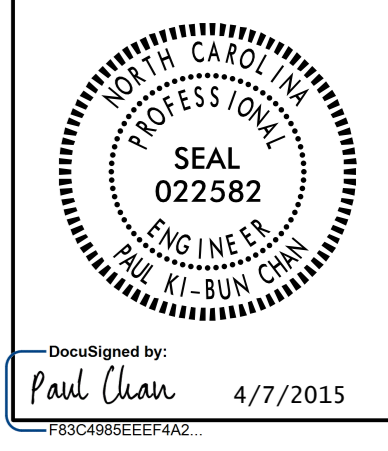


PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION



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 LOCATE PROPOSED CONTROL SYSTEM IN AN AREA ACCESSIBLE FOR MAINTENANCE VEHICLES AND OUTSIDE OF CLEAR ZONE AS DEFINED BY THE 2011 AASHTO ROADSIDE DESIGN GUIDE.
- 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 TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 7 TYPE PC36 JUNCTION BOXES ARE 36" L X 24" W X 18" H.
- 8 PLACE SINGLE ARM STANDARD ACCORDING TO DETAIL DRAWING 1404D01 (SHEET 1 OF 3), PLANSHEET E5, AND WHERE REQUIRED, PLACE JUNCTION BOX WITHIN 2' OF SINGLE ARM LIGHT STANDARD.
- 9 INSTALL ELECTRICAL DUCT FOR BEST ALIGNMENT OF CIRCUITRY AS SHOWN ON PLANS.
- 10 PLACE TWIN ARM STANDARD OFF CENTER OF MEDIAN AND MINIMUM OF 5' FROM DITCHLINE.
- 11 HIGH MAST FOUNDATION SHALL BE SET APPROXIMATELY 40' FROM THE OVER POWER LINES.
- 12 THE CONTRACTOR SHALL NOT DISTURB UNDERGROUND UTILITY CABLES WHEN LOCATING ROADWAY LIGHTING FOUNDATIONS.
- 13 ADDITIONAL JUNCTION BOXES ARE REQUIRED AS PART OF GENERIC LIGHTING PAY ITEMS AS SHOWN IN HIGH MAST STANDARD FOUNDATION, LIGHT CONTROL SYSTEM, AND STANDARD FOUNDATION. THESE JUNCTION BOXES ARE TO BE PAID FOR AS PART OF THE RESPECTIVE GENERIC LIGHTING PAY ITEMS.

SCOPE OF WORK

PLACE ROADWAY LIGHTING SYSTEM INTO SERVICE BY PROVIDING AND INSTALLING 120' AND 60' HIGH MOUNT STANDARDS, SINGLE ARM STANDARDS, AND TWIN ARM STANDARDS WITH LIGHT EMITTING DIODE LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

DESIGN CRITERIA

- 0.8 AVERAGE FOOTCANDLES ON TRAVEL LANES
- 4:1 AVERAGE TO MINIMUM UNIFORMITY RATIO ON TRAVEL LANES
- 2005 AASHTO ROADWAY LIGHTING DESIGN GUIDE
- 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 110 MPH. ANY CONTRACTOR-DESIGNED SITE SPECIFIC FOUNDATION DESIGN SHALL BE DESIGNED FOR THE SAME WIND SPEED
- 2014 NATIONAL ELECTRICAL CODE
- 2011 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 JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD NO.	TITLE
1401.01	HIGH MOUNT STANDARD (USE ATTACHED DETAIL SHEET 1401D01 IN LIEU OF STANDARD DRAWING 1401.01 SHEET 1)
1404.01	LIGHT STANDARDS (USE ATTACHED DETAIL SHEET 1404D01 IN LIEU OF STANDARD DRAWING 1404.01 SHEET 1)
1405.01	STANDARD FOUNDATION
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

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

LEGEND

- PROPOSED 60' HIGH MAST STANDARD W/ HM FOUNDATION & (4) HM LED LUMINAIRES. 320W MAX, 30,000 MIN. INITIAL LUMENS, MAX BUG RATING 5-0-5, TYPE V
- PROPOSED 120' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 550W MAX, 53,000 MIN. INITIAL LUMENS, MAX BUG RATING 5-0-5, TYPE V
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' TWIN ARMS. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2 IN MEDIAN WITH 185W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED MAX BUG RATING 3-0-3
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2 & 185W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED MAX BUG RATING 3-0-3
- PROPOSED CONTROL SYSTEM WITH PC36 JUNCTION BOX. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E2
- 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 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

TABLE "B"
JUNCTION BOX SUMMARY

NUMBER	LOCATION	TYPE	SHEET
JB1	10+82 -R5- 20' RT	PC36	E2
JB2	APPROX. 280' FROM JB1, BESIDE R5	PC18	E2
JB3	ACROSS FROM JB4-15' FROM EOT	PC18	E2
JB4	IN NC 147 MEDIAN, 430' PED. BRG.	PC18	E2
JB5	12+14 -R4- 42' LT	PC18	E2
JB6	19+90 -LALT- 60' LT	PC18	E2
JB7	10+65 -R3- 42' RT	PC18	E2
JB8	AT SA#1	PC18	E2
JB9	18+46 -R3- 13' RT	PC18	E2
JB10	18+46 -R3- 60' LT	PC18	E2
JB11	ACROSS FROM JB10	PC18	E2
TOTALS		10	1

TABLE "D"
SINGLE & TWIN ARM STANDARD SUMMARY

LOCATION	SINGLE ARM	TWIN ARM
12+86 -R3-	SA#1	
15+23 -R3-	SA#2	
220' FROM SA#4	SA#3	
220' FROM SA#5	SA#4	
12+10 -R1-	SA#5	
220' WEST OF TA#2		TA#1
220' WEST OF TA#3		TA#2
220' WEST OF TA#4		TA#3
10+20 -YA- 5'LT		TA#4
95' WEST OF PEDESTRIAN BRIDGE		TA#5
220' EAST OF TA#5		TA#6
220' EAST OF TA#6		TA#7
220' EAST OF TA#7		TA#8
TOTALS	5	8

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
*8	2 #8 Ø 1 #10G	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR

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 2"	SIZE 3"	SIZE 4"	
10+82 -R5-	CS"A" - JB1	E2				50			
10+82 -R5-		E2			30				
20+00 -LALT-	JB1 - JB6	E2				110			
20+00 -LALT-		E2			90				
12+14 -R4-	JB1 - JB5	E2				50			
12+14 -R4-		E2			30				
18+46 -R3-	JB9 - JB10	E2				95			
18+46 -R3-		E2			75				
18+46 -R3-		E2		75					
-YA- IN MEDIAN, 430' FROM PEDESTRIAN BRIDGE		E2		75					
TOTALS				150	225	305			

ABBREVIATIONS

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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