Street Lighting General Notes

1. All work and material shall conform to the latest edition of the City of Liberty Specifications and shall be from the City of Liberty pre–approved materials list available at City Hall.
2. All traffic control in conjunction with the street lighting construction shall be in conformance with the Manual On Uniform Traffic Control Devices, latest revision.
3. The Contractor shall stake the locations for all poles, boxes, and service enclosures to be installed. If obstructions are encountered during installation, the contractor will re–stake those locations affected by the obstruction. The City Engineer shall inspect the staking prior to any excavation/construction.
4. The locations of existing underground utilities, if shown, are approximate only and have not been independently verified. The Contractor shall be responsible for contacting all utility companies for locations of all underground lines prior to excavation and be fully responsible for any and all damages, which might occur as a result of the Contractor's failure to exactly locate and preserve any and all underground utilities.
5. The Contractor shall, by his own investigation, and prior to commencing work, satisfy himself as to the surface and subsurface conditions to be encountered. No additional payments will be made for excavation of rock and backfill materials.
6. Screw–in anchor bases have been assumed for all areas, unless otherwise noted in the Plans. In the event a screw–in anchor base may not be installed, then the contractor shall install a concrete base for the street light pole.
7. Conduit shall be bored under all street pavements that are in place at the time of installation. Saw cutting existing street pavement for the purpose of trenching conduit across any existing pavement will not be allowed.
8. Bracket Arms shall be oriented perpendicular to the centerline of the street unless otherwise noted.
9. All cable splices shall be made with multiple tap connectors in pole bases or boxes. Splices will only be allowed at pole bases or where a circuit branches as indicated in the Plans.
10. All distribution cables in boxes and service enclosures shall be labeled with round aluminum tags attached to the cables with copper wire. The service enclosure number and circuit number shall be stamped or engraved on each tag.
11. The Contractor shall be required to apply adhesive pole labels on the poles and service enclosure cabinet as indicated in the Plans (See Pole Details).
12. The Contractor shall install conduit and electrical service cable from the service enclosure to the secondary service point. The contractor is responsible for coordinating the delivery of secondary service with the electrical utility company.
13. All existing street lighting equipment is to be used in place (U.I.P.) unless otherwise noted in the plans.
14. All existing concrete bases, shown to be removed, shall be removed a minimum of 24" below final grade. All existing cables removed from service shall be removed by the Contractor. Existing conduits no longer used may be abandoned in place.
15. The contractor shall take all precautions necessary to minimize the downtime of the existing street lighting systems to be modified. Any existing street lighting system shall be maintained during construction as long as possible until the new street lighting system is installed and operating.
16. Damage to any existing street lighting equipment due to the construction shall be the responsibility of the Contractor. The equipment shall be replaced or repaired (as directed by the City Engineer) with materials equal or better than the existing material.
17. Damage to any existing curb and gutter, sidewalk, pavement, drainage structures, and irrigation systems damaged due to the construction shall be replaced to meet or exceed the original condition. All restoration work will be at the Contractor's expense, and shall be acceptable to the City Engineer.
18. All unpaved areas damaged during construction shall be restored to the original condition. Unless otherwise directed, grassy areas shall be re–sodded.

Project Specific Notes

1. The center of all pole foundations shall be located 3 feet behind the back of curb, unless otherwise noted.
2. The dimensions, stations, and offsets provided are to the center of the street lighting equipment.
3. Expansion joints are to be installed where bases are installed adjacent to sidewalks or paved surfaces.

Design Analysis

Roadway:
{Street Name and end points}

Criteria:

Street Classification –
Minimum Average Illuminance –
Average/Minimum Ratio –

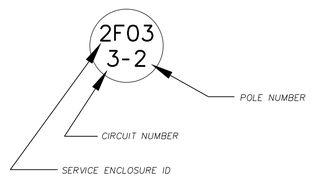
Design Results

Minimum Average Illuminance –
Average/Minimum Ratio –

Street Lighting Legend

- Type Z LED Luminaire w/ 30' Pole
- Type Z LED Luminaire w/ 40' Pole
- Type A LED Luminaire w/ 30' Pole
- Type A LED Luminaire w/ 40' Pole
- Type C LED Luminaire w/ 30' Pole
- Type C LED Luminaire w/ 40' Pole
- Type D LED Luminaire w/ 30' Pole
- Class 1 Pull Box
- Type 1 Junction Box
- Type 2 Junction Box
- Pad Mounted Service Enclosure (Shaded Area Indicates Photocell Orientation) (North or East)
- 2 Inch PVC Conduit
- Secondary Service Point

STREET LIGHT POLE NUMBERING



STREET LIGHTING QUANTITES (1)

Item	Unit	Quantity
Aluminum Street Light Pole, 30' Single Type A Arm, Type 301	Each	X
Aluminum Street Light Pole, 30' Single Type B Arm, Type 302	Each	X
Aluminum Street Light Pole, 30' Dual Type A Arms, Type 303	Each	X
Aluminum Street Light Pole, 40' Single Type B Arm, Type 402	Each	X
Aluminum Street Light Pole, 40' Dual Type B Arm, Type 403	Each	X
Bracket Arm, 6' Type A	Each	X
Bracket Arm, 10' Type B	Each	X
Bracket Arm, 15' Type B	Each	X
LED Luminaire, Type Z	Each	X
LED Luminaire, Type A	Each	X
LED Luminaire, Type C	Each	X
LED Luminaire, Type D	Each	X
Screw–in Foundation, Type T1	Each	X
Screw–in Foundation, Type F1	Each	X
Screw–in Foundation, Type F2	Each	X
Concrete Foundation for 40' Pole	Each	X
Concrete Foundation for 30' Pole	Each	X
1/2" x 10' Ground Rod w/ Clamp for Concrete Foundation	Each	X
Solid Copper Ground Cable (Bare # 6 AWG)	Lin. Ft.	X
Service Enclosure, 1–Circuit	Each	X
Service Enclosure, 4–Circuit	Each	X
Photo Cell	Each	X
1/2" x 10' Ground Rod w/ Clamp for Concrete Foundation	Each	X
Solid Copper Ground Cable (Bare # 4 AWG)	Lin. Ft.	X
Conduit, 2" HDPE (Installed)	Lin. Ft.	X
Conduit 3" PVC (Installed)	Lin. Ft.	X
Class 1 Pull Box	Each	X
Type 1 Junction Box	Each	X
Type 2 Junction Box	Each	X
Electrical Service Power Cable 3–1c #4 AWG Type USE	Lin. Ft.	X
Distribution Cable 3–1c No. 4 AWG Type USE	Lin. Ft.	X
Distribution Cable 3–1c No. 6 AWG Type USE	Lin. Ft.	X
Distribution Cable 3–1c No. 8 AWG Type USE	Lin. Ft.	X
Pole and Bracket Cable 3c No. 12 AWG (IMSA Spec. 19–1)	Lin. Ft.	X
Multiple Tap Connector	Each	X
Break–Away Non–Fused Disconnect Kits	Each	X
Break–Away Fused Disconnect Kits	Each	X

Notes:
1. These approximate quantities were prepared solely for the contractor's convenience. It is not guaranteed that this list of materials constitutes all items required for the completion of the work.

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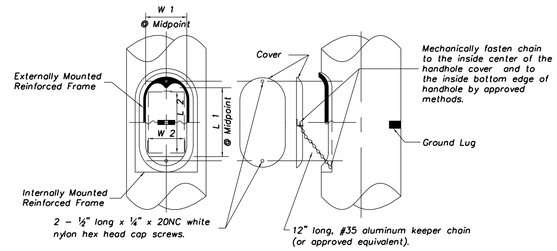
DEPARTMENT OF PUBLIC WORKS

STREET LIGHTING GENERAL NOTES AND QUANTITIES



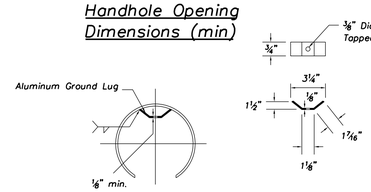
Front Handhole Side

Handhole Notes:

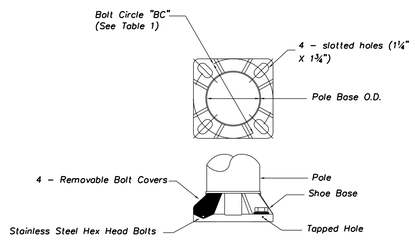
1. The dimensions for the handhole opening shall be clear of any interference from the handhole reinforcing frame. These dimensions represent minimum values.
2. The handhole opening shall be smooth and free of burrs.
3. The handhole cover shall be uniform and fit tightly with no gaps and secured with nylon hex head screws.
4. Holes in cover shall be overdrilled and not tapped allowing screw to slide through.
5. Handhole for poles located on bridges shall be on same side as luminaire arm.
6. Handhole covers shall be universal in size to fit all poles interchangeably.

	4" x 6"	4" x 8"
W1	3 ⅛"	4"
L1	5 ¼"	7 ¼"
W2	3"	3 7/16"
L2	3 13/16"	6 3/32"

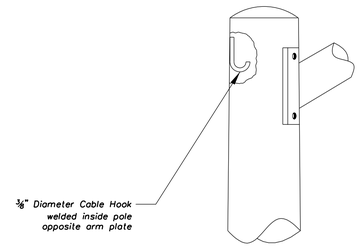
Handhole Opening Dimensions (min)



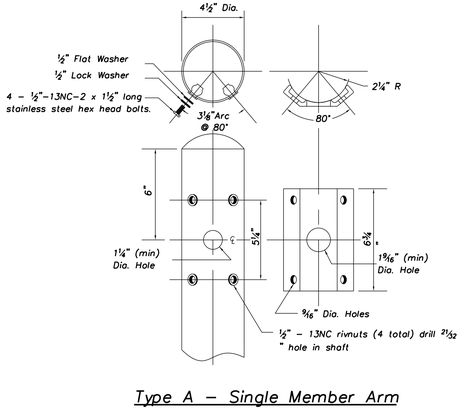
Ground Lug



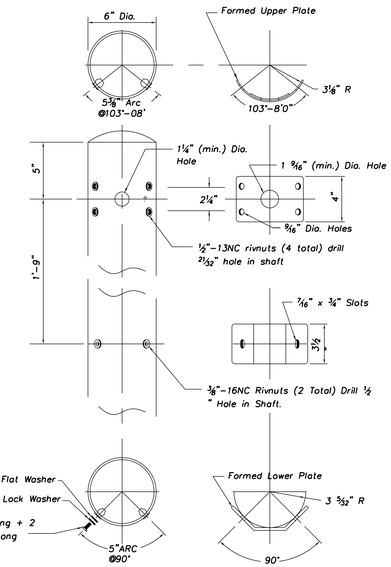
Shoe Base



Pole Top



Type A – Single Member Arm



Type B – Truss Arm

Material Data

Component	Aluminum Alloy Designation	Specification
Shoe Base	356–T6, Cast	ASTM B26 or B108
Break–Away Base	356–T6	ASTM B108
Cover Skirt	3003–H14, Sheet	ASTM B209
Bolt Covers	356 F or 443, Cast	ASTM B26 or B108
Pole Shaft	6063–T6, Extruded	ASTM B221
Ground Lug	6061–T6 or 6063–T6	ASTM B221
Reinforced Handhole Frame	356–T6 or 6061–T6	ASTM B26, B108, or B221
Handhole Cover	6063–T6	ASTM B209, B221, or B241
Bracket Arm – Tubing	6063–T6	ASTM B221 or B241
– Pipe*	6063–T6	ASTM B429
Bracket Arm Plate	6061–T6 or 6063–T6	ASTM B221
Bracket Arm, Strut* & Connector*	6061–T6 or 6063–T6	ASTM B221, B24,1 or B429
Pole Cap	356 F or 443, CAST	ASTM B26 or B108
Anchor Bolts	N/A	ASTM A–576 Steel, Galvanized per ASTM A–153

*Truss–Type Bracket Arms (Type B) Only.

Material Notes:

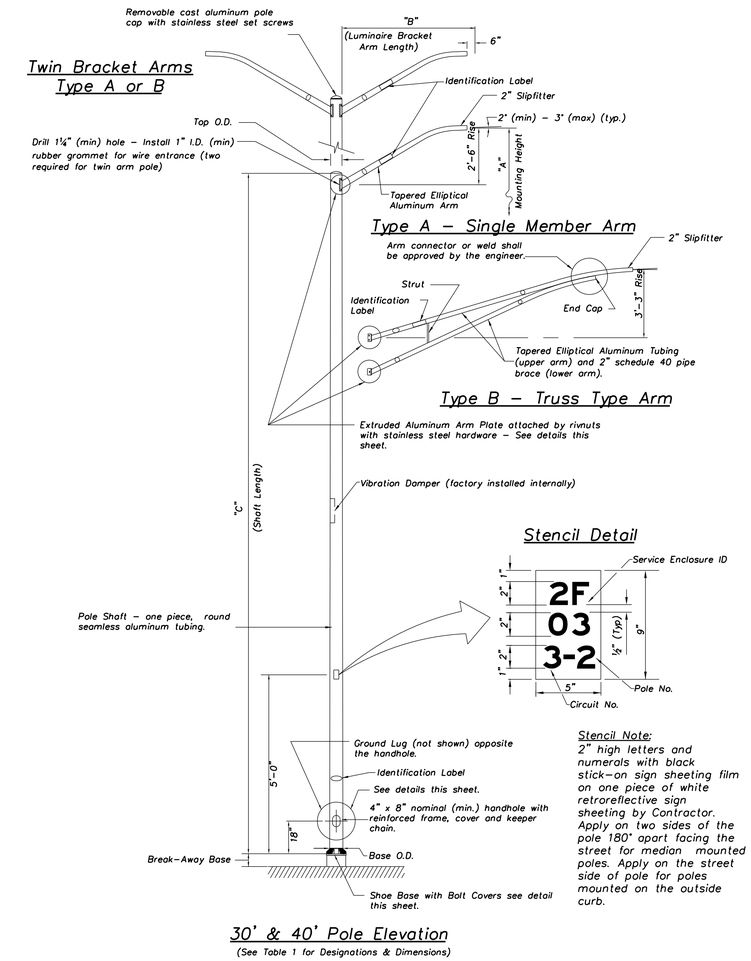
1. Pole shaft shall have a satin ground finish.
2. All hardware (bolts, nuts, washers but not including anchor bolts) not otherwise specifically designated in the specifications or details shall be stainless steel per ASTM A193 Class 1 B8.
3. Anchor Bolts – Galvanized steel anchor bolts with 50,000 PSI minimum yield; top 10" min. galvanized; include one nut each and two flat washers galvanized to ASTM A–153 standards (4 bolts, 4 nuts, & 8 washers to be provided with each pole). Anchor bolts shall be used with concrete foundations. Hex head bolt (see pole foundation detail sheet) shall be used with screw–in foundations.
4. All welding is to be done with 4043 weld wire. All arms and shafts shall have a mechanical strength of not less than T6 temper.

Table 1 – Bracket Arm, Pole, Shoe Base & Anchor Bolt Data

Pole Designation	Mounting Height (A)	Bracket Arm(s) Luminaire 1 Length (B)	Luminaire 1 Type	Luminaire 2 Length (B)	Luminaire 2 Type	Pole Shaft Base O.D.	Pole Shaft Top O.D.	Pole Shaft Minimun Wall Thickness	Pole Shaft Shaft Lengths (C)	Shoe Base Bolt Circle (BC)	Anchor Bolt for Concrete Foundation Diameter	Anchor Bolt for Concrete Foundation Length	Anchor Bolt for Concrete Foundation Hook	Screw–in Anchor Foundation Type
301	30	6	A	NA	NA	7"	4.5"	0.188"	27'–6"	11"	1.0" 8NC	36"	4"	T1
302	30	10	B	NA	NA	8"	6"	0.188"	26'–8"	11"	1.0" 8NC	36"	4"	T1
303	30	6	A	6	A	8"	4.5"	0.188"	27'–6"	11"	1.0" 8NC	36"	4"	T1
402	40	10,15	B	NA	NA	8"	6"	0.219"	36'–8"	11.5"	1.0" 8NC	36"	4"	F1
403	40	10,15	B	10,15	B	10"	6"	0.219"	36'–8"	14.5"	1.0" 8NC	48"	4"	F2

Table 1 Notes:

1. The intent of these material restrictions is to provide interchangeability of both types of luminaire arms for mounting on either the 30' or 40' pole.
2. Bracket Arms – 6' arms shall be single member (Type A) unless otherwise noted on the plans; 10 & 15' arms shall be truss–type (Type B).
3. Table 1 represents pole shaft dimensions for a 30' and 40' pole to be installed with break–away devices. The pole shaft length shall be dimensioned accordingly but the top & bottom pole diameters, bolt circle, mounting height, and luminaire arm design and rise shown in Table 1 and noted in the pole elevation detail shall be maintained (see note 2).
4. Anchor bolts shall project above the foundation as per manufacturer's recommended practices – 2.5" to 3". The leveling devices (i.e. washers) shall be installed between the steel shim plate, provided as per the manufacturer's recommended practices, and the top of the pole foundation.
5. Pole 403 shall be pre–drilled for the mounting of twin luminaire arms whether or not twin arms are noted on the plans to be installed. If the second luminaire arm is not to be installed, the extra holes shall be 'plugged'.



Stencil Note:
2" high letters and numerals with black stick–on sign sheeting film on one piece of white retroreflective sign sheeting by Contractor. Apply on two sides of the pole 180° apart facing the street for median mounted poles. Apply on the street side of pole for poles mounted on the outside curb.

30' & 40' Pole Elevation

(See Table 1 for Designations & Dimensions)

General Notes:

1. All poles, arms, and miscellaneous equipment shall conform to these details and as specified in the latest edition of the Liberty Street Lighting Specifications. The poles and arms shall be dimensioned to enable interchangeability.
2. The aluminum lighting standard including anchorage with luminaire properly installed shall be in accordance with the 2013 edition of American Association of State Highway and Transportation Officials (AASHTO) for continuous 90 MPH wind and a maximum luminaire size of 1.3 sq. ft. effective projected area and maximum 55 lbs.
3. Minor adjustments in the location of streetlight poles should be made in the field during construction in order to maintain 4'–0" clearance from the centerline of any fire hydrant to the face of pole.
4. All poles and arms shall be clearly identified by the manufacturer name, abbreviation or symbol engraved on the shaft, baseplate, handhole or other means such as to be readily visible after installation.

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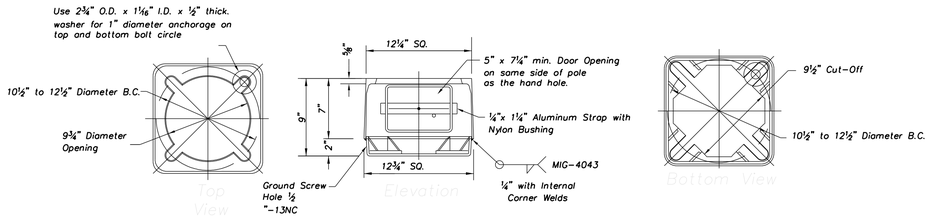
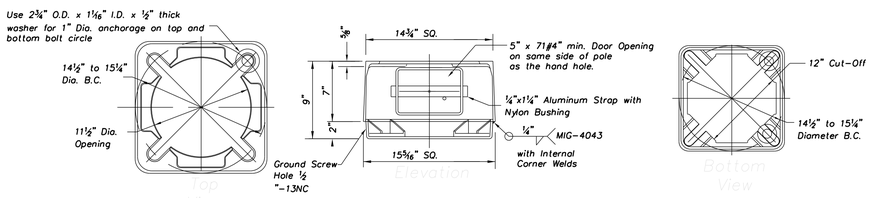
STREET LIGHT POLE DETAILS

Liberty missouri



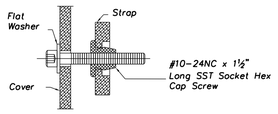
Break-Away Base (30' Pole – Series 301, 302, & 303) and (40' Pole – Series 402)

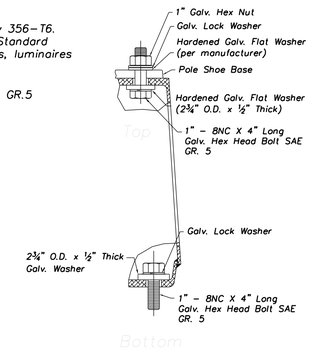


Break-Away Base (40' Pole – Series 403)

Frangible Base Notes:

1. Material shall conform to ASTM designation B108 Alloy 356-T6.
2. Base shall conform to breakaway criteria of AASHTO Standard Specifications for structural supports for highway signs, luminaires and traffic signals (Latest Edition)
3. Fastener Quantities:
   - (8) 1"-8NC x 4" long Galvanized Hex Head Bolt SAE GR.5
   - (4) Hardened Galvanized Flat Washer
     - 2½" O.D. (Valmont Poles)
     - 2" O.D. (HAPCO Poles)
   - (4) 1" Galvanized Hex Nut
   - (8) Galvanized Lock Washer
   - (8) 2¾" O.D. x ½" Thick Galvanized Washer





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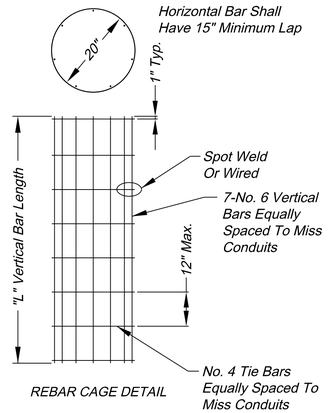
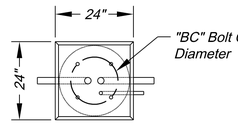
STREET LIGHT POLE
BREAK-AWAY BASE DETAILS

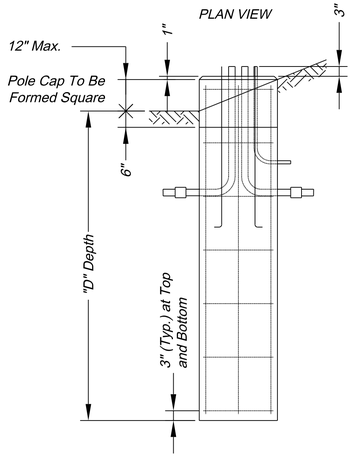
POLE TYPE	DEPTH (D)	REBAR LENGTH (L)	BOLT CIRCLE (BC)
301, 302, 303	72"	68"	11.0"
402	96"	92"	11.5"
403	96"	92"	14.5"



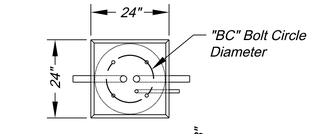
REBAR CAGE DETAIL



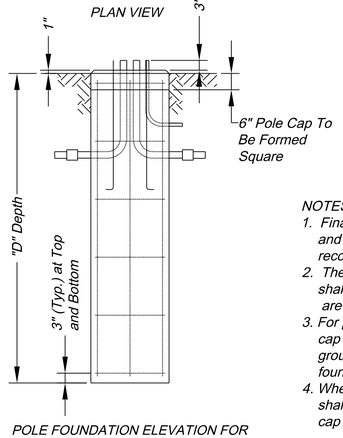
PLAN VIEW



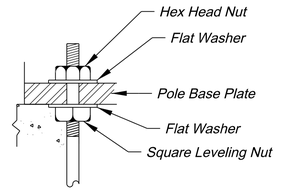
POLE FOUNDATION ELEVATION FOR SLOPED GROUND



PLAN VIEW



POLE FOUNDATION ELEVATION FOR LEVEL GROUND

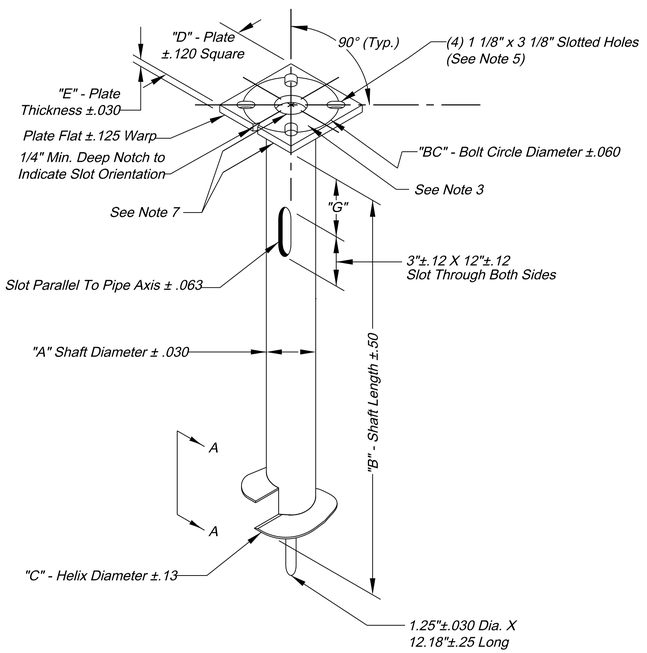


ANCHOR BOLT DETAIL

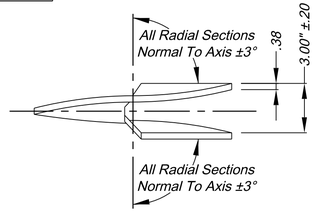
NOTES:
1. Final pole, anchor bolt size, anchor bolt projection, and bolt circle shall be as per manufacturer's recommended practice.
2. The pole cap shall be formed square. The cap shall be formed and poured after the bracket arms are attached and pole is plumb.
3. For pole foundations on sloped ground, the pole cap can be extended a maximum of 12" above the ground line at the lowest point adjacent to the foundation.
4. When a pole cap is extended, the vertical rebar length shall be increased by the same lenght that the pole cap is extended.

CONCRETE FOUNDATION DETAILS

ANCHOR TYPE	POLE TYPE	MAXIMUM TORQUE RATING (lbs. ft.)	SHAFT DIA. (A)	SHAFT LENGTH (B)	HELIX DIA. (C)	PLATE SIZE (D)	PLATE THICKNESS (E)	BOLT CIRCLE (BC)	SLOT LOCATION (G)
T1	301, 302, 303	15,000	6"	60"	12"	12"	1.0"	11.0"	18"
F1	402	20,000	8"	60"	14"	12"	1.0"	11.5"	18"
F2	403	20,000	8"	60"	14"	15"	1.25"	14.5"	18"

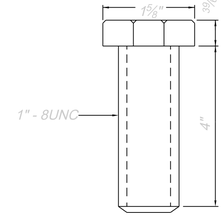


SCREW-IN ANCHOR FOUNDATION DETAILS



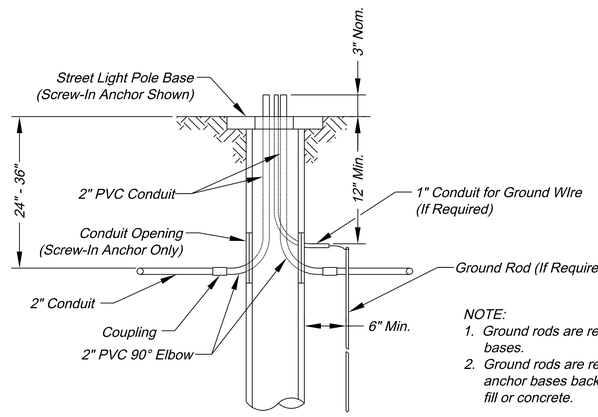
Helix Must Be Formed By Matching Metal Die

SECTION A-A



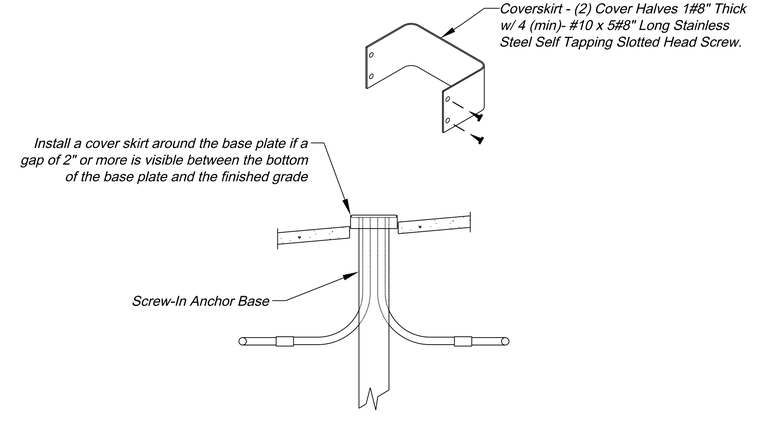
HEX HEAD BOLT

NOTES:
1. Finish: Hot dip galvanize per ASTM-A153 (latest revision).
2. Baseplate to be perpinducular to shaft axis (±1°) and hole and concentric (±.188 I.D. Fim) to shaft axis.
3. All bases shall be indentified by the manufacturer's name, abbreviation, or symbol engraved on the shaft and/or the baseplate. The anchor type (T1, F1, or F2) shall be engraved into the baseplate with 1/4" to 1/2" lettering.
4. Pilot point and shaft axes to be concentric (±.125 Fim) and in line (±2°).
5. Slotted holes shall be aligned radially to accept anchor bolts per the bolt circle diameter.
6. Preheat (room temperature 70°F), tumbleblast, handgrind, and clean baseplate, helix, and core on all weld areas.
7. Flame cut irregularities permissible:
   (1) Valleys not to exceed 3/32 in. below nominal surface level.
   (2) Peaks or positive irregularities not to exceed 1/32 in. above nominal surface level or intersections of nominal surfaces.
8. Manufacturer to have in effect industry recognized written quality control for all materials and manufacturing processes.
9. All material is to be new, unused and mill traceable meeting the following specifications:
   - Baseplate: ASTM A36-(latest revision) hot rolled steel plate (conform to AASHTO technical bul. #270).
   - Shaft: Steel pipe piles, seemless or straight welded, grade 2 per ASTM A252. Alternate material: steel pipe type E or S, grade B per ASTM A53.
   - Helix: ASTM A635-(latest revision) hot rolled steel plate
   - Pilot Point: ASTM A575-(latest revision) hot rolled steel
   - Bolt: ASTM A325 or Grade 5 SAE J429 - 1" diameter hot dip galvanized hex head bolt. Bolt shall include one each lock and flat washer.
10. The design and performance integrity of the foundation shall be verified by full-scale tests by qualified engineers independent of the manufacturer. Certified test reports shall be provided upon request.
11. Flame cut notch or projection will be on the base plate to indicate slot orientation.



NOTE:
1. Ground rods are required for all concrete bases.
2. Ground rods are required for screw-in anchor bases backfilled with flowable fill or concrete.

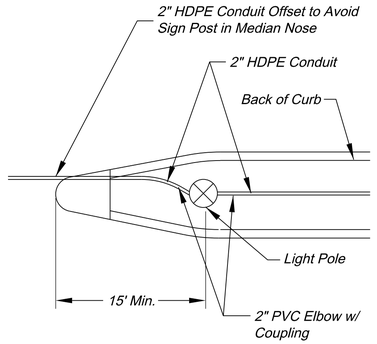
CONDUIT ENTRANCE AND GROUNDING



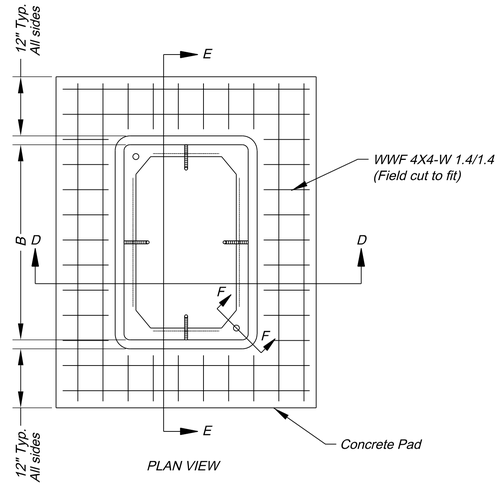
COVERSKIRT REQUIREMENTS

CITY OF LIBERTY, MO
DEPARTMENT OF PUBLIC WORKS
Liberty missouri

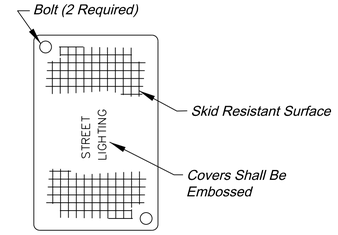
POLE FOUNDATION DETAILS



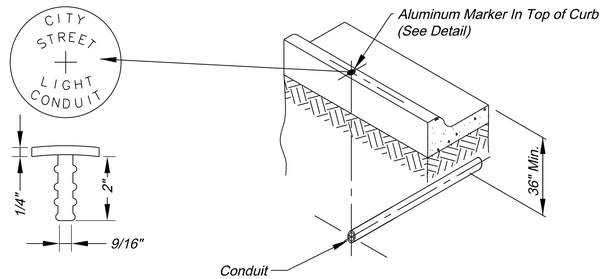
STREET LIGHT POLE IN MEDIAN



PLAN VIEW

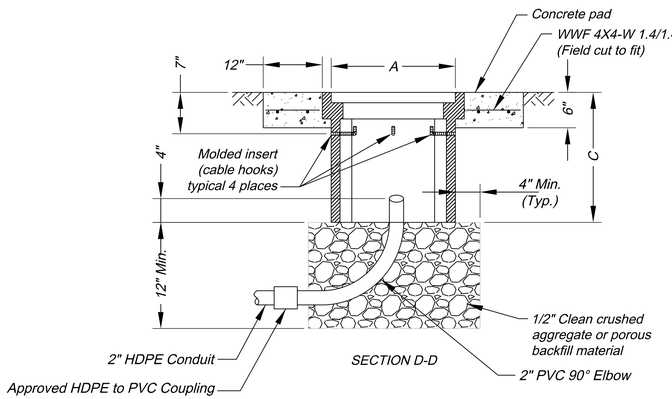


BOX COVER

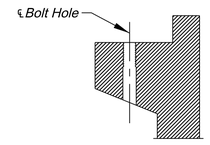


CONDUIT MARKING DETAIL

NOTES:
1. An aluminum marker shall be placed in the top of the curb directly over the conduit at each street crossing.
2. Markers shall be installed by drilling the curb and expoxying the marker in place. If installed in a sidewalk or curb ramp, the marker shall be embedded so that the top of the marker is flush with the concrete surface.
3. No direct payment shall be made for conduit markers; they are subsidary to the installation of conduit.



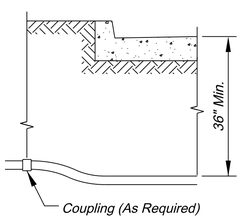
SECTION D-D



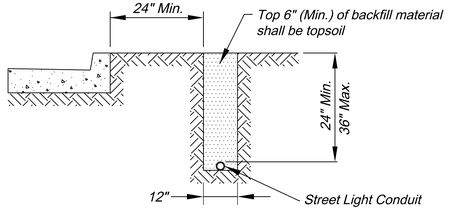
SECTION F-F

Number of Entering/Exiting Conduits	Box Type	Minimum Box Dimensions		
		A	B	C
1 - 2	Type 1 Junction Box	12"	12"	12"
3 - 4	Type 2 Junction Box	12"	18"	12"
> 4	Class 1 Pull Box	17"	30"	22"

All dimensions shown are nominal



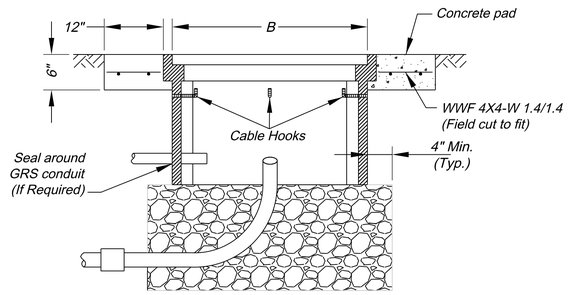
BORED CONDUIT



TRENCHED OR PLOWED CONDUIT

CONDUIT LOCATIONS

NOTES:
1. All trenches for conduit under proposed paved surfaces shall be backfilled with flowable fill.
2. Backfill in unpaved areas shall be free of rubble and rock.
3. If multiple conduits are installed within the same trench, they shall have a minimum of 12" horizontal and vertical clearance between them.



SECTION E-E

PULL OR JUNCTION BOX DETAILS

NOTES:
1. Lift opening required on all covers.
2. Preformed box walls may be either flared or vertical. The bottom of boxes shall be open to below.
3. If an extension is used with a preformed box, the lip of the extension may be interior or exterior. The extension shall be compatible and from the same manufacturer.
4. Cable hooks are to be installed in Class 1 Pull Boxes only.
5. A Class 1 Pull Box shall be installed adjacent to each Service Enclosure.

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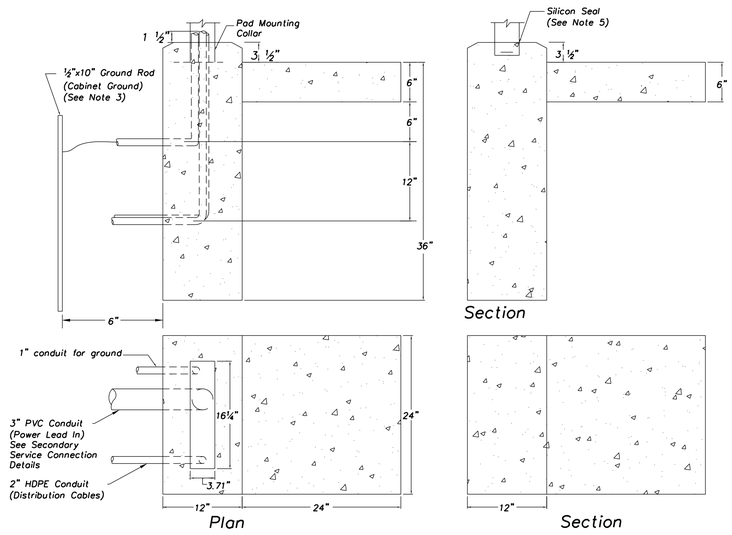
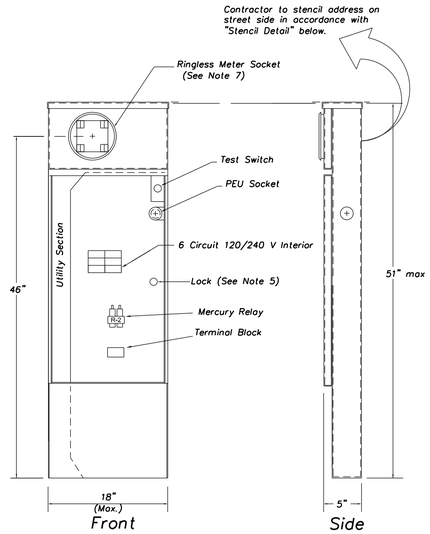
BOX AND CONDUIT DETAILS

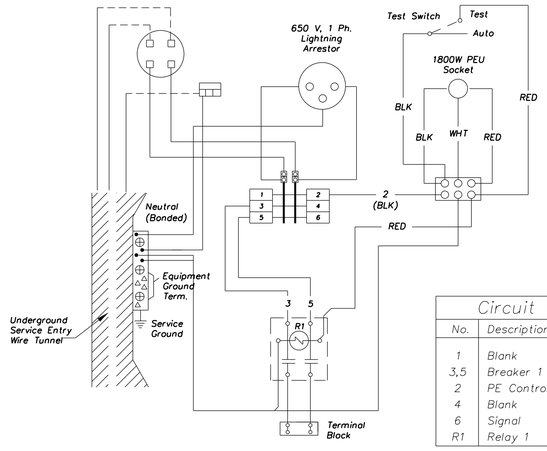


Concrete Base
(1–Circuit Service Enclosure)

Concrete Foundation Notes:
1. All concrete shall be KCMMB4K concrete.
2. All exposed edges of the foundation should be chamfered.
3. Contractor to provide ground rod(s) as required for maximum of 25 ohms resistance to ground.
4. Duct Seal shall be applied at all conduit entrances after cable installation.
5. Seal the joint between the cabinet and concrete foundation with with silicone sealant.



Pad Mounted Service Enclosure (1–Circuit)

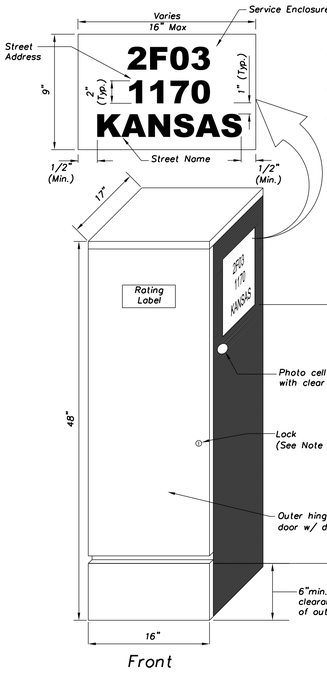


Wiring Diagram

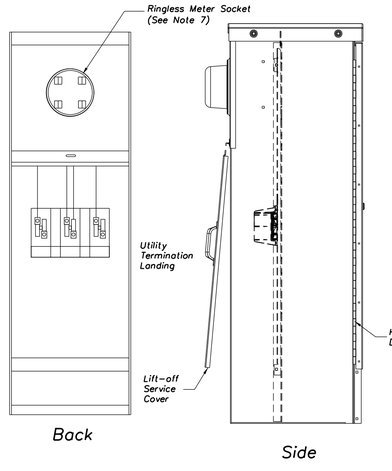
Circuit Directory				
No.	Description	Qty	Amp	Pole
1	Blank			
3,5	Breaker 1	1	30	2
2	PE Control	1	15	1
4	Blank			
6	Signal	1	50	1
R1	Relay 1	1	30	2

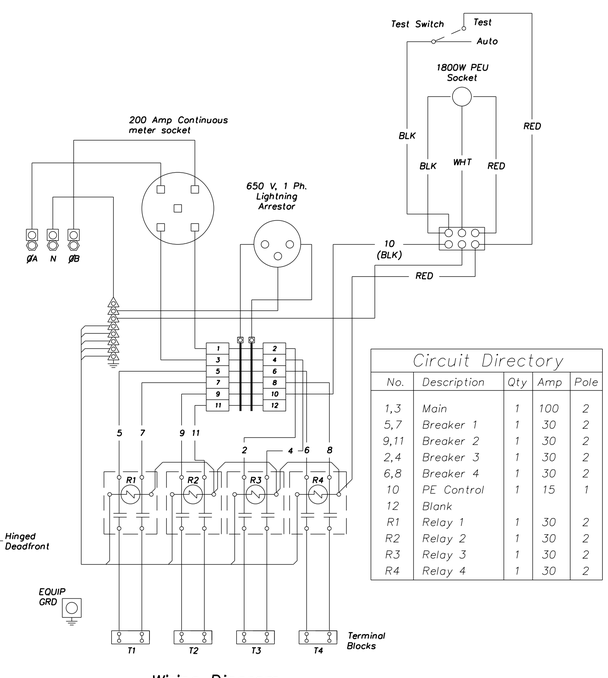
1–Circuit & 4–Circuit Service Enclosure Notes:
1. Cabinet to be code 0.125 inch corrosion resistant aluminum NEMA 3R Enclosure.
2. All factory installed wire to be copper.
3. All terminals approved for copper or aluminum wire #6 to 350 MCM AWG.
4. Silver–plated copper bussed circuit breaker interior.
5. Factory installed Corbin lock assembly designed for standard No. 2 key with tapered latch.
6. Finish: Natural Aluminum unless otherwise specified.
7. Exposed 200A 240V 5 terminal meter socket w/horn bypass and ringless cover.
8. Photocell and pad shall be oriented to the north or east. Photocell is located on the right side of the cabinet.
9. Shall be UL listed for 5,000 amp short circuit current rating.
10. Include mounting collar with cabinet.

Stencil Detail



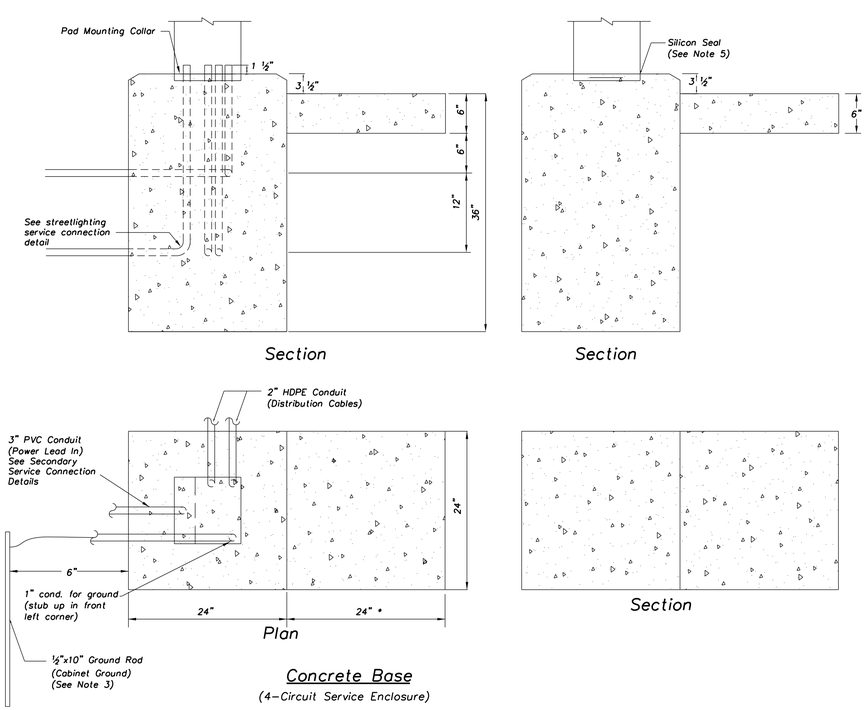
Stencil Detail Note:
2" high letters and numerals with black stick–on sign sheeting film on one piece of white retroreflective sheeting by the contractor. Apply on "street side" of cabinet facing the street referenced in the address.





Wiring Diagram

Circuit Directory				
No.	Description	Qty	Amp	Pole
1,3	Main	1	100	2
5,7	Breaker 1	1	30	2
9,11	Breaker 2	1	30	2
2,4	Breaker 3	1	30	2
6,8	Breaker 4	1	30	2
10	PE Control	1	15	1
12	Blank			
R1	Relay 1	1	30	2
R2	Relay 2	1	30	2
R3	Relay 3	1	30	2
R4	Relay 4	1	30	2



Concrete Base
(4–Circuit Service Enclosure)

Pad Mounted Controller (4–Circuit)

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SERVICE ENCLOSURE DETAILS

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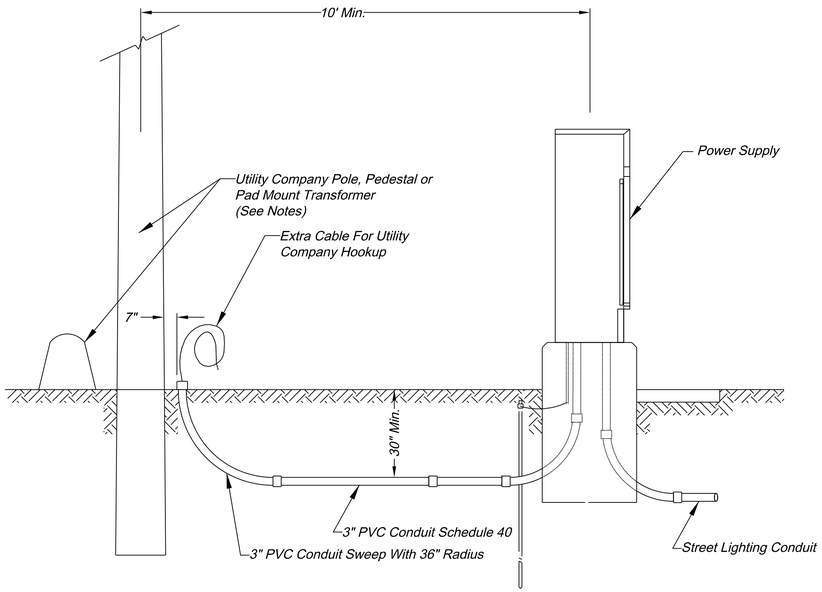
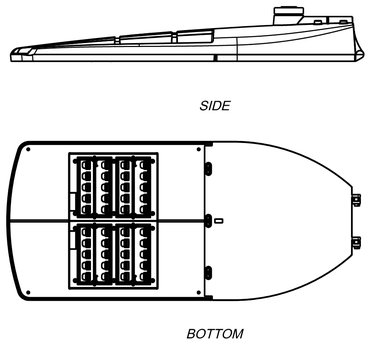
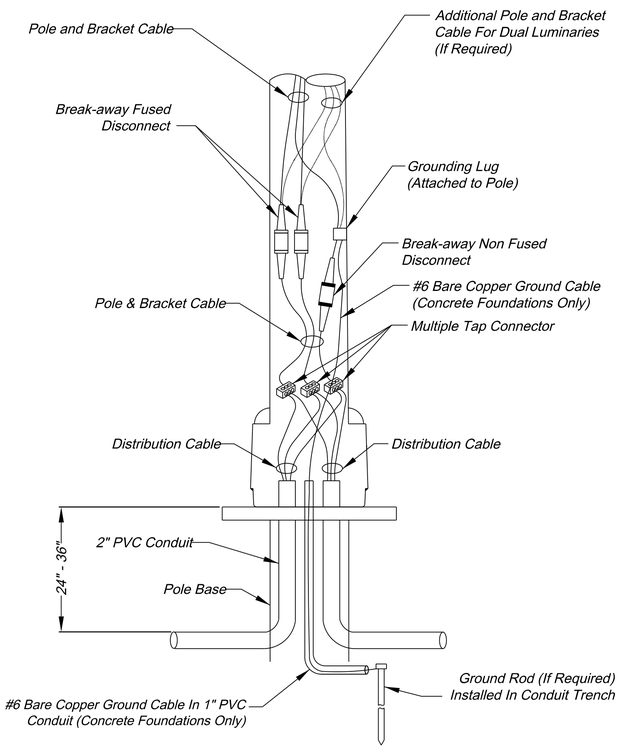


SECONDARY SERVICE CONNECTION DETAILS

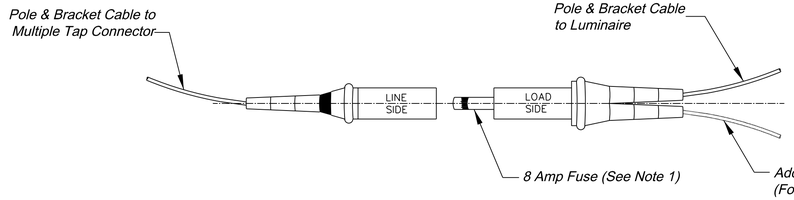
NOTES:
1. Contractor is responsible for coordinating the delivery of secondary service with the electrical utility company.
2. Contractor shall install a conduit stub 24" to 6" above ground at poles. Conduit shall be stubbed to the side of the pole that will allow a direct run up the pole to the transformer without crossing other utility lines or cables. The end of the conduit shall be capped.
3. Contractor shall install conduit with a pull string and trench to within 24" of pedistals or pad mount transformers, and leave a 36" x 36" x 36" access hole in the ground. Contractor shall keep open trench covered and promptly backfill when service is completed.



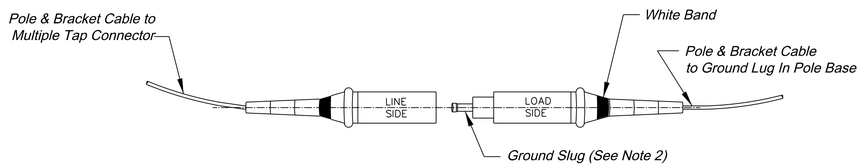
LED LUMINAIRE



POLE WIRING DETAILS

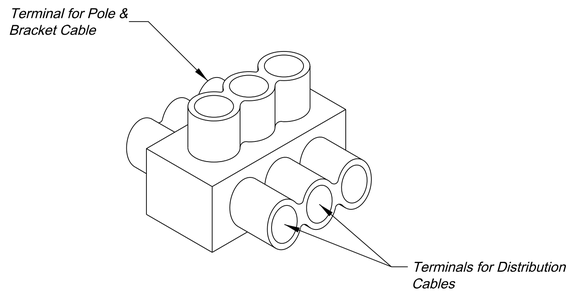


BREAK-AWAY FUSED ELECTRICAL DISCONNECT

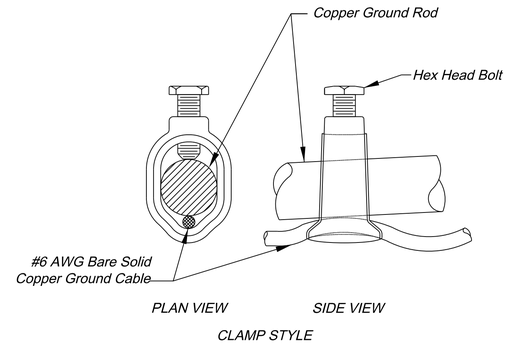


BREAK-AWAY NON FUSED ELECTRICAL DISCONNECT

NOTES:
1. Fuse remains in "Load Side" after break-away.
2. Ground "Slug" remains in "Load Side" after break-way.
3. Connectors shall have set screw type terminals to attach cables.



MULITPLE TAP ELECTRICAL CONNECTOR



GROUND ROD CONNECTION DETAILS

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ELECTRICAL WIRING DETAILS