

# 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 2002 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 2002 AASHTO ROADSIDE DESIGN GUIDE.
- 5 TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 6 TYPE PC30 JUNCTION BOXES ARE 30" L X 17" W X 18" H.
- 7 TYPE BR JUNCTION BOXES ARE 18" L X 12" W X 6" D.
- 8 STANDARD HAS BEEN KNOCKED DOWN, BUT WILL BE REPLACED BY THE DEPARTMENT INDEPENDENT OF THIS PROJECT.
- 9 PLACE STANDARD BEHIND SIDEWALK AND IN FRONT OF C/A FENCE.

## SCOPE OF WORK

PLACE ROADWAY LIGHTING SYSTEM INTO SERVICE BY PROVIDING AND INSTALLING 80' AND 100' HIGH MOUNT STANDARDS, 45' SINGLE ARM STANDARDS AND 45' TWIN ARM STANDARDS EACH WITH HIGH PRESSURE SODIUM LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

## DESIGN CRITERIA

- 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
- 2011 NATIONAL ELECTRICAL CODE
- 2002 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
1402.01	HIGH MOUNT FOUNDATION
1403.01	HIGH MOUNT 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 2012.

## LEGEND

- PROPOSED 80' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 400W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED 100' HIGH MAST STANDARD W/ HM FOUNDATION & (6) HM LUMINAIRES 750W HPS, MEDIUM, CUTOFF, TYPE V
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' TWIN ARMS. INCLUDES STANDARD FOUNDATION IN MEDIAN BARRIER WITH 400W HPS FLAT GLASS ROADWAY LUMINAIRE. IES DISTRIBUTION: MEDIUM, CUTOFF, TYPE III. STANDARD TO BE PROVIDED BY THE DEPARTMENT.
- PROPOSED LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2 & 400W HPS FLAT GLASS ROADWAY LUMINAIRE. IES DISTRIBUTION: MEDIUM, CUTOFF, TYPE III
- EXISTING TWIN ARM LIGHT STANDARD.
- EXISTING SINGLE ARM LIGHT STANDARD.
- PROPOSED CONTROL SYSTEM WITH PC36 JUNCTION BOX. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEETS E2 & E3
- 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
- EXISTING CONDUCTOR IN 1 1/2" CONDUIT.
- 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

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

NUMBER	LOCATION	TYPE	SHEET
CONTROL SYSTEM "E"			
JB1	24+20 -Y1- 245' LT	PC18	E2
JB2	22+36 -Y1- 125' LT	PC30	E2
JB3	18+36 -Y1RPAA- 68' RT	PC18	E2
JB4	22+36 -Y1- 74' RT	PC18	E2
JB5	40+00 -L- 120' LT	PC18	E2
JB6	STA 40+00 -L-	BR	E2
JB7	40+00 -L- 120' RT	PC18	E2
CONTROL SYSTEM "F"			
JB1	11+50 -Y15LPD- 40' RT	PC30	E3
JB2	14+66 -Y15LPD- 150' RT	PC18	E3
JB3	92+08 -LRT- 65' RT	PC30	E3
JB4	11+38 -Y15RPD- 40' LT	PC18	E3
JB5	92+08 -LLT- 75' LT	PC18	E3
JB6	36+88 -Y15- 80' RT	PC30	E3
JB7	39+66 -Y15- 85' RT	PC18	E3
JB8	36+88 -Y15- 75' LT	PC18	E3
JB9	38+85 -Y15- 120' LT	PC18	E3
JB10	34+85 -Y15- 140' LT	PC18	E3
TOTALS		12 4 1	

LOCATION	RACEWAY	SHEET	TYPE					
			JACKED (JA) FEET		BURIED (BD) FEET			
			SIZE 2"	SIZE 3"	SIZE 4"	SIZE 2"	SIZE 3"	SIZE 4"
STA 18+36 -Y1RPAA-		E2					70	
STA 22+36 -Y1-	JB2 - JB4	E2				200		
STA 22+36 -Y1-		E2						85
STA 40+00 -L-	JB5 - JB6	E2				120		
STA 40+00 -L-		E2				120		
STA 11+50 -Y15LPD-	JB1 - JB3	E3				130		
STA 11+50 -Y15LPD-		E3						40
STA 11+38 -Y15RPD-		E3					40	
STA 92+08 -LRT-	JB3 - JB5	E3				225		
STA 92+08 -LRT-		E3			175			
STA 36+88 -Y15-	JB6 - JB8	E3				160		
STA 36+88 -Y15-		E3						105
TOTALS					175	955	110	230

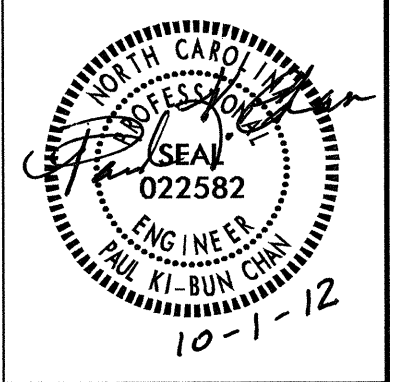
### ABBREVIATIONS

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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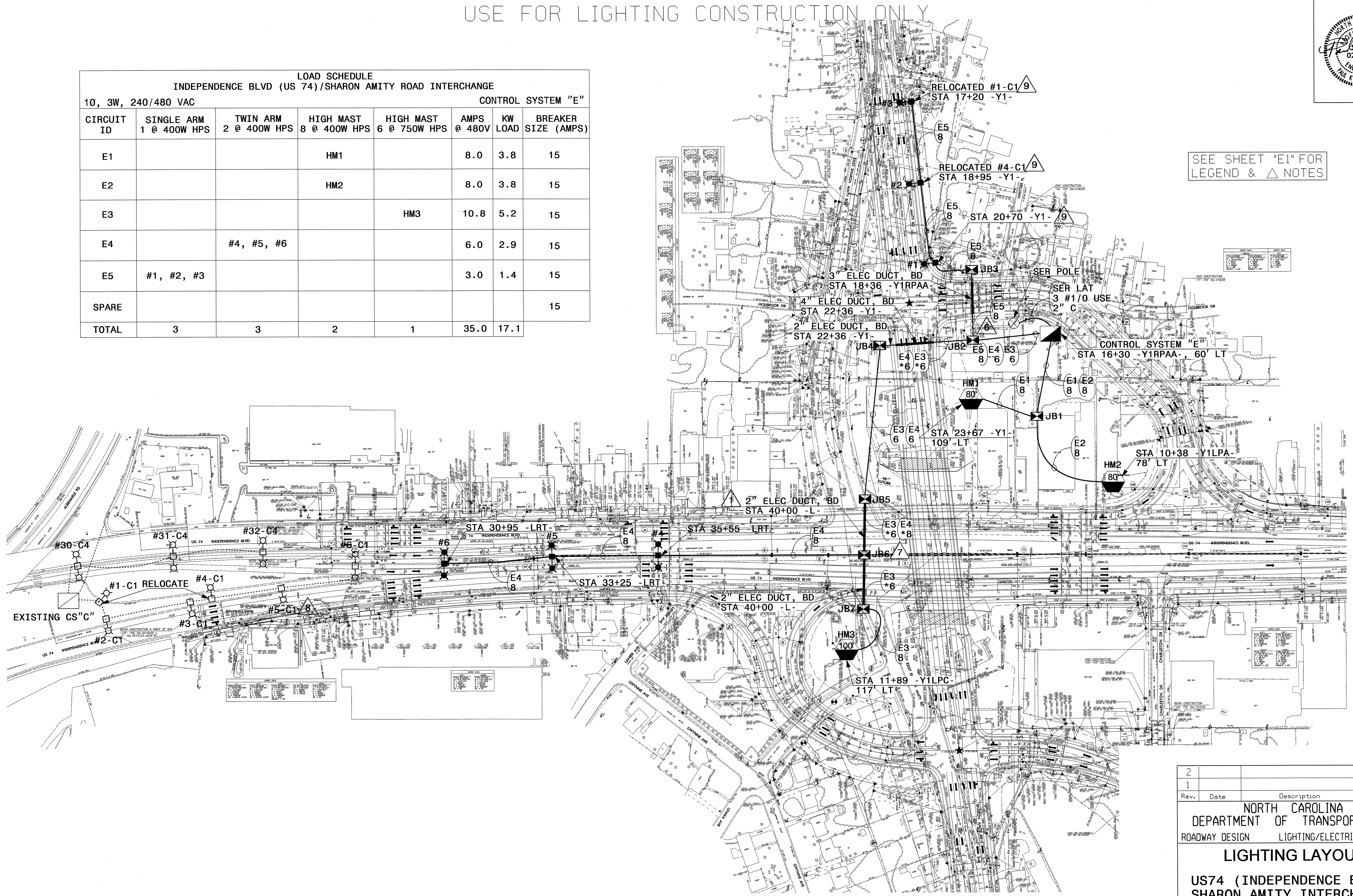




USE FOR LIGHTING CONSTRUCTION ONLY

LOAD SCHEDULE							
INDEPENDENCE BLVD (US 74)/SHARON AMITY ROAD INTERCHANGE							
CONTROL SYSTEM "E"							
CIRCUIT ID	SINGLE ARM 1 @ 400W HPS	TWIN ARM 2 @ 400W HPS	HIGH MAST 8 @ 400W HPS	HIGH MAST 6 @ 750W HPS	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
E1			HM1		8.0	3.8	15
E2			HM2		8.0	3.8	15
E3				HM3	10.8	5.2	15
E4		#4, #5, #6			6.0	2.9	15
E5	#1, #2, #3				3.0	1.4	15
SPARE							15
TOTAL	3	3	2	1	35.0	17.1	

SEE SHEET "E1" FOR  
LEGEND & △ NOTES

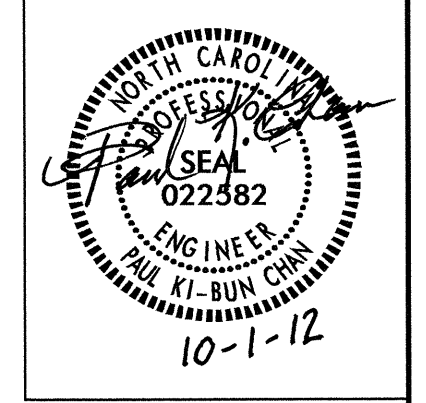


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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION <b>LIGHTING LAYOUT</b> US74 (INDEPENDENCE BLVD) / SHARON AMITY INTERCHANGE MECKLENBURG COUNTY Drawn By: RGH    Approved By: PKC    Dwg No.:			

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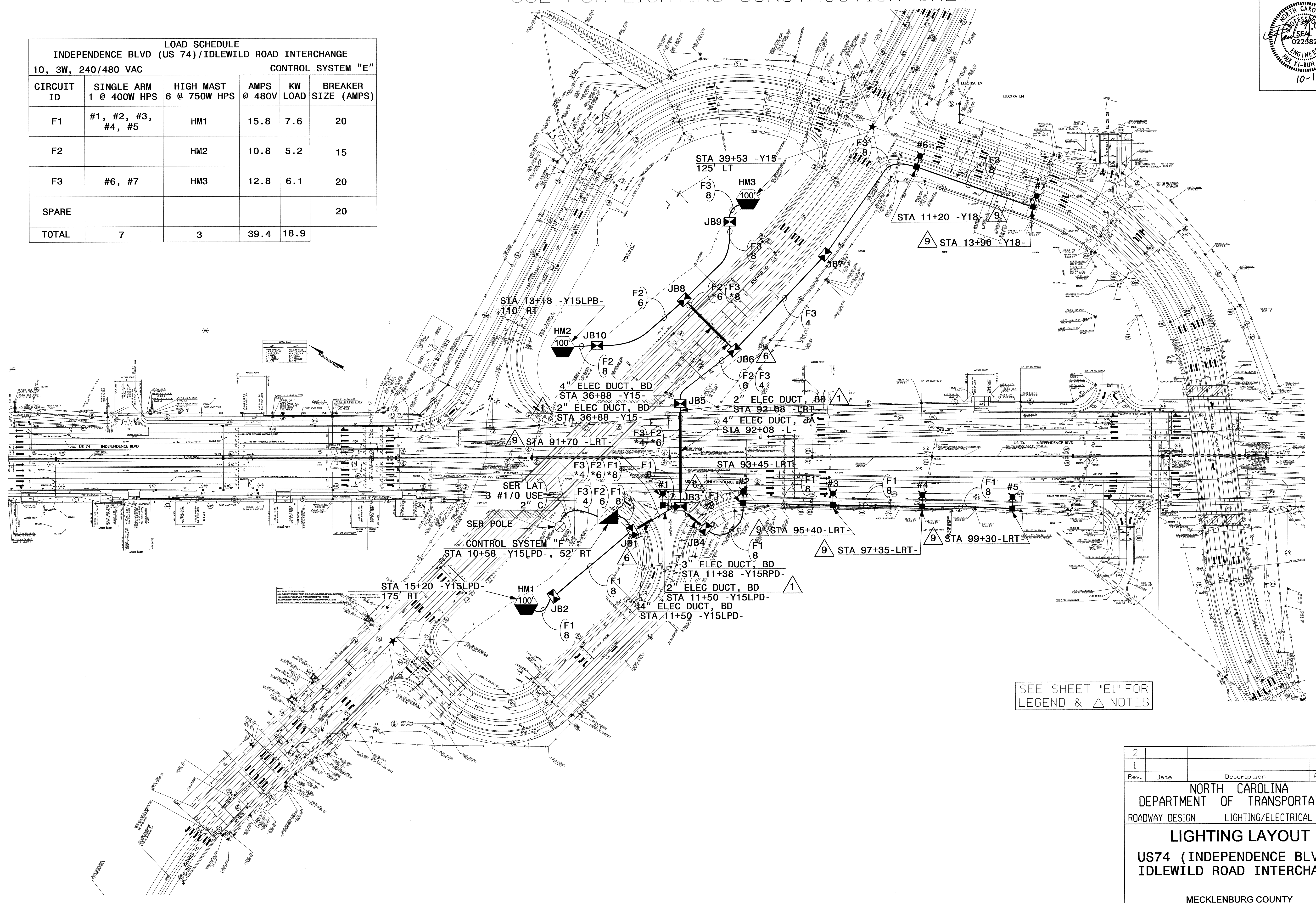
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USE FOR LIGHTING CONSTRUCTION ONLY

LOAD SCHEDULE					
INDEPENDENCE BLVD (US 74)/IDLEWILD ROAD INTERCHANGE					
10, 3W, 240/480 VAC CONTROL SYSTEM "E"					
CIRCUIT ID	SINGLE ARM 1 @ 400W HPS	HIGH MAST 6 @ 750W HPS	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
F1	#1, #2, #3, #4, #5	HM1	15.8	7.6	20
F2		HM2	10.8	5.2	15
F3	#6, #7	HM3	12.8	6.1	20
SPARE					20
TOTAL	7	3	39.4	18.9	



SEE SHEET "E1" FOR  
LEGEND & △ NOTES

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION <b>LIGHTING LAYOUT</b> US74 (INDEPENDENCE BLVD) / IDLEWILD ROAD INTERCHANGE MECKLENBURG COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

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