

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 PC36 JUNCTION BOXES ARE 36" L X 24" W X 18" H.
- 8 REMOVE EXISTING CONDUCTORS FROM CONDUIT. REPLACE WITH NEW CONDUCTORS SIZED AS SHOWN ON THE PLANS.
- 9 REUSE EXISTING GROUND MOUNTED JUNCTION BOXES AS NOTED. IF JUNCTION BOX IS DAMAGED OR CAN NOT BE LOCATED, REPLACE WITH NEW PC30 JUNCTION BOX.
- 10 FABRICATE AND INSTALL STAINLESS STEEL FOUNDATION COVER OVER FOUNDATION OF REMOVED TWIN ARM STANDARDS. SEE SHEET E4 FOR FOUNDATION COVER DETAILS.

SCOPE OF WORK

RENOVATE ROADWAY LIGHTING SYSTEM BY RELOCATING EXISTING CONTROL SYSTEM, EXISTING 45' SINGLE ARM AND EXISTING 100' HIGH MOUNT STANDARDS. RELAMP ALL EXISTING SINGLE ARM, TWIN ARM AND HIGH MAST STANDARDS WITH HIGH PRESSURE SODIUM LUMINAIRES. INSTALL NEW UNDERGROUND CIRCUITRY AND JUNCTION BOXES.

DESIGN CRITERIA

- 2005 AASHTO ROADWAY LIGHTING DESIGN GUIDE
- 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
- 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
1402.01	HIGH MOUNT FOUNDATION
1403.01	HIGH MOUNT LUMINAIRES
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

- EXISTING 100' HIGH MAST STANDARD TO BE RELOCATED. REMOVE OR ABANDON FOUNDATION.
- RELOCATED 100' HIGH MAST STANDARD W/ HM FOUNDATION & (4) HM LUMINAIRES 1000W HPS, MEDIUM, CUTOFF, TYPE V
- EXISTING SINGLE ARM LIGHT STANDARD TO BE REMOVED OR RELOCATED. ABANDON OR REMOVE FOUNDATION. SEE SHEETS E2 AND E3 FOR RELOCATION DETAILS.
- RELOCATED LIGHT STANDARD TYPE MTLT 45' WITH 15' SINGLE ARM. INCLUDES STANDARD FOUNDATION TYPE R1 OR R2 & 250W HPS ROADWAY LUMINAIRE. IES DISTRIBUTION: MEDIUM, SEMI-CUTOFF, TYPE II
- EXISTING TWIN ARM LIGHT STANDARD TO BE REMOVED. PLACE STAINLESS STEEL FOUNDATION COVER OVER EXISTING FOUNDATION. SEE SHEET E4 FOR FOUNDATION COVER DETAILS.
- EXISTING TWIN ARM LIGHT STANDARD TO REMAIN. REPLACE LUMINAIRE WITH NEW 250 HPS LUMINAIRE. IES DISTRIBUTION: MEDIUM, SEMI-CUTOFF, TYPE II.
- EXISTING CONTROL SYSTEM. RELOCATE AS SHOWN. REPLACE BREAKERS AND CONTACTORS. SIZE AS SHOWN IN THE PLANS AND STANDARD SPECIFICATIONS.
- RELOCATED CONTROL SYSTEM WITH PC36 JUNCTION BOX. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E3.
- EXISTING ELECTRICAL JUNCTION BOX. REMOVE UNLESS OTHERWISE NOTED ON THE PLANS.
- EXISTING BARRIER RAIL JUNCTION BOX TO BE RETAINED.
- PROPOSED ELECTRICAL JUNCTION BOX SEE DETAILS & TABLE B, THIS SHEET
- REFERENCE TO CORRESPONDING NOTE AS NUMBERED
- EXISTING ELECTRICAL CIRCUITRY AND/OR CONDUIT. ABANDON OR REMOVE ALL EXCEPT CONDUIT CROSSING UNDER I-95 TO BARRIER RAIL AND CONDUIT UNDER BARRIER RAIL FOR TWIN ARM FEEDER CIRCUITS.
- PROPOSED FEEDER CIRCUIT CONTROL SYSTEM(A), CIRCUIT(1) PLAN SYMBOL (6) SEE TABLE A, THIS SHEET
- PROPOSED SERVICE POLE AND LATERAL 30' CLASS 4 3 #1/0 USE CONDUCTORS 2" CONDUIT
- PROPOSED ELECTRICAL DUCT SIZE 2", 3", 4" OR 6" TYPE (JA) OR (BD) LOCATION: SEE TABLE C, SHEET E2.

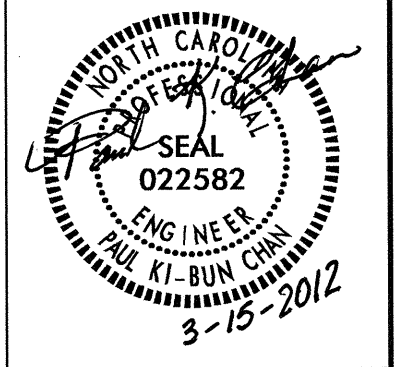
PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
8	2 #8 Ø 1 #10G 1.5" PVC	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR 1.5" PVC CONDUIT
*8	2 #8 Ø 1 #10G	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR
4	2 #4 Ø 1 #6G 1.5" PVC	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR 1.5" PVC CONDUIT
*4	2 #4 Ø 1 #6G	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR
2	2 #2 Ø 1 #4G 1.5" PVC	2 AWG SIZE 2 CONDUCTOR (BK & RD) 1 AWG SIZE 4 GROUNDING CONDUCTOR 1.5" PVC CONDUIT
*2	2 #2 Ø 1 #4G	2 AWG SIZE 2 CONDUCTOR (BK & RD) 1 AWG SIZE 4 GROUNDING CONDUCTOR
1	2 #1 Ø 1 #2G 2" PVC	2 AWG SIZE 1 CONDUCTOR (BK & RD) 1 AWG SIZE 2 GROUNDING CONDUCTOR 2" PVC CONDUIT
*1	2 #1 Ø 1 #2G	2 AWG SIZE 1 CONDUCTOR (BK & RD) 1 AWG SIZE 2 GROUNDING CONDUCTOR
1/0	2 #1/0 Ø 1 #1G 2" PVC	2 AWG SIZE 1/0 CONDUCTOR (BK & RD) 1 AWG SIZE 1 GROUNDING CONDUCTOR 2" PVC CONDUIT
*1/0	2 #1/0 Ø 1 #1G	2 AWG SIZE 1/0 CONDUCTOR (BK & RD) 1 AWG SIZE 1 GROUNDING CONDUCTOR

NUMBER	LOCATION	TYPE	SHEET
JB1	15+75 -L-, 48' LT	PC36	E3
JB2	18+75 -RAMP-B-, 45' RT	PC30	E3
JB3	18+75 -RAMP-B-, 45' LT	PC18	E3
JB4	EXISTING GROUND MOUNTED JB		E3
JB5	EXISTING BARRIER RAIL JB		E3
JB6	EXISTING GROUND MOUNTED JB		E3
JB7	16+87 -RAMP-A-, 35' RT	PC18	E3
JB8	16+87 -RAMP-A-, 35' LT	PC18	E3
JB9	15+75 -L-, 75' RT	PC36	E3
JB10	23+65 -RAMP-C-, 40' LT	PC30	E3
JB11	20+00 -RAMP-C-, 40' RT	PC30	E3
JB12	16+95 -RAMP-C-, 35' LT	PC18	E3
JB13	20+00 -RAMP-C-, 35' LT	PC18	E3
JB14	EXISTING GROUND MOUNTED JB		E3
JB15	EXISTING BARRIER RAIL JB		E3
JB16	EXISTING GROUND MOUNTED JB		E3
JB17	19+00 -RAMP-D-, 35' LT	PC18	E3
JB18	19+00 -RAMP-D-, 45' RT	PC18	E3
JB19	29+15 -L-, 60' RT	PC18	E3
JB20	29+15 -L-, 60' LT	PC18	E3
TOTALS		9	3

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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 CHECKED BY: PKC DATE: 3-15-2012

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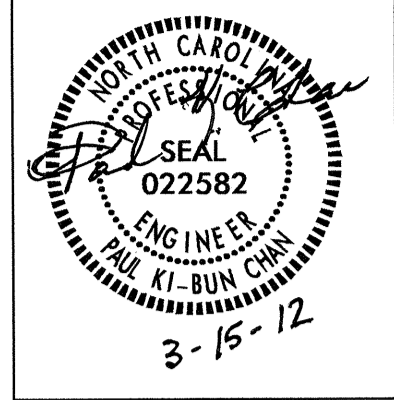
PLANS AND DETAILS FOR PROPOSED LIGHTING /ELECTRICAL CONSTRUCTION

SEE SHEET "E1" FOR
LEGEND & △ NOTES

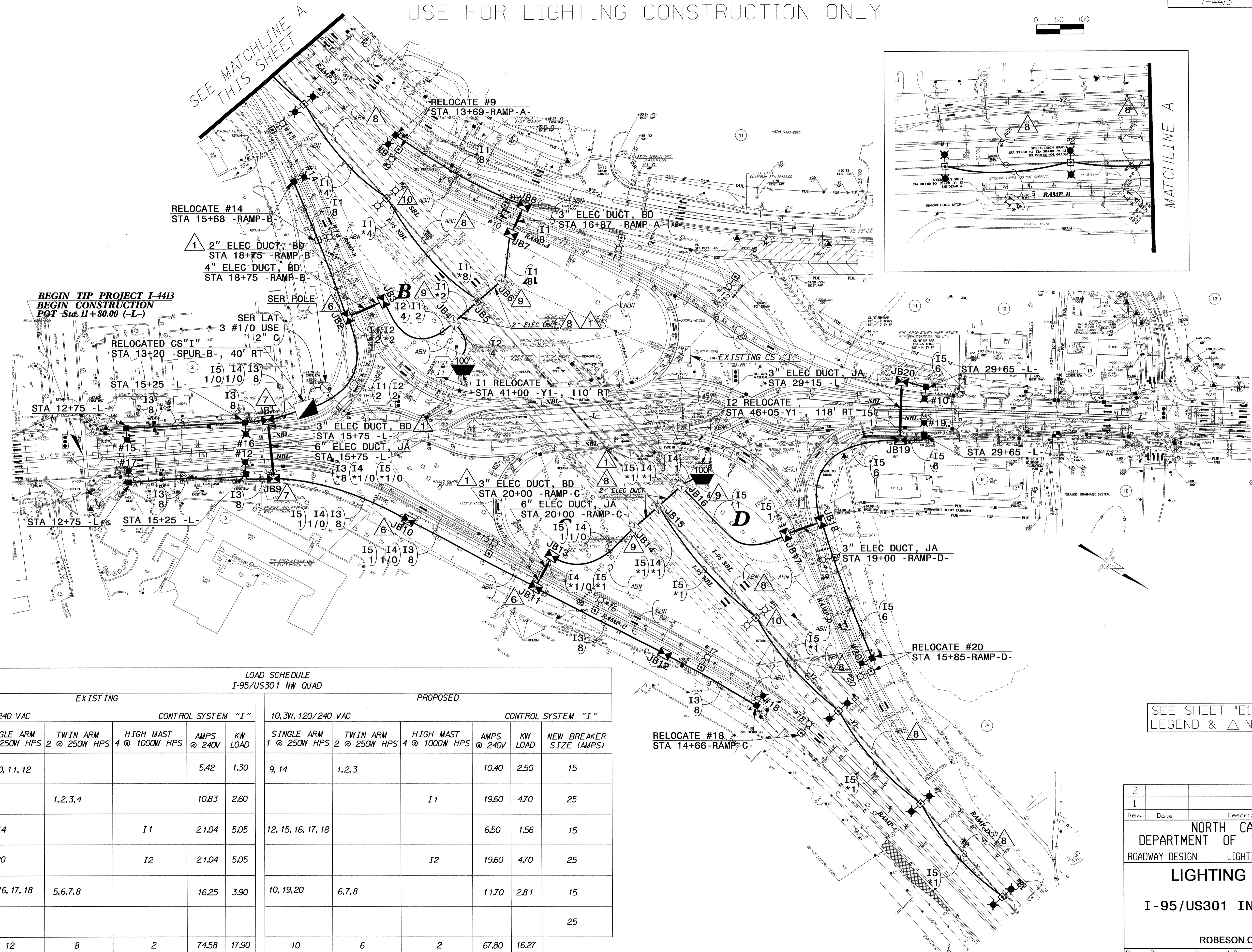
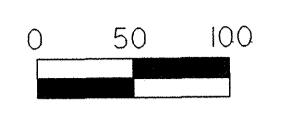
TABLE "C" ELECTRICAL DUCT SUMMARY (ESTIMATED LENGTH IN FEET)								
LOCATION	RACEWAY	SHEET	TYPE					
			JACKED (JA) FEET			BURIED (BD) FEET		
			SIZE 2"	SIZE 3"	SIZE 6"	SIZE 2"	SIZE 3"	SIZE 4"
18+75 -RAMP-B-		E3						45
18+75 -RAMP-B-	JB2 - JB3	E3				85		
16+87 -RAMP-A-		E3					35	
15+75 -L-		E3			95			
15+75 -L-	JB1 - JB9	E3					125	
20+00 -RAMP-C-		E3			35			
20+00 -RAMP-C-	JB11 - JB13	E3					80	
19+00 -RAMP-D-		E3					45	
29+15 -L-		E3		95				
TOTALS				95	130	85	285	45

TABLE "D" LIGHT STANDARD RELOCATION POINTS		
STANDARD	EXISTING DESCRIPTION & LOCATION	PROPOSED ACTION & LOCATION
1	TWIN ARM, I-95 MEDIAN BARRIER	NO CHANGE
2	TWIN ARM, I-95 MEDIAN BARRIER	NO CHANGE
3	TWIN ARM, I-95 MEDIAN BARRIER	NO CHANGE
4	TWIN ARM, I-95 MEDIAN BARRIER	REMOVE STANDARD & DELIVER TO CITY OF LUMBERTON. INSTALL FOUNDATION COVER.
5	TWIN ARM, I-95 MEDIAN BARRIER	REMOVE STANDARD & DELIVER TO CITY OF LUMBERTON. INSTALL FOUNDATION COVER.
6	TWIN ARM, I-95 MEDIAN BARRIER	NO CHANGE
7	TWIN ARM, I-95 MEDIAN BARRIER	NO CHANGE
8	TWIN ARM, I-95 MEDIAN BARRIER	NO CHANGE
9	SINGLE ARM, EXISTING RAMP B	RELOCATE TO STA 13+69, -RAMP-A-
10	SINGLE ARM, EXISTING RAMP B	RELOCATE TO STA 29+65 -L-
11	SINGLE ARM, EXISTING RAMP B	REMOVE STANDARD & DELIVER TO CITY OF LUMBERTON
12	SINGLE ARM, EXISTING RAMP B	RELOCATE TO STA 15+25 -L-
13	SINGLE ARM, EXISTING RAMP C	REMOVE STANDARD & DELIVER TO CITY OF LUMBERTON
14	SINGLE ARM, EXISTING RAMP C	RELOCATE TO STA 15+68 -RAMP-B-
15	SINGLE ARM, EXISTING RAMP D	RELOCATE TO STA 12+75 -L-
16	SINGLE ARM, EXISTING RAMP D	RELOCATE TO STA 15+25 -L-
17	SINGLE ARM, EXISTING RAMP D	RELOCATE TO STA 12+75 -L-
18	SINGLE ARM, EXISTING RAMP D	RELOCATE TO STA 14+66 -RAMP-C-
19	SINGLE ARM, EXISTING RAMP A	RELOCATE TO STA 29+65 -L-
20	SINGLE ARM, EXISTING RAMP A	RELOCATE TO STA 15+85 -RAMP-D-
HM1	100' HIGH MAST INSIDE EXISTING QUADRANT C	RELOCATE TO STA 41+00 -Y1-, 110' RT
HM2	100' HIGH MAST INSIDE EXISTING QUADRANT A	RELOCATE TO STA 46+05 -Y1-, 118' LT

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USE FOR LIGHTING CONSTRUCTION ONLY



BEGIN TIP PROJECT I-4413
BEGIN CONSTRUCTION
POT - Sta. 11+80.00 (-L-)

RELOCATE #14
STA 15+68 -RAMP-B-
1 2" ELEC DUCT, BD
STA 18+75 -RAMP-B-
4" ELEC DUCT, BD
STA 18+75 -RAMP-B-

RELOCATED CS "I"
STA 13+20 -SPUR-B-, 40' RT
STA 15+25 -L-
15 14 13
1/0 1/0 8

STA 12+75 -L-
#15
#16
#17
#12
#13
#14
#15
#16
#17
#18
#19
#20

3" ELEC DUCT, BD
STA 15+75 -L-
6" ELEC DUCT, JA
STA 15+75 -L-
13 14 15
*8 *1/0 *1/0

3" ELEC DUCT, BD
STA 20+00 -RAMP-C-
6" ELEC DUCT, JA
STA 20+00 -RAMP-C-
15 14
1/1/0 8

3" ELEC DUCT, JA
STA 19+00 -RAMP-D-

RELOCATE #20
STA 15+85-RAMP-D-

RELOCATE #18
STA 14+66-RAMP-C-

SEE SHEET "E1" FOR
LEGEND & Δ NOTES

LOAD SCHEDULE I-95/US301 NW QUAD											
EXISTING						PROPOSED					
CONTROL SYSTEM "I"						CONTROL SYSTEM "I"					
10.3W, 120/240 VAC	SINGLE ARM 1 @ 250W HPS	TWIN ARM 2 @ 250W HPS	HIGH MAST 4 @ 1000W HPS	AMPS @ 240V	KW LOAD	SINGLE ARM 1 @ 250W HPS	TWIN ARM 2 @ 250W HPS	HIGH MAST 4 @ 1000W HPS	AMPS @ 240V	KW LOAD	NEW BREAKER SIZE (AMPS)
I1	9, 10, 11, 12			5.42	1.30	9, 14	1, 2, 3		10.40	2.50	15
I2		1, 2, 3, 4		10.83	2.60			I1	19.60	4.70	25
I3	13, 14		I1	21.04	5.05	12, 15, 16, 17, 18			6.50	1.56	15
I4	19, 20		I2	21.04	5.05			I2	19.60	4.70	25
I5	15, 16, 17, 18	5, 6, 7, 8		16.25	3.90	10, 19, 20	6, 7, 8		11.70	2.81	15
SPARE											25
TOTAL	12	8	2	74.58	17.90	10	6	2	67.80	16.27	

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION LIGHTING LAYOUT I-95/US301 INTERCHANGE ROBESON COUNTY			
Drawn By:	RGH	Approved By:	PKC
Dwg No.:			

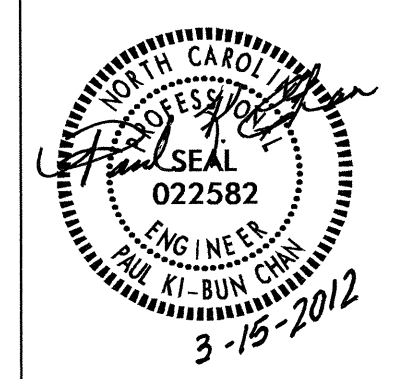
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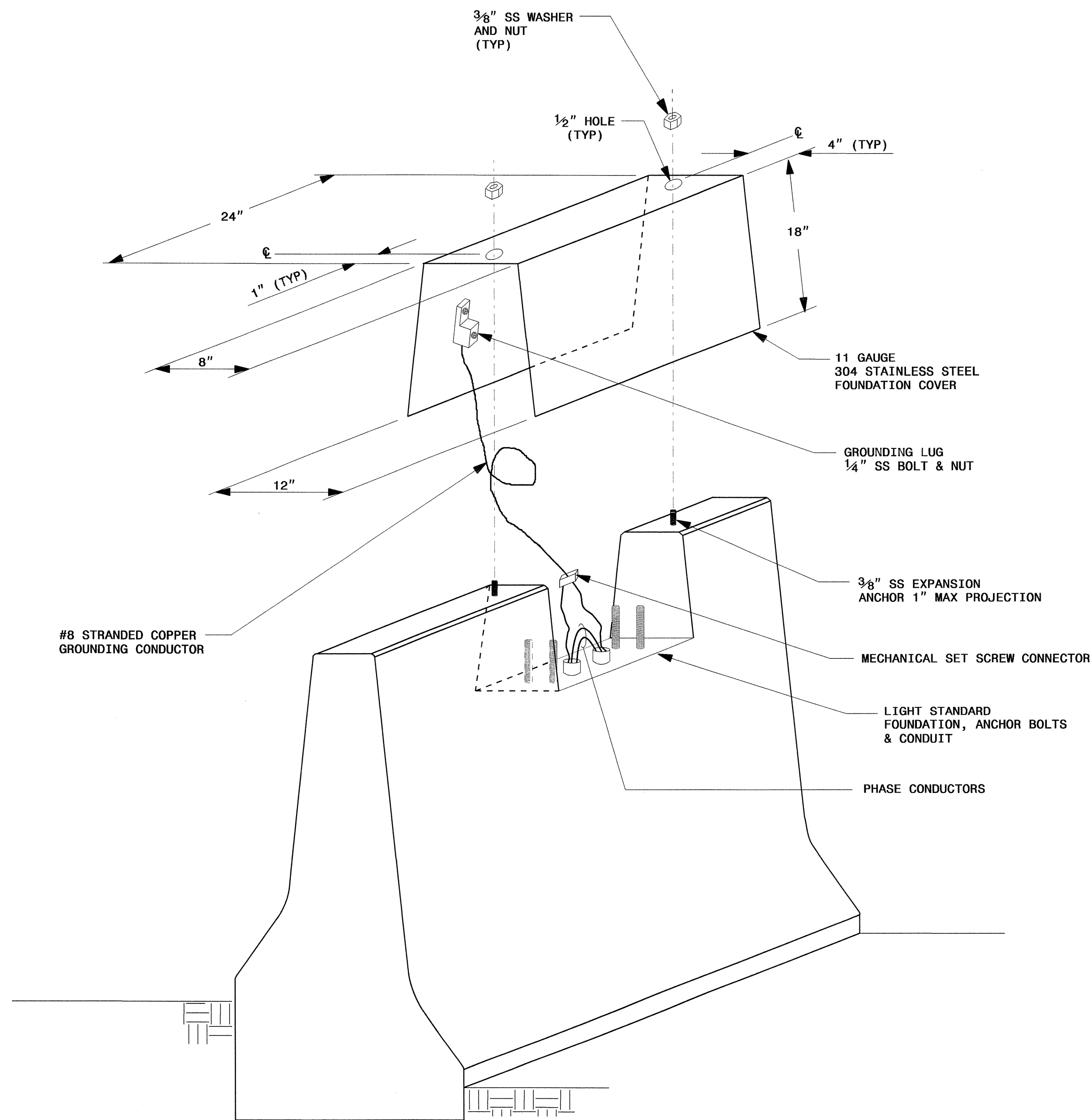
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PROJECT REFERENCE NO.
1-4413

SHEET NO.
E4



USE FOR LIGHTING CONSTRUCTION ONLY



△ NOTES:

- △ DIMENSIONS SHOWN ARE MINIMUM REQUIRED TO COVER TYPE M1 AND M2 FOUNDATIONS. VERIFY FOUNDATION DIMENSIONS BEFORE FABRICATION.
- △ CUT GROUNDING CONDUCTOR LONG ENOUGH FOR COVER TO BE REMOVED WITHOUT DISCONNECTING AT THE GROUNDING LUG.
- △ LOOP PHASE CONDUCTORS THROUGH. SPLICING OF PHASE CONDUCTORS UNDER THE FOUNDATION COVER IS NOT ALLOWED.
- △ SEE STANDARD DRAWING NUMBER 1405.01 SHEETS 2 AND 3 FOR STANDARD FOUNDATIONS TYPE M1 AND M2.

FOUNDATION COVER △

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Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION			
LIGHTING SPECIAL DETAILS			
FOUNDATION COVER			
Drawn By:	RGH	Approved By:	Dwg No.:

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