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CANNON & CANNON, INC.
8550 KINGSTON PIKE
KNOXVILLE, TN 37919

REBECCA BOTTOMS, P.E. NO. 102750

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE OF TENN. CODE ANN. §62-2-306.

SHEET NAME	SHEET NO.
SIGNATURE SHEET	LIGHTING-SIGN1
ESTIMATED LIGHTING QUANTITIES	L
LIGHTING SPECIAL NOTES	LA
LIGHTING PLANS	L-1 – L-13
LIGHTING DETAILS	L-14 – L-19
LIGHTING REMOVALS	L-27 – L-31

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KNOXVILLE, TN 37919

EVERETT NOE, JR., P.E. NO. 16558

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE OF TENN. CODE ANN. §62-2-306.

SHEET NAME	SHEET NO.
SIGNATURE SHEET	LIGHTING-SIGN1
ESTIMATED LIGHTING QUANTITIES	L
LIGHTING SPECIAL NOTES	LA
LIGHTING PLANS	L-1 – L-13
LIGHTING DETAILS	L-14 – L-26

YEAR	PROJECT NO.	SHEET NO.
2023	R-STP/NH-115(29)	LIGHTING-SIGN1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

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8550 KINGSTON PIKE
KNOXVILLE, TN 37919

REBECCA BOTTOMS, P.E. NO. 102750

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SHEET NAME	SHEET NO.
SIGNATURE SHEET	LIGHTING-SIGN2
LIGHTING INDEX AND ESTIMATED LIGHTING QUANTITIES	L
LIGHTING SPECIAL NOTES	LA

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KNOXVILLE, TN 37919

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SHEET NAME	SHEET NO.
SIGNATURE SHEET	LIGHTING-SIGN2
LIGHTING INDEX AND ESTIMATED LIGHTING QUANTITIES	L
LIGHTING SPECIAL NOTES	LA

YEAR	PROJECT NO.	SHEET NO.
2023	R-STP/NH-115(29)	LIGHTING-SIGN2

REV. 04-12-23: ADDED SHEET TO PLANS

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L

REV. 04-12-23: ADDED LIGHTING INDEX.
UPDATED SHEET TITLE.
ADDED ITEM NO. 714-26.05
AND FOOTNOTE NO. 37.

LIGHTING INDEX

SHEET NAME	SHEET NO.
SIGNATURE SHEET	LIGHTING-SIGN1-2
LIGHTING INDEX AND ESTIMATED LIGHTING QUANTITIES	L
LIGHTING SPECIAL NOTES	LA
LIGHTING PLANS	L-1 – L-13
LIGHTING DETAILS	L-14 – L-26
LIGHTING REMOVALS	L-27 – L-31

ESTIMATED LIGHTING QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY 47026-3280-14
(1)	714-02.01	ENCASED CONDUIT (2" PVC, SCHEDULE 80)	L.F.	1554
	714-03	JACKED OR BORED CONDUIT	L.F.	3000
	714-03.01	DIRECT BURIAL CONDUIT (2" PVC, SCHEDULE 40)	L.F.	24735
	714-04.01	CONDUIT (STRUCTURES - 1" RGS)	L.F.	400
	714-04.02	CONDUIT (STRUCTURES - 2" RGS)	L.F.	200
	714-04.03	CONDUIT (2" IN BARRIER WALL)	L.F.	6361
	714-05.02	PULL BOXES (TYPE A)	EACH	61
(2)	714-05.05	PULL BOXES (JUNCTION BOX IN WALL)	EACH	38
(3)	714-05.06	PULL BOXES (SURFACE MOUNTED JUNCTION BOX)	EACH	33
	714-06.03	CABLE (1/C # 10 AWG)	L.F.	160
	714-06.05	CABLE (1/C # 6 AWG)	L.F.	81662
	714-06.06	CABLE (1/C # 4 AWG)	L.F.	84060
(4)	714-08.01	LIGHT STANDARDS (45' M.H., 15' ARM)	EACH	37
(5)	714-08.09	LIGHT STANDARDS (40' M.H.)	EACH	44
	714-08.10	LIGHT STANDARDS (30' M.H., 6' ARM)	EACH	14
(6)	714-08.11	LIGHT STANDARDS (45' M.H., BARRIER MOUNTED)	EACH	16
(7)	714-08.12	LIGHT STANDARDS (45' M.H., DOUBLE ARM, BARRIER MOUNTED)	EACH	9
(8)	714-08.13	LIGHT STANDARDS (40' M.H., 10' ARM, BARRIER MOUNTED)	EACH	6
	714-08.14	LIGHT STANDARDS (30' M.H., 6' ARM, BARRIER MOUNTED)	EACH	6
(9)	714-08.15	LIGHT STANDARDS (120' HIGH MAST)	EACH	1
(10)	714-08.16	LIGHT STANDARDS (125' HIGH MAST)	EACH	2
(11)	714-08.17	LIGHT STANDARDS (130' HIGH MAST)	EACH	1
(11)	714-08.18	LIGHT STANDARDS (135' HIGH MAST)	EACH	1
(12)	714-08.20	FOUNDATION (ONLY) FOR LIGHT STANDARD	EACH	37
(13)	714-08.21	FOUNDATION (ONLY) FOR LIGHT STANDARD	EACH	44
(14)	714-08.22	FOUNDATION (ONLY) FOR LIGHT STANDARD	EACH	14
(15)	714-08.23	FOUNDATION (ONLY) FOR LIGHT STANDARD	EACH	9
(16)	714-08.24	FOUNDATION (ONLY) FOR LIGHT STANDARD	EACH	6
(17)	714-08.25	FOUNDATION (ONLY) FOR LIGHT STANDARD	EACH	6
(18)	714-08.26	FOUNDATION FOR LIGHT STANDARDS(MEDIAN BARRIER)	EACH	16
(19)	714-08.33	REMOVAL OF EXISTING COBRA HEAD LUMINAIRE	EACH	1
(20)	714-08.34	REMOVAL OF LIGHT STANDARD	EACH	80
	714-08.46	FOUNDATION (ONLY) FOR HIGH MAST LIGHT STANDARD	EACH	5
(21)	714-09.43	LED LUMINAIRES (200 WATT)	EACH	24
(22)	714-09.47	LED LUMINAIRES (166 WATT)	EACH	41
(23)	714-09.48	LED LUMINAIRES (113 WATT)	EACH	9
(24)	714-09.49	LED LUMINAIRES (28 WATT)	EACH	19
(25)	714-09.50	LED LUMINAIRES (50 WATT)	EACH	11
(26)	714-09.51	LED LUMINAIRES (94 WATT)	EACH	35
(27)	714-09.52	LED LUMINAIRES (155 WATT)	EACH	12
(28)	714-09.53	LED LUMINAIRES (180 WATT)	EACH	3
(29)	714-09.54	LED LUMINAIRES (105 WATT)	EACH	2
(30)	714-09.64	LUMINAIRES (LED - 295W - HIGH MAST)	EACH	44
(31)	714-09.83	LUMINAIRES (LED - 39W UNDERPASS)	EACH	6
(32)	714-09.84	LUMINAIRES (PED TUNNEL)	EACH	30
	714-12.01	CONTROL CENTER (NO. 1)	LS	1
	714-12.02	CONTROL CENTER (NO. 2)	LS	1
	714-12.03	CONTROL CENTER (NO. 3)	LS	1
	714-12.04	CONTROL CENTER (NO. 4)	LS	1
(33)	714-14.02	MASTARM - 6'	EACH	1
(34)	714-14.03	MASTARM (TENON MOUNT)	EACH	8
(35)	714-25.01	ELECTRICAL CONNECTION (LIGHTING SYSTEM)	LS	1
(36)	714-25.22	INSTALL SVC RISER (1" PVC)	EACH	6
(37)	714-26.05	TEMPORARY ROADWAY LIGHTING	LS	1

FOOT NOTES

(1) INCLUDES 1,428 L.F. OF DOUBLE 2" DUCT AND 126 L.F. OF TRIPLE 2" DUCT.
(2) INCLUDES 7 JUNCTION BOXES AS SHOWN ON PLANS AND 23 JUNCTION BOXES TO BE INSTALLED BENEATH EACH BARRIER MOUNTED POLE. JUNCTION BOX SHALL BE CITY OF KNOXVILLE STANDARD (QUAZITE PC0608DG06), OR APPROVED EQUAL.
(3) FOR USE IN PEDESTRIAN TUNNEL. SEE SHEET L-15.
(4) INCLUDES 35 POLES WITH 15' ARM AND 2 POLES WITH 20' ARM.
(5) INCLUDES ONE POLE WITH 6' ARM, 20 POLES WITH 10' ARM, AND 23 POLES WITH 15' ARM.
(6) INCLUDES 3 POLES WITH TENON MOUNT, 3 POLES WITH 5' ARM, 9 POLES WITH 10' ARM, AND ONE POLE WITH 15' ARM.
(7) INCLUDES 5 POLES WITH ONE 5' ARM AND ONE 10' ARM AND 4 POLES WITH TWO 10' ARMS.
(8) INCLUDES 5 POLES WITH 10' ARM AND 1 POLE WITH 15' ARM.
(9) SHALL HAVE 6 LUMINAIRES. ITEM SHALL INCLUDE OBSTRUCTION LIGHTING MEETING CURRENT FAA STANDARDS, STEPDOWN TRANSFORMER, AND ASSOCIATED WIRING.
(10) ONE POLE SHALL HAVE 8 LUMINAIRES AND ONE POLE SHALL HAVE 10 LUMINAIRES. ITEM SHALL INCLUDE OBSTRUCTION LIGHTING MEETING CURRENT FAA STANDARDS, STEPDOWN TRANSFORMER, AND ASSOCIATED WIRING.
(11) SHALL HAVE 10 LUMINAIRES. ITEM SHALL INCLUDE OBSTRUCTION LIGHTING MEETING CURRENT FAA STANDARDS, STEPDOWN TRANSFORMER, AND ASSOCIATED WIRING.
(12) FOR ITEM NO. 714-08.01.
(13) FOR ITEM NO. 714-08.09.
(14) FOR ITEM NO. 714-08.10.
(15) FOR ITEM NO. 714-08.12.
(16) FOR ITEM NO. 714-08.13.
(17) FOR ITEM NO. 714-08.14.
(18) FOR ITEM NO. 714-08.11.
(19) REMOVAL OF LUMINAIRE, BRACKET ARM, AND ASSOCIATED WIRING FROM EXISTING POLE SHOWN ON SHEET L-27.
(20) ITEM INCLUDES REMOVAL OF 74 ROADWAY AND PARKING LOT LIGHTS AND 6 HIGH MAST LIGHTS. INCLUDES REMOVAL OF EXISITNG FIXTURE(S), ARM (S), POLE, FOUNDATION AND ASSOCIATED WIRING. SEE SHEETS 27 - 31.
(21) TYPE G LUMINAIRE SHALL BE AMERICAN ELECTRIC LIGHTING AUTOBAHN LED LUMINAIRE (ATBL-C-MVOLT-R3-3K-NL-P7).
(22) INCLUDES 26 TYPE A LUMINAIRES AND 15 TYPE B LUMINAIRES. TYPE A LUMINARE SHALL BE COOPER NAVION LED LUMINAIRE (NVN-SA3C-740-U-SL4-AP-10K-PR7). TYPE B LUMINAIRE SHALL BE COOPER NAVION LED LUMINAIRE (NVN-SA3C-740-U-T3-AP-10K-PR7).
(23) TYPE C LUMINAIRE SHALL BE COOPER NAVION LED LUMINAIRE (NVN-SA2C-740-U-T3-AP-10K-PR7).
(24) TYPE D LUMINAIRE SHALL BE AMERICAN ELECTRIC LIGHTING AUTOBAHN LED LUMINAIRE (ATBX-P40-MVOLT-R2-3K-MP-NL-P7).
(25) TYPE E LUMINAIRE SHALL BE AMERICAN ELECTRIC LIGHTING AUTOBAHN LED LUMINAIRE (ATBS-P20-MVOLT-R3-3K-MP-NL-P7).
(26) TYPE F LUMINAIRE SHALL BE AMERICAN ELECTRIC LIGHTING AUTOBAHN LED LUMINAIRE (ATBM-P20-MVOLT-R2-3K-NL-P7).
(27) TYPE H LUMINAIRE SHALL BE HOLOPHANE LIGHTING MONGOOSE OFFSET LED LUMINAIRE (MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7). INCLUDES LUMINAIRE MOUNTING ARM.
(28) TYPE I LUMINAIRE SHALL BE HOLOPHANE LIGHTING MONGOOSE OFFSET LED LUMINAIRE (MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7).
(29) TYPE M LUMINAIRE SHALL BE HOLOPHANE LIGHTING MONGOOSE OFFSET LED LUMINAIRE (MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7).
(30) TYPE K LUMINAIRE SHALL BE HOLOPHANE LIGHTING HMLED3 HIGH MAST LED LUMINAIRE (HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH).
(31) TYPE J LUMINAIRE SHALL BE HOLOPHANE WALLPACK IV LED LUMINAIRE (W4GLED-10C-1000-30K-T3M-MVOLT-GYSDP).
(32) TYPE L LUMINAIRE FOR USE IN PEDESTRIAN TUNNEL.
(33) FOR LUMINAIRE NO. LP 131.
(34) FOR LUMINAIRES TO BE INSTALLED ON TRAFFIC SIGNAL POLES.
(35) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL UTILITY TO OBTAIN THE ESTIMATE FOR ANY CHARGES BY THE UTILITY FOR PROVIDING ELECTRICAL SERVICE TO THE LIGHTING SYSTEM. THESE CHARGES SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 714-25 FOR PAYMENT BY THE CONTRACTOR.
(36) SERVICE RISER FOR LP1-LP6
(37) SEE LIGHTING SPECIAL NOTE 30 ON SHEET LA.

SEALED BY

04/12/2023

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04/12/23

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

LIGHTING INDEX
AND ESTIMATED
LIGHTING
QUANTITIES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	LA

REV. 04-12-23: ADDED SPECIAL NOTE NO. 30.

LIGHTING SPECIAL NOTES

(1) CONTRACTOR SHALL PROVIDE MANUFACTURER'S SPECIFICATION SHEETS FOR ALL CONTRACTOR SUPPLIED MATERIALS FOR REVIEW AND APPROVAL PRIOR TO PURCHASING AND INSTALLING MATERIALS. ANY REWORK REQUIRING REMOVAL OF NON-APPROVED MATERIALS WILL BE PERFORMED AT NO ADDITIONAL EXPENSE TO CONTRACT.

(2) CONTRACTOR SHALL HAVE A QUALIFIED JOURNEYMAN ELECTRICIAN OR JOURNEYMAN WIREMAN ON THE JOB SITE AT ALL TIMES TO SUPERVISE THE INSTALLATION AND TESTING OF ALL LIGHTING SYSTEM COMPONENTS AND TO INSURE ADHERANCE TO ALL STANDARDS AND CODES.

(3) THE CITY OF KNOXVILLE STREET LIGHT COORDINATOR (CHEVELLE LEWIS, 865-215-6046) SHALL BE CONTACTED PRIOR TO THE START OF CONSTRUCTION OF THE LIGHTING SYSTEM. THE CITY OF KNOXVILLE HAS THE RIGHT TO REVIEW INSTALLATION OF THE LIGHTING STYSTEM DURING CONSTRUCTION.

(4) CONTRACTOR SHALL CONTACT THE KNOXVILLE / KNOX COUNTY METROPOLITAN PLANNING COMMISSION (MPC) AT 865-215-2500 TO OBTAIN A CERTIFIED ADDRESS FOR EACH CONTROL CENTER LOCATION. AFTER OBTAINING CERTIFIED ADDRESSES, THE CONTRACTOR SHALL CONTACT THE CITY OF KNOXVILLE (CHEVELLE LEWIS, 865-215-6046) TO REQUEST SERVICE FOR LIGHTING CONTROL CENTERS. THE CITY WILL THEN CONTACT KNOXVILLE UTILITIES BOARD (KUB) NEW SERVICES TO ARRANGE FOR ELECTRICAL SERVICE AT EACH CONTROL CENTER LOCATION. CONTRACTOR SHALL NOT BEGIN CONSTRUCTION OF LIGHTING CONTROL CENTERS UNTIL APPROVAL OF LOCATIONS IS RECEIVED FROM KUB NEW SERIVCES GROUP.

(5) ALL CONNECTIONS OF THE LIGHTING CONTROL CABINET TO POWER SHALL BE MADE BY KNOXVILLE UTILITY BOARD (KUB). CONNECTION WILL ONLY BE PERFORMED AFTER PRELIMINARY VERIFICATION BY THE CITY OF KNOXVILLE OF COMPLETION OF INSTALLATION AND CIRCUTIRY ACCORDING TO CONTRACT DOCUMENTS. CONTROL CABINET WILL REMAIN ENERGIZED FOR TWO WEEKS FOR CONTRACTOR TO PERFORM SYSTEM TESTING AND SATISFACTORY CORRECTION OF ANY ISSUES OR UNTIL FINAL WRITTEN ACCEPTANCE BY THE CITY OF KNOXVILLE.

(6) PRIOR TO COMPLETION OF INSTALLATION, CONTRACTOR SHALL PERFORM A PERFORMANCE TEST TO INSURE THAT THE SYSTEM IS PROPERLY FUNCTIONING. THIS TEST CONSISTS OF A 48 HOUR CONTINUOUS BURN-IN OF ALL COMPONENTS WITHOUT INTERRUPTION OR FAILURE ATTRIBUTABLE TO POOR WORKMANSHIP OR DEFECTIVE MATERIAL. OTHER SYSTEM TESTS MAY BE REQUIRED AT THE DISCRESSION OF CITY OF KNOXVILLE REPRESENTATIVES TO INSURE THAT SYSTEM WILL FUNCTION PROPERLY OVER TIME. THESE ADDITIONAL TESTS MAY INCLUDE ANY OR ALL OF THE FOLLOWING: VOLTAGE AND CURRENT READINGS OF EACH CIRCUIT, GROUND RESISTANCE TEST, INSULATION RESISTANCE TEST.

(7) CONTRACTOR TO CONTACT KUB DISPATCH AT 558-2660 FOR OPENING OF TRANSFORMERS TO RECEIVE CONDUIT AND WIRE OR WHEN WORKING WITHIN 10 FEET OF ANY ENERGIZED KUB POWER LINE OR POWER POLE.

(8) CONTRACTOR TO BE RESPONSIBLE FOR INSTALLATION DEFECTS FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE LIGHTING INSTALLATION.

(9) ALL CONCEALED WIRE IN CONDUIT SHALL BE RATED FOR DRY AND WET LOCATIONS AND SHALL BE STRANDED COPPER WITH THWN TYPE THERMOSET INSULATION. WIRE SIZE 6-2 AWG SHALL HAVE A MINIMUM INSULATION THICKNESS OF 45 MILS. WIRE SIZE 10 AWG SHALL HAVE MINIMUM INSULATION THICKNESS OF 30 MILS. WIRE SIZE AND QUANTITIES PER PLANS. THE GROUND WIRE SHALL BE RUN INSIDE CONDUIT WITHIN STRUCTURES, SHALL BE COLORED GREEN AND HAVE THWN INSULATION.

(10) CONTRACTOR SHALL COLOR CODE ALL LIGHT POLE RELATED CABLES PER CITY OF KNOXVILLE STANDARD DWG-A-15688.

(11) ALL WIRING SHALL BE CONCEALED UNDERGROUND IN 2-INCH SCHEDULE 40 PVC CONDUIT, UNLESS OTHERSWISE NOTED. MINIMUM CONDUIT DEPTH SHALL BE 30".

(12) CONTRACTOR SHALL INSTALL HANDHOLES WHERE QUANTITY OF BENDS IS GREATER THAN 270 DEGREES AND/OR PULL EXCEEDS 250 LINEAR FEET.

(13) FACTORY BENDS ARE PREFERRED. HEAT BENDING OF CONDUIT MAY BE ALLOWED IF PROPER HEAT BENDING APPARATUS IS USED. ALL CONDUIT INSTALLATIONS ARE SUBJECT TO MANDREL TESTING. CONTRACTOR TO PERFORM TESTING AT NO ADDITIONAL EXPENSE TO CONTRACT.

(14) EACH CONDUIT RUN INTO A PULL BOX SHALL HAVE AN END BELL, AND A MINIMUM OF THIRTY-SIX (36) INCHES OF SLACK IN THE WIRE FROM END BELL TO END BELL IN THE SAME PULL BOX.

(15) ALL CONDUIT LOCATED IN ROADWAYS AND DRIVEWAYS SHALL BE CONCRETE ENCASED PER CITY OF KNOXVILLE DWG-16132-DINFO AND DWG-16132-DL9, EXCEPT WHERE NOTED AS "JACK AND BORE". CONDUIT INSTALLED UNDER EXISTING TRAVEL LANES SHALL BE INSTALLED BY MEANS OF JACK AND BORE, UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.

(16) ALL PULL BOXES LOCATED OFF ROADWAY BUT IN AREAS OF POTENTIAL EXPOSURE TO TRAFFIC SHALL INCLUDE A CONCRETE APRON PER CITY OF KNOXVILLE DWG A-15509.

(17) POLE FOUNDATIONS SHALL BE CONSTRUCTED PER TDOT STANDARD DRAWING T-L-1 WITH THE FOLLOWING EXCEPTIONS:

A. ALL GROUND RODS SHALL BE 5/8" X 8 FT COPPERWELD TYPE. GROUND WIRE TO COPPERWELD GROUND RODS SHALL BE BARE, SOFT DRAWN COPPER. CONNECTIONS TO GROUND ROD SHALL BE WITH CITY OF KNOXVILLE APPROVED ACORN TYPE FITTING.

B. LEVELING NUTS SHALL NOT BE USED ON POLES REQUIRING BREAKAWAY CAPABILITIES.

C. ALL FOUNDATIONS SHOWN ARE FOR UNDERGROUND ELECTRICAL FEEDS ONLY. SHOULD APPLICATIONS CHANGE AN APPROVED FOUNDATION DESIGN SHALL BE PROVIDED AND PREPARED BY A LICENSED ENGINEER.

(18) LIGHTING ASSEMBLIES SHALL INCLUDE THE FOLLOWING:

A. HOT DIPPED, GALVANIZED ANCHOR BOLTS AND FULLY GALVANIZED NUTS, AND WASHERS (ASTM A153).EXCLUDES ANCHOR BOLTS ON BARRIER MOUNTED LIGHTING ASSEMBLIES.

B. POLE GROUND LUG SHALL BE TINNED OR RATED FOR COPPER TO ALUMINUM CONNECTIONS.

C. TAMPER RESISTANT STAINLESS STEEL SCREWS SIMILAR TO FASTENAL X204C0040SSX600, SIZED AS REQUIRED.

D. WIRING INSIDE POLES SHALL BE THWN TYPE WITH 90 DEG C RATING.

(19) REGARDLESS OF IDENTIFIED SPECIFICATION REQUIREMENTS, POLE FOUNDATIONS ARE TO BE FURNISHED AS FOLLOWS:

A. CONSTRUCTED WITH CONTINUOUS AND MONOLITHIC POURS WITH NO CONSTRUCTION JOINTS.

B. TOPS SHALL BE FLAT, LEVEL AND POURED TO EXACT ELEVATION SUCH THAT POLES MAY BE MOUNTED DIRECTLY ON EACH FOUNDATION WITHOUT THE USE OF LEVELING NUTS.

(20) HIGH MAST POLE FOUNDATIONS SHALL BE CONSTRUCTED PER TDOT STANDARD DRAWING T-L-1 AND PER FOUNDATION DETAILS ON SHEET F-1.

(21) FOR BARRIER WALL AND BRDIGE MOUNTED POLE FOUNDATIONS SEE STANDARD DRAWINGS T-L-2, STD-8-2SS, STD-8-3, STD-8-3SS, AND STRUCTURES PLANS.

(22) ALL LUMINAIRE MOUNTING HEIGHTS SHALL BE 45', UNLESS OTHERWISE SPECIFIED.

(23) LUMINAIRE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE LUMINAIRE LIGHT SOURCE. POLE LENGTH MAY NOT BE THE SAME AS THE LUMINAIRE MOUNTING HEIGHT DUE TO BRACKET ARM UPSWEEP, MOUNTING LOCATION, AND TOPOGRAPHY. CONTRACTOR TO VERIFY POLE LENGTHS PRIOR TO ORDERING POLES.

(24) FOR BARRIER WALL MOUNTED POLE LOCATIONS, A JUNCTION BOX SHALL BE LOCATED IN THE BARRIER WALL BENEATH EACH POLE. JUNCTION BOX SHALL BE CITY OF KNOXVILLE STANDARD (QUAZITE PC0608DG06), OR APPROVED EQUAL.

(25) CONTRACTOR SHALL PROVIDE ALL MATERIAL WARRANTY INFORMATION TO OWNER BEFORE CLOSE OUT OF PROJECT. WARRANTY INFORMATION SHALL INCLUDE COPIES OF PURCHASE ORDERS SHOWING ADDRESS OF ELECTRICAL DISTRIBUTOR AND ALL CONTACT INFORMATION.

(26) ALL HIGH VOLTAGE WORK SHALL BE PERFORMED BY A QUALIFIED JOURNEYMAN LINEMAN.

(27) STREET LIGHT TAGS TO BE FURNISHED AND INSTALLED BY CITY OF KNOXVILLE.

(28) SALVAGEABLE EQUIPMENT SHALL BECOME THE PROPERTY OF THE CITY OF KNOXVILLE AND SHALL BE STOCKPILED AT A LOCATION DESIGNATED BY THE ENGINEER FOR PICKUP BY THE CITY.

(29) CONTRACTOR SHALL CONTACT THE UNIVERSITY OF TENNESSEE MEDICAL CENTER (KEITH NEELEY 865-305-5635) PRIOR TO REMOVAL OF LIGHTING EQUIPMENT ON UTMC PROPERTY. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO REMAINING UTMC LIGHTING SYSTEM. ANY COSTS ASSOCIATED WITH MAINTAINING SERVICE SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 714-08.34.

(30) CONTRACTOR IS TO MAINTAIN EXISTING LIGHTING LEFT OF CENTERLINE FROM STATION 130+00 TO 165+00 AND EXISTING HIGH MAST LIGHTING AT HOSPITAL RAMPS DURING ALL OF PHASE 1 CONSTRUCTION. A PLAN FOR MAINTENANCE OF LIGHTING MUST BE PREPARED BY CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE DEPARTMENT 14 DAYS IN ADVANCE OF ANY IMPACT TO LIGHTING. ALL COSTS ASSOCIATED INCLUDING ELECTRICAL CONNECTIONS ARE TO BE INCLUDED IN ITEM *714-26.05 (TEMPORARY ROADWAY LIGHTING).* ALL IDENTIFIED LIGHTING MUST BE MAINTAINED THROUGH PHASE 1 OF CONSTRUCTION ALL COSTS ASSOCIATED WITH MAINTENANCE AND CONTINUITY OF SERVICE IS TO BE INCLUDED IN ITEM *714-26.05 (TEMPORARY ROADWAY LIGHTING).* ANY LIGHTING DEFICIENCIES MUST BE ADDRESSED AND RESTORED TO SERVICE WITHIN 24 HOURS. ALL NEW LIGHTING RIGHT OF CENTERLINE FROM STATION 130+00 TO 165+00 PLUS THE 4 NEW HIGH MAST LIGHTS SHALL BE COMPLETE AND OPERATIONAL PRIOR TO THE COMPLETION OF PHASE 1 AND REMAIN OPERATIONAL THROUGH ALL OTHER PHASES OF WORK. ALL COSTS ASSOCIATED WITH MAINTENANCE AND OPERATION OF PERMANENT LIGHTING *INCLUDING THE NEED FOR TEMPORARY CONNECTIONS* ARE TO BE INCLUDED IN THE COST OF OTHER ITEMS.

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
No. 115270
STATE OF TENNESSEE
04/12/2023

SEALED BY

EVERETT NOE JR.
REGISTERED ENGINEER
No. 18938
STATE OF TENNESSEE
04/12/23

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

LIGHTING
SPECIAL
NOTES

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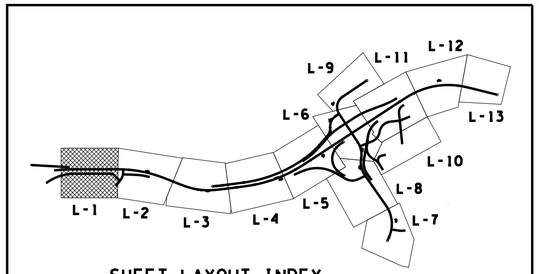
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-1



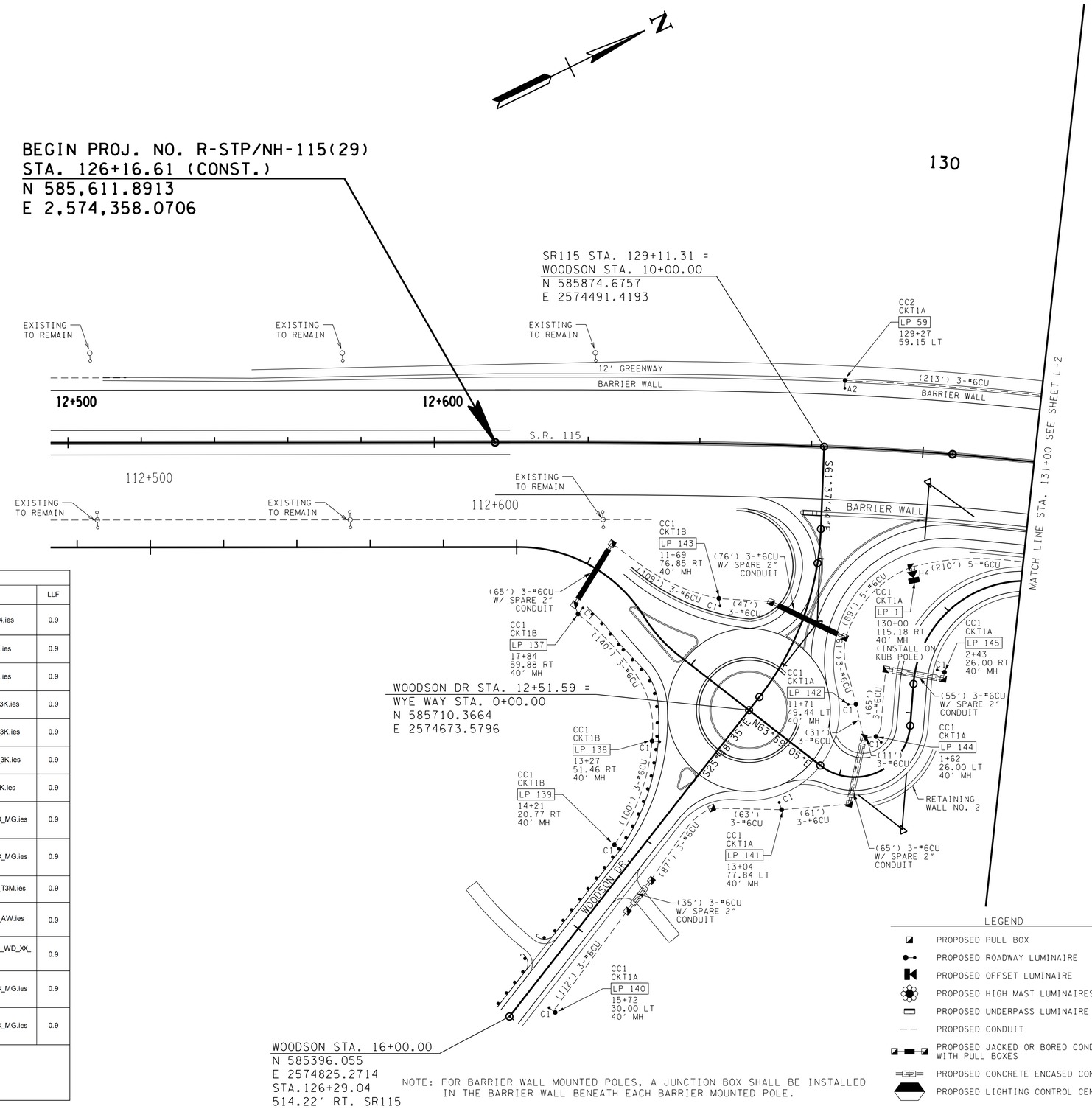
SHEET LAYOUT INDEX

ILLUMINATION RESULTS					
SECTION	AVG.	MAX.	MIN.	MAX/MIN	AVG/MIN
SR 115 NORTHBOUND	0.9 fc	1.9 fc	0.4 fc	4.8 : 1	2.2 : 1
SR 115 SOUTHBOUND	0.9 fc	2.3 fc	0.4 fc	5.8 : 1	2.3 : 1
CHEROKEE TRAIL	1.2 fc	2.6 fc	0.5 fc	5.2 : 1	2.3 : 1
MARINE ROAD	1.0 fc	1.7 fc	0.4 fc	4.3 : 1	2.5 : 1
HOSPITAL ROAD	1.1 fc	2.4 fc	0.4 fc	6.0 : 1	2.7 : 1
HOSPITAL ROUNDABOUT	2.3 fc	4.2 fc	1.0 fc	4.2 : 1	2.3 : 1
WOODSON ROUNDABOUT	1.4 fc	1.9 fc	0.6 fc	3.2 : 1	2.3 : 1

ILLUMINATION RESULTS BASED ON LUMINAIRES SPECIFIED IN LUMINAIRE SCHEDULE (THIS SHEET) AND 45' MOUNTING HEIGHTS UNLESS OTHERWISE SPECIFIED.

LUMINAIRE SCHEDULE						
LEGEND	QUANTITY	DESCRIPTION	CATALOG NUMBER	WATTAGE	IES FILE	LLF
A	26	COOPER NAVION LED LUMINAIRE	NVN-SA3C-740-U-SL4-AP-10K-PR7	166	NVN-SA3C-740-U-SL4.ies	0.9
B	15	COOPER NAVION LED LUMINAIRE	NVN-SA3C-740-U-T3-AP-10K-PR7	166	NVN-SA3C-740-U-T3.ies	0.9
C	9	COOPER NAVION LED LUMINAIRE	NVN-SA2C-740-U-T3-AP-10K-PR7	113	NVN-SA2C-740-U-T3.ies	0.9
D	19	AMERICAN ELECTRIC LIGHTING AUTOBAHN LUMINAIRE	ATBX-P40-MVOLT-R2-3K-MP-NL-P7	28	ATBX_P40_XXXXX_R3_3K.ies	0.9
E	11	AMERICAN ELECTRIC LIGHTING AUTOBAHN LUMINAIRE	ATBS-P20-MVOLT-R3-3K-MP-NL-P7	50	ATBS_P20_XXXXX_R3_3K.ies	0.9
F	35	AMERICAN ELECTRIC LIGHTING AUTOBAHN LUMINAIRE	ATBM-P20-MVOLT-R2-3K-NL-P7	94	ATBM_P20_XXXXX_R2_3K.ies	0.9
G	24	AMERICAN ELECTRIC LIGHTING AUTOBAHN LUMINAIRE	ATBL-C-MVOLT-R3-3K-NL-P7	200	ATBL_C_XXXXX_R3_3K.ies	0.9
H	6	HOLOPHONE MONGOOSE LED LUMINAIRE	MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7	155	MGLEDM_P3_40K_XXXXX_MG.ies	0.9
I	3	HOLOPHONE MONGOOSE LED LUMINAIRE	MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7	180	MGLEDM_P4_30K_XXXXX_MG.ies	0.9
J	6	HOLOPHONE LED WALLPACK IV LUMINAIRE	W4G-LED-10C-1000-30K-T3M-MVOLT-GYSDP	39	W4GLED_10C1000_30K_T3M.ies	0.9
K	44	HOLOPHONE HIGHMAST LED LUMINAIRE	HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH	295	HMLED4_P2_30K_XXXX_AW.ies	0.9
L	30	HOLOPHONE EMS LED LUMINAIRE	EMS-L48-4000LM-IMACD-WD-MVOLT-80CRI-30K	30	EMS_L48_4000LM_IMACD_WD_XX_30K_80CRI.ies	0.9
M	2	HOLOPHONE MONGOOSE LED LUMINAIRE	MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7	105	MGLEDM_P1_30K_XXXXX_MG.ies	0.9
N	6	HOLOPHONE MONGOOSE LED LUMINAIRE	MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7	155	MGLEDM_P3_30K_XXXXX_MG.ies	0.9

* POLE BASE TYPE DESIGNATION:
1 = GROUND MOUNTED WITH BREAKAWAY BASE
2 = BARRIER / WALL MOUNTED WITH NON-BREAKAWAY BASE
3 = BRIDGE MOUNTED WITH NON-BREAKAWAY BASE
4 = SHARED UTILITY POLE (POLE BY OTHERS)
5 = SHARED PROPOSED TRAFFIC SIGNAL POLE



NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
No. 115258
COMMERCE
STATE OF TENNESSEE
11/29/2022

SEALED BY

EVERETT NOE JR.
REGISTERED ENGINEER
No. 105598
COMMERCE
STATE OF TENNESSEE
11/29/22

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 1 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA.126++00 TO STA. 131+00

SCALE: 1"= 50'

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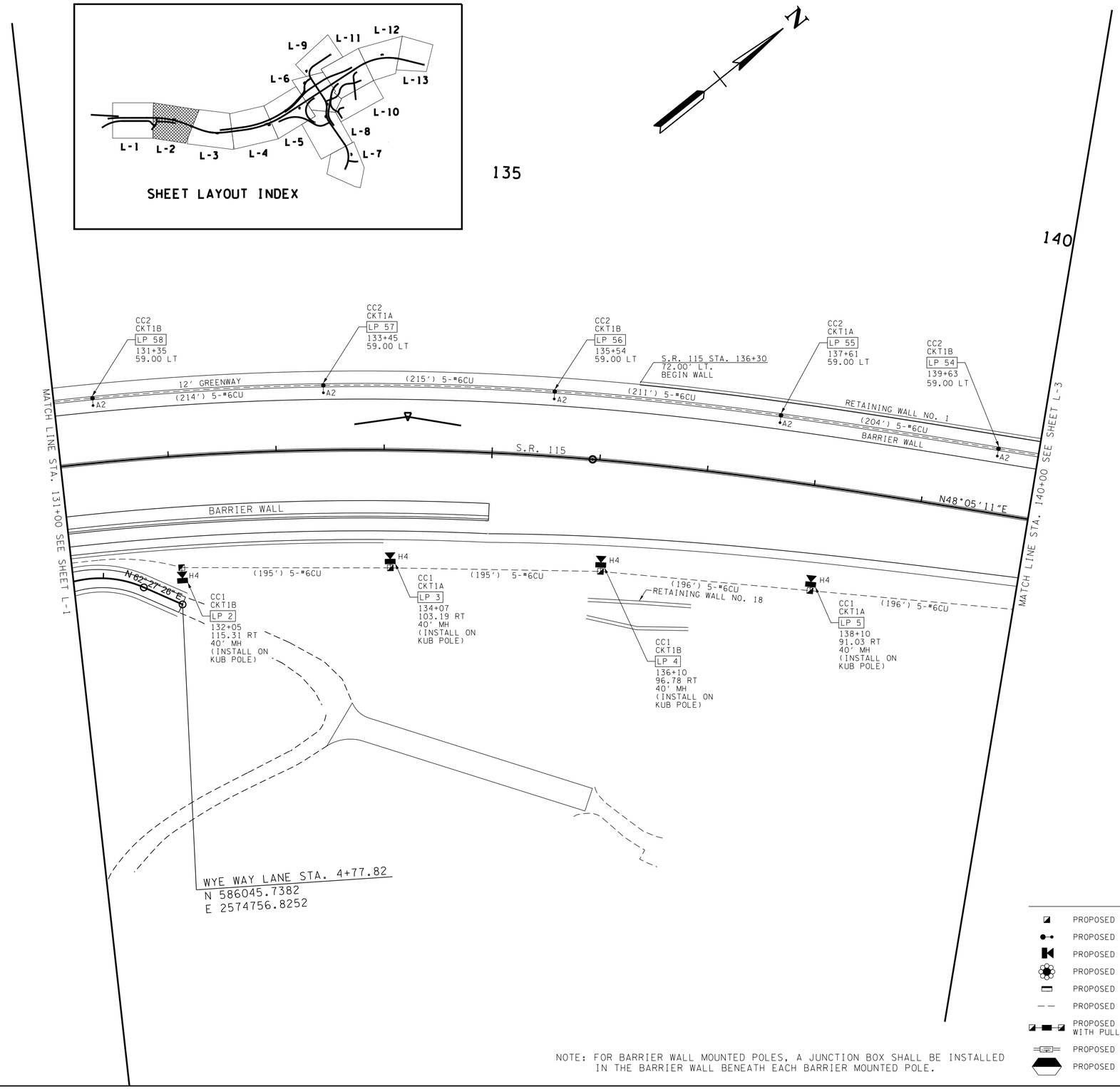
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-2

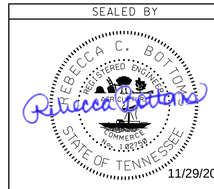


NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

LEGEND

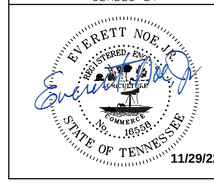
- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY



11/29/2022

SEALED BY



11/29/22

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 131+00 TO STA. 140+00

SCALE: 1"= 50'

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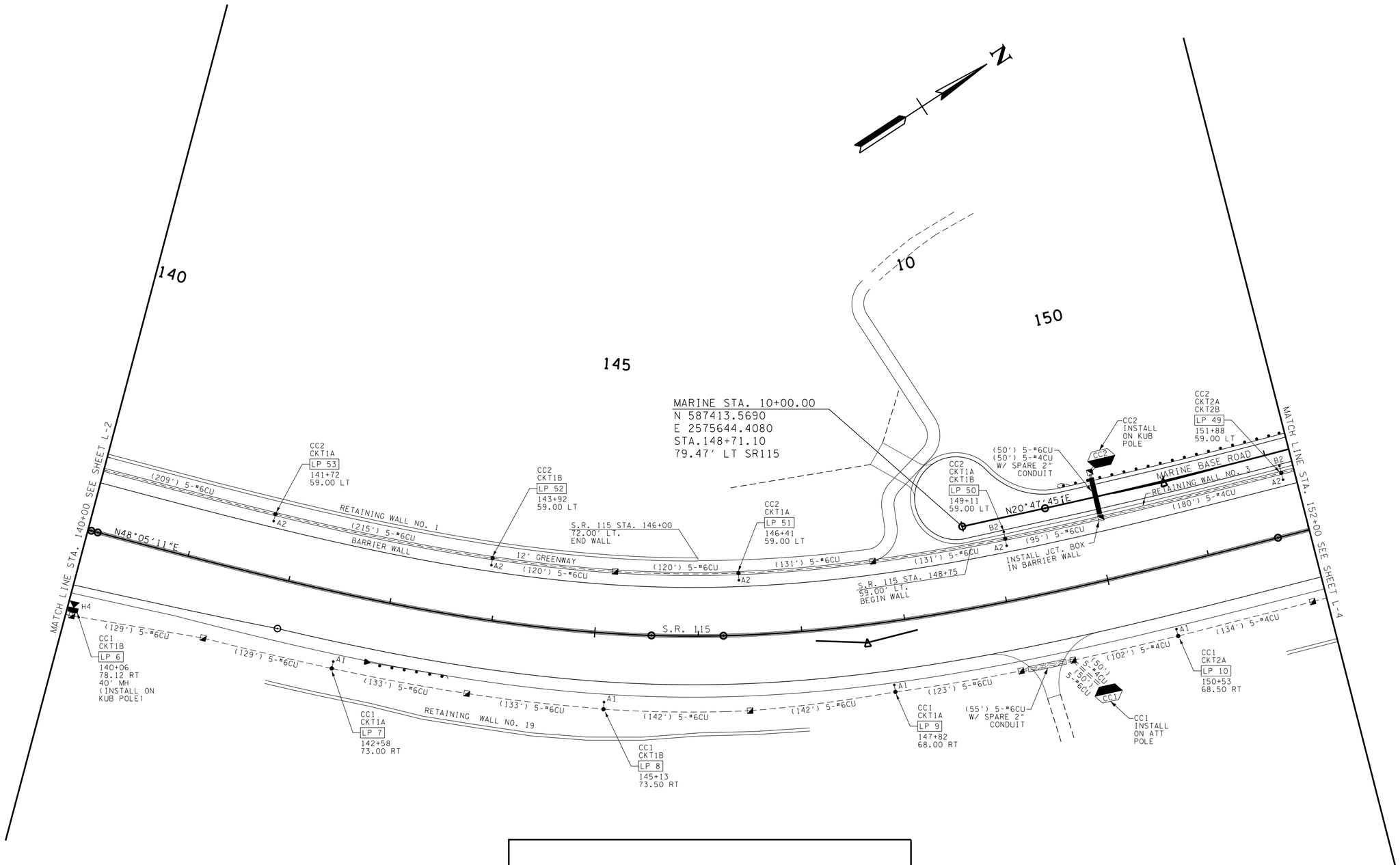
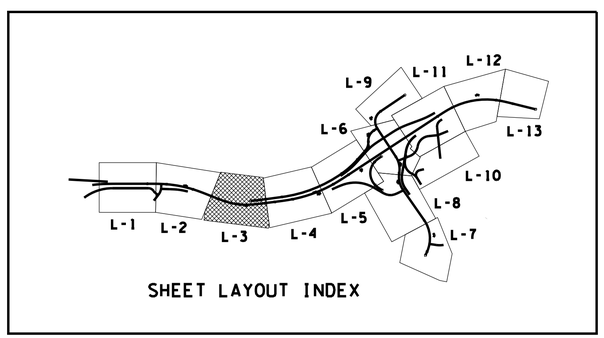
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-3





NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM REGISTERED ENGINEER NO. 18298 COMMERCE STATE OF TENNESSEE

11/29/2022

SEALED BY

EVERETT NOE JR. REGISTERED ENGINEER NO. 18598 COMMERCE STATE OF TENNESSEE

11/29/22

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 1 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 140+00 TO STA. 152+00

SCALE: 1"= 50'

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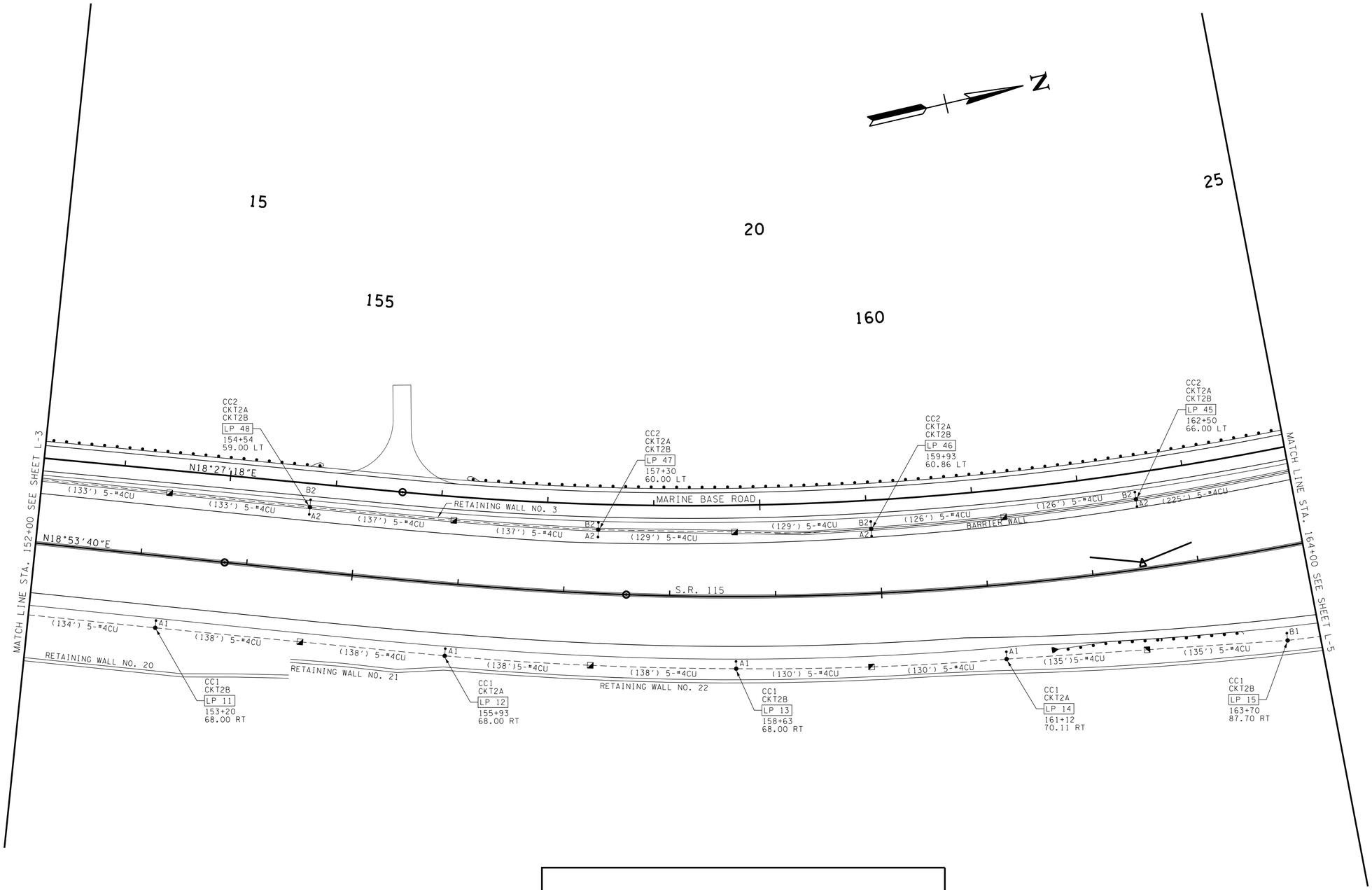
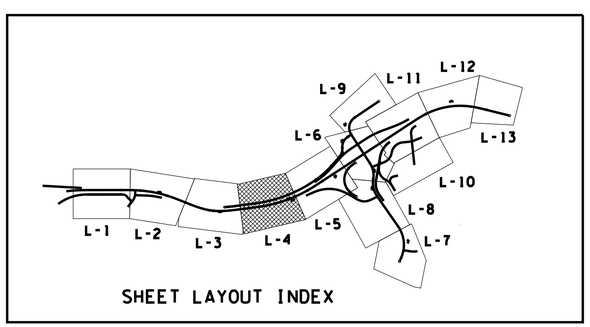
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-4





NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM
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STATE OF TENNESSEE
11/29/2022

SEALED BY

EVERETT NOE, JR.
REGISTERED ENGINEER
No. 105598
STATE OF TENNESSEE
11/29/22

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 152+00 TO STA. 164+00

SCALE: 1"= 50'

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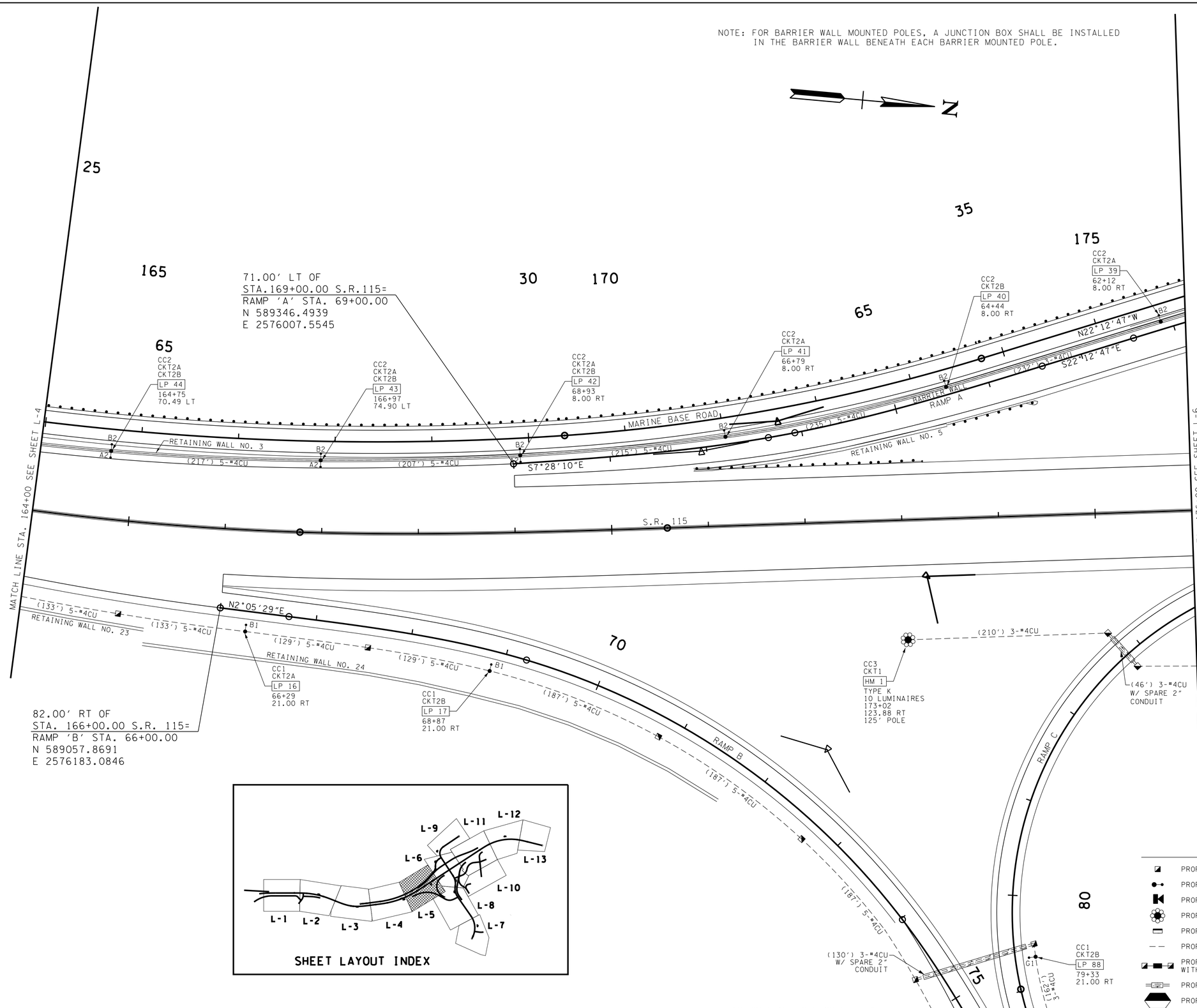
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-5

NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.



LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
No. 111
COMMERCE
STATE OF TENNESSEE
11/29/2022

SEALED BY

EVERETT NOE JR.
REGISTERED ENGINEER
No. 18998
COMMERCE
STATE OF TENNESSEE
11/29/22

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.0001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 164+00 TO STA. 176+00

SCALE: 1"= 50'

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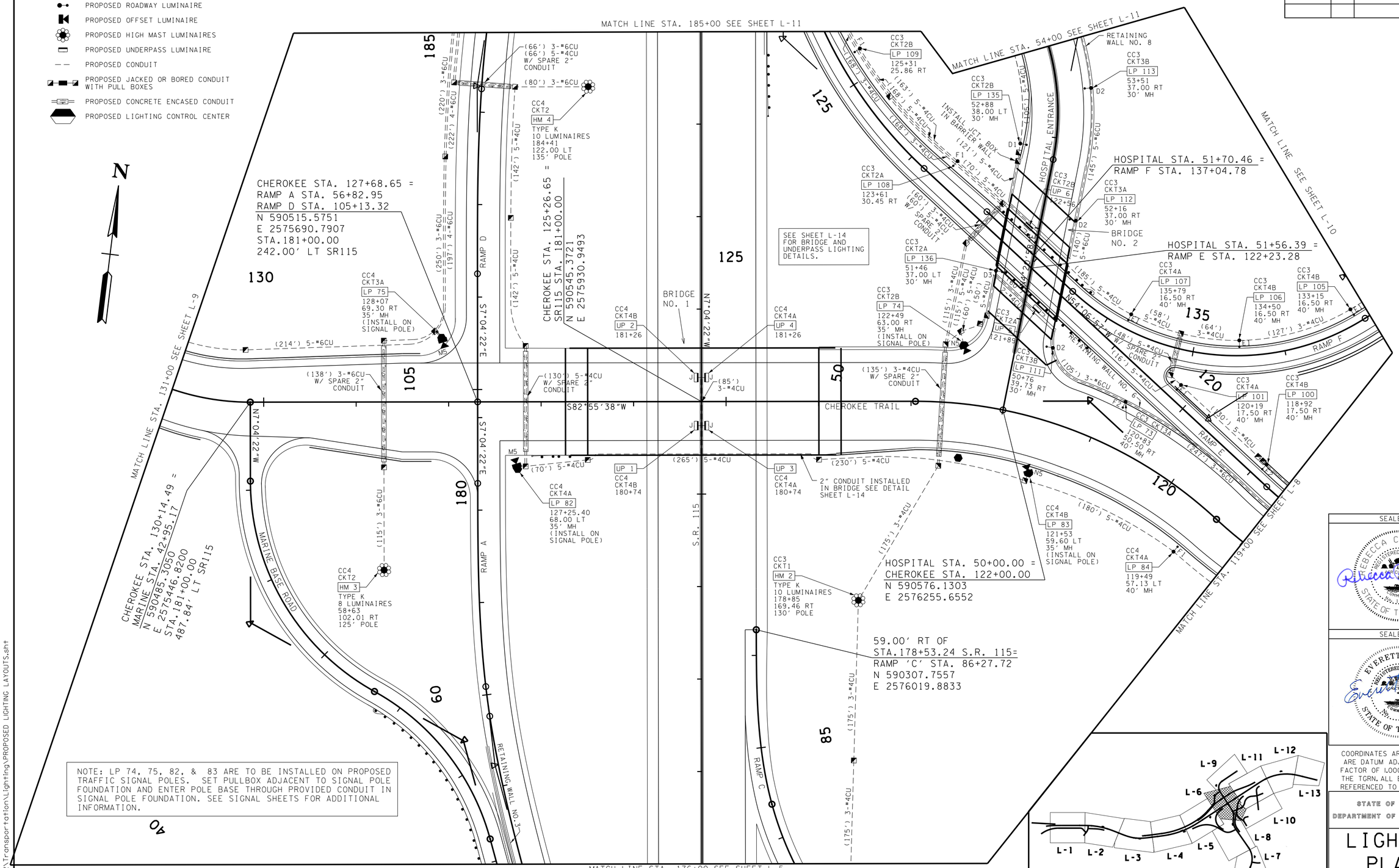
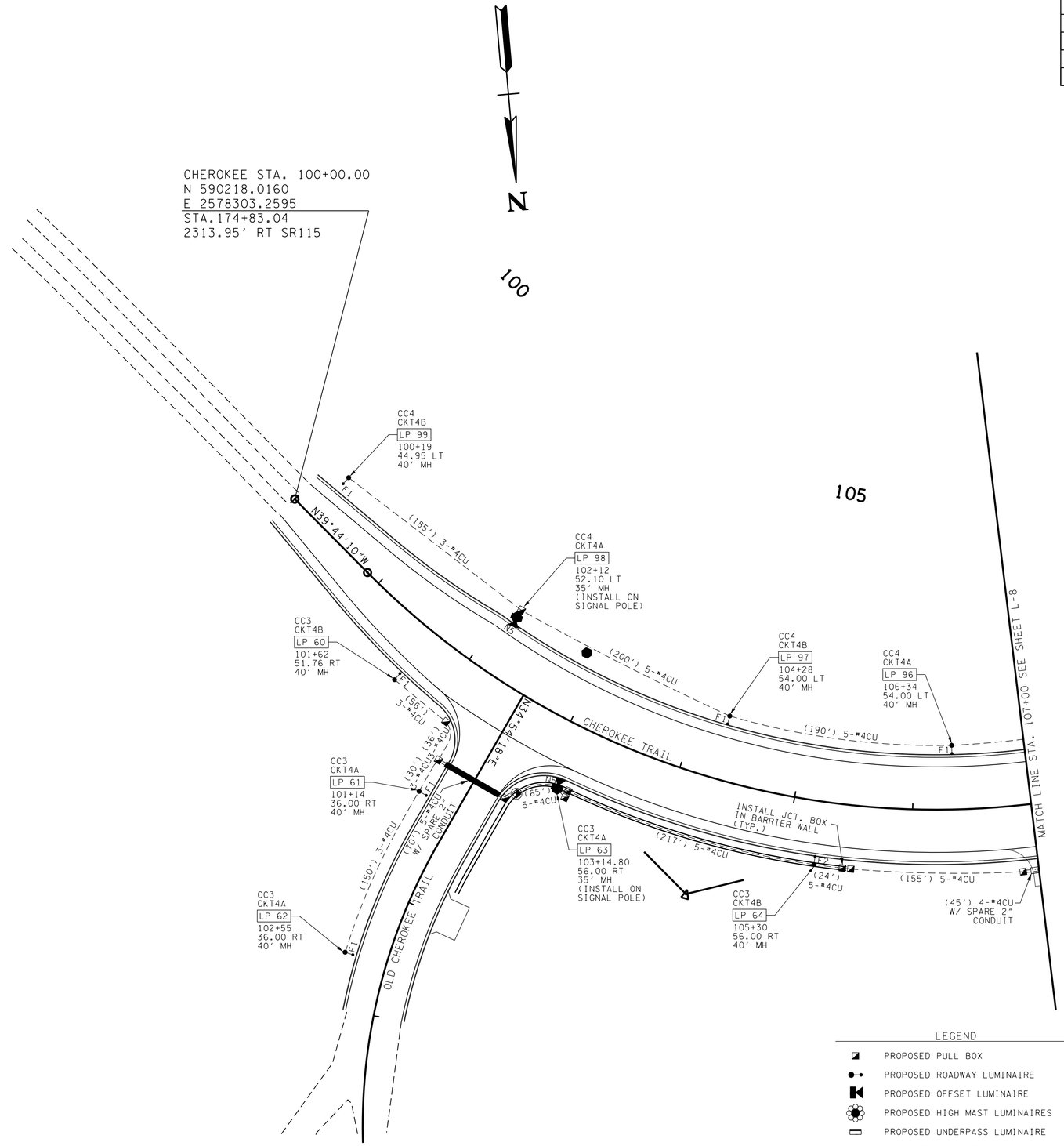
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-6

LEGEND

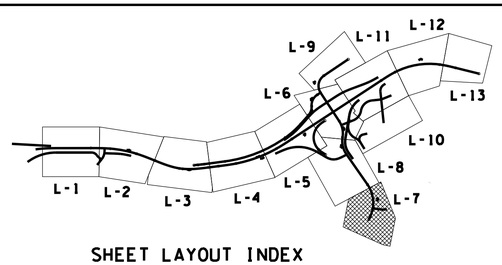
- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER


N
MATCH LINE STA. 185+00 SEE SHEET L-11
MATCH LINE STA. 54+00 SEE SHEET L-11
MATCH LINE SEE SHEET L-10
MATCH LINE STA. 131+00 SEE SHEET L-9
MATCH LINE STA. 119+00 SEE SHEET L-8
MATCH LINE STA. 176+00 SEE SHEET L-5
CHEROKEE STA. 127+68.65 =
RAMP A STA. 56+82.95
RAMP D STA. 105+13.32
N 590515.5751
E 2575690.7907
STA.181+00.00
242.00' LT SR115
CHEROKEE STA. 125+26.65
SR115 STA. 181+00.00
N 590545.3721
E 2575930.9493
CHEROKEE STA. 130+14.49 =
MARINE STA. 42+95.17
N 590485.3050
E 2575446.8200
STA.181+00.00
487.84' LT SR115
HOSPITAL STA. 51+70.46 =
RAMP F STA. 137+04.78
HOSPITAL STA. 51+56.39 =
RAMP E STA. 122+23.28
HOSPITAL STA. 50+00.00 =
CHEROKEE STA. 122+00.00
N 590576.1303
E 2576255.6552
59.00' RT OF
STA.178+53.24 S.R. 115=
RAMP 'C' STA. 86+27.72
N 590307.7557
E 2576019.8833
SEE SHEET L-14
FOR BRIDGE AND
UNDERPASS LIGHTING
DETAILS.
BRIDGE
NO. 1
BRIDGE
NO. 2
CHEROKEE TRAIL
S82°55'38"W
N7°04'22"W
S7°04'22"E
N54°06'57"W
RAMP D
RAMP A
RAMP C
RAMP E
RAMP F
S.R. 115
HOSPITAL ENTRANCE
MARINE BASE ROAD
RETAINING WALL NO. 3
RETAINING WALL NO. 6
RETAINING WALL NO. 8
INSTALL JCT. BOX IN BARRIER WALL
2" CONDUIT INSTALLED IN BRIDGE SEE DETAIL SHEET L-14
CC4 CKT3A LP 75 128+07 69.30 RT 35' MH (INSTALL ON SIGNAL POLE)
CC4 CKT2 HM 4 TYPE K 10 LUMINAIRES 184+41 122.00 LT 135' POLE
CC4 CKT2 HM 3 TYPE K 8 LUMINAIRES 58+63 102.01 RT 125' POLE
CC3 CKT1 HM 2 TYPE K 10 LUMINAIRES 178+85 169.46 RT 130' POLE
CC4 CKT4A LP 82 127+25.40 68.00 LT 35' MH (INSTALL ON SIGNAL POLE)
CC4 CKT4B UP 2 181+26
CC4 CKT4A UP 4 181+26
CC4 CKT4B UP 1 CC4 CKT4B 180+74
UP 3 CC4 CKT4A 180+74
CC3 CKT2B LP 109 125+31 25.86 RT
CC3 CKT2A LP 108 123+61 30.45 RT
CC3 CKT2B LP 135 52+88 38.00 LT 30' MH
CC3 CKT2A LP 136 51+46 37.00 LT 30' MH
CC3 CKT2B LP 74 122+49 63.00 RT 35' MH (INSTALL ON SIGNAL POLE)
CC3 CKT3B LP 111 50+76 39.73 RT 30' MH
CC3 CKT3B LP 113 53+51 37.00 RT 30' MH
CC3 CKT2B UP 6 122+56
CC3 CKT3A LP 112 52+16 37.00 RT 30' MH
CC3 CKT4A LP 107 135+79 16.50 RT 40' MH
CC3 CKT4B LP 106 134+50 16.50 RT 40' MH
CC3 CKT4B LP 105 133+15 16.50 RT 40' MH
CC3 CKT4A LP 101 120+19 17.50 RT 40' MH
CC3 CKT4B LP 100 118+92 17.50 RT 40' MH
CC3 CKT3A LP 73 120+83 40.50 RT MH
CC4 CKT4B LP 83 121+53 59.60 LT 35' MH (INSTALL ON SIGNAL POLE)
CC4 CKT4A LP 84 119+49 57.13 LT 40' MH
(66') 3-#6CU (66') 5-#4CU W/ SPARE 2" CONDUIT
(80') 3-#6CU
(220') 3-#6CU (222') 4-#6CU
(250') 3-#6CU (197') 4-#6CU
(142') 5-#4CU
(214') 5-#6CU
(138') 3-#6CU W/ SPARE 2" CONDUIT
(130') 5-#4CU W/ SPARE 2" CONDUIT
(85') 3-#4CU
(135') 3-#4CU W/ SPARE 2" CONDUIT
(265') 5-#4CU
(230') 5-#4CU
(70') 5-#4CU
(115') 3-#6CU
(175') 3-#4CU
(180') 5-#4CU
(145') 5-#6CU
(140') 5-#6CU
(185') 5-#4CU
(48') 5-#4CU W/ SPARE 2" CONDUIT
(116') 5-#4CU
(105') 3-#6CU
(130') 5-#4CU
(124') 3-#4CU
(64') 3-#4CU
(127') 3-#4CU
(60') 5-#4CU
(115') 3-#4CU
(163') 5-#4CU
(168') 3-#4CU
(188') 5-#4CU
(121') 5-#4CU
(70') 5-#4CU
(60') 3-#4CU (60') 5-#4CU W/ SPARE 2" CONDUIT
(58') 5-#4CU
(50') 5-#4CU
(121') 5-#4CU
(121') 5-#4CU
(121

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-7



NOTE: LP 63 & 98 ARE TO BE INSTALLED ON PROPOSED TRAFFIC SIGNAL POLES. SET PULLBOX ADJACENT TO SIGNAL POLE FOUNDATION AND ENTER POLE BASE THROUGH PROVIDED CONDUIT IN SIGNAL POLE FOUNDATION. SEE SIGNAL SHEETS FOR ADDITIONAL INFORMATION.



SHEET LAYOUT INDEX

NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
No. 112736
TENNESSEE
STATE OF TENNESSEE
11/29/2022

SEALED BY

EVERETT NOE JR.
REGISTERED ENGINEER
No. 105998
TENNESSEE
STATE OF TENNESSEE
11/29/22

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 1 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 100+00 TO STA. 107+00
CHEROKEE TRAIL

SCALE: 1"= 50'

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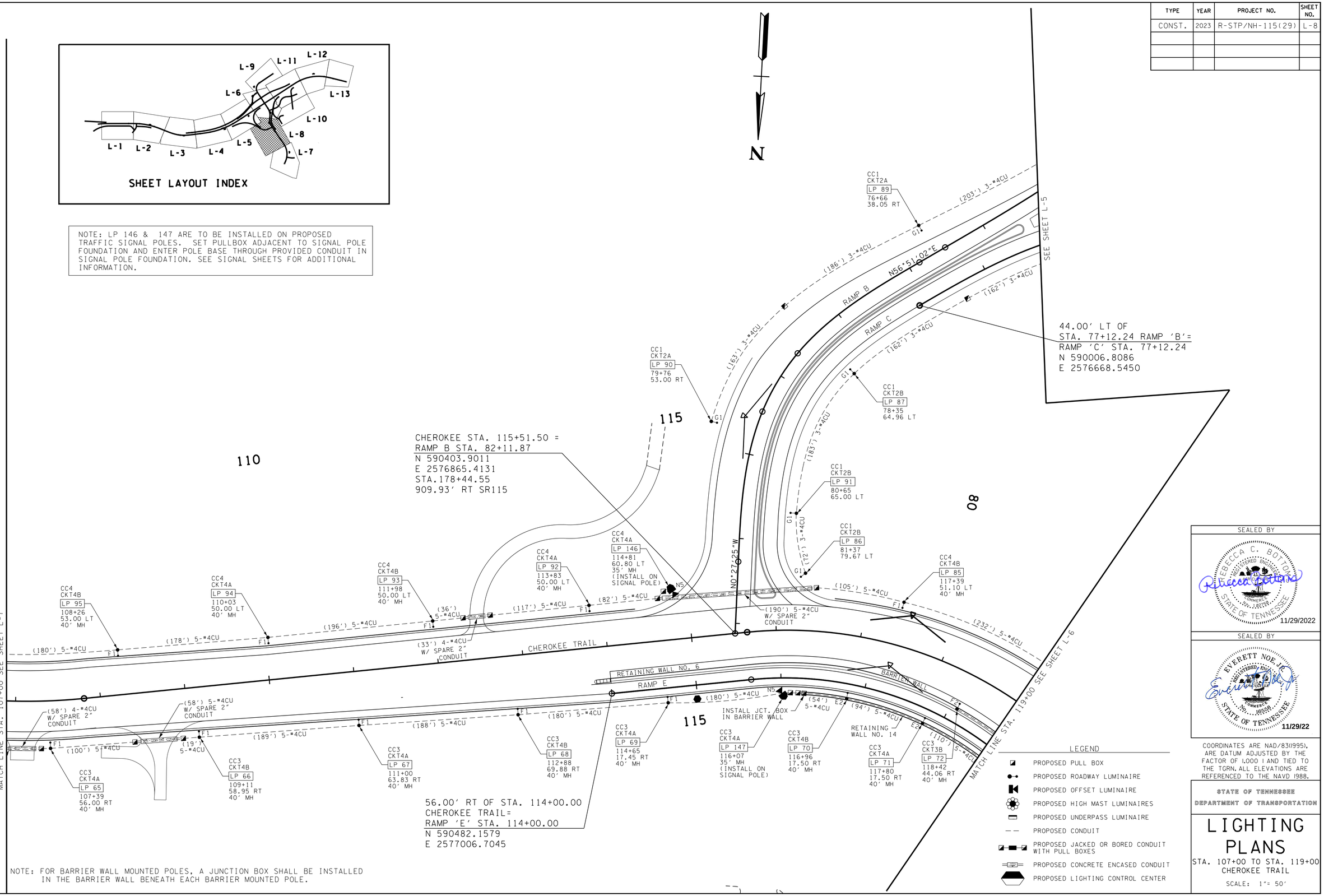
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-8

NOTE: LP 146 & 147 ARE TO BE INSTALLED ON PROPOSED TRAFFIC SIGNAL POLES. SET PULLBOX ADJACENT TO SIGNAL POLE FOUNDATION AND ENTER POLE BASE THROUGH PROVIDED CONDUIT IN SIGNAL POLE FOUNDATION. SEE SIGNAL SHEETS FOR ADDITIONAL INFORMATION.



NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
No. 115
COMMERCE
STATE OF TENNESSEE

11/29/2022

SEALED BY

EVERETT NOE JR.
REGISTERED ENGINEER
No. 18998
COMMERCE
STATE OF TENNESSEE

11/29/22

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 1 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 107+00 TO STA. 119+00
CHEROKEE TRAIL

SCALE: 1"= 50'

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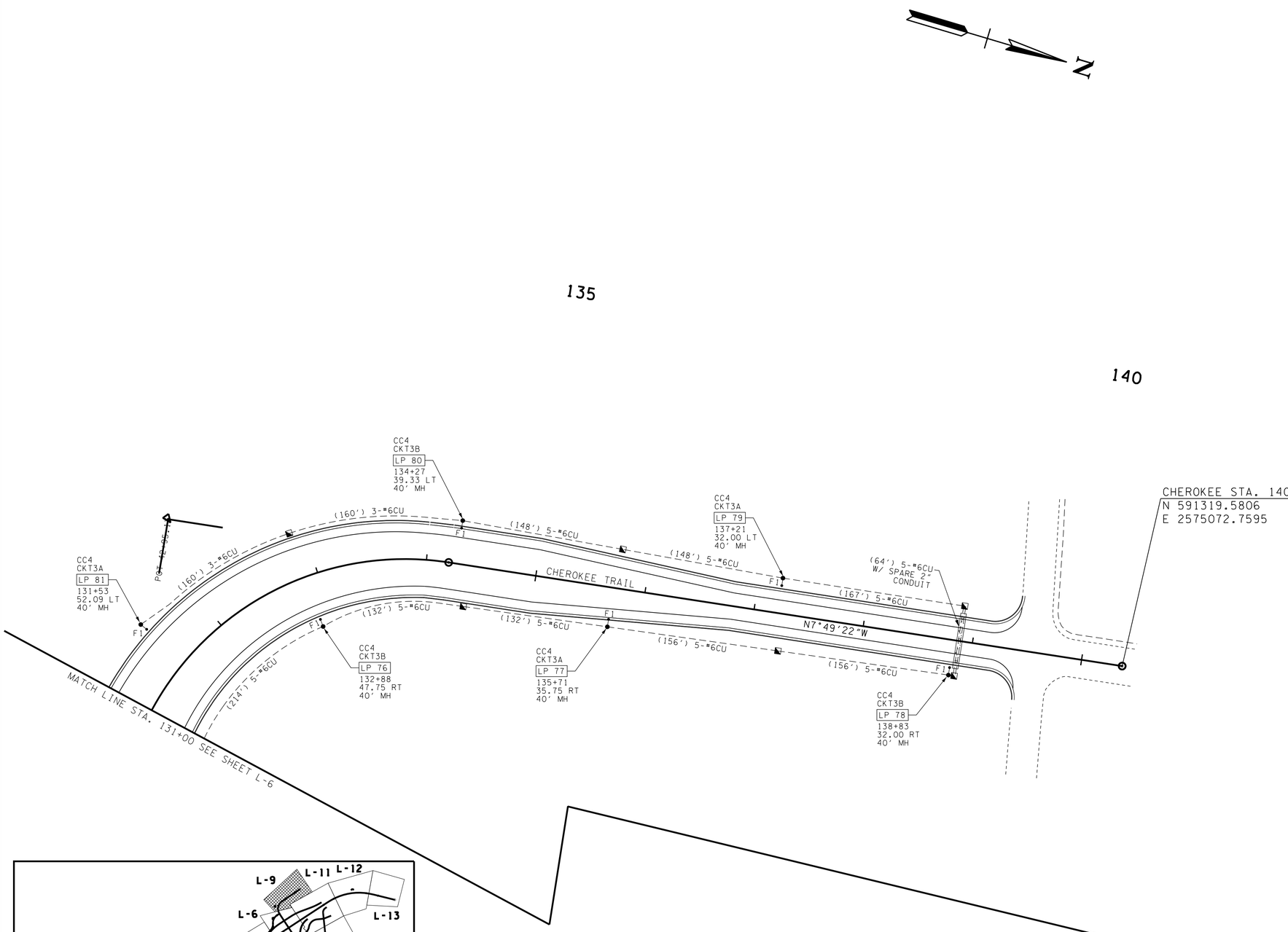
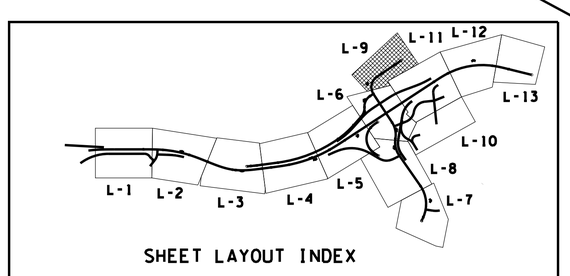
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-9





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LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY

REBECCA C. BOTTOM
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No. 115700
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11/29/2022

SEALED BY

EVERETT NOE, JR.
REGISTERED ENGINEER
No. 18998
COMMERCE
STATE OF TENNESSEE

11/29/22

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 131+00 TO STA. 140+00
CHEROKEE TRAIL

SCALE: 1"= 50'

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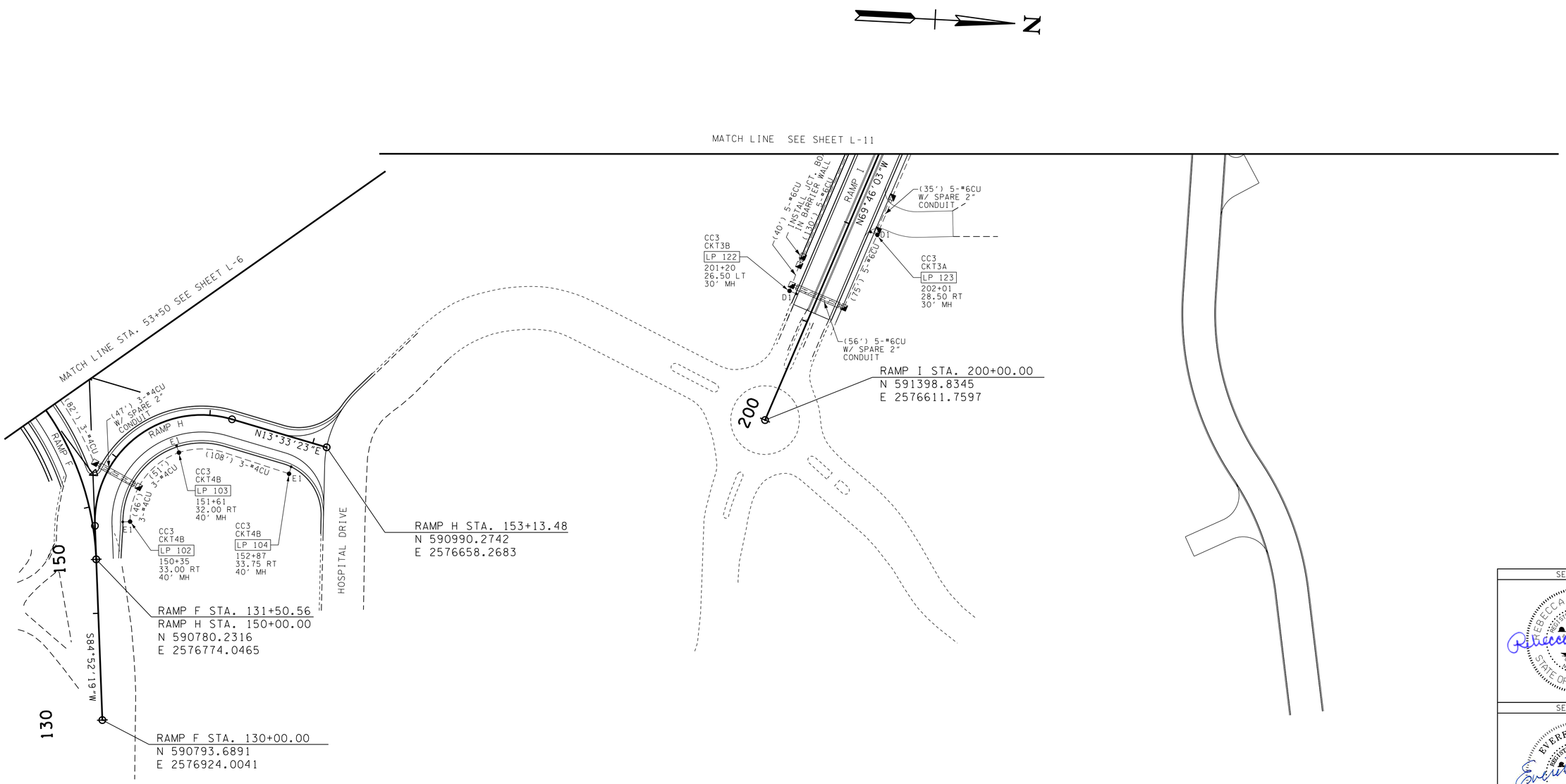
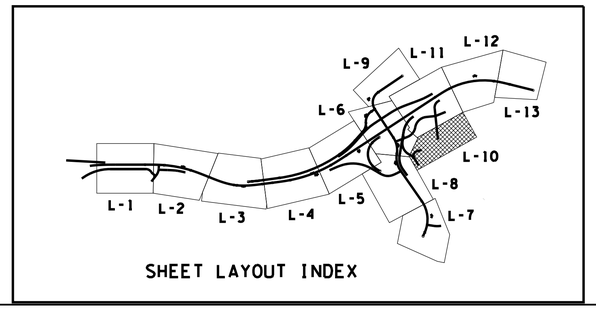
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-10



NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.

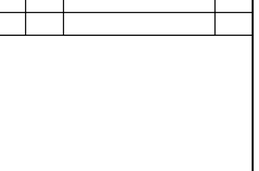


SHEET LAYOUT INDEX

LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER

SEALED BY



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 54+00 TO STA. 60+00
HOSPITAL ENTRANCE

SCALE: 1"= 50'

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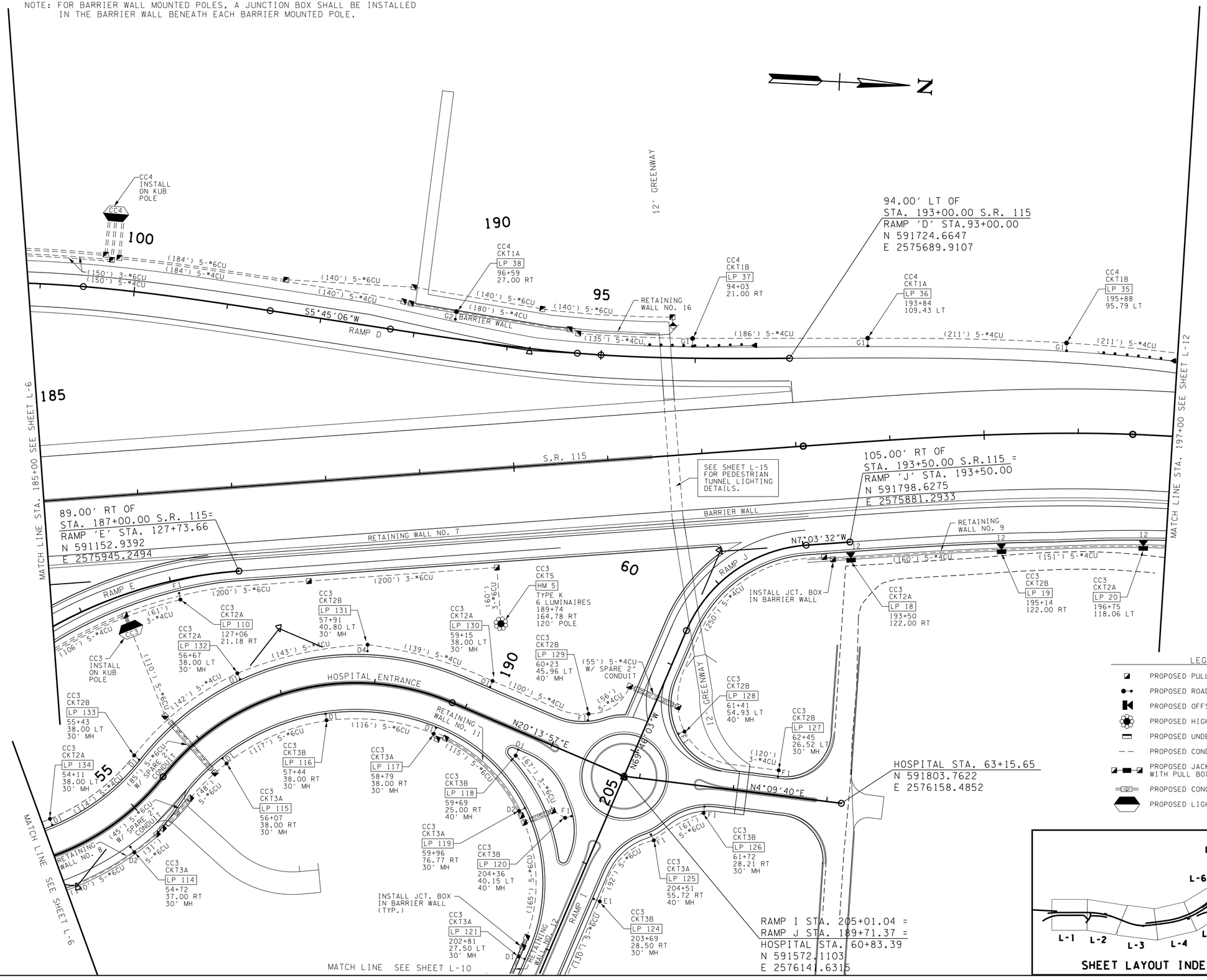
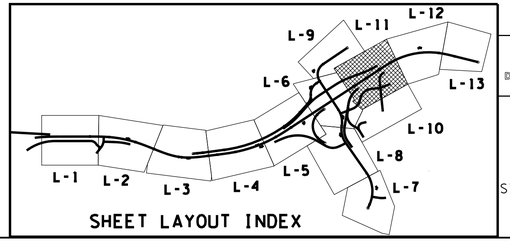
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-11

NOTE: FOR BARRIER WALL MOUNTED POLES, A JUNCTION BOX SHALL BE INSTALLED IN THE BARRIER WALL BENEATH EACH BARRIER MOUNTED POLE.



LEGEND

- PROPOSED PULL BOX
- PROPOSED ROADWAY LUMINAIRE
- PROPOSED OFFSET LUMINAIRE
- PROPOSED HIGH MAST LUMINAIRES
- PROPOSED UNDERPASS LUMINAIRE
- PROPOSED CONDUIT
- PROPOSED JACKED OR BORED CONDUIT WITH PULL BOXES
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER



SEALED BY

REBECCA C. BOTOS REGISTERED ENGINEER NO. 115778 STATE OF TENNESSEE

11/29/2022

SEALED BY

EVERETT NOE JR. REGISTERED ENGINEER NO. 18998 STATE OF TENNESSEE

11/29/22

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 185+00 TO STA. 197+00

SCALE: 1"= 50'

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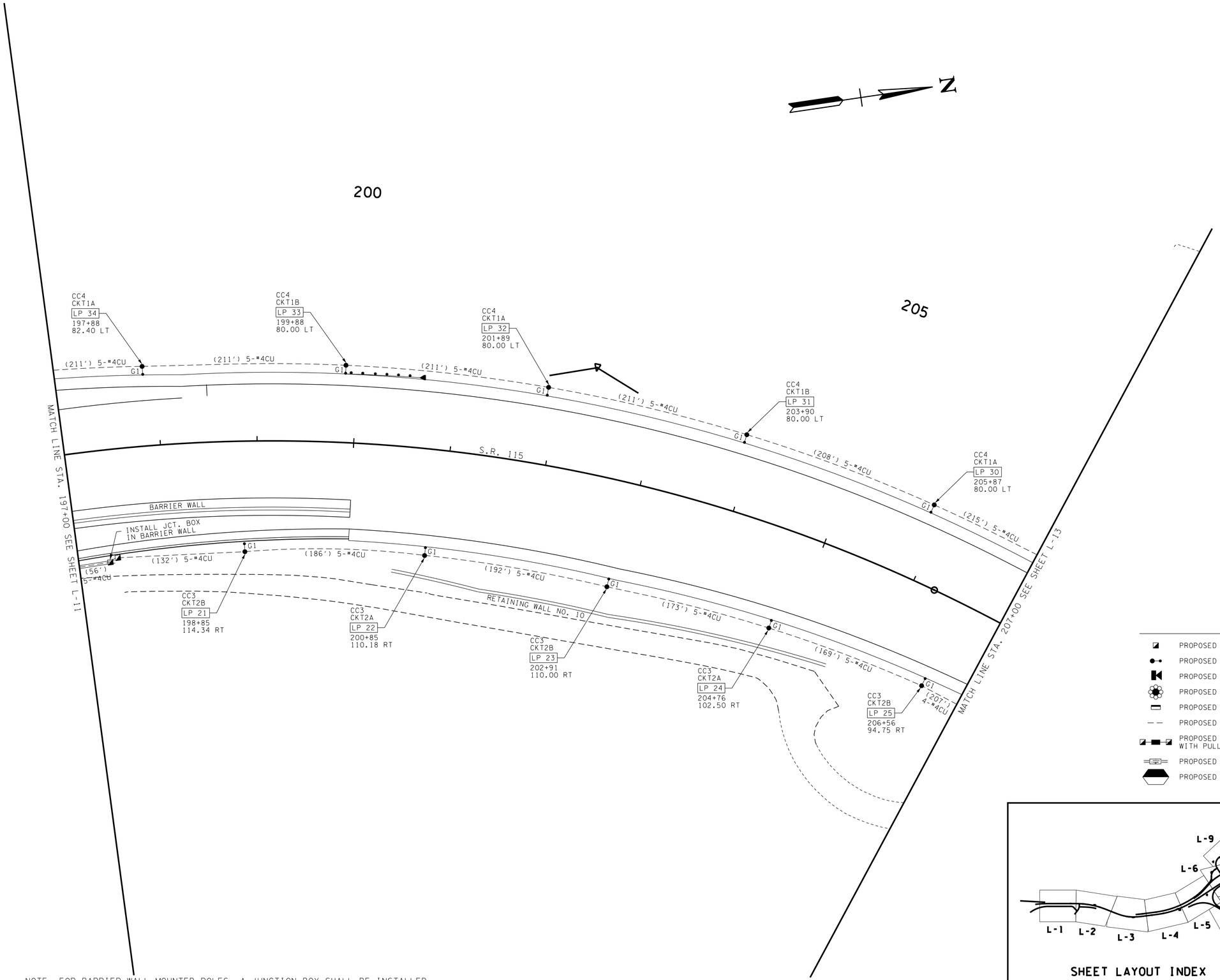
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-12



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- PROPOSED PULL BOX
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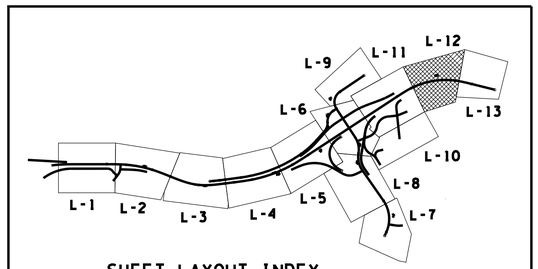
- PROPOSED CONCRETE ENCASED CONDUIT
- PROPOSED LIGHTING CONTROL CENTER



SHEET LAYOUT INDEX

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 1 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 197+00 TO STA. 207+00

SCALE: 1"= 50'

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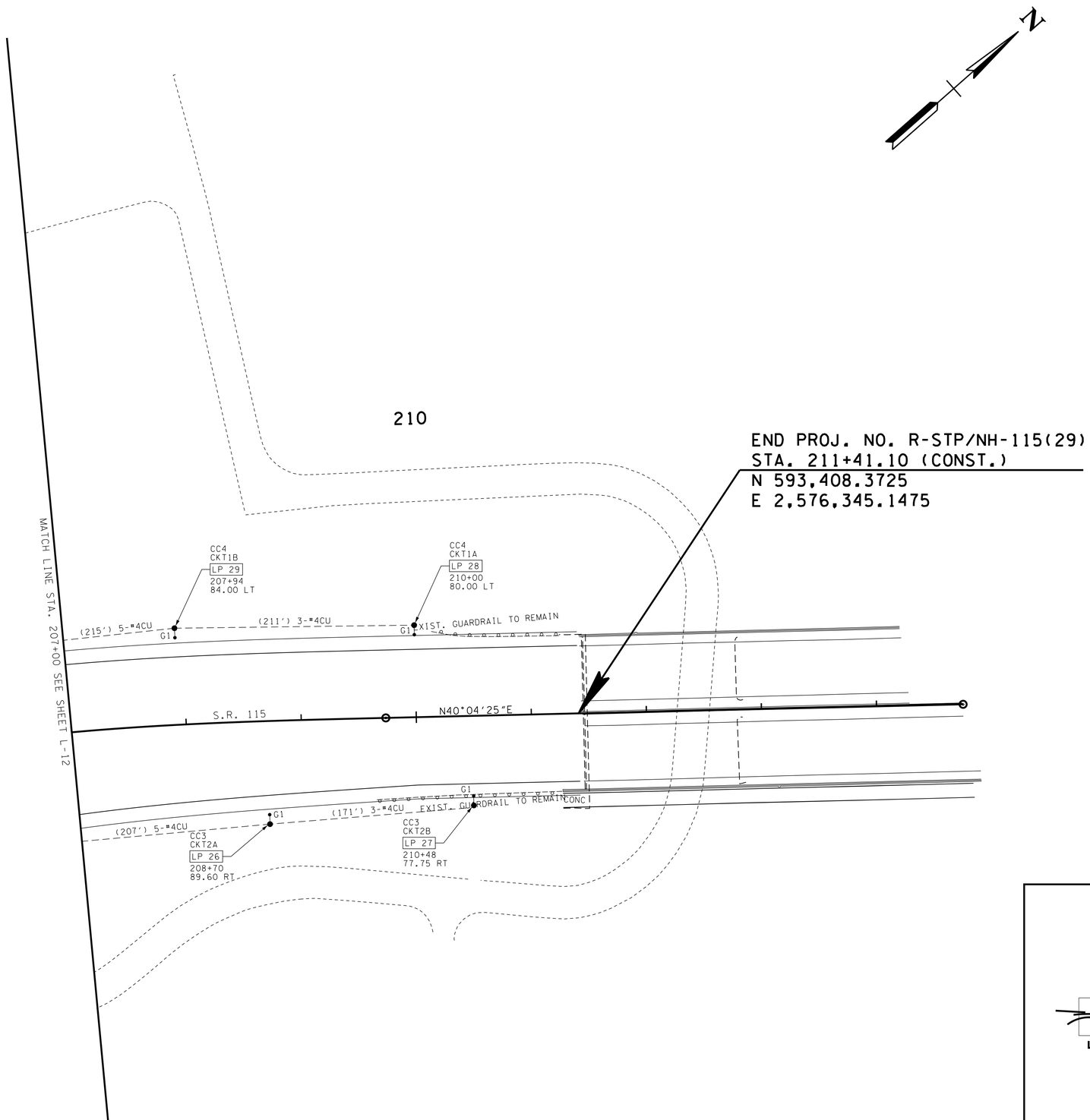
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-13



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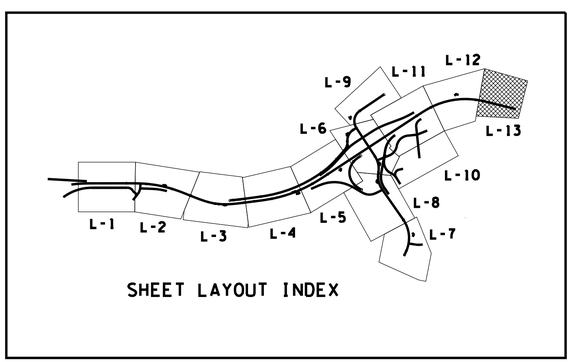

SEALED BY

REBECCA C. BOTON
REGISTERED ENGINEER
NO. 115270
COMMERCE
STATE OF TENNESSEE
Rebecca Boton
11/29/2022

SEALED BY

EVERETT NOE JR.
REGISTERED ENGINEER
NO. 109598
COMMERCE
STATE OF TENNESSEE
Everett Noe Jr.
11/29/22

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING PLANS

STA. 207+00 TO STA. 215+00

SCALE: 1"= 50'

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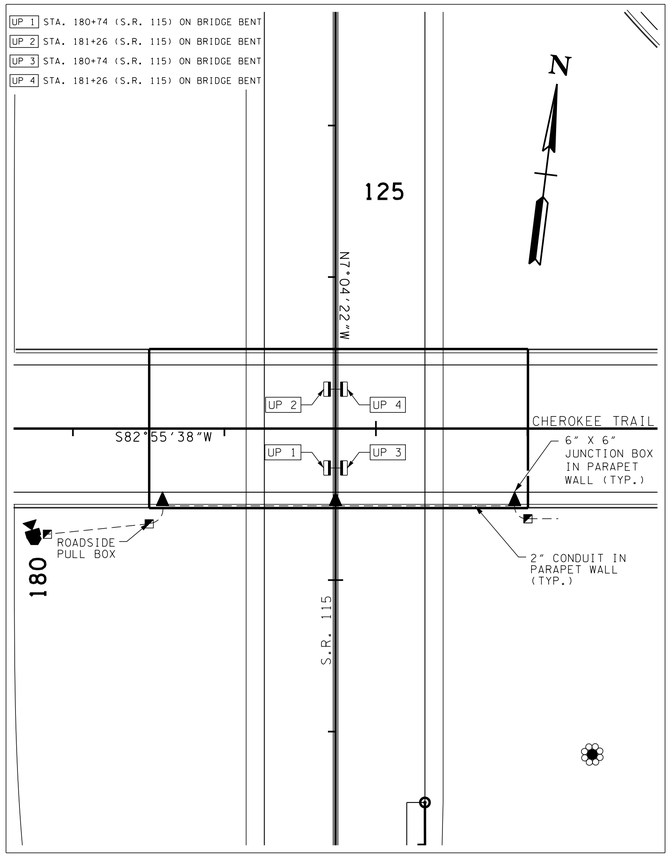
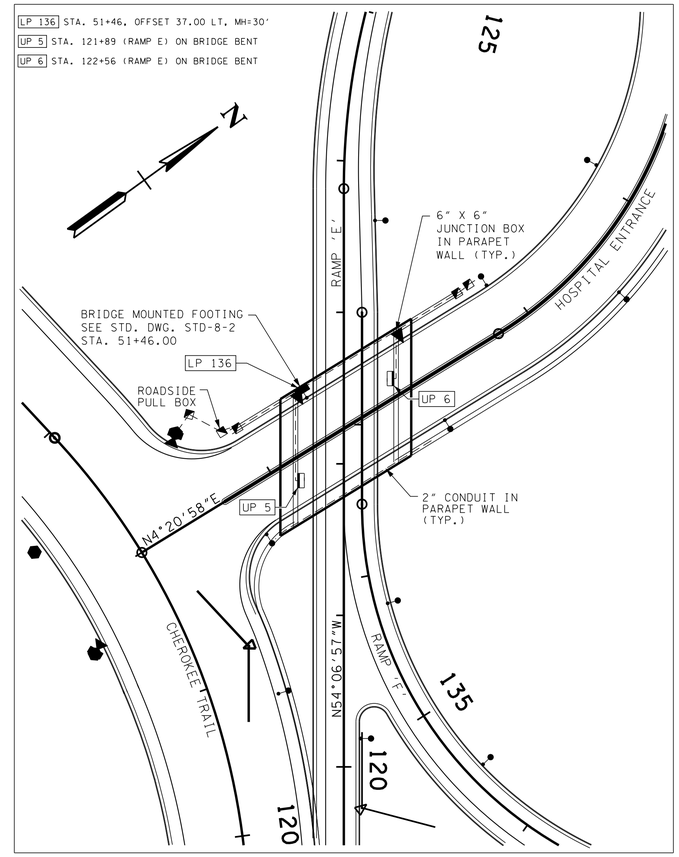
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-14

LEGEND

- BRIDGE MOUNTED FOOTING
- PROPOSED PARAPET MOUNT JUNCTION BOX
- PROPOSED PULL BOX
- PROPOSED POLE MOUNTED LUMINAIRE
- PROPOSED UNDERPASS LUMINAIRE
- --- PROPOSED CONDUIT



BRIDGE NO. 1
CHEROKEE TRAIL OVER
ALCOA HIGHWAY (S.R. 115)



BRIDGE NO. 2
HOSPITAL ENTRANCE OVER
RAMP E & F

ITEM 714-01.01
STRUCTURAL LIGHTING (BRIDGE NO. 1)
INCLUDES:

A) 335 L.F. - 2" CONDUIT

B) 3 - PARAPET JUNCTION BOXES

C) 4 - JUNCTION BOXES FOR UNDERPASS LUMINAIRES

ITEM 714-01.02
STRUCTURAL LIGHTING (BRIDGE NO. 2)
INCLUDES:

A) 300 L.F. - 2" CONDUIT

B) 2 - PARAPET JUNCTION BOXES

C) 1 - BRIDGE MOUNTED FOOTING (INCLUDES FOUR ANCHOR BOLTS PER FOOTING)

D) 2 - JUNCTION BOXES FOR UNDERPASS LUMINAIRES

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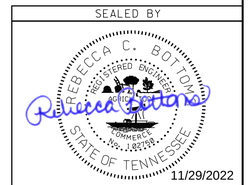

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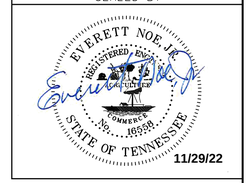

11/29/22

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS
UNDERPASS LIGHTING

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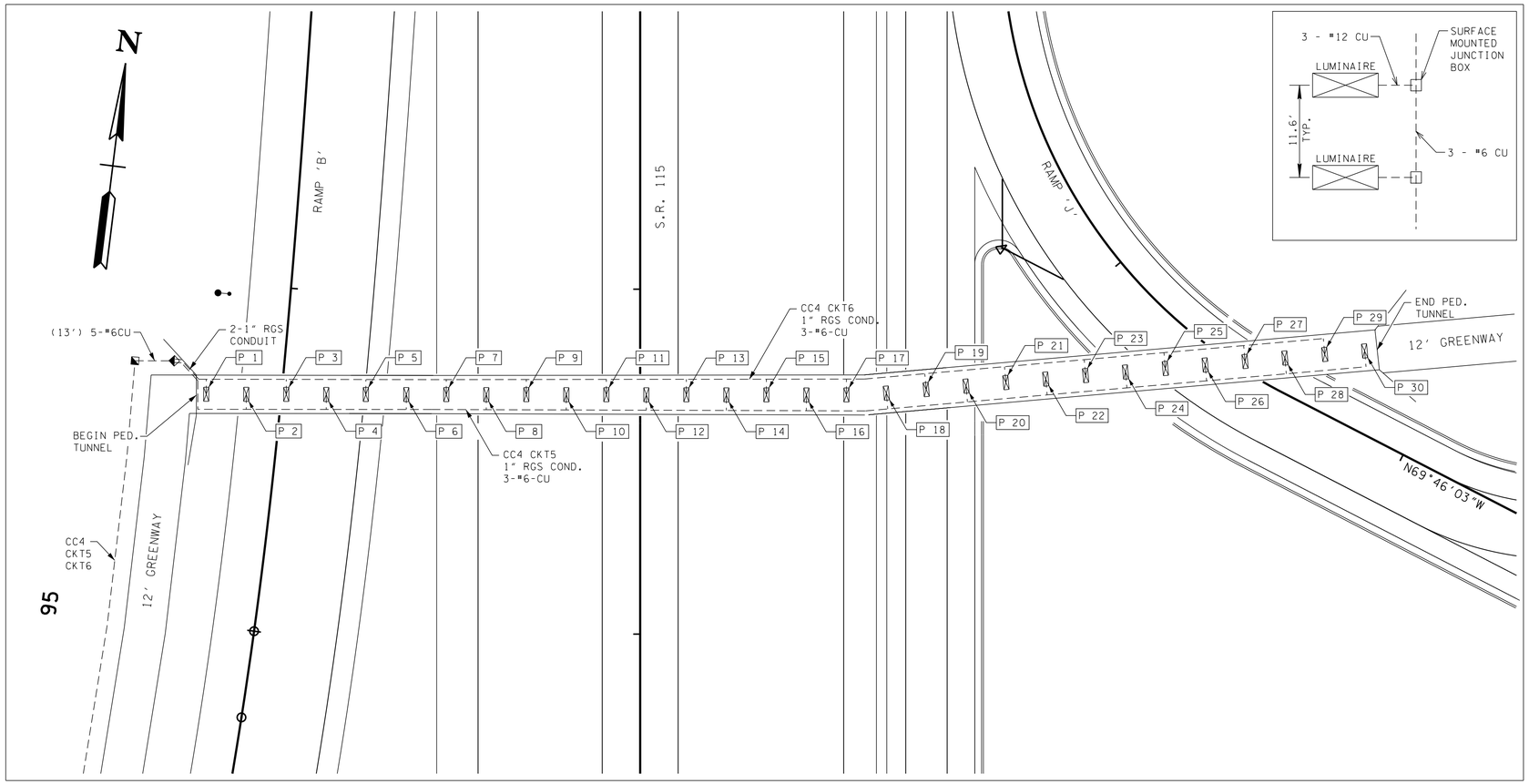
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R- STP/NH-115(29)	L-15

LEGEND

- BRIDGE MOUNTED FOOTING
- PROPOSED PARAPET MOUNT JUNCTION BOX
- PROPOSED PULL BOX
- PROPOSED POLE MOUNTED LUMINAIRE
- PROPOSED UNDERPASS LUMINAIRE
- --- PROPOSED CONDUIT
- PROPOSED PEDESTRIAN TUNNEL LUMINAIRE

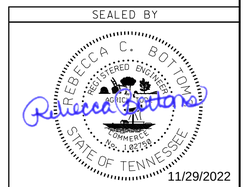


PEDESTRIAN TUNNEL
ALCOA HIGHWAY (S.R. 115)
OVER GREENWAY

NOTES:

1. MOUNT RIGID CONDUIT, SURFACE MOUNTED JUNCTION BOXES, AND LUMINAIRES TO TUNNEL ROOF IN NEAT MANNER.
2. SECURE CONDUIT WITH TWO HOLE STRAPS 3.00' ON CENTER. SECURE STRAPS WITH EPOXY ANCHOR BOLTS.
3. PEDESTRIAN TUNNEL LIGHTING CONTROL SHALL CONSIST OF CONTINUOUS OPERATION OF LUMINAIRES ON CIRCUIT 6 AND 2-PHASE OPERATION OF LUMINAIRES ON CIRCUIT 5 SUCH THAT CIRCUIT 5 IS ENERGIZED DURING DAYTIME CONDITIONS AND TURNED OFF DURING NIGHTTIME CONDITIONS.

SEALED BY



11/29/2022

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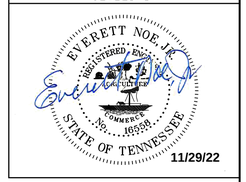

11/29/22

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS
PEDESTRIAN TUNNEL

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-16

LUMINAIRE AND POLE DATA

	LIGHT POLE NO.	SHEET NO.	LUMINAIRE TYPE	NO. OF LUMINAIRES	ARM LENGTH	MOUNTING HEIGHT	TILT	BREAKAWAY BASE	BASELINE	STATION	OFFSET	SIDE	CONTROL CENTER	CIRCUIT NO.	VOLTAGE	COMMENT
	LP 1	L-1	H	1	N/A	40'	45°	N/A	SR 115	130+00	115.18'	RT	1	1A	240	INSTALL ON KUB POLE
	LP 2	L-2	H	1	N/A	40'	45°	N/A	SR 115	132+05	115.31'	RT	1	1B	240	INSTALL ON KUB POLE
	LP 3	L-2	H	1	N/A	40'	45°	N/A	SR 115	134+07	103.19'	RT	1	1A	240	INSTALL ON KUB POLE
	LP 4	L-2	H	1	N/A	40'	45°	N/A	SR 115	136+10	96.78'	RT	1	1B	240	INSTALL ON KUB POLE
	LP 5	L-2	H	1	N/A	40'	45°	N/A	SR 115	138+10	91.03'	RT	1	1A	240	INSTALL ON KUB POLE
	LP 6	L-3	H	1	N/A	40'	45°	N/A	SR 115	140+06	78.12'	RT	1	1B	240	INSTALL ON KUB POLE
	LP 7	L-3	A	1	20'	45'	N/A	YES	SR 115	142+58	73.00'	RT	1	1A	240	
	LP 8	L-3	A	1	20'	45'	N/A	YES	SR 115	145+13	73.5'0	RT	1	1B	240	
	LP 9	L-3	A	1	15'	45'	N/A	YES	SR 115	147+82	68.00'	RT	1	1A	240	
	LP 10	L-3	A	1	15'	45'	N/A	YES	SR 115	150+53	68.50'	RT	1	2A	240	
	LP 11	L-4	A	1	15'	45'	N/A	YES	SR 115	153+20	68.00'	RT	1	2B	240	
	LP 12	L-4	A	1	15'	45'	N/A	YES	SR 115	155+93	68.00'	RT	1	2A	240	
	LP 13	L-4	A	1	15'	45'	N/A	YES	SR 115	158+63	68.00'	RT	1	2B	240	
	LP 14	L-4	A	1	15'	45'	N/A	YES	SR 115	161+12	70.11'	RT	1	2A	240	
	LP 15	L-4	B	1	15'	45'	N/A	YES	SR 115	163+70	87.70'	RT	1	2B	240	
	LP 16	L-5	B	1	15'	45'	N/A	YES	RAMP B	66+29	21.00'	RT	1	2A	240	
	LP 17	L-5	B	1	15'	45'	N/A	YES	RAMP B	68+87	21.00'	RT	1	2B	240	
	LP 18	L-11	I	1	N/A	45'	35°	NO	SR 115	193+50	RETAINING WALL 9	RT	3	2A	240	
	LP 19	L-11	I	1	N/A	45'	35°	NO	SR 115	195+14	RETAINING WALL 9	RT	3	2B	240	
	LP 20	L-11	I	1	N/A	45'	35°	NO	SR 115	196+75	RETAINING WALL 9	RT	3	2A	240	
	LP 21	L-12	G	1	15'	45'	N/A	YES	SR 115	198+85	114.34'	RT	3	2B	240	
	LP 22	L-12	G	1	15'	45'	N/A	YES	SR 115	200+85	110.18'	RT	3	2A	240	
	LP 23	L-12	G	1	15'	45'	N/A	YES	SR 115	202+91	110.00'	RT	3	2B	240	
	LP 24	L-12	G	1	15'	45'	N/A	YES	SR 115	204+76	102.50'	RT	3	2A	240	
	LP 25	L-12	G	1	15'	45'	N/A	YES	SR 115	206+56	94.75'	RT	3	2B	240	
	LP 26	L-13	G	1	15'	45'	N/A	YES	SR 115	208+70	89.60'	RT	3	2A	240	
	LP 27	L-13	G	1	15'	45'	N/A	YES	SR 115	210+48	77.75'	RT	3	2B	240	
	LP 28	L-13	G	1	15'	45'	N/A	YES	SR 115	210+00	80.00'	LT	4	1A	240	
	LP 29	L-13	G	1	15'	45'	N/A	YES	SR 115	207+94	84.00'	LT	4	1B	240	
	LP 30	L-12	G	1	15'	45'	N/A	YES	SR 115	205+87	80.00'	LT	4	1A	240	
	LP 31	L-12	G	1	15'	45'	N/A	YES	SR 115	203+90	80.00'	LT	4	1B	240	
	LP 32	L-12	G	1	15'	45'	N/A	YES	SR 115	201+89	80.00'	LT	4	1A	240	
	LP 33	L-12	G	1	15'	45'	N/A	YES	SR 115	199+88	80.00'	LT	4	1B	240	
	LP 34	L-12	G	1	15'	45'	N/A	YES	SR 115	197+88	82.40'	LT	4	1A	240	
	LP 35	L-11	G	1	15'	45'	N/A	YES	SR 115	195+88	95.79'	LT	4	1B	240	
	LP 36	L-11	G	1	15'	45'	N/A	YES	SR 115	193+84	109.43'	LT	4	1A	240	
	LP 37	L-11	G	1	15'	45'	N/A	YES	RAMP D	94+03	21.00'	RT	4	1B	240	
	LP 38	L-11	G	1	15'	45'	N/A	NO	RAMP D	96+59	RETAINING WALL 16	RT	4	1A	240	
	LP 39	L-5	B	1	5'	45'	N/A	NO	RAMP A	62+12	RETAINING WALL 3	RT	2	2A	240	Mounting Height above Marine Road
	LP 40	L-5	B	1	5'	45'	N/A	NO	RAMP A	64+44	RETAINING WALL 3	RT	2	2B	240	Mounting Height above Marine Road
	LP 41	L-5	B	1	5'	45'	N/A	NO	RAMP A	66+79	RETAINING WALL 3	RT	2	2A	240	Mounting Height above Marine Road
(1)	LP 42	L-5	A/B	2	5' / 10'	45'	N/A	NO	RAMP A	68+93	RETAINING WALL 3	RT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
(1)	LP 43	L-5	A/B	2	5' / 10'	45'	N/A	NO	SR 115	166+97	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
(1)	LP 44	L-5	A/B	2	5' / 10'	45'	N/A	NO	SR 115	164+75	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
(1)	LP 45	L-4	A/B	2	5' / 10'	45'	N/A	NO	SR 115	162+50	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
(1)	LP 46	L-4	A/B	2	5' / 10'	45'	N/A	NO	SR 115	159+93	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
	LP 47	L-4	A/B	2	10' / 10'	45'	N/A	NO	SR 115	157+30	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
	LP 48	L-4	A/B	2	10' / 10'	45'	N/A	NO	SR 115	154+54	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
	LP 49	L-3	A/B	2	10' / 10'	45'	N/A	NO	SR 115	151+88	RETAINING WALL 3	LT	2	2A/2B	240	Mounting Height above Marine Road & SR 115
	LP 50	L-3	A/B	2	10' / 10'	45'	N/A	NO	SR 115	149+11	RETAINING WALL 3	LT	2	1A/1B	240	Mounting Height above Marine Road & SR 115
	LP 51	L-3	A	1	10'	45'	N/A	NO	SR 115	146+41	BARRIER WALL	LT	2	1A	240	51" BARRIER WALL
	LP 52	L-3	A	1	10'	45'	N/A	NO	SR 115	143+92	BARRIER WALL	LT	2	1B	240	51" BARRIER WALL
	LP 53	L-3	A	1	10'	45'	N/A	NO	SR 115	141+72	BARRIER WALL	LT	2	1A	240	51" BARRIER WALL
	LP 54	L-2	A	1	10'	45'	N/A	NO	SR 115	139+63	BARRIER WALL	LT	2	1B	240	51" BARRIER WALL
	LP 55	L-2	A	1	10'	45'	N/A	NO	SR 115	137+61	BARRIER WALL	LT	2	1A	240	51" BARRIER WALL
	LP 56	L-2	A	1	10'	45'	N/A	NO	SR 115	135+54	BARRIER WALL	LT	2	1B	240	51" BARRIER WALL
	LP 57	L-2	A	1	10'	45'	N/A	NO	SR 115	133+45	BARRIER WALL	LT	2	1A	240	51" BARRIER WALL
	LP 58	L-2	A	1	10'	45'	N/A	NO	SR 115	131+35	BARRIER WALL	LT	2	1B	240	51" BARRIER WALL
	LP 59	L-1	A	1	10'	45'	N/A	NO	SR 115	129+27	BARRIER WALL	LT	2	1A	240	51" BARRIER WALL
	LP 60	L-7	F	1	15'	40'	N/A	YES	CHER. TRL.	101+62	51.76'	RT	3	4B	240	

LUMINAIRE TYPE:

A = COOPER NAVION LED (NVN-SA3C-740-U-SL4-AP-10K-PR7)
B = COOPER NAVION LED (NVN-SA3C-740-U-T3-AP-10K-PR7)
C = COOPER NAVION LED (NVN-SA2C-740-U-T3-AP-10K-PR7)
D = AEL AUTOBAHN LED (ATBX-P40-MVOLT-R2-3K-MP-NL-P7)
E = AEL AUTOBAHN LED (ATBS-P20-MVOLT-R3-3K-MP-NL-P7)
F = AEL AUTOBAHN LED (ATBM-P20-VOLT-R2-3K-NL-P7)
G = AEL AUTOBAHN LED (ATBL-C-MVOLT-R3-3K-NL-P7)
H = HOLOPHANE MONGOOSE LED (MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7)
I = HOLOPHANE MONGOOSE LED (MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7)
J = HOLOPHANE LED WALLPACK (W4G-LED-10C-1000-30K-T3M-MVOLT-GYSDP)
K = HOLOPHANE HIGH MAST LED (HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH7)
L = HOLOPHANE EMS LED (EMS-L48-4000LM-IMACD-WD-MVOLT-80CRI-30K)
M = HOLOPHANE MONGOOSE LED (MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7)
N = HOLOPHANE MONGOOSE LED (MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7)

MOUNTING HEIGHT:

LUMINAIRE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE LUMINAIRE LIGHT SOURCE. SEE NOTE NO. 23 ON SHEET LA.

NOTE:

(1) 5' ARM ORIENTED OVER MARINE BASE ROAD AND 10' ARM ORIENTED OVER SR 115

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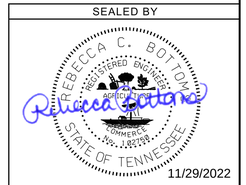

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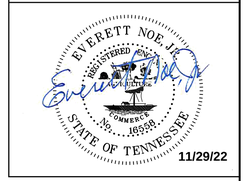

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

POLE DATA

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-17

LUMINAIRE AND POLE DATA

LIGHT POLE NO.	SHEET NO.	LUMINAIRE TYPE	NO. OF LUMINAIRES	ARM LENGTH	MOUNTING HEIGHT	TILT	BREAKAWAY BASE	BASELINE	STATION	OFFSET	SIDE	CONTROL CENTER	CIRCUIT NO.	VOLTAGE	
LP 61	L-7	F	1	10'	40'	N/A	YES	OLD CHER.	101+14	36.00'	RT	3	4A	240	
LP 62	L-7	F	1	10'	40'	N/A	YES	OLD CHER.	102+55	36.00'	RT	3	4A	240	
LP 63	L-7	N	1	N/A	35'	22°	N/A	CHER. TRL.	103+14.80	SIGNAL POLE	RT	3	4A	240	Rotate luminaire 15° toward center of intersection.
LP 64	L-7	F	1	15'	40'	N/A	YES	CHER. TRL.	105+23	RETAINING WALL 13	RT	3	4B	240	
LP 65	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	107+39	56.00'	RT	3	4A	240	
LP 66	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	109+11	58.95'	RT	3	4B	240	
LP 67	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	111+00	63.83'	RT	3	4A	240	
LP 68	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	112+88	69.88'	RT	3	4B	240	
LP 69	L-8	F	1	15'	40'	N/A	YES	RAMP E	114+65	17.45'	RT	3	4A	240	
LP 70	L-8	E	1	10'	40'	N/A	N/A	RAMP E	116+96	RETAINING WALL 14	RT	3	4B	240	
LP 71	L-8	E	1	10'	40'	N/A	YES	RAMP E	117+80	RETAINING WALL 14	RT	3	4A	240	
LP 72	L-8	F	1	10'	40'	N/A	NO	CHER. TRL.	118+42	RETAINING WALL 6	RT	3	3B	240	
LP 73	L-6	F	1	10'	40'	N/A	NO	CHER. TRL.	120+83	RETAINING WALL 6	RT	3	3A	240	
LP 74	L-6	N	1	N/A	35'	22°	N/A	CHER. TRL.	122+49	SIGNAL POLE	RT	3	2B	240	Rotate luminaire 30° toward center of intersection.
LP 75	L-6	M	1	N/A	35'	20°	N/A	CHER. TRL.	128+07	SIGNAL POLE	RT	4	3A	240	Rotate luminaire 15° toward center of intersection.
LP 76	L-9	F	1	15'	40'	N/A	YES	CHER. TRL.	132+88	47.75'	RT	4	3B	240	
LP 77	L-9	F	1	10'	40'	N/A	YES	CHER. TRL.	135+71	35.75'	RT	4	3A	240	
LP 78	L-9	F	1	10'	40'	N/A	YES	CHER. TRL.	138+83	32.00'	RT	4	3B	240	
LP 79	L-9	F	1	10'	40'	N/A	YES	CHER. TRL.	137+21	32.00'	LT	4	3A	240	
LP 80	L-9	F	1	15'	40'	N/A	YES	CHER. TRL.	134+27	39.33'	LT	4	3B	240	
LP 81	L-9	F	1	15'	40'	N/A	YES	CHER. TRL.	131+53	52.09'	LT	4	3A	240	
LP 82	L-6	M	1	N/A	35'	20°	N/A	CHER. TRL.	127+25	SIGNAL POLE	LT	4	4A	240	Rotate luminaire 15° toward center of intersection.
LP 83	L-6	N	1	N/A	35'	22°	N/A	CHER. TRL.	121+53	SIGNAL POLE	LT	4	4B	240	Rotate luminaire 30° toward center of intersection.
LP 84	L-6	F	1	15'	40'	N/A	YES	CHER. TRL.	119+49	57.13'	LT	4	4A	240	
LP 85	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	117+39	51.10'	LT	4	4B	240	
LP 86	L-8	G	1	15'	45'	N/A	YES	RAMP B	81+37	79.67'	LT	1	2B	240	
LP 87	L-8	G	1	15'	45'	N/A	YES	RAMP B	78+35	64.96'	LT	1	2B	240	
LP 88	L-5	G	1	15'	45'	N/A	YES	RAMP C	79+33	21.00'	RT	1	2B	240	
LP 89	L-8	G	1	15'	45'	N/A	YES	RAMP B	76+66	38.05'	RT	1	2A	240	
LP 90	L-8	G	1	15'	45'	N/A	YES	RAMP B	79+76	53.00'	RT	1	2A	240	
LP 91	L-8	G	1	15'	45'	N/A	YES	RAMP B	80+65	65.00'	LT	1	2B	240	
LP 92	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	113+83	50.00'	LT	4	4A	240	
LP 93	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	111+98	50.00'	LT	4	4B	240	
LP 94	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	110+03	50.00'	LT	4	4A	240	
LP 95	L-8	F	1	15'	40'	N/A	YES	CHER. TRL.	108+26	53.00'	LT	4	4B	240	
LP 96	L-7	F	1	15'	40'	N/A	YES	CHER. TRL.	106+34	54.00'	LT	4	4A	240	
LP 97	L-7	F	1	15'	40'	N/A	YES	CHER. TRL.	104+28	54.00'	LT	4	4B	240	
LP 98	L-7	N	1	N/A	35'	22°	N/A	CHER. TRL.	102+12	SIGNAL POLE	LT	4	4A	240	Rotate luminaire 15° toward center of intersection.
LP 99	L-7	F	1	15'	40'	N/A	YES	CHER. TRL.	100+19	44.95'	LT	4	4B	240	
LP 100	L-6	E	1	10'	40'	N/A	YES	RAMP E	118+92	RETAINING WALL 14	RT	3	4B	240	
LP 101	L-6	E	1	10'	40'	N/A	YES	RAMP E	120+19	17.50'	RT	3	4A	240	
LP 102	L-10	E	1	10'	40'	N/A	YES	RAMP H	150+35	33.00'	RT	3	4B	240	
LP 103	L-10	E	1	10'	40'	N/A	YES	RAMP H	151+61	32.00'	RT	3	4B	240	
LP 104	L-10	E	1	10'	40'	N/A	YES	RAMP H	152+87	33.75'	RT	3	4B	240	
LP 105	L-6	E	1	10'	40'	N/A	YES	RAMP F	133+15	16.50'	RT	3	4B	240	
LP 106	L-6	E	1	10'	40'	N/A	YES	RAMP F	134+50	16.50'	RT	3	4B	240	
LP 107	L-6	E	1	10'	40'	N/A	YES	RAMP F	135+79	16.50'	RT	3	4A	240	
LP 108	L-6	F	1	15'	45'	N/A	YES	RAMP E	123+61	30.45'	RT	3	2A	240	
LP 109	L-6	F	1	15'	45'	N/A	YES	RAMP E	125+31	25.86'	RT	3	2B	240	
LP 110	L-11	F	1	15'	45'	N/A	YES	RAMP E	127+06	21.18'	RT	3	2A	240	
LP 111	L-6	D	1	6'	30'	N/A	NO	HOSPITAL	50+76	RETAINING WALL 6	RT	3	3B	240	
LP 112	L-6	D	1	6'	30'	N/A	NO	HOSPITAL	52+16	RETAINING WALL 8	RT	3	3A	240	
LP 113	L-6	D	1	6'	30'	N/A	NO	HOSPITAL	53+51	RETAINING WALL 8	RT	3	3B	240	
LP 114	L-11	D	1	6'	30'	N/A	NO	HOSPITAL	54+72	RETAINING WALL 8	RT	3	3A	240	
LP 115	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	56+07	38.00'	RT	3	3A	240	
LP 116	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	57+44	38.00'	RT	3	3B	240	
LP 117	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	58+79	38'00'	RT	3	3A	240	
LP 118	L-11	D	1	6'	40'	N/A	YES	HOSPITAL	59+69	25.00'	RT	3	3B	240	
LP 119	L-11	D	1	6'	30'	N/A	NO	HOSPITAL	59+96	RETAINING WALL 11	RT	3	3A	240	
LP 120	L-11	F	1	10'	40'	N/A	YES	RAMP I	204+36	40.15'	LT	3	3B	240	
LP 121	L-11	D	1	6'	30'	N/A	YES	RAMP I	202+81	RETAINING WALL 12	LT	3	3A	240	

LUMINAIRE TYPE:

A = COOPER NAVION LED (NVN-SA3C-740-U-SL4-AP-10K-PR7)
B = COOPER NAVION LED (NVN-SA3C-740-U-T3-AP-10K-PR7)
C = COOPER NAVION LED (NVN-SA2C-740-U-T3-AP-10K-PR7)
D = AEL AUTOBAHN LED (ATBX-P40-MVOLT-R2-3K-MP-NL-P7)
E = AEL AUTOBAHN LED (ATBS-P20-MVOLT-R3-3K-MP-NL-P7)
F = AEL AUTOBAHN LED (ATBM-P20-VOLT-R2-3K-NL-P7)
G = AEL AUTOBAHN LED (ATBL-C-MVOLT-R3-3K-NL-P7)
H = HOLOPHANE MONGOOSE LED (MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7)
I = HOLOPHANE MONGOOSE LED (MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7)
J = HOLOPHANE LED WALLPACK (W4G-LED-10C-1000-30K-T3M-MVOLT-GYSDP)
K = HOLOPHANE HIGH MAST LED (HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH7)
L = HOLOPHANE EMS LED (EMS-L48-4000LM-IMACD-WD-MVOLT-80CRI-30K)
M = HOLOPHANE MONGOOSE LED (MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7)
N = HOLOPHANE MONGOOSE LED (MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7)

MOUNTING HEIGHT:

LUMINAIRE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE LUMINAIRE LIGHT SOURCE. SEE NOTE NO. 23 ON SHEET LA.

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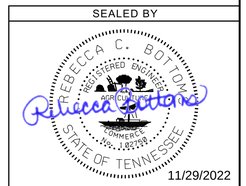

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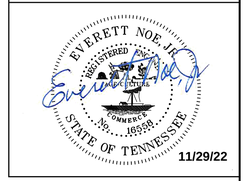

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

POLE DATA

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-18

LUMINAIRE AND POLE DATA

LIGHT POLE NO.	SHEET NO.	LUMINAIRE TYPE	NO. OF LUMINAIRES	ARM LENGTH	MOUNTING HEIGHT	TILT	BREAKAWAY BASE	BASELINE	STATION	OFFSET	SIDE	CONTROL CENTER	CIRCUIT NO.	VOLTAGE	
LP 122	L-10	D	1	6'	30'	N/A	YES	RAMP I	201+20	26.50'	LT	3	3B	240	
LP 123	L-10	D	1	6'	30'	N/A	YES	RAMP I	202+01	28.50'	RT	3	3A	240	
LP 124	L-11	E	1	6'	30'	N/A	YES	RAMP I	203+69	28.50'	RT	3	3B	240	
LP 125	L-11	F	1	10'	40'	N/A	YES	RAMP I	204+51	55.72'	RT	3	3A	240	
LP 126	L-11	F	1	6'	30'	N/A	YES	HOSPITAL	61+72	28.21'	RT	3	3B	240	
LP 127	L-11	F	1	6'	30'	N/A	YES	HOSPITAL	62+45	26.52'	LT	3	2B	240	
LP 128	L-11	F	1	10'	40'	N/A	YES	HOSPITAL	61+41	54.93'	LT	3	2B	240	
LP 129	L-11	F	1	10'	40'	N/A	YES	HOSPITAL	60+23	45.96'	LT	3	2B	240	
LP 130	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	59+15	38.00'	LT	3	2A	240	
LP 131	L-11	D	1	6'	30'	N/A	N/A	HOSPITAL	57+91	40.80'	LT	3	2B	240	INSTALL ON AT&T POLE
LP 132	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	56+67	38.00'	LT	3	2A	240	
LP 133	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	55+43	38.00'	LT	3	2B	240	
LP 134	L-11	D	1	6'	30'	N/A	YES	HOSPITAL	54+11	38.00'	LT	3	2A	240	
LP 135	L-6	D	1	6'	30'	N/A	YES	HOSPITAL	52+88	38.00'	LT	3	2B	240	
LP 136	L-6	D	1	6'	30'	N/A	NO	HOSPITAL	51+46	BRIDGE	LT	3	2A	240	INSTALL ON BRIDGE
LP 137	L-1	C	1	15'	40'	N/A	YES	COLLECTOR	17+84	59.88'	RT	1	1B	240	
LP 138	L-1	C	1	10'	40'	N/A	YES	WOODSON	13+27	51.46'	RT	1	1B	240	
LP 139	L-1	C	1	10'	40'	N/A	YES	WOODSON	14+21	20.77'	RT	1	1B	240	
LP 140	L-1	C	1	15'	40'	N/A	YES	WOODSON	15+72	30.00'	LT	1	1A	240	
LP 141	L-1	C	1	15'	40'	N/A	YES	WOODSON	13+04	77.84'	LT	1	1A	240	
LP 142	L-1	C	1	15'	40'	N/A	YES	WOODSON	11+71	49.44'	LT	1	1A	240	
LP 143	L-1	C	1	15'	40'	N/A	YES	WOODSON	11+69	76.85'	RT	1	1B	240	
LP 144	L-1	C	1	10'	40'	N/A	YES	WYE WAY	1+62	26.00'	LT	1	1A	240	
LP 145	L-1	C	1	10'	40'	N/A	YES	WYE WAY	2+43	26.00'	RT	1	1A	240	
LP 146	L-8	N	1	N/A	35'	22°	NO	CHER. TR.	114+81	SIGNAL POLE	LT	4	4A	240	Rotate luminaire 30° toward center of intersection.
LP 147	L-8	N	1	N/A	35'	22°	NO	CHER. TR.	116+07	SIGNAL POLE	RT	3	4A	240	Rotate luminaire 30° toward center of intersection.
					POLE HT.										
HM 1	L-5	K	10	N/A	125'	N/A	NO	SR 115	173+02	123.88'	RT	3	1	480	
HM 2	L-6	K	10	N/A	130'	N/A	NO	SR 115	178+85	169.46'	RT	3	1	480	
HM 3	L-6	K	8	N/A	125'	N/A	NO	RAMP A	58+63	102.01'	RT	4	2	480	
HM 4	L-6	K	10	N/A	135'	N/A	NO	SR 115	184+41	122.00'	LT	4	2	480	
HM 5	L-11	K	6	N/A	120'	N/A	NO	SR 115	189+74	164.78'	RT	3	5	480	
UP 1	L-6	J	1	N/A	UNDERPASS	N/A	N/A	S.R. 115	180+74			4	4B	240	
UP 2	L-6	J	1	N/A	UNDERPASS	N/A	N/A	S.R. 115	181+26			4	4B	240	
UP 3	L-6	J	1	N/A	UNDERPASS	N/A	N/A	S.R. 115	180+74			4	4A	240	
UP 4	L-6	J	1	N/A	UNDERPASS	N/A	N/A	S.R. 115	181+26			4	4A	240	
UP 5	L-6	J	1	N/A	UNDERPASS	N/A	N/A	RAMP E	121+89			3	2A	240	
UP 6	L-6	J	1	N/A	UNDERPASS	N/A	N/A	RAMP E	122+56			3	2B	240	
P 1	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 2	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 3	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 4	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 5	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 6	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 7	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 8	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 9	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 10	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 11	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 12	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 13	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 14	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 15	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 16	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 17	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 18	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 19	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	

LUMINAIRE TYPE:

A = COOPER NAVION LED (NVN-SA3C-740-U-SL4-AP-10K-PR7)
B = COOPER NAVION LED (NVN-SA3C-740-U-T3-AP-10K-PR7)
C = COOPER NAVION LED (NVN-SA2C-740-U-T3-AP-10K-PR7)
D = AEL AUTOBAHN LED (ATBX-P40-MVOLT-R2-3K-MP-NL-P7)
E = AEL AUTOBAHN LED (ATBS-P20-MVOLT-R3-3K-MP-NL-P7)
F = AEL AUTOBAHN LED (ATBM-P20-VOLT-R2-3K-NL-P7)
G = AEL AUTOBAHN LED (ATBL-C-MVOLT-R3-3K-NL-P7)
H = HOLOPHANE MONGOOSE LED (MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7)
I = HOLOPHANE MONGOOSE LED (MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7)
J = HOLOPHANE LED WALLPACK (W4G-LED-10C-1000-30K-T3M-MVOLT-GYSDP)
K = HOLOPHANE HIGH MAST LED (HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH7)
L = HOLOPHANE EMS LED (EMS-L48-4000LM-IMACD-WD-MVOLT-80CRI-30K)
M = HOLOPHANE MONGOOSE LED (MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7)
N = HOLOPHANE MONGOOSE LED (MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7)

MOUNTING HEIGHT:

LUMINAIRE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE LUMINAIRE LIGHT SOURCE. SEE NOTE NO. 23 ON SHEET LA.

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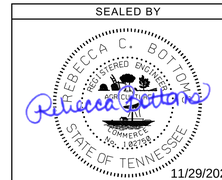

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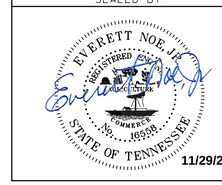

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

POLE DATA

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-19

LUMINAIRE AND POLE DATA

LIGHT POLE NO.	SHEET NO.	LUMINAIRE TYPE	NO. OF LUMINAIRES	ARM LENGTH	MOUNTING HEIGHT	TILT	BREAKAWAY BASE	BASELINE	STATION	OFFSET	SIDE	CONTROL CENTER	CIRCUIT NO.	VOLTAGE	
P 20	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 21	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 22	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 23	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 24	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 25	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 26	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 27	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 28	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	
P 29	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	6	240	
P 30	L-26	L	1	N/A	PED TUNNEL	N/A	N/A					4	5	240	

LUMINAIRE TYPE:

A = COOPER NAVION LED (NVN-SA3C-740-U-SL4-AP-10K-PR7)
B = COOPER NAVION LED (NVN-SA3C-740-U-T3-AP-10K-PR7)
C = COOPER NAVION LED (NVN-SA2C-740-U-T3-AP-10K-PR7)
D = AEL AUTOBAHN LED (ATBX-P40-MVOLT-R2-3K-MP-NL-P7)
E = AEL AUTOBAHN LED (ATBS-P20-MVOLT-R3-3K-MP-NL-P7)
F = AEL AUTOBAHN LED (ATBM-P20-VOLT-R2-3K-NL-P7)
G = AEL AUTOBAHN LED (ATBL-C-MVOLT-R3-3K-NL-P7)
H = HOLOPHANE MONGOOSE LED (MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7)
I = HOLOPHANE MONGOOSE LED (MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7)
J = HOLOPHANE LED WALLPACK (W4G-LED-10C-1000-30K-T3M-MVOLT-GYSDP)
K = HOLOPHANE HIGH MAST LED (HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH7)
L = HOLOPHANE EMS LED (EMS-L48-4000LM-IMACD-WD-MVOLT-80CRI-30K)
M = HOLOPHANE MONGOOSE LED (MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7)
N = HOLOPHANE MONGOOSE LED (MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7)

MOUNTING HEIGHT:

LUMINAIRE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE LUMINAIRE LIGHT SOURCE. SEE NOTE NO. 23 ON SHEET LA.

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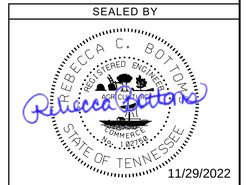

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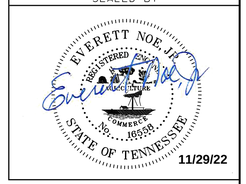

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

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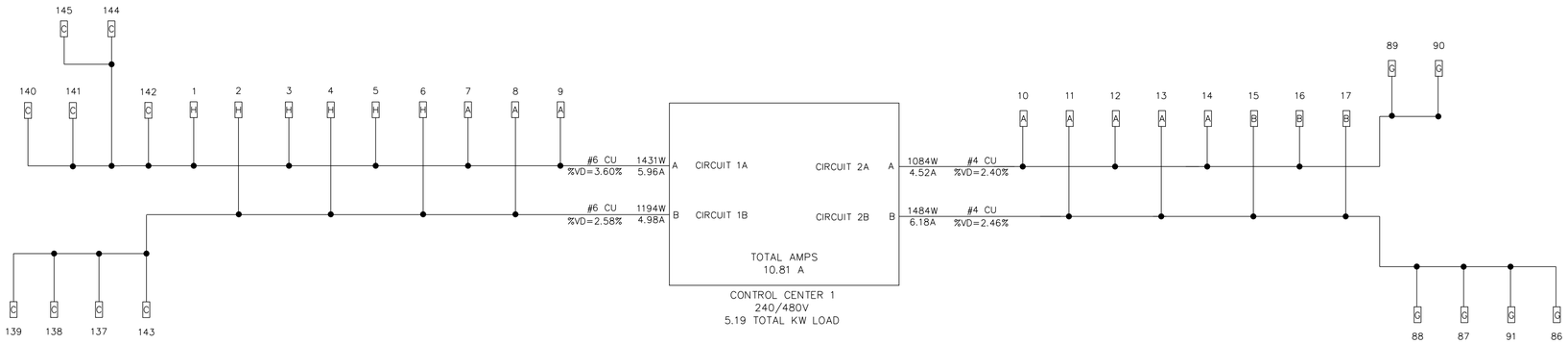
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-20

LIGHTING CIRCUIT DIAGRAM



NOTES

- A PHASE IS ALWAYS BLACK AND B PHASE IS ALWAYS RED FOR 2-240V CKTS PER CONDUIT, A PHASE NEUTRAL IS ALWAYS WHITE AND B PHASE NEUTRAL IS ALWAYS GRAY. GROUND WIRE IS ALWAYS GREEN
- CONDUIT SHALL BE 2" PVC UNLESS OTHERWISE NOTED.

A STREET LIGHT
NVN-SA3C-740-U-SL4-AP-10K-PR7
166 WATT LED

B STREET LIGHT
NVN-SA3C-740-U-T3-AP-10K-PR7
166 WATT LED

C STREET LIGHT
NVN-SA2C-740-U-T3-AP-10K-PR7
113 WATT LED

D STREET LIGHT
ATBX-P40-MVOLT-R2-3K-MP-NL-P7
28 WATT LED

E STREET LIGHT
ATBS-P20-MVOLT-R3-3K-MP-NL-P7
50 WATT LED

F STREET LIGHT
ATBM-P20-MVOLT-R2-3K-NL-P7
94 WATT LED

G STREET LIGHT
ATBL-C-MVOLT-R3-3K-NL-P7
200 WATT LED

H STREET LIGHT
MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7
155 WATT LED

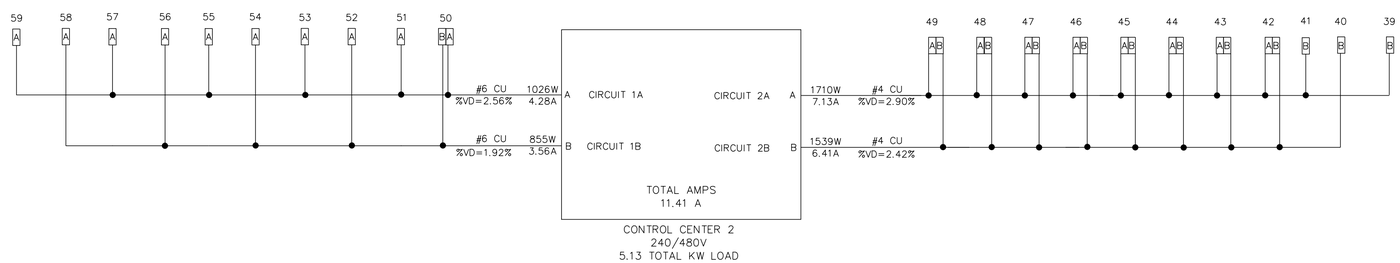
I STREET LIGHT
MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7
180 WATT LED

J STREET LIGHT
W4G LED 10C 1000 30K T3M MVOLT GYSDP
39 WATT LED

K STREET LIGHT
HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH
295 WATT LED

M STREET LIGHT
MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7
105 WATT LED

N STREET LIGHT
MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7
155 WATT LED



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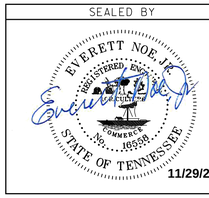

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

CIRCUIT DIAGRAMS

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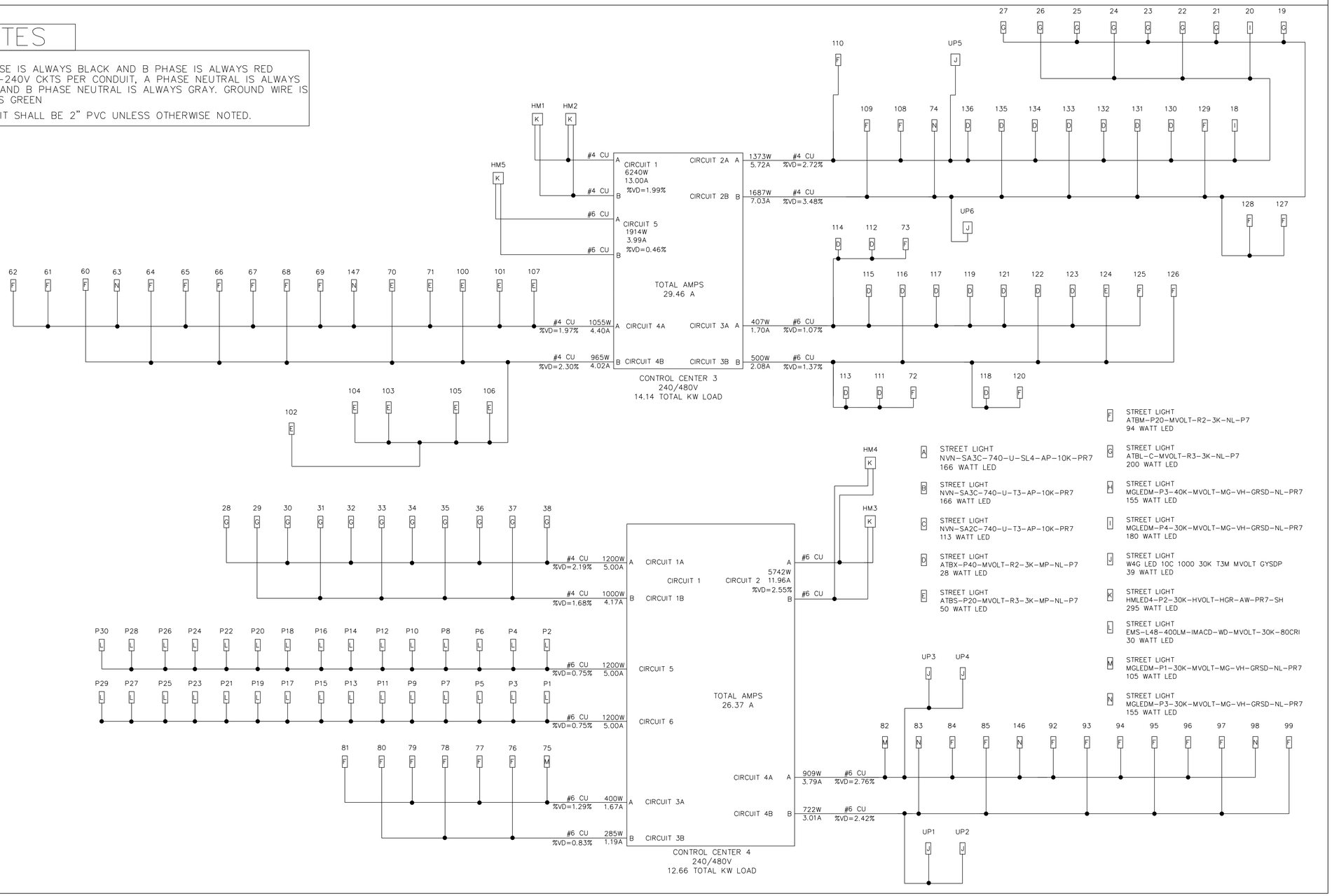
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-21

LIGHTING CIRCUIT DIAGRAM

NOTES

- A PHASE IS ALWAYS BLACK AND B PHASE IS ALWAYS RED FOR 2-240V CKTS PER CONDUIT, A PHASE NEUTRAL IS ALWAYS WHITE AND B PHASE NEUTRAL IS ALWAYS GRAY. GROUND WIRE IS ALWAYS GREEN
- CONDUIT SHALL BE 2" PVC UNLESS OTHERWISE NOTED.



A STREET LIGHT
NVN-SA3C-740-U-SL4-AP-10K-PR7
166 WATT LED

B STREET LIGHT
NVN-SA3C-740-U-T3-AP-10K-PR7
166 WATT LED

C STREET LIGHT
NVN-SA2C-740-U-T3-AP-10K-PR7
113 WATT LED

D STREET LIGHT
ATBX-P40-MVOLT-R2-3K-MP-NL-P7
28 WATT LED

E STREET LIGHT
ATBS-P20-MVOLT-R3-3K-MP-NL-P7
50 WATT LED

F STREET LIGHT
ATBM-P20-MVOLT-R2-3K-NL-P7
94 WATT LED

G STREET LIGHT
ATBL-C-MVOLT-R3-3K-NL-P7
200 WATT LED

H STREET LIGHT
MGLEDM-P3-40K-MVOLT-MG-VH-GRSD-NL-PR7
155 WATT LED

I STREET LIGHT
MGLEDM-P4-30K-MVOLT-MG-VH-GRSD-NL-PR7
180 WATT LED

J STREET LIGHT
W4G LED 10C 1000 30K T3M MVOLT GYSDP
39 WATT LED

K STREET LIGHT
HMLED4-P2-30K-HVOLT-HGR-AW-PR7-SH
295 WATT LED

L STREET LIGHT
EMS-L48-400LM-IMACD-WD-MVOLT-30K-80CRI
30 WATT LED

M STREET LIGHT
MGLEDM-P1-30K-MVOLT-MG-VH-GRSD-NL-PR7
105 WATT LED

N STREET LIGHT
MGLEDM-P3-30K-MVOLT-MG-VH-GRSD-NL-PR7
155 WATT LED

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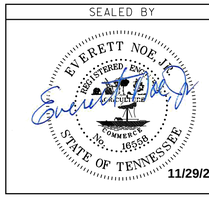

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

CIRCUIT DIAGRAMS

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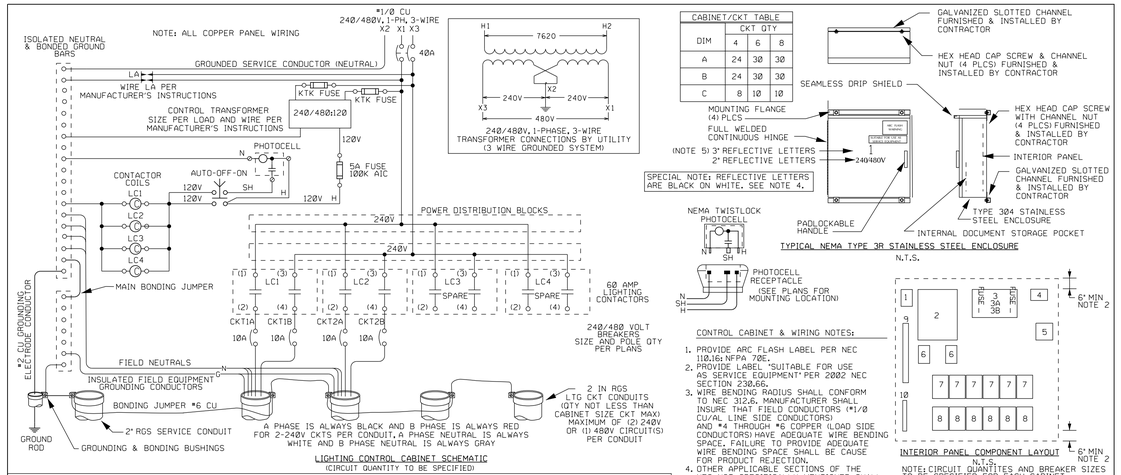
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-22



CABINET/CKT TABLE			
	CKT QTY		
DIM	4	6	8
A	24	30	30
B	24	30	30
C	8	10	10

SPECIAL NOTE: REFLECTIVE LETTERS ARE BLACK ON WHITE. SEE NOTE 4.

TYPICAL NEMA TYPE 3R STAINLESS STEEL ENCLOSURE
N.T.S.

INTERIOR PANEL COMPONENT LAYOUT
N.T.S.

NOTE: CIRCUIT QUANTITES AND BREAKER SIZES TO BE SPECIFIED FOR EACH CABINET

CONTROL CABINET & WIRING NOTES:

1. PROVIDE ARC FLASH LABEL PER NEC 110.16: NFPA 70E.
2. PROVIDE LABEL "SUITABLE FOR USE AS SERVICE EQUIPMENT" PER 2002 NEC SECTION 230.66.
3. WIRE BENDING RADIUS SHALL CONFORM TO NEC 312.6. MANUFACTURER SHALL INSURE THAT FIELD CONDUCTORS (*1/0 CU/AL LINE SIDE CONDUCTORS) AND *4 THROUGH *6 COPPER (LOAD SIDE CONDUCTORS) HAVE ADEQUATE WIRE BENDING SPACE. FAILURE TO PROVIDE ADEQUATE WIRE BENDING SPACE SHALL BE CAUSE FOR PRODUCT REJECTION.
4. OTHER APPLICABLE SECTIONS OF THE NEC NOT SPECIFICALLY MENTIONED SHALL APPLY TO THIS EQUIPMENT.
5. CONTACT COK FOR CONTROL CABINET NUMBER.
6. SUBMIT MFGR'S CUT SHEETS, CERTIFICATIONS, & WARRANTY INFORMATION ON ALL PROPOSED COMPONENTS TO BE USED IN CONTROL CABINET AND OBTAIN COK APPROVAL PRIOR TO PURCHASING. NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL FROM COK ENGINEERING.
7. GROUND BAR SHALL BE BONDED DIRECTLY TO THE PANEL WITH A DEDICATED BONDING SCREW.
8. FOR SUBPANEL, PROVIDE MANUFACTURER SUPPLIED MOUNTING BRACKETS OR SCREW STUDS PERMANENTLY ATTACHED TO THE BACK PANEL FOR MOUNTING COMPONENTS.
9. INSTALL A GROUNDING/BONDING BUSHING ON EACH CONDUIT. CONNECT *6 SOLID COPPER BONDING JUMPER AS SHOWN.
10. CABINET MUST PASS A CONTINUITY TEST AND LOW VOLTAGE, OPERATIONAL BENCH TEST PRIOR TO DELIVERY. QUALITY ASSURANCE TEST REPORT SHALL ACCOMPANY EACH CABINET.
11. THIS CONTROL CABINET IS NOT FOR FOR USE WITH 240V, 2-W OR 480V, 2-W PHASE-TO-GROUND SYSTEMS.
12. FOR FOUNDATION DETAILS AND INSTALLATION NOTES, SEE COK DRAWING A-15587.

LIGHTING CONTROL CABINET SCHEMATIC
(CIRCUIT QUANTITY TO BE SPECIFIED)

No.	QTY	DESCRIPTION	MATERIAL SPECIFICATIONS: (SUBSTITUTIONS REQUIRE WRITTEN COK APPROVAL) # - QTY TO BE SPECIFIED
1	1	SURGE SUPPRESSOR	IEEE C62.41 CATAGORY C, 100kA PER PHASE, 20kV/10kA SURGE CURRENT, NEMA LS-1, LED MONITORING OF EACH PHASE
2	1	MAIN CIRCUIT BREAKER	40 AMP, 2 POLE, 480 VOLT AC, MOLDED CASE, THERMAL-MAGNETIC, BOLT ON, FACTORY SEALED, 10kA IR @ 480 VOLTS, SQ D FAL
3	1	CONTROL TRANSFORMER	500 VA PRIMARY: 480V/240V AC; SECONDARY: 120V AC, PRIMARY FUSE KIT (WIRE PER MANUFACTURER'S INSTRUCTIONS)
3A	1	FUSE	5 AMP, 600V, 100K AIC RMS SYMMETRICAL, NON-RENEWABLE, BUSSMAN LIMITRON KTK-5
3B	1	FUSEHOLDER	30 AMP, 1 POLE MIDGET ULTRASAFE, 600 VAC, 100k AIC, FOR 10 X 38 MM MIDGET FUSES, FERRAZ SHAWMUT USM1I
4	1	TERMINAL BLOCK	30 AMP, 600 VAC, 4 POSITION, FOR *10-16 AWG COPPER WIRE, MARATHON CAT. NO. 1584
5	1	SELECTOR SWITCH	30 AMP, 2 NO CONTACT BLOCKS, 3-POSITION MAINTAINED, HAND-OFF-AUTO LEGEND, SQ D 9001BG112
6	2	POWER DISTRIBUTION BLOCK	2/0-12 MAIN SIDE, 4-14 SECONDARY SIDE; RATED FOR USE WITH COPPER CONDUCTORS
7	#	CONTACTOR	600V AC, 60 AMP, OPEN TYPE, 2 POLE NORMALLY OPEN CONTACTS, 120 VOLT COIL, SQ D 8910 DPA62V02
8	#	FEEDER CIRCUIT BREAKERS	1-POLE OR 2-POLE, 480V AC, 10kA IR @ 480V, MOLDED CASE, THERMAL-MAGNETIC, INDIVIDUAL MTD, SQ D FAL TYPE
9	1	NEUTRAL BAR (ISOLATED)	24 PLCS MIN: *14-*1/0 STRANDED COPPER CONDUCTORS
10	1	GND BAR (BONDED)	12 PLCS MIN: *14-*1/0 STRANDED COPPER CONDUCTORS (BONDING SCREW-NO ATTACHMENTS)
12	1	ENCLOSURE	NEMA 3R, STAINLESS STEEL, SIZE AS SPECIFIED, CONTINUOUS PAD-LOCKABLE HANDLE, METAL SUBPLATE, DRIP SHIELD, CONTINUOUSLY WELDED SS HINGE, EXTERNAL MOUNTING FEET, INTERNAL DOCUMENT POCKET, UNISTRUT MOUNTING BARS.

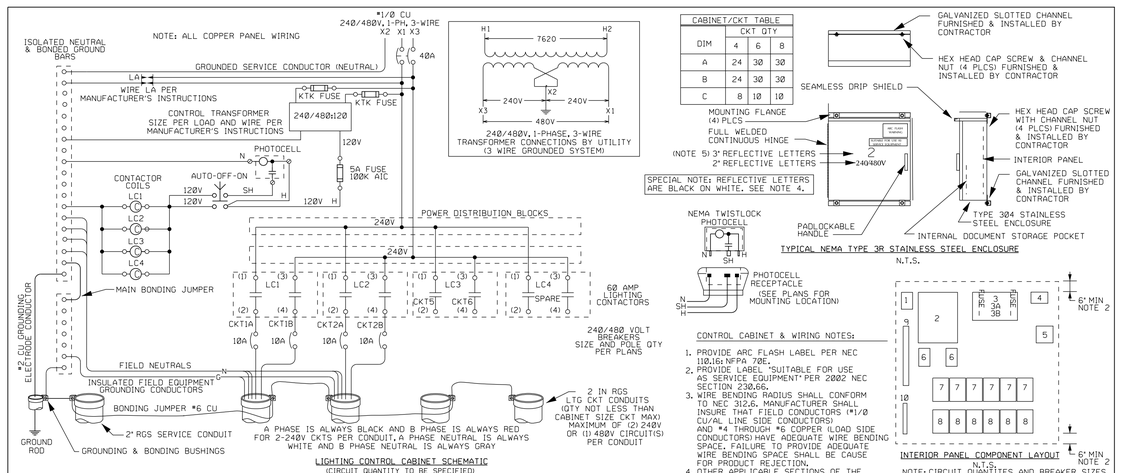
FOR 1-PH, 240/480V, 3-WIRE SYSTEMS: H-H-N-G (480V TO HIGH MAST) & H-N-G (240V TO STANDARD)

REV.: 0	W.F.P.#:	EST.:	W.O.:	REV.: 2	W.F.P.#:	EST.:	W.O.:
DWN.:	CHK.:	APPV.:	DATE:	DWN.: LGA	CHK.:	APPV.:	DATE:
DESC.:				DESC.:			
REV.: 1	W.F.P.#:	EST.:	W.O.:	REV.: 3		EST.:	W.O.:
DWN.:	CHK.:	APPV.:	DATE:	DWN.: LGA	CHK.:	APPV.:	DATE:
DESC.:				DESC.:			
				GRID:		SCALE: N/A	

SPLIT-PHASE LIGHTING SYSTEMS
240/480V, 3-WIRE
CONTROL SCHEMATIC & CABINET DETAILS

CC 1

SHEET REV



CABINET/CKT TABLE			
	CKT QTY		
DIM	4	6	8
A	24	30	30
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SPECIAL NOTE: REFLECTIVE LETTERS ARE BLACK ON WHITE. SEE NOTE 4.

TYPICAL NEMA TYPE 3R STAINLESS STEEL ENCLOSURE
N.T.S.

INTERIOR PANEL COMPONENT LAYOUT
N.T.S.

NOTE: CIRCUIT QUANTITES AND BREAKER SIZES TO BE SPECIFIED FOR EACH CABINET

CONTROL CABINET & WIRING NOTES:

1. PROVIDE ARC FLASH LABEL PER NEC 110.16: NFPA 70E.
2. PROVIDE LABEL "SUITABLE FOR USE AS SERVICE EQUIPMENT" PER 2002 NEC SECTION 230.66.
3. WIRE BENDING RADIUS SHALL CONFORM TO NEC 312.6. MANUFACTURER SHALL INSURE THAT FIELD CONDUCTORS (*1/0 CU/AL LINE SIDE CONDUCTORS) AND *4 THROUGH *6 COPPER (LOAD SIDE CONDUCTORS) HAVE ADEQUATE WIRE BENDING SPACE. FAILURE TO PROVIDE ADEQUATE WIRE BENDING SPACE SHALL BE CAUSE FOR PRODUCT REJECTION.
4. OTHER APPLICABLE SECTIONS OF THE NEC NOT SPECIFICALLY MENTIONED SHALL APPLY TO THIS EQUIPMENT.
5. CONTACT COK FOR CONTROL CABINET NUMBER.
6. SUBMIT MFGR'S CUT SHEETS, CERTIFICATIONS, & WARRANTY INFORMATION ON ALL PROPOSED COMPONENTS TO BE USED IN CONTROL CABINET AND OBTAIN COK APPROVAL PRIOR TO PURCHASING. NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL FROM COK ENGINEERING.
7. GROUND BAR SHALL BE BONDED DIRECTLY TO THE PANEL WITH A DEDICATED BONDING SCREW.
8. FOR SUBPANEL, PROVIDE MANUFACTURER SUPPLIED MOUNTING BRACKETS OR SCREW STUDS PERMANENTLY ATTACHED TO THE BACK PANEL FOR MOUNTING COMPONENTS.
9. INSTALL A GROUNDING/BONDING BUSHING ON EACH CONDUIT. CONNECT *6 SOLID COPPER BONDING JUMPER AS SHOWN.
10. CABINET MUST PASS A CONTINUITY TEST AND LOW VOLTAGE, OPERATIONAL BENCH TEST PRIOR TO DELIVERY. QUALITY ASSURANCE TEST REPORT SHALL ACCOMPANY EACH CABINET.
11. THIS CONTROL CABINET IS NOT FOR FOR USE WITH 240V, 2-W OR 480V, 2-W PHASE-TO-GROUND SYSTEMS.
12. FOR FOUNDATION DETAILS AND INSTALLATION NOTES, SEE COK DRAWING A-15587.

LIGHTING CONTROL CABINET SCHEMATIC
(CIRCUIT QUANTITY TO BE SPECIFIED)

No.	QTY	DESCRIPTION	MATERIAL SPECIFICATIONS: (SUBSTITUTIONS REQUIRE WRITTEN COK APPROVAL) # - QTY TO BE SPECIFIED
1	1	SURGE SUPPRESSOR	IEEE C62.41 CATAGORY C, 100kA PER PHASE, 20kV/10kA SURGE CURRENT, NEMA LS-1, LED MONITORING OF EACH PHASE
2	1	MAIN CIRCUIT BREAKER	40 AMP, 2 POLE, 480 VOLT AC, MOLDED CASE, THERMAL-MAGNETIC, BOLT ON, FACTORY SEALED, 10kA IR @ 480 VOLTS, SQ D FAL
3	1	CONTROL TRANSFORMER	500 VA PRIMARY: 480V/240V AC; SECONDARY: 120V AC, PRIMARY FUSE KIT (WIRE PER MANUFACTURER'S INSTRUCTIONS)
3A	1	FUSE	5 AMP, 600V, 100K AIC RMS SYMMETRICAL, NON-RENEWABLE, BUSSMAN LIMITRON KTK-5
3B	1	FUSEHOLDER	30 AMP, 1 POLE MIDGET ULTRASAFE, 600 VAC, 100k AIC, FOR 10 X 38 MM MIDGET FUSES, FERRAZ SHAWMUT USM1I
4	1	TERMINAL BLOCK	30 AMP, 600 VAC, 4 POSITION, FOR *10-16 AWG COPPER WIRE, MARATHON CAT. NO. 1584
5	1	SELECTOR SWITCH	30 AMP, 2 NO CONTACT BLOCKS, 3-POSITION MAINTAINED, HAND-OFF-AUTO LEGEND, SQ D 9001BG112
6	2	POWER DISTRIBUTION BLOCK	2/0-12 MAIN SIDE, 4-14 SECONDARY SIDE; RATED FOR USE WITH COPPER CONDUCTORS
7	#	CONTACTOR	600V AC, 60 AMP, OPEN TYPE, 2 POLE NORMALLY OPEN CONTACTS, 120 VOLT COIL, SQ D 8910 DPA62V02
8	#	FEEDER CIRCUIT BREAKERS	1-POLE OR 2-POLE, 480V AC, 10kA IR @ 480V, MOLDED CASE, THERMAL-MAGNETIC, INDIVIDUAL MTD, SQ D FAL TYPE
9	1	NEUTRAL BAR (ISOLATED)	24 PLCS MIN: *14-*1/0 STRANDED COPPER CONDUCTORS
10	1	GND BAR (BONDED)	12 PLCS MIN: *14-*1/0 STRANDED COPPER CONDUCTORS (BONDING SCREW-NO ATTACHMENTS)
12	1	ENCLOSURE	NEMA 3R, STAINLESS STEEL, SIZE AS SPECIFIED, CONTINUOUS PAD-LOCKABLE HANDLE, METAL SUBPLATE, DRIP SHIELD, CONTINUOUSLY WELDED SS HINGE, EXTERNAL MOUNTING FEET, INTERNAL DOCUMENT POCKET, UNISTRUT MOUNTING BARS.

FOR 1-PH, 240/480V, 3-WIRE SYSTEMS: H-H-N-G (480V TO HIGH MAST) & H-N-G (240V TO STANDARD)

REV.: 0	W.F.P.#:	EST.:	W.O.:	REV.: 2	W.F.P.#:	EST.:	W.O.:
DWN.:	CHK.:	APPV.:	DATE:	DWN.: LGA	CHK.:	APPV.:	DATE:
DESC.:				DESC.:			
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DWN.:	CHK.:	APPV.:	DATE:	DWN.: LGA	CHK.:	APPV.:	DATE:
DESC.:				DESC.:			
				GRID:		SCALE: N/A	

SPLIT-PHASE LIGHTING SYSTEMS
240/480V, 3-WIRE
CONTROL SCHEMATIC & CABINET DETAILS

CC 2

SHEET REV

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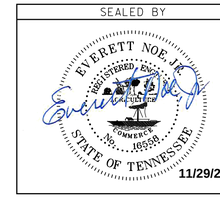

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

CONTROL CENTERS

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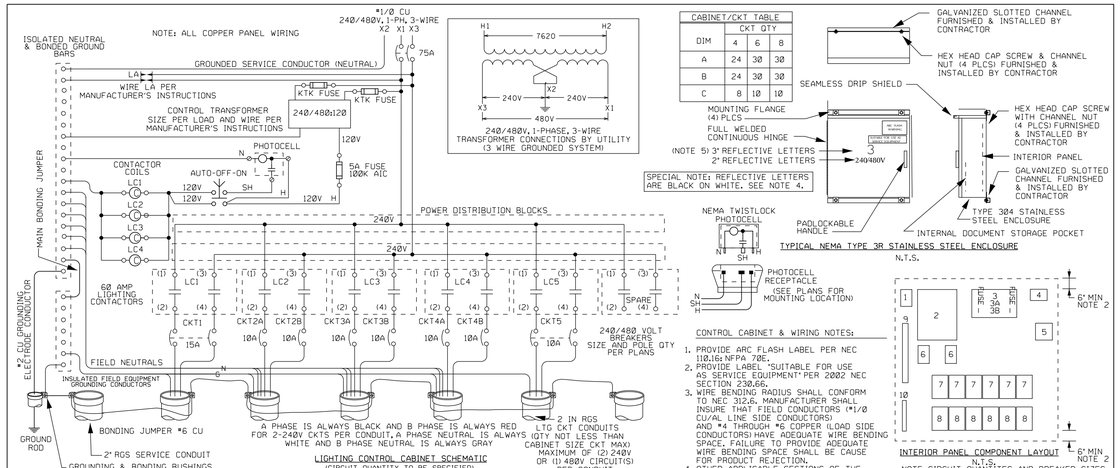
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-23



LIGHTING CONTROL CABINET SCHEMATIC
(CIRCUIT QUANTITY TO BE SPECIFIED)

CABINET/CKT TABLE	CKT QTY		
DIM	4	6	8
A	24	30	30
B	24	30	30
C	8	10	10

TYPICAL NEMA TYPE 3R STAINLESS STEEL ENCLOSURE
N.T.S.

CONTROL CABINET & WIRING NOTES:

1. PROVIDE ARC FLASH LABEL PER NEC 110.16: NFPA 70E.
2. PROVIDE LABEL "SUITABLE FOR USE AS SERVICE EQUIPMENT" PER 2002 NEC SECTION 230.66.
3. WIRE BENDING RADIUS SHALL CONFORM TO NEC 312.6. MANUFACTURER SHALL INSURE THAT FIELD CONDUCTORS (#1/0 CU/AL LINE SIDE CONDUCTORS) AND #4 THROUGH #6 COPPER (LOAD SIDE CONDUCTORS) HAVE ADEQUATE WIRE BENDING SPACE. FAILURE TO PROVIDE ADEQUATE WIRE BENDING SPACE SHALL BE CAUSE FOR PRODUCT REJECTION.
4. OTHER APPLICABLE SECTIONS OF THE NEC NOT SPECIFICALLY MENTIONED SHALL APPLY TO THIS EQUIPMENT.
5. CONTACT COK FOR CONTROL CABINET NUMBER.
6. SUBMIT MFGR'S CUT SHEETS, CERTIFICATIONS, & WARRANTY INFORMATION ON ALL PROPOSED COMPONENTS TO BE USED IN CONTROL CABINET AND OBTAIN COK APPROVAL PRIOR TO PURCHASING. NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL FROM COK ENGINEERING.
7. GROUND BAR SHALL BE BONDED DIRECTLY TO THE PANEL WITH A DEDICATED BONDING SCREW.
8. FOR SUBPANEL, PROVIDE MANUFACTURER SUPPLIED MOUNTING BRACKETS OR SCREW STUDS PERMANENTLY ATTACHED TO THE BACK PANEL FOR MOUNTING COMPONENTS.
9. INSTALL A GROUNDING/BONDING BUSHING ON EACH CONDUIT. CONNECT #6 SOLID COPPER BONDING JUMPER AS SHOWN.
10. CABINET MUST PASS A CONTINUITY TEST AND LOW VOLTAGE, OPERATIONAL BENCH TEST PRIOR TO DELIVERY. QUALITY ASSURANCE TEST REPORT SHALL ACCOMPANY EACH CABINET.
11. THIS CONTROL CABINET IS NOT FOR FOR USE WITH 240V, 2-W OR 480V, 2-W PHASE-TO-GROUND SYSTEMS.
12. FOR FOUNDATION DETAILS AND INSTALLATION NOTES, SEE COK DRAWING A-15587.

INTERIOR PANEL COMPONENT LAYOUT
N.T.S.

NOTE: CIRCUIT QUANTITES AND BREAKER SIZES TO BE SPECIFIED FOR EACH CABINET

No.	QTY	DESCRIPTION	MATERIAL SPECIFICATIONS: (SUBSTITUTIONS REQUIRE WRITTEN COK APPROVAL) # - QTY TO BE SPECIFIED
1	1	SURGE SUPPRESSOR	IEEE C62.41 CATAGORY C, 100kA PER PHASE, 20kV/10kA SURGE CURRENT, NEMA LS-1, LED MONITORING OF EACH PHASE
2	1	MAIN CIRCUIT BREAKER	75 AMP, 2 POLE, 480 VOLT AC, MOLDED CASE, THERMAL-MAGNETIC, BOLT ON, FACTORY SEALED, 10kA IR @ 480 VOLTS, SQ D FAL
3	1	CONTROL TRANSFORMER	500 VA PRIMARY: 480V/240V AC; SECONDARY: 120V AC, PRIMARY FUSE KIT (WIRE PER MANUFACTURER'S INSTRUCTIONS)
3A	1	FUSE	5 AMP, 600V, 100K AIC RMS SYMMETRICAL, NON-RENEWABLE, BUSSMAN LIMITRON KTK-5
3B	1	FUSEHOLDER	30 AMP, 1 POLE MIDGET ULTRASAFE, 600 VAC, 100k AIC, FOR 10 X 38 MM MIDGET FUSES, FERRAZ SHAWMUT USM1I
4	1	TERMINAL BLOCK	30 AMP, 600 VAC, 4 POSITION, FOR #10-16 AWG COPPER WIRE, MARATHON CAT. NO. 1584
5	1	SELECTOR SWITCH	30 AMP, 2 NO CONTACT BLOCKS, 3-POSITION MAINTAINED, HAND-OFF-AUTO LEGEND , SQ D 9001BG112
6	2	POWER DISTRIBUTION BLOCK	2/0-12 MAIN SIDE, 4-14 SECONDARY SIDE; RATED FOR USE WITH COPPER CONDUCTORS
7	#	CONTACTOR	600V AC, 60 AMP, OPEN TYPE, 2 POLE NORMALLY OPEN CONTACTS, 120 VOLT COIL, SQ D 8910 DPA62V02
8	#	FEEDER CIRCUIT BREAKERS	1-POLE OR 2-POLE, 480V AC, 10kA IR @ 480V, MOLDED CASE, THERMAL-MAGNETIC, INDIVIDUAL MTD, SQ D FAL TYPE
9	1	NEUTRAL BAR (ISOLATED)	24 PLCS MIN: #14-#1/0 STRANDED COPPER CONDUCTORS
10	1	GND BAR (BONDED)	12 PLCS MIN: #14-#1/0 STRANDED COPPER CONDUCTORS (BONDING SCREW-NO ATTACHMENTS)
12	1	ENCLOSURE	NEMA 3R, STAINLESS STEEL, SIZE AS SPECIFIED, CONTINUOUS PAD-LOCKABLE HANDLE, METAL SUBPLATE, DRIP SHIELD, CONTINUOUSLY WELDED SS HINGE, EXTERNAL MOUNTING FEET, INTERNAL DOCUMENT POCKET, UNISTRUT MOUNTING BARS.

FOR 1-PH, 240/480V, 3-WIRE SYSTEMS: H-H-N-G (480V TO HIGH MAST) & H-N-G (240V TO STANDARD)

REV.: 0	W.F.P.R:	EST.:	W.O.:	REV.: 2	W.F.P.R:	EST.:	W.O.:
DWN.:	CHK.:	APPV.:	DATE:	DWN.: LGA	CHK.:	APPV.:	DATE:
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DESC.:				DESC.:			
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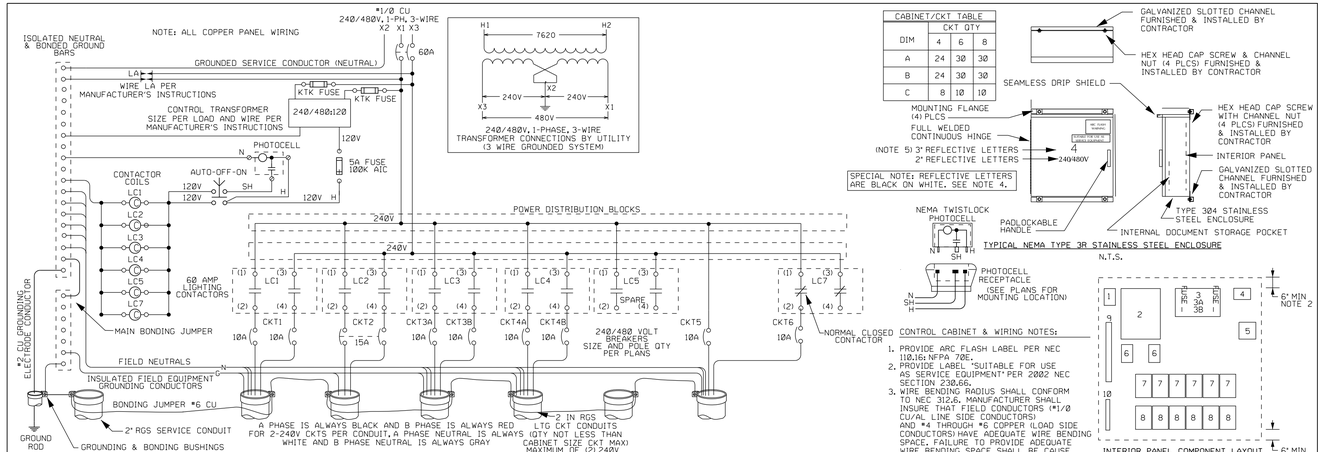
SPLIT-PHASE LIGHTING SYSTEMS
240/480V, 3-WIRE
CONTROL SCHEMATIC & CABINET DETAILS

CC 3

SHEET REV



LIGHTING CONTROL CABINET SCHEMATIC
(CIRCUIT QUANTITY TO BE SPECIFIED)

CABINET/CKT TABLE	CKT QTY		
DIM	4	6	8
A	24	30	30
B	24	30	30
C	8	10	10

TYPICAL NEMA TYPE 3R STAINLESS STEEL ENCLOSURE
N.T.S.

CONTROL CABINET & WIRING NOTES:

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2. PROVIDE LABEL "SUITABLE FOR USE AS SERVICE EQUIPMENT" PER 2002 NEC SECTION 230.66.
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8. FOR SUBPANEL, PROVIDE MANUFACTURER SUPPLIED MOUNTING BRACKETS OR SCREW STUDS PERMANENTLY ATTACHED TO THE BACK PANEL FOR MOUNTING COMPONENTS.
9. INSTALL A GROUNDING/BONDING BUSHING ON EACH CONDUIT. CONNECT #6 SOLID COPPER BONDING JUMPER AS SHOWN.
10. CABINET MUST PASS A CONTINUITY TEST AND LOW VOLTAGE, OPERATIONAL BENCH TEST PRIOR TO DELIVERY. QUALITY ASSURANCE TEST REPORT SHALL ACCOMPANY EACH CABINET.
11. THIS CONTROL CABINET IS NOT FOR FOR USE WITH 240V, 2-W OR 480V, 2-W PHASE-TO-GROUND SYSTEMS.
12. FOR FOUNDATION DETAILS AND INSTALLATION NOTES, SEE COK DRAWING A-15587.

INTERIOR PANEL COMPONENT LAYOUT
N.T.S.

NOTE: CIRCUIT QUANTITES AND BREAKER SIZES TO BE SPECIFIED FOR EACH CABINET

No.	QTY	DESCRIPTION	MATERIAL SPECIFICATIONS: (SUBSTITUTIONS REQUIRE WRITTEN COK APPROVAL) # - QTY TO BE SPECIFIED
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2	1	MAIN CIRCUIT BREAKER	60 AMP, 2 POLE, 480 VOLT AC, MOLDED CASE, THERMAL-MAGNETIC, BOLT ON, FACTORY SEALED, 10kA IR @ 480 VOLTS, SQ D FAL
3	1	CONTROL TRANSFORMER	500 VA PRIMARY: 480V/240V AC; SECONDARY: 120V AC, PRIMARY FUSE KIT (WIRE PER MANUFACTURER'S INSTRUCTIONS)
3A	1	FUSE	5 AMP, 600V, 100K AIC RMS SYMMETRICAL, NON-RENEWABLE, BUSSMAN LIMITRON KTK-5
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5	1	SELECTOR SWITCH	30 AMP, 2 NO CONTACT BLOCKS, 3-POSITION MAINTAINED, HAND-OFF-AUTO LEGEND , SQ D 9001BG112
6	2	POWER DISTRIBUTION BLOCK	2/0-12 MAIN SIDE, 4-14 SECONDARY SIDE; RATED FOR USE WITH COPPER CONDUCTORS
7	#	CONTACTOR	600V AC, 60 AMP, OPEN TYPE, 2 POLE NORMALLY OPEN CONTACTS, 120 VOLT COIL, SQ D 8910 DPA62V02
8	#	FEEDER CIRCUIT BREAKERS	1-POLE OR 2-POLE, 480V AC, 10kA IR @ 480V, MOLDED CASE, THERMAL-MAGNETIC, INDIVIDUAL MTD, SQ D FAL TYPE
9	1	NEUTRAL BAR (ISOLATED)	24 PLCS MIN: #14-#1/0 STRANDED COPPER CONDUCTORS
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12	1	ENCLOSURE	NEMA 3R, STAINLESS STEEL, SIZE AS SPECIFIED, CONTINUOUS PAD-LOCKABLE HANDLE, METAL SUBPLATE, DRIP SHIELD, CONTINUOUSLY WELDED SS HINGE, EXTERNAL MOUNTING FEET, INTERNAL DOCUMENT POCKET, UNISTRUT MOUNTING BARS.

FOR 1-PH, 240/480V, 3-WIRE SYSTEMS: H-H-N-G (480V TO HIGH MAST) & H-N-G (240V TO STANDARD)

REV.: 0	W.F.P.R:	EST.:	W.O.:	REV.: 2	W.F.P.R:	EST.:	W.O.:
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DESC.:				DESC.:			
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DWN.:	CHK.:	APPV.:	DATE:	DWN.: LGA	CHK.:	APPV.:	DATE:
DESC.:				DESC.:			
				GRID:		SCALE: N/A	

SPLIT-PHASE LIGHTING SYSTEMS
240/480V, 3-WIRE
CONTROL SCHEMATIC & CABINET DETAILS

CC 4

SHEET REV

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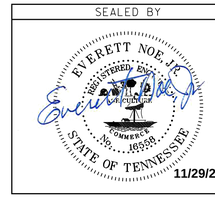

11/29/22

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

CONTROL CENTERS

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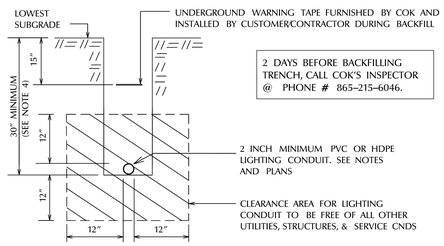
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-24

• LAST REVISION: REVISE NOTES TO INCLUDE TDOT STDS

GENERAL NOTES:

1. INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND COK CONTRACT DOCUMENTS. COK, AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
2. AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND ALSO SHALL CONTACT COK PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS..
3. ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY COK PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE BACKFILLING. FAILURE TO HAVE COK INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
4. CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL CONDUIT AND FITTINGS. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-40 OR 80 ELECTRIC POWER CONDUIT MEETING THE REQUIREMENTS OF ASTM D1248 & D2447. HDPE DUCT WHEN ALLOWED MAY HAVE ADDITIONAL REQUIREMENTS; CONTACT COK FOR APPROVED MATERIALS.
5. CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
6. LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 10 FEET UNLESS OTHERWISE DIRECTED BY COK.
7. ALL HORIZONTAL CHANGES IN CONDUIT ELEVATIONS SHALL BE SUPPORTED BY APPROVED BACKFILL MATERIAL AND COMPACTED TO ADJACENT SOIL COMPACTION. .
8. THE MAXIMUM OF BENDS IN ANY CONDUIT IS NOT TO EXCEED 270 DEGREES. FACTORY BENDS ARE REQUIRED AT ALL POLES, PULL BOXES, AND STRUCTURE MOUNTING. HEAT BENDING OF CONDUIT IS NOT ACCEPTABLE. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF COK INSPECTOR.
9. TRENCH DEPTH FOR DIRECT BURIAL CONDUIT IN EARTH IS 30IN (MIN) BELOW SUBGRADE. FOR CONDUIT INSTALLATION UNDER DRIVEWAYS, ROADWAYS, OR PARKING AREAS SEE COK DRAWING A-15578 AND B-15710.
10. BOTTOM 15IN OF TRENCH BACKFILL TO BE IN CLEAN GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3/4IN OR ANY MATERIAL WHICH COULD DAMAGE CONDUIT. REMAINING BACKFILL TO BE GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3IN.
11. REFER TO LOCAL MUNICIPAL STANDARDS FOR REQUIREMENTS FOR STREET CUTS AND REPAIRS AND SIDEWALK REMOVALS AND REPAIRS.
12. CONTACT COK INSPECTOR IF ROCK IS ENCOUNTERED IN TRENCH ROUTE. INSTALLATION DETAILS OF TDOT DRAWING T-L-4 AND/OR COK ACCEPTABLE PRACTICE SHALL APPLY FOR CONDUIT ON ROCK



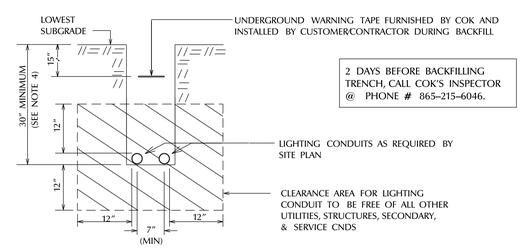
REFERENCE TDOT DRAWING T-L-4 FOR ADDITIONAL STATE & FEDERAL HIGHWAY INSTALLATION REQUIREMENTS

ELECTRIC TRENCH DETAIL WITH ONE 2 INCH LIGHTING CONDUIT	REVISION: 2 (12/26/2013)
ORIG DWG BY: LGA DATE: 6-28-13 SHEET 1 OF 1 SHEETS	A-15576

• LAST REVISION: REVISE NOTES TO INCLUDE TDOT STDS

GENERAL NOTES:

1. INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND COK CONTRACT DOCUMENTS. COK, AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
2. AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND ALSO SHALL CONTACT COK PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS..
3. ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY COK PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE BACKFILLING. FAILURE TO HAVE COK INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
4. CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL CONDUIT AND FITTINGS. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-40 OR 80 ELECTRIC POWER CONDUIT MEETING THE REQUIREMENTS OF ASTM D1248 & D2447. HDPE DUCT WHEN ALLOWED MAY HAVE ADDITIONAL REQUIREMENTS; CONTACT COK FOR APPROVED MATERIALS.
5. CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
6. LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 10 FEET UNLESS OTHERWISE DIRECTED BY COK.
7. ALL HORIZONTAL CHANGES IN CONDUIT ELEVATIONS SHALL BE SUPPORTED BY APPROVED BACKFILL MATERIAL AND COMPACTED TO ADJACENT SOIL COMPACTION. .
8. THE MAXIMUM OF BENDS IN ANY CONDUIT IS NOT TO EXCEED 270 DEGREES. FACTORY BENDS ARE REQUIRED AT ALL POLES, PULL BOXES, AND STRUCTURE MOUNTING. HEAT BENDING OF CONDUIT IS NOT ACCEPTABLE. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF COK INSPECTOR.
9. TRENCH DEPTH FOR DIRECT BURIAL CONDUIT IN EARTH IS 30IN (MIN) BELOW SUBGRADE. FOR CONDUIT INSTALLATION UNDER DRIVEWAYS, ROADWAYS, OR PARKING AREAS SEE COK DRAWING A-15578 AND B-15710.
10. BOTTOM 15IN OF TRENCH BACKFILL TO BE IN CLEAN GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3/4IN OR ANY MATERIAL WHICH COULD DAMAGE CONDUIT. REMAINING BACKFILL TO BE GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3IN.
11. REFER TO LOCAL MUNICIPAL STANDARDS FOR REQUIREMENTS FOR STREET CUTS AND REPAIRS AND SIDEWALK REMOVALS AND REPAIRS.
12. CONTACT COK INSPECTOR IF ROCK IS ENCOUNTERED IN TRENCH ROUTE. INSTALLATION DETAILS OF TDOT DRAWING T-L-4 AND/OR COK ACCEPTABLE PRACTICE SHALL APPLY FOR CONDUIT ON ROCK



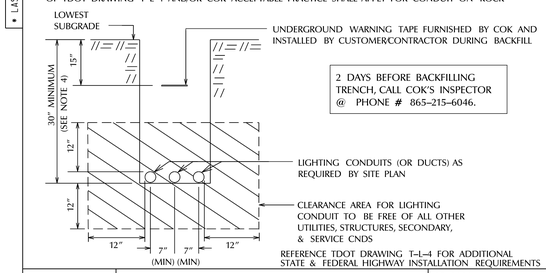
REFERENCE TDOT DRAWING T-L-4 FOR ADDITIONAL STATE & FEDERAL HIGHWAY INSTALLATION REQUIREMENTS

ELECTRIC TRENCH DETAIL WITH TWO-2 INCH LIGHTING CONDUITS	REVISION: 1 (12/26/2013)
ORIG DWG BY: LGA DATE: 6/29/2013 SHEET 1 OF 1 SHEETS	A-15577

• LAST REVISION: REVISE NOTES TO INCLUDE TDOT STDS

GENERAL NOTES:

1. INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND COK CONTRACT DOCUMENTS. COK, AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
2. AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND ALSO SHALL CONTACT COK PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS..
3. ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY COK PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE BACKFILLING. FAILURE TO HAVE COK INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
4. CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL CONDUIT AND FITTINGS. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-40 OR 80 ELECTRIC POWER CONDUIT MEETING THE REQUIREMENTS OF ASTM D1248 & D2447. HDPE DUCT WHEN ALLOWED MAY HAVE ADDITIONAL REQUIREMENTS; CONTACT COK FOR APPROVED MATERIALS.
5. CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
6. LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 10 FEET UNLESS OTHERWISE DIRECTED BY COK.
7. ALL HORIZONTAL CHANGES IN CONDUIT ELEVATIONS SHALL BE SUPPORTED BY APPROVED BACKFILL MATERIAL AND COMPACTED TO ADJACENT SOIL COMPACTION. .
8. THE MAXIMUM OF BENDS IN ANY CONDUIT IS NOT TO EXCEED 270 DEGREES. FACTORY BENDS ARE REQUIRED AT ALL POLES, PULL BOXES, AND STRUCTURE MOUNTING. HEAT BENDING OF CONDUIT IS NOT ACCEPTABLE. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF COK INSPECTOR.
9. TRENCH DEPTH FOR DIRECT BURIAL CONDUIT IN EARTH IS 30IN (MIN) BELOW SUBGRADE. FOR CONDUIT INSTALLATION UNDER DRIVEWAYS, ROADWAYS, OR PARKING AREAS SEE COK DRAWING A-15578 AND B-15710.
10. BOTTOM 15IN OF TRENCH BACKFILL TO BE IN CLEAN GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3/4IN OR ANY MATERIAL WHICH COULD DAMAGE CONDUIT. REMAINING BACKFILL TO BE GRAVEL OR WELL-TAMPED SOIL, FREE OF HARD MATERIAL LARGER THAN 3IN.
11. REFER TO LOCAL MUNICIPAL STANDARDS FOR REQUIREMENTS FOR STREET CUTS AND REPAIRS AND SIDEWALK REMOVALS AND REPAIRS.
12. CONTACT COK INSPECTOR IF ROCK IS ENCOUNTERED IN TRENCH ROUTE. INSTALLATION DETAILS OF TDOT DRAWING T-L-4 AND/OR COK ACCEPTABLE PRACTICE SHALL APPLY FOR CONDUIT ON ROCK



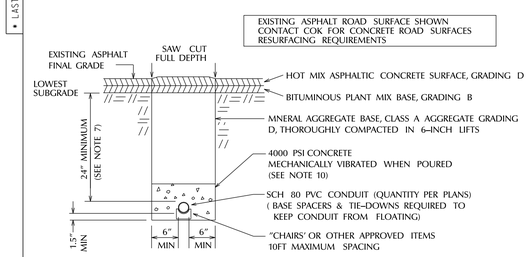
REFERENCE TDOT DRAWING T-L-4 FOR ADDITIONAL STATE & FEDERAL HIGHWAY INSTALLATION REQUIREMENTS

ELECTRIC TRENCH DETAILS WITH THREE 2 INCH LIGHTING CONDUITS	REVISION: 1 (12/26/2013)
ORIG DWG BY: LGA DATE: 6-28-13 SHEET 1 OF 1 SHEETS	A-15575

• LAST REVISION: REVISE NOTES AND DETAILS TO INCLUDE TDOT STDS

GENERAL NOTES:

1. INSTALLATION SHALL MEET THE REQUIREMENTS OF NEC, NESC, AND COK CONTRACT DOCUMENTS. COK, AS OWNER, SHALL DECIDE THE MOST STRINGENT REQUIREMENTS TO USE SHOULD CONFLICTS ARISE.
2. AT LEAST 3 DAYS, BUT NOT MORE THAN 10 DAYS IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM AT 811 AND SHALL ALSO CONTACT THE COK PROJECT INSPECTOR TO ARRANGE FOR INSPECTIONS.
3. ALL TRENCHES FOR LIGHTING CONDUITS MUST BE INSPECTED BY COK PROJECT INSPECTOR AFTER PLACEMENT OF CONDUIT AND BEFORE POURING CONCRETE OR BACKFILLING. FAILURE TO HAVE A COK INSPECTION PRIOR TO BACKFILLING WILL RESULT IN REJECTION OF THE WORK.
4. CUSTOMER/CONTRACTOR TO EXCAVATE AND BACKFILL TRENCHES AND TO FURNISH AND INSTALL 2 INCH CONDUIT. ENCASED CONDUIT TO BE GRAY PVC SCHEDULE-80 ELECTRIC POWER CONDUIT (EPC-80) MEETING THE REQUIREMENTS OF ASTM D 1248 & D 2447. CUSTOMER TO FURNISH AND INSTALL PVC SOLVENT CEMENT AT EACH CONDUIT JOINT PER MANUFACTURERS INSTRUCTIONS. SEE SITE PLAN FOR QUANTITY AND LOCATION OF CONDUIT. HDPE DUCT, WHEN ALLOWED, MAY HAVE ADDITIONAL REQUIREMENTS. CONTACT COK FOR APPROVED MATERIALS.
5. CUSTOMER/CONTRACTOR TO FURNISH AND INSTALL 210LB-TEST POLYLINE PULL-STRING IN ALL CONDUITS.
6. LIGHTING CONDUIT TO BE INSTALLED AS STRAIGHT AS PRACTICAL. ANY DEFINED CHANGES IN DIRECTION SHALL HAVE A BENDING RADIUS OF NOT LESS THAN 50 FEET UNLESS OTHERWISE DIRECTED BY COK. THE MAXIMUM NUMBER OF BENDS IN ANY CONDUIT RUN IS NOT TO EXCEED 270 DEGREES. CONDUIT IS SUBJECT TO MANDREL TESTING FOR ROUNDNESS IN THE PRESENCE OF COK INSPECTOR.
7. REQUIRED ENCASED CONDUIT TRENCH DEPTH IS 30 INCHES MINIMUM (36IN UNDER VEHICLE TRAVEL AREAS) FROM TOP OF CONDUIT TO LOWEST SUBGRADE. EXTEND CONDUIT ENCASEMENT 3 FEET MINIMUM BEYOND ALL PAVED SURFACES. EXTEND CONDUIT 6 INCHES MINIMUM BEYOND CONCRETE ENCASEMENT.
8. WHERE MORE THAN (1) 2 INCH CONDUIT IS INSTALLED IN TRENCH, CONDUITS SHALL NOT BE PLACED CLOSER THAN 8 INCHES CENTER TO CENTER.
9. CONCRETE SHALL BE PROPERLY VIBRATED WHEN INSTALLED TO INSURE COMPLETE FLOW UNDER AND AROUND CONDUIT TO ELIMINATE ANY AIR POCKETS. ALLOW CONCRETE TO SET FIRM BEFORE BACKFILLING REMAINDER OF TRENCH. FOR CONCRETE ROADWAYS, FILL TRENCH WITH CONCRETE TO FINAL ROADWAY GRADE.
10. FOR ADDITIONAL CONCRETE DETAIL INFORMATION, SEE COK DWG-16132-DINFO AND DWG-16132-DL9.



REFERENCE TDOT DRAWING T-L-4 FOR ADDITIONAL STATE & FEDERAL HIGHWAY INSTALLATION REQUIREMENTS

ELECTRIC TRENCH DETAIL FOR 2 INCH CONDUITS UNDER ASPHALT TRAFFIC BEARING AREAS	REVISION: 2 (1/24/2014)
ORIG DWG BY: LGA DATE: 6/29/2013 SHEET 1 OF 1 SHEETS	A-15578

• LAST REVISION: CHANGED DRAWING NUMBER FROM 16350-DINFO TO 16132-DINFO.

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	15"	12"	4.3 CU-YDS
3"	15"	13"	4.9 CU-YDS
4"	15"	14"	5.4 CU-YDS
5"	18"	15"	6.1 CU-YDS
6"	18"	16"	6.8 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	18"	12"	5.3 CU-YDS
3"	18"	13"	6.2 CU-YDS
4"	24"	14"	7.2 CU-YDS
5"	24"	15"	8.2 CU-YDS
6"	24"	16"	9.3 CU-YDS

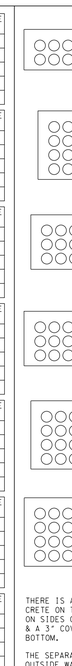
CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	12"	6.7 CU-YDS
3"	24"	13"	7.8 CU-YDS
4"	30"	14"	9.3 CU-YDS
5"	30"	15"	10.4 CU-YDS
6"	30"	16"	11.6 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	12"	7.5 CU-YDS
3"	30"	13"	9.2 CU-YDS
4"	36"	14"	11.0 CU-YDS
5"	36"	15"	12.4 CU-YDS
6"	36"	16"	13.9 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	18"	16"	7.0 CU-YDS
3"	18"	18"	8.3 CU-YDS
4"	24"	20"	9.9 CU-YDS
5"	24"	23"	11.3 CU-YDS
6"	24"	25"	12.8 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	16"	8.7 CU-YDS
3"	24"	18"	10.4 CU-YDS
4"	30"	20"	12.5 CU-YDS
5"	30"	23"	14.6 CU-YDS
6"	30"	25"	16.8 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	18"	21"	9.1 CU-YDS
3"	18"	24"	10.8 CU-YDS
4"	24"	27"	13.0 CU-YDS
5"	24"	32"	15.2 CU-YDS
6"	24"	35"	17.5 CU-YDS



CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	16"	9.8 CU-YDS
3"	30"	18"	12.3 CU-YDS
4"	36"	20"	14.9 CU-YDS
5"	36"	23"	17.1 CU-YDS
6"	42"	25"	19.8 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	18"	25"	10.6 CU-YDS
3"	18"	29"	13.0 CU-YDS
4"	24"	33"	15.8 CU-YDS
5"	24"	40"	18.5 CU-YDS
6"	24"	44"	21.3 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	21"	11.3 CU-YDS
3"	24"	24"	13.7 CU-YDS
4"	30"	27"	16.6 CU-YDS
5"	30"	32"	19.3 CU-YDS
6"	30"	35"	22.1 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	21"	12.5 CU-YDS
3"	30"	24"	16.0 CU-YDS
4"	36"	27"	19.4 CU-YDS
5"	36"	32"	22.7 CU-YDS
6"	42"	35"	26.3 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	25"	13.0 CU-YDS
3"	24"	29"	16.4 CU-YDS
4"	30"	33"	20.1 CU-YDS
5"	30"	40"	23.5 CU-YDS
6"	30"	44"	27.0 CU-YDS

CND SIZE	MIN WIDTH	MIN DEPTH	CU-YDS CONCRETE PER 100FT RUN
2"	24"	25"	15.6 CU-YDS
3"	30"	29"	19.1 CU-YDS
4"	36"	33"	22.4 CU-YDS
5"	36"	40"	24.7 CU-YDS
6"	42"	44"	28.3 CU-YDS

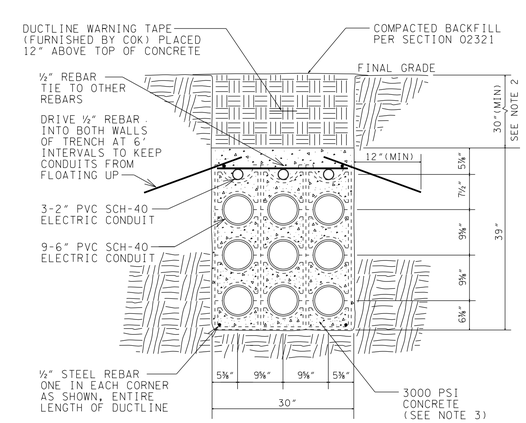
THERE IS A 6" COVER OF CONCRETE ON TOP. A 2"- 6" COVER ON SIDES OF OUTER CONDUITS, & A 3" COVER OF CONCRETE ON BOTTOM.

THE SEPARATION BETWEEN CONDUIT OUTSIDE WALL SURFACES IN ROWS AND COLUMNS IS 2".

CND SIZE	OUTSIDE DIMENSION
2"	2-3/8"
3"	3-1/2"
4"	4-1/2"
5"	5-9/16"
6"	6-5/8"

MINIMUM DUCTLINE DIMENSIONS AND CONCRETE REQUIREMENTS	LAST UPDATE: 6-30-04 CEA
ORIG DWG BY: CEA DATE: 8-23-01 SHEET 1 OF 1 SHEETS	DWG-16132-DINFO

• LAST REVISION: CHANGED 12" TO 18" MINIMUM DIRT DEPTH IN NOTE 2



STANDARD MAIN DUCTLINE SECTION VIEW

SCALE: 1" = 15"

NOTES:

1. INSTALL INTERLOCKING BASE SPACERS THAT PROVIDE 3" SPACE UNDERNEATH CONDUIT AND 3" HORIZONTAL SPACE BETWEEN OUTSIDE CONDUIT WALLS. INSTALL INTERLOCKING INTERMEDIATE SPACERS THAT PROVIDE 3" HORIZONTAL & VERTICAL SPACE BETWEEN OUTSIDE CONDUIT WALLS. SPACERS SHALL BE INSTALLED AT 6' INTERVALS THE ENTIRE LENGTH OF DUCTLINE. (SPACERS SHOWN BY DASHED LINES IN ABOVE DRAWING.)
2. EXCEPT UNDER ROADWAYS, 2" OF ADDITIONAL CONCRETE ON TOP OF DUCTLINE CAN REPLACE 6" OF DIRT BACKFILL, UP TO A MINIMUM DEPTH OF 18" OF DIRT. THIS ALLOWANCE SHOULD BE USED ONLY IN CASES OF ROCK AND/OR CONFLICTS WITH OTHER UTILITIES.
3. CONCRETE SHALL BE PROPERLY VIBRATED WHEN INSTALLED TO INSURE COMPLETE FLOW UNDER, AROUND, AND BETWEEN ALL CONDUITS, AND TO ELIMINATE ANY AIR POCKETS. ALLOW CONCRETE TO SET FIRM BEFORE BACKFILLING.
4. SEE SECTION 02580 FOR ADDITIONAL DETAILS.

TYPICAL MAIN DUCTLINE INSTALLATION CONCRETE-ENCASED PVC CONDUITS	LAST UPDATE: 3-29-10 CEA
ORIG DWG BY: CEA DATE: 1-24-02 SHEET 1 OF 1 SHEETS	DWG-16132-DL9

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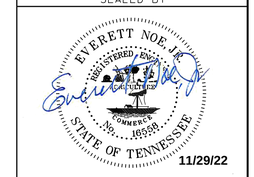

11/29/22

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

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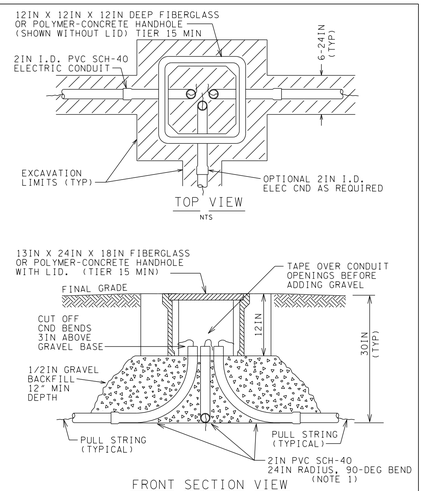
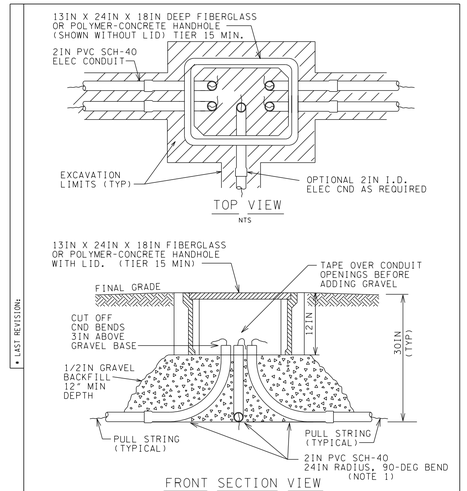
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-25



NOTES:
1. CONDUIT BENDS FEEDING RADIAL TAPS INTO POLES MAY BE REDUCED TO 12" MIN BEND RADIUS.
2. FOR USE WITH 4 CONDUITS MAXIMUM.
3. CONCRETE APRON REQUIRED IF USED IN NON-DELIBERATE TRAFFIC BEARING AREAS. SEE COK DRAWING A-15610.

12" X 12" X 12" DEEP PULL BOX INSTALLATION DETAILS			LAST UPDATE: 1-8-14
ORIG DWG BY: LGA	DATE: 8-14-13	SHEET 1 OF 1 SHEETS	A- 15608



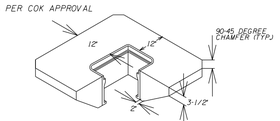
NOTES:
1. CONDUIT BENDS FEEDING RADIAL TAPS INTO POLES MAY BE REDUCED TO 12" MIN BEND RADIUS.
2. FOR USE WITH 6 CONDUITS MAXIMUM.
3. CONCRETE APRON REQUIRED IF USED IN NON-DELIBERATE TRAFFIC BEARING AREAS. SEE COK DRAWING A-15610.

13" X 24" X 18" DEEP PULL BOX INSTALLATION DETAILS			LAST UPDATE: 1-8-14
ORIG DWG BY: LGA	DATE: 8-14-13	SHEET 1 OF 1 SHEETS	A- 15609

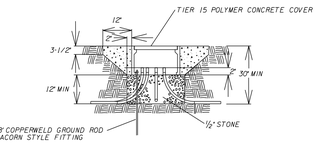
STANDARD COK APPROVED PULL BOX SIZES:
12" x 12" x 12" (MAXIMUM OF 2-2" CONDUITS) QUAZITE PC STYLE
13" x 24" x 18" (MAXIMUM OF 6-2" CONDUITS) QUAZITE PG STYLE
17" x 30" x 18" (UP TO 8-2" CONDUITS)

REFERENCES:
UL LISTED TO ANSI/SCTE 77
2008 NEC SECTION 314.20

LARGER PULL BOXES PER COK APPROVAL



CONCRETE APRON AROUND JUNCTION BOX
NO SCALE
(APPROX.7 CUBIC FEET OF CONCRETE IN NEAT SECTION)
NOTE:4000 POUNDS PER SQUARE INCH AT 28 DAYS.

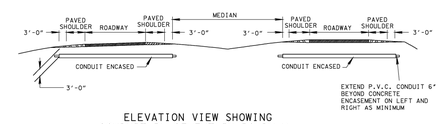


CONCRETE POLYMER JUNCTION BOX INSTALLATION
NO SCALE

NOTES:
1. CIRCUIT WIRES ARE NOT SHOWN. SEE PLANS.
2. CIRCUITS SHALL BE SPLICED WITH SPLIT BOLT CONNECTORS AND COVERED WITH RUBBER TAPE EQUAL TO 2 TIMES THE INSULATION THICKNESS WITH A FINAL COAT OF VINYL ELECTRICAL TAPE.
3. CONCRETE POLYMER PULL BOX SHALL HAVE A MINIMUM TIER 15 RATING. LOCATIONS FOR USE LIMITED TO OPEN FIELD AND NON-TRAFFIC BEARING AREAS.
4. AASHTO H-20 RATED PREFABRICATED OR POURED IN PLACE CONCRETE PULL BOXES SHALL BE USED IN TRAVEL LANES, SHOULDERS, OR AREAS EXPOSED TO VEHICULAR TRAFFIC. COK APPROVAL REQUIRED.
5. GROUND ROD SHALL BE INSTALLED IN PULL BOXES WHEN LOCATED NEAR LIGHT POLES OR IN THE FIRST PULL BOX EXITING BRIDGE INSTALLED LIGHT POLES.

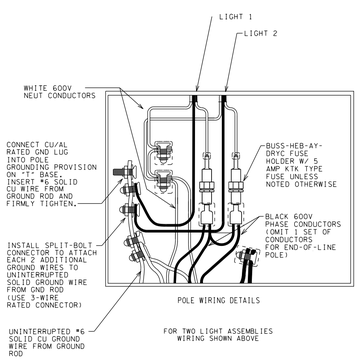
NOTE: COK APPROVED PULL BOXES ARE OPEN BOTTOM QUAZITE, HEAVY DUTY MINIMUM TIER 15 RATED BOX AND COVER STRAIGHT SIDE WITH (2) SS RENTA FASTENERS, SKID RESISTANT SURFACE, CORNER BOLTS WITH REPLACABLE EZ NUTS, AND (2) PULL SLOTS, AND "ELECTRIC" LOGO. FOR APPROVED TRAFFIC RATED PULL BOXES, CONTACT COK ENGINEERING.

W.E.P.I.:			INTERSTATE HIGHWAY LIGHTING SYSTEMS APPROVED PULL BOXES AND INSTALLATION DETAILS	
W.O.:		EST.:		
DATE: 3/19/2013		GRID.:		
DWN.: LGA				
CHK.:				
APPR.:				
DESC.: PULL BOX STANDARD INSTALL			SHEET 1 REV. Ø	A-15509
			SCALE: NONE	



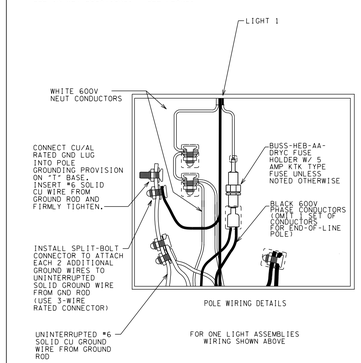
ELEVATION VIEW SHOWING
CONDUIT PLACEMENT IN ROADWAY
WITH PAVED SHOULDERS

INSTALLATION NOTES:
1. ALL PHASE, NEUTRAL, & GROUND CONNECTIONS IN THE COK SYSTEM ARE TO BE MADE WITH SPLIT-BOLT CONNECTORS & WRAPPED WITH SELF-VULCANIZING RUBBER TAPE APPLIED IN HALF LAP LAYERS TO GIVE A SMOOTH COVERING OF NOT LESS THAN 2 TIMES THE THICKNESS OF THE WIRE INSULATION. OVER THIS RUBBER TAPE APPLY AT LEAST TWO LAYERS OF HALF-LAPPED 7-MIL ULTRAVIOLET, ABRASION, MOISTURE, ALKALID, ACID, & CORROSION RESISTANT VINYL PLASTIC TAPE. WIRE NUTS ARE NEVER ALLOWED.
2. MULTIPLE LIGHTS ON SAME POLE ARE TO BE WIRED & FUSED INDEPENDENTLY AT LOCATIONS NOTED IN THE PLANS.
3. ALL WIRING BETWEEN POLES TO BE INSULATED (600V) COPPER WITH INSULATION RATED FOR DIRECT-BURIAL APPLICATIONS. (TYPE "XHHW" OR EQUIV). SIZE PER SITE PLAN.
4. MULTIPLE CIRCUITS IN SAME POLE. "T" BASE, OR PULLBOX SHALL BE COLOR-CODED WITH CIRCUIT IDENTIFICATION PER COK DWG-A-15688. CABLES IN PULL BOXES, MANHOLES, OR VAULTS MUST ALSO BE TAGGED WITH SOLID BRASS TAG.
5. ALL WIRING FROM POLE ACCESS TO LIGHTS/RECEPTACLES SHALL BE "THW" TYPE OR RATED FOR USE IN WET LOCATIONS. SEE PLANS.

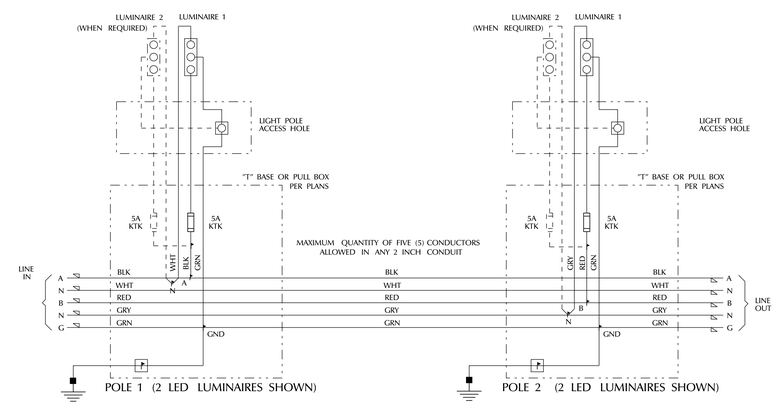


POLE FUSING DETAIL - TWO LIGHTS			LAST UPDATE:
ORIG DWG BY:	DATE:	SHEET OF SHEETS	

INSTALLATION NOTES:
1. ALL PHASE, NEUTRAL, & GROUND CONNECTIONS IN THE COK SYSTEM ARE TO BE MADE WITH SPLIT-BOLT CONNECTORS & WRAPPED WITH SELF-VULCANIZING RUBBER TAPE APPLIED IN HALF LAP LAYERS TO GIVE A SMOOTH COVERING OF NOT LESS THAN 2 TIMES THE THICKNESS OF THE WIRE INSULATION. OVER THIS RUBBER TAPE APPLY AT LEAST TWO LAYERS OF HALF-LAPPED 7-MIL ULTRAVIOLET, ABRASION, MOISTURE, ALKALID, ACID, & CORROSION RESISTANT VINYL PLASTIC TAPE. WIRE NUTS ARE NEVER ALLOWED.
2. MULTIPLE LIGHTS ON SAME POLE ARE TO BE WIRED & FUSED INDEPENDENTLY AT LOCATIONS NOTED IN THE PLANS.
3. ALL WIRING BETWEEN POLES TO BE INSULATED (600V) COPPER WITH INSULATION RATED FOR DIRECT-BURIAL APPLICATIONS. (TYPE "XHHW" OR EQUIV). SIZE PER SITE PLAN.
4. MULTIPLE CIRCUITS IN SAME POLE. "T" BASE, OR PULLBOX SHALL BE COLOR-CODED WITH CIRCUIT IDENTIFICATION PER COK DWG-A-15688. CABLES IN PULL BOXES, MANHOLES, OR VAULTS MUST ALSO BE TAGGED WITH SOLID BRASS TAG.
5. ALL WIRING FROM POLE ACCESS TO LIGHTS/RECEPTACLES SHALL BE "THW" TYPE OR RATED FOR USE IN WET LOCATIONS. SEE PLANS.



POLE FUSING DETAIL - ONE LIGHT			LAST UPDATE:
ORIG DWG BY:	DATE:	SHEET OF SHEETS	



TYPICAL POLE WIRING DIAGRAM FOR ONE OR TWO LUMINAIRES ON SAME POLE

120/240 VAC 2 WIRE (120 VOLTS TO LUMINARE) OR 240/480 VAC 2 WIRE (240 VOLTS TO LUMINARE)

TYPICAL POLE WIRING DETAIL
SCALE: N.T.S.

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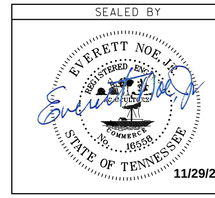

11/29/22

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

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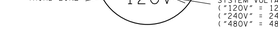
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-26

• LAST REVISION: NEWLY CONFIGURED SINGLE PHASE VOLTAGE CONFIGURATIONS



BRASS TAG - MANDATORY FOR ALL MANHOLES, VAULTS, & PULL BOXES

NOTE 1:
SOLID BRASS CABLE TAG SHALL BE APPROXIMATELY TWO INCHES ROUND WITH A SMALL HOLE NEAR ITS EDGE TO INSERT A TIE WIRE. LETTERS/NUMBERS SHALL BE APPROX. ONE-QUARTER INCH TALL & ENGRAVED IN THE CENTER OF THE TAG SIMILAR TO THAT SHOWN IN THE ABOVE SCALED DRAWING.

NOTE 2:
THE FIRST (TOP) LINE SHALL BE USED FOR CONTROLLER & CIRCUIT IDENTIFICATION. IN THIS LINE, THE NUMBER ON THE LEFT SHALL BE THE CONTROL CABINET NUMBER THAT IS ASSIGNED BY COK; THE NUMBER ON THE RIGHT IS THE LIGHTING OR RECEPTACLE CIRCUIT NUMBER. EACH CIRCUIT GROUP SHALL BE BUNDLED AND LABELED WITH THIS TAG.

NOTE 3:
GROUPED PHASE CONDUCTORS #6 AWG AND SMALLER SHALL BE WRAPPED IN COLOR-CODED ELECTRICAL TAPE AT ALL TERMINATIONS, CONNECTIONS, AND SPLICE POINTS USING COLORS PER THE FOLLOWING TABLE "A" AND PER NOTES.

TABLE A - CONDUCTOR COLOR TAPE CIRCUIT CODE

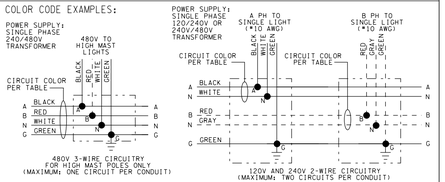
A PHASE HOT LEG IS ALWAYS BLACK	B PHASE HOT LEG IS ALWAYS RED
A PHASE NEUTRAL IS ALWAYS WHITE	B PHASE NEUTRAL IS ALWAYS GRAY

CIRCUIT IDENTIFIER COLOR CODING IS AS FOLLOWS:

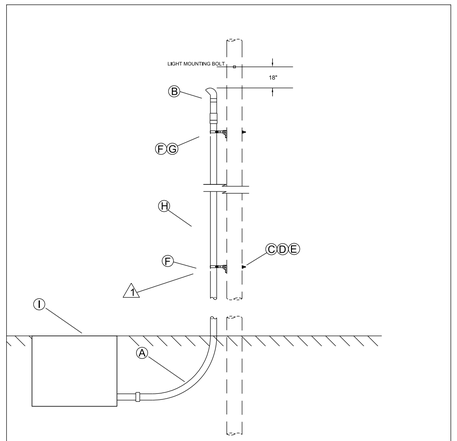
CIRCUIT 1 = BLACK	CIRCUIT 5 = YELLOW
CIRCUIT 2 = RED	CIRCUIT 6 = BROWN
CIRCUIT 3 = BLUE	CIRCUIT 7 = PURPLE
CIRCUIT 4 = ORANGE	CIRCUIT 8 = VIOLET

NOTE 4:
GROUPED PHASE CONDUCTORS #4 AWG SHALL USE SAME WIRE COLOR CODE FOR #6 AWG; HOWEVER, PER NEC REQUIREMENTS, WIRE SIZE #4 AND LARGER REQUIRE TAPE CIRCUIT COLOR CODES ONLY.

COLOR CODE EXAMPLES:



WIRE IDENTIFICATION FOR SINGLE PHASE LIGHTING CIRCUITS		LAST UPDATE: 8-27-15
ORIG DWG BY: LGA	DATE: 11-15-13	SHEET 1 OF 1 SHEETS	A- 15688



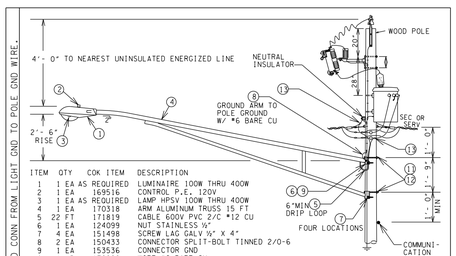
GENERAL NOTES:

1. SPACE CONDUIT BRACKETS 7 TO 8 FEET APART.
2. 3-#6CU THROUGH RIGIDL TRANSITION TO 2-#12TFX AT LIGHT FOR OVERHEAD CONNECTION.

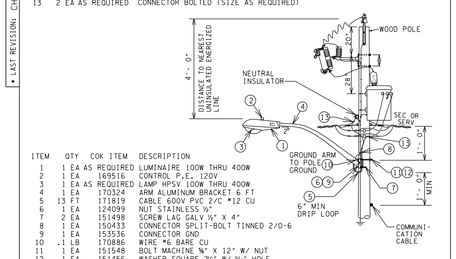
	QTY	DESCRIPTION
A	1	CONDUIT ELL 1", 36" RADIUS, RGS
B	1	WEATHERHEAD - 1"
C	5	MACHINE BOLT 5/8" X REQUIRED LENGTH
D	5	WASHER, 2-1/4" X 2-1/4" SQ. 11/16" HOLE
E	5	LOCKNUT NF, 5/8"
F	5	CONDUIT STAND OFF BRACKET, ALUMA FORM CSO-TYPE
G	5	CONDUIT CLAMP 1" ALUMINUM, ALUMA FORM
H	5	CONDUIT, 1" PVC SCH 80 (LENGTH AS REQUIRED)
I	1	TYPE "A" PULL BOX
J		
K		
L		
M		

SECONDARY UG RISER				DWG. No.
DATE 12/15/15	REVISION	DATE	REVISION	

• LAST REVISION: CHANGED CONN FROM LIGHT GND TO POLE GND WIRE.



ITEM	QTY	COK ITEM	DESCRIPTION
1	1 EA	AS REQUIRED	LUMINAIRE 100W THRU 400W
2	1 EA	169516	CONTROL P.E. 120V
3	1 EA	AS REQUIRED	LAMP HPSV 100W THRU 400W
4	1 EA	170318	ARM ALUMINUM TRUSS 15 FT
5	22 FT	171819	CABLE 600V PVC 2/C #12 CU
6	1 EA	124099	NUT STAINLESS ½"
7	4 EA	151498	SCREW LAG GALV ½" X 4"
8	2 EA	150433	CONNECTOR SPLIT-BOLT TINNED 2/0-6
9	1 EA	153536	CONNECTOR GND
10	.1 LB	170886	WIRE #6 BARE CU
11	2 EA	151548	BOLT MACHINE ⅝" X 12" W/ NUT
12	2 EA	151456	WASHER SQUARE 2¼" W/ ⅝" HOLE
13	2 EA	AS REQUIRED	CONNECTOR BOLTED (SIZE AS REQUIRED)



ITEM	QTY	COK ITEM	DESCRIPTION
1	1 EA	AS REQUIRED	LUMINAIRE 100W THRU 400W
2	1 EA	169516	CONTROL P.E. 120V
3	1 EA	AS REQUIRED	LAMP HPSV 100W THRU 400W
4	1 EA	170324	ARM ALUMINUM BRACKET 6 FT
5	13 FT	171819	CABLE 600V PVC 2/C #12 CU
6	1 EA	124099	NUT STAINLESS ½"
7	2 EA	151498	SCREW LAG GALV ½" X 4"
8	1 EA	150433	CONNECTOR SPLIT-BOLT TINNED 2/0-6
9	1 EA	153536	CONNECTOR GND
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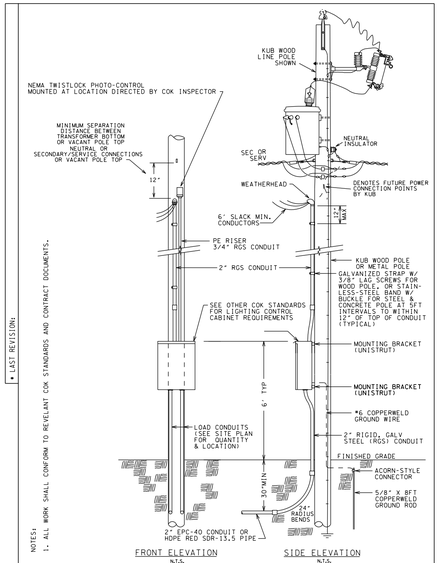
12	1 EA	151456	WASHER SQUARE 2¼" W/ ⅝" HOLE
13	2 EA	AS REQUIRED	CONNECTOR BOLTED (SIZE AS REQUIRED)

COBRAHEAD LIGHT & 15'TRUSS & 6'BRACKET ARM DISTRIBUTION WOOD POLE MOUNTING			LAST UPDATE: 12-5-12 TKI
ORIG DWG BY: LGA/CEA	DATE: 11-5-08	SHEET 1 OF 2 SHEETS	DWG-16521-WDMTG

• LAST REVISION:

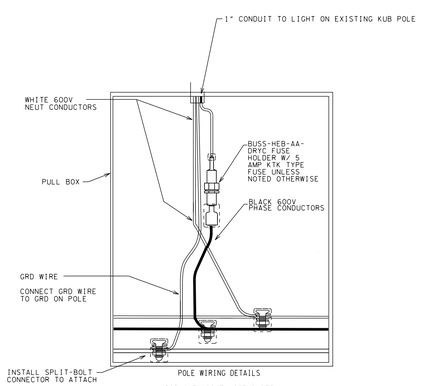
NOTES:
1. ALL WORK SHALL CONFORM TO REVELANT COK STANDARDS AND CONTRACT DOCUMENTS.



LIGHTING CONTROL CABINET ON KUB POLE INSTALLATION DETAILS			REV:	DATE:
ORIG DWG BY: LGA	DATE: 12/10/15	SHEET 1 OF 1 SHEETS	A- 15690	

INSTALLATION NOTES:

1. ALL PHASE, NEUTRAL, & GROUND CONNECTIONS IN THE COK SYSTEM ARE TO BE MADE WITH SPLIT-BOLT CONNECTORS & WRAPPED WITH SELF-VULCANIZING RUBBER TAPE APPLIED IN HALF LAP LAYERS TO GIVE A SMOOTH COVERING OF NOT LESS THAN 2 TIMES THE THICKNESS OF THE WIRE INSULATION. OVER THIS RUBBER TAPE APPLY AT LEAST TWO LAYERS OF HALF-LAPPED 7-MIL ULTRAVIOLET, ABRASION, MOISTURE, ALKALID, ACID, & CORROSION RESISTANT VINYL PLASTIC TAPE. WIRE NUTS ARE NEVER ALLOWED.
2. MULTIPLE LIGHTS ON SAME POLE ARE TO BE WIRED & FUSED INDEPENDENTLY AT LOCATIONS NOTED IN THE PLANS.
3. ALL WIRING BETWEEN POLES TO BE INSULATED (600V) COPPER WITH INSULATION RATED FOR DIRECT-BURIAL APPLICATIONS, (TYPE "XHHW" OR EQUIV). SIZE PER SITE PLAN.
4. MULTIPLE CIRCUITS IN SAME POLE, "T" BASE, OR PULLBOX SHALL BE COLOR-CODED WITH CIRCUIT IDENTIFICATION PER COK DWG-A-15688. CABLES IN PULL BOXES, MANHOLES, OR VAULTS MUST ALSO BE TAGGED WITH SOLID BRASS TAG.
5. ALL WIRING FROM POLE ACCESS TO LIGHTS/RECEPTACLES SHALL BE "THW" TYPE OR RATED FOR USE IN WET LOCATIONS. SEE PLANS.



POLE WIRING DETAILS
FOR ONE LIGHT ASSEMBLIES COMING FROM PULL BOX ON EXISTING POLES

PULL BOX FUSING DETAIL - LP1-LP6			LAST UPDATE:
ORIG DWG BY:	DATE:	SHEET OF SHEETS	

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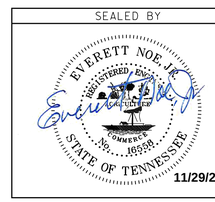

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS

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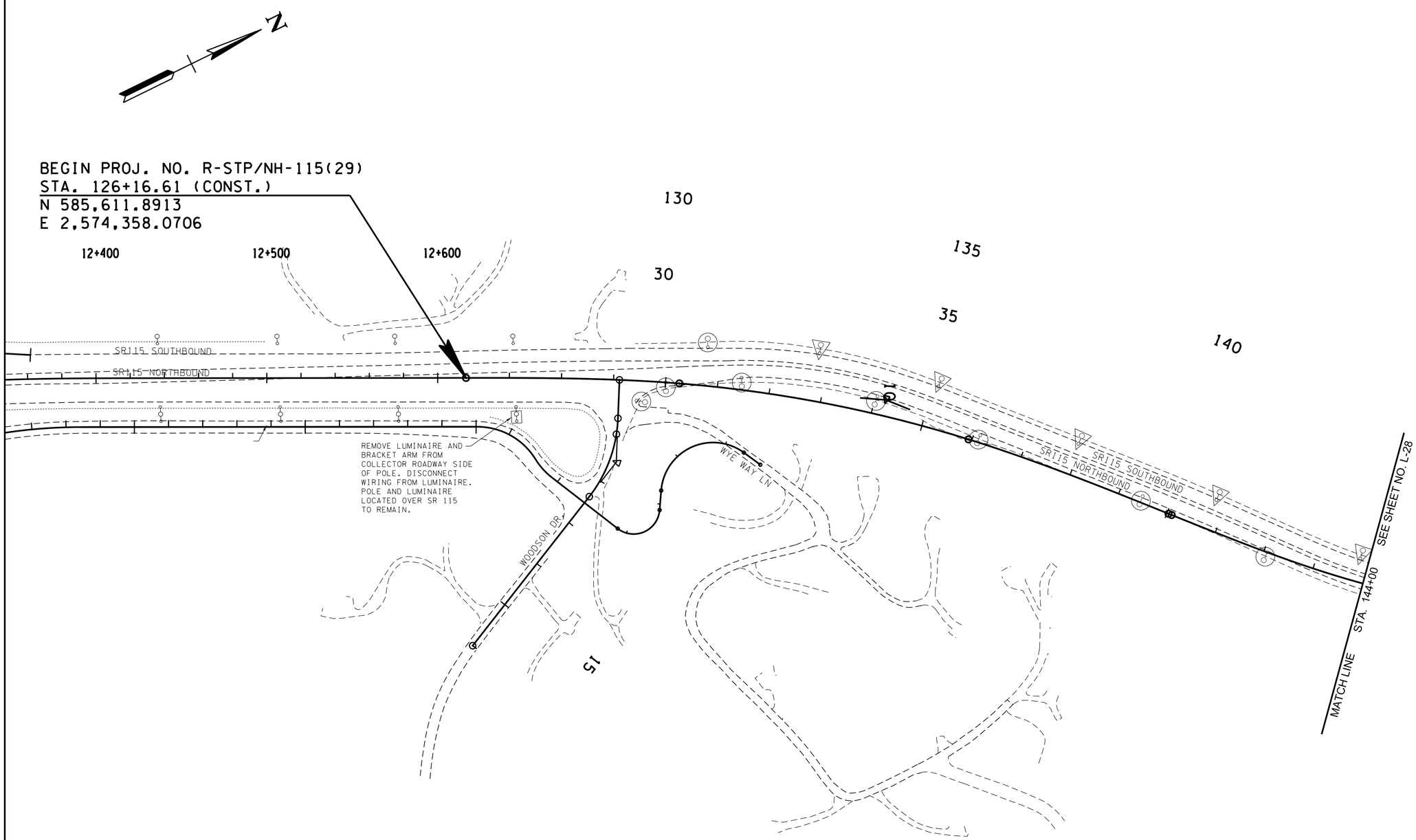
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-27



LEGEND

- EXISTING STREET LIGHT TO BE REMOVED
- EXISTING STREET LIGHT TO BE REMOVED BY OTHERS
- EXISTING STREET LIGHT TO REMAIN
- EXISTING STREET LIGHT - REMOVE LIGHT AND BRACKET ARM

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
NO. 112728
STATE OF TENNESSEE
Rebecca Bottom
11/29/2022

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING REMOVALS

STA. 127+12.38 TO STA. 144+00

SCALE: 1"=100'

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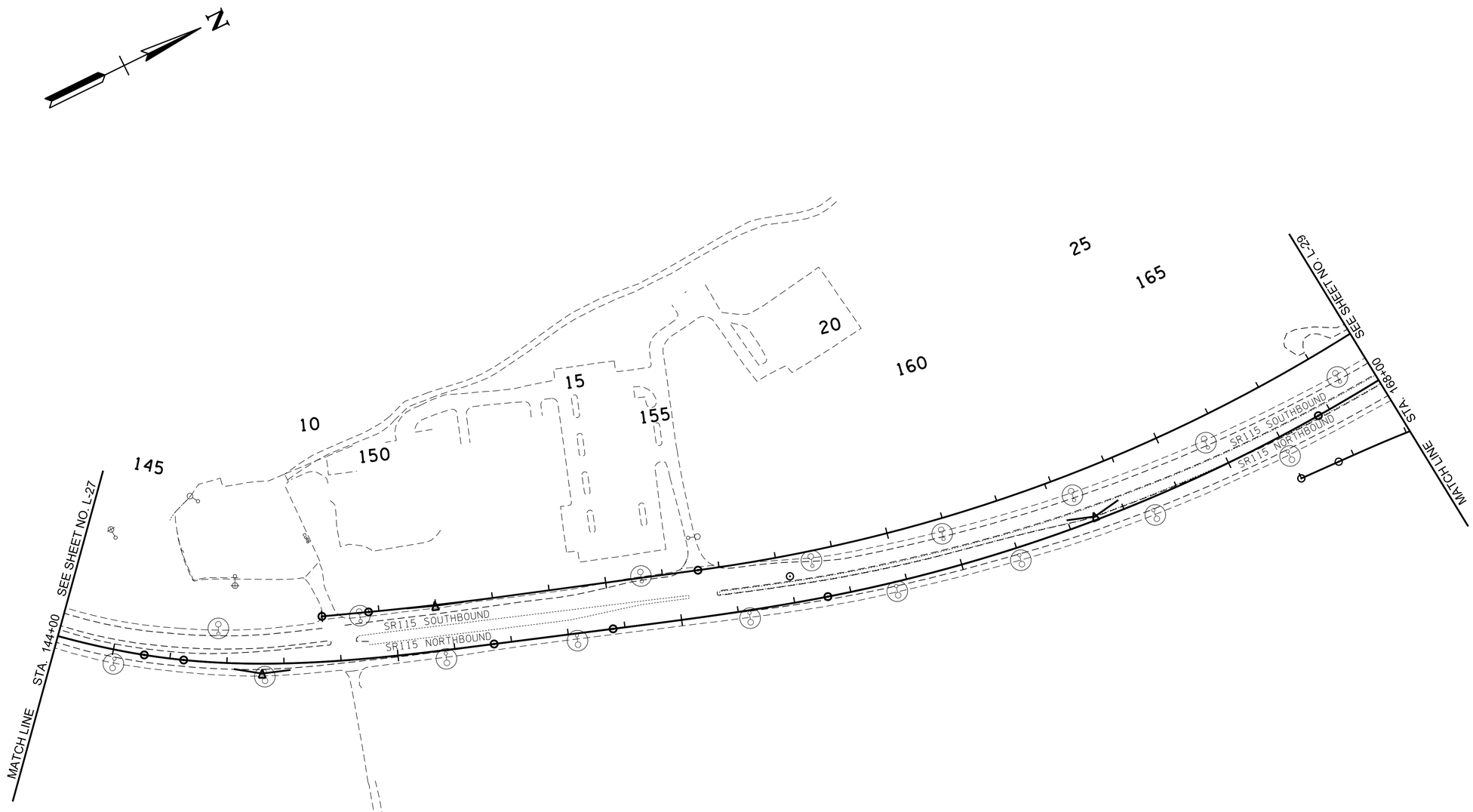
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-28



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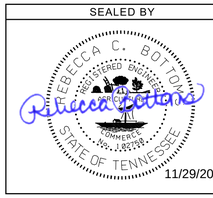

11/29/2022

LEGEND

- EXISTING STREET LIGHT TO BE REMOVED
- EXISTING STREET LIGHT TO BE REMOVED BY OTHERS
- EXISTING STREET LIGHT TO REMAIN
- EXISTING STREET LIGHT - REMOVE LIGHT AND BRACKET ARM

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

LIGHTING REMOVALS

STA. 144+00 TO STA. 168+00

SCALE: 1"=100'

CELL BDR2ND

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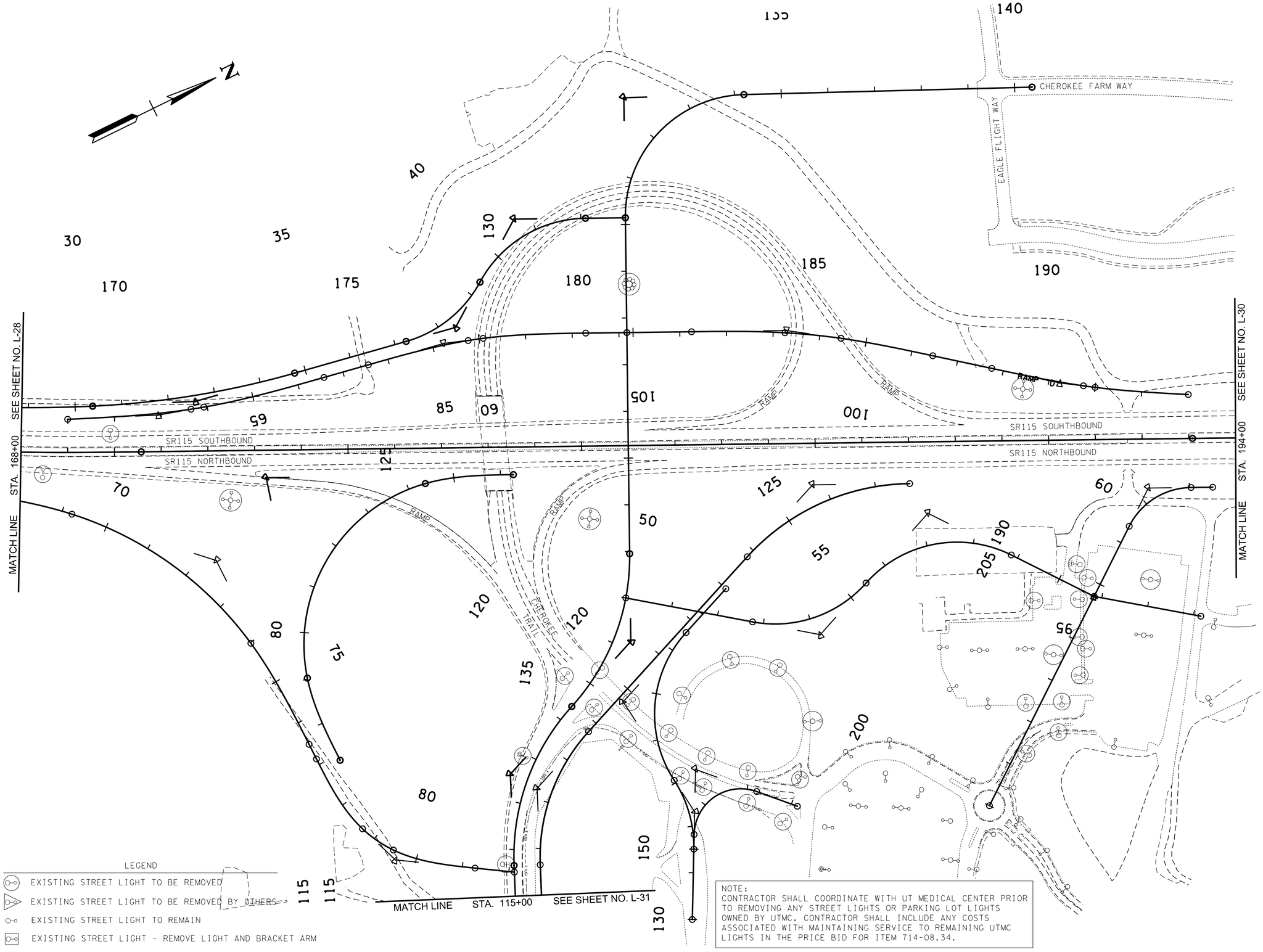
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-29



NOTE:
CONTRACTOR SHALL COORDINATE WITH UT MEDICAL CENTER PRIOR TO REMOVING ANY STREET LIGHTS OR PARKING LOT LIGHTS OWNED BY UTMC. CONTRACTOR SHALL INCLUDE ANY COSTS ASSOCIATED WITH MAINTAINING SERVICE TO REMAINING UTMC LIGHTS IN THE PRICE BID FOR ITEM 714-08.34.

SEALED BY

REBECCA C. BOTTOM
REGISTERED ENGINEER
No. 125728
STATE OF TENNESSEE
11/29/2022

STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

LIGHTING REMOVALS

STA. 168+00 TO STA. 194+00

SCALE: 1"=100'

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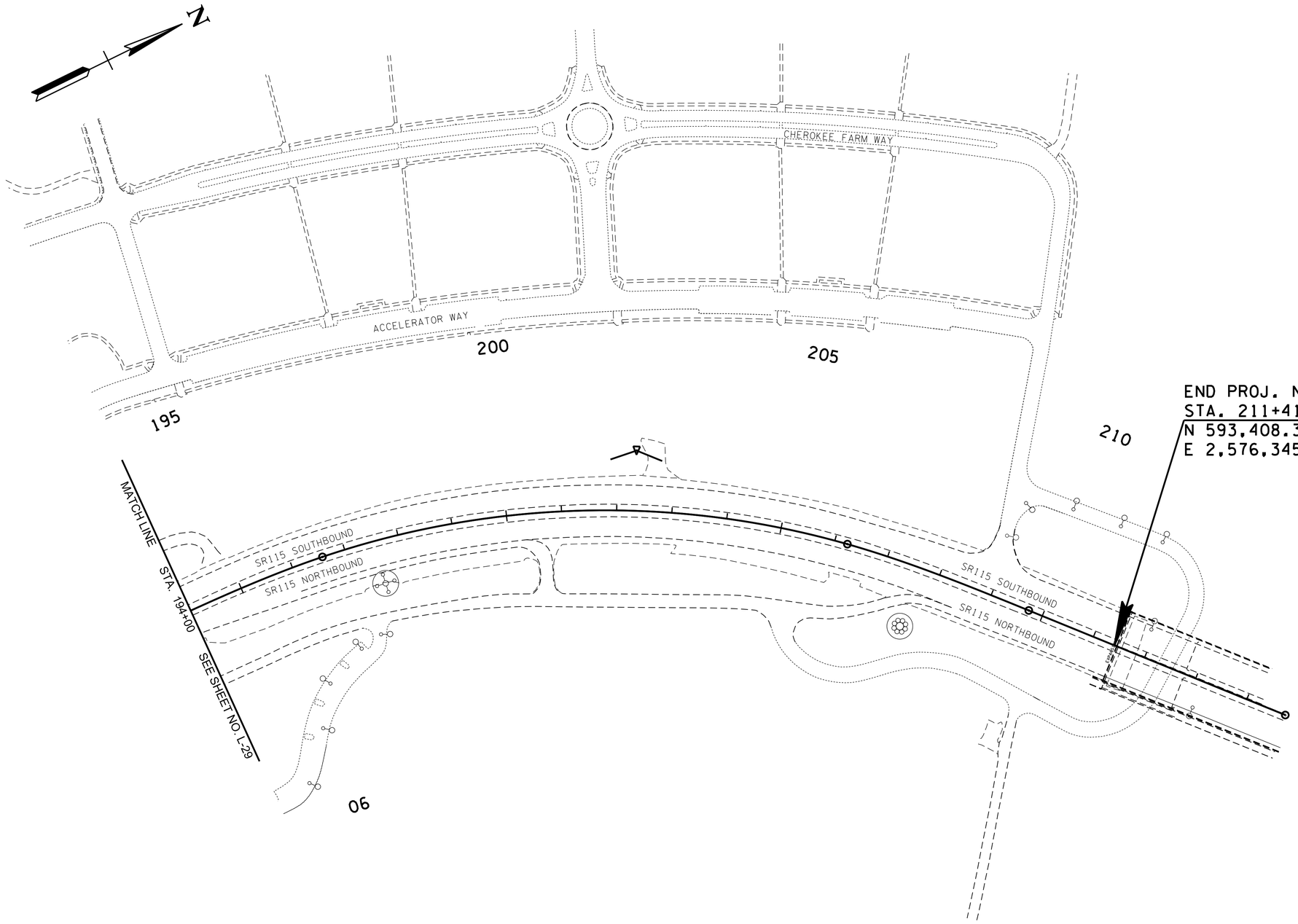
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-30



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LEGEND

- EXISTING STREET LIGHT TO BE REMOVED
- EXISTING STREET LIGHT TO BE REMOVED BY OTHERS
- EXISTING STREET LIGHT TO REMAIN
- EXISTING STREET LIGHT - REMOVE LIGHT AND BRACKET ARM

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING REMOVALS

STA. 194+00 TO STA. 211+25

SCALE: 1"=100'

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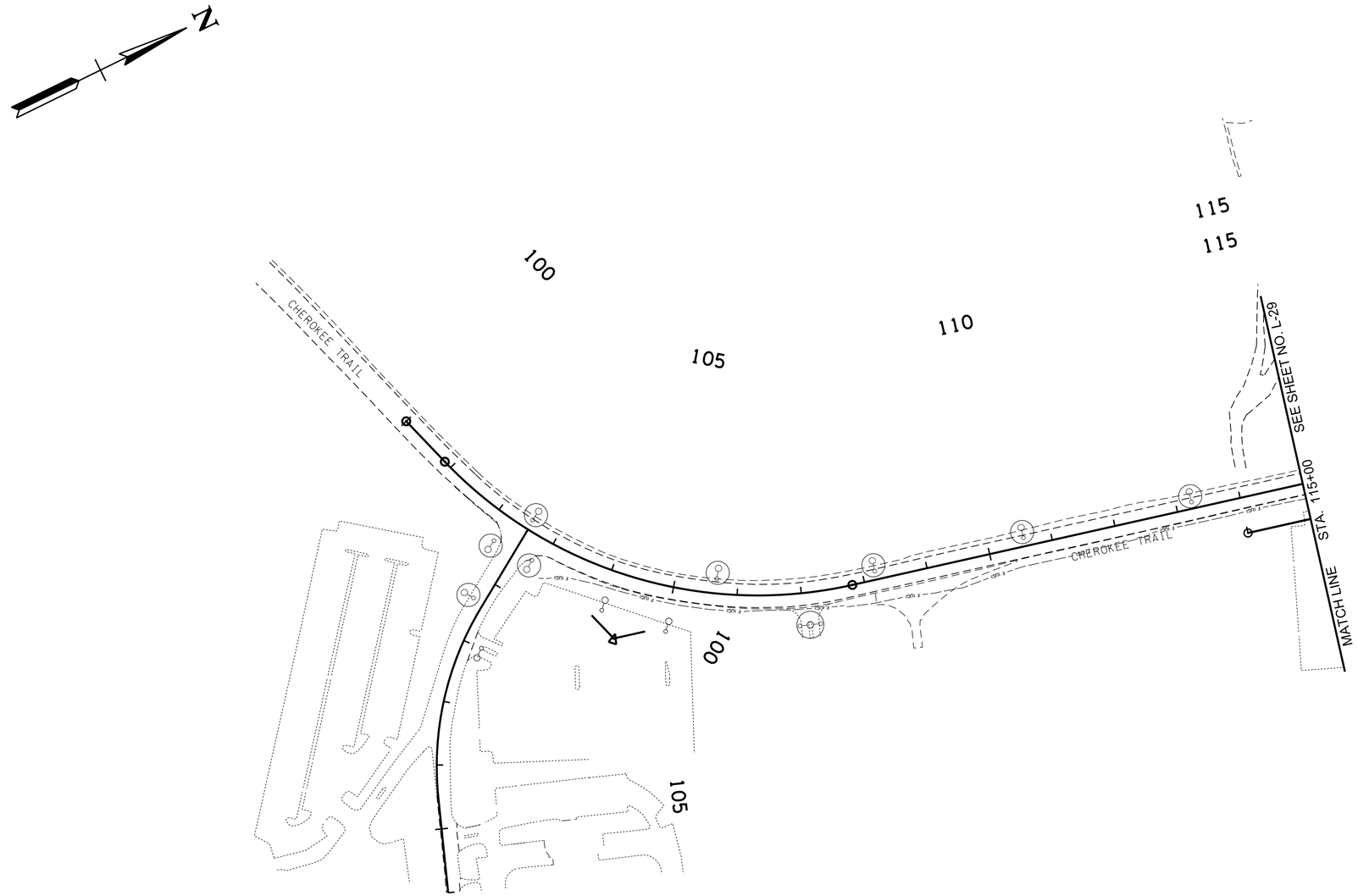
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2023	R-STP/NH-115(29)	L-31



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11/29/2022

LEGEND

- EXISTING STREET LIGHT TO BE REMOVED
- EXISTING STREET LIGHT TO BE REMOVED BY OTHERS
- EXISTING STREET LIGHT TO REMAIN
- EXISTING STREET LIGHT - REMOVE LIGHT AND BRACKET ARM

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LIGHTING REMOVALS

STA. 100+00 TO STA. 115+00

SCALE: 1"=100'

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