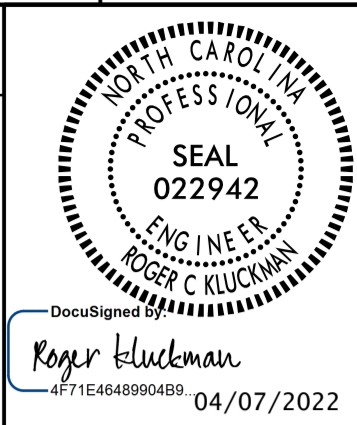


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# PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

## 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 ALL IN GROUND JUNCTION BOXES SHALL BE 18" HIGH AND ALL BARRIER RAIL AND SIDEWALK JUNCTION BOXES SHALL BE 6" 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 STANDARDS (LSJB & HMJB) ARE SHOWN FOR CLARITY. THESE JUNCTION BOXES ARE TO BE USED AS A TEE POINT FOR CIRCUITRY TO THE STANDARD, AND SHALL BE INSTALLED FOR BEST ALIGNMENT OF CIRCUITRY WHILE MAINTAINING THE OFFSETS SHOWN IN TABLE "C". SEE STANDARD DRAWINGS 1401.01 AND 1406.01 FOR INSTALLATION DETAILS.
- 10 CLEAR AND GRUB AN AREA 25' IN DIAMETER AROUND CENTER OF HIGH MAST FOUNDATION.
- 11 REMOVE EXISTING CONDUCTORS. REPLACE CONDUCTOR SIZE AS SHOWN.
- 12 USE EXISTING JUNCTION BOX.
- 13 USE EXISTING FOUNDATION FROM REMOVED POLE.
- 14 EXISTING POLE APPEARS TO BE IN CONFLICT WITH CONSTRUCTION, RELOCATE THE POLE MINIMUM 14' FROM PROPOSED EOT.

## 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 ROADSIDE 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 110 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
- 2020 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               |
| 1402.01 | HIGH MOUNT FOUNDATION             |
| 1403.01 | HIGH MOUNT LED LUMINAIRES         |
| 1404.01 | LIGHT STANDARDS                   |
| 1405.01 | STANDARD FOUNDATION               |
| 1406.01 | LIGHT STANDARD 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         |

ALL WORK SHALL BE IN CONFORMANCE WITH DIVISION 14 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2018.

| PLAN SYMBOL | DESCRIPTION                | CONTRACT ITEM                            |
|-------------|----------------------------|--|
| 8           | 2 #8 Ø<br>1 #10G<br>1.5" P | 2 - 8 W/G FEEDER CIRCUIT IN 1.5" CONDUIT |
| *8          | 2 #8 Ø<br>1 #10G           | 2 - 8 W/G FEEDER CIRCUIT                 |
| 6           | 2 #6 Ø<br>1 #8G<br>1.5" P  | 2 - 6 W/G FEEDER CIRCUIT IN 1.5" CONDUIT |
| *6          | 2 #6 Ø<br>1 #10G           | 2 - 6 W/G FEEDER CIRCUIT                 |
| 4           | 2 #4 Ø<br>1 #6G<br>1.5" P  | 2 - 4 W/G FEEDER CIRCUIT IN 1.5" CONDUIT |
| *4          | 2 #4 Ø<br>1 #6G            | 2 - 4 W/G FEEDER CIRCUIT                 |
| 2           | 2 #2 Ø<br>1 #4G<br>1.5" P  | 2 - 2 W/G FEEDER CIRCUIT IN 1.5" CONDUIT |
| *2          | 2 #2 Ø<br>1 #4G            | 2 - 2 W/G FEEDER CIRCUIT                 |

## 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 LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2, JUNCTION BOX (WHEN SHOWN IN THE PLANS) & 285W MAX LED ROADWAY LUMINAIRE. IES DISTRIBUTION: TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' TWIN ARMS. INCLUDES STANDARD FOUNDATION IN MEDIAN BARRIER WITH 285W MAX LED ROADWAY LUMINAIRES. IES DISTRIBUTION: TYPE II OR III AS REQUIRED. MAXIMUM BUG RATING 3-0-3.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARMS. INSTALLED ON EXISTING FOUNDATION WITH 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 OF BREAKERS AS SHOWN IN LOAD SCHEDULE. SEE SHEETS E-3 AND E-6.
- EXISTING ELECTRICAL JUNCTION BOX. REUSE, REMOVE OR ABANDON AS NOTED ON THE PLANS.
- EXISTING TWIN ARM LIGHT STANDARD TO BE REMOVED.
- EXISTING SINGLE ARM LIGHT STANDARD TO BE REMOVED. REUSE, ABANDON OR REMOVE FOUNDATION.
- PROPOSED ELECTRICAL JUNCTION BOX. SEE TABLE C, SHEET E-1A AND E-1B, FOR DETAILS AND TYPE.
- EXISTING CONTROL SYSTEM TO BE REMOVED.
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED.
- PROPOSED FEEDER CIRCUIT. CONTROL SYSTEMS (A) CIRCUIT NUMBER (1) PLAN SYMBOL (8). SEE TABLE A, THIS SHEET.
- PROPOSED 30' CLASS 4 SERVICE POLE AND LATERAL 3 #1/0 USE 2" CONDUIT
- PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE B, SHEET E-1A AND E-1B.
- EXISTING 100' HIGH MAST STANDARD TO BE REMOVED. REMOVE OR ABANDON FOUNDATION.
- EXISTING SINGLE ARM LIGHT STANDARD ON WOOD POLE TO BE RELOCATED.
- EXISTING SINGLE ARM LIGHT STANDARD ON WOOD POLE.

### 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    |

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