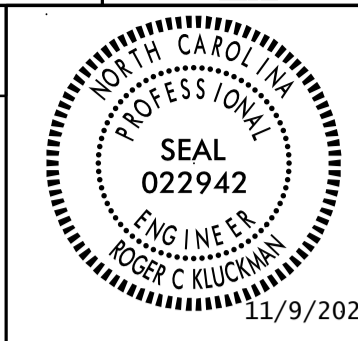


PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DocuSigned by:
Roger Kluckman

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 ALL JUNCTION BOXES SHALL BE 18" HIGH, UNLESS OTHERWISE NOTED.
- 7 CONTRACTOR SHALL RECORD THE GPS COORDINATES OF EACH JUNCTION BOX IN THE JUNCTION BOX SUMMARY, TABLE C. PROVIDE A COPY OF THE JUNCTION BOX SUMMARY WITH THESE COORDINATES TO THE LIGHTING ENGINEER DURING PROJECT INSPECTION.
- 8 POLE NUMBERING CONVENTION: CONTROL SYSTEM-POLE #-CKT # (A-3-2).
- 9 JUNCTION BOXES SHOWN NEAR LIGHT STANDARD(LSJB + HMJB) ARE SHOWN FOR CLARITY. THESE JUNCTION BOXES SHALL BE INSTALLED FOR BEST ALIGNMENT OF CIRCUITRY WHILE MAINTAINING THE OFFSETS SHOWN IN TABLE C.

SCOPE OF WORK

PLACE ROADWAY LIGHTING SYSTEM INTO SERVICE BY PROVIDING AND INSTALLING LIGHT STANDARDS WITH LIGHT EMITTING DIODE LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

DESIGN CRITERIA

- 0.8 AVERAGE FOOTCANDLE ON TRAVEL LANES
- 4:1 AVERAGE TO MINIMUM UNIFORMITY RATIO ON TRAVEL LANES
- 2018 AASHTO ROADWAY LIGHTING DESIGN GUIDE
- 2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 6TH EDITION AND LATEST INTERIM SPECIFICATIONS VALID AT THE TIME OF LETTING (HANDHOLE SHAFT DIAMETER REQUIREMENT AND HANDHOLE PLACEMENT REQUIREMENT WAIVED)
- FATIGUE CATEGORY II SHALL BE USED IN DESIGN
- DESIGN HIGH MOUNT SUPPORT FOR BASIC WIND SPEED OF 100 MPH
- DESIGN HIGH MOUNT STANDARD FOUNDATION FOR BASIC WIND SPEED OF 130 MPH. ANY CONTRACTOR-DESIGNED SITE SPECIFIC FOUNDATION DESIGN SHALL BE DESIGNED FOR THE SAME WIND SPEED
- 2017 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 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD NO.	TITLE
1401.01	HIGH MOUNT STANDARD
1404.01	LIGHT STANDARDS
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 2018.

LEGEND

- PROPOSED 120' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX & 8 HM LED LUMINAIRES. 560W MAX, 54,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V. MAXIMUM BUG RATING 5-0-5.
- PROPOSED 100' HIGH MAST STANDARD W/ HM FOUNDATION, JUNCTION BOX & 6 HM LED LUMINAIRES. 560W MAX, 54,000 MIN. MAINTAINED DELIVERED LUMENS, TYPE V. MAXIMUM BUG RATING 5-0-5.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' TWIN ARMS. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, JUNCTION BOX & 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
- PROPOSED CONTROL SYSTEM WITH JUNCTION BOX. SIZE BREAKERS AS SHOWN IN LOAD SCHEDULE. SEE SHEET E2.
- PROPOSED ELECTRICAL JUNCTION BOX. SEE TABLE C, SHEET E1A FOR DETAILS AND TYPE.
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED.
- PROPOSED FEEDER CIRCUIT. CONTROL SYSTEM (A), CIRCUIT NUMBER (1) PLAN SYMBOL (6). SEE TABLE A, THIS SHEET.
- PROPOSED 30' CLASS 4 SERVICE POLE AND LATERAL 3 #1/0 USE CONDUCTORS 2" CONDUIT
- PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE B, SHEET E1A.
2", 3" OR 4" ELEC. DUCT JA & BD

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

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
IGJB	IN GROUND JUNCTION BOX	HM	HIGH MAST
LED	LIGHT EMITTING DIODE	LSJB	LIGHT STANDARD JUNCTION BOX
HMJB	HIGH MAST JUNCTION BOX	CSJB	CONTROL SYSTEM JUNCTION BOX

COMPUTED BY: SAM DATE: 11/8/21
CHECKED BY: RGH DATE: 11/8/21

02/03/98

08-NOV-2021 4:31
 R:\Lighting\Electrical\Lighting Design\Lighting Design 022020\U-5996-L&E-PSH-El.dgn
 .somaiki AT RD-304555

TABLE "C"
 JUNCTION BOX SUMMARY

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "A"											GPS LOCATION LAT/LONG
			TYPE, PAY ITEM & SIZE											
			IN GROUND			LIGHT STANDARD			HIGH MAST			CONTROL SYSTEM	BARRIER RAIL	
IG18 18"X12"	IG30 30"X17"	IB36 36"X24"	LS18 18"X12"	LS30 30"X17"	LS36 36"X24"	HM18 18"X12"	HM30 30"X17"	HM36 36"X24"	CS36 36"X24"	BR18 18"X12"	SW18 18"X12"			
E2	CSAJB	2' FROM EXISTING CONTROL SYSTEM "A"	-	-	-	-	-	-	-	-	-	X	-	-
E2	JBA1	-L1RPB- STA. 16+58, 40' LT	-	-	X	-	-	-	-	-	-	-	-	-
E2	A-3JB	10' FROM HIGH MAST A-3	-	-	-	-	-	X	-	-	-	-	-	-
E2	JBA2	-Y23- STA. 11+96, 83' RT	X	-	-	-	-	-	-	-	-	-	-	-
E2	JBA3	-Y23- STA. 11+96, 4' LT	X	-	-	-	-	-	-	-	-	-	-	-
E2	A-2JB	5' FROM LIGHT STANDARD A-2	-	-	-	X	-	-	-	-	-	-	-	-
E2	A-1JB	5' FROM LIGHT STANDARD A-1	-	-	-	X	-	-	-	-	-	-	-	-
E2	A-4JB	10' FROM HIGH MAST A-4	-	-	-	-	-	X	-	-	-	-	-	-
E2	JBA4	-L1- STA. 53+88, 90' LT	X	-	-	-	-	-	-	-	-	-	-	-
E2	JBA5	-L1- STA. 53+88, 16' RT	X	-	-	-	-	-	-	-	-	-	-	-
E2	JBA6	-Y23- STA. 21+77, 87' RT	X	-	-	-	-	-	-	-	-	-	-	-
E2	JBA-5	10' FROM HIGH MAST A-5	-	-	-	-	-	X	-	-	-	-	-	-
E2	JBA7	-Y23- STA. 24+25, 3' RT	X	-	-	-	-	-	-	-	-	-	-	-
E2	A-6JB	5' FROM LIGHT STANDARD A-6	-	-	-	X	-	-	-	-	-	-	-	-
E2	A-7JB	5' FROM LIGHT STANDARD A-7	-	-	-	X	-	-	-	-	-	-	-	-
E2	JBA8	-Y23- STA. 17+03, 88' RT	X	-	-	-	-	-	-	-	-	-	-	-
E2	JBA9	-Y23- STA. 17+03, 81' LT	X	-	-	-	-	-	-	-	-	-	-	-
E2	JBA10	-L1- STA. 57+53, 96' LT	X	-	-	-	-	-	-	-	-	-	-	-
E2	A-8JB	10' FROM HIGH MAST A-8	-	-	-	-	-	X	-	-	-	-	-	-
CSA TOTALS			9		1	4			4			1		

PROJECT REFERENCE NO. U-5996 SHEET NO. EIA

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Documented by: Roger Kluckman

TABLE "B"
 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"	SIZE 4"	SIZE 6"
-Y23- STA. 11+96		E2		70						
-RPB- STA. 16+57	CSAJB - JBA	E2			60		120			
-Y23- STA. 17+03		E2		150						
-L1- STA. 53+88		E2		90						
-Y23- STA. 24+25		E2		60						
-L1- STA. 57+52		E2		90						
CSA TOTALS				460	60		120			

SEE SHEET "E1" FOR
 LEGEND & △ NOTES

COMPUTED BY: SAM DATE: 11/8/21
 CHECKED BY: RGH DATE: 11/8/21

