ROADWAY LIGHTING ESTIMATE OF QUANTITIES

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T23

EXISTING SERVICE C	SERVICE 1	SERVICE 2	SERVICE 3	SERVICE 4	SERVICE 5	TOTAL	UNITS	CODE	ITEM DESCRIPTION
0	0	0	17	8	14	39	EACH	4700	POLE 30' MTG HT
0	10	9	32	13	34	98	EACH	4701	POLE 40' MTG HT
2	8	7	1	0	0	18	EACH	4714	POLE 120' MTG HT HIGH MAST
0	0	0	0	0	18	18	EACH	4720	BRACKET 4'
0	0	0	0	0	0	0	EACH	4721	BRACKET 6'
0	0	0	0	9	9	18	EACH	4722	BRACKET 8'
0	0	5	14	0	11	30	EACH	4723	BRACKET 10'
0	10	4	25	0	8	47	EACH	4724	BRACKET 12'
0	0	0	10	0	4	14	EACH	4725	BRACKET 15'
0	0	0	0	12	0	12	EACH	4730	BRACKET "C"
0	10	9	49	0	30	98	EACH	4740	POLE BASE
0	10	9	49	9	48	125	EACH	4750	TRANSFORMER BASE
0	0	0	0	0	1	1	EACH	4760	POLE W/SECONDARY CONTROL EQUIP
0	1	1	1	1	0	4	EACH	4761	LIGHTING CONTROL EQUIPMENT
0	10	9	49	9	50	127	EACH	4770	HPS LUMINAIRE
0	0	0	0	0	3	3	EACH	4771	HPS LUMINAIRE WALL PACK
12	48	41	6	0	0	107	EACH	4773	HPS LUMINAIRE HIGH MAST
0	20	18	98	42	106	284	EACH	4780	FUSED CONNECTOR KIT
0	0	1,860	8,305	0	5,730	15,895	LIN FT	4793	CONDUIT 1 1/4 INCH
0	2,100	0	1,130	590	600	4,420	LIN FT	4795	CONDUIT 2 INCH
0	1,610	1,244	530	0	0	3,384	LIN FT	4797	CONDUIT 3 INCH
9	29	15	5	0	0	58	EACH	4800	MARKER
0	0	0	0	0	0	0	EACH	4811	JUNCTION BOX TYPE B
4495	11,109	7,235	10201	0	5,380	38,420	LIN FT	4820	TRENCHING AND BACKFILLING
0	1,650	1,467	8,232	2,865	7,185	21,399	LIN FT	4832	WIRE-NO. 12
0	0	5,580	19,125	13,956	18,936	57,597	LIN FT	4833	WIRE-NO. 8
0	0	0	11,100	0	9,810	20,910	LIN FT	4834	WIRE-NO. 6
0	6,300	0	0	0	0	6,300	LIN FT	4835	WIRE-NO. 4
0	0	0	0	0	0	0	LIN FT	4836	WIRE-NO. 2
0	0	0	0	0	0	0	LIN FT	4837	WIRE-NO. 0
0	620	1,500	0	0	0	2,120	LIN FT	4860	CABLE - NO. 8/3C DUCTED
1300	1,160	1,110	0	0	0	3,570	LIN FT	4861	CABLE - NO. 6/3C DUCTED
1520	9568	6,378	0	0	0	17,466	LIN FT	4862	CABLE - NO. 4/3C DUCTED
4495	5671	2,621	2,350	0	0	15,137	LIN FT	4863	CABLE - NO. 2/3C DUCTED
0	3,612	0	0	0	0	3,612	LIN FT	22928EN	CABLE - NO. 1/3C DUCTED
0	0	0	0	0	0	1	LP SUM	4940	REMOVE LIGHTING
0	0	9	22	0	13	44	EACH	20391NS835	JUNCTION BOX TYPE A
0	6	3	0	0	0	9	EACH	20392NS835	JUNCTION BOX TYPE C
0	0	0	0	12	0	12	EACH	20993ND	HPS LUMINAIRE 400 WATT
0	1,610	1,244	1,000	0	250	4,104	LIN FT	21543EN	BORE AND JACK CONDUIT
0	0	0	0	7	3	10	EACH	21563NN	SPLICE BOX - 8"X6"X4"
19.54	72.41	63.11	9.77	0.00	0.00	164.83	CU YD	23161EN	POLE BASE - HIGH MAST

THE INSTALLATION OF THE NEW UNDERGROUND SERVICE FOR SERVICE D (I-275 @ THREE MILE ROAD) SHALL BE BEFORE THE IMPACT OF THE COMMUNICATION LINES THAT THE EXISTING SERVICE GOES OVER.
THE INSTALLATION OF THE DUCTED CABLE FOR EX HMC5/EX HMC8 SHALL CORRESPOND TO THE CLOSING OF RAMP A AT THE I-275/I-471 INTERCHANGE SHOWN IN THE MOT.
THE INSTALLATION OF HM1/HM4/HM5/HM6 (SERVICE 1), HM11/HM12 (SERVICE C), HM5/HM6/HM7/CIRCUIT 8 (SERVICE 2), CIRCUIT 1/CIRCUIT 2 (SERVICE 3), CIRCUIT 1/CIRCUIT 3/CIRCUIT 4 (SERVICE 4), AND CIRCUIT 2/CIRCUIT 6 (SERVICE 5) SHOULD BE INSTALLED WHEN WORK ON NB I-471 IS BEING DONE.
THE INSTALLATION OF HM2/HM3/HM7/HM8/CIRCUIT 9 (SERVICE 1), HM1/HM2/HM3/HM4 (SERVICE 2), CIRCUIT 3/CIRCUIT 4/HM5 (SERVICE 3), AND CIRCUIT 5/CIRCUIT 7/CIRCUIT 8 (SERVICE 5) SHOULD BE INSTALLED WHEN WORK ON SB I-471 IS BEING DONE.
DURING THE RAMP CLOSURES IN THE MOT, THE CONTRACTOR SHALL INSTALL ALL CROSSINGS, CONDUITS, POLE BASES FOR THE CONVENTIONAL/HIGHMAST LIGHTING.
THE CONTRACTOR SHALL REMOVE ALL EXISTING LIGHTING BEFORE THE COMPLETION DATE STATED IN THE MOT FOR I-471 NB AND I-471 SB (INCLUDING ANY RAMPS).

DESIGN BY:
TED SWANSEGAR
CHARLES WEITZEL
JASON HYATT
ADAM PROCTOR
LARRY IRISH

DESIGNED BY: SEE ABOVE
DATE SUBMITTED: 1/19/2012

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF

CAMPBELL

PROJECT NUMBERS: FD52 019 0471 000-006

ROADWAY LIGHTING ESTIMATE OF QUANTITIES

FILE NAME: C:\PWWORK\CHARLES.WEITZEL\D05IM45\T023005U.DGN
USER: Charles.Weitzel
DATE PLOTTED: January 19, 2012
E-SHEET NAME: T023005U
MicroStation v8.11.7.180

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T24

BID ITEM NOTES

The Standard Specifications for Road and Bridge Construction, current edition, and other special notes and specifications will apply on this project.

Steel high mast pole shall include furnishing, assembling, and installing specified pole and lowering device in accordance with manufacturers installation instructions. This item includes anchor bolts, head frame assembly, cables, winch unit, power cables, wiring, connectors, circuit breakers, grounding lugs, and all additional hardware. This item must be compatible with the pole base-high mast bid item. Incidental to this item shall be the adjustment and calibration of the unit to provide the desired operation.

Poles shall include furnishing and installing shaft (shaft of pole on structure shall include hand-hole with reinforcing frame and cover), anchor bolts, anchor bolt covers, ground lugs, and any associated hardware.

Pole base high mast shall include excavation, furnishing and placing concrete, conduits, ground rods, ground wires, and reinforcing steel. This item also includes backfilling and restoring disturbed areas to the satisfaction of the resident engineer.

Pole base shall include excavation, furnishing and installing concrete, conduit, fittings, ground rod and ground wire. This item also includes backfilling and restoring disturbed areas to the satisfaction of the resident engineer.

Transformer base shall include furnishing and installing specified cast aluminum transformer base, transformer door, ground lug and associated hardware.

Pole with secondary control equipment shall include furnishing and installing specified pole mounted cabinet, specified pole, service racks, lightning arrestors, photoelectric control, circuit breakers, contactor, manual switch, fuses, ground rod, transformers, cutouts, conduits and service wires. This item also includes excavation, backfilling, and any necessary anchors. Electrical service and all electrical inspection fees are incidental to this item.

Lighting control equipment shall include furnishing and installing a specified base mounted cabinet with secondary control equipment, specified pole, service racks, lightning arrestors, photoelectric control, circuit breakers, contactor, manual switch, fuses, ground rod, transformers, cutouts, conduits and service wires. This item also includes excavation, backfilling, and any necessary anchors. Electrical service and all electrical inspection fees are incidental to this item.

Bracket shall include furnishing and installing specified bracket and any associated hardware needed for attaching the bracket to the pole.

High mast luminaire shall include furnishing and installing the specified luminaire. This item shall include lamps, protective starters, ballasts and any adjustments necessary to provide the desired lighting pattern. This also includes furnishing and installing specified shielding (if required).

The contractor shall submit pertinent photometric data for each type of luminaire to include literature with isofootcandle curves, ANSI/IES type distribution and actual lamp lumens supplied by that luminaire with the supplied ballast. The contractor shall also submit the photometric data in IES format to the Division of Traffic, Frankfort, KY to insure the luminaire meets the design criteria. Luminaires should provide appropriate light levels to meet the guidelines of AASHTO using a total light loss factor of 0.65 for closed fixtures and 0.80 for open bottom fixtures. A point of contact shall also be provided to answer technical questions about the luminaire.

Luminiare shall include furnishing and installing specified luminaire, built-in constant wattage auto transformer type ballast, protective starter, lamp, and all associated hardware.

Luminaire wall pack shall include furnishing and installing specified luminaire, built-in constant wattage auto transformer type ballast, lamp, and all associated hardware.

Junction box shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include #57 aggregate as shown, backfilling and restoration of disturbed areas to the satisfaction of the resident engineer, and concrete (if required).

Cable ducted shall include furnishing and installing specified cable within trench or conduit as indicated on the plan sheets. Incidental to this item shall be the furnishing and installing of any other necessary hardware. The contractor shall install all cable or wire runs splice-free from the controller to each pole the cable or wire is feeding.

Wire or cable shall include furnishing and installing specified wire or cable within conduit as indicated on the plan sheets. Incidental to this item shall be the furnishing and installing of splice boots or any other hardware required for installing cable. The contractor shall install all cable or wire runs splice-free from the controller to each pole the cable or wire is feeding. Exceptions to this must be approved by the engineer or as specified on the plans.

Conduit shall include furnishing and installing specified conduit in ground or on structure in accordance with specifications. This item includes conduit fittings, pipe/test plugs, expansion joints with bonding straps, drill anchors, clamps, and any additional hardware required. All conduit shall be rigid galvanized steel.

Markers shall include furnishing and installing pre-cast concrete cable markers as indicated on the plans.

Fused connector kit shall include furnishing and installing specified connectors inside transformer base or junction box.

Trenching and backfilling shall include excavation, backfilling, roadway crossings, and the restoration of disturbed areas to original condition. Incidental to this item shall be furnishing and installing underground utility warning tape (if required).

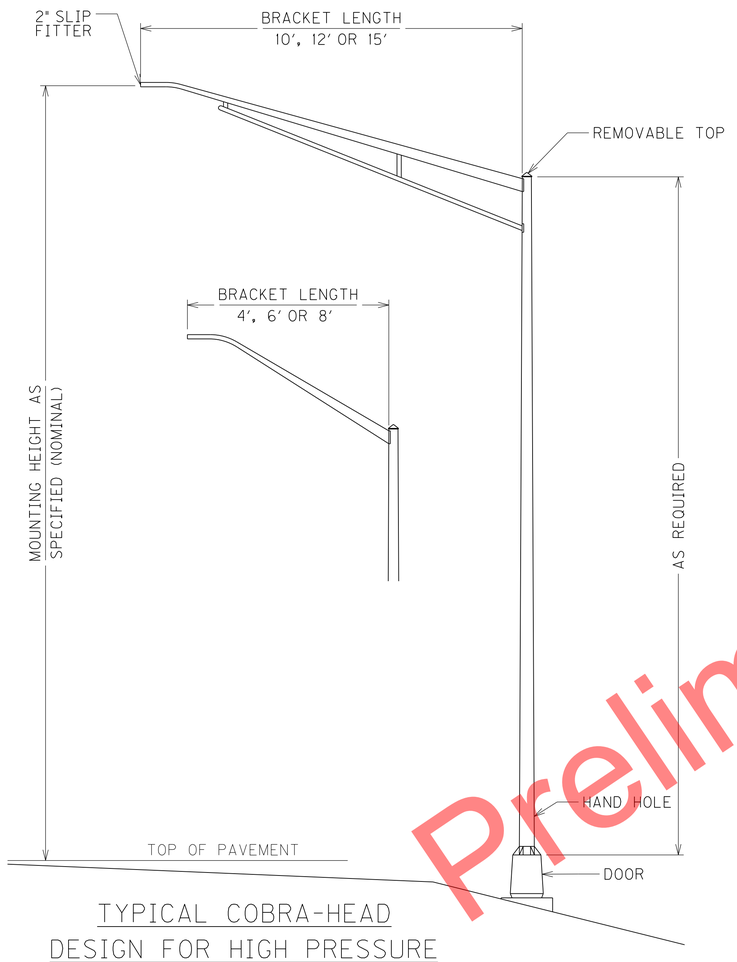
Contractor shall maintain existing lighting or equivalent to existing lighting at all times until new lighting is installed and a functional inspection has been performed. A proposed lighting layout shall be submitted for approval to the Division of Traffic, Frankfort, KY (502-564-3020) prior to the beginning of road or bridge construction. Payment for this item shall be included in maintain lighting.

Remove lighting shall include the removal of existing poles, luminaires, control equipment, power transformers, transformer bases and pole bases. Transformers not owned by a utility shall be tested for PCB's and disposed of in accordance with state regulations. Pole base shall be removed a minimum of 1 foot below finished grade. Chipping off or other method that is approved by the engineer may be used. Contractor shall backfill hole with material approved by the engineer. Incidental to this item shall be the removal of all materials off the project. All salvageable poles, brackets, transformer bases and luminaires shall be returned to the district pole yard or as instructed by the engineer.

Contractor shall be responsible for a set of acceptable as-built plans. Payment for this item shall be incidental to the cost of the project.

Bore and jack conduit shall include boring a hole for installing conduit under the existing roadway in accordance with the construction method described in the first, second and fourth paragraphs of Section 706.03 of the Standard Specifications. This item does not include furnishing and installing conduit.

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T25

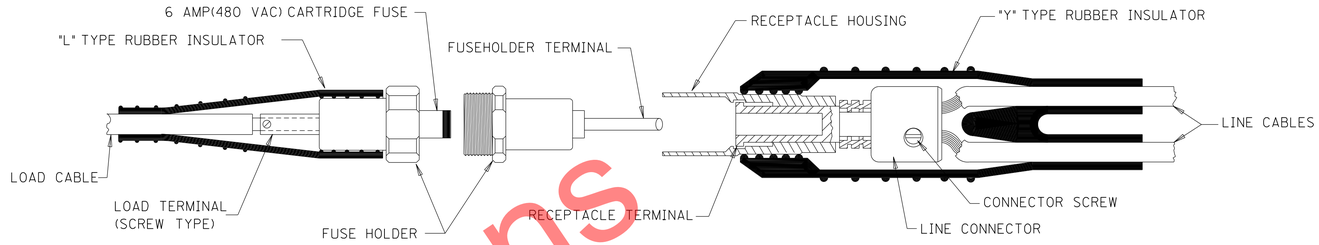


TYPICAL COBRA-HEAD DESIGN FOR HIGH PRESSURE SODIUM LUMINAIRES

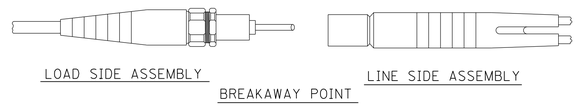
COBRA-HEAD LUMINAIRES:

LUMINAIRES SHALL BE HIGH PRESSURE SODIUM WITH AN IES TYPE II DISTRIBUTION PATTERN, PAYNE SPARKMAN STARTER (OR APPROVED EQUAL), AND BUILT-IN CONSTANT WATTAGE TRANSFORMER TYPE BALLAST.

BREAKAWAY FUSE CONNECTOR KIT



DETAILS OF TYPE HEB-JW-RYC CONNECTOR



TYPE HEB-JW-RYC CONNECTOR SHOWN

NOTE:

POLES AND BRACKETS SHALL BE ALUMINUM WITH A BRUSHED SATIN FINISH.

POLES WITH LUMINAIRE(S) AND BRACKET(S) SHALL BE MANUFACTURED AND CERTIFIED TO WITHSTAND 90 MPH WINDS WITH 117 MPH GUSTS.

HAND HOLES SHALL BE 4" X 6" NOMINAL WITH COVER AND STAINLESS STEEL SCREWS.

THERE SHALL BE A FACTORY INSTALLED VIBATION DAMPENER.

HAND HOLE AND TRANSFORMER BASE DOOR SHALL BE PLACED AWAY FROM TRAFFIC.

LUMINAIRE DESIGNATION EXAMPLE

2 - 7 - A - 6 - 10

- 10 — DISTANCE FROM RIGHT EDGE OF DRIVING LANE TO CENTER OF POLE BASE. (SEE NOTE BELOW)
- 6 — MAST ARM LENGTH
- A — LUMINAIRE WATTAGE
- 7 — LUMINAIRE NUMBER IN CIRCUIT
- 2 — CIRCUIT NUMBER

NOTE: IF NO SETBACK DIMENSION IS INDICATED, THE MAST ARM LENGTH DENOTES THE DISTANCE FROM THE RIGHT EDGE OF PAVEMENT TO CENTER OF POLE BASE.

NOTE:
ALL TYPE A LUMINAIRES ARE MOUNTED AT 40' (NOMINAL) 250 WATTS WITH DOUBLE ARM.
ALL TYPE B LUMINAIRES ARE MOUNTED AT 30' (NOMINAL) 150 WATTS.
ALL TYPE C LUMINAIRES ARE MOUNTED AT 40' (NOMINAL) 250 WATTS.
ALL TYPE D LUMINAIRES ARE MOUNTED AT 40' (NOMINAL) 400 WATTS.

NOTE:

WHENEVER THE SPECIFICATION CONFLICTS WITH THE STANDARD SPECIFICATIONS, THE PLAN SPECIFICATIONS SHALL GOVERN.

FUSED CONNECTOR KITS:

1. DETAILS SHOWN HEREON ARE TYPICAL. ALTERNATE DESIGNS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. MINIMUM REQUIREMENTS AND SIMILAR MATERIALS MUST BE USED.

2. ALL CONNECTOR ASSEMBLIES SHALL BE OF WATERPROOF CONSTRUCTION, DESIGNED FOR DIRECT BURIAL IN THE EARTH AND EXPOSURE TO SUNLIGHT, AND SHALL BE CAPABLE OF REPEATED DISCONNECTIONS WITHOUT DAMAGE TO THE WATERTIGHT SEALS AND TERMINALS, OR REDUCING THE CONDUCTIVITY BELOW SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH CONNECTORS RECOMMENDED FOR THE REQUIRED CABLE SIZES.

3. EACH CONNECTOR SHALL INCLUDE ALL PARTS AND MATERIALS NECESSARY TO COMPLETE ITS INSTALLATION, SUCH AS FUSES WHEN REQUIRED, LUBRICATING COMPOUND, AND ASSEMBLY DEVICES.

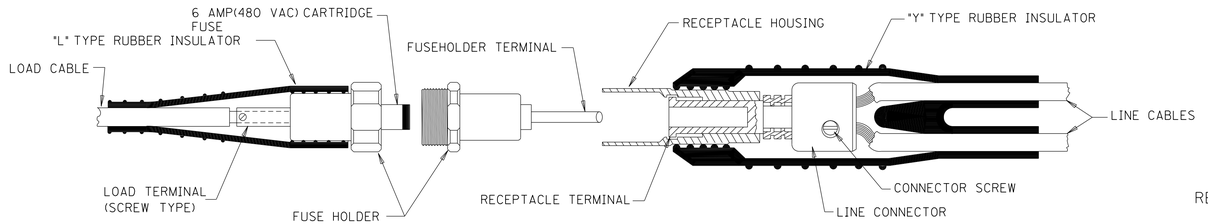
4. CABLE CONNECTOR TO BE USED IN POLE BASE ONLY.

5. MINIMUM OF 6 AMP(480 VAC) CARTRIDGE FUSE SHALL BE USED.

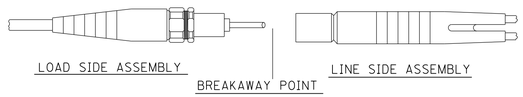
COBRA-HEAD LUMINAIRE/FUSE CONNECTOR DETAILS

6/10/2011

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T26



DETAILS OF TYPE HEB-JW-RYC CONNECTOR



TYPE HEB-JW-RYC CONNECTOR SHOWN

NOTE:

WHENEVER THE SPECIFICATION CONFLICTS WITH THE STANDARD SPECIFICATIONS, THE PLAN SPECIFICATIONS SHALL GOVERN.

FUSED CONNECTOR KITS:

1. DETAILS SHOWN HEREON ARE TYPICAL. ALTERNATE DESIGNS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. MINIMUM REQUIREMENTS AND SIMILAR MATERIALS MUST BE USED.

2. ALL CONNECTOR ASSEMBLIES SHALL BE OF WATERPROOF CONSTRUCTION, DESIGNED FOR DIRECT BURIAL IN THE EARTH AND EXPOSURE TO SUNLIGHT, AND SHALL BE CAPABLE OF REPEATED DISCONNECTIONS WITHOUT DAMAGE TO THE WATERTIGHT SEALS AND TERMINALS, OR REDUCING THE CONDUCTIVITY BELOW SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH CONNECTORS RECOMMENDED FOR THE REQUIRED CABLE SIZES.

3. EACH CONNECTOR SHALL INCLUDE ALL PARTS AND MATERIALS NECESSARY TO COMPLETE ITS INSTALLATION, SUCH AS FUSES WHEN REQUIRED, LUBRICATING COMPOUND, AND ASSEMBLY DEVICES.

4. CABLE CONNECTOR TO BE USED IN POLE BASE ONLY.

5. MINIMUM OF 6 AMP(480 VAC) CARTRIDGE FUSE SHALL BE USED.

NOTE:

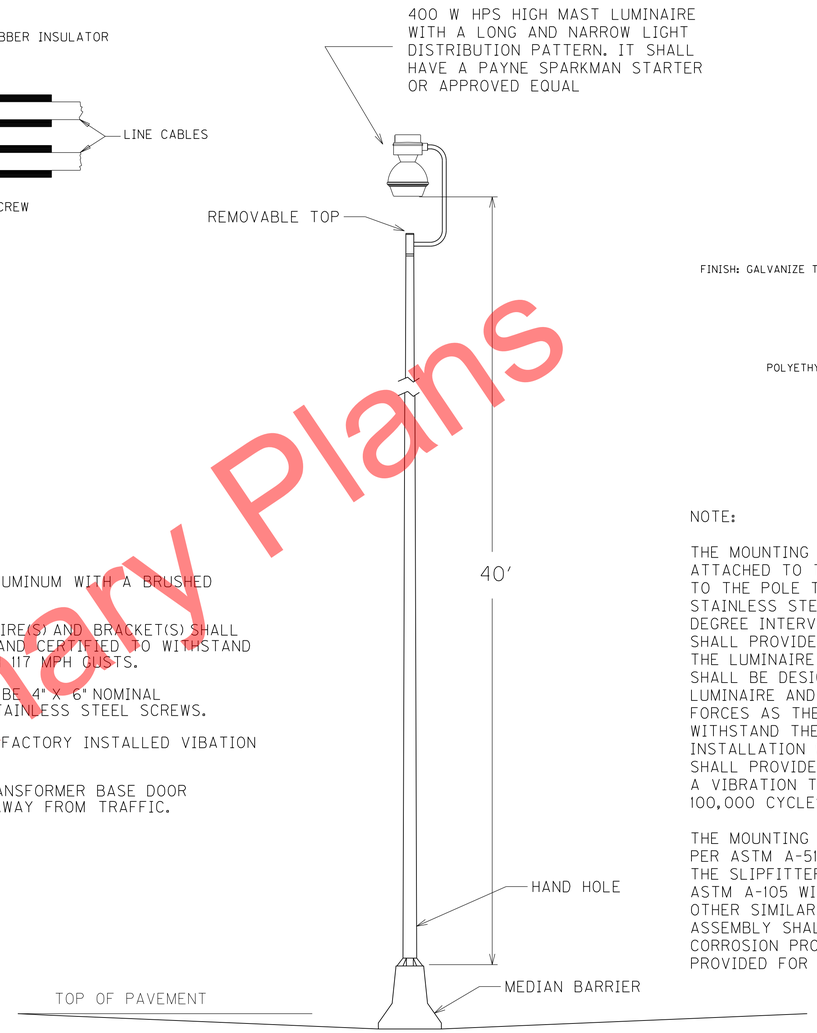
POLES SHALL BE ALUMINUM WITH A BRUSHED SATIN FINISH.

POLES WITH LUMINAIRE(S) AND BRACKET(S) SHALL BE MANUFACTURED AND CERTIFIED TO WITHSTAND 90 MPH WINDS WITH 117 MPH GUSTS.

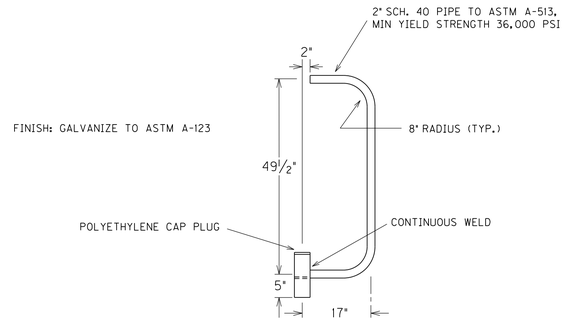
HAND HOLES SHALL BE 4" X 6" NOMINAL WITH COVER AND STAINLESS STEEL SCREWS.

THERE SHALL BE A FACTORY INSTALLED VIBATION DAMPENER.

HAND HOLE AND TRANSFORMER BASE DOOR SHALL BE PLACED AWAY FROM TRAFFIC.



TYPICAL SHEPHERD'S CROOK DESIGN FOR HIGH PRESSURE SODIUM LUMINAIRES



NOTE:

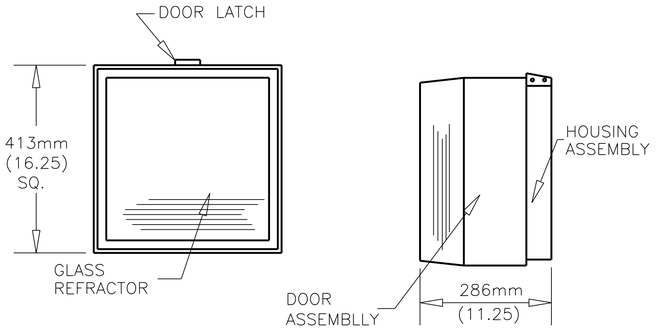
THE MOUNTING BRACKET FOR THE LUMINAIRE SHALL BE ATTACHED TO THE TOP OF THE POLE BY SLIPFITTING ON TO THE POLE TENON AND SECURING WITH THREE (3) 3/8-16 STAINLESS STEEL CUP POINT SET SCREWS LOCATED AT 120 DEGREE INTERVALS AROUND THE SLIPFITTER. THE BRACKET SHALL PROVIDE A MOUNTING ARRANGEMENT THAT POSITIONS THE LUMINAIRE OVER THE CENTER OF THE POLE. THE BRACKET SHALL BE DESIGNED FOR OPERATION WITH THE SPECIFIED LUMINAIRE AND BE CAPABLE OF WITHSTANDING THE SAME WIND FORCES AS THE POLE. THE BRACKET SHALL BE ABLE TO WITHSTAND THE VIBRATIONS ASSOCIATED WITH THIS TYPE OF INSTALLATION WITH THE LUMINAIRE INSTALLED; THE MANUFACTURER SHALL PROVIDE DOCUMENTATION THAT THE BRACKET HAS PASSED A VIBRATION TEST TO A MINIMUM OF 1.2 G'S FOR A MINIMUM OF 100,000 CYCLES.

THE MOUNTING BRACKET SHALL BE FABRICATED OF 2" SCHEDULE 40 PIPE PER ASTM A-513 WITH A MINIMUM YIELD STRENGTH OF 36,000 PSI. THE SLIPFITTER SHALL BE FABRICATED OF 2.5" SCHEDULE 40 PIPE PER ASTM A-105 WITH A MINIMUM YIELD STRENGTH OF 36,000 PSI OR OTHER SIMILAR SIZE TO FIT THE POLE TOP TENON. THE ENTIRE ASSEMBLY SHALL BE HOT DIP GALVANIZED PER ASTM A-123 FOR CORROSION PROTECTION. A POLYETHYLENE CAP SHALL BE PROVIDED FOR THE TOP OF THE SLIPFITTER.

2/2008

SHEPHERD'S CROOK/FUSE CONNECTOR DETAILS

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T27

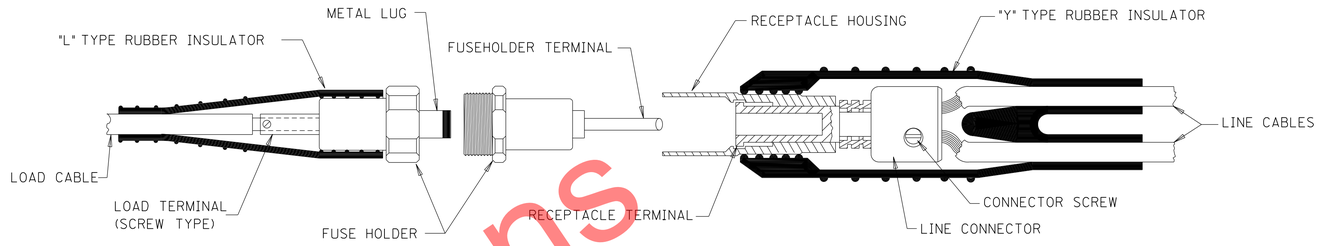


NOTE: NEED KNOCKOUTS TO BE ON THE BOTTOM OF THE LUMINIAIRE IN THE MIDDLE.

WALL PACK LUMINAIRES:

LUMINAIRES (HOLOPHANE MODULE 600 OR APPROVED EQUAL) SHALL BE 100 WATT, HIGH PRESSURE SODIUM WITH AN IES TYPE IV DISTRIBUTION PATTERN, SHORT, NON-CUTOFF, PAYNE SPARKMAN STARTER (OR APPROVED EQUAL), AND BUILT-IN CONSTANT WATTAGE TRANSFORMER TYPE BALLAST.

BREAKAWAY FUSE CONNECTOR KIT



DETAILS OF TYPE HEB-JW-RYC CONNECTOR

NOTE:

WHENEVER THE SPECIFICATION CONFLICTS WITH THE STANDARD SPECIFICATIONS, THE PLAN SPECIFICATIONS SHALL GOVERN.

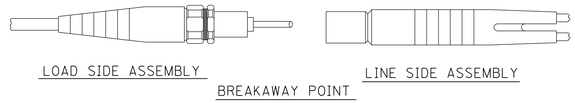
FUSED CONNECTOR KITS:

1. DETAILS SHOWN HEREON ARE TYPICAL. ALTERNATE DESIGNS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. MINIMUM REQUIREMENTS AND SIMILAR MATERIALS MUST BE USED.

2. ALL CONNECTOR ASSEMBLIES SHALL BE OF WATERPROOF CONSTRUCTION, DESIGNED FOR DIRECT BURIAL IN THE EARTH AND EXPOSURE TO SUNLIGHT, AND SHALL BE CAPABLE OF REPEATED DISCONNECTIONS WITHOUT DAMAGE TO THE WATERTIGHT SEALS AND TERMINALS, OR REDUCING THE CONDUCTIVITY BELOW SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH CONNECTORS RECOMMENDED FOR THE REQUIRED CABLE SIZES.

3. EACH CONNECTOR SHALL INCLUDE ALL PARTS AND MATERIALS NECESSARY TO COMPLETE ITS INSTALLATION, SUCH AS FUSES WHEN REQUIRED, LUBRICATING COMPOUND, AND ASSEMBLY DEVICES.

4. CABLE CONNECTOR TO BE USED IN POLE BASE ONLY.



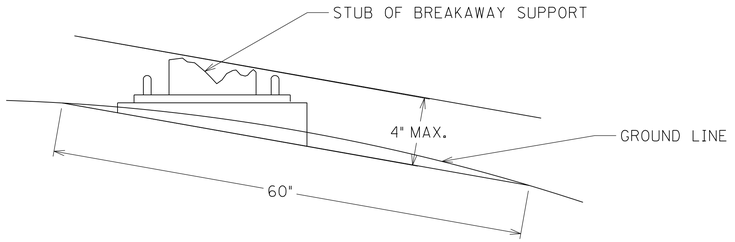
TYPE HEB-JW-RYC CONNECTOR SHOWN

10/11/2011

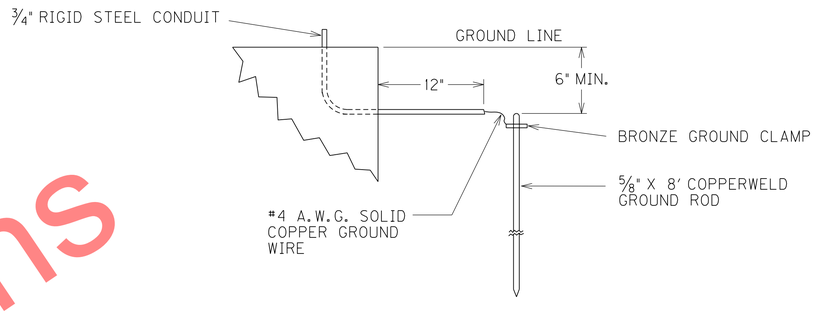
WALL PACK LUMINAIRE/FUSE CONNECTOR DETAILS

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T28

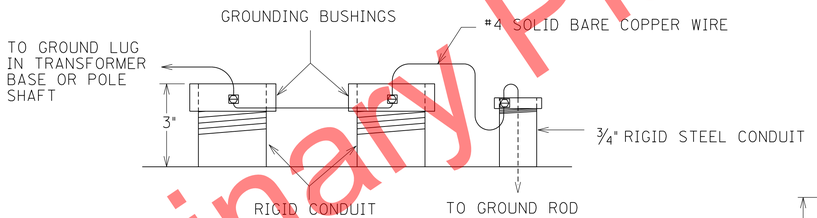
BREAKAWAY SUPPORTS SHALL COMPLY WITH SECTION 12 OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, LATEST EDITION. THE SURROUNDING SURFACE SHOULD BE REMOVED OR FILLED AND SLOPED APPROPRIATELY.



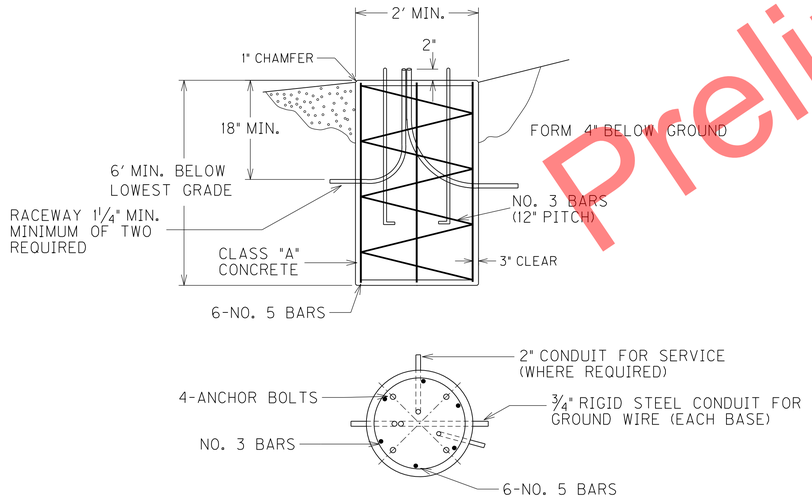
BREAKAWAY SUPPORT STUB HEIGHT MEASUREMENT



GROUNDING DETAIL

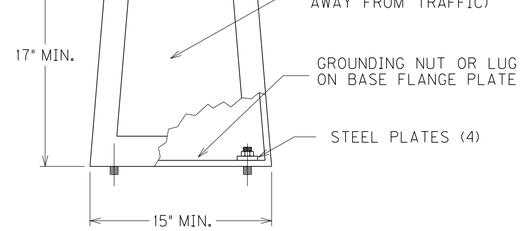


TYPICAL GROUNDING DETAIL



NOTE: PRECAST CONCRETE BASES ARE NOT ACCEPTABLE

FOUNDATION DETAIL



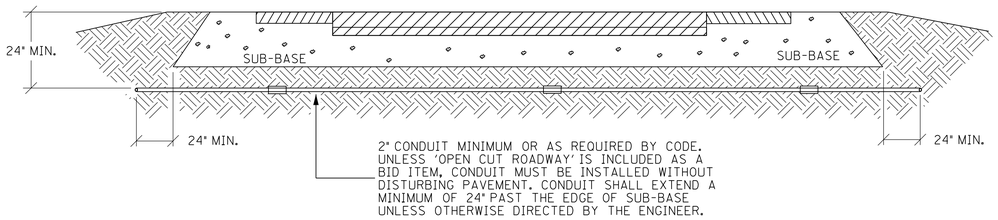
CONCRETE BASES SHALL BE POURED LEVEL. NO MORE THAN A ⅜" GAP SHALL EXIST BETWEEN CONCRETE BASE AND TRANSFORMER BASE WHEN THE POLE IS PLUMBED.

TYPICAL CAST ALUMINUM TRANSFORMER BASE

NOTE: ALL TRANSFORMER BASES SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, LATEST EDITION. ALL TRANSFORMER BASE DOORS SHALL BE CONSTRUCTED OF HIGH-DENSITY POLYETHYLENE IN A MATCHING COLOR.

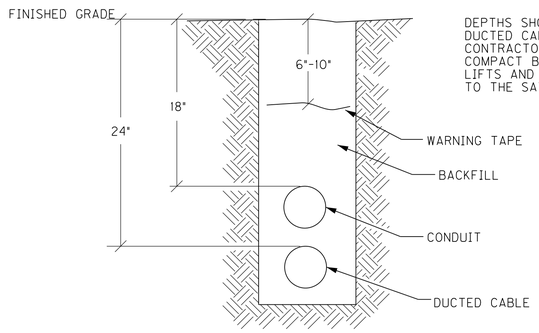
TRANSFORMER BASE DETAIL

11/2011



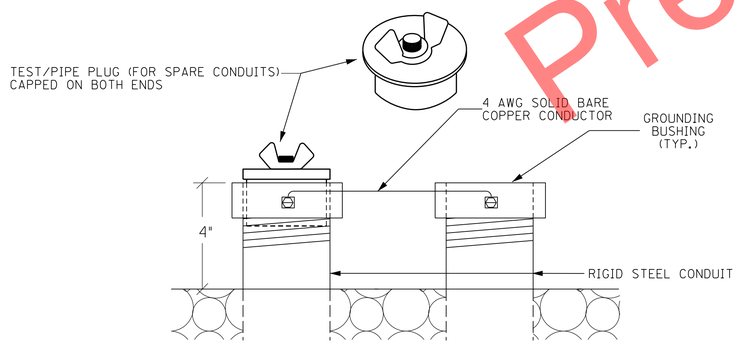
CONDUIT INSTALLATION UNDER EXISTING PAVEMENT DETAIL

CONTRACTOR SHALL INSTALL UNDERGROUND UTILITY WARNING TAPE ABOVE CONDUIT AND/OR DUCTED CABLE AS SHOWN. THE TAPE SHALL BE 6" WIDE BY 7.0 MILS (NOMINAL) THICK, HAVE A MINIMUM TENSILE STRENGTH OF 600 POUNDS PER 6" WIDTH, AND BE COLOR CODE IMPREGNATED WITH ALKALI AND ACID STABLE, LEAD-FREE, ORGANIC PIGMENTS SUITABLE FOR DIRECT BURIAL. THE TAPE SHALL ALSO BE ULTRAVIOLET COLORFAST AND NON-DISTORTING WITH NO ELONGATION. THE TAPE SHALL INCLUDE BLACK LETTERING/SYMBOLS ON A RED BACKGROUND THAT CONFORMS TO THE APWA-ULCC NATIONAL COLOR CODE. THE TAPE SHALL CONTINUOUSLY READ, "CAUTION: ELECTRIC LINE BURIED BELOW" ALTERNATING WITH A 'NO DIGGING' SYMBOL.



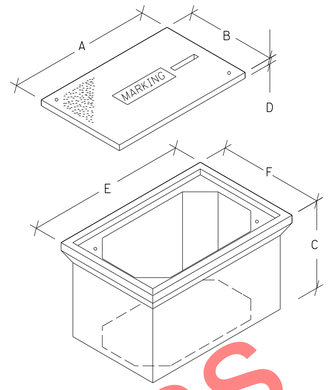
DEPTHS SHOWN FOR CONDUIT AND DUCTED CABLE ARE MINIMUMS. CONTRACTOR SHALL PLACE AND COMPACT BACKFILL IN 9" MAXIMUM LIFTS AND RETORE DISTURBED AREA TO THE SATISFACTION OF THE ENGINEER.

CONDUIT, DUCTED CABLE, AND WARNING TAPE TRENCH



TEST/PIPE PLUG SHALL BE GALVANIZED STEEL OR STAINLESS STEEL MECHANICAL TYPE. IT SHALL HAVE A RUBBER GROMMET THAT EXPANDS INSIDE THE CONDUIT TO SEAL THE CONDUIT.

TEST/PIPE PLUG(FOR SPARE CONDUITS) AND GROUNDING DETAIL



JUNCTION BOX SHALL MEET OR EXCEED ANSI/SCTE 77-2007, TIER 15 AND SHALL BE INSTALLED FLUSH WITH THE FINISHED GRADE AS SHOWN.

JUNCTION BOX FOR TRAFFIC SIGNAL INSTALLATIONS SHALL BE MARKED "TRAFFIC." JUNCTION BOX FOR LIGHTING INSTALLATIONS SHALL BE MARKED "LIGHTING." COVERS SHALL BE ATTACHED WITH A MINIMUM OF TWO ⅜" STAINLESS STEEL HEX BOLTS.

WHERE REQUIRED, JUNCTION BOX SHALL BE ORIENTED SUCH THAT THE DIMENSIONS COMPLY WITH THE NATIONAL ELECTRICAL CODE.

THIS NOTE DESCRIBES THE SPLICING PROCESS (IF REQUIRED) AND IS NOT INTENDED TO GRANT PERMISSION TO SPLICE. PERMISSION TO SPLICE SHALL BE DETERMINED BY THE DIVISION OF TRAFFIC OPERATIONS AND THE LOCATIONS SHALL BE SHOWN ON THE LAYOUT SHEET. IF SPLICING IS NEEDED BUT NOT SHOWN ON THE LAYOUT SHEET, THE CONTRACTOR SHALL RECEIVE PRIOR APPROVAL FROM THE ENGINEER.

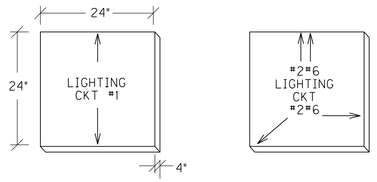
ALL UNDERGROUND SPLICES SHALL BE MADE WITH BUTT SPLICES. BUTT SPLICES SHALL BE COPPER AND OF THE CORRECT CONDUCTOR RANGE. ALL BUTT SPLICES SHALL BE COVERED WITH A 3M MASTIC PAD OR APPROVED EQUAL AND THEN TAPED WITH A 3M BRAND #33 ELECTRICAL TAPE OR APPROVED EQUAL. MASTIC PAD MUST COVER AT LEAST 3 INCHES PAST EACH END OF BUTT SPLICE. IF LOOP SPLICING, THE MASTIC PAD SHALL EXTEND AT LEAST ONE INCH ONTO THE OUTER INSULATION OF THE LEAD-IN WIRE (IMSA 19-2). UNDERGROUND SPLICES INCLUDE SPLICES IN JUNCTION BOXES AND TRANSFORMER BASES. EACH CONDUCTOR, INCLUDING THE GROUND, SHALL BE ENCASED IN A SEPARATE SPLICE KIT. COST OF THIS ITEM SHALL BE INCIDENTAL TO THE PROJECT. THIS SPLICING SPECIFICATION TAKES PRECEDENCE OVER ANY OTHER SPLICING SPECIFICATION LISTED IN THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

SPLICING REQUIREMENTS

WHEN SHOWN ON THE PLANS, THE LOCATION OF UNDERGROUND CIRCUITS SHALL BE MARKED BY A CONCRETE SLAB MARKER. EACH MARKER SHALL EXTEND APPROXIMATELY 1" ABOVE THE FINISHED GRADE. THE WORD "LIGHTING", APPROPRIATE CIRCUIT NUMBERS AND DIRECTIONAL ARROWS SHALL BE IMPRESSED ON EACH SLAB. THE MARKINGS SHALL BE APPROXIMATELY 4" HIGH BY 3" WIDE WITH THE STROKE ½" WIDE BY ¼" DEEP.

EACH CABLE RUN SHALL BE MARKED AT APPROXIMATELY EVERY 300 FEET ALONG THE CABLE RUN BETWEEN JUNCTION BOXES AND LIGHT POLES, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION AND AT EACH END OF THE CONDUIT CROSSING A ROADWAY (IF NO JUNCTION BOX IS PRESENT). CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLE.

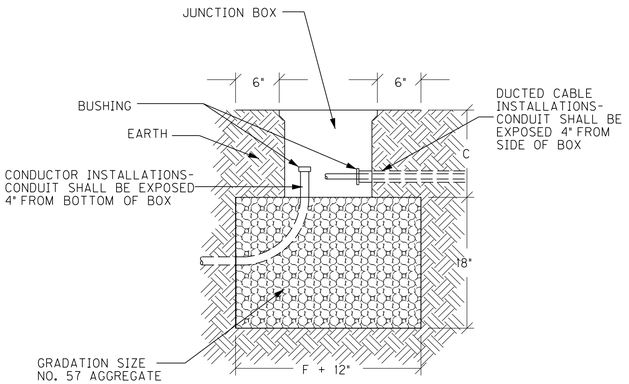
MARKERS SHALL BE PRE-CAST. DO NOT POUR MARKERS IN PLACE OR CHISEL LETTERS IN CONCRETE. SUBSTITUTION OF RURAL RIGHT-OF-WAY MARKERS IS NOT ALLOWED.



CONCRETE CABLE MARKERS

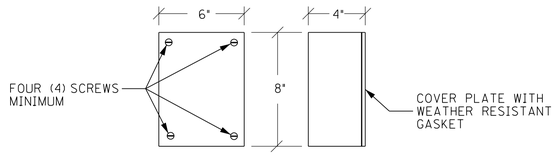
JUNCTION BOX DIMENSIONS (NOMINAL)						
	A	B	C	D	E	F
TYPE A	23"	14"	27"	2"	25"	15"
TYPE B	18"	11"	12"	1¾" •	20"	13"
TYPE C	36"	24"	30"	3"	38"	26"

• MINIMUM
NOTE: STACKABLE BOXES ARE PERMITTED



JUNCTION BOX

SPLICE BOX SHALL BE FABRICATED FROM MINIMUM 12 GAUGE STEEL AND GALVANIZED AFTER FABRICATION. BOXES SHALL HAVE NO KNOCKOUTS AND SHALL BE PROVIDED WITH A PLATE COVER WITH A WEATHER RESISTANT GASKET AND A MINIMUM OF FOUR SCREWS FOR ATTACHING THE PLATE COVER TO THE BOX. CABLE CLAMPS SHALL BE PROVIDED FOR CABLES ENTERING AND EXITING THE BOX.



SPLICE BOX

1/11/2011

TRAFFIC SIGNAL AND ROADWAY LIGHTING
JUNCTION BOX AND CONDUIT DETAILS

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T30

NOTE:

WHENEVER THE PLAN SPECIFICATIONS CONFLICT WITH THE KENTUCKY STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, THE PLAN SPECIFICATIONS SHALL GOVERN.

HIGH MAST POLES

HIGH MAST POLE DESIGN SHALL BE IN ACCORDANCE WITH LOADING AND ALLOWABLE STRESS REQUIREMENTS OF 2009 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS." FIFTH EDITION WITH CURRENT INTERIMS. LOADING SHALL BE BASED ON BASIC WIND SPEED OF 90 MPH, WITH A DESIGN LIFE/RECURRENCE INTERVAL OF 50 YEARS AND DESIGNED TO FATIGUE CATEGORY I. ALL DRAWINGS SHALL BE SUBMITTED IN DETAIL DEMONSTRATING THE COMPLIANCE WITH THE AASHTO SPECIFICATION.

THE STEEL POLE MEMBERS SHALLBE DESIGNED FOR VORTEX SHEDDING. THERE SHALL BE NO GALLOPING DESIGN FOR THIS STRUCTURE. ALL STRUCTURES SHALL BE DESIGNED FOR A GUST FACTOR OF 1.14. THERE SHALL BE NO TRUCK INDUCED GUST FATIGUE.

THE FABRICATOR SHALL BE CERTIFIED UNDER CATEGORY I "CONVENTIONAL STEEL STRUCTURES" AS SET FORTH BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION QUALITY CERTIFICATION PROGRAM.

ALL WELDING SHALL BE IN ACCORDANCE WITH SECTIONS 1 THROUGH 8 OF THE AMERICAN WELDING SOCIETY (AWS) D1.1 STRUCTURAL WELDING CODE. TACKERS AND WELDERS SHALL BE QUALIFIED IN ACCORDANCE WITH THE CODE. TUBE LONGITUDINAL SEAM WELDS SHALL BE FREE OF CRACKS AND EXCESSIVE UNDERCUT, PERFORMED WITH AUTOMATIC PROCESSES, AND BE VISUALLY INSPECTED. LONGITUDINAL WELDS SUSPECTED TO CONTAIN DEFECTS SHALL BE MAGNETIC PARTICLE INSPECTED. ALL CIRCUMFERENTIAL BUTT WELDED POLE AND ARM SPLICES SHALL BE ULTRASONICALLY AND RADIOGRAPHICALLY INSPECTED.

ALL MATERIALS AND PRODUCTS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA AND COMPLY WITH ASTM OR AASHTO SPECIFICATIONS.

ALL POLES SHALL BE OF THE SAME DESIGN. POLES SHALL BE DESIGNED FOR 12 FIXTURES PER POLE. THE COMBINED EFFECTIVE PROJECTED AREA (EPA) AND WEIGHT OF THE FIXTURES AND LOWERING DEVICE SHALL BE DETERMINED BY THE FIXTURE MANUFACTURER.

THE CALCULATIONS SHALL INCLUDE A POLE, BASE PLATE, AND ANCHOR BOLT ANALYSIS. THE POLE CALCULATIONS SHALL BE ANALYZED AT THE POLE BASE, 5 FT INTERVALS, AND AT EACH SLIP JOINT SPLICE. AT EACH OF THESE LOCATIONS, THE FOLLOWING INFORMATION SHALL BE GIVEN:

1. THE POLE'S DIAMETER, THICKNESS, SECTION MODULUS, MOMENT OF INERTIA, AND CROSS SECTIONAL AREA.
2. THE CENTROID, WEIGHT, PROJECTED AREA, DRAG COEFFICIENT, VELOCITY PRESSURE, AND WIND FORCE OF EACH TRAPEZOIDAL POLE SEGMENT.
3. THE AXIAL FORCE, SHEAR FORCE, PRIMARY MOMENT, TOTAL MOMENT, AXIAL STRESS, BENDING STRESS, ALLOWABLE AXIAL STRESS, ALLOWABLE BENDING STRESS, AND COMBINED STRESS RATIO (CSR) AT EACH ELEVATION.
4. THE POLE'S ANGULAR AND LINEAR DEFLECTION AT EACH ELEVATION.

EACH POLE SECTION SHALL CONFORM TO ASTM A 595 GRADE A WITH A MINIMUM YIELD STRENGTH OF 55 KSI OR ASTM A 572 WITH A MINIMUM YIELD STRENGTH OF 65 KSI. TUBES SHALL BE ROUND OR 16 SIDED WITH A FOUR INCH CORNER RADIUS, HAVE A CONSTANT LINEAR TAPER OF .144 IN/FT AND CONTAIN ONLY ONE LONGITUDINAL SEAM WELD. CIRCUMFERENTIAL WELDED TUBE BUTT SPLICES AND LAMINATED TUBES ARE NOT PERMITTED. POLE SECTIONS SHALL BE TELESCOPICALLY SLIP FIT ASSEMBLED IN THE FIELD TO FACILITATE INSPECTION OF INTERIOR SURFACE WELDS AND THE PROTECTIVE COATING. THE MINIMUM LENGTH OF THE TELESCOPIC SLIP SPLICES SHALL BE 1.5 TIMES THE INSIDE DIAMETER OF THE EXPOSED END OF THE FEMALE SECTION. LONGITUDINAL SEAM WELDS ON BOTH SECTIONS OF THE SLIP SPLICE SHALL BE COMPLETE PENETRATION WELDS FOR A LENGTH EQUAL TO THE MINIMUM SPLICE LENGTH PLUS 1/2 FT. LONGITUDINAL SEAM WELDS WITHIN 1/2 FT OF COMPLETE PENETRATION POLE TO BASE PLATE WELDS SHALL BE COMPLETE PENETRATION WELDS. TUBES SHALL BE HOT DIP GALVANIZED PER ASTM A 123.

BASE PLATES SHALL CONFORM TO ASTM GRADE 36 OR GRADE 50. THE THICKNESS OF THE BASE PLATES SHALL BE EQUAL TO OR GREATER THAN THE NOMINAL DIAMETER OF THE CONNECTION BOLT. PLATES SHALL BE INTEGRALLY WELDED TO THE TUBES WITH A TELESCOPIC WELDED JOINT OR A FULL PENETRATION BUTT WELD WITH BACKUP BAR. PLATES SHALL BE HOT DIP GALVANIZED PER ASTM A 123.

ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENT OF ASTM F 1554 GRADE 55 FOR HOOKED SMOOTH BARS OR GRADE 105 FOR HEADED. THE UPPER 12" OF THE BOLTS SHALL BE HOT DIP GALVANIZED PER ASTM A 153. EACH ANCHOR BOLT SHALL BE SUPPLIED WITH TWO HEX NUTS AND TWO FLAT WASHERS. THE STRENGTH OF THE NUTS SHALL EQUAL OR EXCEED THE PROOF LOAD OF THE BOLTS. BOTH NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

1/3/2011

GALVANIZING: PRIOR TO BEING INCORPORATED INTO AN ASSEMBLED PRODUCT, STEEL PLATES 3/4 INCH OR MORE IN THICKNESS SHALL BE BLAST CLEANED WHEN REQUIRED TO REMOVE ROLLED-IN MILL SCALE, IMPURITIES AND NON-METALLIC FOREIGN MATERIALS. AFTER ASSEMBLY, ALL WELD FLUX SHALL BE MECHANICALLY REMOVED. THE IRON OR STEEL PRODUCT SHALL BE DEGREASED BY IMMERSION IN AN AGITATED 4.5%-6% CONCENTRATED CAUSTIC SOLUTION ELEVATED TO A TEMPERATURE RANGING FROM 150-190 °F. IT SHALL THEN BE PICKLED BY IMMERSION IN A HEATED SULFURIC ACID SOLUTION OF 6%-13% CONCENTRATION, WITH A CONTROLLED TEMPERATURE BETWEEN 150-190 °F. IT SHALL NEXT BE RINSED CLEAN FROM ANY RESIDUAL EFFECTS OF THE CAUSTIC OR ACID SOLUTION BY IMMERSION IN A CIRCULATING FRESH WATER BATH. FINAL PREPARATION SHALL BE ACCOMPLISHED BY IMMERSION IN A CONCENTRATED ZINC AMMONIUM CHLORIDE FLUX SOLUTION HEATED TO 130° F. THE SOLUTION'S ACIDITY CONTENT SHALL BE MAINTAINED BETWEEN 4.5-5.0 pH. THE ASSEMBLY SHALL BE AIR DRIED TO REMOVE ANY MOISTURE REMAINING IN THE FLUX COAT AND/OR TRAPPED WITHIN THE PRODUCT.

THE PRODUCT SHALL BE HOT-DIP GALVANIZED TO THE REQUIREMENTS OF EITHER ASTM A 123 (FABRICATED PRODUCTS) OR ASTM A 153 (HARDWARE ITEMS) BY IMMERSION IN A MOLTEN BATH OF PRIME WESTERN GRADE ZINC MAINTAINED BETWEEN 810-850 °F.

LOWERING DEVICE

HEAD FRAME ASSEMBLY: THE HEAD FRAME ASSEMBLY SHALL BE FABRICATED FROM GALVANIZED STRUCTURE STEEL OR STAINLESS STEEL. THE HEAD FRAME ASSEMBLY SHALL MOUNT TO THE HIGH MAST POLE TENON AND SHALL BE SECURED WITH STAINLESS STEEL SET SCREWS. THE MANUFACTURER OF THE LOWERING DEVICE SHALL COORDINATE WITH THE POLE MANUFACTURER TO ENSURE COMPATIBILITY BETWEEN THE LOWERING DEVICE AND THE POLE. THE HEAD FRAME ASSEMBLY SHALL BE A TOP LATCHING DESIGN WITH THREE LIFTING CABLES USED TO RAISE AND LOWER THE LUMINAIRE RING. THE LIFTING CABLES SHALL BE STAINLESS STEEL, .18 INCH, 19 X 7 OR 7 X 19, AIRCRAFT CABLES MANUFACTURED PER MIL W-83140. EACH LIFTING CABLE SHALL BE SUPPORTED BY TWO SHEAVES (PULLEYS). SHEAVES SHALL BE CAST OR FORGED STEEL WITH A MACHINED GROOVE FOR THE CABLE .007 INCH LARGER THAN THE NOMINAL DIAMETER OF THE CABLE. SHEAVES MAY ALSO BE MANUFACTURED OF A MOLYBDENUM DISULFIDE REINFORCED NYLON. SHEAVES SHALL INCORPORATE OIL IMPREGNATED SINTERED BRONZE BUSHINGS. SHEAVES SHALL BE SUPPORTED BY SMOOTH STAINLESS STEEL SHAFTS. HEAD FRAME ASSEMBLY COVER SHALL BE CONSTRUCTED OF COPPER FREE SPUN ALUMINUM OR CLEAR UV STABILIZED ACRYLIC. COVER SHALL BE SHAPED TO SHED WATER.

ELECTRICAL POWER CORD: ELECTRICAL POWER CORD SHALL BE TYPE SO, EXTRA FLEXIBLE, RATED FOR 600 VOLTS. POWER CORD SHALL BE 4 CONDUCTOR #8 AWG OR 3 CONDUCTOR #10 AWG. POWER CORD SHALL BE SUPPORTED BY A MINIMUM OF SEVEN TEFLON OR DELRIN ROLLERS. CORD SHALL BE TERMINATED WITH A 4 CONDUCTOR TWISTLOCK CONNECTOR ON THE FREE END AND 600 VOLT TERMINAL BLOCK IN THE RING ENCLOSURE.
LUMINAIRE RING: THE LUMINAIRE RING SHALL BE CONSTRUCTED OF 6 FT X 2 FT GALVANIZED STRUCTURE STEEL. THE LUMINAIRE RING SHALL BE PREWIRED AND INCLUDE A WEATHERPROOF JUNCTION BOX AND TEST RECEPTACLE FOR GROUND LEVEL TESTING OF THE LUMINAIRES. IF A SPECIAL CABLE IS REQUIRED FOR GROUND LEVEL TESTING, ONE CABLE SHALL BE SUPPLIED WITH EACH PORTABLE POWER UNIT SPECIFIED ON THE PROJECT. THE RING SHALL INCLUDE THE APPROPRIATE NUMBER OF 2" STEEL LUMINAIRE MOUNTING TENONS INSTALLED. THE LUMINAIRE RING SHALL HAVE SPRING LOADED IRIS ARMS OR SPRING LOADED ROLLERS TO KEEP THE RING CONCENTRIC AROUND THE POLE DURING RAISING AND LOWERING. DESIGN OF THE IRIS ARMS SHALL BE AS SHOWN ON THE SPECIFICATION SHEETS. SPRINGS AND SPRING MOUNTING HARDWARE SHALL BE STAINLESS STEEL.

LUMINAIRES: HIGH MAST LUMINAIRES SHALL BE 1000W, HPS, 480V SINGLE PHASE STARTERS SHALL BE A PAYNE SPARKMAN OR APPROVED EQUAL.

CRITERIA FOR APPROVAL OF LUMINAIRES:
AVERAGE MAINTAINED: .8 FOOTCANDLES*
MINIMUM MAINTAINED : .2 FOOTCANDLES*
UNIFORMITY RATIO : <= 4:1*
* ON ROADWAY SURFACE

A 0.2 ISO-FOOTCANDLE TRACE MUST COVER ALL ROADWAY SURFACES. THIS TRACE MUST BE FROM TAPER TO TAPER ON EACH MAINLINE AND CROSSROAD.

ALL CRITERIA MUST BE MET WITH ORIGINAL LOCATIONS OF POLES ON THE PLAN SHEET.

ALL HIGH MAST LUMINAIRES SHALL BE OF THE SAME MANUFACTURER.

LATCHING MECHANISM: THE LATCHING MECHANISM SHALL CONSIST OF THREE HIGH STRENGTH, MARINE GRADE ALUMINUM LATCHING HOUSINGS AND THREE STAINLESS STEEL LATCH PINS. LATCHING AND UNLATCHING SHALL BE ACCOMPLISHED BY ALTERNATELY RAISING AND LOWERING THE LUMINAIRE RING. LATCHING MAY BE ACCOMPLISHED BY ROTATION OF THE LATCH PIN OR TRAVEL OF THE PIN THROUGH A MECHANICAL CIRCUIT. THE LATCHING HOUSINGS SHALL BE AN ENCLOSED DESIGN WITH THE ONLY OPENING AT THE BOTTOM. LATCH HOUSINGS SHALL HAVE A FLARED ENTRANCE BELL TO ALIGN THE LATCH PIN. EACH LATCH SHALL INCLUDE A REFLECTIVE INDICATOR FLAG THAT INDICATES WHEN THE LATCHING IS COMPLETE. EACH LATCH SHALL INCLUDE A SPRING TO COMPENSATE FOR POLE DEFLECTION.

WINCH ASSEMBLY: THE WINCH ASSEMBLY SHALL CONSIST OF A WINCH DRUM AND GEARBOX MOUNTED IN THE POLE AND AN EXTERNAL POWER UNIT. THE RAISING AND LOWERING SHALL BE SUPPORTED BY A SINGLE 1/4 INCH DIAMETER ZINC ELECTROPLATED STEEL AIRCRAFT CABLE. THE WINCH SHALL HAVE A LOAD RATING OF AT LEAST 1200 LB WITH A GEAR RATIO NOT LESS THAN 30:1. THE WINCH ASSEMBLY SHALL INCLUDE A FAIL SAFE BRAKE SYSTEM TO PREVENT FREEWHEELING OF THE WINCH DRUM. THE PORTABLE EXTERNAL POWER UNIT SHALL CONSIST OF A DRILL MOTOR, TORQUE LIMITER, STEP DOWN TRANSFORMER FOR 480 VOLT OPERATION, AND REMOTE SWITCH. TO PROVIDE COMPATIBILITY WITH EXISTING HIGH MAST SYSTEMS IN KENTUCKY, THE PORTABLE POWER UNIT AND WINCH UNIT SHALL BE FULLY COMPATIBLE WITH THE HOLOPHANE LD-5 PORTABLE LOWERING DEVICE.

CIRCUIT BREAKER IN POLE: THE CIRCUIT BREAKER SHALL BE A SINGLE THROW, DOUBLE POLE DEVICE WITH 100 AMP FRAME FOR 480 VOLT OPERATION. AMPERAGE RATING SHALL BE 15A FOR TOWERS WITH 4 OR LESS LUMINAIRES, 20A FOR TOWERS WITH 6 LUMINAIRES, AND 30A FOR TOWERS WITH 8 OR 10 LUMINAIRES.

GENERAL MATERIALS AND NOTES

MISCELLANEOUS HARDWARE: MISCELLANEOUS HARDWARE THAT REQUIRES GALVANIZING OR ELECTROPLATING SHALL CONFORM ASTM A 123.

METALLIC CONDUIT: METALLIC CONDUIT SHALL BE RIGID STEEL CONDUIT MEETING THE REQUIREMENTS OF AMERICAN STANDARD SPECIFICATION C-80.1.

METALLIC CONDUIT FITTINGS: METALLIC CONDUIT FITTINGS SHALL BE ZINC COATED AND SHALL MEET THE REQUIREMENTS OF AMERICAN STANDARD SPECIFICATION C-80.1.

NON-METALLIC CONDUIT: NON-METALLIC CONDUIT SHALL BE SCHEDULE 40 POLYVINYL CHLORIDE MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATIONS NO. LP 1036A, TYPE II, ELECTRICAL CLASS 2, GRADE C. EACH LENGTH SHALL BEAR THE UNDERWRITERS, INC. LABEL.

NON-METALLIC CONDUIT FITTINGS: NON-METALLIC CONDUIT FITTINGS SHALL BE FABRICATED FROM POLYVINYL CHLORIDE HAVING THE SAME CHEMICAL AND PHYSICAL PROPERTIES AS THE CONDUIT WITH WHICH IT IS TO BE USED. EACH SHALL BEAR THE UNDERWRITERS, INC. LABEL. THE JOINTS SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

CONCRETE CONDUIT MARKERS: MARKERS, IF REQUIRED, SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE PLANS.

DUCTED CABLE

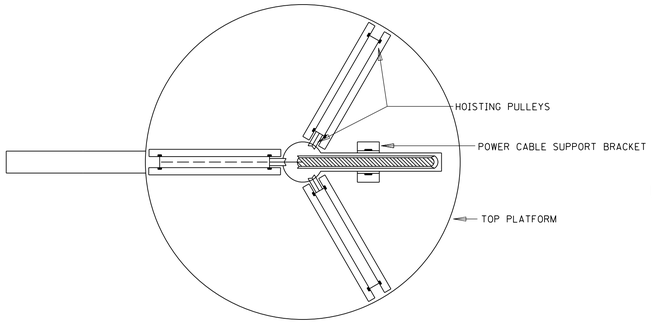
CABLE SHALL BE STRANDED ANNEALED COPPER MEETING THE REQUIREMENTS OF ASTM B-8 AND ASTM B-33 FOR OPERATION AT 600 VOLTS MAXIMUM MATERIAL SHALL MEET THE APPLICABLE REQUIREMENTS OF ICEA STANDARDS S-19-18. WITH THERMOPLASTIC INSULATION OF GRS-RUBBER BASE MEETING APPENDIX K(A) OF ICEA AND LISTED BY UL AS TYPE USE FOR DIRECT BURIAL; OR, MATERIAL SHALL MEET THE APPLICATION REQUIREMENTS OF ICEA STANDARD S-66-524. WITH THERMO-SETTING INSULATION OF CROSS LINK POLYETHYLENE MEETING REQUIREMENTS OF COLUMN "A" OF ICEA AND LISTED BY UL AS TYPE USE. CABLE SHALL BE PRE-INSTALLED IN DUCT. THE DUCT FOR SECONDARY CABLE UNDERGROUND SHALL BE POLYETHYLENE DUCT WITH MINIMUM TENSILE STRENGTH OF 3100 PSI DUCT TO PROVIDE FOR 40 % MAXIMUM FILL. THE DUCT SHALL MEET ASTM D 3485-80.

TESTING

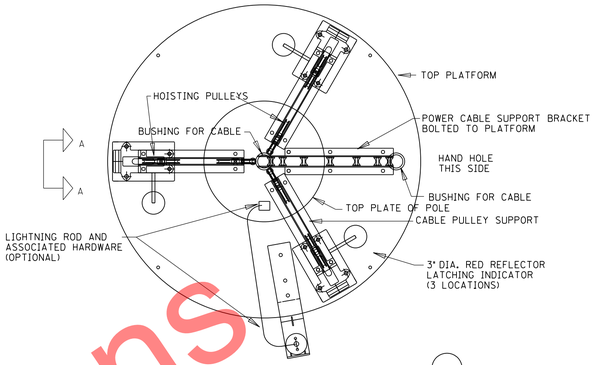
CONTRARY TO SECTION 716.03.08 OF THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION THE TESTING SPECIFICATION FOR ROADWAY LIGHTING SYSTEMS SHALL ENSURE THAT CIRCUITS TEST FREE OF SHORTS AND UNAUTHORIZED GROUNDS AND HAVE AN INSULATING RESISTANCE OF NO LESS THAN 100 MEGOHMS WHEN TESTED WITH 500 VOLT DIRECT CURRENT POTENTIAL IN A REASONABLY DRY ATMOSPHERE BETWEEN CONDUCTORS AND GROUND.

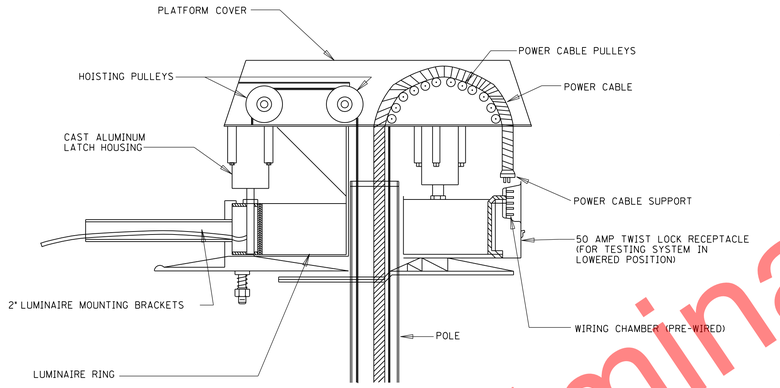
HIGHMAST NOTES

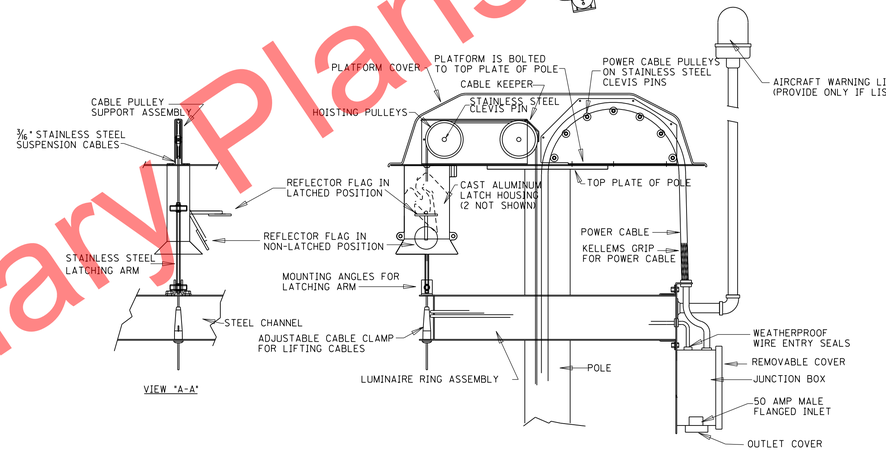
COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T31

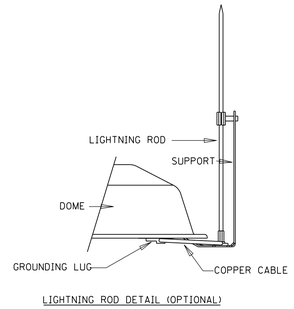


HEADFRAME ASSEMBLY - TOP VIEW

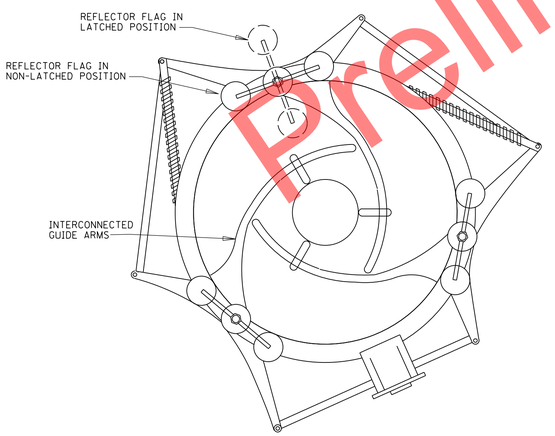




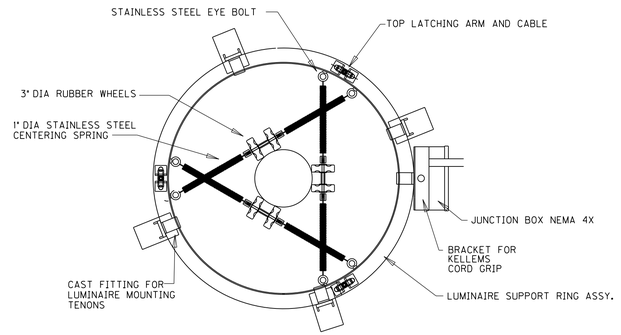




LIGHTNING ROD DETAIL (OPTIONAL)



LUMINAIRE RING ASSEMBLY - TOP VIEW



HEADFRAME & LUMINAIRE RING DETAILS - ROTARY LATCHING TYPE

HEADFRAME & LUMINAIRE RING DETAILS - LATERAL LATCHING TYPE

FILE NAME: C:\DOCUMENTS AND SETTINGS\TED.SWANSEGAR\DESKTOP\NEW FOLDER (2)\NEW FOLDER\T03100HM.DGN
USER: ted.swansegar
DATE PLOTTED: January 1, 0001
E-SHEET NAME: T03100HM
MicroStation v8.11.7.180

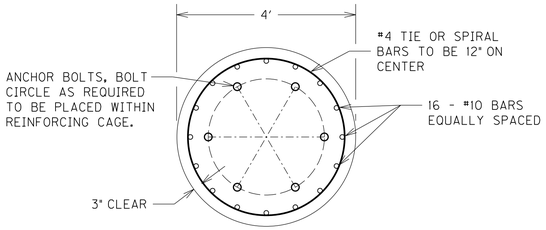
7/2002

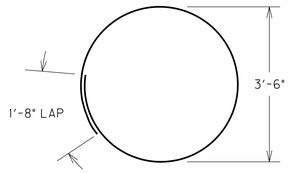
HIGHMAST LOWERING DEVICE DETAIL

BASE DESIGN FOR UP TO 120' HIGH MAST POLES

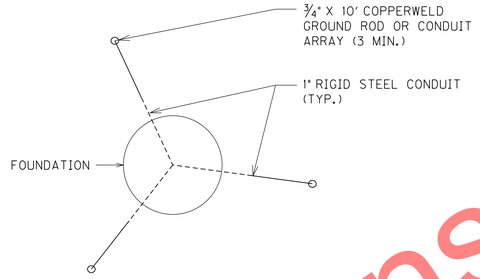
(WITH A MAXIMUM OF TWELVE LUMINAIRES)

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T32



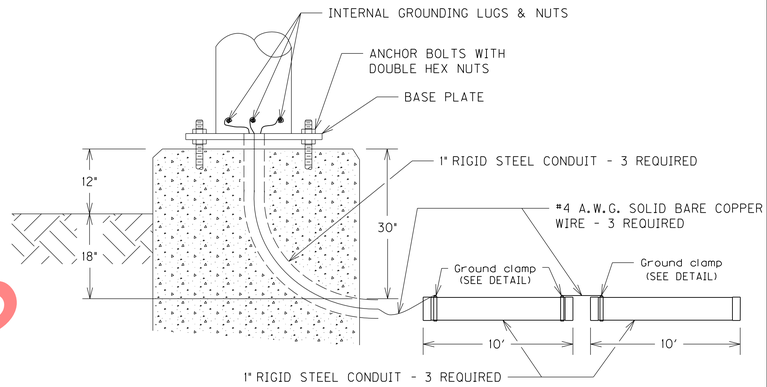


BENDING DETAIL
FOR #4 TIE BARS



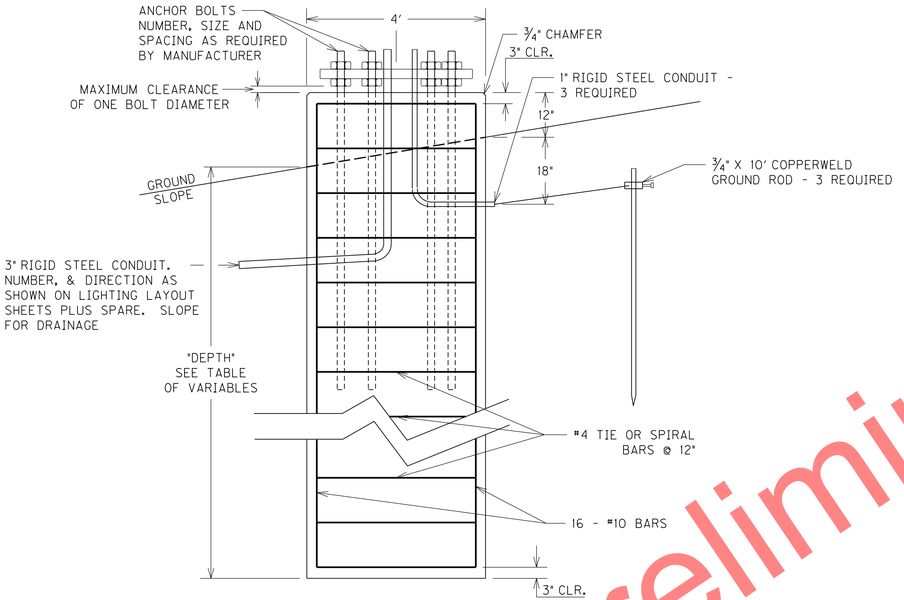
TOWER HAND HOLES SHALL BE ON THE DOWN-SLOPE SIDE OF THE TOWER

GROUND ROD
PLACEMENT DETAIL

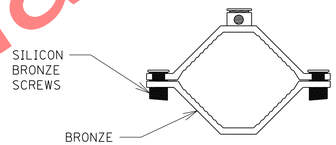


GROUNDING NOTE: TOWERS SHALL BE GROUNDED BY MEANS OF THREE NO. 4 A.W.G. SOLID BARE COPPER GROUND WIRES ATTACHED TO THE INTERNAL GROUNDING LUGS WITHIN THE TOWER. GROUND WIRES SHALL BE CONNECTED TO PIPE CLAMPS AS SHOWN ABOVE.

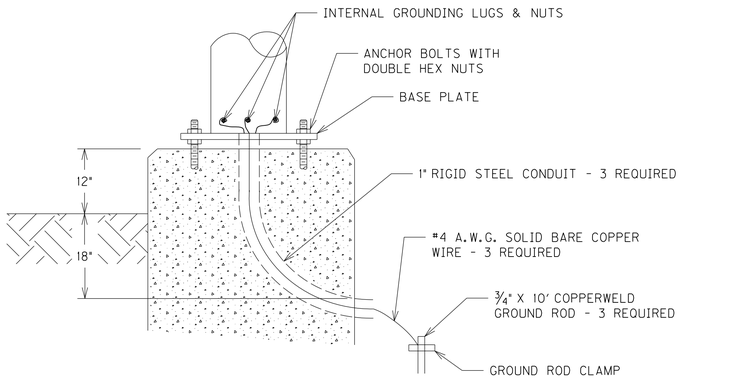
GROUNDING AND CONDUIT ARRAY
ENTRANCE DETAIL FOR ROCK AREAS



BASE DETAIL



DIRECT BURIAL
GROUND CLAMP



GROUNDING NOTE: TOWERS SHALL BE GROUNDED BY MEANS OF THREE NO. 4 A.W.G. SOLID BARE COPPER GROUND WIRES ATTACHED TO THE INTERNAL GROUNDING LUGS WITHIN THE TOWER. GROUND WIRES SHALL BE CONNECTED TO THREE GROUND RODS BY MEANS OF GROUND ROD CLAMPS.

GROUNDING AND CONDUIT
ENTRANCE DETAIL

NOTES:

DRILLED SHAFT DEPTH SHALL BE BASED ON THE SOIL CONDITIONS ENCOUNTERED DURING DRILLING AND SLOPE CONDITION AT THE SITE. REFER TO THE DESIGN CHART.

IF ROCK IS ENCOUNTERED DURING DRILLING OPERATIONS AND CONFIRMED BY THE RESIDENT ENGINEER TO BE OF SOUND QUALITY, THE SHAFT IS ONLY REQUIRED TO BE FURTHER ADVANCED INTO THE ROCK BY THE LENGTH OF ROCK SOCKET SHOWN IN THE TABLE. THE TOTAL LENGTH OF THE SHAFT NEED NOT BE LONGER THAN THAT OF SOIL ALONE. BOTH LONGITUDINAL REBAR LENGTH AND NUMBER OF TIES OR SPIRAL LENGTH SHALL BE ADJUSTED ACCORDINGLY.

IF A SHORTER DEPTH IS DESIRED FOR THE DRILLED SHAFT, THE CONTRACTOR SHALL PROVIDE, FOR THE STATE'S REVIEW AND APPROVAL, A DETAILED COLUMN DESIGN WITH INDIVIDUAL SITE SPECIFIC SOIL AND ROCK ANALYSIS PERFORMED AND APPROVED BY A REGISTERED PROFESSIONAL ENGINEER.

SPIRAL REINFORCEMENT MAY BE SUBSTITUTED FOR TIES. IF SPIRAL REINFORCEMENT IS USED, ONE AND ONE-HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. SPLICES FOR SPIRALS WHERE DESIRED BY THE CONTRACTOR SHALL BE MADE WITH A MINIMUM OF ONE AND ONE-HALF TURNS OF THE SPIRAL.

SUBSURFACE CONDITIONS CONSISTING OF VERY SOFT CLAY OR VERY LOOSE SATURATED SAND COULD RESULT IN SOIL PARAMETERS WEAKER THAN THOSE ASSUMED. RESIDENT ENGINEER SHALL CONSULT WITH THE GEOTECHNICAL BRANCH IF SUCH CONDITIONS ARE ENCOUNTERED.

THE BOTTOM OF THE DRILLED HOLE SHALL BE FIRM AND THOROUGHLY CLEANED SO NO LOOSE OR COMPRESSIBLE MATERIALS ARE PRESENT AT THE TIME OF THE CONCRETE PLACEMENT.

IF THE DRILLED HOLE CONTAINS STANDING WATER, THE CONCRETE SHALL BE PLACED USING A TREMIE TO DISPLACE WATER. CONTINUOUS CONCRETE FLOW WILL BE REQUIRED TO INSURE FULL DISPLACEMENT OF ANY WATER.

THE REINFORCEMENT AND ANCHOR BOLTS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

TOP NUTS SHALL BE TIGHTENED TO ONE-SIXTH TURN BEYOND SNUG-TIGHT. SNUG-TIGHT IS DEFINED AS THE CONDITION WHERE THE NUT IS IN FULL CONTACT WITH THE BASE PLATE. IT IS ASSUMED THAT THE FULL EFFORT OF A WORKMAN ON A 12-INCH WRENCH RESULTS IN A SNUG-TIGHT CONDITION.

THE CLEARANCE BETWEEN THE BOTTOM OF THE LEVELING NUTS AND THE TOP OF THE CONCRETE FOUNDATION SHALL NOT EXCEED ONE BOLT DIAMETER.

A MINIMUM OF 6 ANCHOR BOLTS SHALL BE USED.

WELDING OF ANCHOR BOLTS TO THE REINFORCING CAGE IS UNACCEPTABLE, TEMPLATES SHALL BE USED.

THE COST OF ALL MATERIALS & INSTALLATION SHALL BE INCLUDED IN THE UNIT BID PRICE.

CONCRETE: CLASS A
STEEL REINFORCEMENT: 60,000 PSI

EXPOSED PORTIONS OF THE FOUNDATION SHALL BE FORMED TO CREATE A SMOOTH FINISHED SURFACE. ALL FORMING SHALL BE REMOVED UPON COMPLETION OF FOUNDATION CONSTRUCTION.

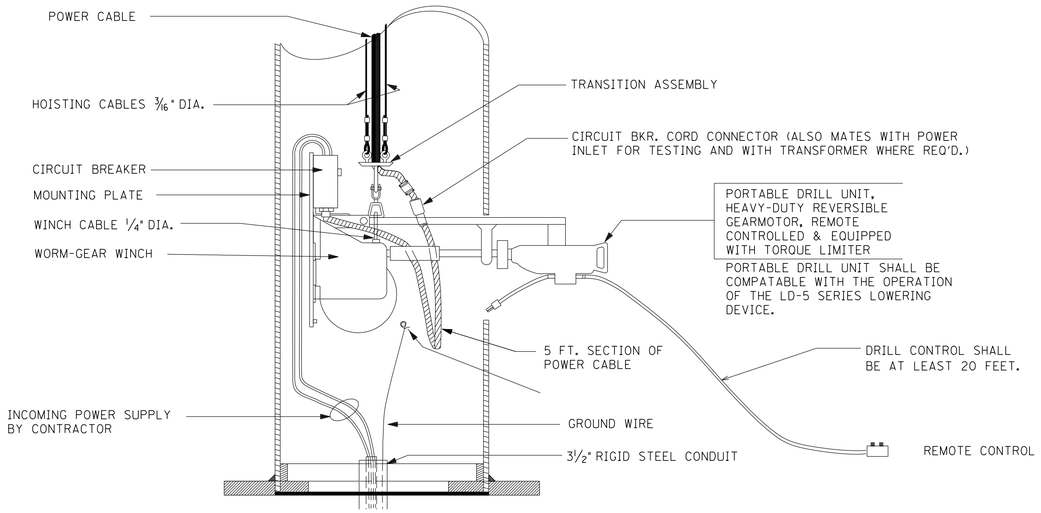
MAXIMUM SERVICE FORCES		DRILLED SHAFT DATA												
			DEPTH								VERTICAL BARS		TIES OR SPIRAL	
MAX MOMENT (ft-kips)	MAX SHEAR (kips)	DIAMETER (inches)	LEVEL GROUND		3:1 GROUND SLOPE		2:1 GROUND SLOPE		1.5:1 GROUND SLOPE		SIZE	TOTAL	SIZE	SPACING OR PITCH
			SOIL	ROCK	SOIL	ROCK	SOIL	ROCK	SOIL	ROCK				
230.0	22.0	48.0	17.0	7.0	19.0	7.0	20.0	7.0	SEE NOTE 1	7.0	#10	16	#4	12"

NOTE 1: SHAFT LENGTH IS 22' FOR COHESIVE SOIL ONLY. FOR COHESIONLESS SOIL, CONTACT GEOTECHNICAL BRANCH FOR DESIGN.

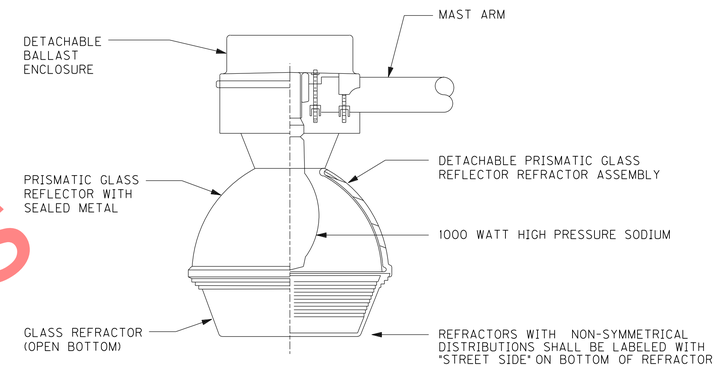
HIGHMAST BASE DETAIL

4/19/2011

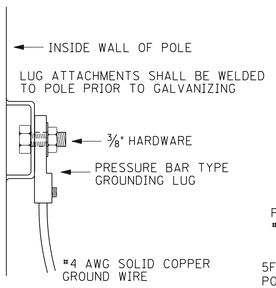
COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T33



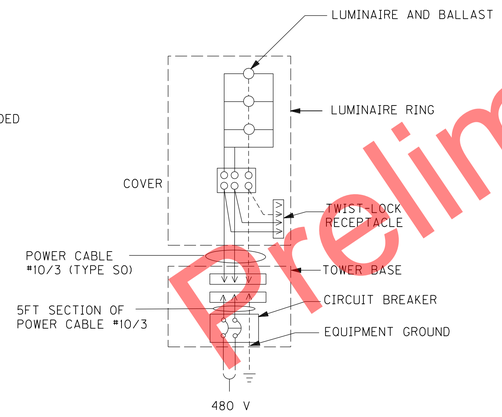
POLE BASE DETAIL



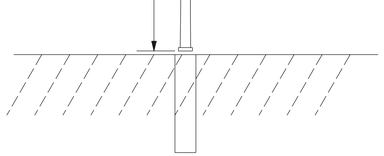
HIGH MAST LUMINAIRE
NON-CUTOFF TYPE



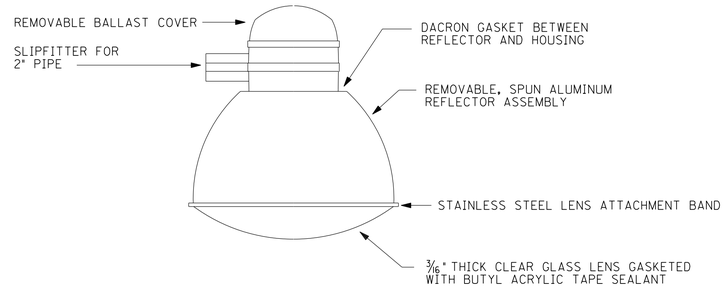
POLE GROUNDING LUG (3 REQ.)



WIRING ARRANGEMENT AT
TOWER LOCATIONS



SEE HIGH MAST DETAIL SHEET



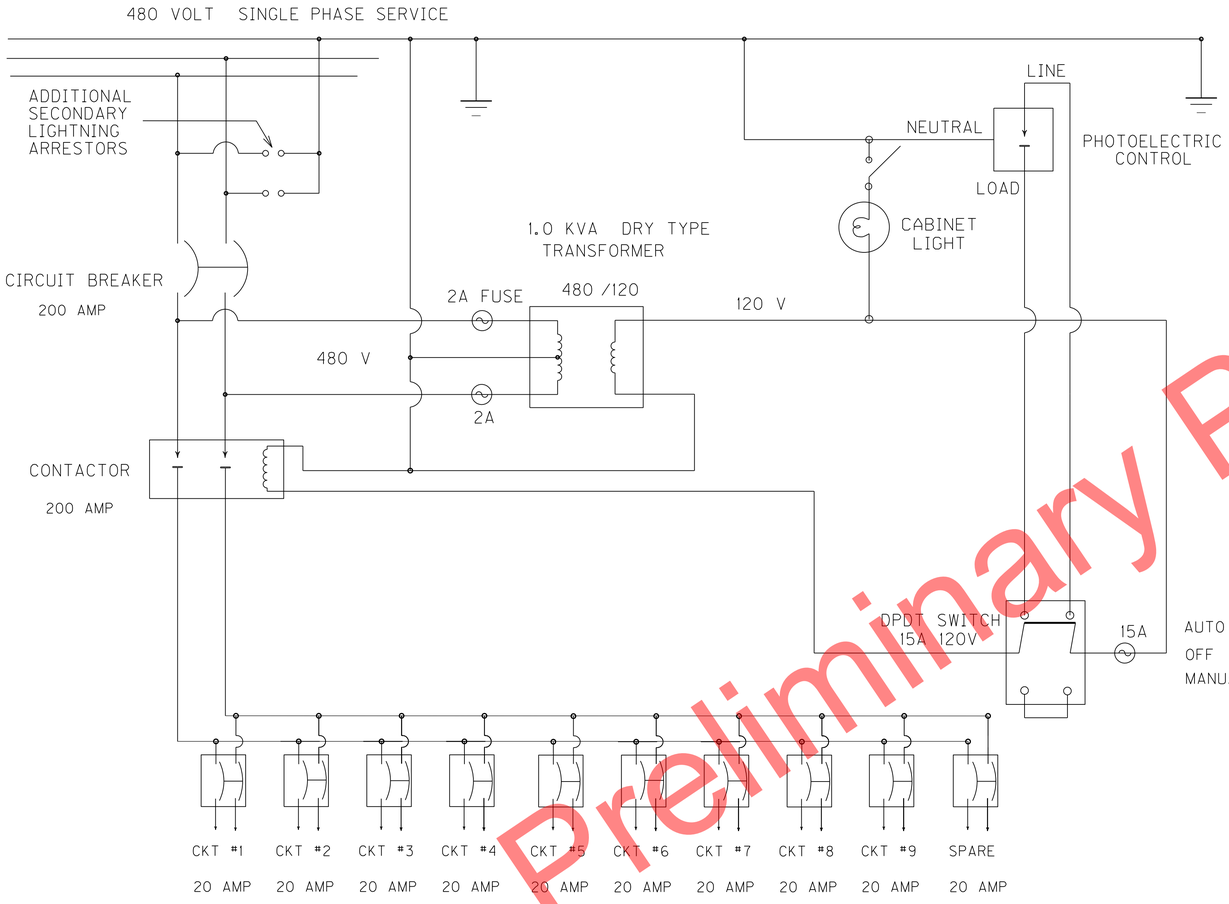
HIGH MAST LUMINAIRE
CUTOFF TYPE

NUMBER OF PORTABLE POWER UNITS TO BE SUPPLIED 1

1/2008

HIGHMAST POLE/LUMINAIRE DETAILS

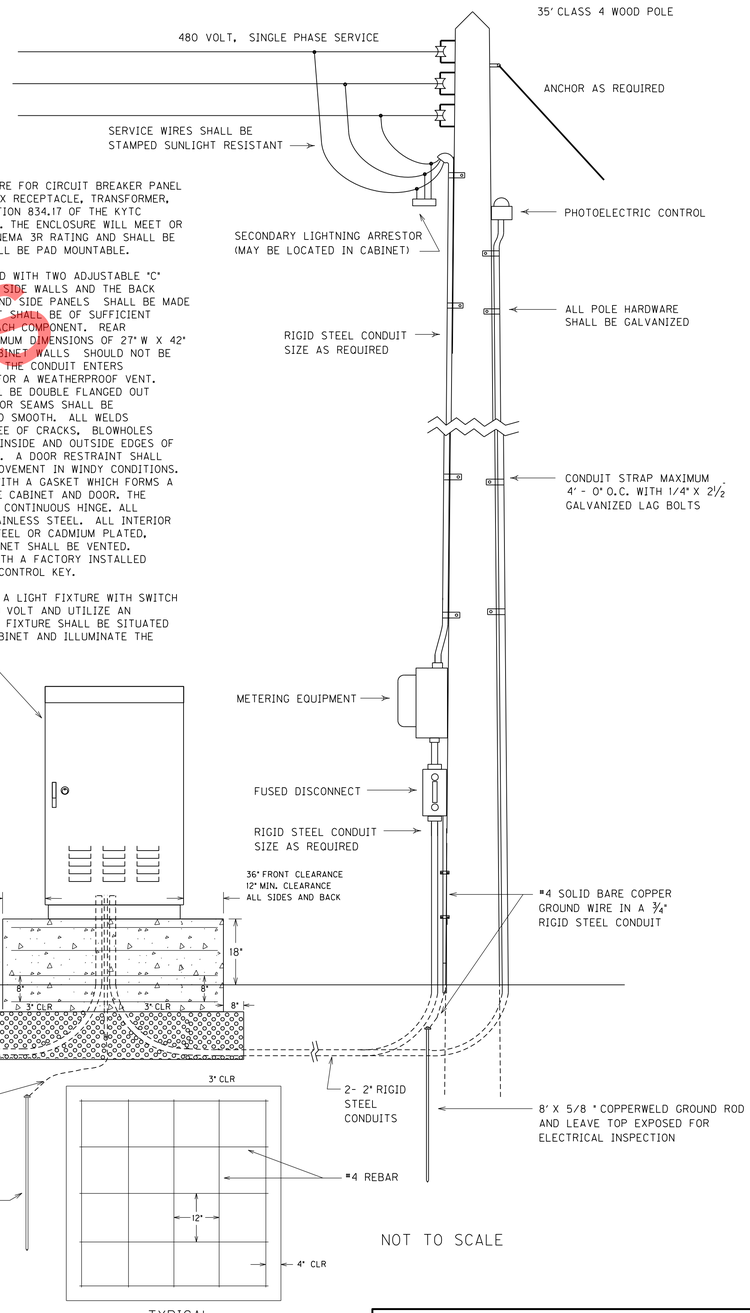
COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T34



ALUMINUM WEATHERPROOF ENCLOSURE FOR CIRCUIT BREAKER PANEL BOARD, CIRCUIT BREAKERS, DUPLEX RECEPTACLE, TRANSFORMER, CONTACTOR, FUSES, ETC. PER SECTION 834.17 OF THE KYTC STANDARD SPECIFICATIONS BOOK. THE ENCLOSURE WILL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED. THE ENCLOSURE SHALL BE PAD MOUNTABLE.

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO ADJUSTABLE 'C' MOUNTING CHANNELS ON BOTH THE SIDE WALLS AND THE BACK WALL OF THE ENCLOSURE. BACK AND SIDE PANELS SHALL BE MADE OF 0.125 INCH ALUMINUM. CABINET SHALL BE OF SUFFICIENT SIZE TO GAIN EASY ACCESS TO EACH COMPONENT. REAR ALUMINUM PANEL SHALL HAVE MINIMUM DIMENSIONS OF 27" W X 42" HIGH. THE INTEGRITY OF THE CABINET WALLS SHOULD NOT BE COMPROMISED EXCEPT FOR WHERE THE CONDUIT ENTERS (PREFERABLY ON THE BOTTOM) OR FOR A WEATHERPROOF VENT. THE ENCLOSURE DOOR FRAME SHALL BE DOUBLE FLANGED OUT ON ALL FOUR SIDES. ALL EXTERIOR SEAMS SHALL BE CONTINUOUSLY WELDED AND GROUND SMOOTH. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOWHOLES AND OTHER IRREGULARITIES. ALL INSIDE AND OUTSIDE EDGES OF CABINET SHALL BE FREE OF BURRS. A DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT IN WINDY CONDITIONS. THE DOOR SHALL BE FURNISHED WITH A GASKET WHICH FORMS A WEATHER TIGHT SEAL BETWEEN THE CABINET AND DOOR. THE DOOR SHALL HAVE A HEAVY GAUGE CONTINUOUS HINGE. ALL EXTERIOR HARDWARE SHALL BE STAINLESS STEEL. ALL INTERIOR HARDWARE SHALL BE STAINLESS STEEL OR CADMIUM PLATED, TYPE II, CLASS I OR EQUAL. CABINET SHALL BE VENTED. CABINET DOOR SHALL BE KEYED WITH A FACTORY INSTALLED STANDARD NO. 2 CORBIN TRAFFIC CONTROL KEY.

CONTRACTOR SHALL ALSO INSTALL A LIGHT FIXTURE WITH SWITCH AND BULB. FIXTURE SHALL BE 120 VOLT AND UTILIZE AN INCANDESCENT BULB (60 W MIN.) FIXTURE SHALL BE SITUATED AT OR NEAR THE TOP OF THE CABINET AND ILLUMINATE THE CONTENTS OF THE CABINET.



NOT TO SCALE

NOTES:

CONTRACTOR SHALL INSTALL ALL LIGHTING CONTROL EQUIPMENT AS INDICATED.

CONCRETE SHALL BE CLASS A. CONCRETE SHALL BE POURED ON 12" OF POWER TAMPED DENSE GRADE ROCK. PAD SHALL BE 30" THICK WITH 18" ABOVE GRADE.

PAD SHALL BE OF SUFFICIENT SIZE TO ALLOW A MINIMUM 36" IN FRONT OF THE CABINET AND 12" MINIMUM CLEARANCE AROUND THE SIDES AND BACK OF THE CABINET.

CONCRETE SHALL BE SLOPED 1/8 " PER FOOT TO PREVENT STANDING WATER. OUTSIDE EDGE SHALL HAVE A ONE INCH CHAMFER.

#4 REBAR SHALL BE COMPRISED OF RUNS AS SHOWN AND TIED AT EACH JOINT.

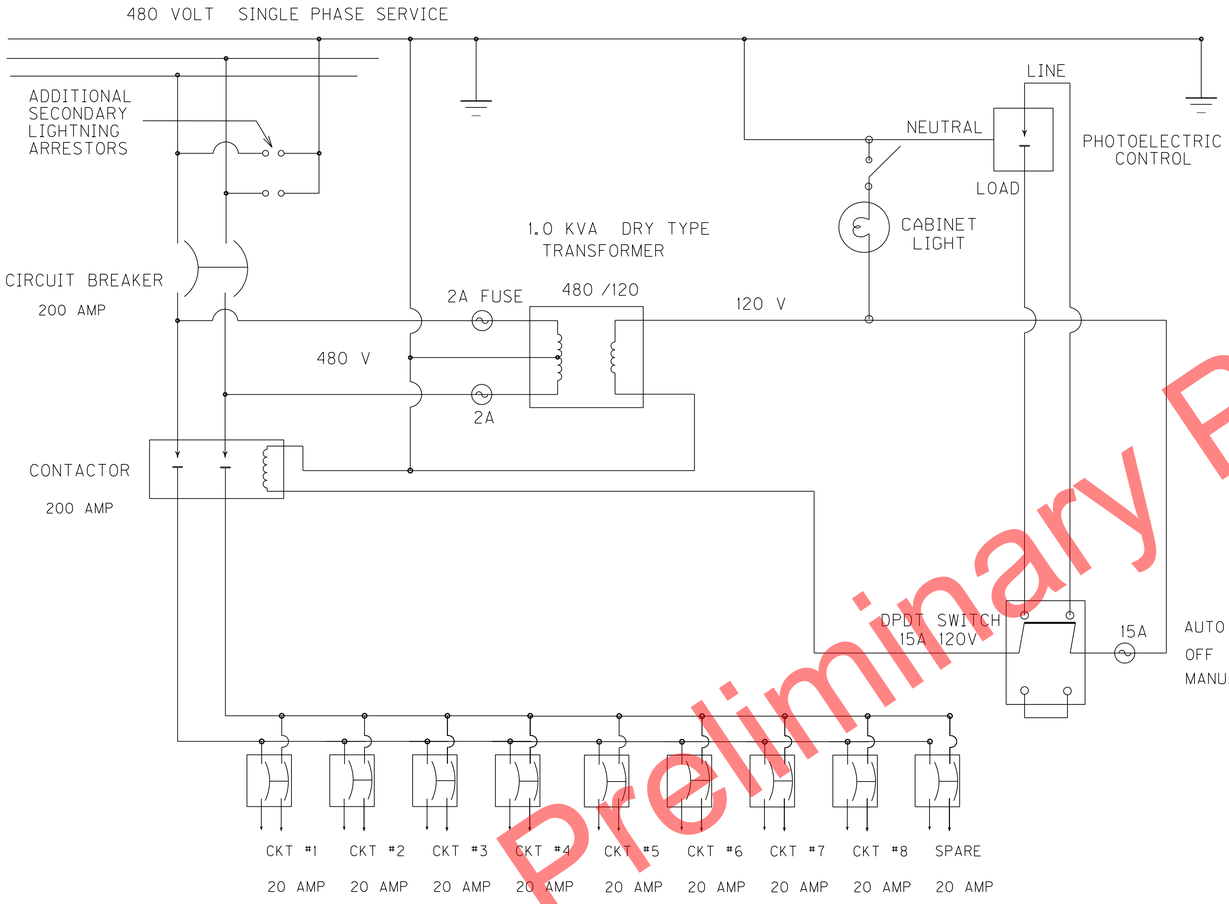
ALL CONSTRUCTION (TO INCLUDE EXCAVATION WORK) AND MATERIALS (CONCRETE , STEEL REINFORCEMENT, ETC.) FOR THE CONCRETE PAD SHALL BE INCIDENTAL TO THE POLE FOR THE LIGHTING CONTROL EQUIPMENT BID ITEM.

THE CONTRACTOR SHALL PROVIDE A CABINET WITH ALL WIRING AND COMPONENTS APPROVED BY THE MANUFACTURER AS AN ASSEMBLY. THIS APPROVAL SHALL BE INCIDENTAL TO LIGHTING CONTROL EQUIPMENT. DOCUMENTATION THAT THE CABINET, WIRING, AND ALL COMPONENTS ARE AN APPROVED ASSEMBLY SHALL BE SUBMITTED TO CENTRAL OFFICE TRAFFIC OPERATIONS.

7/2008

BASE MOUNTED SERVICE A DETAIL
#1

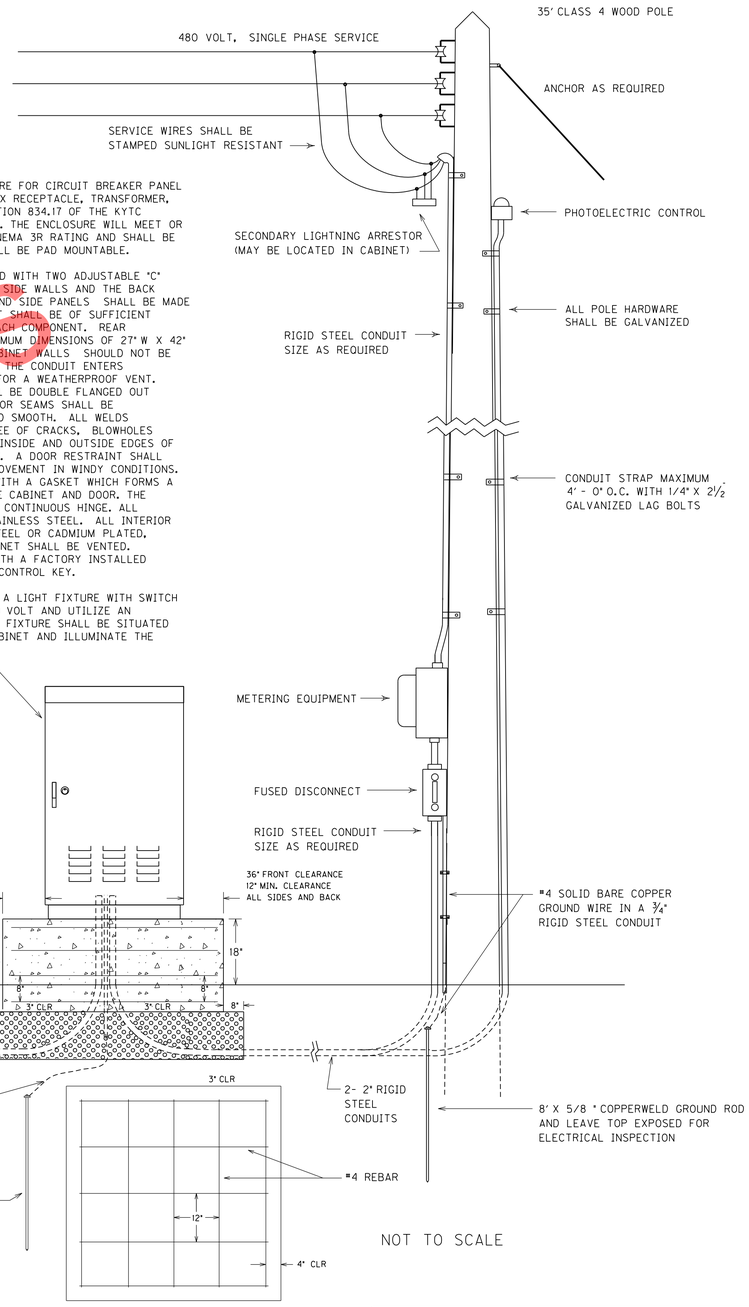
COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T35



ALUMINUM WEATHERPROOF ENCLOSURE FOR CIRCUIT BREAKER PANEL BOARD, CIRCUIT BREAKERS, DUPLEX RECEPTACLE, TRANSFORMER, CONTACTOR, FUSES, ETC. PER SECTION 834.17 OF THE KYTC STANDARD SPECIFICATIONS BOOK. THE ENCLOSURE WILL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED. THE ENCLOSURE SHALL BE PAD MOUNTABLE.

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO ADJUSTABLE 'C' MOUNTING CHANNELS ON BOTH THE SIDE WALLS AND THE BACK WALL OF THE ENCLOSURE. BACK AND SIDE PANELS SHALL BE MADE OF 0.125 INCH ALUMINUM. CABINET SHALL BE OF SUFFICIENT SIZE TO GAIN EASY ACCESS TO EACH COMPONENT. REAR ALUMINUM PANEL SHALL HAVE MINIMUM DIMENSIONS OF 27" W X 42" HIGH. THE INTEGRITY OF THE CABINET WALLS SHOULD NOT BE COMPROMISED EXCEPT FOR WHERE THE CONDUIT ENTERS (PREFERABLY ON THE BOTTOM) OR FOR A WEATHERPROOF VENT. THE ENCLOSURE DOOR FRAME SHALL BE DOUBLE FLANGED OUT ON ALL FOUR SIDES. ALL EXTERIOR SEAMS SHALL BE CONTINUOUSLY WELDED AND GROUND SMOOTH. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOWHOLES AND OTHER IRREGULARITIES. ALL INSIDE AND OUTSIDE EDGES OF CABINET SHALL BE FREE OF BURRS. A DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT IN WINDY CONDITIONS. THE DOOR SHALL BE FURNISHED WITH A GASKET WHICH FORMS A WEATHER TIGHT SEAL BETWEEN THE CABINET AND DOOR. THE DOOR SHALL HAVE A HEAVY GAUGE CONTINUOUS HINGE. ALL EXTERIOR HARDWARE SHALL BE STAINLESS STEEL. ALL INTERIOR HARDWARE SHALL BE STAINLESS STEEL OR CADMIUM PLATED, TYPE II, CLASS I OR EQUAL. CABINET SHALL BE VENTED. CABINET DOOR SHALL BE KEYED WITH A FACTORY INSTALLED STANDARD NO. 2 CORBIN TRAFFIC CONTROL KEY.

CONTRACTOR SHALL ALSO INSTALL A LIGHT FIXTURE WITH SWITCH AND BULB. FIXTURE SHALL BE 120 VOLT AND UTILIZE AN INCANDESCENT BULB (60 W MIN.) FIXTURE SHALL BE SITUATED AT OR NEAR THE TOP OF THE CABINET AND ILLUMINATE THE CONTENTS OF THE CABINET.



NOT TO SCALE

TYPICAL

NOTES:

CONTRACTOR SHALL INSTALL ALL LIGHTING CONTROL EQUIPMENT AS INDICATED.

CONCRETE SHALL BE CLASS A. CONCRETE SHALL BE POURED ON 12" OF POWER TAMPED DENSE GRADE ROCK. PAD SHALL BE 30" THICK WITH 18" ABOVE GRADE.

PAD SHALL BE OF SUFFICIENT SIZE TO ALLOW A MINIMUM 36" IN FRONT OF THE CABINET AND 12" MINIMUM CLEARANCE AROUND THE SIDES AND BACK OF THE CABINET.

CONCRETE SHALL BE SLOPED 1/8 " PER FOOT TO PREVENT STANDING WATER. OUTSIDE EDGE SHALL HAVE A ONE INCH CHAMFER.

#4 REBAR SHALL BE COMPRISED OF RUNS AS SHOWN AND TIED AT EACH JOINT.

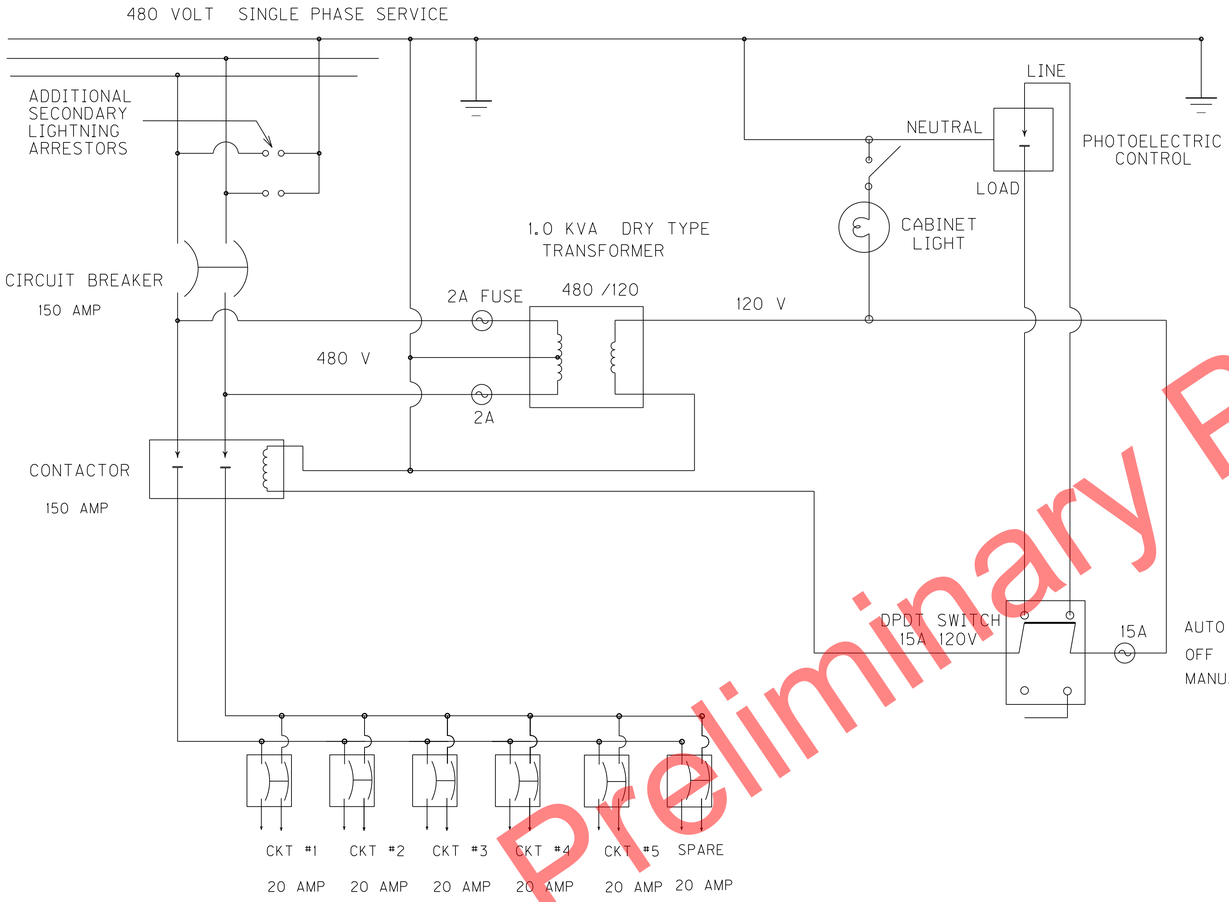
ALL CONSTRUCTION (TO INCLUDE EXCAVATION WORK) AND MATERIALS (CONCRETE , STEEL REINFORCEMENT, ETC.) FOR THE CONCRETE PAD SHALL BE INCIDENTAL TO THE POLE FOR THE LIGHTING CONTROL EQUIPMENT BID ITEM.

THE CONTRACTOR SHALL PROVIDE A CABINET WITH ALL WIRING AND COMPONENTS APPROVED BY THE MANUFACTURER AS AN ASSEMBLY. THIS APPROVAL SHALL BE INCIDENTAL TO LIGHTING CONTROL EQUIPMENT. DOCUMENTATION THAT THE CABINET, WIRING, AND ALL COMPONENTS ARE AN APPROVED ASSEMBLY SHALL BE SUBMITTED TO CENTRAL OFFICE TRAFFIC OPERATIONS.

7/2008

BASE MOUNTED SERVICE DETAIL #2

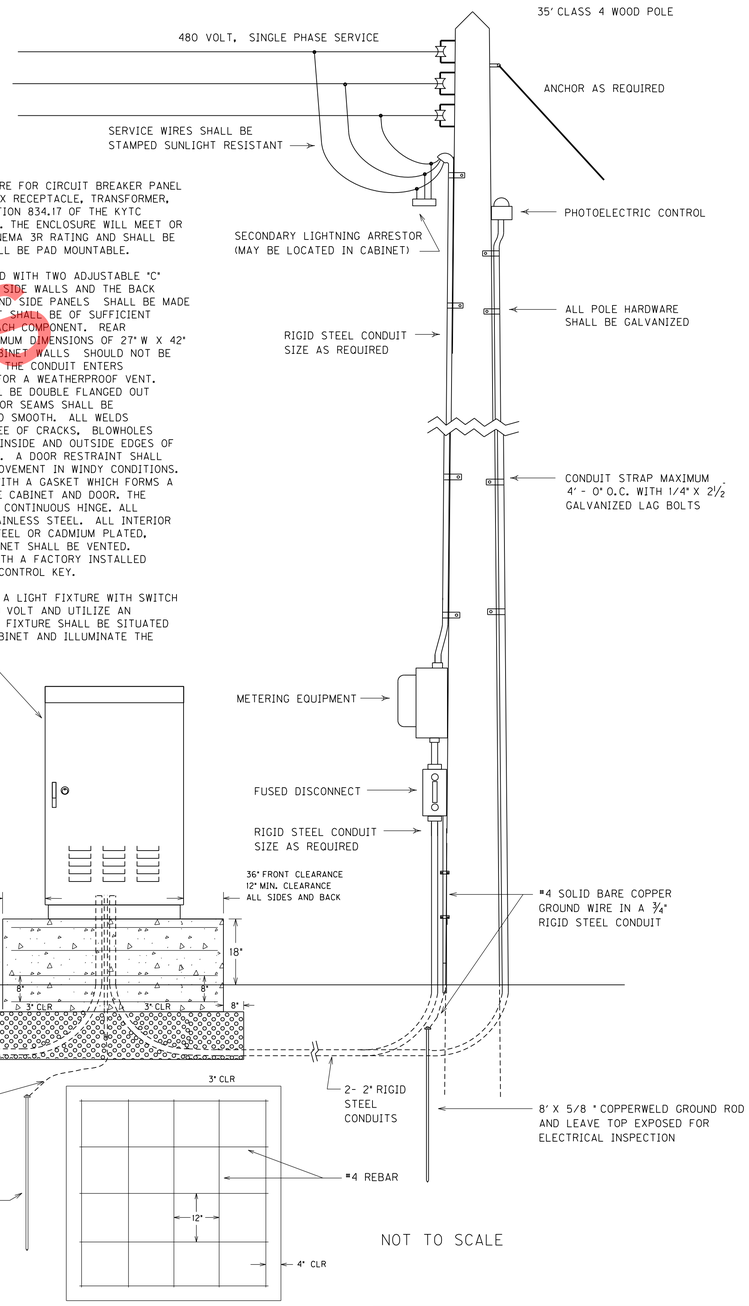
COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T36



ALUMINUM WEATHERPROOF ENCLOSURE FOR CIRCUIT BREAKER PANEL BOARD, CIRCUIT BREAKERS, DUPLEX RECEPTACLE, TRANSFORMER, CONTACTOR, FUSES, ETC. PER SECTION 834.17 OF THE KYTC STANDARD SPECIFICATIONS BOOK. THE ENCLOSURE WILL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED. THE ENCLOSURE SHALL BE PAD MOUNTABLE.

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO ADJUSTABLE 'C' MOUNTING CHANNELS ON BOTH THE SIDE WALLS AND THE BACK WALL OF THE ENCLOSURE. BACK AND SIDE PANELS SHALL BE MADE OF 0.125 INCH ALUMINUM. CABINET SHALL BE OF SUFFICIENT SIZE TO GAIN EASY ACCESS TO EACH COMPONENT. REAR ALUMINUM PANEL SHALL HAVE MINIMUM DIMENSIONS OF 27" W X 42" HIGH. THE INTEGRITY OF THE CABINET WALLS SHOULD NOT BE COMPROMISED EXCEPT FOR WHERE THE CONDUIT ENTERS (PREFERABLY ON THE BOTTOM) OR FOR A WEATHERPROOF VENT. THE ENCLOSURE DOOR FRAME SHALL BE DOUBLE FLANGED OUT ON ALL FOUR SIDES. ALL EXTERIOR SEAMS SHALL BE CONTINUOUSLY WELDED AND GROUND SMOOTH. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOWHOLES AND OTHER IRREGULARITIES. ALL INSIDE AND OUTSIDE EDGES OF CABINET SHALL BE FREE OF BURRS. A DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT IN WINDY CONDITIONS. THE DOOR SHALL BE FURNISHED WITH A GASKET WHICH FORMS A WEATHER TIGHT SEAL BETWEEN THE CABINET AND DOOR. THE DOOR SHALL HAVE A HEAVY GAUGE CONTINUOUS HINGE. ALL EXTERIOR HARDWARE SHALL BE STAINLESS STEEL. ALL INTERIOR HARDWARE SHALL BE STAINLESS STEEL OR CADMIUM PLATED, TYPE II, CLASS I OR EQUAL. CABINET SHALL BE VENTED. CABINET DOOR SHALL BE KEYED WITH A FACTORY INSTALLED STANDARD NO. 2 CORBIN TRAFFIC CONTROL KEY.

CONTRACTOR SHALL ALSO INSTALL A LIGHT FIXTURE WITH SWITCH AND BULB. FIXTURE SHALL BE 120 VOLT AND UTILIZE AN INCANDESCENT BULB (60 W MIN.) FIXTURE SHALL BE SITUATED AT OR NEAR THE TOP OF THE CABINET AND ILLUMINATE THE CONTENTS OF THE CABINET.



TYPICAL

NOT TO SCALE

NOTES:

CONTRACTOR SHALL INSTALL ALL LIGHTING CONTROL EQUIPMENT AS INDICATED.

CONCRETE SHALL BE CLASS A. CONCRETE SHALL BE POURED ON 12" OF POWER TAMPED DENSE GRADE ROCK. PAD SHALL BE 30" THICK WITH 18" ABOVE GRADE.

PAD SHALL BE OF SUFFICIENT SIZE TO ALLOW A MINIMUM 36" IN FRONT OF THE CABINET AND 12" MINIMUM CLEARANCE AROUND THE SIDES AND BACK OF THE CABINET.

CONCRETE SHALL BE SLOPED 1/8 " PER FOOT TO PREVENT STANDING WATER. OUTSIDE EDGE SHALL HAVE A ONE INCH CHAMFER.

#4 REBAR SHALL BE COMPRISED OF RUNS AS SHOWN AND TIED AT EACH JOINT.

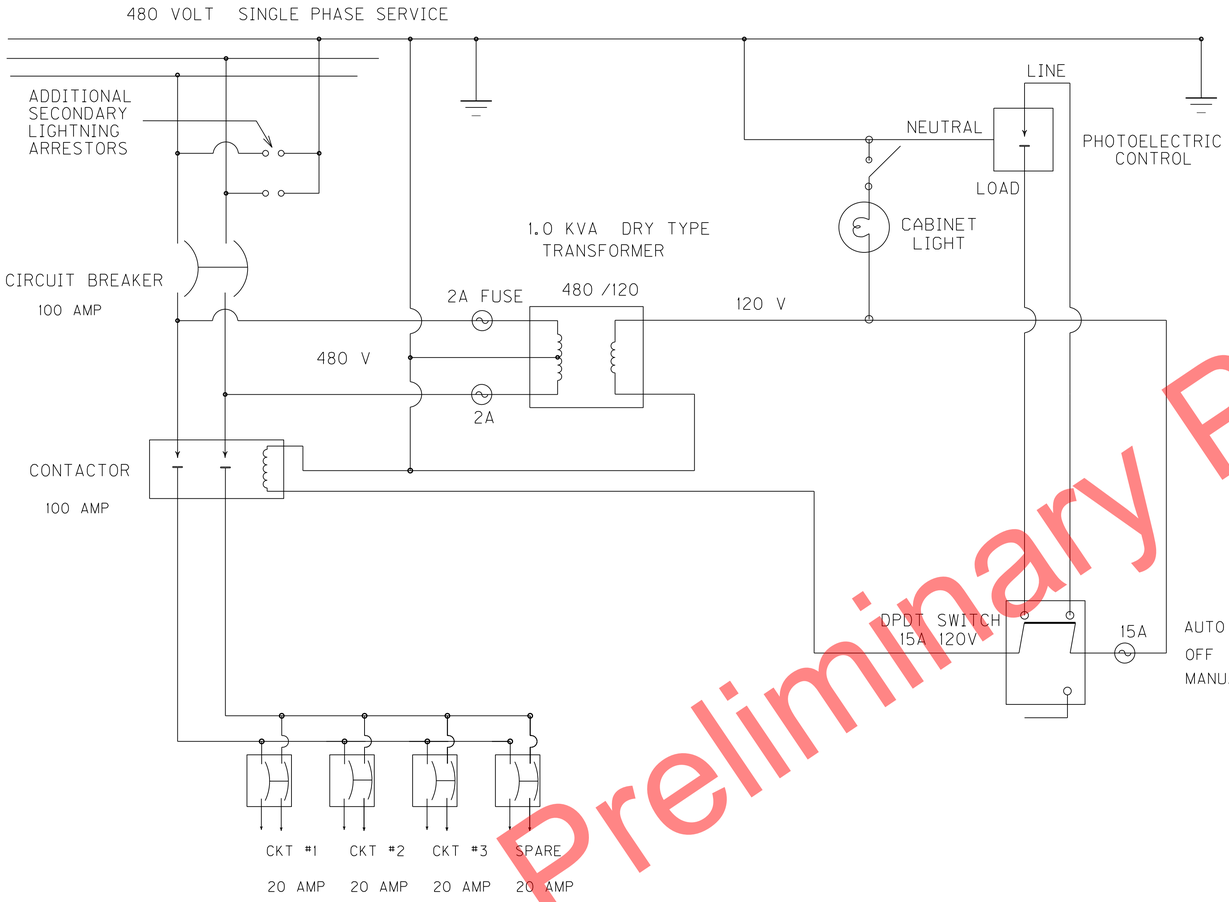
ALL CONSTRUCTION (TO INCLUDE EXCAVATION WORK) AND MATERIALS (CONCRETE , STEEL REINFORCEMENT, ETC.) FOR THE CONCRETE PAD SHALL BE INCIDENTAL TO THE POLE FOR THE LIGHTING CONTROL EQUIPMENT BID ITEM.

THE CONTRACTOR SHALL PROVIDE A CABINET WITH ALL WIRING AND COMPONENTS APPROVED BY THE MANUFACTURER AS AN ASSEMBLY. THIS APPROVAL SHALL BE INCIDENTAL TO LIGHTING CONTROL EQUIPMENT. DOCUMENTATION THAT THE CABINET, WIRING, AND ALL COMPONENTS ARE AN APPROVED ASSEMBLY SHALL BE SUBMITTED TO CENTRAL OFFICE TRAFFIC OPERATIONS.

7/2008

BASE MOUNTED SERVICE DETAIL #3

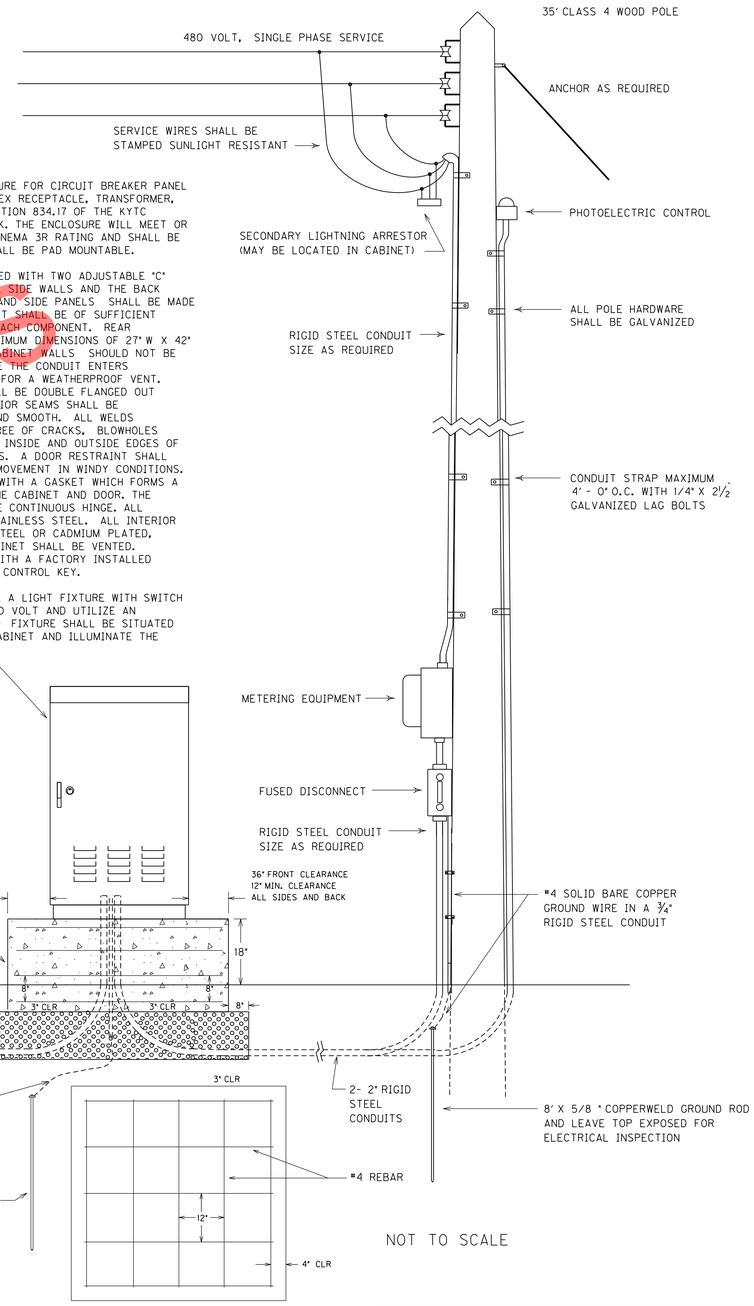
COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T37



ALUMINUM WEATHERPROOF ENCLOSURE FOR CIRCUIT BREAKER PANEL BOARD, CIRCUIT BREAKERS, DUPLEX RECEPTACLE, TRANSFORMER, CONTACTOR, FUSES, ETC. PER SECTION 834.17 OF THE KYTC STANDARD SPECIFICATIONS BOOK. THE ENCLOSURE WILL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED. THE ENCLOSURE SHALL BE PAD MOUNTABLE.

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO ADJUSTABLE 'C' MOUNTING CHANNELS ON BOTH THE SIDE WALLS AND THE BACK WALL OF THE ENCLOSURE. BACK AND SIDE PANELS SHALL BE MADE OF 0.125 INCH ALUMINUM. CABINET SHALL BE OF SUFFICIENT SIZE TO GAIN EASY ACCESS TO EACH COMPONENT. REAR ALUMINUM PANEL SHALL HAVE MINIMUM DIMENSIONS OF 27" W X 42" HIGH. THE INTEGRITY OF THE CABINET WALLS SHOULD NOT BE COMPROMISED EXCEPT FOR WHERE THE CONDUIT ENTERS (PREFERABLY ON THE BOTTOM) OR FOR A WEATHERPROOF VENT. THE ENCLOSURE DOOR FRAME SHALL BE DOUBLE FLANGED OUT ON ALL FOUR SIDES. ALL EXTERIOR SEAMS SHALL BE CONTINUOUSLY WELDED AND GROUND SMOOTH. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOWHOLES AND OTHER IRREGULARITIES. ALL INSIDE AND OUTSIDE EDGES OF CABINET SHALL BE FREE OF BURRS. A DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT IN WINDY CONDITIONS. THE DOOR SHALL BE FURNISHED WITH A GASKET WHICH FORMS A WEATHER TIGHT SEAL BETWEEN THE CABINET AND DOOR. THE DOOR SHALL HAVE A HEAVY GAUGE CONTINUOUS HINGE. ALL EXTERIOR HARDWARE SHALL BE STAINLESS STEEL. ALL INTERIOR HARDWARE SHALL BE STAINLESS STEEL OR CADMIUM PLATED, TYPE II, CLASS I OR EQUAL. CABINET SHALL BE VENTED. CABINET DOOR SHALL BE KEYED WITH A FACTORY INSTALLED STANDARD NO. 2 CORBIN TRAFFIC CONTROL KEY.

CONTRACTOR SHALL ALSO INSTALL A LIGHT FIXTURE WITH SWITCH AND BULB. FIXTURE SHALL BE 120 VOLT AND UTILIZE AN INCANDESCENT BULB (60 W MIN.) FIXTURE SHALL BE SITUATED AT OR NEAR THE TOP OF THE CABINET AND ILLUMINATE THE CONTENTS OF THE CABINET.



NOTES:

CONTRACTOR SHALL INSTALL ALL LIGHTING CONTROL EQUIPMENT AS INDICATED.

CONCRETE SHALL BE CLASS A. CONCRETE SHALL BE POURED ON 12" OF POWER TAMPED DENSE GRADE ROCK. PAD SHALL BE 30" THICK WITH 18" ABOVE GRADE.

PAD SHALL BE OF SUFFICIENT SIZE TO ALLOW A MINIMUM 36" IN FRONT OF THE CABINET AND 12" MINIMUM CLEARANCE AROUND THE SIDES AND BACK OF THE CABINET.

CONCRETE SHALL BE SLOPED 1/8 " PER FOOT TO PREVENT STANDING WATER. OUTSIDE EDGE SHALL HAVE A ONE INCH CHAMFER.

#4 REBAR SHALL BE COMPRISED OF RUNS AS SHOWN AND TIED AT EACH JOINT.

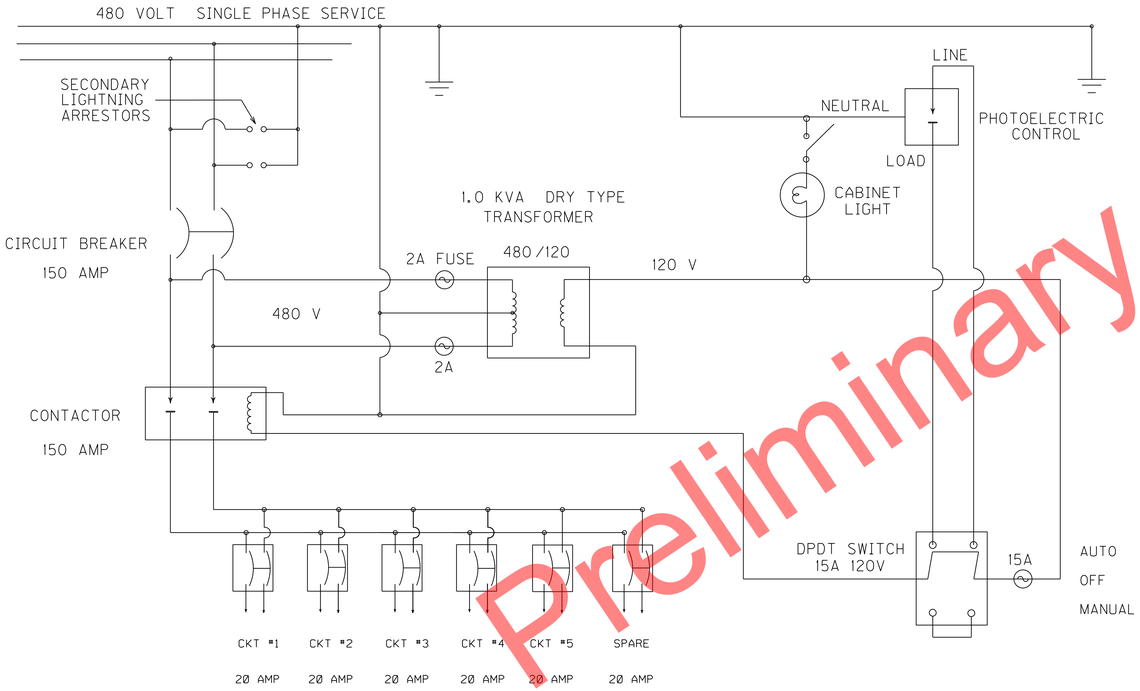
ALL CONSTRUCTION (TO INCLUDE EXCAVATION WORK) AND MATERIALS (CONCRETE , STEEL REINFORCEMENT, ETC.) FOR THE CONCRETE PAD SHALL BE INCIDENTAL TO THE POLE FOR THE LIGHTING CONTROL EQUIPMENT BID ITEM.

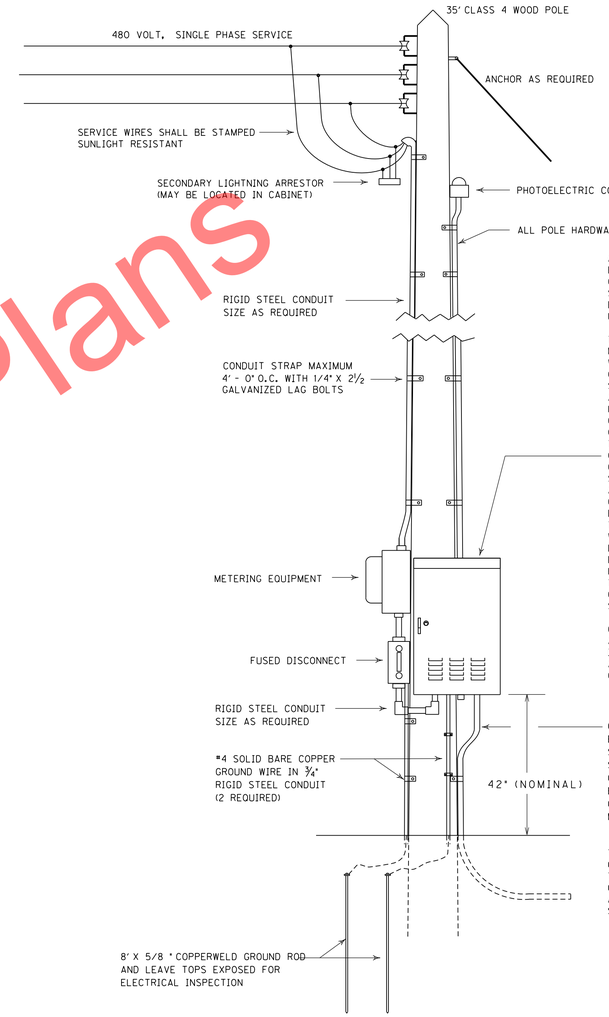
THE CONTRACTOR SHALL PROVIDE A CABINET WITH ALL WIRING AND COMPONENTS APPROVED BY THE MANUFACTURER AS AN ASSEMBLY. THIS APPROVAL SHALL BE INCIDENTAL TO LIGHTING CONTROL EQUIPMENT. DOCUMENTATION THAT THE CABINET, WIRING, AND ALL COMPONENTS ARE AN APPROVED ASSEMBLY SHALL BE SUBMITTED TO CENTRAL OFFICE TRAFFIC OPERATIONS.

7/2008

BASE MOUNTED SERVICE DETAIL #4

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T38





ALUMINUM WEATHERPROOF ENCLOSURE FOR CIRCUIT BREAKER PANEL BOARD, CIRCUIT BREAKERS, DUPLEX RECEPTACLE, TRANSFORMER, CONTACTOR, FUSES, ETC. PER SECTION 834.17 OF THE KYTC STANDARD SPECIFICATIONS BOOK. THE ENCLOSURE WILL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED.

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO ADJUSTABLE 'C' MOUNTING CHANNELS ON BOTH THE SIDE WALLS AND THE BACK WALL OF THE ENCLOSURE. BACK AND SIDE PANELS SHALL BE MADE OF 0.125 INCH ALUMINUM. CABINET SHALL BE OF SUFFICIENT SIZE TO GAIN EASY ACCESS TO EACH COMPONENT. REAR ALUMINUM PANEL SHALL HAVE MINIMUM DIMENSIONS OF 27" W X 42" HIGH. THE INTEGRITY OF THE CABINET WALLS SHOULD NOT BE COMPROMISED EXCEPT FOR WHERE THE CONDUIT ENTERS (PREFERABLY ON THE BOTTOM) OR FOR A WEATHERPROOF VENT. THE ENCLOSURE DOOR FRAME SHALL BE DOUBLE FLANGED OUT ON ALL FOUR SIDES. ALL EXTERIOR SEAMS SHALL BE CONTINUOUSLY WELDED AND GROUND SMOOTH. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOWHOLES AND OTHER IRREGULARITIES. ALL INSIDE AND OUTSIDE EDGES OF CABINET SHALL BE FREE OF BURRS. A DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT IN WINDY CONDITIONS. THE DOOR SHALL BE FURNISHED WITH A GASKET WHICH FORMS A WEATHER TIGHT SEAL BETWEEN THE CABINET AND DOOR. THE DOOR SHALL HAVE A HEAVY GAUGE CONTINUOS HINGE ALL EXTERIOR HARDWARE SHALL BE STAINLESS STEEL. ALL INTERIOR HARDWARE SHALL BE STAINLESS STEEL OR CADMIUM PLATED, TYPE II, CLASS I OR EQUAL. CABINET SHALL BE VENTED. CABINET DOOR SHALL BE KEYED WITH A FACTORY INSTALLED STANDARD NO. 2 CORBIN TRAFFIC CONTROL KEY.

CONTRACTOR SHALL ALSO INSTALL A LIGHT FIXTURE WITH SWITCH AND BULB. FIXTURE SHALL BE 120 VOLT AND UTILIZE AN INCANDESCENT BULB (60 W MIN.) FIXTURE SHALL BE SITUATED AT OR NEAR THE TOP OF THE CABINET AND ILLUMINATE THE CONTENTS OF THE CABINET.

(1) RIGID STEEL CONDUIT FOR EACH CIRCUIT PLUS (1) RIGID STEEL SPARE CONDUIT TO BE STUBBED (12" MIN.) AND CAPPED ON BOTH ENDS. CONDUITS SHALL BE 2" FOR CONVENTIONAL LIGHTING CIRCUITS AND 3½" FOR HIGH MAST CIRCUITS

THE CONTRACTOR SHALL PROVIDE A CABINET WITH ALL WIRING AND COMPONENTS APPROVED BY THE MANUFACTURER AS AN ASSEMBLY. THIS APPROVAL SHALL BE INCIDENTAL TO POLE W/ SECONDARY CONTROL EQUIPMENT. DOCUMENTATION THAT THE CABINET, WIRING, AND ALL COMPONENTS ARE AN APPROVED ASSEMBLY SHALL BE SUBMITTED TO CENTRAL OFFICE TRAFFIC OPERATIONS.

7/2008

POLE MOUNTED SERVICE DETAIL #5

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T39

CABLE	ORIGIN	ENDING	CONNECTING
#4/3C	DUCTED SERVICE C	HMC5	HMC5 CKT C5
#2/3C	DUCTED SERVICE C	HMC8	HMC8 CKT C8
#6/3C	DUCTED SERVICE C	HMC11	HMC11 CKT C11
#2/3C	DUCTED SERVICE C	HMC12	HMC12 CKT C12

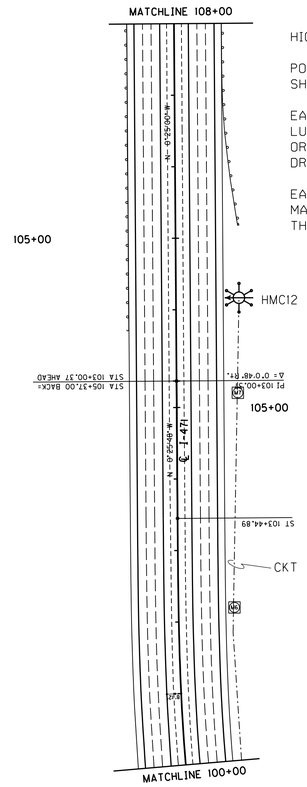
POLE	MTG HT.	LAMP WATTS	NO.	BASE DEPTH	CKT NO.	LIGHT PATTERN	HOUSE SIDE SHIELD	REFRACTOR ORIENTATION
HMC11	120 FT	1000W	(6)	SEE T32	11	ASYMMETRICAL	120°	197°
HMC12	120 FT	1000W	(6)	SEE T32	12	ASYMMETRICAL	120°	179°

HIGH MAST:

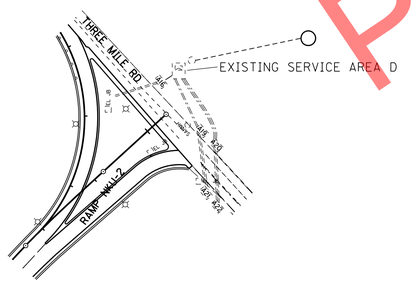
POLE HEIGHTS AND LOCATIONS SHALL BE AS DENOTED ON PLANS. POLES SHALL BE LOCATED TO AVOID TREES, DRAINAGE, STRUCTURES, ETC.

EACH POLE SHALL BE ON A SEPARATE CIRCUIT AND HAVE 1000 W HPS LUMINAIRES WITH LIGHT PATTERNS AS INDICATED. THE LUMINAIRES SHALL BE ORIENTED AS SHOWN ON THE PLANS. ORIENT THE AXIS OF THE WINCH DRUM ALONG THE NORTH-SOUTH AXIS.

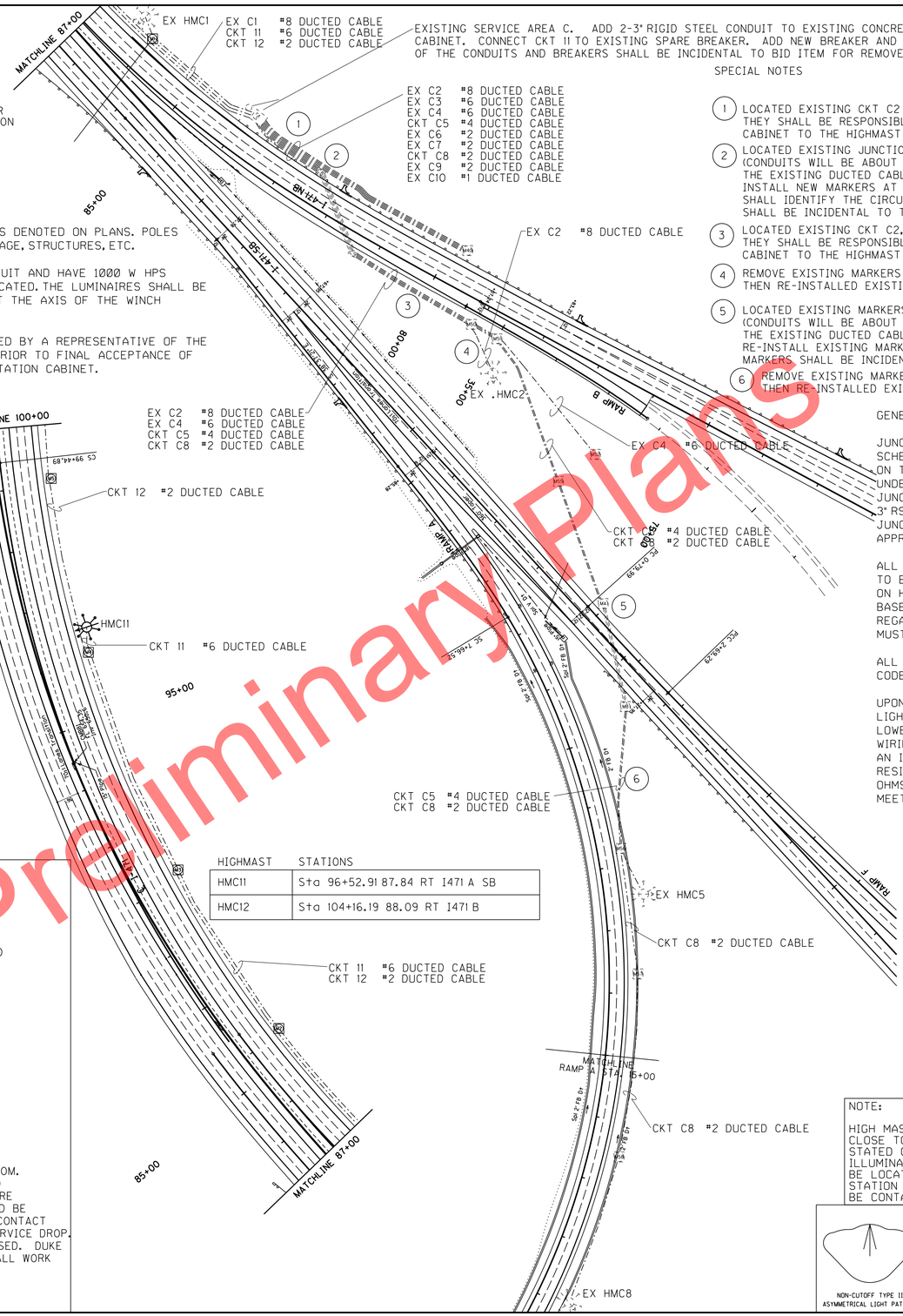
EACH TOWER SHALL BE INSPECTED/CERTIFIED BY A REPRESENTATIVE OF THE MANUFACTURER OF THE LOWERING DEVICE PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE KENTUCKY TRANSPORTATION CABINET.



I-275 @ THREE MILE RD. REWORK OF SERVICE



INSTALL 1 1/2" RIGID STEEL CONDUIT FROM THE EXISTING METER DOWN THE EXISTING POLE AND TRANSITION FROM THE RIGID STEEL CONDUIT TO SCHEDULE 40 PVC. RUN 1 1/2" SCHEDULE 40 PVC TO THE DUKE ENERGY POLE THAT THE ORIGINAL SERVICE COMES FROM. THE CONTRACTOR WILL HAVE TO RUN THE SCHEDULE 40 PVC UP THE DUKE ENERGY POLE TO A SPECIFY HEIGHT DIRECTED BY DUKE ENERGY. THE CONTRACTOR WILL HAVE TO SUPPLY WIRE FROM THE EXISTING METER TO THE SPECIFY HEIGHT AS DIRECTED BY DUKE ENERGY (SHOULD BE ENOUGH WIRE TO CONNECT TO THE DUKE ENERGY TRANSFORMER). THE CONTRACTOR SHALL CONTACT THE DUKE ENERGY CONTACT 2 WEEKS BEFORE THE PROPOSED INSTALLATION OF THE NEW SERVICE DROP. THE CONTACT FROM DUKE ENERGY WILL VERIFY THE GAUGE/TYPE OF WIRE THAT WILL BE USED. DUKE ENERGY CONTACT IS ADAM RAUCH. PHONE NUMBER 859-534-4378 OR CELL 513-967-1089. ALL WORK TO REPLACE THE SERVICE DROP SHALL BE INCIDENTAL TO THE REMOVE LIGHTING BID ITEM.



HIGHMAST	STATIONS
HMC11	Sta 96+52.91 87.84 RT I471 A SB
HMC12	Sta 104+16.19 88.09 RT I471 B

SPECIAL NOTES

1. LOCATED EXISTING CKT C2 THROUGH C10. IF CONTRACTOR DAMAGE ANY OF THE DUCTED CABLES, THEY SHALL BE RESPONSIBLE FOR REPLACING THE DUCTED CABLE SPLICE FREE FROM THE CONTROLLER CABINET TO THE HIGHMAST THAT IT IS FEEDING.
2. LOCATED EXISTING JUNCTION BOX C8/C9 AND REMOVE. LOCATED EXISTING 3" RIGID STEEL CONDUITS (CONDUITS WILL BE ABOUT 3 TO 4 FEET UNDER THE JUNCTION BOXES) THAT CROSSES I-471 AND REMOVE THE EXISTING DUCTED CABLE FOR CKT C5/C8. AFTER DUCTED IS INSTALLED, THE CONTRACTOR SHALL INSTALL NEW MARKERS AT THE LOCATIONS OF THE REMOVED JUNCTION BOX C8/C9. THESE MARKERS SHALL IDENTIFY THE CIRCUITS THAT ARE LOCATED BELOW THEM. THE REMOVAL OF THE JUNCTION BOXES SHALL BE INCIDENTAL TO THE REMOVE LIGHTING BID ITEM.
3. LOCATED EXISTING CKT C2, C4, C7, AND C8. IF CONTRACTOR DAMAGE ANY OF THE DUCTED CABLES, THEY SHALL BE RESPONSIBLE FOR REPLACING THE DUCTED CABLE SPLICE FREE FROM THE CONTROLLER CABINET TO THE HIGHMAST THAT IT IS FEEDING.
4. REMOVE EXISTING MARKERS M50, M51, AND M55. INSTALL NEW DUCTED CABLE FOR CIRCUITS 5 AND 8 AND THEN RE-INSTALLED EXISTING MARKERS M50, M51, AND M55.
5. LOCATED EXISTING MARKERS MA/MB AND REMOVE. LOCATED EXISTING 3" RIGID STEEL CONDUITS (CONDUITS WILL BE ABOUT 3 TO 4 FEET UNDER THE MARKERS) THAT CROSSES I-471 AND REMOVE THE EXISTING DUCTED CABLE FOR CKT C5/C8. AFTER DUCTED IS INSTALLED, THE CONTRACTOR SHALL RE-INSTALL EXISTING MARKERS AT THE ORIGINAL LOCATIONS. THE REMOVAL AND REINSTALLATION OF MARKERS SHALL BE INCIDENTAL TO THE REMOVE LIGHTING ITEM
6. REMOVE EXISTING MARKERS M56, M57, AND M58. INSTALL NEW DUCTED CABLE FOR CIRCUITS 5 AND 8 AND THEN RE-INSTALLED EXISTING MARKERS M50 AND M51.

GENERAL HIGH MAST NOTES:

JUNCTION BOXES, MARKERS, DUCTS, CONDUITS AND ROAD CROSSING LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND DENOTED ON THE AS-BUILT PLANS. CONTRACTOR SHALL RUN DUCTED CABLE THROUGH 3" RS CONDUIT UNDER ROADWAYS. ALL CONDUITS SHALL BE ACCESSIBLE INSIDE JUNCTION BOXES. THERE SHALL BE ONLY ONE DUCTED CABLE RUN THROUGH EACH 3" RS CONDUIT. ALL SPARE CONDUITS SHALL BE CAPPED ON BOTH ENDS AS SHOWN ON JUNCTION BOX DETAIL. THERE SHALL BE NO OPEN CUTTING OF ROADWAY UNLESS APPROVED BY ENGINEER.

ALL CABLE AND WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH HIGH MAST POLE THE CABLE OR WIRE IS FEEDING. SPLICES ARE NOT ALLOWED ON HIGH MAST LIGHTING. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS. REGARDLESS OF THE STATION & OFFSET NOTED, ALL POLES LOCATED BEHIND GUARDRAIL MUST BE A MINIMUM OF 5 FEET BEHIND THE FACE OF THE GUARDRAIL.

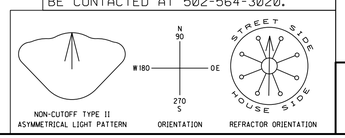
ALL EXPOSED CONDUIT MUST BE SECURED IN PLACE ACCORDING TO THE NATIONAL ELECTRIC CODE WITH CONDUIT STRAPS/OR METHODS AS APPROVED BY THE ENGINEER.

UPON COMPLETION OF THE PROJECT, AN INSPECTION WILL BE CARRIED OUT AFTER THE LIGHTING IS FUNCTIONAL TO VERIFY PROPER ILLUMINATION, PROPER FUNCTIONING OF THE LOWERING DEVICES, OTHER OPERATIONAL FEATURES AND AN INSULATION TEST OF ALL WIRING AS WELL AS GROUNDING RESISTANCE. ALL ROADWAY LIGHTING CIRCUITS MUST PASS AN INSULATION TEST OF 100 MILLION OHMS TO GROUND. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEEDS 25 OHMS. IF GROUND RESISTANCE EXCEED 25 OHMS, THERE SHALL BE TWO OR MORE GROUND RODS CONNECTED IN PARALLEL UNTIL IT MEETS THIS VALUE.

Scale 1" = 100'

NOTE:

HIGH MAST POLES SHALL BE PLACED AS CLOSE TO STATIONS AND OFFSETS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE LOCATED MORE THAN 20' FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.



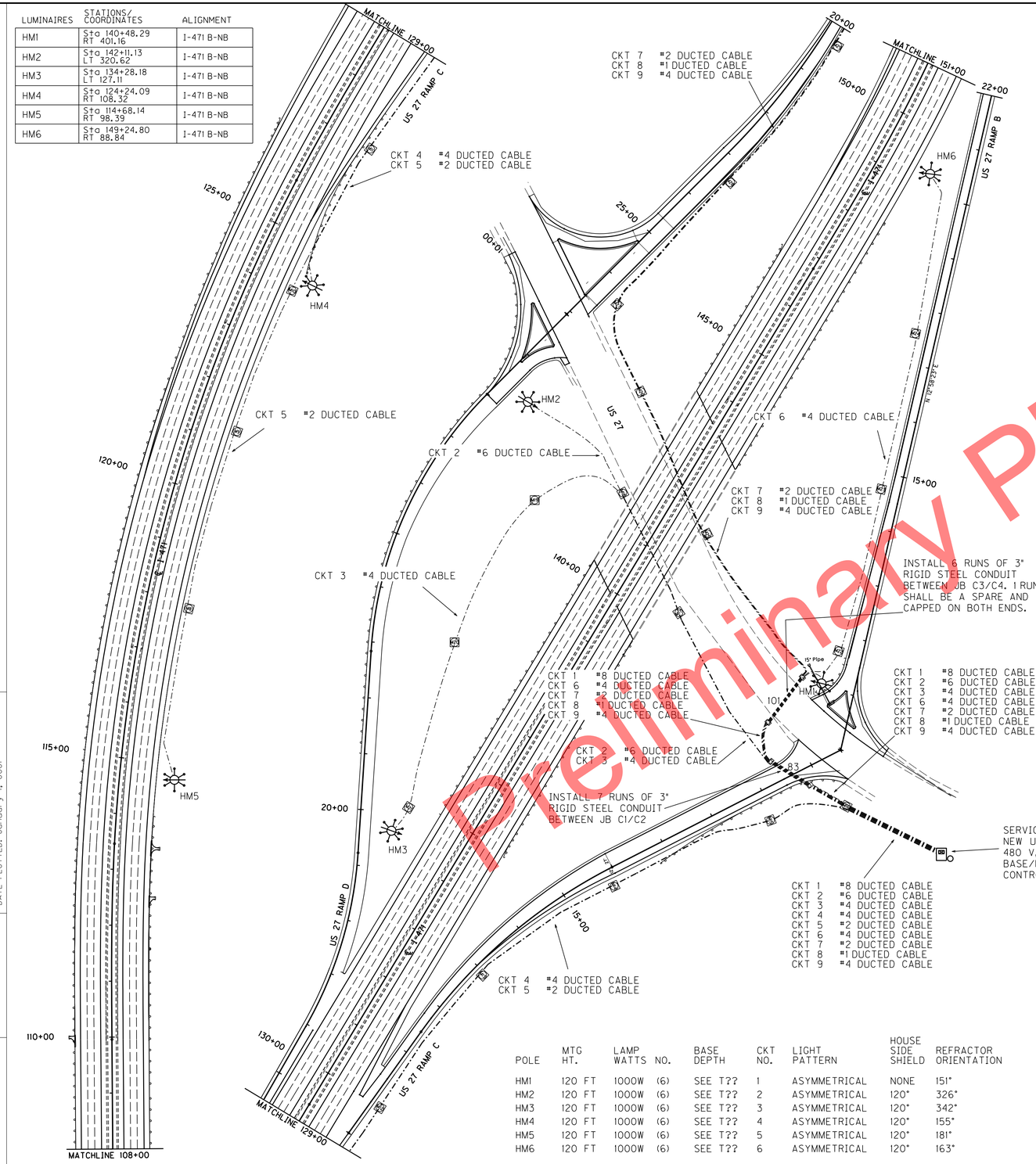
LEGEND

- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- EXISTING HIGH MAST POLE
- EXISTING BASE MOUNTED CABINET
- C1 — JUNCTION BOXES - TYPES A & C (AS DESIGNATED)
- M10 — CONCRETE MARKER
- EXISTING CONCRETE MARKER
- EXISITNG 3" RIGID STEEL CONDUIT
- DUCTED CABLE(EXISTING OR NEW)
- EXISTING WOOD SERVICE POLE
- 1 — SPECIAL NOTE

LIGHTING PLAN
I-275 AT I-471 SERVICE C
NEW AND REWORK

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T40

LUMINAIRES	STATIONS/ COORDINATES	ALIGNMENT
HM1	Sta 140+48.29 RT 401.16	I-471 B-NB
HM2	Sta 142+11.13 LT 320.62	I-471 B-NB
HM3	Sta 134+28.18 LT 127.11	I-471 B-NB
HM4	Sta 124+24.09 RT 108.32	I-471 B-NB
HM5	Sta 114+68.14 RT 98.39	I-471 B-NB
HM6	Sta 149+24.80 RT 88.84	I-471 B-NB



POLE	MTG HT.	LAMP WATTS	NO.	BASE DEPTH	CKT NO.	LIGHT PATTERN	HOUSE SIDE SHIELD	REFRACTOR ORIENTATION
HM1	120 FT	1000W	(6)	SEE T??	1	ASYMMETRICAL	NONE	151°
HM2	120 FT	1000W	(6)	SEE T??	2	ASYMMETRICAL	120°	326°
HM3	120 FT	1000W	(6)	SEE T??	3	ASYMMETRICAL	120°	342°
HM4	120 FT	1000W	(6)	SEE T??	4	ASYMMETRICAL	120°	155°
HM5	120 FT	1000W	(6)	SEE T??	5	ASYMMETRICAL	120°	181°
HM6	120 FT	1000W	(6)	SEE T??	6	ASYMMETRICAL	120°	163°

HIGH MAST:

POLE HEIGHTS AND LOCATIONS SHALL BE AS DENOTED ON PLANS. POLES SHALL BE LOCATED TO AVOID TREES, DRAINAGE, STRUCTURES, ETC.

EACH POLE SHALL BE ON A SEPARATE CIRCUIT AND HAVE 1000 W HPS LUMINAIRES WITH LIGHT PATTERNS AS INDICATED. THE LUMINAIRES SHALL BE ORIENTED AS SHOWN ON THE PLANS. ORIENT THE AXIS OF THE WINCH DRUM ALONG THE NORTH-SOUTH AXIS.

EACH TOWER SHALL BE INSPECTED/CERTIFIED BY A REPRESENTATIVE OF THE MANUFACTURER OF THE LOWERING DEVICE PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE KENTUCKY TRANSPORTATION CABINET.

GENERAL HIGH MAST NOTES:

CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANY BEFORE INSTALLING SERVICE POLE TO PROVIDE 480 VOLT SINGLE PHASE SERVICE AND DETERMINE EXACT POLE/METER LOCATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE DISTRICT UTILITY AGENT BEFORE ANY HOLES ARE DUG OR SET TO INSURE PROPER CLEARANCE AND SHIELDING FROM EXISTING OR PROPOSED UTILITY LINES.

ALL UNDERGROUND CONDUIT SHALL BE 3" RIGID STEEL UNLESS OTHERWISE SPECIFIED. JUNCTION BOXES, MARKERS, DUCTS, CONDUITS AND ROAD CROSSING LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND DENOTED ON THE AS-BUILT PLANS. CONTRACTOR SHALL RUN DUCTED CABLE THROUGH 3" RS CONDUIT UNDER ROADWAYS. ALL CONDUITS SHALL BE ACCESSIBLE INSIDE JUNCTION BOXES. THERE SHALL BE ONLY ONE DUCTED CABLE RUN THROUGH EACH 3" RS CONDUIT. ALL SPARE CONDUITS SHALL BE CAPPED ON BOTH ENDS AS SHOWN ON JUNCTION BOX DETAIL. THERE SHALL BE NO OPEN CUTTING OF ROADWAY UNLESS APPROVED BY ENGINEER.

JUNCTION BOXES SHALL BE PLACED IN LOCATIONS TO AVOID STANDING WATER AND DITCH LINES. ANY ADDITIONAL JUNCTION BOXES MUST BE APPROVED BY THE ENGINEER.

ALL CABLE AND WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH HIGH MAST POLE THE CABLE OR WIRE IS FEEDING. SPLICES ARE NOT ALLOWED ON HIGH MAST LIGHTING. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.

CONTRACTOR SHALL INSTALL POLE WITH LIGHTING CONTROL EQUIPMENT IN BASE MOUNTED CABINETS (SEE DETAIL).

REGARDLESS OF THE STATION & OFFSET NOTED, ALL POLES LOCATED BEHIND GUARDRAIL MUST BE A MINIMUM OF 5 FEET BEHIND THE FACE OF THE GUARDRAIL.

ALL EXPOSED CONDUIT MUST BE SECURED IN PLACE ACCORDING TO THE NATIONAL ELECTRIC CODE WITH CONDUIT STRAPS/OR METHODS AS APPROVED BY THE ENGINEER.

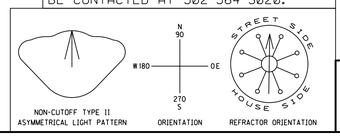
UPON COMPLETION OF THE PROJECT AN INSPECTION WILL BE CARRIED OUT AFTER THE LIGHTING IS FUNCTIONAL TO VERIFY PROPER ILLUMINATION, PROPER FUNCTIONING OF THE LOWERING DEVICES, AN INSULATION TEST OF ALL WIRING, AND A GROUNDING RESISTANCE TEST. ALL ROADWAY LIGHTING CIRCUITS MUST PASS AN INSULATION TEST OF 100 MILLION OHMS TO GROUND. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, THERE SHALL BE TWO OR MORE GROUND RODS CONNECTED IN PARALLEL UNTIL IT MEETS THIS VALUE.

Scale 1" - 100'

CABLE	ORIGIN	ENDING	CONNECTING
#8/3C	DUCTED SERVICE # 1	HM1	HM1 CKT #1
#6/3C	DUCTED SERVICE # 1	HM2	HM2 CKT #2
#4/3C	DUCTED SERVICE # 1	HM3	HM3 CKT #3
#4/3C	DUCTED SERVICE # 1	HM4	HM4 CKT #4
#2/3C	DUCTED SERVICE # 1	HM5	HM5 CKT #5
#4/3C	DUCTED SERVICE # 1	HM6	HM6 CKT #6
#2/3C	DUCTED SERVICE # 1	HM7	HM7 CKT #7
#1/3C	DUCTED SERVICE # 1	HM8	HM8 CKT #8
#4/3C	DUCTED SERVICE # 1	9-1-C	9-1-C CKT #9

NOTE:

HIGH MAST POLES SHALL BE PLACED AS CLOSE TO STATIONS AND OFFSETS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE LOCATED MORE THAN 20' FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.



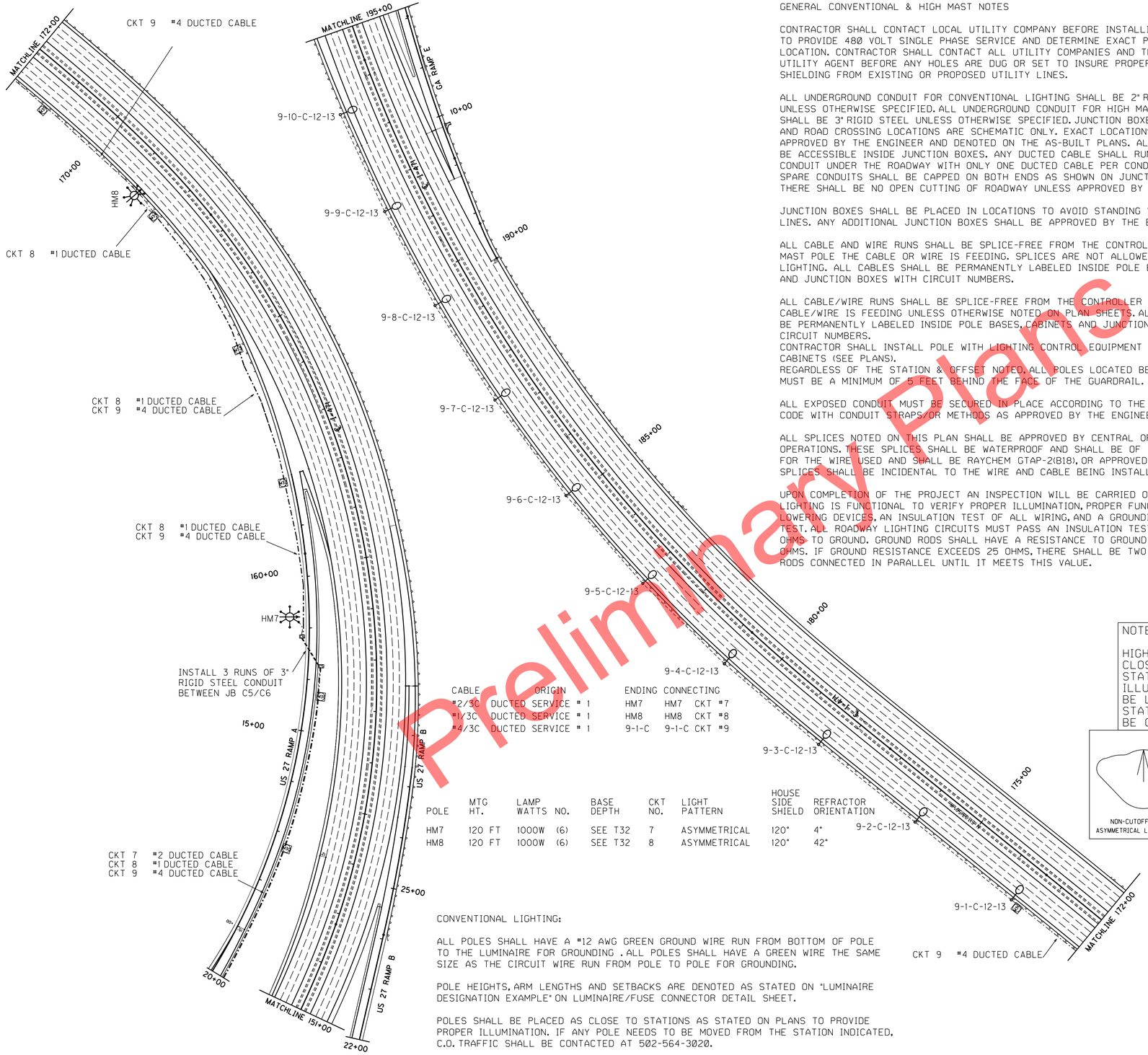
LEGEND

- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- BASE MOUNTED CABINET
- A9 — JUNCTION BOXES - TYPES A & C (AS DESIGNATED)
- M10 — CONCRETE MARKER
- ---------- 3" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
- -·-·-·-·-·- DUCTED CABLE
- ○ WOOD POLE

LIGHTING PLAN FOR INTERCHANGE I-471 AND US27 PLAN SHEET 1

FILE NAME: C:\DOCUMENTS AND SETTINGS\TED.SWANSEGAR\DESKTOP\NEW FOLDER (2)\NEW FOLDER\T040001.DGN
USER: ted.swansegar
DATE PLOTTED: January 1, 0001
E-SHEET NAME: T040001.T
MicroStation v8.11.7.180

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T41



CABLE	ORIGIN	ENDING CONNECTING	
#2/3C	DUCTED SERVICE # 1	HM7	HM7 CKT #7
#1/3C	DUCTED SERVICE # 1	HM8	HM8 CKT #8
#4/3C	DUCTED SERVICE # 1	9-1-C	9-1-C CKT #9

POLE	MTG HT.	LAMP WATTS	NO.	BASE DEPTH	CKT NO.	LIGHT PATTERN	HOUSE SIDE SHIELD	REFRACTOR ORIENTATION
HM7	120 FT	1000W	(6)	SEE T32	7	ASYMMETRICAL	120°	4°
HM8	120 FT	1000W	(6)	SEE T32	8	ASYMMETRICAL	120°	42°

CONVENTIONAL LIGHTING:

ALL POLES SHALL HAVE A #12 AWG GREEN GROUND WIRE RUN FROM BOTTOM OF POLE TO THE LUMINAIRE FOR GROUNDING . ALL POLES SHALL HAVE A GREEN WIRE THE SAME SIZE AS THE CIRCUIT WIRE RUN FROM POLE TO POLE FOR GROUNDING.

POLE HEIGHTS, ARM LENGTHS AND SETBACKS ARE DENOTED AS STATED ON "LUMINAIRE DESIGNATION EXAMPLE" ON LUMINAIRE/FUSE CONNECTOR DETAIL SHEET.

POLES SHALL BE PLACED AS CLOSE TO STATIONS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE MOVED FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.

GENERAL CONVENTIONAL & HIGH MAST NOTES

CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANY BEFORE INSTALLING SERVICE POLE TO PROVIDE 480 VOLT SINGLE PHASE SERVICE AND DETERMINE EXACT POLE/METER LOCATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE DISTRICT UTILITY AGENT BEFORE ANY HOLES ARE DUG OR SET TO INSURE PROPER CLEARANCE AND SHIELDING FROM EXISTING OR PROPOSED UTILITY LINES.

ALL UNDERGROUND CONDUIT FOR CONVENTIONAL LIGHTING SHALL BE 2" RIGID STEEL UNLESS OTHERWISE SPECIFIED. ALL UNDERGROUND CONDUIT FOR HIGH MAST LIGHTING SHALL BE 3" RIGID STEEL UNLESS OTHERWISE SPECIFIED. JUNCTION BOXES, CONDUITS, AND ROAD CROSSING LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND DENOTED ON THE AS-BUILT PLANS. ALL CONDUITS SHALL BE ACCESSIBLE INSIDE JUNCTION BOXES. ANY DUCTED CABLE SHALL RUN THROUGH 3" RS CONDUIT UNDER THE ROADWAY WITH ONLY ONE DUCTED CABLE PER CONDUIT PERMITTED. ALL SPARE CONDUITS SHALL BE CAPPED ON BOTH ENDS AS SHOWN ON JUNCTION BOX DETAIL. THERE SHALL BE NO OPEN CUTTING OF ROADWAY UNLESS APPROVED BY ENGINEER.

JUNCTION BOXES SHALL BE PLACED IN LOCATIONS TO AVOID STANDING WATER AND DITCH LINES. ANY ADDITIONAL JUNCTION BOXES SHALL BE APPROVED BY THE ENGINEER.

ALL CABLE AND WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH HIGH MAST POLE THE CABLE OR WIRE IS FEEDING. SPLICES ARE NOT ALLOWED ON HIGH MAST LIGHTING. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.

ALL CABLE/WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH POLE THE CABLE/WIRE IS FEEDING UNLESS OTHERWISE NOTED ON PLAN SHEETS. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.
CONTRACTOR SHALL INSTALL POLE WITH LIGHTING CONTROL EQUIPMENT IN BASE MOUNTED CABINETS (SEE PLANS).
REGARDLESS OF THE STATION & OFFSET NOTED, ALL POLES LOCATED BEHIND GUARDRAIL MUST BE A MINIMUM OF 5 FEET BEHIND THE FACE OF THE GUARDRAIL.

ALL EXPOSED CONDUIT MUST BE SECURED IN PLACE ACCORDING TO THE NATIONAL ELECTRIC CODE WITH CONDUIT STRAPS/OR METHODS AS APPROVED BY THE ENGINEER.

ALL SPLICES NOTED ON THIS PLAN SHALL BE APPROVED BY CENTRAL OFFICE TRAFFIC OPERATIONS. THESE SPLICES SHALL BE WATERPROOF AND SHALL BE OF THE CORRECT SIZE FOR THE WIRE USED AND SHALL BE RAYCHEM GTAP-2(B18), OR APPROVED EQUAL. ALL SPLICES SHALL BE INCIDENTAL TO THE WIRE AND CABLE BEING INSTALLED.

UPON COMPLETION OF THE PROJECT AN INSPECTION WILL BE CARRIED OUT AFTER THE LIGHTING IS FUNCTIONAL TO VERIFY PROPER ILLUMINATION, PROPER FUNCTIONING OF THE LOWERING DEVICES, AN INSULATION TEST OF ALL WIRING, AND A GROUNDING RESISTANCE TEST. ALL ROADWAY LIGHTING CIRCUITS MUST PASS AN INSULATION TEST OF 100 MILLION OHMS TO GROUND. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, THERE SHALL BE TWO OR MORE GROUND RODS CONNECTED IN PARALLEL UNTIL IT MEETS THIS VALUE.

LUMINAIRES	STATIONS/ COORDINATES	ALIGNMENT
HM7	Sta 158+97.02 LT 156.46	I-471 B-NB
HM8	Sta 168+66.99 LT 81.28	I-471 B-NB
9-1-C-12-13	Sta 173+60.62	I-471 B-NB
9-2-C-12-13	Sta 176+00.61	I-471 B-NB
9-3-C-12-13	Sta 178+40.10	I-471 B-NB
9-4-C-12-13	Sta 180+75.82	I-471 B-NB
9-5-C-12-13	Sta 182+91.76	I-471 B-NB
9-6-C-12-13	Sta 185+11.94	I-471 B-NB
9-7-C-12-13	Sta 187+36.54	I-471 B-NB
9-8-C-12-13	Sta 189+47.57	I-471 B-NB
9-9-C-12-13	Sta 191+48.50	I-471 B-NB
9-10-C-12-13	Sta 193+49.55	I-471 B-NB

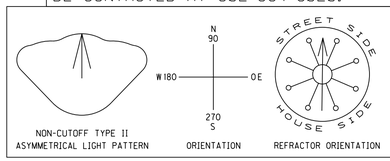
WIRING SCHEDULE

FROM	TO	WIRE SIZE	CONDUIT SIZE
CKT #9 CONTROLLER	9-1-C-12-13	#4 DUCTED CABLE	
9-1-C-12-13	9-2-C-12-13	3-#4 AWG	2" RS
9-2-C-12-13	9-3-C-12-13	3-#4 AWG	2" RS
9-3-C-12-13	9-4-C-12-13	3-#4 AWG	2" RS
CKT #9 9-4-C-12-13	9-5-C-12-13	3-#4 AWG	2" RS
9-5-C-12-13	9-6-C-12-13	3-#4 AWG	2" RS
9-6-C-12-13	9-7-C-12-13	3-#4 AWG	2" RS
9-7-C-12-13	9-8-C-12-13	3-#4 AWG	2" RS
9-8-C-12-13	9-9-C-12-13	3-#4 AWG	2" RS
9-9-C-12-13	9-10-C-12-13	3-#4 AWG	2" RS

NOTE:

HIGH MAST POLES SHALL BE PLACED AS CLOSE TO STATIONS AND OFFSETS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE LOCATED MORE THAN 20' FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.

Scale 1" - 100'



LEGEND

- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- M10 — CONCRETE MARKER
- 2 INCH RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
- DUCTED CABLE
- LUMINAIRE POLE

LIGHTING PLAN FOR INTERCHANGE I-471 AND US27 PLAN SHEET 2

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T42

CABLE	ORIGIN	ENDING CONNECTING
#8/3C	DUCTED SERVICE # 2	HM1 HM1 CKT #1
#8/3C	DUCTED SERVICE # 2	HM2 HM2 CKT #2
#8/3C	DUCTED SERVICE # 2	HM3 HM3 CKT #3
#4/3C	DUCTED SERVICE # 2	HM4 HM4 CKT #4
#6/3C	DUCTED SERVICE # 2	HM5 HM5 CKT #5
#4/3C	DUCTED SERVICE # 2	HM6 HM6 CKT #6
#2/3C	DUCTED SERVICE # 2	HM7 HM7 CKT #7
#4/3C	DUCTED SERVICE # 2	8-1-C 8-1-C CKT #8

LUMINAIRES	STATIONS/ COORDINATES	ALIGNMENT
HM1	Sta 16+05.02 Rt 186.70	GA RAMP H
HM2	Sta 224+20.04 Lt 77.82	I-471 B-NB
HM3	Sta 216+24.44 Lt 205.24	I-471 B-NB
HM4	Sta 207+97.05 Lt 88.21	I-471 B-NB
HM5	Sta 34+35.72 Lt 46.33	GA RAMP E
HM6	Sta 24+38.71 Lt 50.64	GA RAMP EE
HM7	Sta 198+33.15 Rt 156.29	I-471 B-NB
8-1-C-12-13	Sta 192+32.42	I-471 B-NB
8-2-C-12-13	Sta 189+93.16	I-471 B-NB
8-3-C-12-13	Sta 187+77.65	I-471 B-NB
8-4-C-12-13	Sta 185+34.97	I-471 B-NB
8-5-C-10-10	Sta 183+10.45	I-471 B-NB
8-6-C-10-10	Sta 180+85.43	I-471 B-NB
8-7-C-10-10	Sta 178+40.94	I-471 B-NB
8-8-C-10-10	Sta 176+00.55	I-471 B-NB
8-9-C-10-10	Sta 173+60.51	I-471 B-NB

GENERAL CONVENTIONAL & HIGH MAST NOTES

CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANY BEFORE INSTALLING SERVICE POLE TO PROVIDE 480 VOLT SINGLE PHASE SERVICE AND DETERMINE EXACT POLE/METER LOCATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE DISTRICT UTILITY AGENT BEFORE ANY HOLES ARE DUG OR SET TO INSURE PROPER CLEARANCE AND SHIELDING FROM EXISTING OR PROPOSED UTILITY LINES.

ALL UNDERGROUND CONDUIT FOR CONVENTIONAL LIGHTING SHALL BE 2" RIGID STEEL UNLESS OTHERWISE SPECIFIED. ALL UNDERGROUND CONDUIT FOR HIGH MAST LIGHTING SHALL BE 3" RIGID STEEL UNLESS OTHERWISE SPECIFIED. JUNCTION BOXES, CONDUITS, AND ROAD CROSSING LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND DENOTED ON THE AS-BUILT PLANS. ALL CONDUITS SHALL BE ACCESSIBLE INSIDE JUNCTION BOXES. ANY DUCTED CABLE SHALL RUN THROUGH 3" RS CONDUIT UNDER THE ROADWAY WITH ONLY ONE DUCTED CABLE PER CONDUIT PERMITTED. ALL SPARE CONDUITS SHALL BE CAPPED ON BOTH ENDS AS SHOWN ON JUNCTION BOX DETAIL. THERE SHALL BE NO OPEN CUTTING OF ROADWAY UNLESS APPROVED BY ENGINEER.

JUNCTION BOXES SHALL BE PLACED IN LOCATIONS TO AVOID STANDING WATER AND DITCH LINES. ANY ADDITIONAL JUNCTION BOXES SHALL BE APPROVED BY THE ENGINEER.

ALL CABLE AND WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH HIGH MAST POLE THE CABLE OR WIRE IS FEEDING. SPLICES ARE NOT ALLOWED ON HIGH MAST LIGHTING. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.

ALL CABLE/WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH POLE THE CABLE/WIRE IS FEEDING UNLESS OTHERWISE NOTED ON PLAN SHEETS. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.
CONTRACTOR SHALL INSTALL POLE WITH LIGHTING CONTROL EQUIPMENT IN BASE MOUNTED CABINETS (SEE PLANS).
REGARDLESS OF THE STATION & OFFSET NOTED, ALL POLES LOCATED BEHIND GUARDRAIL MUST BE A MINIMUM OF 5 FEET BEHIND THE FACE OF THE GUARDRAIL.

ALL EXPOSED CONDUIT MUST BE SECURED IN PLACE ACCORDING TO THE NATIONAL ELECTRIC CODE WITH CONDUIT STRAPS/OR METHODS AS APPROVED BY THE ENGINEER.

UPON COMPLETION OF THE PROJECT AN INSPECTION WILL BE CARRIED OUT AFTER THE LIGHTING IS FUNCTIONAL TO VERIFY PROPER ILLUMINATION, PROPER FUNCTIONING OF THE LOWERING DEVICES, AN INSULATION TEST OF ALL WIRING, AND A GROUNDING RESISTANCE TEST. ALL ROADWAY LIGHTING CIRCUITS MUST PASS AN INSULATION TEST OF 100 MILLION OHMS TO GROUND. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, THERE SHALL BE TWO OR MORE GROUND RODS CONNECTED IN PARALLEL UNTIL IT MEETS THIS VALUE.

NOTES:

① -RUN DUCTED CABLE BETWEEN CONCRETE MARKER 49 AND HM6 ALONG SIDE OF ROAD, GRAND AVE.

Scale 1" = 100'

WIRING SCHEDULE

	FROM	TO	WIRE SIZE	CONDUIT SIZE
CKT #8	CONTROLLER	8-1-C-12-13	#4/3C DC	NONE
	8-1-C-12-13	8-2-C-12-13	3-#8 AWG	1¼" RS
	8-2-C-12-13	8-3-C-12-13	3-#8 AWG	1¼" RS
	8-3-C-12-13	8-4-C-12-13	3-#8 AWG	1¼" RS
	8-4-C-12-13	8-5-C-10-10	3-#8 AWG	1¼" RS
	8-5-C-10-10	8-6-C-10-10	3-#8 AWG	1¼" RS
	8-6-C-10-10	8-7-C-10-10	3-#8 AWG	1¼" RS
	8-7-C-10-10	8-8-C-10-10	3-#8 AWG	1¼" RS
	8-8-C-10-10	8-9-C-10-10	3-#8 AWG	1¼" RS

POLE	MTG HT.	LAMP WATTS	NO.	BASE DEPTH	CKT NO.	LIGHT PATTERN	HOUSE SIDE SHIELD	REFRACTOR ORIENTATION
HM1	120 FT	1000W	(5)	SEE T32	1	ASYMMETRICAL	120°	242°
HM2	120 FT	1000W	(6)	SEE T32	2	ASYMMETRICAL	120°	35°
HM3	120 FT	1000W	(6)	SEE T32	3	ASYMMETRICAL	120°	28°
HM4	120 FT	1000W	(6)	SEE T32	4	ASYMMETRICAL	120°	18°
HM5	120 FT	1000W	(6)	SEE T32	5	ASYMMETRICAL	120°	231°
HM6	120 FT	1000W	(6)	SEE T32	6	ASYMMETRICAL	120°	182°
HM7	120 FT	1000W	(6)	SEE T32	7	ASYMMETRICAL	120°	200°

NOTE:
HIGH MAST POLES SHALL BE PLACED AS CLOSE TO STATIONS AND OFFSETS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE LOCATED MORE THAN 20' FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.

NON-CUTOFF TYPE II ASYMMETRICAL LIGHT PATTERN

ORIENTATION: N 90, W 180, O E, 270 S

REFRACTOR ORIENTATION: STREET SIDE, HOUSE SIDE

LEGEND

- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- BASE MOUNTED CABINET
- A9 — JUNCTION BOXES - TYPES A & C (AS DESIGNATED)
- M10 — CONCRETE MARKER
- 1¼" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
- DUCTED CABLE
- LUMINAIRE POLE
- WOOD POLE
- ① SEE "NOTES"

LIGHTING PLAN FOR INTERCHANGE I-471 AND GRAND AVE PLAN SHEET

FILE NAME: C:\DOCUMENTS AND SETTINGS\TED.SWANSEGAR\DESKTOP\NEW FOLDER (2)\NEW FOLDER\T04200LT.DGN
USER: ted.swansegar
DATE PLOTTED: January 1, 0001
E-SHEET NAME: T04200LT
MicroStation v8.11.7.180

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T43

WIRING SCHEDULE

	FROM	TO	WIRE SIZE	CONDUIT SIZE
CKT #1	CONTROLLER	JBA1 (1)	3-#8 AWG	2" RS
	JBA1	JBA3 (3)	3-#8 AWG	1¼" RS
	JBA3	1-8-C-12-13	3-#8 AWG	1¼" RS
	JBA3	JBA4 (3)	3-#8 AWG	2" RS
	JBA4	1-10-C-12-14	3-#8 AWG	1¼" RS
CKT #2	CONTROLLER	JBA7 (2)	3-#8 AWG	2" RS
	JBA7	JBA9	3-#8 AWG	1¼" RS
	JBA9	JBA10	3-#8 AWG	2" RS
	JBA10	2-9-C-12-14	3-#8 AWG	1¼" RS
CKT #3	CONTROLLER	JBA1 (1)	3-#8 AWG	WITH CKT 1
	JBA1	JBA2	3-#8 AWG	2" RS
	JBA2	JBA19	3-#8 AWG	1¼" RS
	JBA19	JBA20 (4)	3-#8 AWG	1¼" RS
	JBA20	JBA11 (4)	3-#8 AWG	1¼" RS
	JBA11	JBA12	3-#8 AWG	2"" RS
	JBA12	3-13-C-15-16	3-#8 AWG	1¼" RS
CKT #4	CONTROLLER	JBA7 (2)	3-#6 AWG	WITH CKT 2
	JBA7	JBA8	3-#6 AWG	1¼" RS
	JBA8	JBA21	3-#6 AWG	2" RS
	JBA21	JBA22 (5)	3-#6 AWG	1¼" RS
	JBA22	JBA13 (5)	3-#6 AWG	1¼" RS
	JBA13	JBA14	3-#6 AWG	2" RS
	JBA14	4-5-C-10-11	3-#6 AWG	1¼" RS
	4-5-C-10-11	4-12-B-15-16	3-#6 AWG	1¼" RS
	4-12-B-15-16	JBA17 (6)	3-#6 AWG	2" RS
	JBA17	4-13-C-15-16	3-#6 AWG	1¼" RS
	JBA17	JBA18 (6)	3-#6 AWG	2" RS
	JBA18	4-17-C-12-14	3-#6 AWG	1¼" RS
CKT #5 HM5	CONTROLLER	JBA5	#2/3C DC	NONE
	JBA5	JBA6	#2/3C DC	3" RS
	JBA6	JBA7	#2/3C DC	NONE
	JBA7	JBA8	#2/3C DC	3" RS
	JBA8	JBA21	#2/3C DC	NONE
	JBA21	JBA22 (5)	#2/3C DC	3" RS
	JBA22	JBA15 (5)	#2/3C DC	NONE
	JBA15	JBA16	#2/3C DC	3" RS
	JBA16	HM5	#2/3C DC	NONE

POLE	MTG HT.	LAMP WATTS	NO.	BASE DEPTH	CKT NO.	LIGHT PATTERN	HOUSE SIDE SHIELD	REFRACTOR ORIENTATION
HM5	120 FT	1000W	(6)	SEE T32	5	ASYMMETRICAL	120°	20.2°

LUMINAIRES	STATIONS/ COORDINATES	ALIGNMENT
HM5	Sta 234+91.17 Lt 82.49	I-471 B-NB

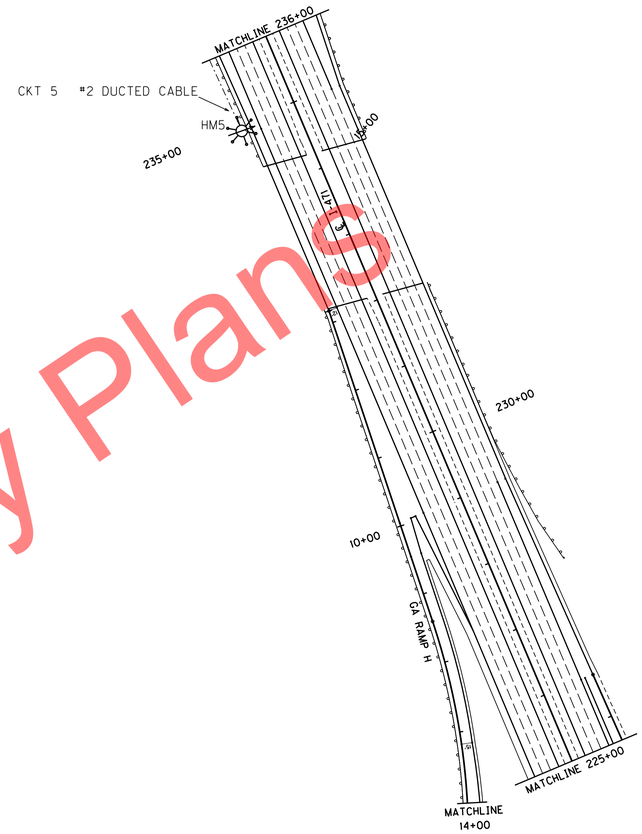
CABLE	ORIGIN	ENDING	CONNECTING
#2/3C	DUCTED SERVICE # 3	HM5	HM5 CKT #5

HIGH MAST:

POLE HEIGHTS AND LOCATIONS SHALL BE AS DENOTED ON PLANS. POLES SHALL BE LOCATED TO AVOID TREES, DRAINAGE, STRUCTURES, ETC.

EACH POLE SHALL BE ON A SEPARATE CIRCUIT AND HAVE 1000 W HPS LUMINAIRES WITH LIGHT PATTERNS AS INDICATED. THE LUMINAIRES SHALL BE ORIENTED AS SHOWN ON THE PLANS. ORIENT THE AXIS OF THE WINCH DRUM ALONG THE NORTH-SOUTH AXIS.

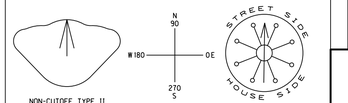
EACH TOWER SHALL BE INSPECTED/CERTIFIED BY A REPRESENTATIVE OF THE MANUFACTURER OF THE LOWERING DEVICE PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE KENTUCKY TRANSPORTATION CABINET.



Scale 1" - 100'

NOTE:

HIGH MAST POLES SHALL BE PLACED AS CLOSE TO STATIONS AND OFFSETS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE LOCATED MORE THAN 20' FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.



LEGEND

- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- BASE MOUNTED CABINET
- A9 — JUNCTION BOXES - TYPES A & C (AS DESIGNATED)
- M10 — CONCRETE MARKER
- ---------- 1 ¼" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
- -·-·-·-·-·- DUCTED CABLE
- LUMINAIRE POLE
- (1) — SEE "NOTES"

LIGHTING PLAN FOR INTERCHANGE I-471 AND MEMORIAL PARKWAY PLAN SHEET 1

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T44

LUMINAIRES	STATIONS/ COORDINATES	ALIGNMENT
HM5	Sta 234+91.17 Off 82.49	I-471 B-NB
1-1-C-10-10	Sta 10+35.56	MP RAMP M
1-2-B-10-10	Sta 12+21.29	MP RAMP M
1-3-B-10-10	Sta 14+12.04	MP RAMP M
1-4-B-10-10	Sta 15+96.15	MP RAMP M
1-5-B-10-10	Sta 17+63.23	MP RAMP M
1-6-C-10-10	Sta 18+93.76	MP RAMP M
1-7-C-12-13	Sta 256+90.17	I-471 B-NB
1-8-C-12-13	Sta 258+74.32	I-471 B-NB
1-9-C-12-14	Sta 252+60.64	I-471 B-NB
1-10-C-12-14	Sta 250+35.36	I-471 B-NB
2-1-C-15-19	Sta 19+00.05	MP RAMP D
2-2-B-12-13	Sta 18+42.39	MP RAMP D
2-3-B-12-13	Sta 16+68.42	MP RAMP D
2-4-B-12-13	Sta 14+65.19	MP RAMP D
2-5-B-12-13	Sta 12+71.01	MP RAMP D
2-6-C-12-14	Sta 240+62.20	I-471 B-NB
2-7-C-12-14	Sta 243+12.27	I-471 B-NB
2-8-C-12-14	Sta 245+48.94	I-471 B-NB
2-9-C-12-14	Sta 247+78.40	I-471 B-NB
3-1-C-10-11	Sta 11+34.91	MP RAMP M
3-2-C-10-12	Sta 248+65.85	I-471 B-NB
3-3-C-10-10	Sta 251+57.01	I-471 B-NB
3-4-C-12-14	Sta 16+71.36	MP RAMP N
3-5-C-12-14	Sta 251+67.44	I-471 B-NB
3-6-C-12-14	Sta 253+87.63	I-471 B-NB
3-7-C-12-14	Sta 256+00.31	I-471 B-NB
3-8-C-12-14	Sta 258+32.68	I-471 B-NB
3-9-B-12-14	Sta 10+79.30	MP RAMP N
3-10-B-12-14	Sta 12+83.33	MP RAMP N
3-11-B-12-14	Sta 14+62.24	MP RAMP N
3-12-C-12-14	Sta 15+65.55	MP RAMP N
3-13-C-15-16	Sta 15+29.05	MP RAMP N
4-1-C-10-12	Sta 247+36.75	I-471 B-NB
4-2-C-10-10	Sta 249+97.89	I-471 B-NB
4-3-C-15-16	Sta 13+11.91	MP RAMP A
4-4-C-15-16	Sta 12+67.05	MP RAMP A
4-5-C-10-11	Sta 10+64.14	MP RAMP A
4-6-C-10-11	Sta 12+03.48	MP RAMP A
4-7-B-10-11	Sta 13+78.62	MP RAMP A
4-8-B-15-16	Sta 15+53.64	MP RAMP A
4-9-B-15-16	Sta 17+21.84	MP RAMP A
4-10-B-15-16	Sta 18+95.09	MP RAMP A
4-11-B-15-16	Sta 20+63.81	MP RAMP A
4-12-B-15-16	Sta 21+76.86	MP RAMP A
4-13-C-15-16	Sta 240+17.97	I-471 B-NB
4-14-C-12-14	Sta 242+74.30	I-471 B-NB
4-15-C-12-14	Sta 244+99.28	I-471 B-NB
4-16-C-12-14	Sta 247+37.12	I-471 B-NB
4-17-C-12-14	Sta 249+08.19	I-471 B-NB

GENERAL CONVENTIONAL & HIGH MAST NOTES

CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANY BEFORE INSTALLING SERVICE POLE TO PROVIDE 480 VOLT SINGLE PHASE SERVICE AND DETERMINE EXACT POLE/METER LOCATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE DISTRICT UTILITY AGENT BEFORE ANY HOLES ARE DUG OR SET TO INSURE PROPER CLEARANCE AND SHIELDING FROM EXISTING OR PROPOSED UTILITY LINES.

ALL UNDERGROUND CONDUIT FOR CONVENTIONAL LIGHTING SHALL BE 2" RIGID STEEL UNLESS OTHERWISE SPECIFIED. ALL UNDERGROUND CONDUIT FOR HIGH MAST LIGHTING SHALL BE 3" RIGID STEEL UNLESS OTHERWISE SPECIFIED. JUNCTION BOXES, CONDUITS, AND ROAD CROSSING LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND DENOTED ON THE AS-BUILT PLANS. ALL CONDUITS SHALL BE ACCESSIBLE INSIDE JUNCTION BOXES. ANY DUCTED CABLE SHALL RUN THROUGH 3" RS CONDUIT UNDER THE ROADWAY WITH ONLY ONE DUCTED CABLE PER CONDUIT PERMITTED. ALL SPARE CONDUITS SHALL BE CAPPED ON BOTH ENDS AS SHOWN ON JUNCTION BOX DETAIL. THERE SHALL BE NO OPEN CUTTING OF ROADWAY UNLESS APPROVED BY ENGINEER.

JUNCTION BOXES SHALL BE PLACED IN LOCATIONS TO AVOID STANDING WATER AND DITCH LINES. ANY ADDITIONAL JUNCTION BOXES SHALL BE APPROVED BY THE ENGINEER.

ALL CABLE AND WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH HIGH MAST POLE THE CABLE OR WIRE IS FEEDING. SPLICES ARE NOT ALLOWED ON HIGH MAST LIGHTING. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.

ALL CABLE/WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH POLE THE CABLE/WIRE IS FEEDING UNLESS OTHERWISE NOTED ON PLAN SHEETS. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.
CONTRACTOR SHALL INSTALL POLE WITH LIGHTING CONTROL EQUIPMENT IN BASE MOUNTED CABINETS (SEE PLANS).
REGARDLESS OF THE STATION & OFFSET NOTED, ALL POLES LOCATED BEHIND GUARDRAIL MUST BE A MINIMUM OF 5 FEET BEHIND THE FACE OF THE GUARDRAIL.

ALL EXPOSED CONDUIT MUST BE SECURED IN PLACE ACCORDING TO THE NATIONAL ELECTRIC CODE WITH CONDUIT STRAPS/OR METHODS AS APPROVED BY THE ENGINEER.

ALL SPLICES NOTED ON THIS PLAN SHALL BE APPROVED BY CENTRAL OFFICE TRAFFIC OPERATIONS. THESE SPLICES SHALL BE WATERPROOF AND SHALL BE OF THE CORRECT SIZE FOR THE WIRE USED AND SHALL BE RAYCHEM GTAP-2(B18), OR APPROVED EQUAL. ALL SPLICES SHALL BE INCIDENTAL TO THE WIRE AND CABLE BEING INSTALLED.

UPON COMPLETION OF THE PROJECT AN INSPECTION WILL BE CARRIED OUT AFTER THE LIGHTING IS FUNCTIONAL TO VERIFY PROPER ILLUMINATION, PROPER FUNCTIONING OF THE LOWERING DEVICES, OTHER OPERATIONAL FEATURES AND AN INSULATION TEST OF ALL WIRING AS WELL AS GROUNDING RESISTANCE. ALL ROADWAY LIGHTING CIRCUITS MUST PASS AN INSULATION TEST OF 100 MILLION OHMS TO GROUND. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, THERE SHALL BE TWO OR MORE GROUND RODS CONNECTED IN PARALLEL UNTIL IT MEETS THIS VALUE.

NOTES:

(1) -RUN WIRES FOR CKT 1 & CKT 3 TOGETHER FROM CONTROLLER TO JBA1 IN 2" CONDUIT

(2) -RUN WIRES FOR CKT 2 & CKT 4 TOGETHER FROM CONTROLLER TO JBA8 IN 2" CONDUIT

(3) -RUN 3-#8 AWG FROM CONTROLLER TO 1-5-B-10-10. INSTALL 2"RS FROM POLE 1-5 TO JBA3.
INSTALL A THREE WAY SPLICE INSIDE TRANSFOMER BASE OF 1-5-B-10-10.
(SEE GENERAL NOTE ON PLAN SHEET FOR SPLICE SPECIFICATIONS)
RUN 3-#8 AWG FROM THREE WAY SPICE TO 1-9-C-12-14 (THROUGH JBA3/JBA4)

(4) -USE 2"RS CONDUIT TO TRANSISITION FROM JBA19 TO SIDE OF BRIDGE.
ALONG BRIDGE, CONDUIT SHALL BE CONNECTED TO BRIDGE EVERY 4 FT.
(CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONNECTOR BEING USED.)

(5) -FOR HM5 DUCTED CABLE USE 3" RIGID STEEL CONDUIT AND 2" RIGID STEEL CONDUIT FOR CKT #4 TO TRANSISITION FROM JBA21 TO SIDE OF BRIDGE.
ALONG BRIDGE CONDUIT SHALL BE CONNECTED TO BRIDGE EVERY 4 FT.
(CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONNECTOR BEING USED)

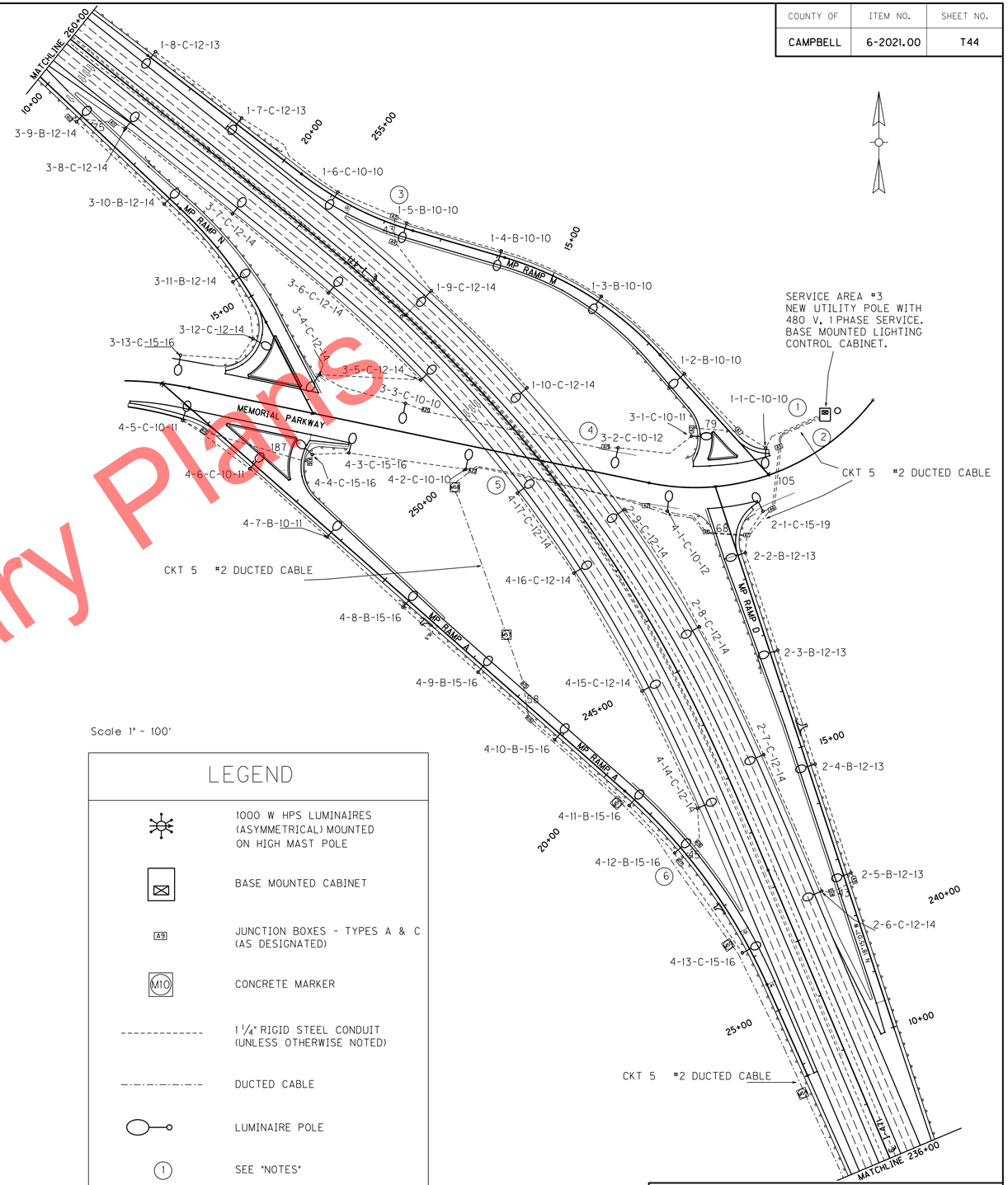
(6) -RUN 3-#8 AWG FROM 4-5-C-10-11 TO 4-12-B-15-16
INSTALL A THREE WAY SPLICE INSIDE TRANSFOMER BASE OF 4-12-B-15-16.
(SEE GENERAL NOTE ON PLAN SHEET FOR SPLICE SPECIFICATIONS)
RUN 3-#8 AWG FROM THREE WAY SPICE TO 4-14-C-12-14(THROUGH JBA17/JBA18)

CONVENTIONAL LIGHTING:

ALL POLES SHALL HAVE A #12 AWG GREEN GROUND WIRE RUN FROM BOTTOM OF POLE TO THE LUMINAIRE FOR GROUNDING . ALL POLES SHALL HAVE A GREEN WIRE THE SAME SIZE AS THE CIRCUIT WIRE RUN FROM POLE TO POLE FOR GROUNDING.

POLE HEIGHTS, ARM LENGTHS, AND SETBACKS ARE DENOTED AS STATED ON "LUMINAIRE DESIGNATION EXAMPLE" ON LUMINAIRE/FUSE CONNECTOR DETAIL SHEET.

POLES SHALL BE PLACED AS CLOSE TO STATIONS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE MOVED FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.



Scale 1" - 100'

LEGEND

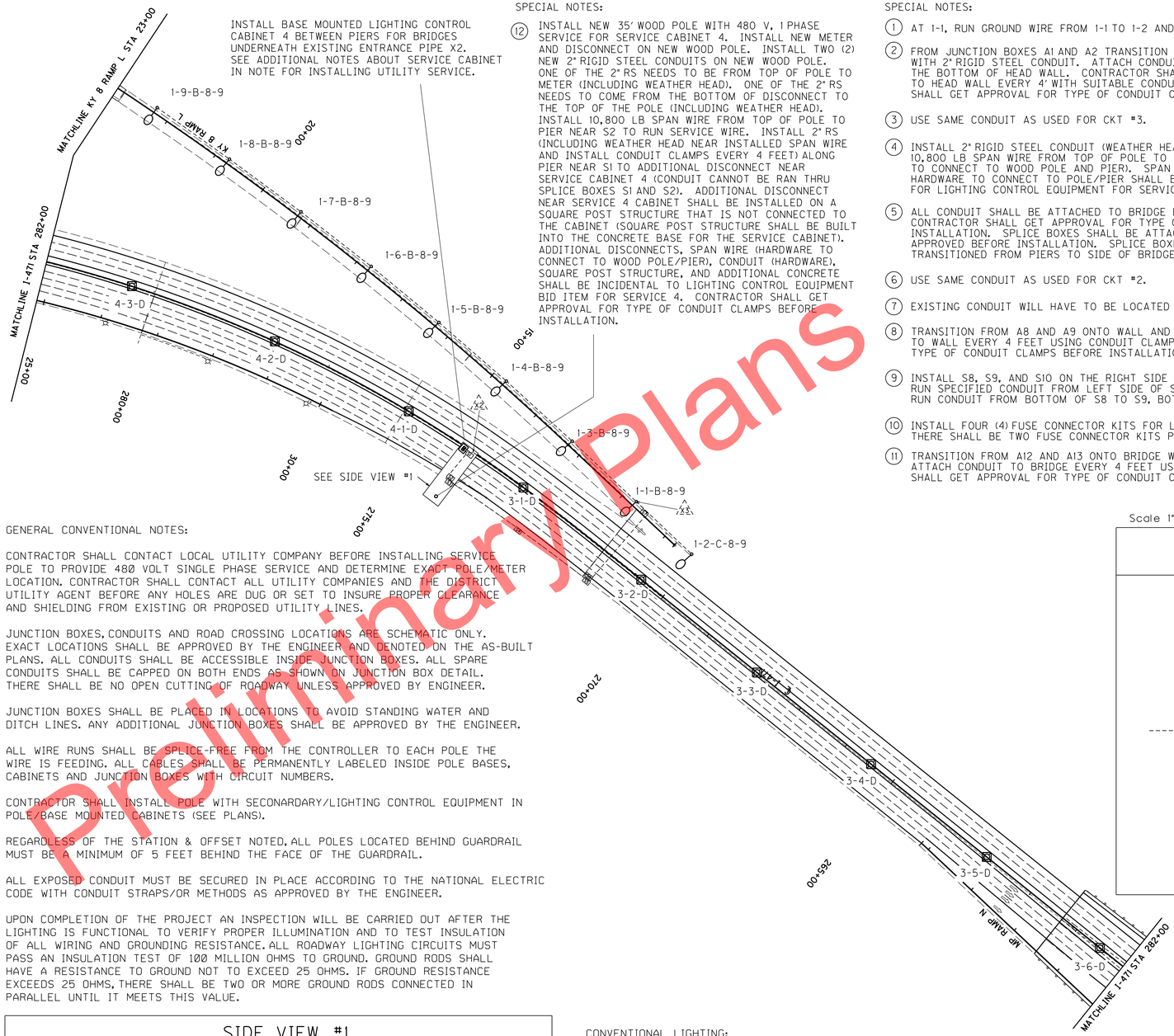
- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- BASE MOUNTED CABINET
- JUNCTION BOXES - TYPES A & C (AS DESIGNATED)
- CONCRETE MARKER
- 1 1/4" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
- DUCTED CABLE
- LUMINAIRE POLE
- SEE "NOTES"
- WOOD POLE

LIGHTING PLAN FOR INTERCHANGE
I-471 AND MEMORIAL PARKWAY
PLAN SHEET 2

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T45

WIRING SCHEDULE

	FROM	TO	WIRE SIZE	CONDUIT SIZE
CKT #1	SERVICE 4	S1	3-#8 AWG	2" RS
	S1 (5)	S2	3-#8 AWG	2" RS
	S2 (5)	S3	3-#8 AWG	2" FLEX
	S3 (5)	S5 (THRU S4)	3-#8 AWG	2" RS
	S5 (5)	S6	3-#8 AWG	2" FLEX
	S6 (5)	S7	3-#8 AWG	2" RS
	S7	X3 1-1-B-8-9	3-#8 AWG	2" FLEX
	1-1-B-8-9 (1)	1-2-C-8-9	3-#8 AWG	EXISTING
	1-2-C-8-9	1-3-B-8-9 (THRU 1-1)	2-#8 AWG	EXISTING
	1-3-B-8-9	1-9 (THRU 1-4 - 1-8)	3-#8 AWG	EXISTING
CKT #2	SERVICE 5	A1	3-#6 AWG	2" RS
	A1 (2)	A2	3-#6 AWG	2" RS
	A2	A3	3-#6 AWG	2" RS
	A3	2-1-C-10-10	3-#6 AWG	1¼" RS
	2-1-C-10-10	A4 (THRU 2-2 - 2-11)	3-#6 AWG	1¼" RS
	A4	A5	3-#6 AWG	2" RS
	A5	2-18 (THRU 2-12 - 2-17)	3-#6 AWG	1¼" RS
CKT #3	SERVICE 4	S1	3-#8 AWG	2" RS
	S1	X2 EXISTING RS	3-#8 AWG	2" RS
	X2	3-1-D	3-#8 AWG	EXISTING
	3-1-D	3-6(THRU 3-2 - 3-5)	3-#8 AWG	EXISTING
CKT #4	SERVICE 4	S1	3-#8 AWG	(3)
	S1	EXISTING RS	3-#8 AWG	(3)
	EXISTING RS	4-1-D	3-#8 AWG	EXISTING
	4-1-D	4-6(THRU 4-2 - 4-5)	3-#8 AWG	EXISTING
CKT #5	SERVICE 5	UP THE POLE (4)	3-#8 AWG	2" RS
	POLE	X1 EXISTING RS	3-#8 AWG	NONE
	X1	5-9 (THRU 5-1 - 5-8)	3-#8 AWG	EXISTING
CKT #6	SERVICE 5	A1	3-#8 AWG	(6)
	A1 (2)	A2	3-#8 AWG	(6)
	A2	A3	3-#8 AWG	(6)
	A3	X4 EXISTING RS (7)	3-#8 AWG	2" RS
	X4	6-9 (THRU 6-1 - 6-8)	3-#8 AWG	EXISTING
CKT #7	SERVICE 5	A6	3-#8 AWG	1¼" RS
	A6	A7	3-#8 AWG	2" RS
	A7	A8 (THRU 7-1)	3-#8 AWG	1¼" RS
	A8 (8)	S8	3-#8 AWG	1¼" RS
	S8 (9)	7-2-E	3-#8 AWG	1¼" RS
	S8	S9	3-#8 AWG	1¼" RS
	S9 (9)	7-3-E	3-#8 AWG	1¼" RS
	S9	S10	3-#8 AWG	1¼" RS
	S10 (9)	7-4-E	3-#8 AWG	1¼" RS
	S10 (8)	A9	3-#8 AWG	1¼" RS
	A9	A10 (THRU 7-5 - 7-7)	3-#8 AWG	1¼" RS
	A10	A11	3-#8 AWG	2" RS
	A11	7-11(THRU 7-8 - 7-10)	3-#8 AWG	1¼" RS
CKT #8	SERVICE 5	8-1-C-10-11	3-#8 AWG	1¼" RS
	8-1-C-10-11	A12	3-#8 AWG	1¼" RS
	A12 (11)	A13	3-#8 AWG	1¼" RS
	A13	8-4(THRU 8-2 - 8-3)	3-#8 AWG	1¼" RS



SPECIAL NOTES:

(12) INSTALL NEW 35' WOOD POLE WITH 480 V, 1 PHASE SERVICE FOR SERVICE CABINET 4. INSTALL NEW METER AND DISCONNECT ON NEW WOOD POLE. INSTALL TWO (2) NEW 2" RIGID STEEL CONDUITS ON NEW WOOD POLE. ONE OF THE 2" RS NEEDS TO BE FROM TOP OF POLE TO METER (INCLUDING WEATHER HEAD). ONE OF THE 2" RS NEEDS TO COME FROM THE BOTTOM OF DISCONNECT TO THE TOP OF THE POLE (INCLUDING WEATHER HEAD). INSTALL 10,800 LB SPAN WIRE FROM TOP OF POLE TO PIER NEAR S2 TO RUN SERVICE WIRE. INSTALL 2" RS (INCLUDING WEATHER HEAD NEAR INSTALLED SPAN WIRE AND INSTALL CONDUIT CLAMPS EVERY 4 FEET) ALONG PIER NEAR S1 TO ADDITIONAL DISCONNECT NEAR SERVICE CABINET 4 (CONDUIT CANNOT BE RAN THRU SPLICE BOXES S1 AND S2). ADDITIONAL DISCONNECT NEAR SERVICE 4 CABINET SHALL BE INSTALLED ON A SQUARE POST STRUCTURE THAT IS NOT CONNECTED TO THE CABINET (SQUARE POST STRUCTURE SHALL BE BUILT INTO THE CONCRETE BASE FOR THE SERVICE CABINET). ADDITIONAL DISCONNECTS, SPAN WIRE (HARDWARE TO CONNECT TO WOOD POLE/PIER), CONDUIT (HARDWARE), SQUARE POST STRUCTURE, AND ADDITIONAL CONCRETE SHALL BE INCIDENTAL TO LIGHTING CONTROL EQUIPMENT BID ITEM FOR SERVICE 4. CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONDUIT CLAMPS BEFORE INSTALLATION.

SPECIAL NOTES:

(1) AT 1-1, RUN GROUND WIRE FROM 1-1 TO 1-2 AND 1-1 TO 1-3.

(2) FROM JUNCTION BOXES A1 AND A2 TRANSITION ONTO THE HEAD WALL WITH 2" RIGID STEEL CONDUIT. ATTACH CONDUIT TO THE OUTSIDE OF THE BOTTOM OF HEAD WALL. CONTRACTOR SHALL ATTACH CONDUIT TO HEAD WALL EVERY 4' WITH SUITABLE CONDUIT CLAMPS. CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONDUIT CLAMPS BEFORE INSTALLATION.

(3) USE SAME CONDUIT AS USED FOR CKT #3.

(4) INSTALL 2" RIGID STEEL CONDUIT (WEATHER HEAD) TO TOP OF POLE. INSTALL 10,800 LB SPAN WIRE FROM TOP OF POLE TO NEAR X1 (INCLUDES HARDWARE TO CONNECT TO WOOD POLE AND PIER). SPAN WIRE, CONDUIT, AND ADDITONAL HARDWARE TO CONNECT TO POLE/PIER SHALL BE INCIDENTAL TO THE BID ITEM FOR LIGHTING CONTROL EQUIPMENT FOR SERVICE 5.

(5) ALL CONDUIT SHALL BE ATTACHED TO BRIDGE EVERY 4 FEET WITH CONDUIT CLAMPS. CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONDUIT CLAMPS BEFORE INSTALLATION. SPLICE BOXES SHALL BE ATTACHED TO BRIDGE WITH CONNECTIONS APPROVED BEFORE INSTALLATION. SPLICE BOXES S2/S3, S5/S6 AND S7/X3 SHALL BE TRANSITIONED FROM PIERS TO SIDE OF BRIDGE WITH CONDUIT SPECIFIED IN WIRING SCHEDULE.

(6) USE SAME CONDUIT AS USED FOR CKT #2.

(7) EXISTING CONDUIT WILL HAVE TO BE LOCATED NEAR X4 (LIKELY UNDERGROUND).

(8) TRANSITION FROM A8 AND A9 ONTO WALL AND RUN CONDUIT ALONG WALL. ATTACH CONDUIT TO WALL EVERY 4 FEET USING CONDUIT CLAMPS. CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONDUIT CLAMPS BEFORE INSTALLATION.

(9) INSTALL S8, S9, AND S10 ON THE RIGHT SIDE OF LUMINAIRES 7-2, 7-3, AND 7-4 RESPECTIVELY. RUN SPECIFIED CONDUIT FROM LEFT SIDE OF S8, S9, AND S10 TO RIGHT SIDE OF LUMINAIRES. RUN CONDUIT FROM BOTTOM OF S8 TO S9, BOTTOM OF S9 TO S10, AND BOTTOM OF S10 TO A9.

(10) INSTALL FOUR (4) FUSE CONNECTOR KITS FOR LUMINAIRES 7-9 AND 7-10. THERE SHALL BE TWO FUSE CONNECTOR KITS PER LUMINAIRE PER POLE.

(11) TRANSITION FROM A12 AND A13 ONTO BRIDGE WITH CONDUIT SPECIFIED. ATTACH CONDUIT TO BRIDGE EVERY 4 FEET USING CONDUIT CLAMPS. CONTRACTOR SHALL GET APPROVAL FOR TYPE OF CONDUIT CLAMPS BEFORE INSTALLATION.

Scale 1" = 100'

LEGEND

(1)	SPECIAL NOTE
✉	POLE MOUNTED CABINET
○	WOOD POLE
A1	JUNCTION BOXES - TYPES A OR S AS SPECIFIED
----------	1 ¼" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
	LUMINAIRE POLE (COBRA HEAD)
	LUMINAIRE POLE (SHEPHERDS CROOK)
X1	ACCESS TO EXISTING CONDUIT
	EXISTING LUMINAIRE POLE

GENERAL CONVENTIONAL NOTES:

CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANY BEFORE INSTALLING SERVICE POLE TO PROVIDE 480 VOLT SINGLE PHASE SERVICE AND DETERMINE EXACT POLE/METER LOCATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE DISTRICT UTILITY AGENT BEFORE ANY HOLES ARE DUG OR SET TO INSURE PROPER CLEARANCE AND SHIELDING FROM EXISTING OR PROPOSED UTILITY LINES.

JUNCTION BOXES, CONDUITS AND ROAD CROSSING LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND DENOTED ON THE AS-BUILT PLANS. ALL CONDUITS SHALL BE ACCESSIBLE INSIDE JUNCTION BOXES. ALL SPARE CONDUITS SHALL BE CAPPED ON BOTH ENDS AS SHOWN ON JUNCTION BOX DETAIL. THERE SHALL BE NO OPEN CUTTING OF ROADWAY UNLESS APPROVED BY ENGINEER.

JUNCTION BOXES SHALL BE PLACED IN LOCATIONS TO AVOID STANDING WATER AND DITCH LINES. ANY ADDITIONAL JUNCTION BOXES SHALL BE APPROVED BY THE ENGINEER.

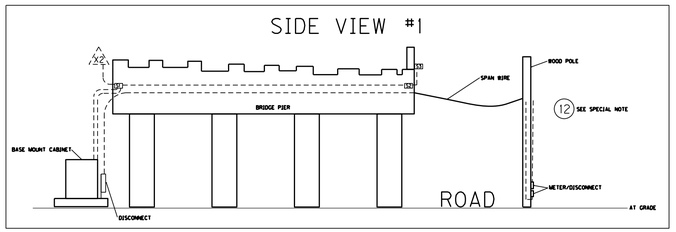
ALL WIRE RUNS SHALL BE SPLICE-FREE FROM THE CONTROLLER TO EACH POLE THE WIRE IS FEEDING. ALL CABLES SHALL BE PERMANENTLY LABELED INSIDE POLE BASES, CABINETS AND JUNCTION BOXES WITH CIRCUIT NUMBERS.

CONTRACTOR SHALL INSTALL POLE WITH SECONARDARY/LIGHTING CONTROL EQUIPMENT IN POLE/BASE MOUNTED CABINETS (SEE PLANS).

REGARDLESS OF THE STATION & OFFSET NOTED, ALL POLES LOCATED BEHIND GUARDRAIL MUST BE A MINIMUM OF 5 FEET BEHIND THE FACE OF THE GUARDRAIL.

ALL EXPOSED CONDUIT MUST BE SECURED IN PLACE ACCORDING TO THE NATIONAL ELECTRIC CODE WITH CONDUIT STRAPS/OR METHODS AS APPROVED BY THE ENGINEER.

UPON COMPLETION OF THE PROJECT AN INSPECTION WILL BE CARRIED OUT AFTER THE LIGHTING IS FUNCTIONAL TO VERIFY PROPER ILLUMINATION AND TO TEST INSULATION OF ALL WIRING AND GROUNDING RESISTANCE. ALL ROADWAY LIGHTING CIRCUITS MUST PASS AN INSULATION TEST OF 100 MILLION OHMS TO GROUND. GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, THERE SHALL BE TWO OR MORE GROUND RODS CONNECTED IN PARALLEL UNTIL IT MEETS THIS VALUE.



CONVENTIONAL LIGHTING:

ALL POLES SHALL HAVE A #12 AWG GREEN GROUND WIRE RUN FROM BOTTOM OF POLE TO THE LUMINAIRE FOR GROUNDING . ALL POLES SHALL HAVE A GREEN WIRE THE SAME SIZE AS THE CIRCUIT WIRE RUN FROM POLE TO POLE FOR GROUNDING.

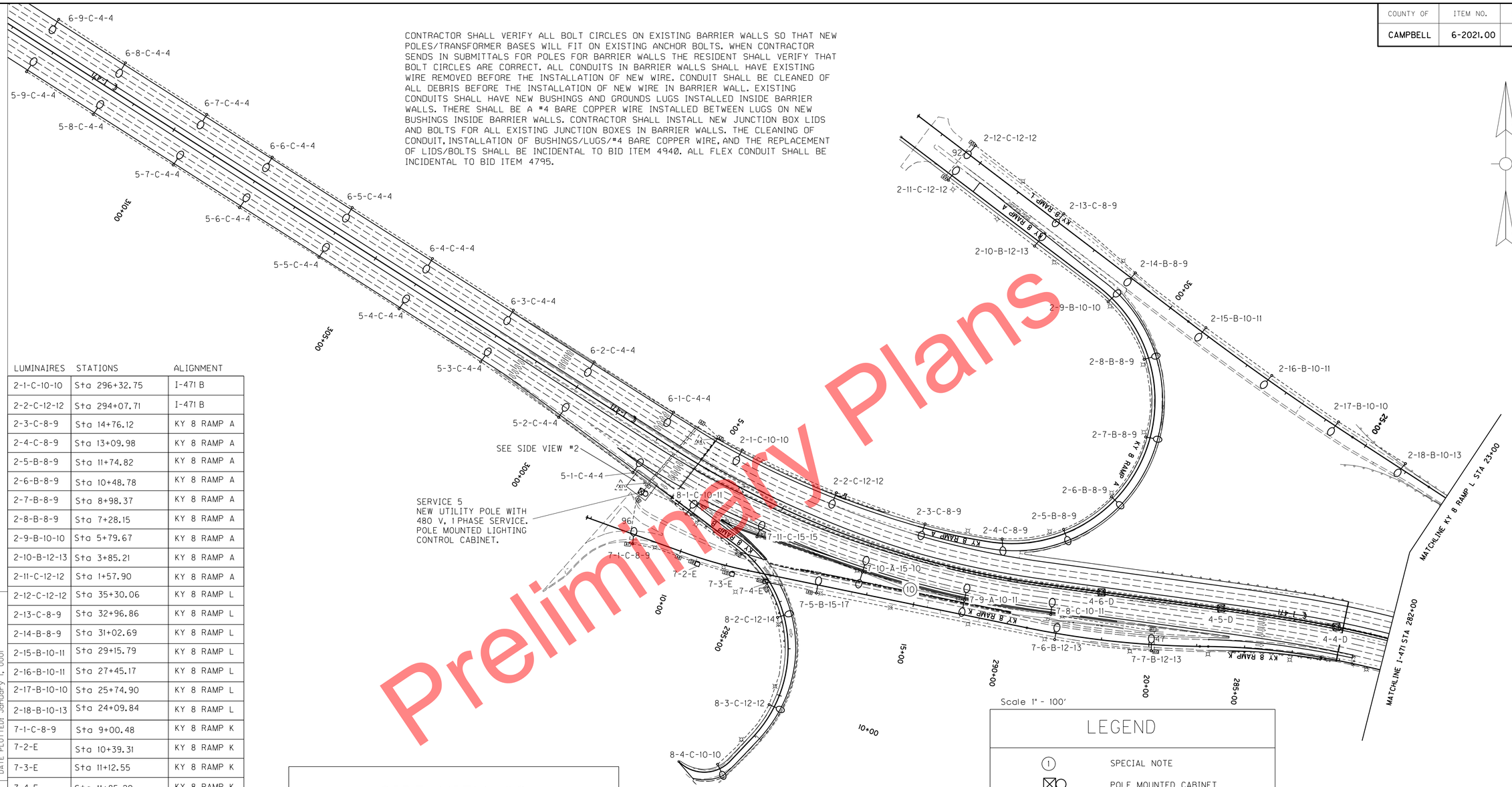
POLE HEIGHTS, ARM LENGTHS AND SETBACKS ARE DENOTED AS STATED ON "LUMINAIRE DESIGNATION EXAMPLE" ON LUMINAIRE/FUSE CONNECTOR DETAIL SHEET.

POLES SHALL BE PLACED AS CLOSE TO STATIONS AS STATED ON PLANS TO PROVIDE PROPER ILLUMINATION. IF ANY POLE NEEDS TO BE MOVED FROM THE STATION INDICATED, C.O. TRAFFIC SHALL BE CONTACTED AT 502-564-3020.

LIGHTING PLANS FOR
I-471 @ KY 8
SHEET 1

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-2021.00	T46

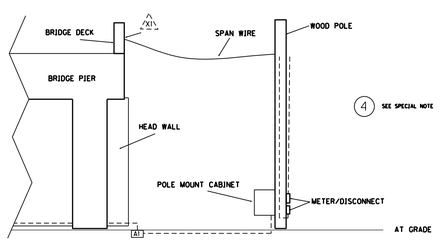
CONTRACTOR SHALL VERIFY ALL BOLT CIRCLES ON EXISTING BARRIER WALLS SO THAT NEW POLES/TRANSFORMER BASES WILL FIT ON EXISTING ANCHOR BOLTS. WHEN CONTRACTOR SENDS IN SUBMITTALS FOR POLES FOR BARRIER WALLS THE RESIDENT SHALL VERIFY THAT BOLT CIRCLES ARE CORRECT. ALL CONDUITS IN BARRIER WALLS SHALL HAVE EXISTING WIRE REMOVED BEFORE THE INSTALLATION OF NEW WIRE. CONDUIT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE INSTALLATION OF NEW WIRE IN BARRIER WALL. EXISTING CONDUITS SHALL HAVE NEW BUSHINGS AND GROUNDS LUGS INSTALLED INSIDE BARRIER WALLS. THERE SHALL BE A #4 BARE COPPER WIRE INSTALLED BETWEEN LUGS ON NEW BUSHINGS INSIDE BARRIER WALLS. CONTRACTOR SHALL INSTALL NEW JUNCTION BOX LIDS AND BOLTS FOR ALL EXISTING JUNCTION BOXES IN BARRIER WALLS. THE CLEANING OF CONDUIT, INSTALLATION OF BUSHINGS/LUGS/#4 BARE COPPER WIRE, AND THE REPLACEMENT OF LIDS/BOLTS SHALL BE INCIDENTAL TO BID ITEM 4940. ALL FLEX CONDUIT SHALL BE INCIDENTAL TO BID ITEM 4795.



Scale 1" - 100'

LUMINAIRES	STATIONS	ALIGNMENT
2-1-C-10-10	Sta 296+32.75	I-471 B
2-2-C-12-12	Sta 294+07.71	I-471 B
2-3-C-8-9	Sta 14+76.12	KY 8 RAMP A
2-4-C-8-9	Sta 13+09.98	KY 8 RAMP A
2-5-B-8-9	Sta 11+74.82	KY 8 RAMP A
2-6-B-8-9	Sta 10+48.78	KY 8 RAMP A
2-7-B-8-9	Sta 8+98.37	KY 8 RAMP A
2-8-B-8-9	Sta 7+28.15	KY 8 RAMP A
2-9-B-10-10	Sta 5+79.67	KY 8 RAMP A
2-10-B-12-13	Sta 3+85.21	KY 8 RAMP A
2-11-C-12-12	Sta 1+57.90	KY 8 RAMP A
2-12-C-12-12	Sta 35+30.06	KY 8 RAMP L
2-13-C-8-9	Sta 32+96.86	KY 8 RAMP L
2-14-B-8-9	Sta 31+02.69	KY 8 RAMP L
2-15-B-10-11	Sta 29+15.79	KY 8 RAMP L
2-16-B-10-11	Sta 27+45.17	KY 8 RAMP L
2-17-B-10-10	Sta 25+74.90	KY 8 RAMP L
2-18-B-10-13	Sta 24+09.84	KY 8 RAMP L
7-1-C-8-9	Sta 9+00.48	KY 8 RAMP K
7-2-E	Sta 10+39.31	KY 8 RAMP K
7-3-E	Sta 11+12.55	KY 8 RAMP K
7-4-E	Sta 11+85.29	KY 8 RAMP K
7-5-B-15-17	Sta 12+96.27	KY 8 RAMP K
7-6-B-12-13	Sta 18+03.61	KY 8 RAMP K
7-7-B-12-13	Sta 20+05.92	KY 8 RAMP K
7-8-C-10-11	Sta 289+06.10	I-471 B
7-9-A-10-11	Sta 290+84.34	I-471 B
7-10-A-15-10	Sta 292+98.68	I-471 B
7-11-C-15-15	Sta 295+22.93	I-471 B
8-1-C-10-11	Sta 5+25.59	KY 8 RAMP B
8-2-C-12-14	Sta 8+30.08	KY 8 RAMP B
8-3-C-12-12	Sta 10+26.97	KY 8 RAMP B
8-4-C-10-10	Sta 12+00.37	KY 8 RAMP B

SIDE VIEW #2



LEGEND

1	SPECIAL NOTE
	POLE MOUNTED CABINET
A1	JUNCTION BOXES - TYPES A OR S AS SPECIFIED
	1 1/4" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
	LUMINAIRE POLE (COBRA HEAD)
	LUMINAIRE POLE (DOUBLE ARM)
	LUMINAIRE POLE (SHEPHERDS CROOK)
	LUMINAIRE (WALL PACK)
X1	ACCESS TO EXISTING CONDUIT
	EXISTING LUMINAIRE POLE

LIGHTING PLANS FOR
I-471 @ KY 8
SHEET 2