PROJECT REFERENCE NO.	SHEET NO.
SS-4904CX	E1

NORTH CAROLINA PROFESSIONAL SEAL 022582 ENGINEER PAUL KI-BUN CHAN

DocuSigned by: Paul Chan F83C4985EEEF4A2... 4/10/2015

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 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. 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. DIMENSIONS SHOWN ARE FROM THE CENTER OF THE HM FOUNDATION TO A POINT PERPENDICULAR TO THE EDGE OF PAVEMENT

SCOPE OF WORK

PLACE ROADWAY LIGHTING SYSTEM INTO SERVICE BY PROVIDING AND INSTALLING 120' HIGH MOUNT STANDARDS WITH LIGHT EMITTING DIODE (LED) 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

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 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

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
862.02	GUARDRAIL INSTALLATION
1401.01	HIGH MOUNT STANDARD (USE ATTACHED DETAIL SHEET 1401D01 IN LIEU OF STANDARD
1407.01	DRAWING 1401.01, SHEET 1)
1408.01	ELECTRIC SERVICE POLE AND LATERAL
1409.01	LIGHT CONTROL SYSTEM
1410.01	ELECTRICAL DUCT
1411.01	FEEDER CIRCUITS
	ELECTRICAL JUNCTION BOXES

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

LEGEND

120' LED — PROPOSED 120' HIGH MAST STANDARD WITH HM FOUNDATION, PC18 JUNCTION BOX, & (8) HM LUMINAIRES 550W MAX, 53,000 MIN. DELIVERED LUMENS, TYPE V MAXIMUM BUG RATING 5-0-5.

100' LED — PROPOSED 100' HIGH MAST STANDARD WITH HM FOUNDATION, PC18 JUNCTION BOX, & (6) HM LUMINAIRES 550W MAX, 53,000 MIN. DELIVERED LUMENS, TYPE V MAXIMUM BUG RATING 5-0-5.

PROPOSED CONTROL SYSTEM WITH PC36 JUNCTION BOX. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E2

JB1 — PROPOSED ELECTRICAL JUNCTION BOX SEE DETAILS & TABLE B, THIS SHEET

△1 — REFERENCE TO CORRESPONDING NOTE AS NUMBERED

A1 6 — PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (6) SEE TABLE A, THIS SHEET

3#1/0 USE 2" — PROPOSED SERVICE LATERAL 30' FROM EXISTING UTILITY POLE
3#1/0 USE CONDUCTORS, 2" CONDUIT

2", 3" OR 4" ELEC. DUCT JA & BD — PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE C, THIS SHEET

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

TABLE "B"
JUNCTION BOX SUMMARY FOR CS-A

NUMBER	LOCATION	TYPE		SHEET
JB1	230' FROM HM1	PC18		E2
JB2	235' FROM JB1	PC18		E2
JB3	235' FROM JB2, 270' FROM CS-A	PC18		E2
JB4	285' FROM JB5, 64' FROM JB3	PC18		E2
JB5	285' FROM JB6	PC18		E2
JB6	275' FROM HM3	PC18		E2
TOTAL		6		

TABLE "C"
ELECTRICAL DUCT SUMMARY
(ESTIMATED LENGTH IN FEET)

			TYPE					
			JACKED (JA) FEET				BURIED (BD) FEET	
LOCATION	RACEWAY △1	SHEET	SIZE 2"	SIZE 3"	SIZE 4"	SIZE 6"	SIZE 2"	SIZE 3"
NC58 NEAR BELOW US64 WEST BRIDGE		E2			60'			
NC58 NEAR BELOW US64 WEST BRIDGE	JB3 - JB4	E2					70'	
TOTAL					60'		70'	

TRADE SIZE	METRIC	ENGLISH
½	16mm	½"
¾	21mm	¾"
1	27mm	1"
1.5	41mm	1½"
2	53mm	2"
3	78mm	3"

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	

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