

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 LOCATE ALL JUNCTION BOXES IN AN AREA UNLIKELY TO BE USED BY TRAFFIC.
- 3 INSTALL ALL BORE PITS OUTSIDE CLEAR ZONE AS DEFINED BY THE 2002 AASHTO ROADSIDE DESIGN GUIDE OR AS DIRECTED BY THE ENGINEER.
- 4 USE SCALED DIMENSIONS FOR ELECTRICAL DUCTS AND JUNCTION BOXES NOT LOCATED WITH STATION NUMBERS.
- 5 REFER TO ROADWAY PLANS FOR GUARDRAIL INSTALLATION AT HM1. REFER TO ROADWAY SUMMARY OF QUANTITIES.
- 6 AVOID CONFLICT WITH BUSHES IN MEDIAN.
- 7 HM1 AND HM4 TO BE 80' IN HEIGHT AND HAVE EIGHT (8) 400 WATT LUMINAIRES.
- 8 HM2 AND HM3 TO BE 120' IN HEIGHT AND HAVE EIGHT (8) 750 WATT LUMINAIRES.
- 9 TYPE PC18 JUNCTION BOXES ARE 18" L X 12" W X 18" H.
- 10 TYPE PC36 JUNCTION BOXES ARE 36" L X 24" W X 18" H.
- 11 REMOVE AND RESET RIGID GUARDRAIL TO FACILITATE THE INSTALLATION OF HM4. REFER TO ROADWAY SUMMARY OF QUANTITIES.

SCOPE OF WORK

PROVIDE ROADWAY LIGHTING BY PROVIDING AND INSTALLING HIGH PRESSURE SODIUM LUMINAIRES ON 80' AND 120' HIGH MOUNT STANDARDS, INCLUDING UNDERGROUND CIRCUITRY, CONTROL SYSTEM AND JUNCTION BOXES.

DESIGN CRITERIA

- 2005 AASHTO ROADWAY LIGHTING DESIGN GUIDE
- 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, AND LATEST INTERIM SPECIFICATIONS VALID AT THE TIME OF LETTING.
- FATIGUE CATEGORY II SHALL BE USED IN DESIGN FOR HIGH MOUNT STANDARD ONLY.
- DESIGN HIGH MOUNT STANDARDS FOR BASIC WIND SPEED SHOWN IN AASHTO 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
- 2008 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 JULY 2006 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
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 JULY 2006.

LEGEND

- PROPOSED 80' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 400W HPS, MEDIUM, CUTOFF, TYPE V, AS SHOWN FOR HM1 & HM4
- PROPOSED 120' HIGH MAST STANDARD W/ HM FOUNDATION & (8) HM LUMINAIRES 750W HPS, MEDIUM, CUTOFF, TYPE V, AS SHOWN FOR HM2 & HM3
- PROPOSED CONTROL SYSTEM. BREAKER SIZE SHOWN IN LOAD SCHEDULE, SHEET E2
- JB1 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
- PROPOSED ELECTRICAL DUCT SIZE 2", 3" OR 4" TYPE (JA) OR (BD) LOCATION: SEE TABLE C, THIS SHEET

2", 3" OR 4" ELEC. DUCT JA & BD

PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
8	2 AWG #8 CONDUCTOR (BK & RD) 1 AWG #10 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 #8 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*8	2 AWG #8 CONDUCTOR (BK & RD) 1 AWG #10 GROUNDING CONDUCTOR	2 #8 W/G FEEDER CIRCUIT
6	2 AWG #6 CONDUCTOR (BK & RD) 1 AWG #8 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 #6 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*6	2 AWG #6 CONDUCTOR (BK & RD) 1 AWG #8 GROUNDING CONDUCTOR	2 #6 W/G FEEDER CIRCUIT
4	2 AWG #4 CONDUCTOR (BK & RD) 1 AWG #6 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 #4 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*4	2 AWG #4 CONDUCTOR (BK & RD) 1 AWG #6 GROUNDING CONDUCTOR	2 #4 W/G FEEDER CIRCUIT
2	2 AWG #2 CONDUCTOR (BK & RD) 1 AWG #4 GROUNDING CONDUCTOR 1.5" PVC CONDUIT	2 #2 W/G FEEDER CIRCUIT IN 1.5" CONDUIT
*2	2 AWG #2 CONDUCTOR (BK & RD) 1 AWG #4 GROUNDING CONDUCTOR	2 #2 W/G FEEDER CIRCUIT

NO.	LOCATION	TYPE	SHEET
JB1	AT HM1	PC18	E2
JB2	NC 147 MEDIAN S OF -L LINE-	PC18	E2
JB3	NC 147 MEDIAN S OF -L LINE-	PC36	E2
JB4	NC 147 MEDIAN S OF -L LINE-	PC18	E2
JB5	NC 147 MEDIAN N OF -L LINE-	PC18	E3
JB6	NC 147 MEDIAN N OF -L LINE-	PC18	E3
JB7	NC 147 MEDIAN N OF -L LINE-	PC18	E3
JB8	NC 147 MEDIAN N OF -L LINE-	PC18	E3
JB9	SW QUAD	PC36	E2
JB10	73+50 -L- 100' RT	PC36	E2
JB11	71+25 -L- 85' RT	PC36	E2
JB12	SE QUAD	PC18	E2
JB13	AT HM3	PC18	E3
JB14	72+60 -L- 100' RT	PC36	E2
JB15	AT HM4	PC18	E3
TOTALS		5	10

LOCATION	RACEWAY	SHEET	TYPE						
			BURIED (BD)			JACKED (JA)			
			2"	3"	4"	3"	4"	6"	
AT RAMP B	JB10 - JB14	E2		85'					
AT RAMP B		E2							50'
SW QUAD, SBL	JB3 - JB9	E2		100'					
SW QUAD, SBL		E2							30'
SE QUAD, NBL		E2					30'		
NW QUAD, SBL		E3					30'		
TOTALS				185'			60'		80'

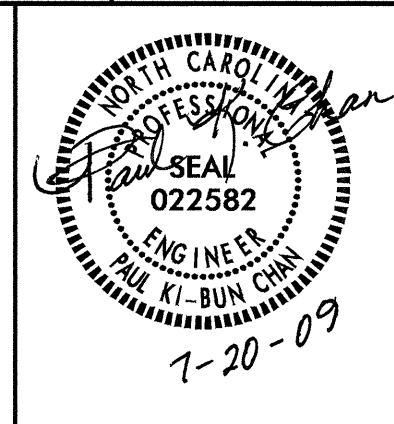
ABBREVIATIONS

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

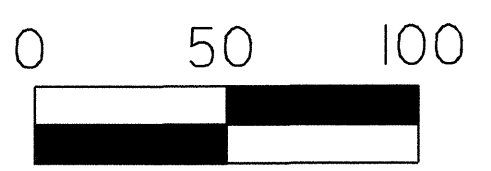
COMPUTED BY: PKC 7-6-09 DATE: _____
 CHECKED BY: *Jay A. Smith* DATE: 7-6-09

06-JUL-2009 14:51
 r:\gtdesign\electrical\tip\gtdesign\plansh\ts\0309a_le_psh_e1.dgn
 \$\$\$USERNAME\$\$\$

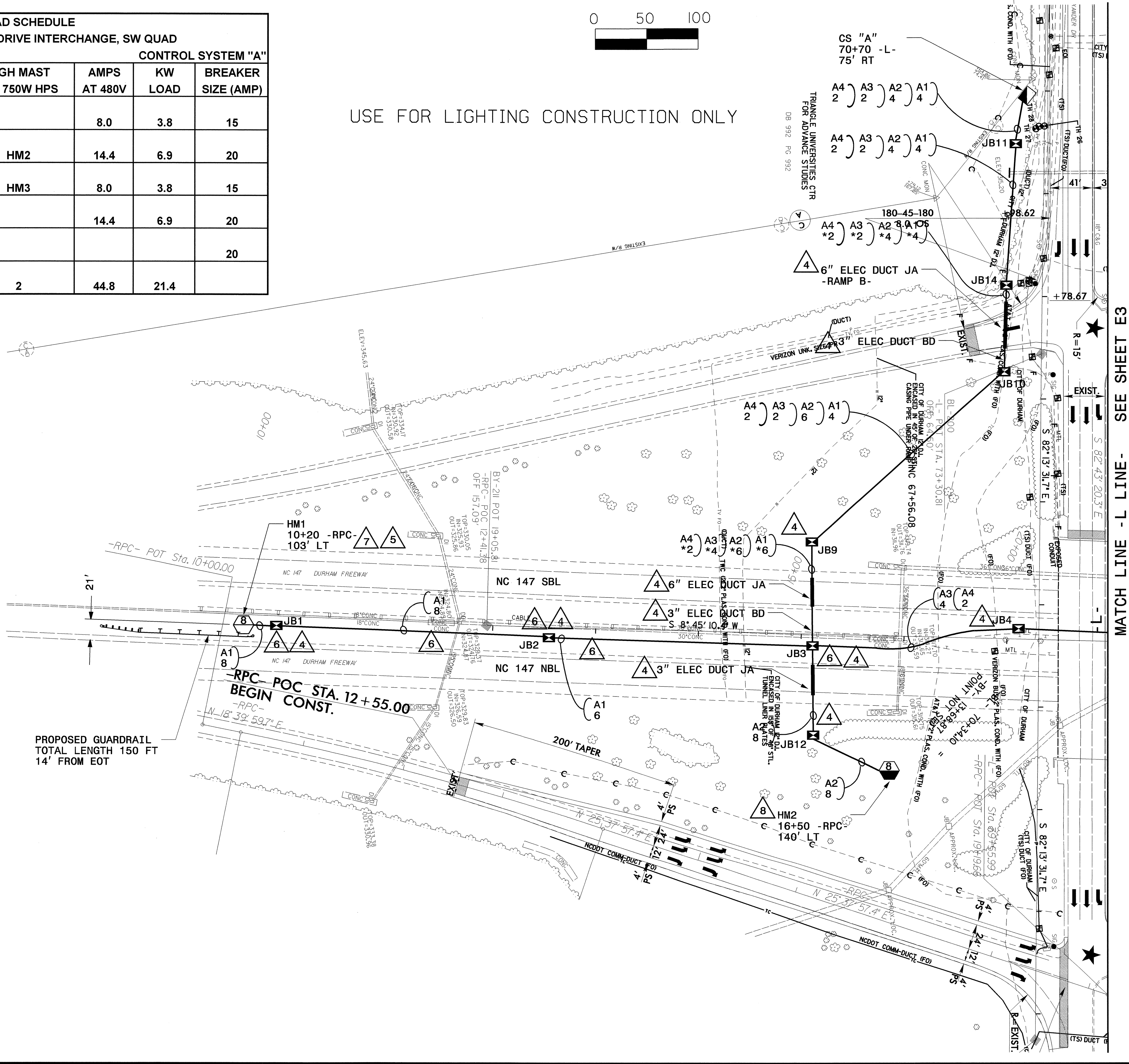
02/03/98



LOAD SCHEDULE					
NC 147 / ALEXANDER DRIVE INTERCHANGE, SW QUAD					
1 PHASE, 3 WIRE, 240/480 VAC			CONTROL SYSTEM "A"		
CKT NO	HIGH MAST 8 @ 400W HPS	HIGH MAST 8 @ 750W HPS	AMPS AT 480V	KW LOAD	BREAKER SIZE (AMP)
A1	HM1		8.0	3.8	15
A2		HM2	14.4	6.9	20
A3		HM3	8.0	3.8	15
A4	HM4		14.4	6.9	20
SPARE					20
TOTAL	2	2	44.8	21.4	



USE FOR LIGHTING CONSTRUCTION ONLY



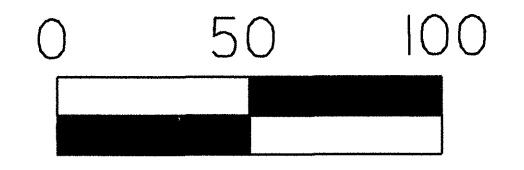
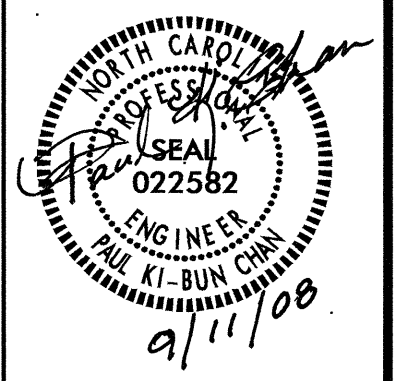
SEE SHEET "E1" FOR
LEGEND & △ NOTES

MATCH LINE - L LINE - SEE SHEET E3

2			
1			
Rev.	Date	Description	Approved
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN SERVICES LIGHTING/ELECTRICAL SECTION			
LIGHTING LAYOUT NC 147/ALEXANDER DR. INTERCHANGE SE QUAD & SW QUAD DURHAM COUNTY			
Drawn By	Approved By	Dwg No.	
PKC 7-20-09	[Signature]		

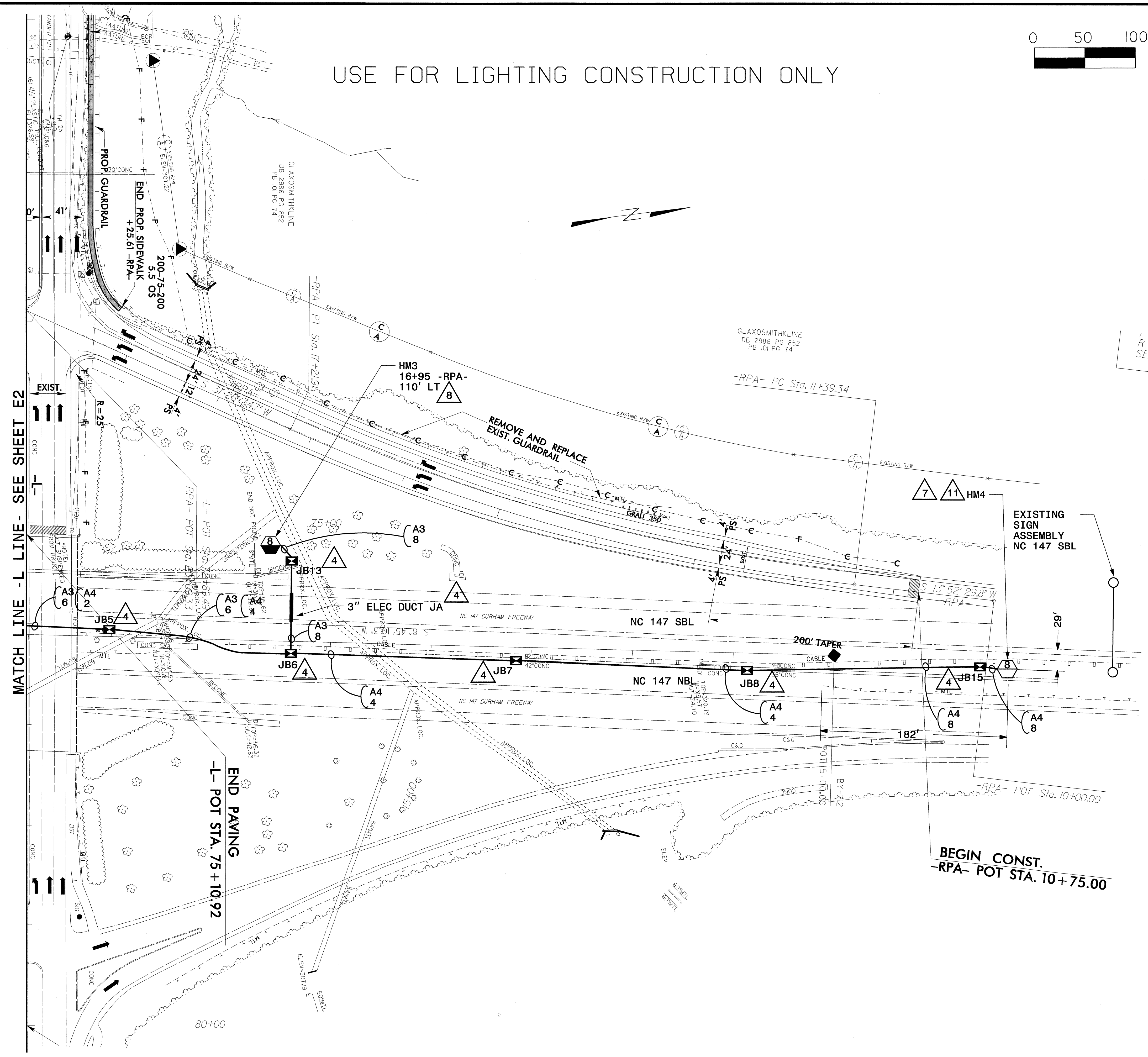
02/03/09
20-Jul-2009 09:51
ngel.electrical\p\ltdesign\p\lenshite\3309a.le.psh.e2.dgn

02/03/08



USE FOR LIGHTING CONSTRUCTION ONLY

SEE SHEET "E1" FOR
LEGEND & △ NOTES



MATCH LINE - L LINE - SEE SHEET E2

END PAVING
-L- POT STA. 75+10.92

BEGIN CONST.
-RPA- POT STA. 10+75.00

2			
1			
Rev.	Date	Description	Approved

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DESIGN SERVICES LIGHTING/ELECTRICAL SECTION

LIGHTING LAYOUT
NC 147/ALEXANDER DR. INTERCHANGE
NE QUAD & NW QUAD
DURHAM COUNTY

Drawn By: PKC 9/9/08
Approved By: [Signature]
Dwg No.:

09-SEP-2008 11:48
c:\projects\3309a\planets\planets\3309a_1e_psh_e3.dgn