



TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

September 1, 2010

CALL NO. 102
CONTRACT ID NO. 101038
ADDENDUM # 1

Subject: Mason County, NH 0681 (023)
Letting September 17, 2010

- (1) Revised - Plan Sheet - R1
- (2) Added - Plan Sheets - T1-T11

Proposal revisions are available at <http://transportation.ky.gov/contract/>.
Plan revisions are available at <http://www.lynnimaging.com/kytransportation/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in black ink that reads "Ryan Griffith".

Ryan Griffith, P.E.
Director
Division of Construction Procurement

Enclosures
RG:ks



An Equal Opportunity Employer M/F/D

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS

COUNTY OF	ITEM NO.	SHEET NO.
MASON	9-124.01	RI

▲ REVISED 9/1/10

PLANS OF PROPOSED PROJECT MASON COUNTY NEW CONNECTOR US 68 TO AA HIGHWAY GRADE, DRAIN AND SURFACING PLANS NH0681 (023)



SHEET NO.	DESCRIPTION
R1	LAYOUT SHEET
R1B	SCHEMATIC PLAN
R2 - R2Z	TYPICAL SECTIONS-SUMMARY OF QUANTITIES
R3 - R76	PLAN AND PROFILE SHEETS
R77 - R77A	RIGHT OF WAY SUMMARY SHEETS
R78 - R81	RIGHT OF WAY STRIP MAP SHEETS
R82 - R82C	RIGHT OF WAY MONUMENTATION DETAIL SHEETS
R83	INTERCHANGE APPROVAL - AA DETAIL SHEET
R84 - R91C	PAVEMENT DEVELOPMENT DETAIL SHEETS
R92 - R99	STRIPING DETAIL SHEETS
R100 - R100G	SEPIA DETAIL SHEETS
R101 - R107	MAINTENANCE OF TRAFFIC SHEETS
R108 - R127	EROSION CONTROL SHEETS
R128	CONTROL COORDINATE SHEET
R129 - R184	GEOTECH AND SOIL PROFILE SHEETS
R185 - R216	PIPE DRAINAGE SHEETS
X1 - X824	CROSS SECTION SHEETS

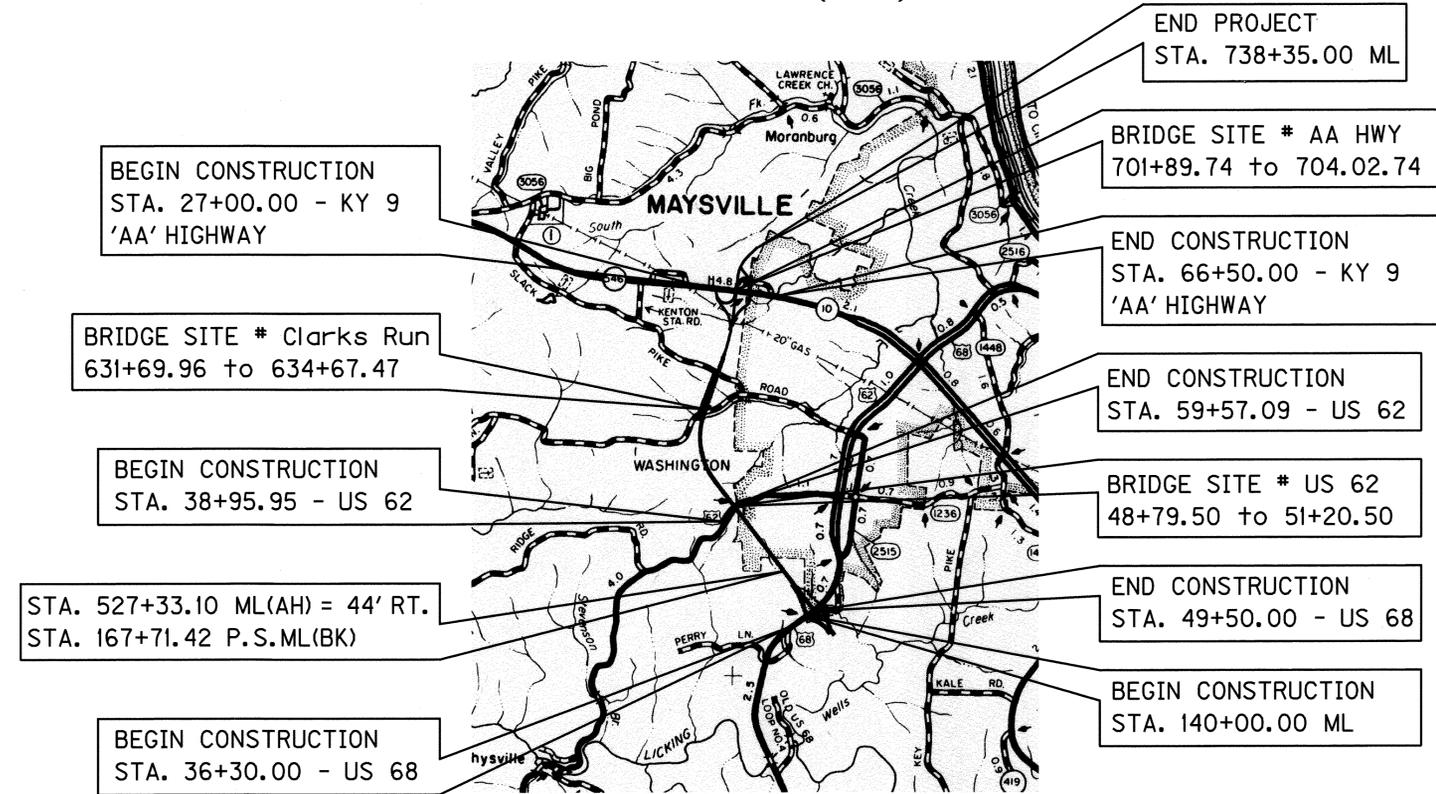
TOTAL SHEETS	
(R) ROADWAY (INCLUDES GEOTECH)	292
(S) STRUCTURE	71
(T) TRAFFIC	1
(U) UTILITY	1
(X) CROSS SECTION	686

SHEETS NOT INCLUDED IN TOTAL SHEETS
 R1A-R1B, R2A-R2Z, R7A-R7B, R8A, R10A, R12A, R17A-R17B, R31A, R35A, R37A-R37E, R39A, R41A, R42A, R43A-R43B, R77A, R82A-B2C, R84A-R84B, R85A-R85C, R86A-R86C, R87A-R87C, R88A-R88C, R89A-R89C, R90A-R90C, R91A-R91C, R97A-R97B, R100A-R100G, R101A, R109A, R114A-R114B, R121A, R123A, R124A-R124E, R125A.

SHEETS NOT USED
 R1A, R210*, R4, R6, R8, R10, R12, R43, R44-R45, R47-R55
 X25-X69, X419-X511.

STANDARD DRAWINGS		
NUMBER	NUMBER	NUMBER
RBB-001-07	RDI-005-03	RGX-001-05
RBC-001-09	RDI-006-03	RGX-005-05
RBC-002-01	RDI-011-02	RGX-010-03
RBE-070-04	RDI-016-02	RGX-100-05
RBE-200-04	RDI-020-08	RGX-200
RBI-001-09	RDI-021	RPM-100-09
RBI-002-06	RDI-025-04	RPM-110-05
RBI-003-07	RDI-026	RPM-120-06
RBI-005-07	RDI-035-01	RRE-002-04
RBI-007-08	RDI-045-01	TPM-105-01
RBM-020-08	RDI-100-04	TPM-110-01
RBR-001-11	RDI-120-03	TPM-115-01
RBR-005-10	RDP-001-05	TPM-120-01
RBR-010-05	RDP-005-04	TPM-125-01
RBR-015-04	RDP-006-03	TPM-135-01
RBR-016-04	RDP-010-08	TPM-140-01
RBR-025-03	RDX-001-05	TTC-100-01
RDB-001-11	RDX-002-03	TTC-105-01
RDB-005-08	RDX-160-05	TTC-115-01
RDB-007-02	RDX-210-02	TTC-120-01
RDB-008-03	RDX-215	TTC-135-01
RDB-100-04	RDX-220-04	TTC-150-01
RDB-101-04	RDX-225	TTC-155-01
RDB-105-05	RDX-230	TTC-160-01
RDB-106-04	RFG-001-06	TTD-110-01
RDB-155-01	RFC-010-04	TTS-105-01
RDB-160-01	RFW-001-04	TTS-115-01
RDD-030-07	RGS-001-06	
RDD-040-04	RGS-002-05	

NUMBER OF STANDARD DRAWINGS: 85



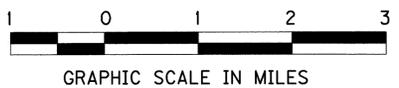
THIS PROJECT IS A
FULLY CONTROLLED ACCESS HIGHWAY

DESIGN CRITERIA	
CLASS OF HIGHWAY	RURAL ARTERIAL
TYPE OF TERRAIN	ROLLING
DESIGN SPEED	60mph
REQUIRED NPSD	490'
REQUIRED PSD	N/A
LEVEL OF SERVICE	A
ADT PRESENT (2000)	1200
ADT FUTURE (2030)	2600
DHV	275 (2030)
D %	*/•
T %	11%

GEOGRAPHIC COORDINATES	
LATITUDE	38 DEGREES 37 MINUTES 17 SECONDS NORTH
LONGITUDE	83 DEGREES 50 MINUTES 18 SECONDS WEST

DESIGNED	
% RESTRICTED SD	0
LEVEL OF SERVICE	A
MAX. DISTANCE W/O PASSING	XXXX

MAINLINE	US 68	KY 9 - 'AA' HIGHWAY	APPROACHES
LENGTH 23,363 LIN. FT. 4.425 MILES	LENGTH 1320 LIN. FT. 0.250 MILES	LENGTH 3950 LIN. FT. 0.748 MILES	LENGTH 6,646 LIN. FT. 1.259 MILES
ADDED DEDUCTED] FOR EQUALITIES 0 LIN. FT.			
NOT INCLUDED	NOT INCLUDED	NOT INCLUDED	NOT INCLUDED
RAILROAD CROSSINGS NO. 0 LIN. FT.			
BRIDGES 911 LIN. FT.	BRIDGES 0 LIN. FT.	BRIDGES 0 LIN. FT.	BRIDGES 0 LIN. FT.



LAYOUT MAP

**KENTUCKY
DEPARTMENT OF HIGHWAYS
COUNTY OF
MASON**

ITEM NO.	9-124.01	101038
PROJECT NUMBER:	NH 00681 (023)	
LETTING DATE:	FD52 081 0068 NEW-LOC	
DESIGNED BY:	9-17-10	

RECOMMENDED BY: 8/17/10 DATE

BY: Jamie Simpson PROJECT MANAGER

APPROVED: _____

DATE: 8/19/10 BY: [Signature] STATE HIGHWAY ENGINEER

PREPARED BY
PALMER ENGINEERING COMPANY

DESIGNED BY: Karl B. Sawyer, Jr. 8/19/2010

F.H.W.A. DIVISION ADMINISTRATOR

USER: \$\$\$USER\$\$\$
 DATE: \$\$\$DATE\$\$\$
 FILE NAME: \$\$\$design\$filespecification\$\$\$
 E-SHEET NAME: R00100LS

NO. SETS
 RECORD PLANS
 CONSTRUCTION PLANS

REVIEWED BY
 DIVISION OF CONSTRUCTION

ESTIMATE OF QUANTITIES

TOTALS	UNITS	CODE	ITEM DESCRIPTION
14	EACH	4714	POLE 120' MTG HT HIGH MAST
1	EACH	4760	POLE W/SECONDARY CONTROL EQUIP
1	EACH	4761	LIGHTING CONTROL EQUIPMENT
73	EACH	4773	HPS LUMINAIRE HIGH MAST
1,671	LIN FT	4798	CONDUIT 3 1/2 INCH
25	EACH	4800	MARKER
21,900	LIN FT	4820	TRENCHING AND BACKFILLING
2,160	LIN FT	4860	CABLE - NO. 8/3C DUCTED
5,900	LIN FT	4861	CABLE - NO. 6/3C DUCTED
3,500	LIN FT	4862	CABLE - NO. 4/3C DUCTED
8,669	LIN FT	4863	CABLE - NO. 2/3C DUCTED
8	EACH	20391NS835	JUNCTION BOX TYPE A
4	EACH	20392NS835	JUNCTION BOX TYPE C
130.25	CU YD	23161EN	POLE BASE - HIGH MAST

FILE NAME: G:\PWORK\TED.SWANSEGAR\0262463\ALL LIGHTING STANDARDS.DGN

USER: Ted.swansegar
DATE PLOTTED: August 5, 2010

E-SHEET NAME: T00100SU

MicroStation v8.11.7.180

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.

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 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.

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.

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.

Conduit shall include furnishing and installing specified conduit in ground or on structure in accordance with specifications. This item includes conduit fittings, 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.

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

An inspection will be carried out after the lighting is functional to verify proper illumination, proper functioning of the lowering devices and other operational features as well as an insulation test of all wiring.

Contractor shall contact all utility companies and the District Utility Agent before any holes are dug or poles set to insure proper clearance and shielding from existing or proposed utility lines.

All poles located behind guardrail must be a min. of 5 ft. behind the face of the guardrail.

Ground rods shall have a resistance to ground not to exceed 25 ohms. Where the resistance is greater than 25 ohms, two or more ground rods connected in parallel shall be used.

COUNTY OF	ITEM NO.	SHEET NO.
MASON	9-124.01	T3

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 2001 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS." FOURTH 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.

TO AVOID VORTEX SHEDDING THE STEEL POLE MEMBERS SHALL HAVE A TAPER OF 0.14 IN/FT. 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. 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 AASHTO M 314 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.

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.

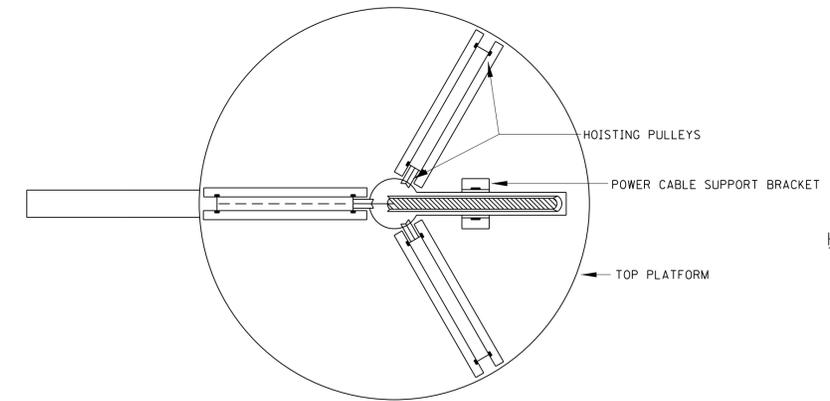
HIGHMAST NOTES

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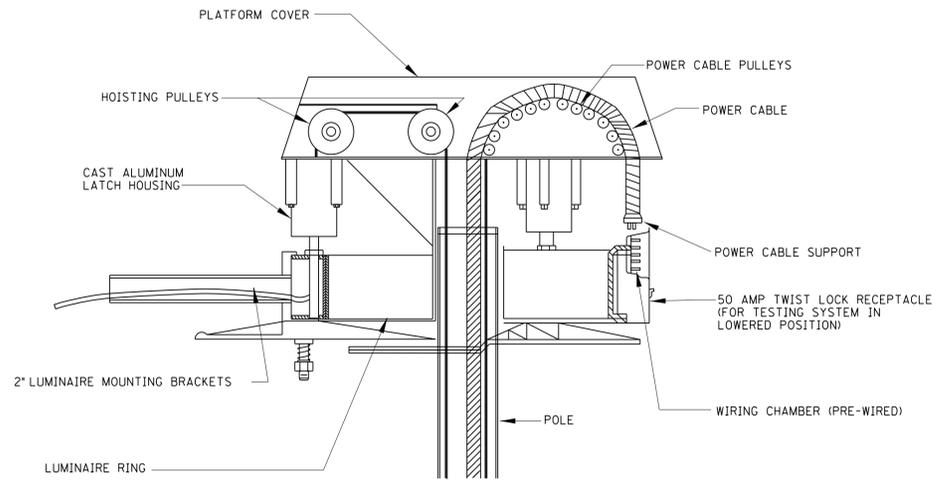
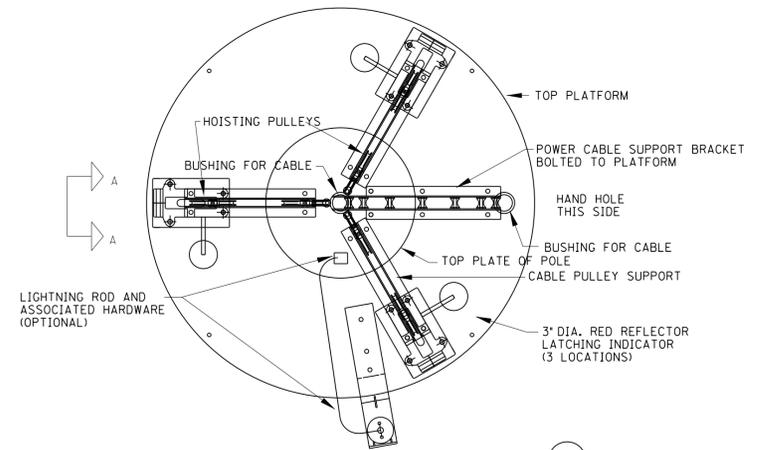
USER: Ted.Swanson
 DATE_PLOTTED: August 5, 2010

E-SHEET NAME: T00300HM

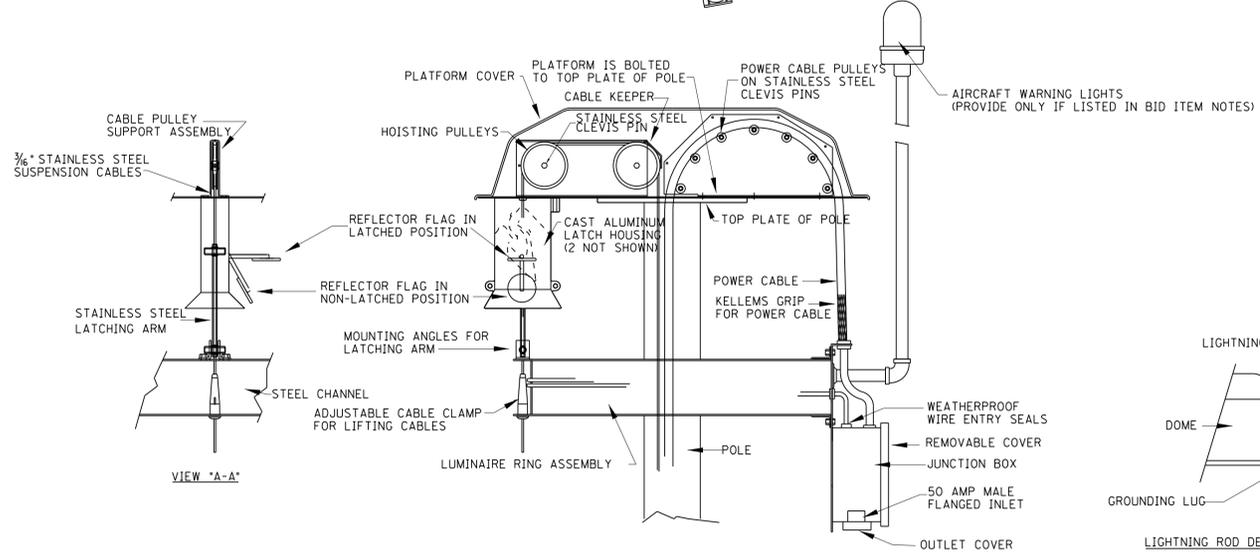
MicroStation v8.1i.7.180



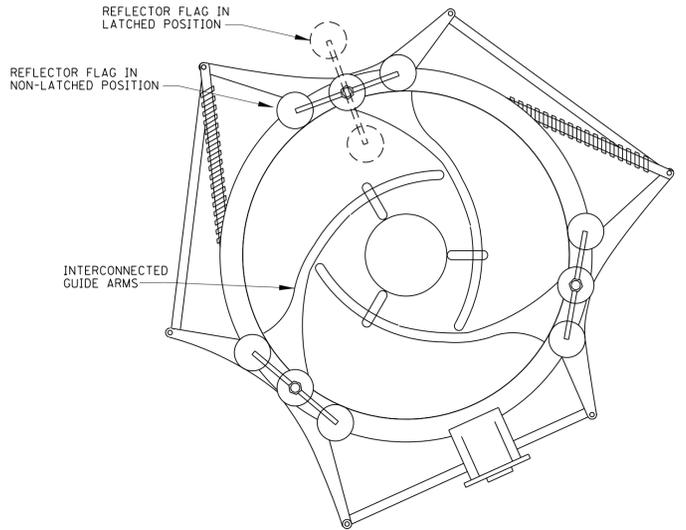
HEADFRAME ASSEMBLY - TOP VIEW



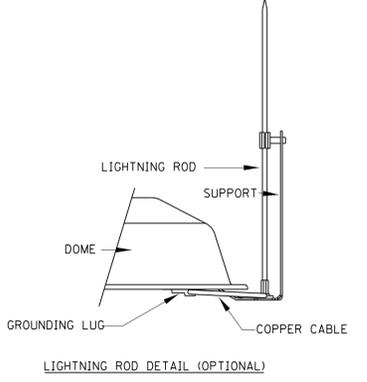
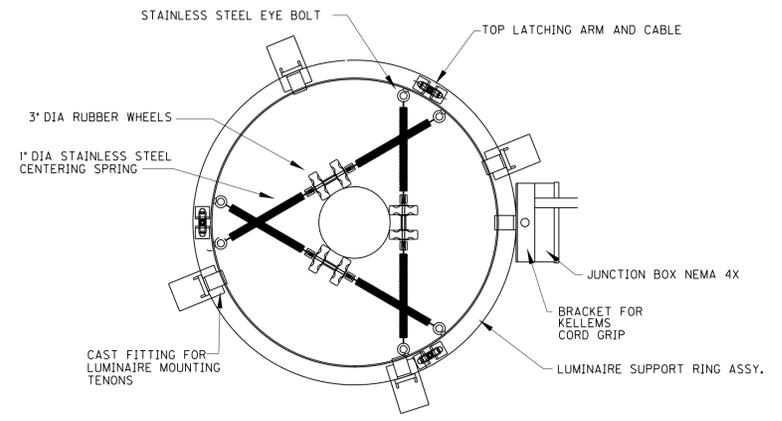
HEADFRAME & LUMINAIRE RING DETAILS - ROTARY LATCHING TYPE



HEADFRAME & LUMINAIRE RING DETAILS - LATERAL LATCHING TYPE



LUMINAIRE RING ASSEMBLY - TOP VIEW



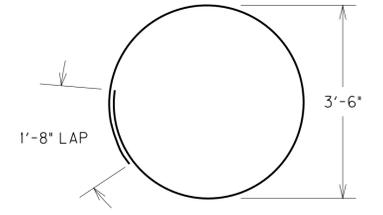
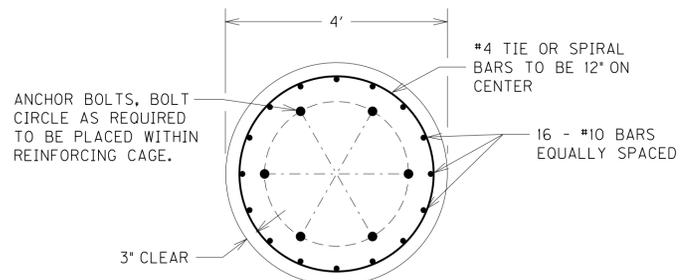
LIGHTNING ROD DETAIL (OPTIONAL)

FILE NAME: G:\PWORK\TED.SWANSEGAR\0262463\ALL LIGHTING STANDARDS.DGN
 USER: ted.swansegar
 DATE PLOTTED: August 5, 2010
 E-SHEET NAME: T00400HM
 MicroStation v8.11.7.180

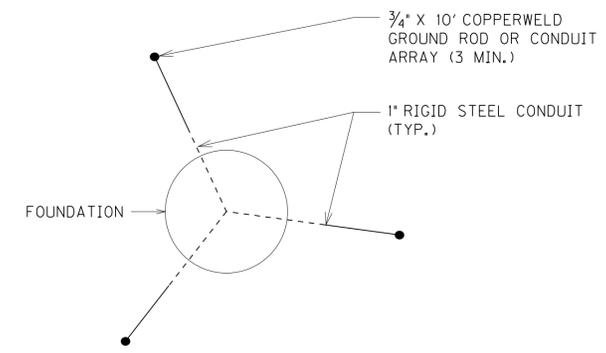
BASE DESIGN FOR UP TO 120' HIGH MAST POLES

(WITH A MAXIMUM OF TWELVE LUMINAIRES)

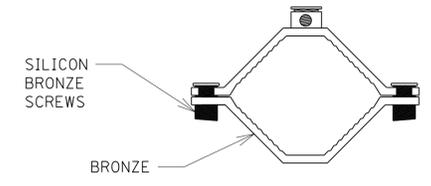
COUNTY OF	ITEM NO.	SHEET NO.
MASON	9-124.01	T5



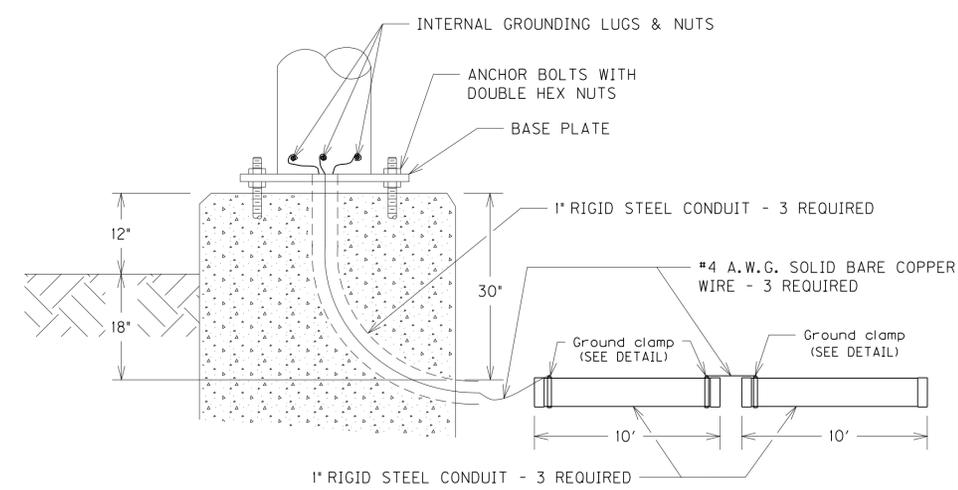
BENDING DETAIL FOR #4 TIE BARS



GROUND ROD PLACEMENT DETAIL

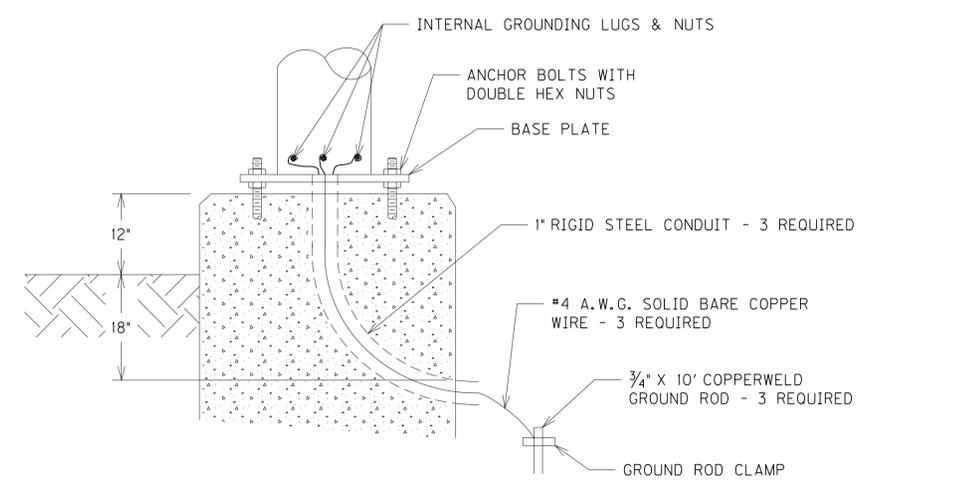


DIRECT BURIAL GROUND CLAMP



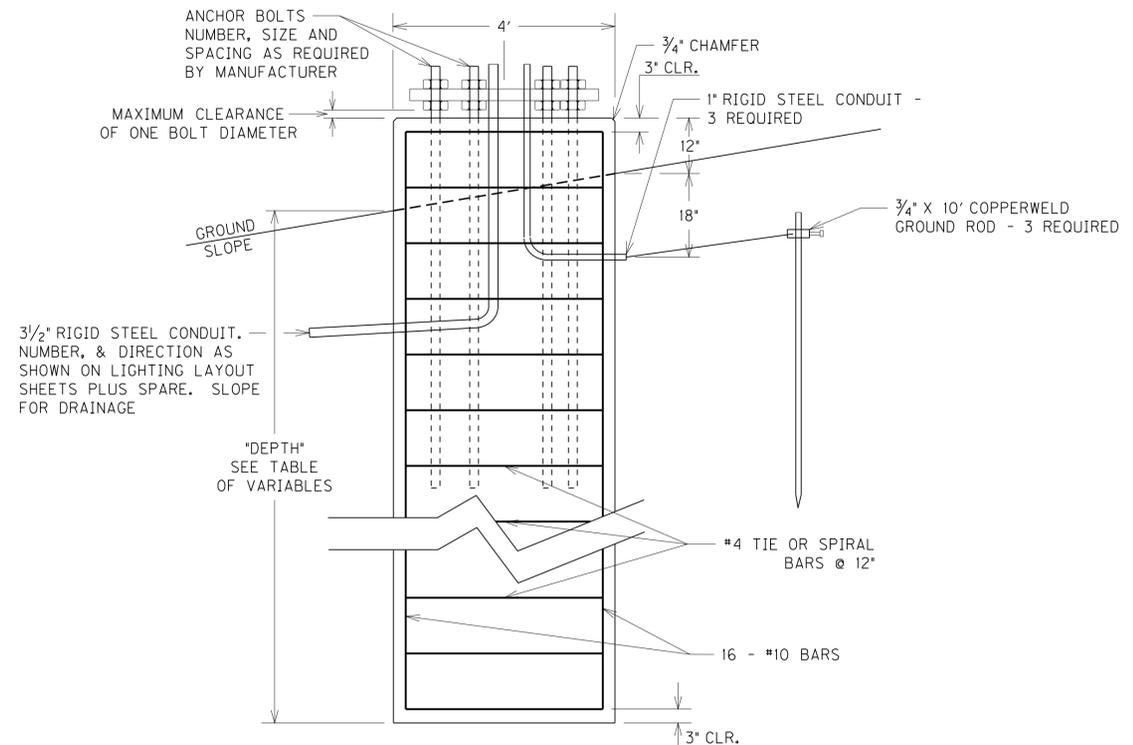
GROUNDING NOTE: TOWERS SHALL BE GROUNDED BY MEANS OF THREE NO. 4 A.W.G. SOLID BARE COPPER GROUND WIRES ATTACHED TO THE INTERNAL GROUNDING LUGS WITHIN THE TOWER. GROUND WIRES SHALL BE CONNECTED TO PIPE CLAMPS AS SHOWN ABOVE.

GROUNDING AND CONDUIT ARRAY ENTRANCE DETAIL FOR ROCK AREAS



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



BASE 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

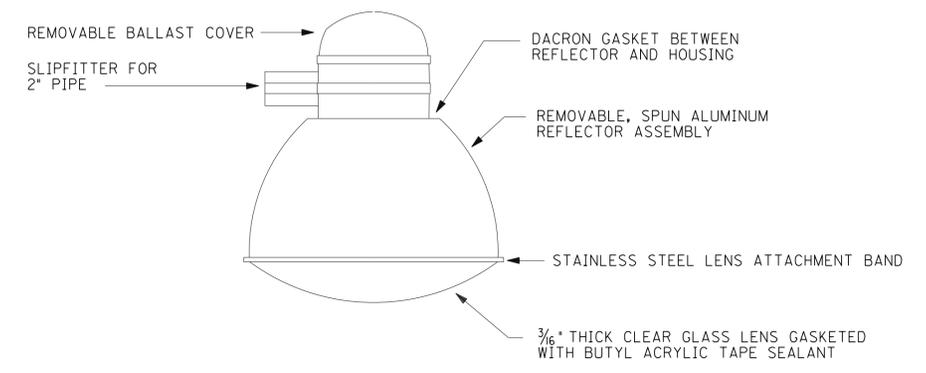
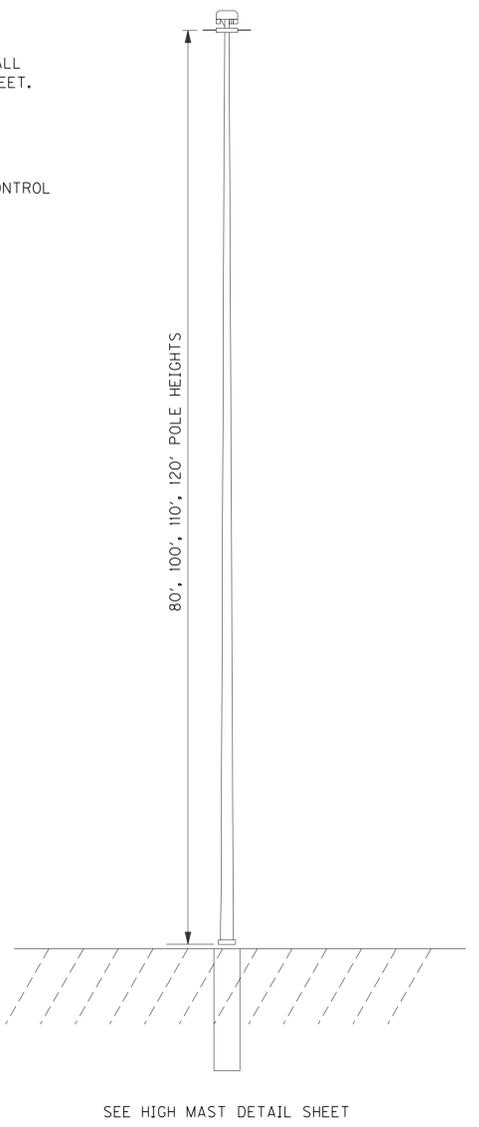
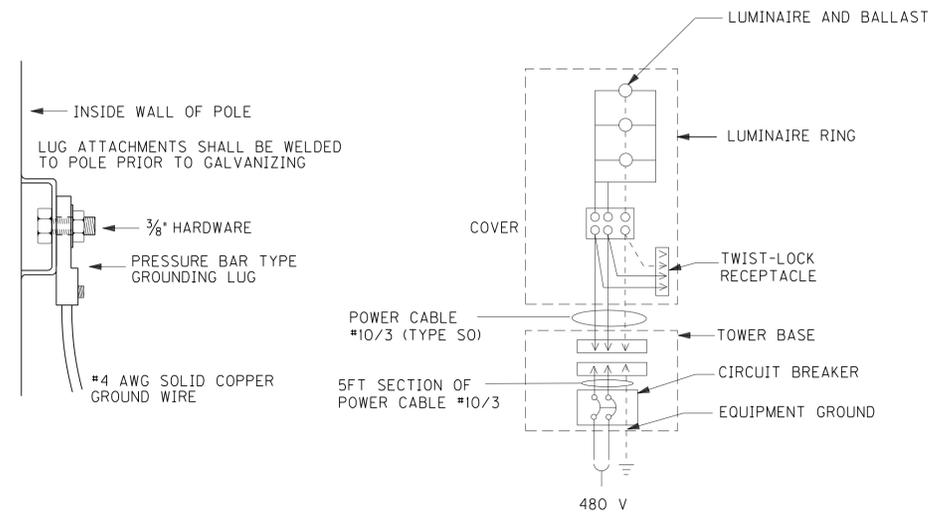
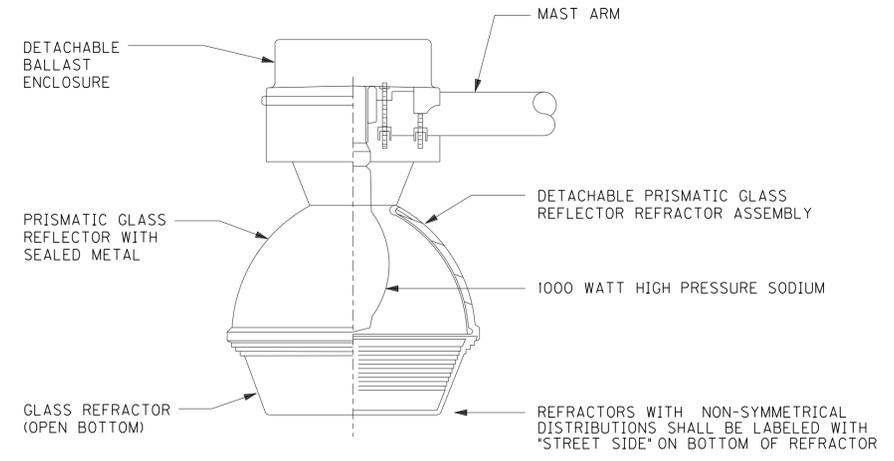
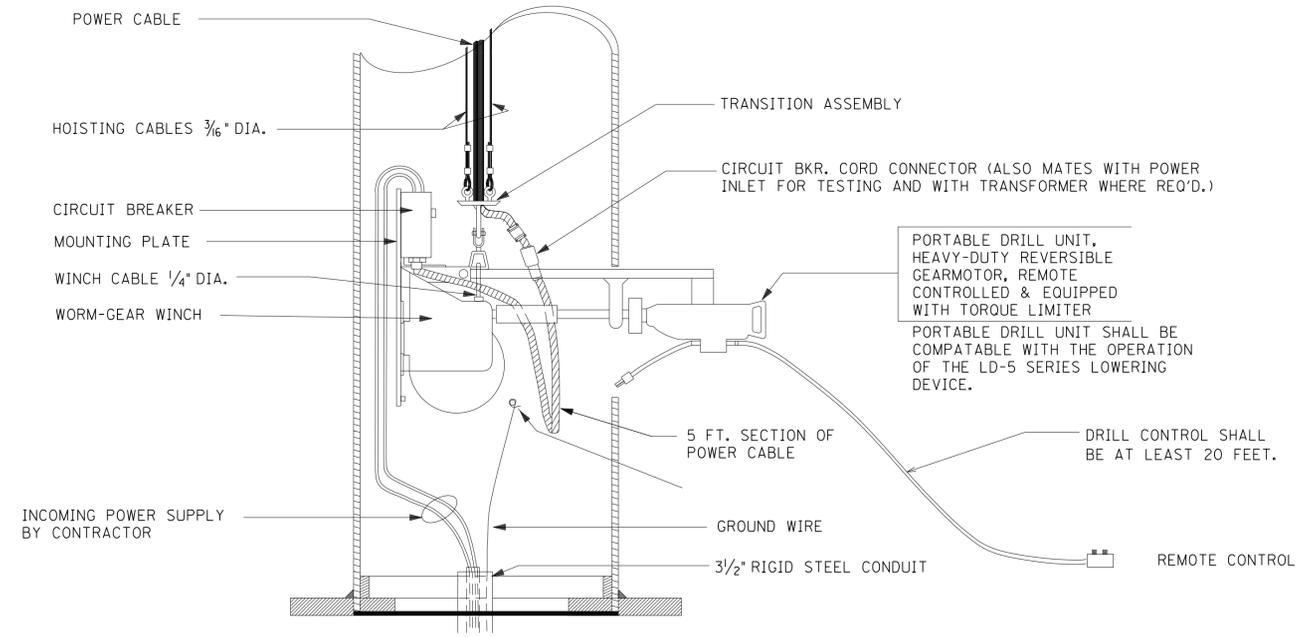
EXPOSED PORTIONS OF THE FOUNDATION SHALL BE FORMED TO CREATE A SMOOTH FINISHED SURFACE. ALL FORMING SHALL BE REMOVED UPON COMPLETION OF FOUNDATION CONSTRUCTION.

MAXIMUM SERVICE FORCES		DRILLED SHAFT DATA												
MAX MOMENT (ft-kips)	MAX SHEAR (kips)	DIAMETER (inches)	DEPTH						VERTICAL BARS		TIES OR SPIRAL			
			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.

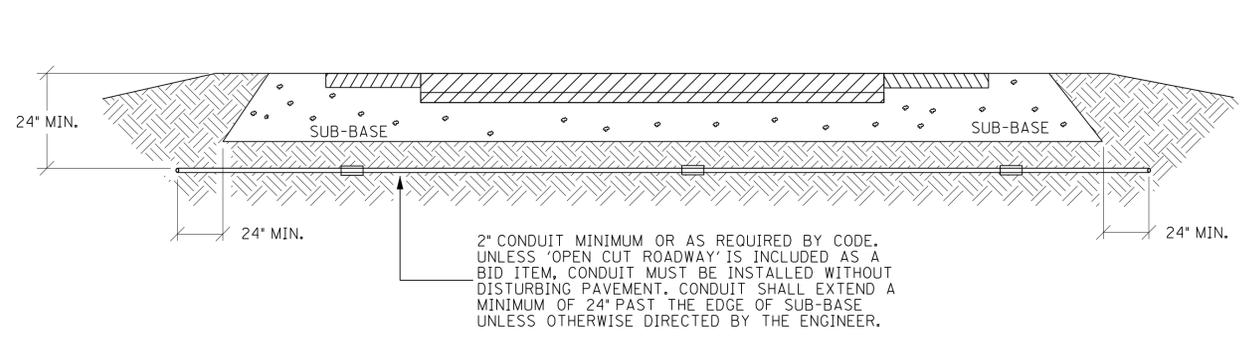
HIGHMAST BASE DETAIL

FILE NAME: G:\PWORK\TED.SWANSEGAR\0262463\ALL LIGHTING STANDARDS.DGN
 USER: Ted.Swansegar
 DATE PLOTTED: August 5, 2010
 E-SHEET NAME: T00500HM
 MicroStation v8.11.7.180



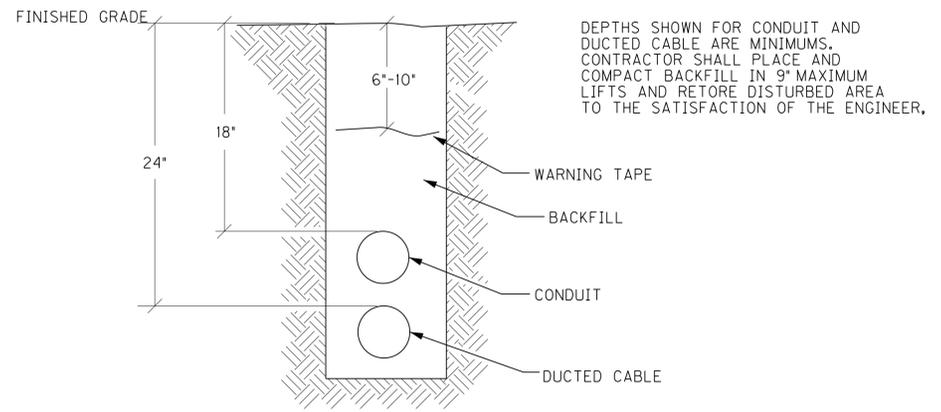
NUMBER OF PORTABLE POWER UNITS TO BE SUPPLIED 1

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 DATE PLOTTED: August 5, 2010
 E-SHEET NAME: T00600HM
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 1/2008

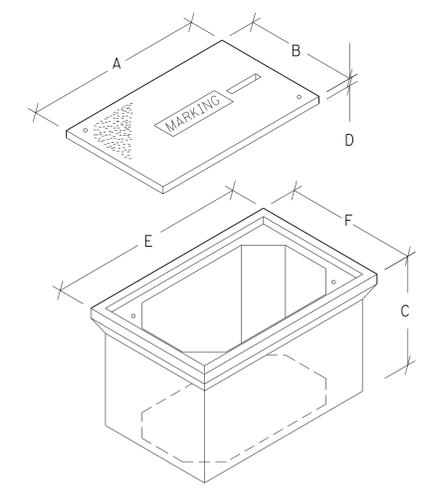


CONDUIT INSTALLATION UNDER EXISTING PAVEMENT DETAIL

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.



CONDUIT, DUCTED CABLE, AND WARNING TAPE TRENCH



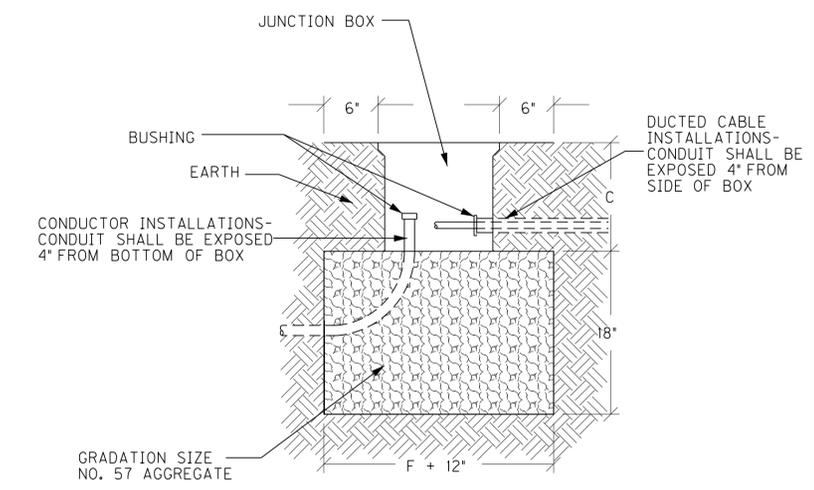
JUNCTION BOX DIMENSIONS (NOMINAL)						
	A	B	C	D	E	F
TYPE A	23"	14"	27"	2"	25"	15"
TYPE B	18"	11"	12"	1 3/4"	20"	13"
TYPE C	36"	24"	30"	3"	38"	26"

* MINIMUM
NOTE: STACKABLE BOXES ARE PERMITTED

JUNCTION BOX SHALL MEET OR EXCEED ANSI/SCTE 77-2002, 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 3/8" STAINLESS STEEL HEX BOLTS.

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



JUNCTION BOX

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.

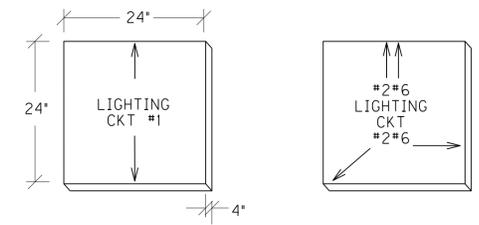
ALL UNDERGROUND SPLICES SHALL BE MADE WITH BUTT SPLICES. BUTT SPLICES SHALL BE COPPER AND OF THE CORRECT CONDUCTOR RANGE. ALL BUTT SPLICES SHALL BE COVERED WITH A 3M MASTIC PAD OR APPROVED EQUAL AND THEN TAPED WITH A 3M BRAND #33 ELECTRICAL TAPE OR APPROVED EQUAL. MASTIC PAD MUST COVER AT LEAST 3 INCHES PAST EACH END OF BUTT SPLICE. 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

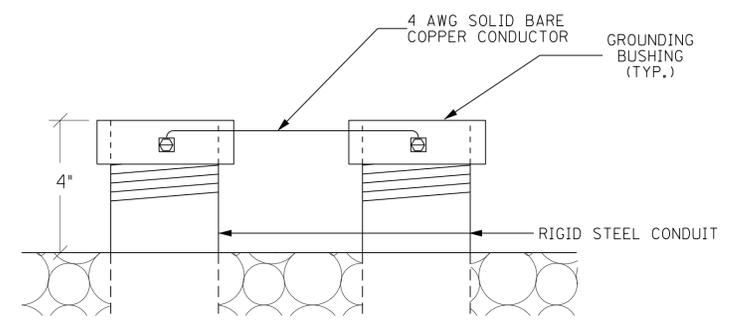
WHEN SHOWN ON THE PLANS, THE LOCATION OF UNDERGROUND CIRCUITS SHALL BE MARKED BY A CONCRETE SLAB MARKER. EACH MARKER SHALL EXTEND APPROXIMATELY 1" ABOVE THE FINISHED GRADE. THE WORD "LIGHTING", APPROPRIATE CIRCUIT NUMBERS AND DIRECTIONAL ARROWS SHALL BE IMPRESSED ON EACH SLAB. THE MARKINGS SHALL BE APPROXIMATELY 4" HIGH BY 3" WIDE WITH THE STROKE 1/2" WIDE BY 1/4" 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.

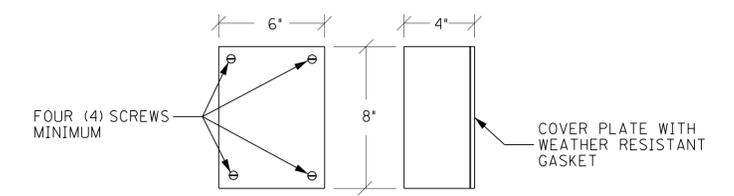


CONCRETE CABLE MARKERS



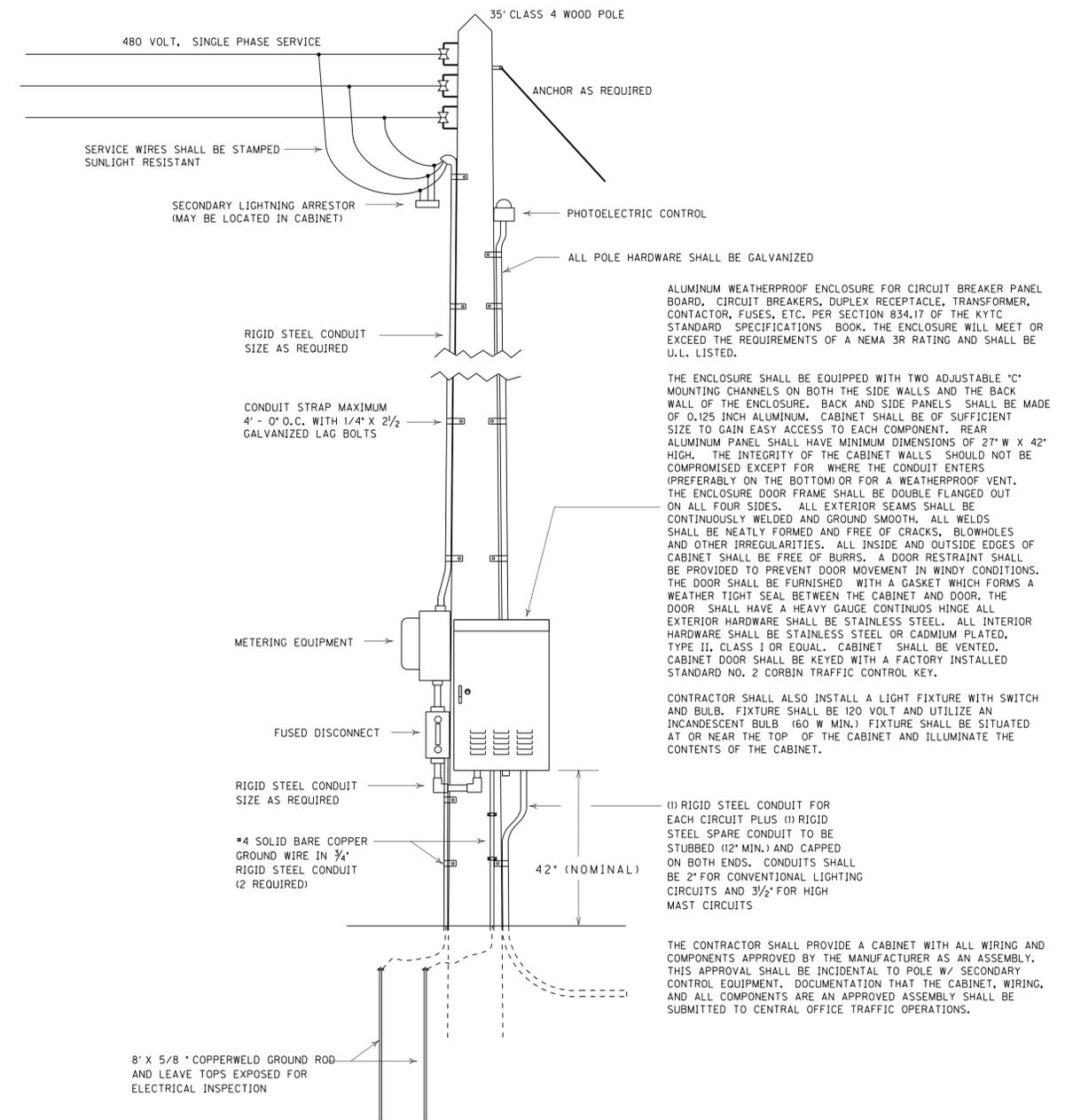
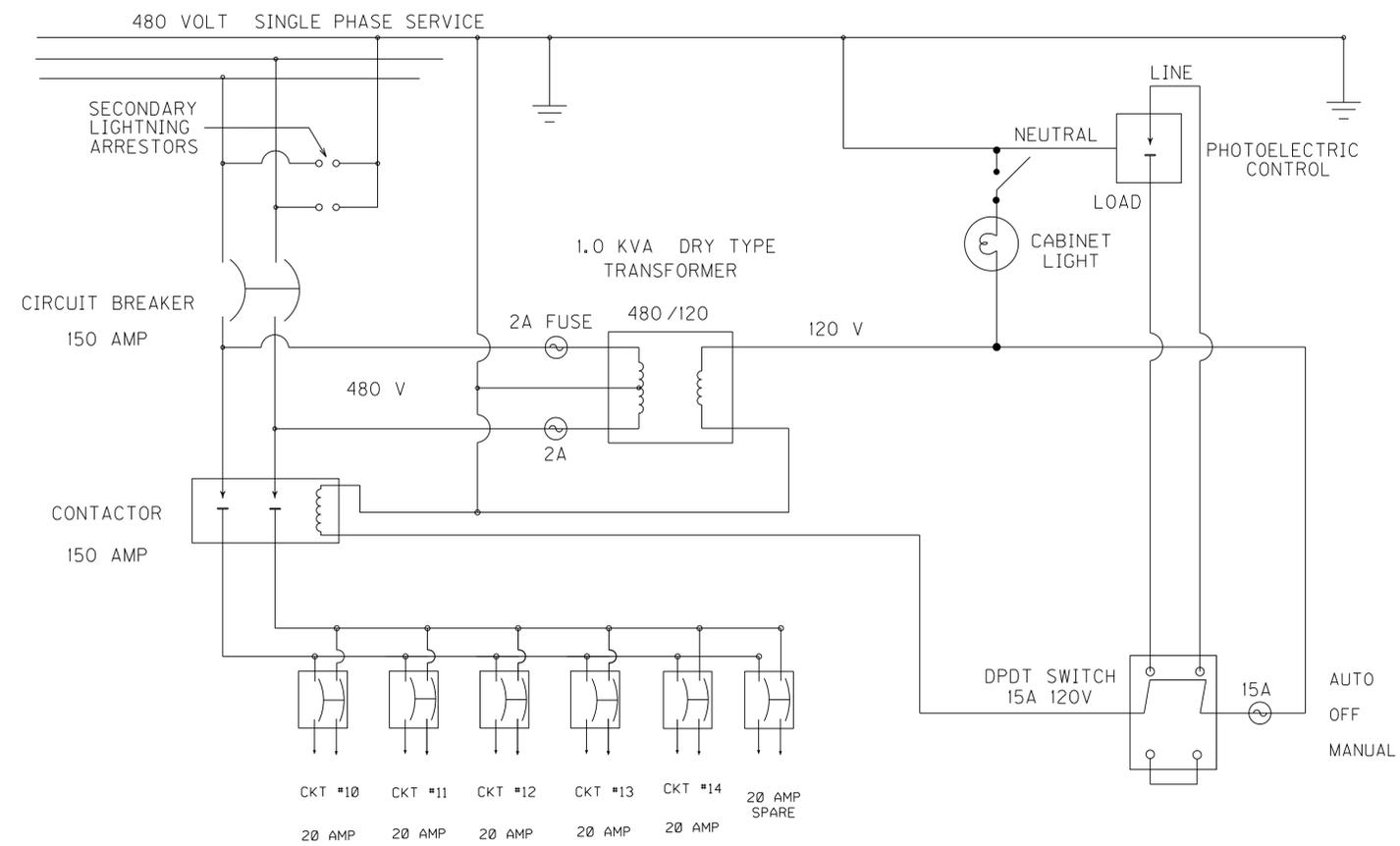
JUNCTION BOX GROUNDING DETAIL

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

FILE NAME: G:\PWORK\T.D.SWANSEGAR\0262463\ALL LIGHTING STANDARD5.DGN
 USER: Ted.Swansegar
 DATE PLOTTED: August 5, 2010
 E-SHEET NAME: T00700JB
 MicroStation v8.11.7.180

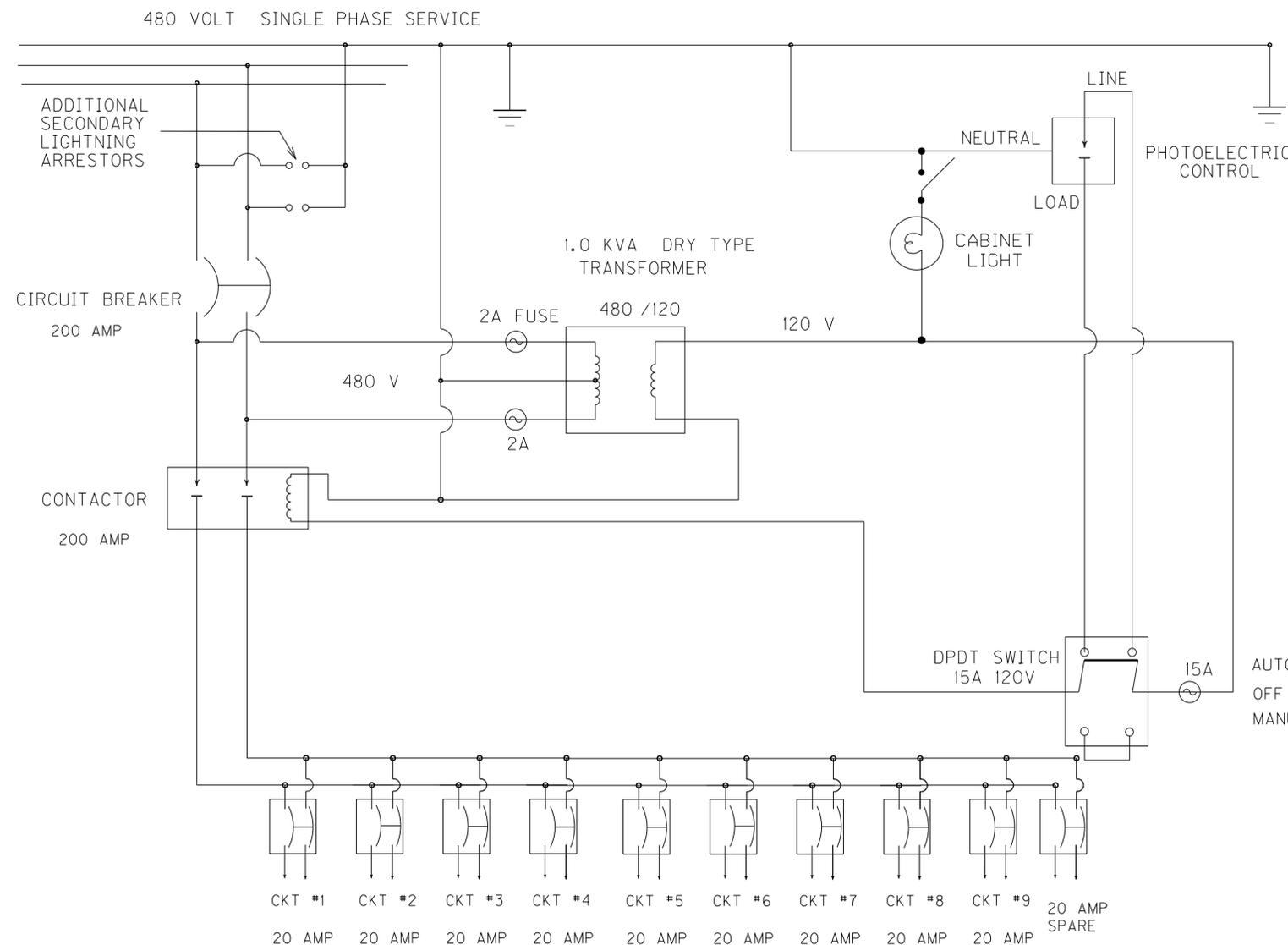


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USER: Ted.Swansegar
DATE PLOTTED: August 5, 2010

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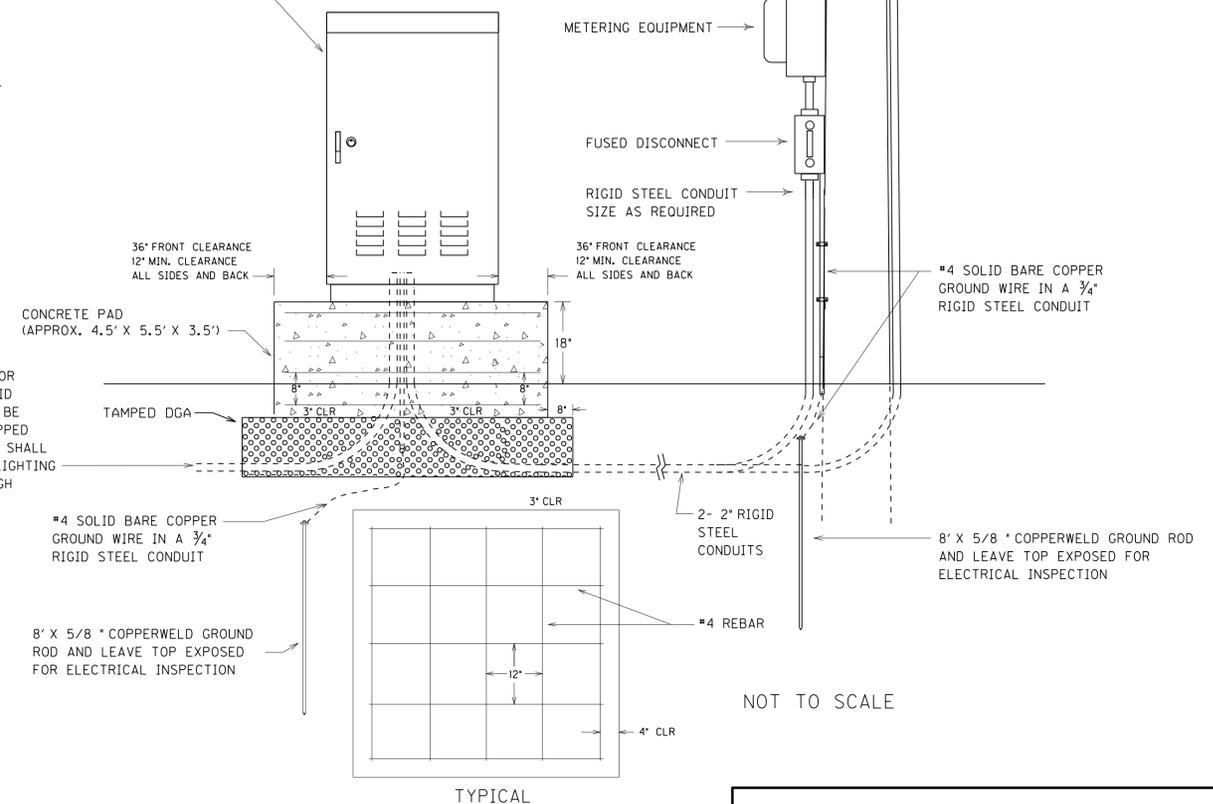
MicroStation v8.11.7.180



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.



(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 3 1/2" FOR HIGH MAST CIRCUITS

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.

NOT TO SCALE

BASE MOUNTED SERVICE DETAIL

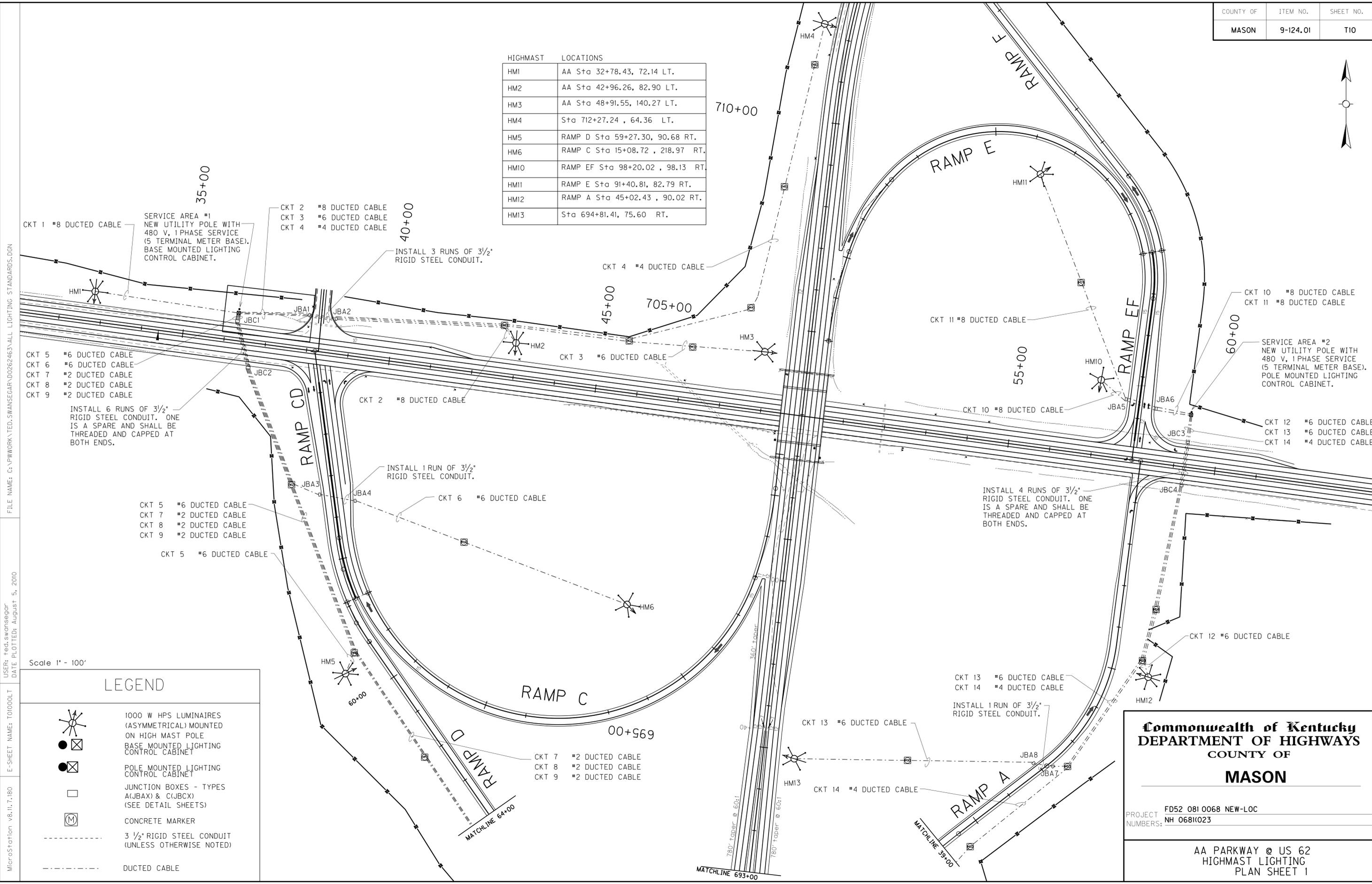
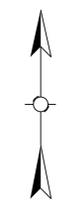
FILE NAME: G:\PWORK\T.D.SWANSEGAR\0262463\ALL LIGHTING STANDARDS.DGN

USER: ted.swansegor
DATE PLOTTED: August 5, 2010

E-SHEET NAME: T009005E

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HIGHMAST	LOCATIONS
HM1	AA Sta 32+78.43, 72.14 LT.
HM2	AA Sta 42+96.26, 82.90 LT.
HM3	AA Sta 48+91.55, 140.27 LT.
HM4	Sta 712+27.24 , 64.36 LT.
HM5	RAMP D Sta 59+27.30, 90.68 RT.
HM6	RAMP C Sta 15+08.72 , 218.97 RT.
HM10	RAMP EF Sta 98+20.02 , 98.13 RT.
HM11	RAMP E Sta 91+40.81, 82.79 RT.
HM12	RAMP A Sta 45+02.43 , 90.02 RT.
HM13	Sta 694+81.41, 75.60 RT.



FILE NAME: G:\PWORK\T.D.SWANSEGAR\0262463\ALL LIGHTING STANDARDS.DGN
 USER: Ted.Swansegar
 DATE PLOTTED: August 5, 2010
 E-SHEET NAME: T01000LT
 MicroStation v8.11.7.180

CKT 5 #6 DUCTED CABLE
 CKT 6 #6 DUCTED CABLE
 CKT 7 #2 DUCTED CABLE
 CKT 8 #2 DUCTED CABLE
 CKT 9 #2 DUCTED CABLE

INSTALL 6 RUNS OF 3/2" RIGID STEEL CONDUIT. ONE IS A SPARE AND SHALL BE THREADED AND CAPPED AT BOTH ENDS.

CKT 5 #6 DUCTED CABLE
 CKT 7 #2 DUCTED CABLE
 CKT 8 #2 DUCTED CABLE
 CKT 9 #2 DUCTED CABLE

CKT 5 #6 DUCTED CABLE

CKT 2 #8 DUCTED CABLE
 CKT 3 #6 DUCTED CABLE
 CKT 4 #4 DUCTED CABLE

INSTALL 3 RUNS OF 3/2" RIGID STEEL CONDUIT.

CKT 3 #6 DUCTED CABLE

CKT 4 #4 DUCTED CABLE

CKT 2 #8 DUCTED CABLE

INSTALL 1 RUN OF 3/2" RIGID STEEL CONDUIT.

CKT 6 #6 DUCTED CABLE

CKT 11 #8 DUCTED CABLE

CKT 10 #8 DUCTED CABLE
 CKT 11 #8 DUCTED CABLE

SERVICE AREA #2
 NEW UTILITY POLE WITH
 480 V, 1PHASE SERVICE
 (5 TERMINAL METER BASE).
 POLE MOUNTED LIGHTING
 CONTROL CABINET.

CKT 12 #6 DUCTED CABLE
 CKT 13 #6 DUCTED CABLE
 CKT 14 #4 DUCTED CABLE

INSTALL 4 RUNS OF 3/2" RIGID STEEL CONDUIT. ONE IS A SPARE AND SHALL BE THREADED AND CAPPED AT BOTH ENDS.

CKT 13 #6 DUCTED CABLE
 CKT 14 #4 DUCTED CABLE

INSTALL 1 RUN OF 3/2" RIGID STEEL CONDUIT.

CKT 13 #6 DUCTED CABLE

CKT 14 #4 DUCTED CABLE

CKT 7 #2 DUCTED CABLE
 CKT 8 #2 DUCTED CABLE
 CKT 9 #2 DUCTED CABLE

Scale 1" = 100'

LEGEND

- 1000 W HPS LUMINAIRES (ASYMMETRICAL) MOUNTED ON HIGH MAST POLE
- BASE MOUNTED LIGHTING CONTROL CABINET
- POLE MOUNTED LIGHTING CONTROL CABINET
- JUNCTION BOXES - TYPES A(JBAX) & C(JBCX) (SEE DETAIL SHEETS)
- CONCRETE MARKER
- 3/2" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
- DUCTED CABLE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
 COUNTY OF
MASON

PROJECT FD52 081 0068 NEW-LOC
 NUMBERS: NH 0681023

AA PARKWAY @ US 62
 HIGHMAST LIGHTING
 PLAN SHEET 1

HIGHMAST	LOCATIONS
HM7	RAMP D Sta 70+06.52, 63.40 RT.
HM8	Sta 678+78.35 , 113.35 LT.
HM9	Sta 668+98.82, 117.14 LT.
HM14	RAMP A Sta 36+54.53, 65.72 RT.

General:

All underground conduit shall be 3 1/2" rigid steel unless otherwise specified. Duct, conduit, junction box, marker and road crossing locations are schematic only. Exact locations shall be approved by the engineer and denoted on the as-built plans. Contractor shall install ducted cable through 3 1/2" rigid steel conduit under roadways. All conduits shall be accessible inside junction boxes. All spare conduits shall be capped on both ends with a threaded, galvanized, rigid steel conduit cap. 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. All cable or wire runs shall be installed splice-free from the controller to each highmast pole the cable or wire is feeding. Splices are not allowed on High Mast Lighting. Any additional junction boxes must be approved by the engineer.

Contractor shall install 35' wood pole and necessary anchors for each service. Contractor shall install lighting control equipments in either a pole mounted cabinet or base mounted cabinet. Contractor shall contact local utility company before installing service poles to provide 480 volt single phase service and determine exact pole/meter locations.

All cables and wires shall be permanently labeled inside pole bases and junction boxes with circuit numbers.

Upon completion of the project all roadway lighting circuits must pass an insulation test with a minimum reading of 100 million ohms to ground.

An inspection will be carried out after the lighting is functional to verify proper illumination, proper functioning of the lowering devices and other operational features as well as an insulation test of all wiring.

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.

Regardless of the station & offset noted, all poles located behind guardrail must be a minimum of 5 feet behind the face of the guardrail.

Ground rods shall have a resistance to ground not to exceed 25 ohms. If ground exceed 25 ohms, there shall be two or more ground rods connected in parallel until it meets this value.

High Mast:

Poles heights and locations shall be as denoted on plans. Poles shall be located to avoid trees, drainage, structures, etc.

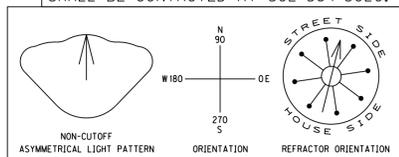
Each pole shall be on a separate circuit and have 1000 W HPS luminaires with light patterns as indicated. The luminaires shall be oriented as shown on the plans. Orient the axis of the winch drum along the North- South axis.

Each tower shall be inspected by a representative of the manufacturer of the lowering device prior to final acceptance of the project by the Kentucky Transportation Cabinet.

Cable	Origin	Ending	Connecting
#8/3C DUCTED	CONTROLLER	HM 1	HM 1 (CKT #1)
#8/3C DUCTED	CONTROLLER	HM 2	HM 2 (CKT #2)
#6/3C DUCTED	CONTROLLER	HM 3	HM 3 (CKT #3)
#4/3C DUCTED	CONTROLLER	HM 4	HM 4 (CKT #4)
#6/3C DUCTED	CONTROLLER	HM 5	HM 5 (CKT #5)
#6/3C DUCTED	CONTROLLER	HM 6	HM 6 (CKT #6)
#2/3C DUCTED	CONTROLLER	HM 7	HM 7 (CKT #7)
#2/3C DUCTED	CONTROLLER	HM 8	HM 8 (CKT #8)
#2/3C DUCTED	CONTROLLER	HM 9	HM 9 (CKT #9)
#8/3C DUCTED	CONTROLLER	HM 10	HM 10 (CKT #10)
#8/3C DUCTED	CONTROLLER	HM 11	HM 11 (CKT #11)
#6/3C DUCTED	CONTROLLER	HM 12	HM 12 (CKT #12)
#6/3C DUCTED	CONTROLLER	HM 13	HM 13 (CKT #13)
#4/3C DUCTED	CONTROLLER	HM 14	HM 14 (CKT #14)

POLE	MTG HT.	LAMP WATTS	NO.	BASE DEPTH	LIGHT PATTERN	HOUSE SIDE SHIELD	REFRACTOR ORIENTATION
HM1	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	263°
HM2	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	265°
HM3	120 FT	1000W	(4)	SEE T5	ASYMMETRICAL	120°	354°
HM4	120 FT	1000W	(4)	SEE T5	ASYMMETRICAL	120°	344°
HM5	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	26°
HM6	120 FT	1000W	(5)	SEE T5	ASYMMETRICAL	120°	314°
HM7	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	28°
HM8	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	349°
HM9	120 FT	1000W	(4)	SEE T5	ASYMMETRICAL	120°	345°
HM10	120 FT	1000W	(5)	SEE T5	ASYMMETRICAL	120°	260°
HM11	120 FT	1000W	(5)	SEE T5	ASYMMETRICAL	NONE	34°
HM12	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	162°
HM13	120 FT	1000W	(4)	SEE T5	ASYMMETRICAL	120°	162°
HM14	120 FT	1000W	(6)	SEE T5	ASYMMETRICAL	120°	152°

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 STATIONS 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
	POLE MOUNTED LIGHTING CONTROL CABINET
	JUNCTION BOXES - TYPES A(JBAX) & C(JBCX) (SEE DETAIL SHEETS)
	CONCRETE MARKER
	3 1/2" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)
	DUCTED CABLE

AA PARKWAY @ US 62
HIGHMAST LIGHTING
PLAN SHEET 2

FILE NAME: G:\PWORK\TED.SWANSEGAR\0262463\ALL LIGHTING STANDARD5.DGN
 USER: ted.swansegar
 DATE PLOTTED: August 5, 2010
 E-SHEET NAME: T0100LT
 MicroStation v8.11.7.180

