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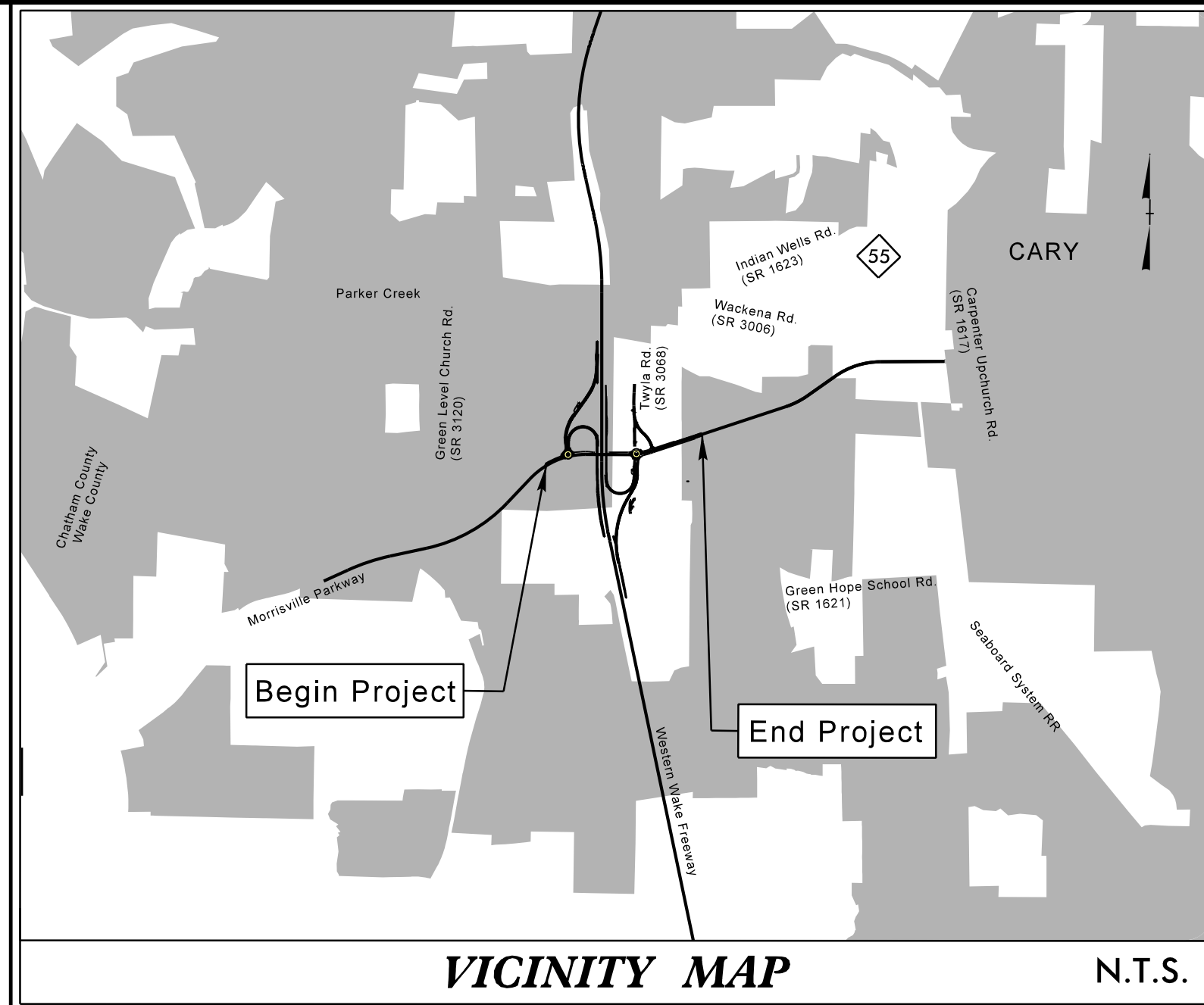
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CARY PROJECT: U-5315 A&B

TIP PROJECT: ST 1123/1220



VICINITY MAP

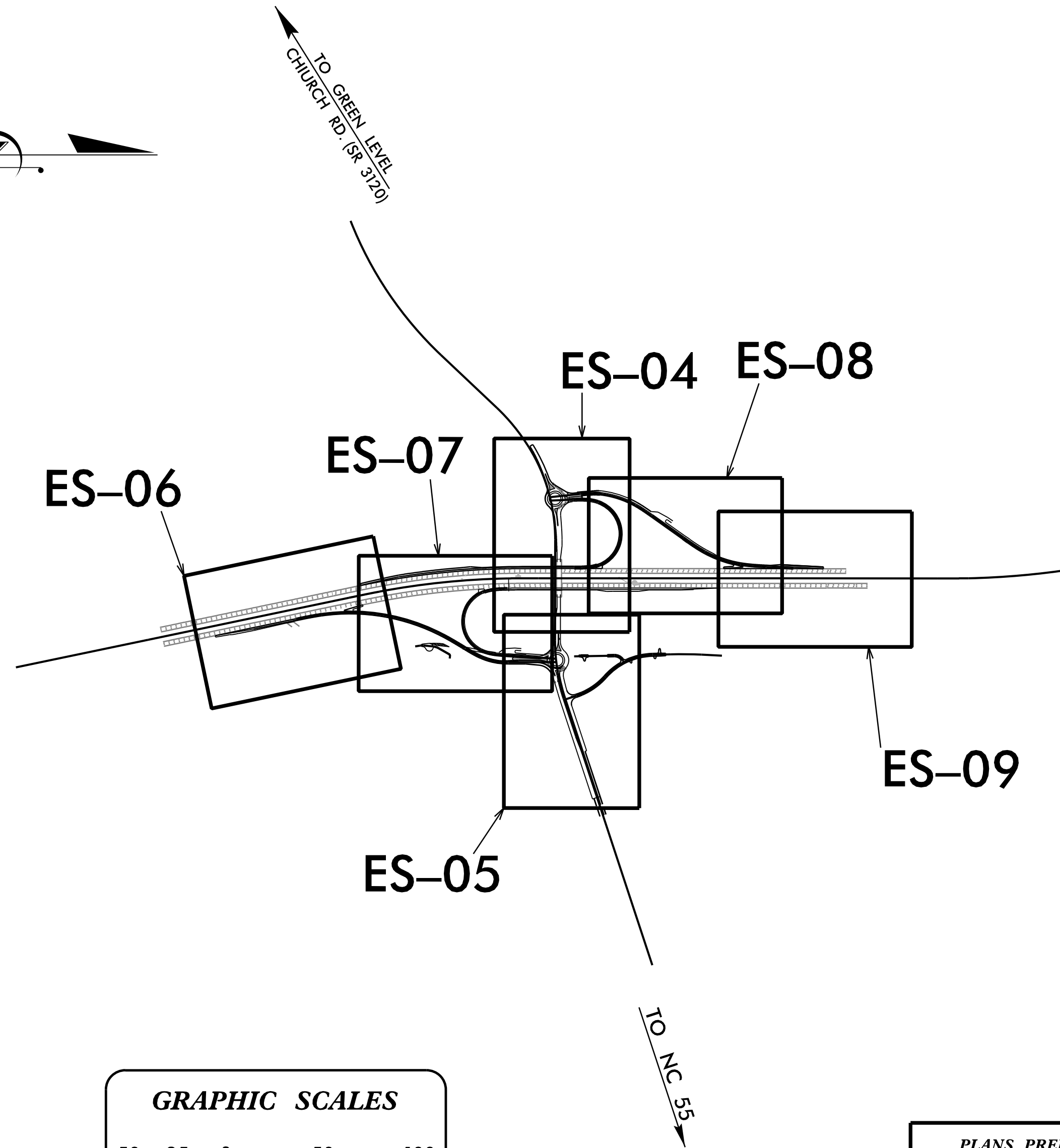
N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIGHTING PLANS WAKE COUNTY

**LOCATION: MORRISVILLE PARKWAY EXTENSION AND NC 540 INTERCHANGE
FROM SR 1625 (GREEN LEVEL CHURCH RD.) TO NC 55
TYPE OF WORK: LIGHTING**

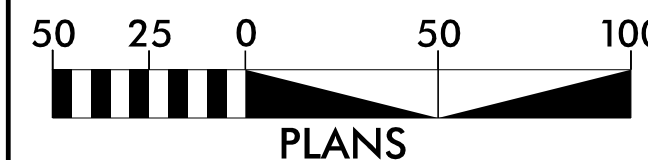
TIP NO. U-5315 A&B	SHEET NO. ES-01
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ES-03B	HIGH MOUNT STANDARD ASSEMBLY
ES-03C	HIGH MOUNT FOUNDATION AND HIGH MOUNT LED LUMINAIRE DETAILS
ES-04-09	LIGHTING PLANS

GRAPHIC SCALES



PLANS PREPARED BY :

RK&K

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RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 (919) 878-9560

FOR
THE NORTH CAROLINA
TURNPIKE AUTHORITY

TITLE SHEET

NOTES

- 1. AT THESE LOCATIONS, PROVIDE ELECTRICAL DUCT IN ACCORDANCE WITH NEC REQUIREMENTS FOR AN APPROVED RACEWAY FOR ELECTRICAL CIRCUITS. WHEN MORE THAN ONE CIRCUIT IS INSTALLED IN A SINGLE RACEWAY, A SINGLE EQUIPMENT GROUNDING CONDUCTOR SIZED AS REQUIRED FOR THE LARGEST CIRCUIT SHALL BE USED. SEE TABLE "C".
- 2. 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.
- 3. INSTALL ALL BORE PITS OUTSIDE THE CLEAR ZONE, AS DEFINED BY THE 2011 AASHTO ROADSIDE DESIGN GUIDE OR AS DIRECTED BY THE ENGINEER.
- 4. LOCATE ALL JUNCTION BOXES OUTSIDE CLEAR ZONE IN AN AREA UNLIKELY TO BE USED BY TRAFFIC.
- 5. INSTALL RIGID GALVANIZED CONDUIT (RGC) ABOVE GROUND AND POLYVINYL CHLORIDE (PVC) SCHEDULE 40 CONDUIT UNDERGROUND, EXCEPT AS MODIFIED ON THESE PLAN SHEETS OR IN APPLICABLE SECTIONS OF THE ROADWAY STANDARD DRAWINGS FOR THIS PROJECT.
- 6. TYPE LSJB JUNCTION BOX - 18" L X 12" W X 18" H.
- 7. TYPE HMJB JUNCTION BOX - 18" L X 12" W X 18" H.
- 8. TYPE PC18 JUNCTION BOX - 18" L X 12" W X 18" H.
- 9. TYPE PC24 JUNCTION BOX - 18" L X 24" W X 18" H.
- 10. TYPE PC36 JUNCTION BOX - 36" L X 24" W X 18" H.
- 11. LIGHT STANDARD SHALL BE INSTALLED BEHIND THE PROPOSED SIDEWALK.
- 12. PROPOSED JUNCTION BOX SHALL BE INSTALLED WITHIN 15' FROM PROPOSED LIGHT STANDARD. THIS JUNCTION BOX WILL SERVE AS THE LIGHT STANDARD JUNCTION BOX (LSJB) SHOWN ON STANDARD DRAWING 1404D01 ON SHEET ES-03A.
- 13. CONNECT LUMINAIRE CIRCUIT TO PHOTOCELL AND CIRCUIT FOR PARKING AREA LIGHTING FROM 120/240V PANEL INSIDE TOLL VAULT. LUMINAIRE OPERATING VOLTAGE SHALL BE 240V. REFER TO ITS PLANS FOR ADDITIONAL DETAILS.
- 14. CONNECT LUMINAIRE CIRCUIT TO NEW 2-POLE, 20 AMP BREAKER FOR LIGHTING IN THE 120/240V RAW POWER PANEL. INSTALL PHOTOCELL ON THE LUMINAIRE. LUMINAIRE OPERATING VOLTAGE SHALL BE 240V. REFER TO ITS PLANS FOR ADDITIONAL DETAILS.

SCOPE OF WORK

PLACE ROADWAY LIGHTING INTO SERVICE BY DESIGNING, FURNISHING AND INSTALLING HIGH MAST AND SINGLE-ARM STANDARDS WITH LED LUMINAIRES, UNDERGROUND CIRCUITRY, CONTROL SYSTEMS AND JUNCTION BOXES.

LIGHTING IS INCLUDED AT THE INTERCHANGE OF NC 540 AND MORRISVILLE PARKWAY.

DESIGN CRITERIA

- PHOTOMETRIC DESIGN CRITERIA:
 NC 540 TRAVEL LANES AND RAMPS:
 - AVERAGE ILLUMINANCE: 0.7 FC
 - AVERAGE TO MINIMUM (UNIFORMITY RATIO): 3.5:1
 MORRISVILLE PARKWAY TRAVEL LANES:
 - AVERAGE ILLUMINANCE: 0.6 FC
 - AVERAGE TO MINIMUM (UNIFORMITY RATIO): 4:1
 ROUNDABOUT TRAVEL LANES:
 - AVERAGE ILLUMINANCE: 1.2 FC
 - AVERAGE TO MINIMUM (UNIFORMITY RATIO): 3:1
 TOLL PLAZA SERVICE PULL-OFF AREAS:
 - AVERAGE ILLUMINANCE: 1.75 FC
 - AVERAGE TO MINIMUM (UNIFORMITY RATIO): 4:1

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

2014 NATIONAL ELECTRIC CODE

2011 AASHTO ROADSIDE DESIGN GUIDE

FATIGUE CATEGORY II SHALL BE USED IN DESIGN

DESIGN HIGH MOUNT STANDARD FOUNDATION FOR BASIC WIND SPEED OF 110 MPH

DESIGN HIGH MOUNT STANDARD SUPPORT FOR BASIC WIND SPEED OF 110 MPH

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 (USE DETAIL 1401.01 ON SHEET ES-03B IN LIEU OF STANDARD DRAWING 1401.01)
1402.01	HIGH MOUNT FOUNDATION (USE DETAIL 1402D01 ON SHEET ES-03C IN LIEU OF STANDARD DRAWING 1402.01)
1403.01	HIGH MOUNT LUMINAIRE (USE DETAIL 1403D01 ON SHEET ES-03C IN LIEU OF STANDARD DRAWING 1403.01)
1404.01	LIGHT STANDARDS (USE DETAIL 1404D01 ON SHEET ES-03A IN LIEU OF STANDARD DRAWING 1404.01 SHEET 1)
1405.01	STANDARD FOUNDATION
1406.01	LIGHT STANDARD LUMINAIRE (USE DETAIL 1406D01 ON SHEET ES-03A IN LIEU OF STANDARD DRAWING 1406.01)
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 40' LIGHT STANDARD TYPE MTLT WITH 17" BRACKET ARM, 208 WATT MAX, LED, B3-U0-G4, TYPE III, 23,250 INITIAL LUMENS, WITH TYPE R1 OR R2 FOUNDATION UNLESS OTHERWISE NOTED
 - PROPOSED 100' HIGH MAST STANDARD W/HM FOUNDATION & (6) HM LUMINAIRES 550 WATT MAX, LED, ARRANGED AT 60 DEGREE SPACING, B5-U0-G5, TYPE V, 57,690 INITIAL LUMENS, SEE DETAIL ON SHEET ES-03C
 - PROPOSED 80' HIGH MAST STANDARD W/HM FOUNDATION & (8) HM LUMINAIRES 320 WATT MAX, LED, ARRANGED AT 45 DEGREE SPACING, B5-U0-G3, TYPE V, 29,000 INITIAL LUMENS, SEE DETAIL ON SHEET ES-03C
 - PROPOSED CONTROL SYSTEM WITH PC36 JUNCTION BOX. BREAKER SIZE SHOWN IN LOAD SCHEDULES.
 - PROPOSED ELECTRICAL JUNCTION BOX WITH 18" REINFORCED CONCRETE COLLAR, MINIMUM 4" DEEP. SEE NOTES, THIS SHEET, AND TABLE B ON SHEET ES-02B.
 - REFERENCE TO CORRESPONDING NOTE AS NUMBERED
 - 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" OR 4" TYPE (JA) OR (BD). SEE TABLE C ON SHEET ES-02B
- POLE NAMING CONVENTION CONTROL SYSTEM-POLE NUMBER-CIRCUIT NUMBER

PLAN SYMBOL	DESCRIPTION	CONTRACT ITEM
8	2 #80 1 #10G 1.5" C	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR 1.5" PVC CONDUIT
*8	2 #80 1 #10G	2 AWG SIZE 8 CONDUCTOR (BK & RD) 1 AWG SIZE 10 GROUNDING CONDUCTOR
4	2 #40 1 #6G 1.5" C	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR 1.5" PVC CONDUIT
*4	2 #40 1 #6G	2 AWG SIZE 4 CONDUCTOR (BK & RD) 1 AWG SIZE 6 GROUNDING CONDUCTOR
2	2 #20 1 #4G 1.5" C	2 AWG SIZE 2 CONDUCTOR (BK & RD) 1 AWG SIZE 4 GROUNDING CONDUCTOR 1.5" PVC CONDUIT
*2	2 #20 1 #4G	2 AWG SIZE 2 CONDUCTOR (BK & RD) 1 AWG SIZE 4 GROUNDING CONDUCTOR

ABBREVIATIONS

BD	BURIED	PVC	PVC SCHEDULE 40 CONDUIT
LT	LEFT	RGC	RIGID GALVANIZED STEEL CONDUIT
RT	RIGHT	C	CONDUIT
JA	JACKED	CKT	CIRCUIT
MH	MOUNTING HEIGHT	N	NEUTRAL
Ø	PHASE	G	GROUND
SER LAT	SERVICE LATERAL	HM	HIGH MAST
AL	ARM LENGTH	USE	UNDERGROUND SERVICE ENTRANCE
WM	WALL MOUNT		

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**LIGHTING NOTES
AND
LEGEND**

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NUMBER	LOCATION	TYPE	SHEET
JB-1	SEE NOTE 1		PC36 ES-07
JB-2	-RPD- STA. 24+57.1, 35.4' RT		PC36 ES-07
JB-3	SEE NOTE 1	LSJB	ES-07
JB-4	SEE NOTE 1	LSJB	ES-05
JB-5	-RPD- STA. 30+21.6, 68.5' RT		PC18 ES-05
JB-6	SEE NOTE 1	LSJB	ES-05
JB-7	SEE NOTE 1	LSJB	ES-05
JB-8	-LPD- STA. 22+76.6, 43.3' LT		PC18 ES-05
JB-9	-L- STA. 72+17.3, 14.3' RT		PC18 ES-05
JB-10	-L- STA. 72+17.0, 67.5' LT		PC18 ES-05
JB-11	SEE NOTE 1	LSJB	ES-05
JB-12	-RPD- STA. 20+23.9, 30.7' RT		PC18 ES-07
JB-13	-RPD- STA. 17+52.8, 35.0' RT		PC18 ES-07
JB-14	-RPD- STA. 17+54.6, 18.7' LT		PC18 ES-07
JB-15	SEE NOTE 2	HMJB	ES-07
JB-16	SEE NOTE 1	LSJB	ES-06
JB-17	SEE NOTE 1	LSJB	ES-06
JB-18	-NC540- STA. 552+81.8, 102.8' RT		PC18 ES-06
JB-19	SEE NOTE 1	LSJB	ES-06
JB-20	SEE NOTE 1	LSJB	ES-06
JB-21	SEE NOTE 1	LSJB	ES-06
JB-22	-LPD- STA. 17+36.7, 24.8' LT		PC24 ES-07
JB-23	-LPD- STA. 15+00.3, 22.0' LT		PC24 ES-07
JB-24	-LPD- STA. 12+59.8, 22.0' LT		PC24 ES-07
JB-25	-LPD- STA. 12+59.8, 19.5' RT		PC18 ES-07
JB-26	SEE NOTE 2	HMJB	ES-07
JB-27	-LPD- STA. 10+75.8, 35.3' LT		PC24 ES-07
JB-28	-NC540- STA. 570+23.5, 104.0' RT		PC24 ES-04
JB-29	SEE NOTE 2	HMJB	ES-04
JB-30	-NC540- 571+96.2, 98.9 RT		PC24 ES-04
JB-31	-NC540- 573+44.1, 101.3 RT		PC24 ES-04
JB-32	-NC540- 573+41.1, 98.3 LT		PC24 ES-04
JB-33	-NC540- STA. 575+18.7, 101.9' LT		PC24 ES-04
JB-34	SEE NOTE 2	HMJB	ES-04
JB-35	-LPB- STA. 13+09.5, 20.2' LT		PC18 ES-08
JB-36	-LPB- STA. 15+20.1, 21.6' LT		PC18 ES-08
JB-37	-LPB- STA. 17+35.0, 25.1' LT		PC18 ES-08
JB-38	-LPB- STA. 17+37.8, 18.6' RT		PC18 ES-08
JB-39	SEE NOTE 2	HMJB	ES-08
JB-40	-LPB- STA. 19+53.7, 21.0' LT		PC18 ES-04
JB-41	-RPB- STA. 27+79.7, 33.5' RT		PC18 ES-04
JB-42	SEE NOTE 1	LSJB	ES-04
JB-43	SEE NOTE 1	LSJB	ES-04
JB-44	-L- STA. 63+39.9, 77.4' LT		PC18 ES-04
JB-45	-L- STA. 63+38.8, 1.7' RT		PC18 ES-04
JB-46	SEE NOTE 1	LSJB	ES-04
JB-47	SEE NOTE 1	LSJB	ES-04
JB-48	SEE NOTE 1	LSJB	ES-04
JB-49	-LPB- STA. 13+08.9, 15.6' RT		PC18 ES-08
JB-50	SEE NOTE 2	HMJB	ES-08
JB-51	-NC540- STA. 582+05.9, 115.8' LT		PC18 ES-08
JB-52	SEE NOTE 2	HMJB	ES-08
JB-53	-RPB- STA. 15+75.7, 13.0' LT		PC18 ES-08
JB-54	-RPB- STA. 15+75.6, 21.0' RT		PC18 ES-08
JB-55	-RPB- STA. 14+05.5, 34.0' RT		PC18 ES-08
JB-56	SEE NOTE 1	LSJB	ES-09
JB-57	SEE NOTE 1	LSJB	ES-09
JB-58	SEE NOTE 1	LSJB	ES-09
JB-59	SEE NOTE 1	LSJB	ES-05
JB-60	SEE NOTE 1	LSJB	ES-07
JB-61	SEE NOTE 1	LSJB	ES-08
JB-62	SEE NOTE 1	LSJB	ES-08

TABLE "B" GENERAL NOTES:

- INSTALL LIGHT STANDARD JUNCTION BOX (LSJB) WITHIN 5' OF LIGHT STANDARD FOUNDATION AS SHOWN IN DETAIL 1404D01 ON SHEET ES-03A.
- INSTALL HIGH MAST JUNCTION BOX (HMJB) WITHIN 10' OF HIGH MAST FOUNDATION AS SHOWN IN DETAIL 1401.01 ON SHEET ES-03B.

LOCATION		RACEWAY	SHEET	TYPE				
BASE LINE	STATION			JACKED (JA)			BURIED (BD)	
				SIZE 3"	SIZE 4"	SIZE 6"	SIZE 2"	SIZE 3"
-RPD-	24+58.4	JB-2 - JB-22	ES-07			95'		101'
-LPD-	12+59.8		ES-07	42'				
-RPD-	17+53.2		ES-07	50'				
-RPD-	30+22.9		ES-05	145'				
-L-	72+17.2		ES-05	82'				
-NC540-	551+70.5		ES-06	230'				
-L-	68+41.1	JB-30 - JB-31	ES-04		155'		161'	
-NC540-	573+43.3	JB-31 - JB-32	ES-04		194'		200'	
-LPB-	13+09.1	JB-35 - JB-49	ES-08		30'		35'	
-LPB-	17+36.7		ES-08	38'				
-RPB-	15+75.7		ES-08	28'				
-RPB-	27+82.4		ES-04	94'				
-L-	63+38.7		ES-04	74'				
TOTAL				783'	379'	95'	396'	101'

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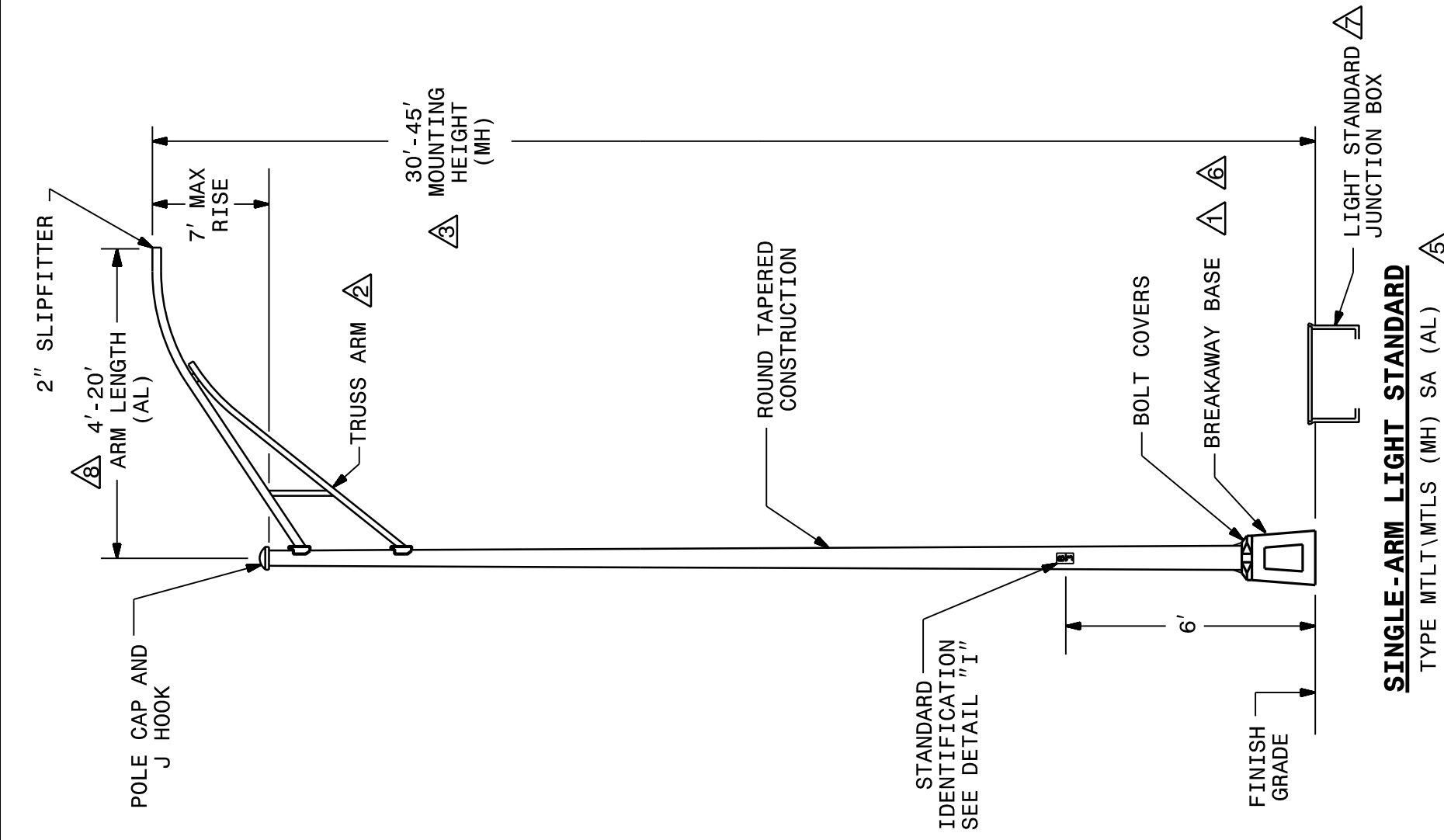
PLANS PREPARED BY :

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**LIGHTING JUNCTION BOX
AND ELECTRICAL DUCT
SUMMARY**

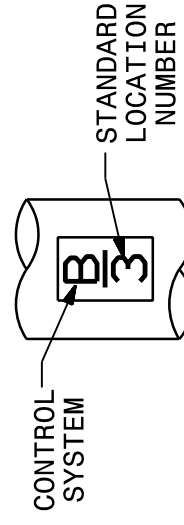
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 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

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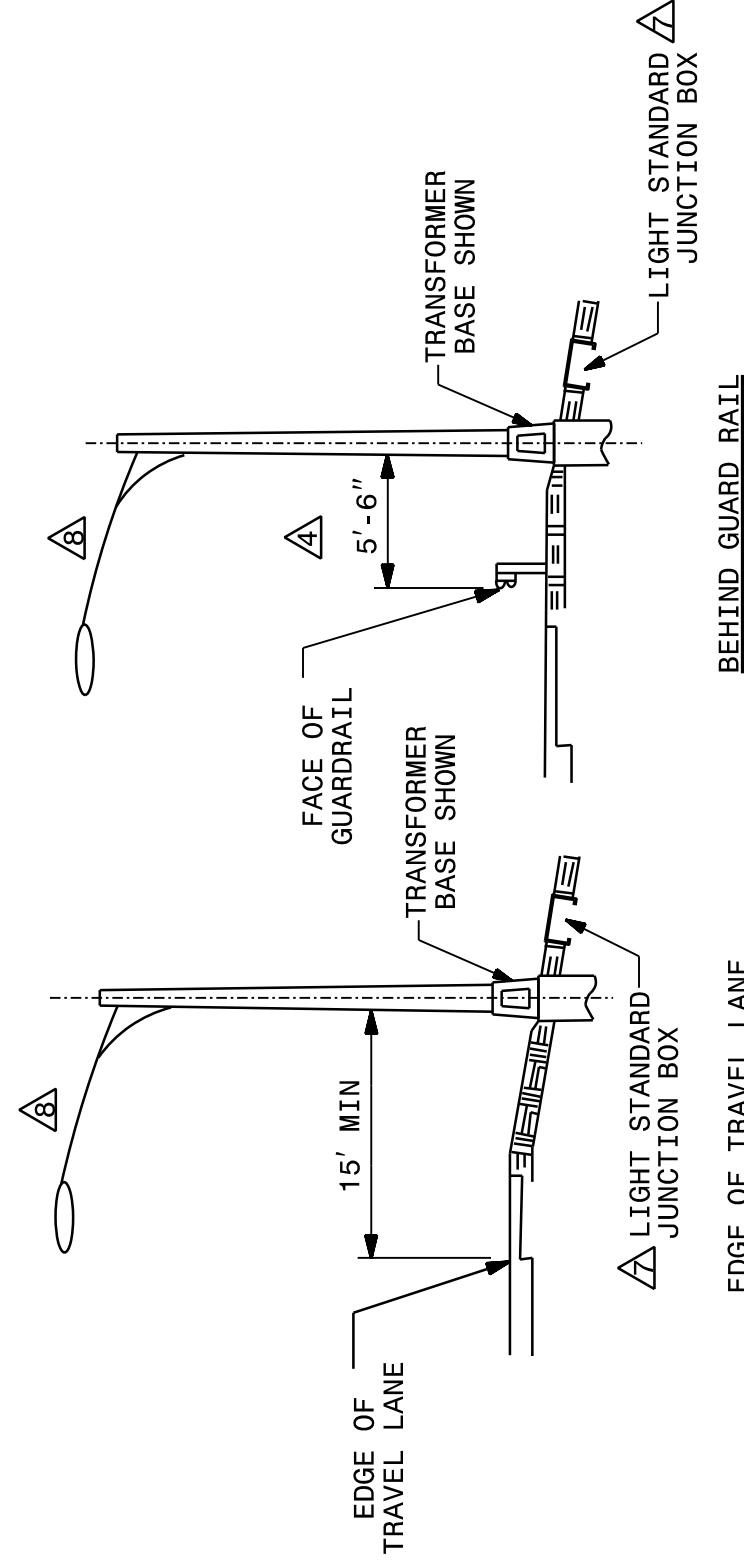


SINGLE-ARM LIGHT STANDARD
 TYPE MTL\MTLS (MH) SA (AL)

- NOTES**
- △ TRANSFORMER BASE SHOWN. OTHER BASES MEETING ASHTO BREAKAWAY REQUIREMENTS MAY BE PROVIDED IF APPROVED BY THE ENGINEER. SEE "BASE DETAILS" ON SHEET 2 OF 3.
 - △ SINGLE-MEMBER ARMS MAY BE PROVIDED IN LIEU OF TRUSS ARMS WHEN SPECIFIED ARM LENGTH IS 8' OR LESS AND MOUNTING HEIGHT IS 35' OR LESS.
 - △ MOUNTING HEIGHT INCLUDES BREAKAWAY BASE FOR LIGHT STANDARDS WITH TRANSFORMER BASES. SEE "BASE DETAILS" ON SHEET 2 OF 3.
 - △ STANDARD PLACEMENT MAY BE REDUCED TO 3'-6" BEHIND FACE OF GUARDRAIL WHEN POSTS ARE SPACED 3'-1 1/2", OR WHERE SPEED LIMIT IS LESS THAN 55 MPH.
 - △ INSERT MOUNTING HEIGHT (MH) AND ARM LENGTH (AL) FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED SINGLE-ARM LIGHT STANDARDS.
 - △ LIGHT STANDARDS MOUNTED ON BRIDGE OUTRIGGERS OR BEHIND RETAINING/BARRIER WALLS DO NOT REQUIRE BREAKAWAY BASES.
 - △ PROVIDE PC18 LIGHT STANDARD JUNCTION BOX 5' FROM LIGHT STANDARD FOUNDATION FOR CONNECTION OF CIRCUITRY. JUNCTION BOX SHALL BE SHOWN AND DIMENSIONED FROM THE LIGHT STANDARD AS VIEWED FROM THE ROADWAY.
 - △ WHEN DIRECT POLE MOUNTED LUMINAIRES ARE USED, BRACKET ARM IS NOT REQUIRED.



DETAIL "1-1"
 3" HIGH CHARACTERS
 WITH 3/8" THICK LINES



STANDARD PLACEMENT

SHEET 1 OF 3
1404D01

ENGLISH STANDARD DRAWING FOR
LIGHT STANDARDS
 SINGLE-ARM

SHEET 1 OF 3
1404D01

STATE OF NORTH CAROLINA
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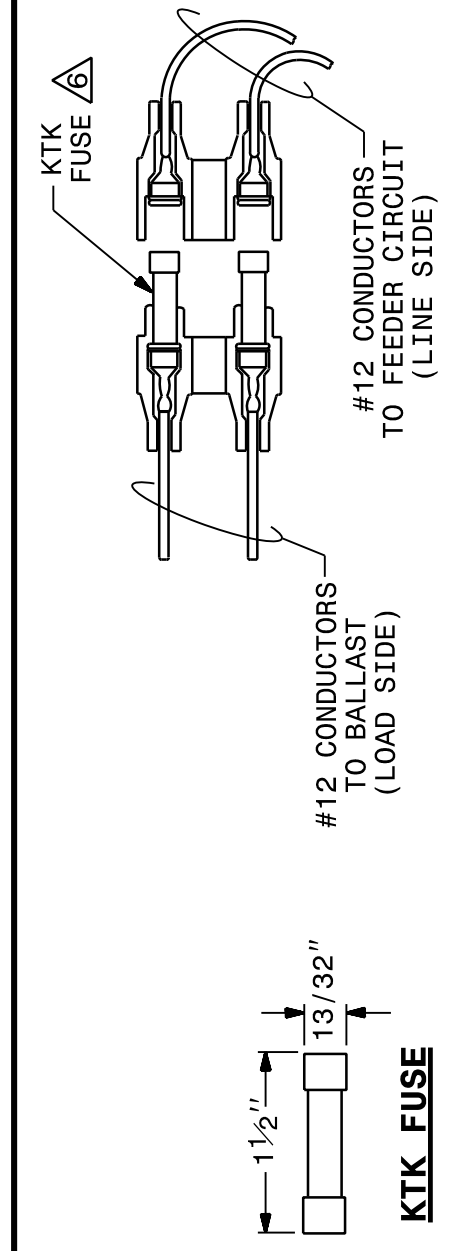
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ENGLISH STANDARD DRAWING FOR
LIGHT STANDARDS
 SINGLE-ARM

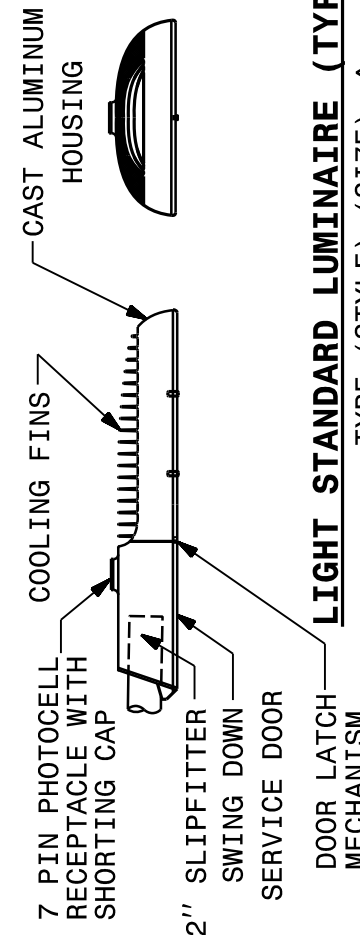
SHEET 1 OF 3
1404D01

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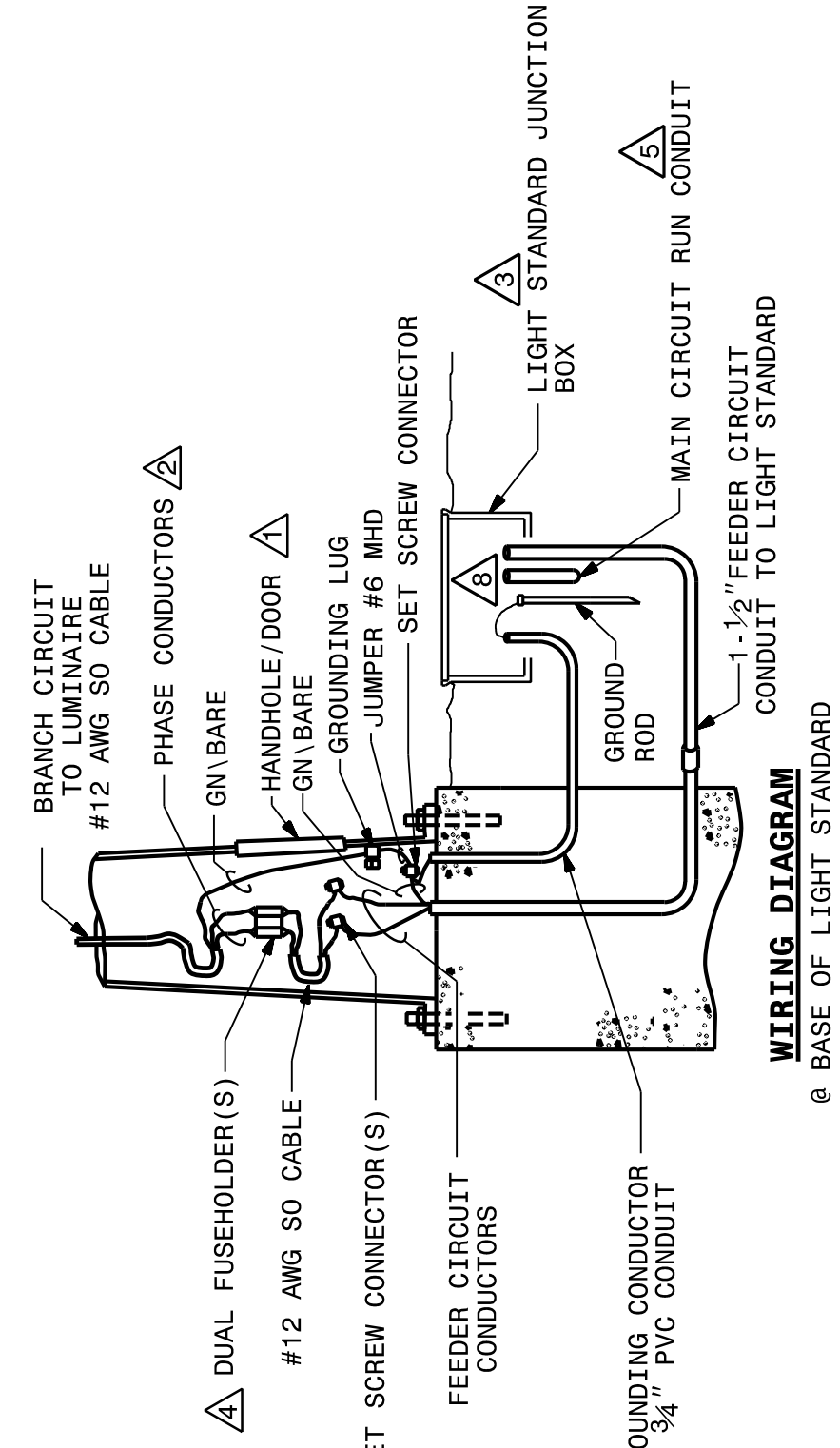
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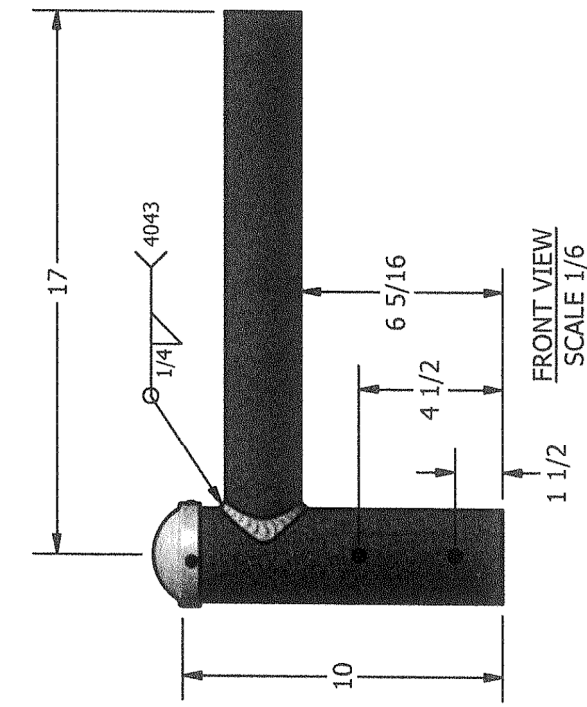
FUSEHOLDER



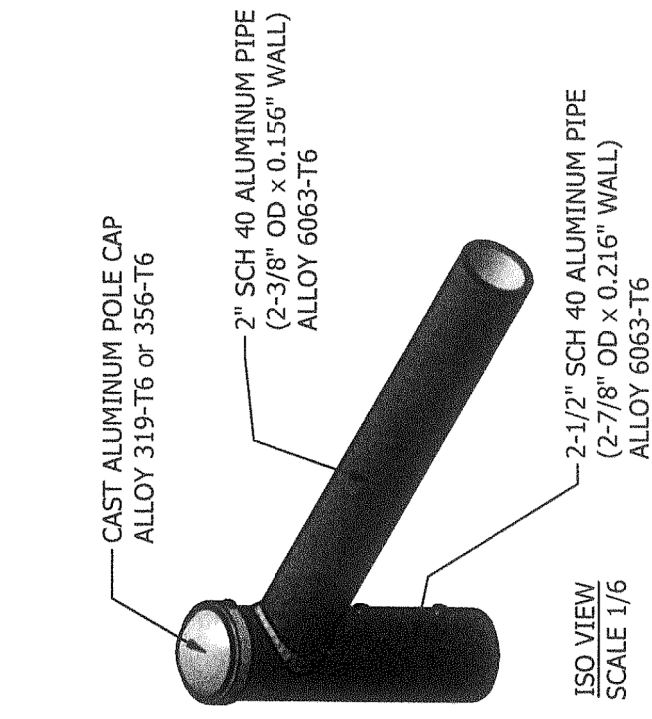
LIGHT STANDARD LUMINAIRE (TYPICAL)
 TYPE (STYLE) (SIZE)



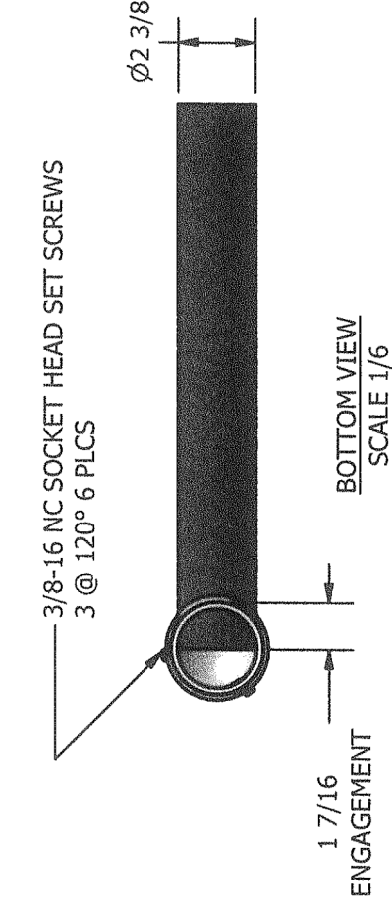
WIRING DIAGRAM
 @ BASE OF LIGHT STANDARD



FRONT VIEW
 SCALE 1/6



ISO VIEW
 SCALE 1/6



BOTTOM VIEW
 SCALE 1/6

LUMINAIRE CHARACTERISTICS			
SPEC TYPE	HRS RELACEMENT EQUIVALENT	COLOR TEMP	MINIMUM PERCENT OF INITIAL OUTPUT MAINTAINED LUMENS (70K HOURS & 25°C)
208W (MAX) LED FIXTURE	250W	3500K-4500K	83%
265W (MAX) LED FIXTURE	400W	3500K-4500K	83%

NOTES

- △ PROVIDE ACCESS TO FUSEHOLDERS FROM HANDHOLE OR TRANSFORMER BASE.
- △ SEE STANDARD SPECIFICATIONS SECTION 1400-AF FOR WIRING METHODS. USE TAPE OR HEAT SHRINK TO COLOR CONDUCTORS TO MATCH PHASE COLOR (RED/BLACK/BLUE).
- △ MAKE SPLICES IN ACCORDANCE WITH SECTION 1400-4(F) OF THE STANDARD SPECIFICATIONS.
- △ BREAKAWAY FUSEHOLDERS REQUIRED AT ALL BREAKAWAY LIGHT STANDARDS.
- △ SIZE FEEDER CIRCUIT CONDUCTORS AS SHOWN IN THE PLANS.
- △ SEE STANDARD SPECIFICATIONS SECTION 1400-2E FOR FUSEHOLDERS.
- △ INSERT STYLE AND SIZE FROM PAY ITEM DESCRIPTION TO DETERMINE PROPOSED LUMINAIRES.
- △ PERMANENTLY ATTACH GROUNDING CONDUCTOR TO GROUND ROD VIA EXOTHERMIC WELD.

ENGLISH STANDARD DRAWING FOR
LIGHT STANDARD LUMINAIRES

SHEET 1 OF 1
1406D01

ENGLISH STANDARD DRAWING FOR
LIGHT STANDARD LUMINAIRES

PLANS PREPARED BY:
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 FOR
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**LIGHT STANDARD AND
 LIGHT STANDARD
 LUMINAIRE DETAILS**

NOTE: SINGLE-MEMBER ARM TO BE USED IN LIEU OF TRUSS ARM SHOWN IN DETAIL 1404D01 SHEET 1 ON THIS SHEET.

TIP NO. U-5315 A&B SHEET NO. ES-03A

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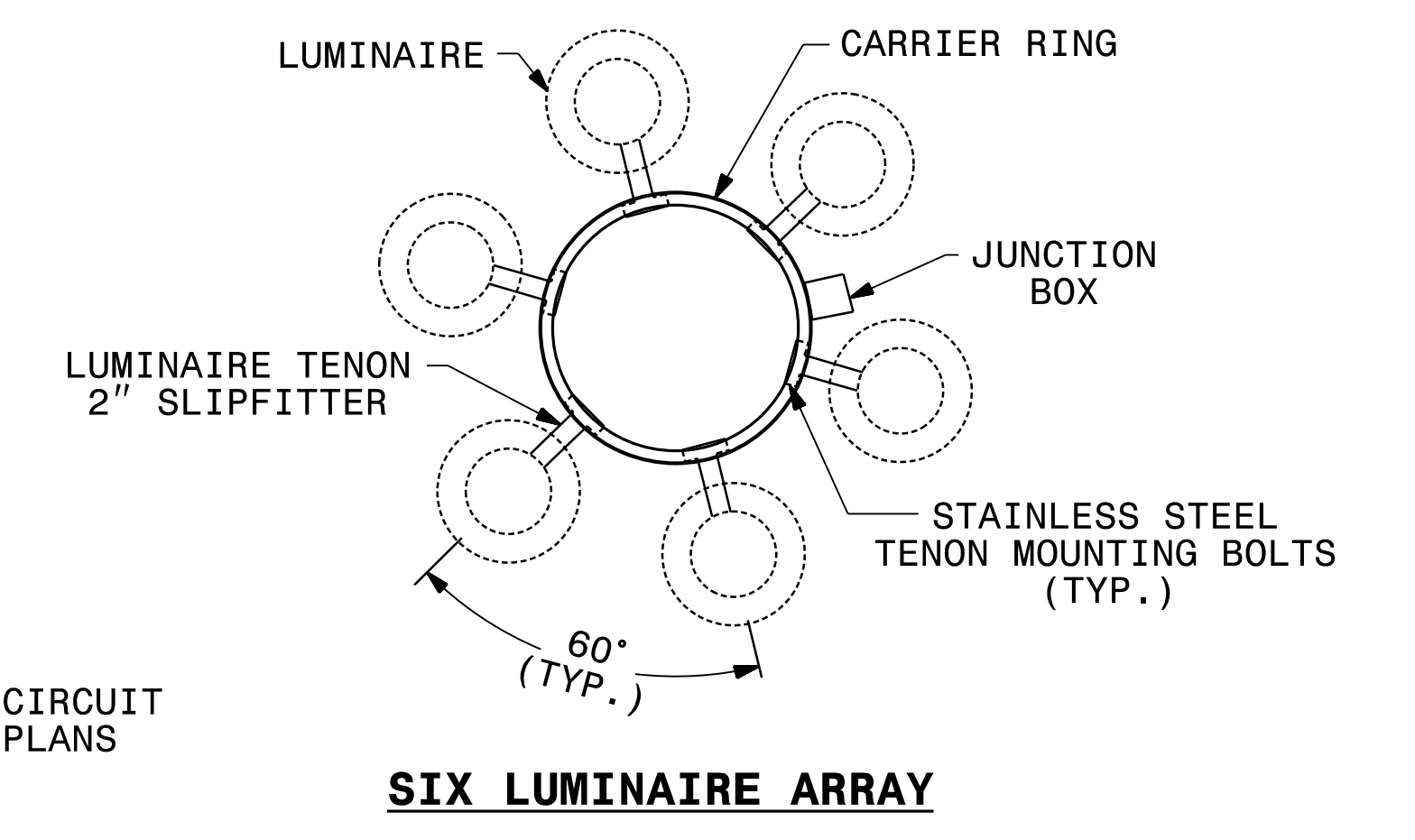
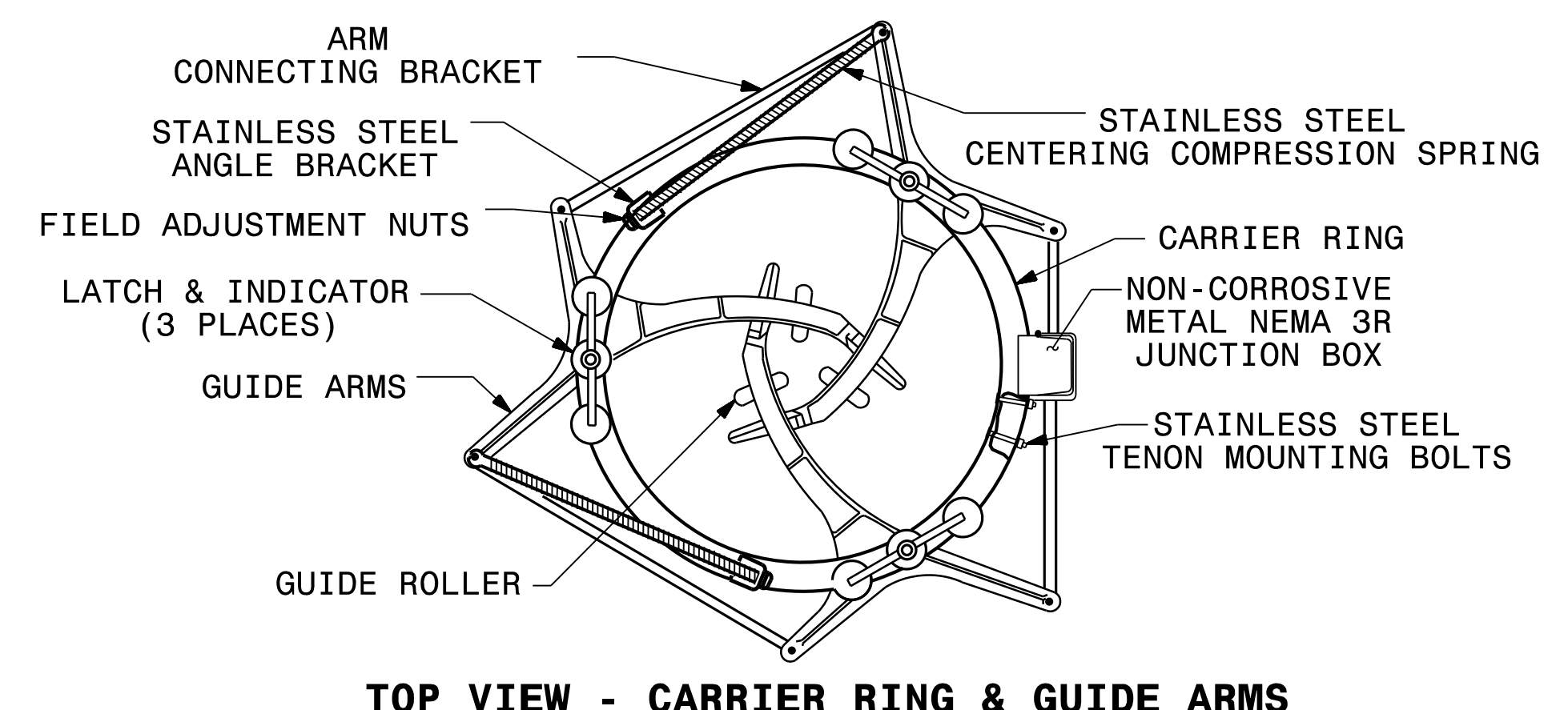
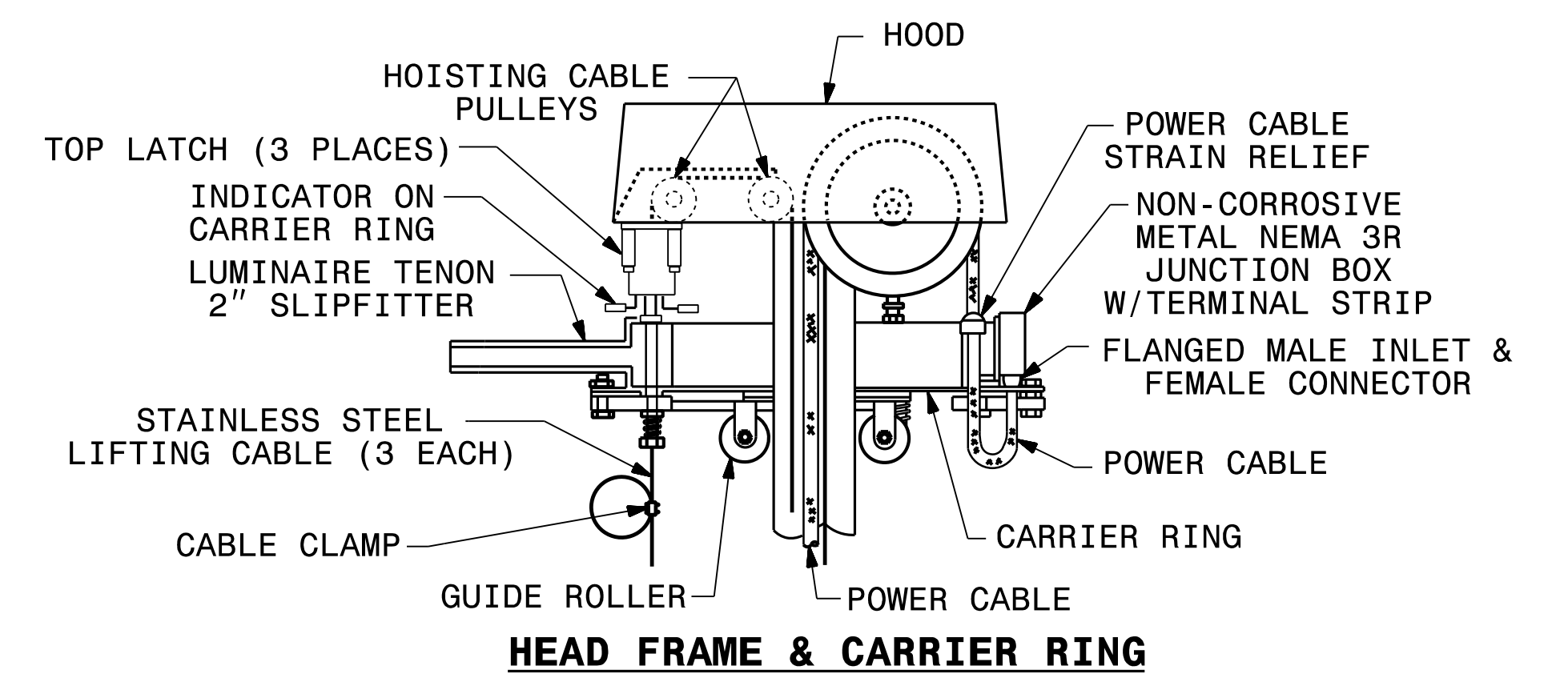
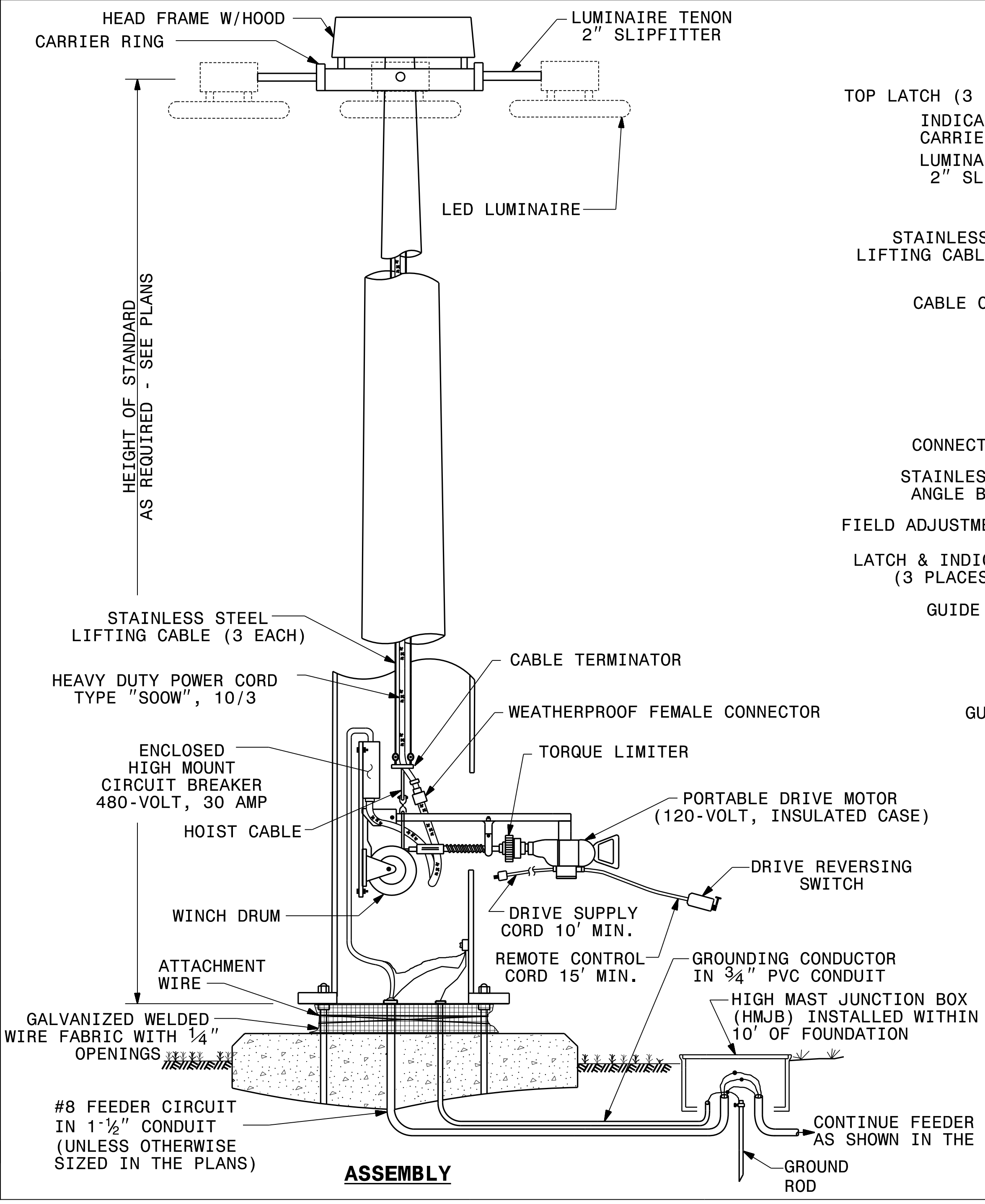
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1-18

ENGLISH STANDARD DRAWING FOR
 HIGH MOUNT STANDARD
 ASSEMBLY

SHEET 1 OF 2
1401.01



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1-18

ENGLISH STANDARD DRAWING FOR
 HIGH MOUNT STANDARD
 ASSEMBLY

SHEET 1 OF 2
1401.01

9/11/2017
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**HIGH MOUNT
 STANDARD ASSEMBLY**

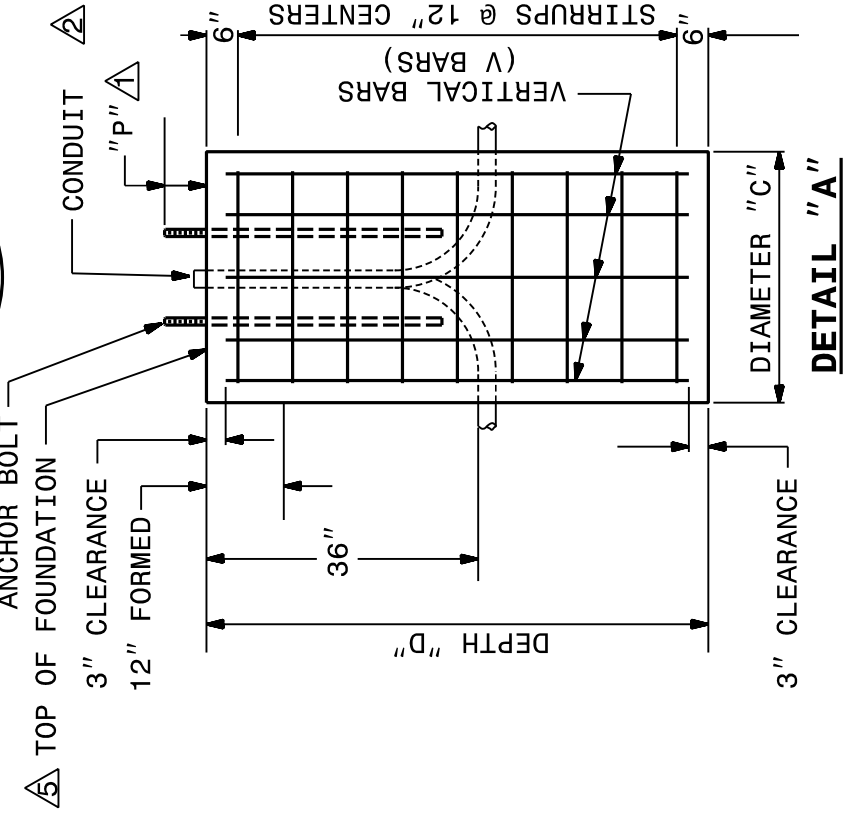
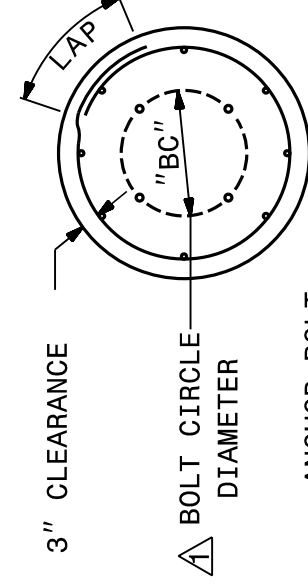
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1-12

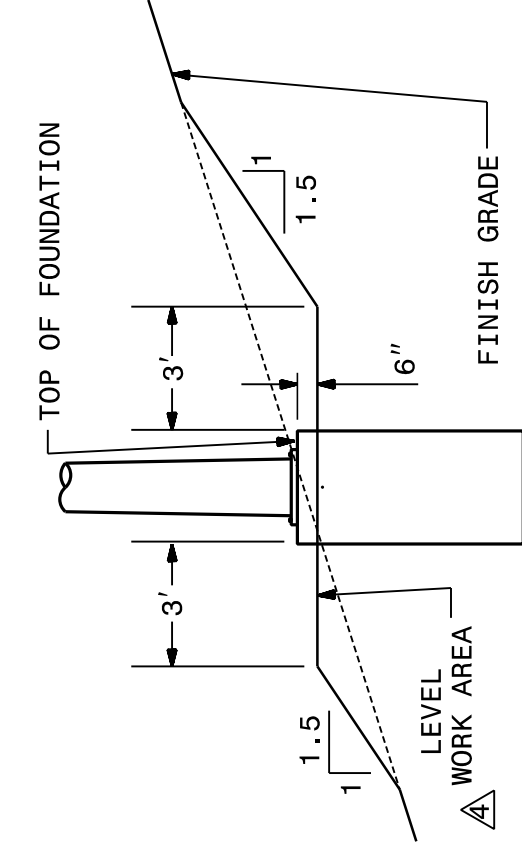
TABLE OF FOUNDATION DIMENSIONS AND QUANTITIES

HEIGHT HIGH MOUNT FT	DIAMETER "C" FT	STIRRUPS		90			110			130								
		LAP-FT	SIZE	V BARS QTY	V BARS SIZE	REINF.* STEEL LBS	CONCRETE CY	DEPTH "D" FT	V BARS QTY	V BARS SIZE	REINF.* STEEL LBS	CONCRETE CY	DEPTH "D" FT	V BARS QTY	V BARS SIZE	REINF.* STEEL LBS	CONCRETE CY	
																		#3
60	3.5	#3	1.0	11	8	#8	280	3.9	12	8	#8	306	4.3	13	8	#8	331	4.6
80	3.5	#3	1.0	12	8	#8	306	4.3	13	8	#8	331	4.6	15	8	#8	382	5.3
100	4.0	#3	1.0	13	8	#9	413	6.1	15	8	#9	477	7.0	16	8	#9	509	7.4
120	4.5	#3	1.0	15	8	#10	557	8.2	16	8	#10	636	9.4	18	8	#10	716	10.6

* INCLUDES STIRRUPS AND VERTICAL BARS (V BARS)



DETAIL "A"



DETAIL "B"

NOTES

- ANCHOR BOLTS
 CONFORM NUMBER, SIZE, AND LENGTH OF ANCHOR BOLTS, BOLT CIRCLE DIAMETER "BC", AND ANCHOR BOLT PROJECTION "P" TO APPROVED HIGH MOUNT STANDARD DRAWINGS.
- CONDUITS
 MATCH ORIENTATION, QUANTITY, TYPE, AND SIZE OF CONDUITS TO THE LAYOUT SHEETS. STUB AND CAP ONE SPARE CONDUIT AT EACH FOUNDATION. PROJECT CONDUIT A MAXIMUM OF 2" ABOVE TOP OF FOUNDATION. PLACE CONDUIT 30" BENEATH FINISH GRADE. INCLUDE 3/4" CONDUIT FOR GROUNDING ELECTRODE CONDUCTOR TO GROUND ROD AT HIGH MAST FOUNDATION.
- DIMENSIONS & QUANTITIES
 DIMENSIONS AND QUANTITIES OF CONCRETE AND REINFORCING STEEL ARE GIVEN FOR THE PURPOSE OF OBTAINING BID PRICES ONLY. SEE PROJECT SPECIAL PROVISIONS FOR OTHER STRUCTURAL REQUIREMENTS.
- WORK AREA
 PROVIDE A LEVEL WORK AREA AROUND EACH FOUNDATION. CUT/FILL SLOPES MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- ELEVATION
 SET TOP OF FOUNDATION AT 6" ABOVE LEVEL WORK AREA. SEE DETAIL "B".
- GUARDRAIL
 WHERE GUARDRAIL IS REQUIRED TO BE INSTALLED AS PART OF LIGHTING WORK, SET GUARDRAIL NO MORE THAN 8' FROM CENTER OF HIGH MAST FOUNDATION.

ENGLISH STANDARD DRAWING FOR
 HIGH MOUNT FOUNDATION

SHEET 1 OF 1
 1402D01

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1-12

ENGLISH STANDARD DRAWING FOR
 HIGH MOUNT FOUNDATION

SHEET 1 OF 1
 1402D01

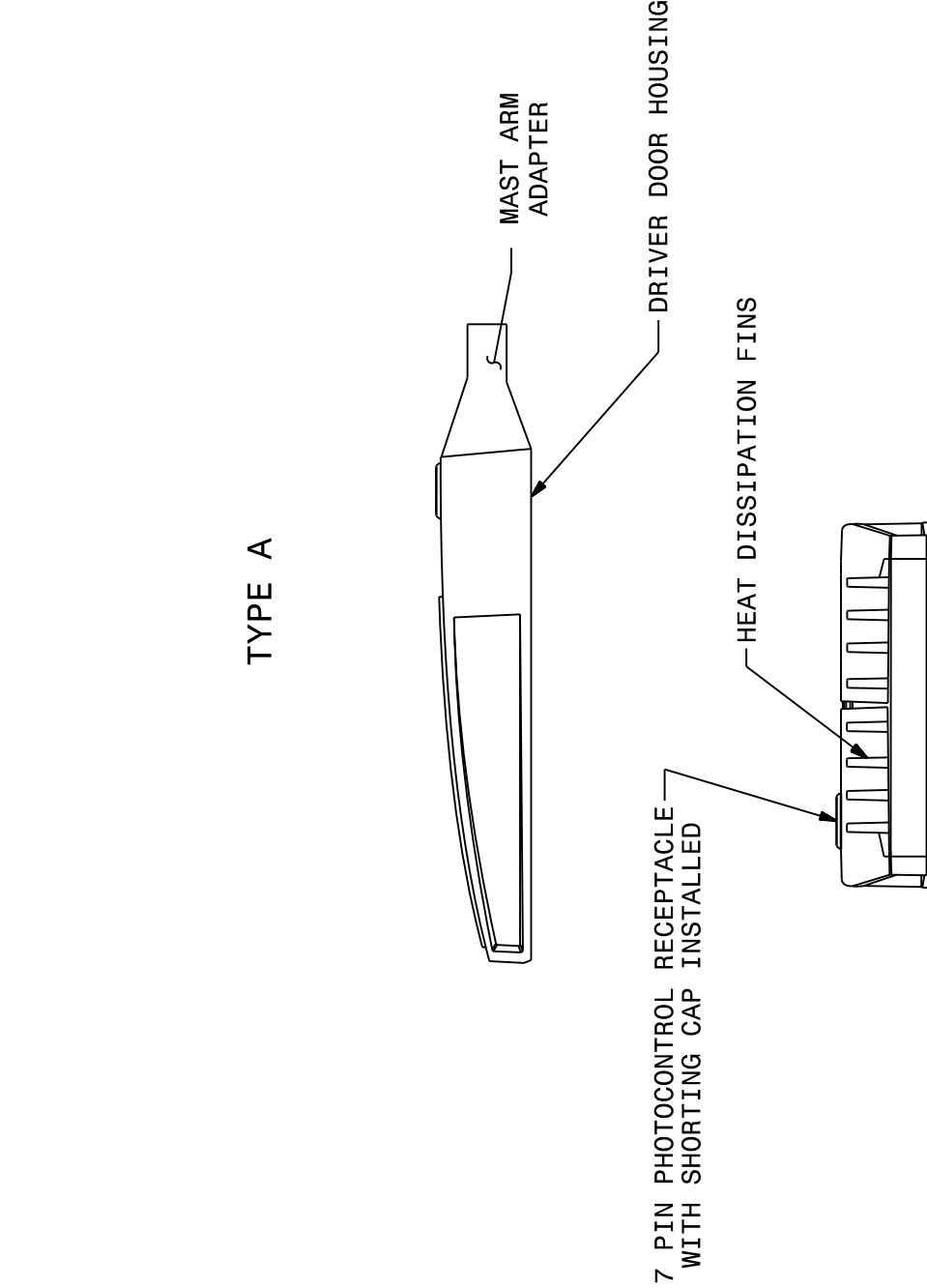
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1-12

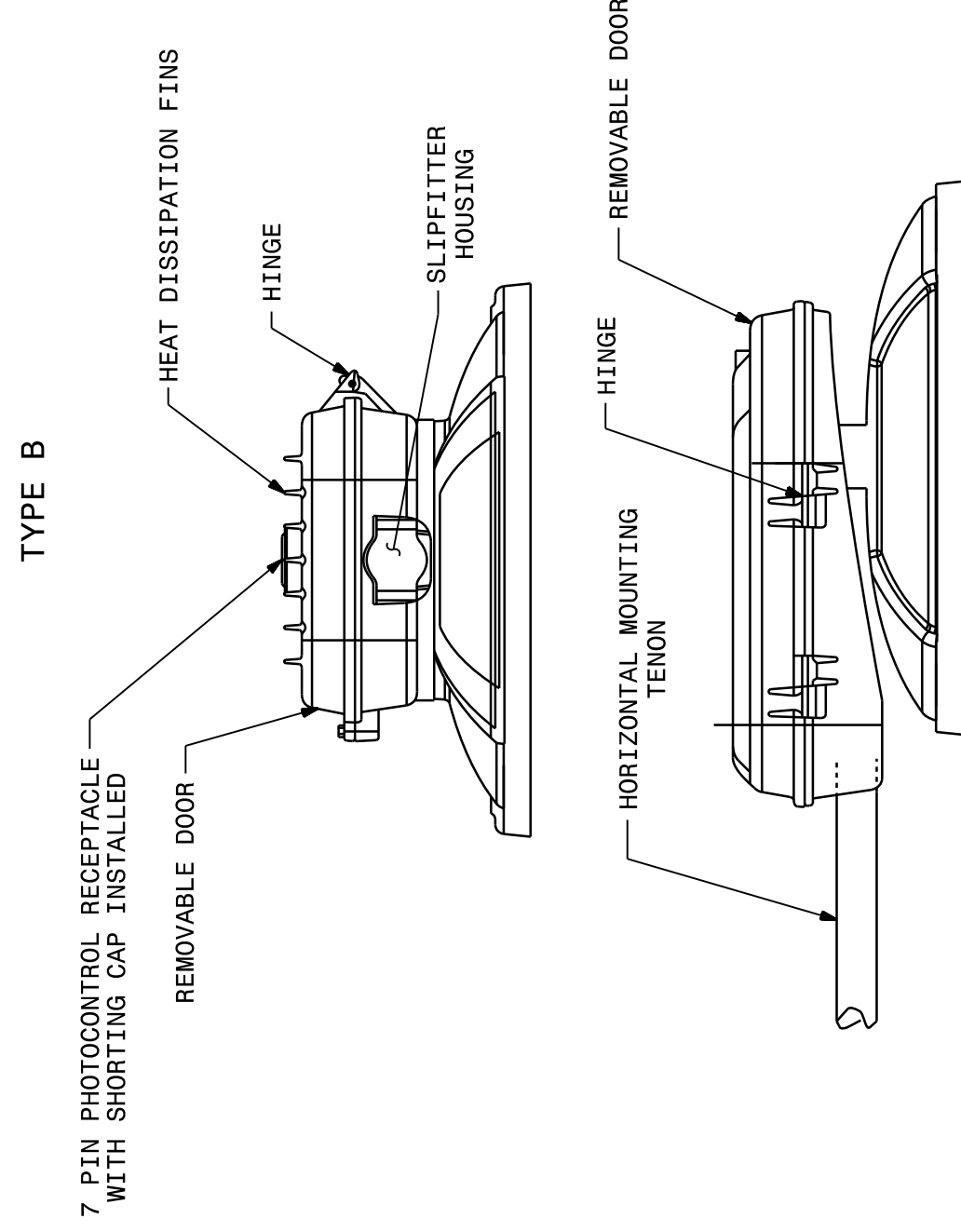
ENGLISH STANDARD DRAWING FOR
 HIGH MOUNT LED LUMINAIRES

SHEET 1 OF 1
 1403D01

TYPICAL CONFIGURATION TYPES



TYPE A



TYPE B

LED LUMEN PACKAGES

MOUNTING HEIGHT	# OF LUMINAIRES	MAXIMUM LUMINAIRE WATTAGE	MINIMUM LUMINAIRE MAINTAINED (100K HOURS @ 25° C)	MINIMUM PERCENT OF INITIAL OUTPUT	COLOR TEMP.
60'	4	320	23,300	87%	4,000K ±500K
80'	8	320	23,300	87%	4,000K ±500K
100'	6	550	44,250	87%	4,000K ±500K
120'	8	550	44,250	87%	4,000K ±500K

NOTES

- SEE PLANS FOR IES DISTRIBUTION

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HIGH MOUNT FOUNDATION
 AND HIGH MOUNT LED
 LUMINAIRE DETAILS

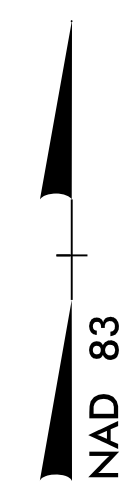
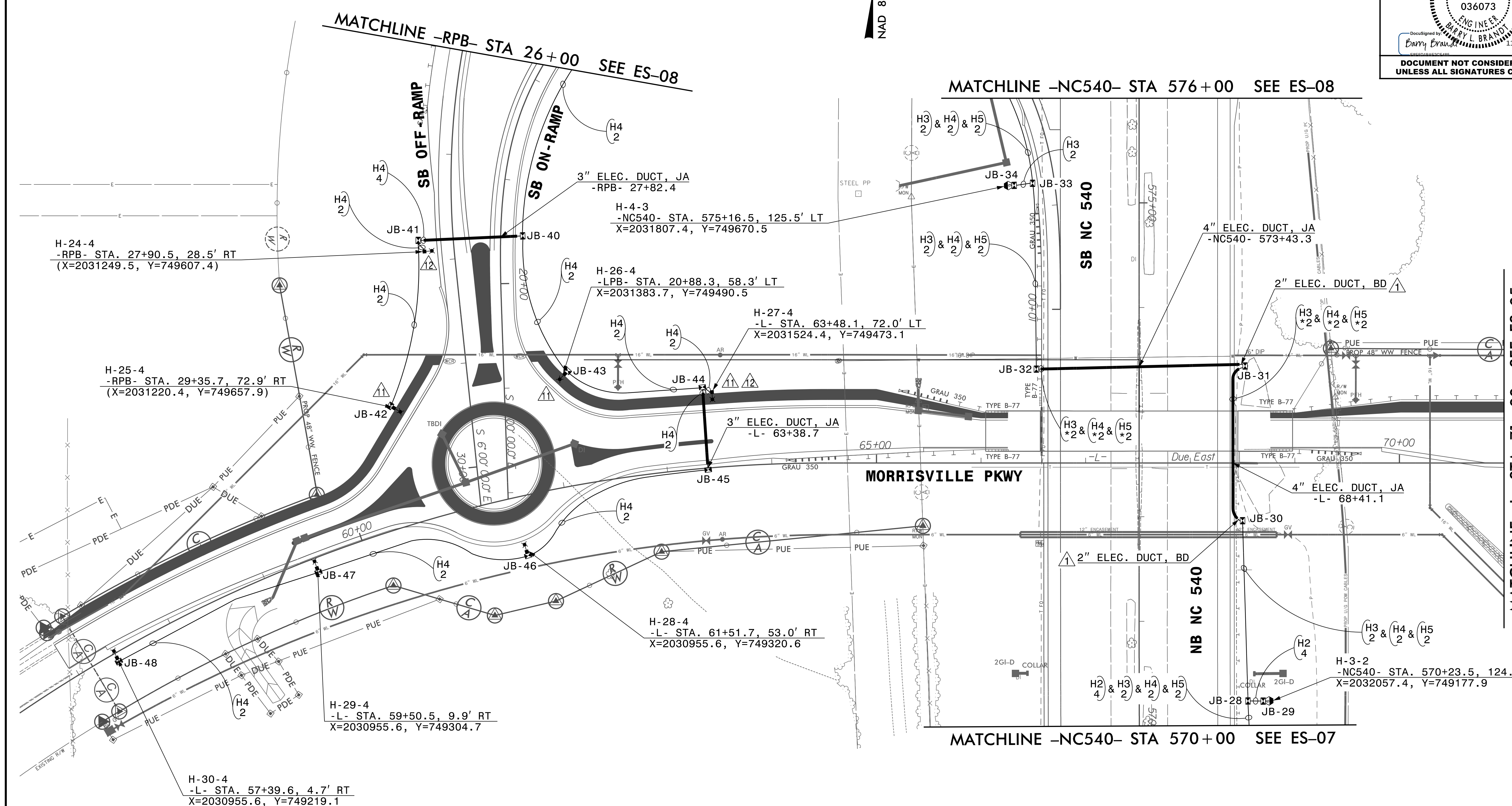
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MATCHLINE -RPB- STA 26+00 SEE ES-08

MATCHLINE -NC540- STA 576+00 SEE ES-08

MATCHLINE -L- STA 71+00 SEE ES-05

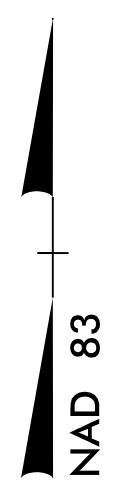
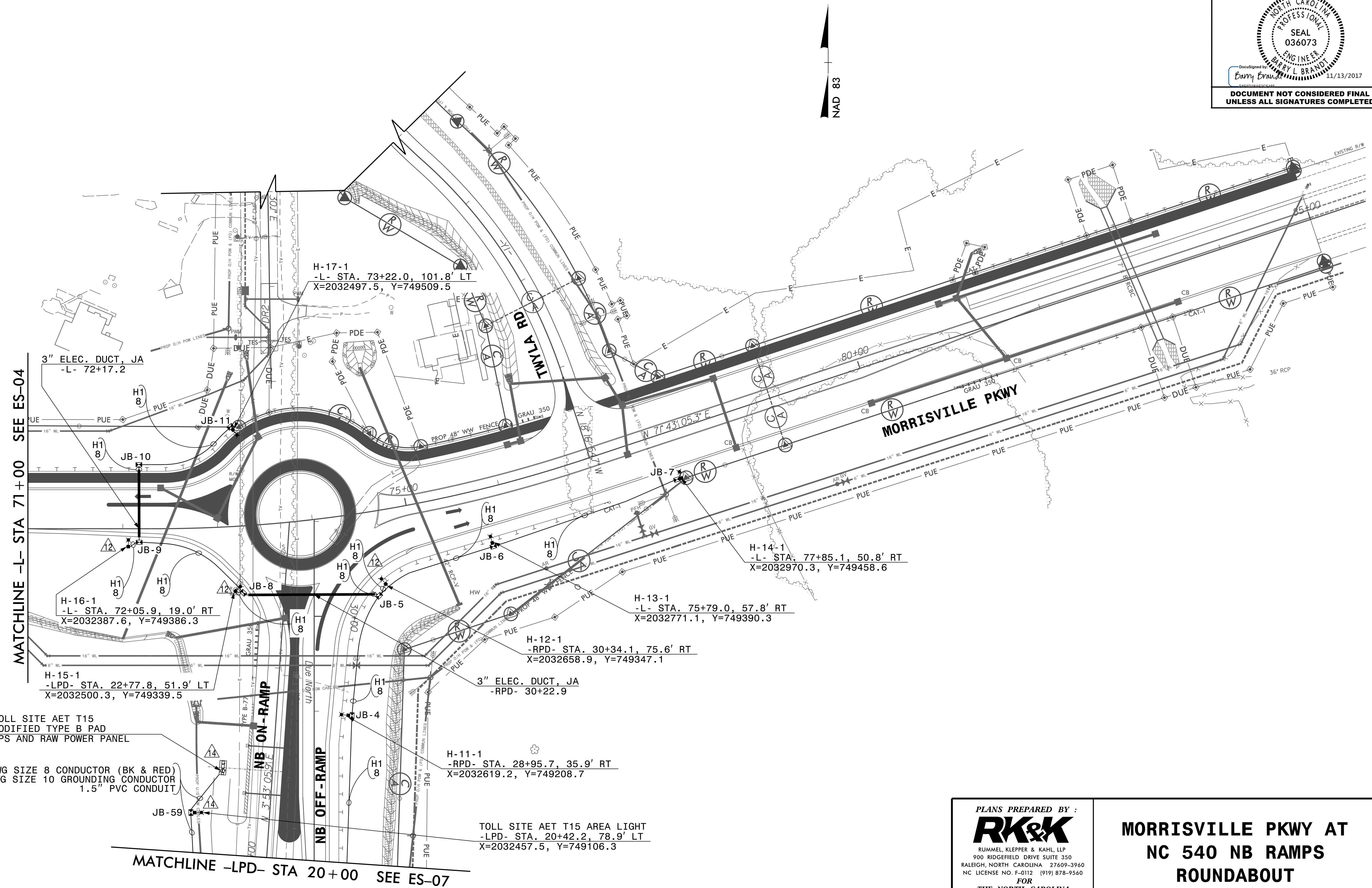
MATCHLINE -NC540- STA 570+00 SEE ES-07

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**MORRISVILLE PKWY AT
 NC 540 SB RAMPS
 ROUNDABOUT**

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MATCHLINE -L- STA 71+00 SEE ES-04

MATCHLINE -LPD- STA 20+00 SEE ES-07

TOLL SITE AET T15
MODIFIED TYPE B PAD
UPS AND RAW POWER PANEL

2 AWG SIZE 8 CONDUCTOR (BK & RED)
1 AWG SIZE 10 GROUNDING CONDUCTOR
1.5\"/>

TOLL SITE AET T15 AREA LIGHT
-LPD- STA. 20+42.2, 78.9' LT
X=2032457.5, Y=749106.3

H-14-1
-L- STA. 77+85.1, 50.8' RT
X=2032970.3, Y=749458.6

H-13-1
-L- STA. 75+79.0, 57.8' RT
X=2032771.1, Y=749390.3

H-12-1
-RPD- STA. 30+34.1, 75.6' RT
X=2032658.9, Y=749347.1

H-11-1
-RPD- STA. 28+95.7, 35.9' RT
X=2032619.2, Y=749208.7

H-16-1
-L- STA. 72+05.9, 19.0' RT
X=2032387.6, Y=749386.3

H-15-1
-LPD- STA. 22+77.8, 51.9' LT
X=2032500.3, Y=749339.5

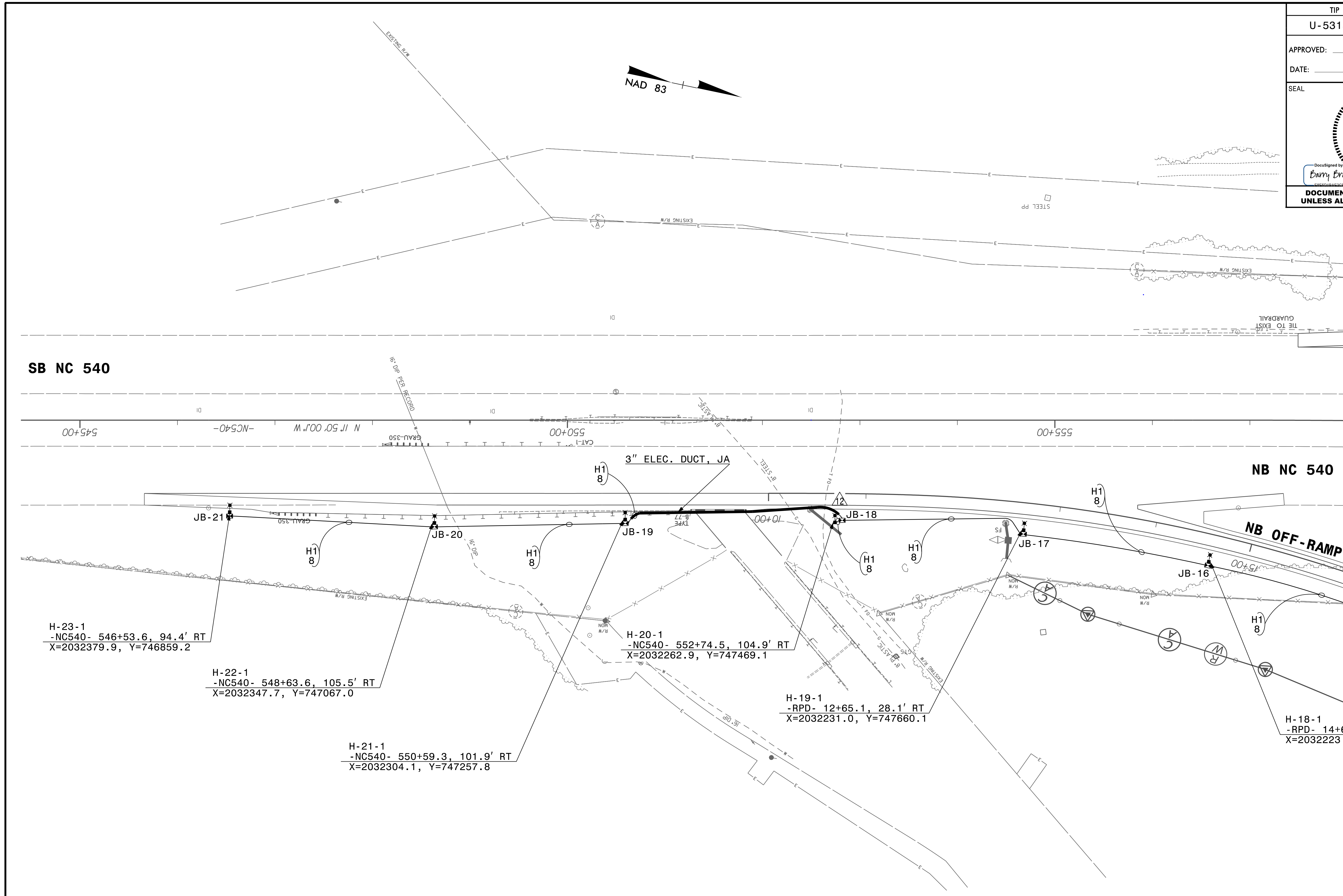
H-17-1
-L- STA. 73+22.0, 101.8' LT
X=2032497.5, Y=749509.5

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**MORRISVILLE PKWY AT
NC 540 NB RAMPS
ROUNDAABOUT**

TIP NO. U-5315 A&B	SHEET NO. ES-06
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MATCHLINE - NC540- STA 558 + 00 SEE ES-07

H-23-1
-NC540- 546+53.6, 94.4' RT
X=2032379.9, Y=746859.2

H-22-1
-NC540- 548+63.6, 105.5' RT
X=2032347.7, Y=747067.0

H-21-1
-NC540- 550+59.3, 101.9' RT
X=2032304.1, Y=747257.8

H-20-1
-NC540- 552+74.5, 104.9' RT
X=2032262.9, Y=747469.1

H-19-1
-RPD- 12+65.1, 28.1' RT
X=2032231.0, Y=747660.1

H-18-1
-RPD- 14+61.3, 28.2' RT
X=2032223.8, Y=747852.5

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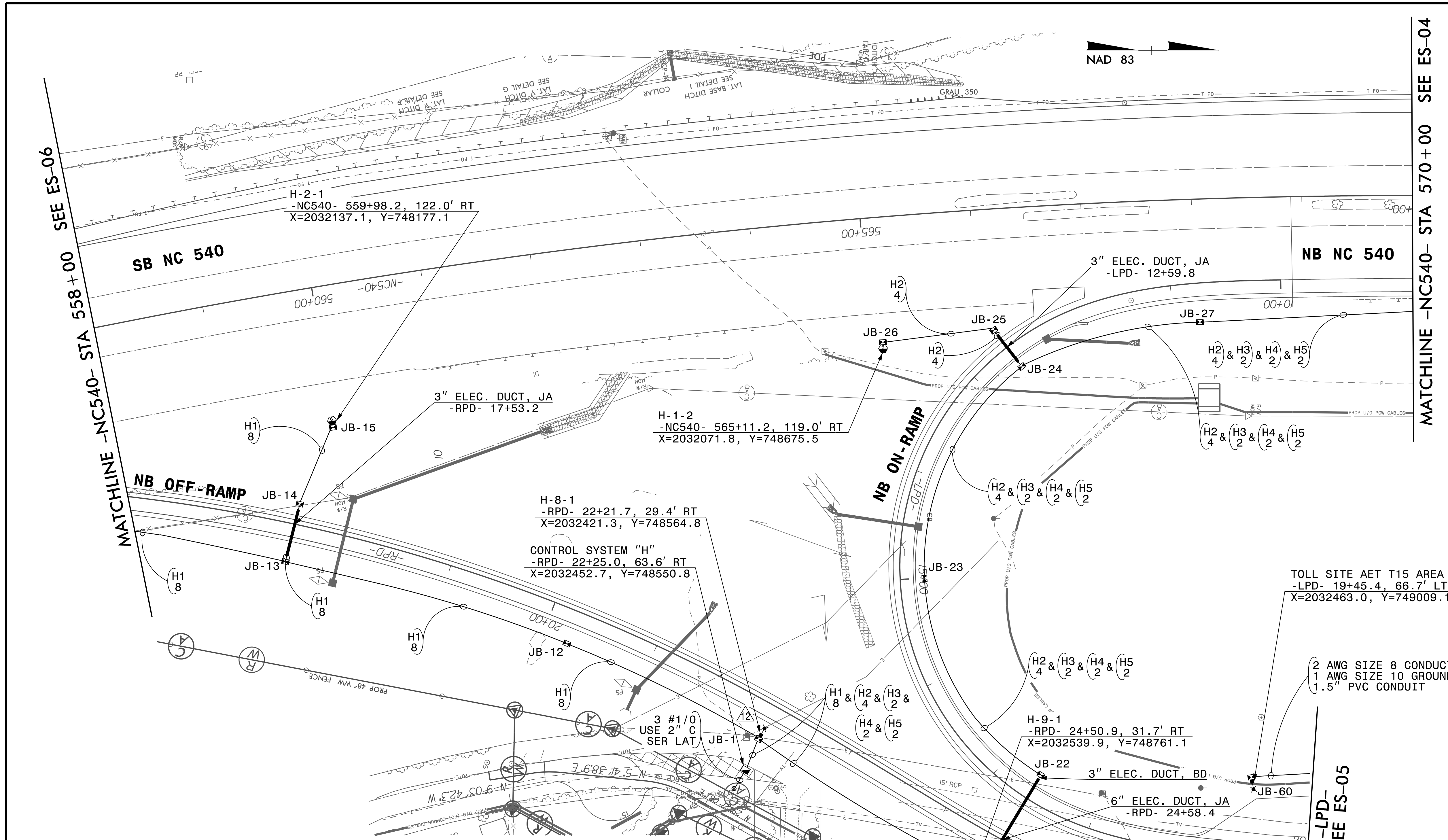
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**NC 540 SOUTH OF
MORRISVILLE PARKWAY
INTERCHANGE**

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**LOAD SCHEDULE
MORRISVILLE PKWY AT NC 540 INTERCHANGE
CONTROL SYSTEM "H"
1Ø, 3W, 240/480 VAC**

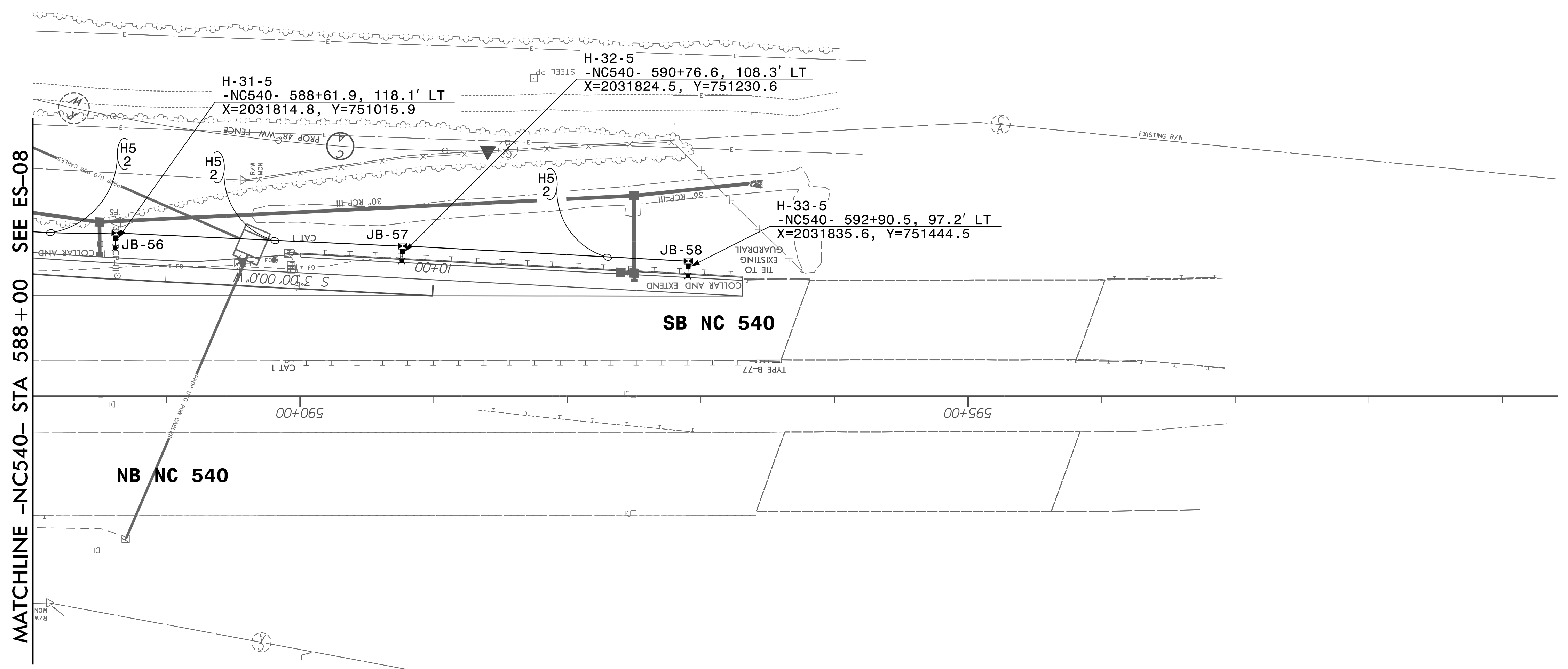
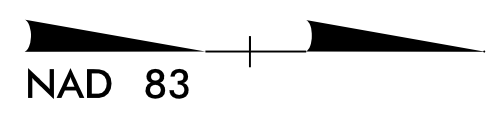
CIRCUIT	SINGLE-ARM 1@208 WATT MAX. LED, TYPE III	100' HIGH MAST W/ 6 - 550 WATT MAX. LED, TYPE V LUMINAIRES	80' HIGH MAST W/ 8 - 320 WATT MAX. LED, TYPE V LUMINAIRES	AMPS @ 480V	KW LOAD	BREAKER SIZE (AMPS)
H1	H-8, H-9, H-10, H-11, H-12, H-13, H-14, H-15, H-16, H-17, H-18, H-19, H-20, H-21, H-22, H-23	H-2	-	13.81	6.63 KW	20
H2	-	H-1, H-3	-	13.76	6.60 KW	20
H3	-	H-4, H-5	-	13.76	6.60 KW	20
H4	H-24, H-25, H-26, H-27, H-28, H-29, H-30	-	H-6	8.36	4.01 KW	20
H5	H-31, H-32, H-33	H-7	-	8.18	3.93 KW	20
SPARE	-	-	-	-	-	20
TOTAL	26	6	1	57.87	27.78 KW	-

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NC 540 & NB RAMPS

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