEEL LBS	CONCRETE CY	DEPTH "D" FT	V BARS QTY	REINF. * STEEL LBS	CONCRETE CY	DEPTH "D" FT	V BARS QTY	REINF. * STEEL LBS	CONCRETE CY			
60	3.5	#3	1.0	11	8	#8	280	3.9	12	8	#8	306	4.3	13	8	#8	331	4.6
80	3.5	#3	1.0	12	8	#8	306	4.3	13	8	#8	331	4.6	15	8	#8	382	5.3
100	4.0	#3	1.0	13	8	#9	413	6.1	15	8	#9	477	7.0	16	8	#9	509	7.4
120	4.5	#3	1.0	15	8	#10	557	8.2	16	8	#10	636	9.4	18	8	#10	716	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
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-06

ENGLISH STANDARD DRAWING FOR
HIGH MOUNT FOUNDATION

SHEET 1 OF 1
1402D01

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING DETAILS HIGH MAST FOUNDATION			
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		Dwg No.:	