

**SCOPE OF WORK**

RENOVATE AND RELOCATE EXISTING LIGHTING IN CONFLICT WITH CONSTRUCTION AT EXISTING INTERCHANGE.

**NOTES**

- 1 INSTALL ALL BORE PITS OUTSIDE THE CLEAR ZONE, AS DEFINED BY THE 2011 AASHTO ROADSIDE DESIGN GUIDE OR AS DIRECTED BY THE ENGINEER.
- 2 LOCATE ALL JUNCTION BOXES OUTSIDE CLEAR ZONE AND IN AN AREA UNLIKELY TO BE USED BY TRAFFIC.
- 3 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.
- 4 ALL IN GROUND, LIGHT STANDARD AND HIGH MAST JUNCTION BOXES SHALL BE 18" HIGH, UNLESS OTHERWISE NOTED. ALL BARRIER RAIL AND SIDEWALK JUNCTION BOXES SHALL BE 8" HIGH, UNLESS OTHERWISE NOTED.
- 5 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.
- 6 INTERCEPT EXISTING CONDUIT. ATTACH NEW CONDUIT TO EXISTING CONDUIT. INSTALL NEW CONDUCTOR, SIZED AS SHOWN.
- 7 AT THESE LOCATIONS, PROVIDE ELECTRICAL DUCT IN ACCORDANCE WITH NEC REQUIREMENTS FOR AN APPROVED RACEWAY FOR ELECTRICAL CIRCUITS. SEE TABLE "B"

**DESIGN CRITERIA**

2017 NATIONAL ELECTRICAL CODE  
2011 AASHTO ROADSIDE DESIGN GUIDE

**PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION**

**LEGEND**

- JB1 PROPOSED ELECTRICAL JUNCTION BOX SEE DETAILS & TABLE C, SHEETS E1A.
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED.
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(J), CIRCUIT(1) PLAN SYMBOL (6) SEE TABLE A, THIS SHEET.
- PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE B, SHEET E1A  
2", 3", 4" OR 6" ELEC. DUCT JA & BD
- EXISTING ELECTRICAL DUCT TO REMAIN.
- EXISTING ELECTRICAL FEEDER CIRCUIT. REMOVE OR ABANDON.
- EXISTING ELECTRICAL FEEDER CIRCUIT TO REMAIN.
- EXISTING 100' HIGH MAST STANDARD TO REMAIN.
- RELOCATED 45' LIGHT STANDARD. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2 AND JUNCTION BOX.
- EXISTING 45' LIGHT STANDARD TO BE RELOCATED.
- EXISTING 45' SINGLE ARM LIGHT STANDARD.
- EXISTING 45' TWIN ARM LIGHT STANDARD.
- EXISTING ELECTRICAL JUNCTION BOX.
- EXISTING CONTROL SYSTEM.

**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
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.

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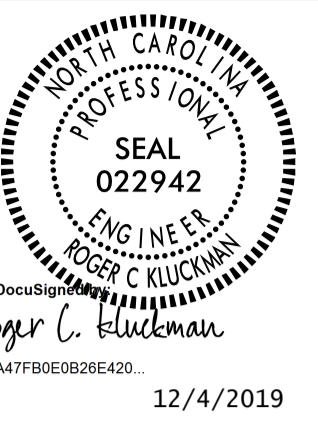


TABLE "A"  
CIRCUITRY CONDUCTOR CONDUIT TYPE & SIZE

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
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: 12/4/19  
CHECKED BY: GH DATE: 12/4/19

02/03/19

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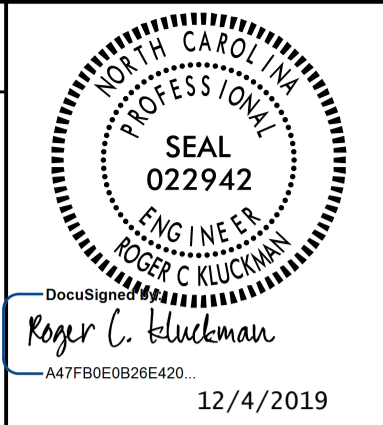


TABLE "C" JUNCTION BOX SUMMARY

SHEET	LABEL	LOCATION AND OFFSET	CONTROL SYSTEM "A"										GPS LOCATION	
			TYPE, PAY ITEM & SIZE										LAT/LONG	
			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	JB12	-L- STA. 25+05, 73' LT	X											
E2	JB13	-L- STA. 25+05, 79' RT	X											
E3	JB14	-RPB Y1- STA. 16+18, 37' LT	X											
E3	SA#6 JB	5' FROM SINGLE ARM # 6				X								
E3	SA#7 JB	5' FROM SINGLE ARM # 7				X								
E3	SA#8 JB	5' FROM SINGLE ARM # 8				X								
CSJ TOTALS			3			3								

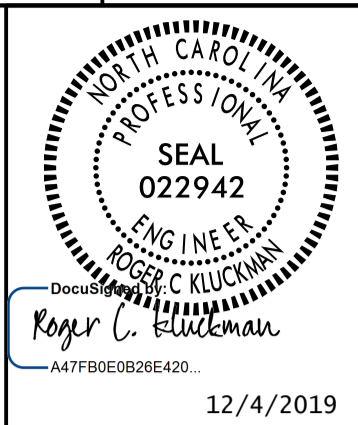
TABLE "B" ELECTRICAL DUCT SUMMARY (ESTIMATED LENGTH IN FEET)

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"
-L- STA. 25+05	JB12 - JB13	E2				135		150		
-RPB_Y1- STA. 16+18		E3		45						
CSJ TOTALS				45	135		150			

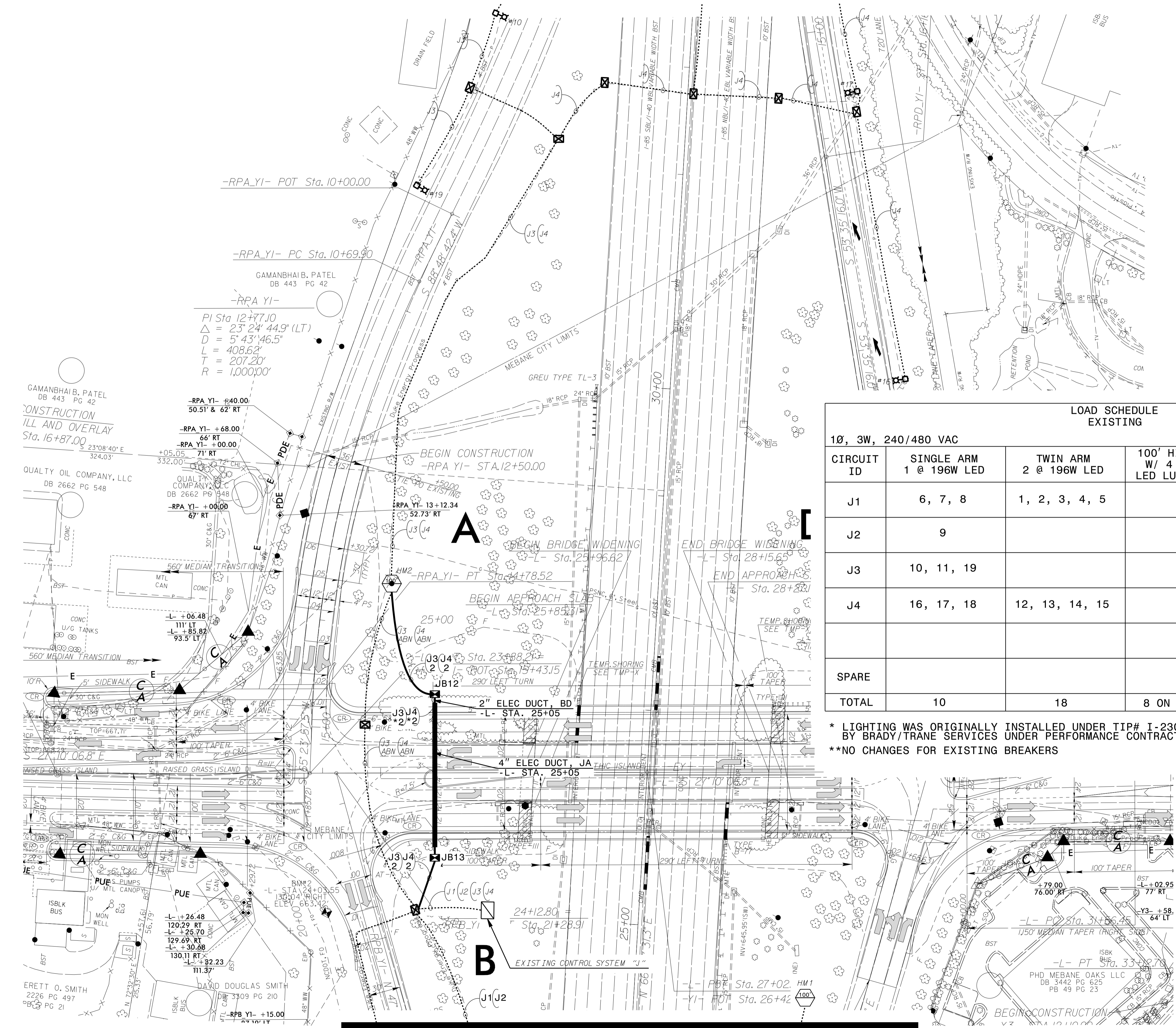
SEE SHEET "E1" FOR LEGEND & △ NOTES



USE FOR LIGHTING CONSTRUCTION ONLY



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LOAD SCHEDULE EXISTING			CONTROL SYSTEM "J"		
CIRCUIT ID	1Ø, 3W, 240/480 VAC		AMPS @ 480V	KW LOAD	BREAKER ** SIZE (AMPS)
J1	SINGLE ARM 1 @ 196W LED	TWIN ARM 2 @ 196W LED	5.3	2.6	50
J2	6, 7, 8	1, 2, 3, 4, 5	4.4	2.1	50
J3	10, 11, 19		9.1	4.4	50
J4	16, 17, 18	12, 13, 14, 15	4.5	2.2	50
SPARE					
TOTAL	10	18	23.3	11.3	

\* LIGHTING WAS ORIGINALLY INSTALLED UNDER TIP# I-2306A/I-304E AND HAS BEEN UPGRADED BY BRADY/TRANE SERVICES UNDER PERFORMANCE CONTRACT IN 2018  
 \*\*NO CHANGES FOR EXISTING BREAKERS

SEE SHEET "E1" FOR LEGEND & △ NOTES

2			
1			
Rev.	Date	Description	Approved
<b>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION</b> ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION <b>LIGHTING LAYOUT</b> I-85/SR 1007 (MEBANE OAKS RD) INTERCHANGE ALAMANCE COUNTY			
Drawn By:	Approved By:	Dwg No.:	
SAM	GH		

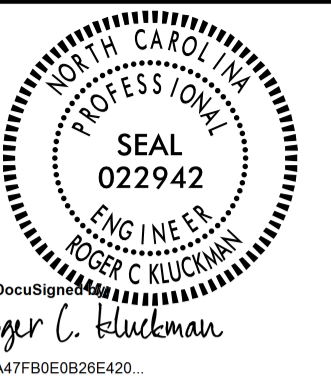
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# USE FOR LIGHTING CONSTRUCTION ONLY

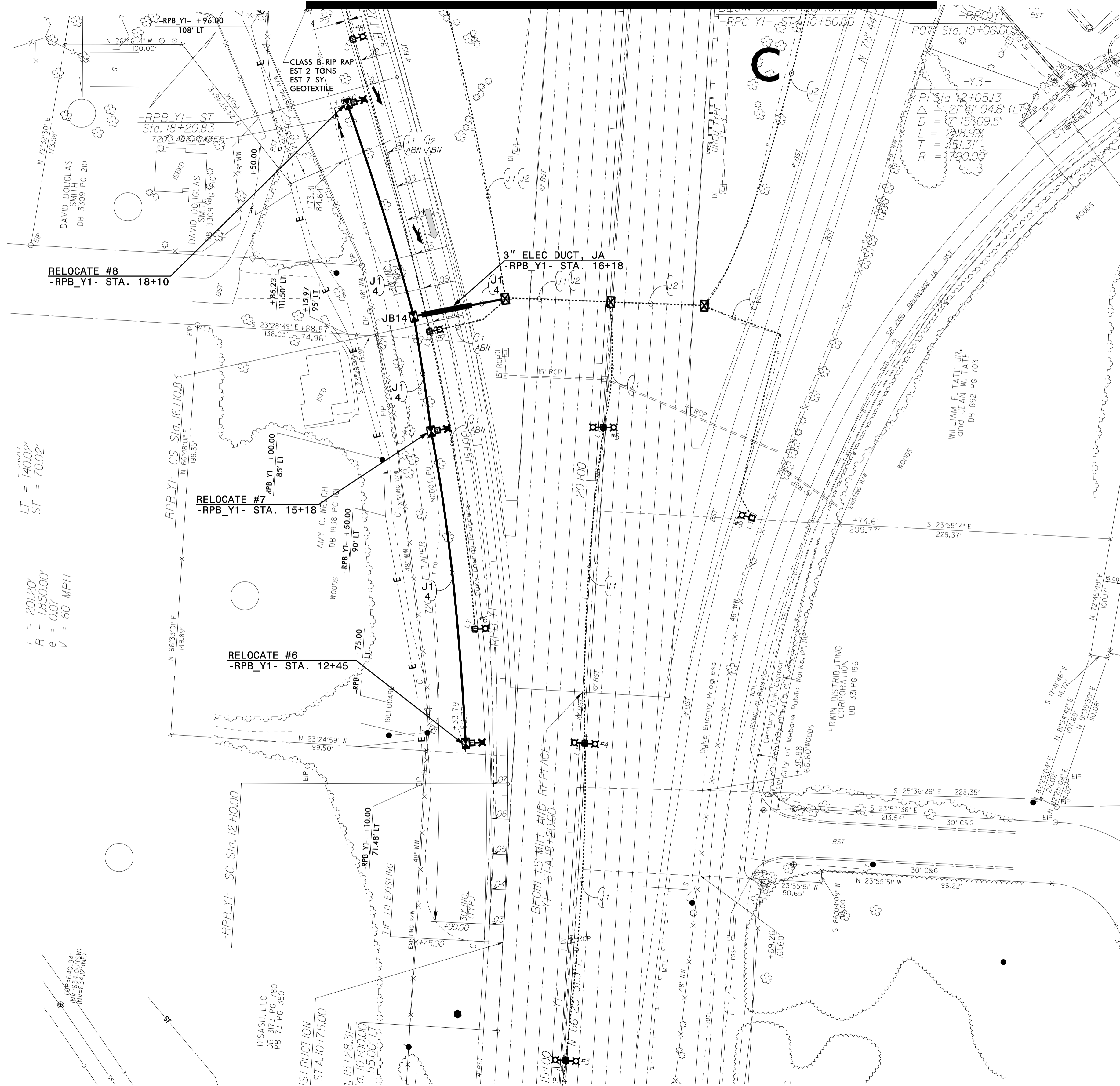
MATCHLINE STA 26+86 -L- SHEET E2

PROJECT REFERENCE NO. 1-5711 SHEET NO. E3



12/4/2019

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LT = 40.02'  
ST = 70.02'

I = 201.20'  
R = 1850.00'  
e = 0.07  
V = 60 MPH

SEE SHEET "E1" FOR LEGEND & Δ NOTES

2			
1			
Rev.	Date	Description	Approved
<b>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION</b> ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION <b>LIGHTING LAYOUT</b> I-85/SR 1007 (MEBANE OAKS RD) INTERCHANGE ALAMANCE COUNTY			
Drawn By:	SAM	Approved By:	GH
Dwg No.:			

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