

Instructions for Disassembly and Return of Salvaged Streetlighting Equipment

For Use on Federal Funded Projects

The following is a list of streetlighting equipment which shall be salvaged and stored on site for pickup by the City of Overland Park, unless otherwise instructed by the inspector. All salvaged equipment shall be carefully disassembled and stored. The condition at the time of City pickup shall be the same as prior to removal. The contractor shall notify the City of Overland Park Department of Public Works, Marvin Furgison (913) 327-6603 to arrange for the City pickup of the salvaged equipment. Provide 48-hours advance notice.

DELETE WHICHEVER NOTE DOES NOT APPLY TO THIS PROJECT

For Use on Non-Federally Funded Projects

The following is a list of streetlighting equipment which shall be salvaged and returned to the City of Overland Park, unless otherwise instructed by the inspector. The condition at the time of delivery shall be the same as prior to removal. Disassembly of equipment shall be done prior to returning the equipment to the Blue Valley Public Works Maintenance Facility (Traffic Services Maintenance Office and Shop) 6869 W. 153rd Street. The contractor shall notify the City of Overland Park Department of Public Works, Marvin Furgison (913) 327-6603 to arrange for the delivery of the salvaged equipment. Provide 48-hours advance notice.

The City maintains the first right of refusal of any equipment listed. The project inspector will make an on-site assessment to determine if the equipment should be salvaged or disposed. Any equipment that will not be salvaged shall become the property of the contractor.

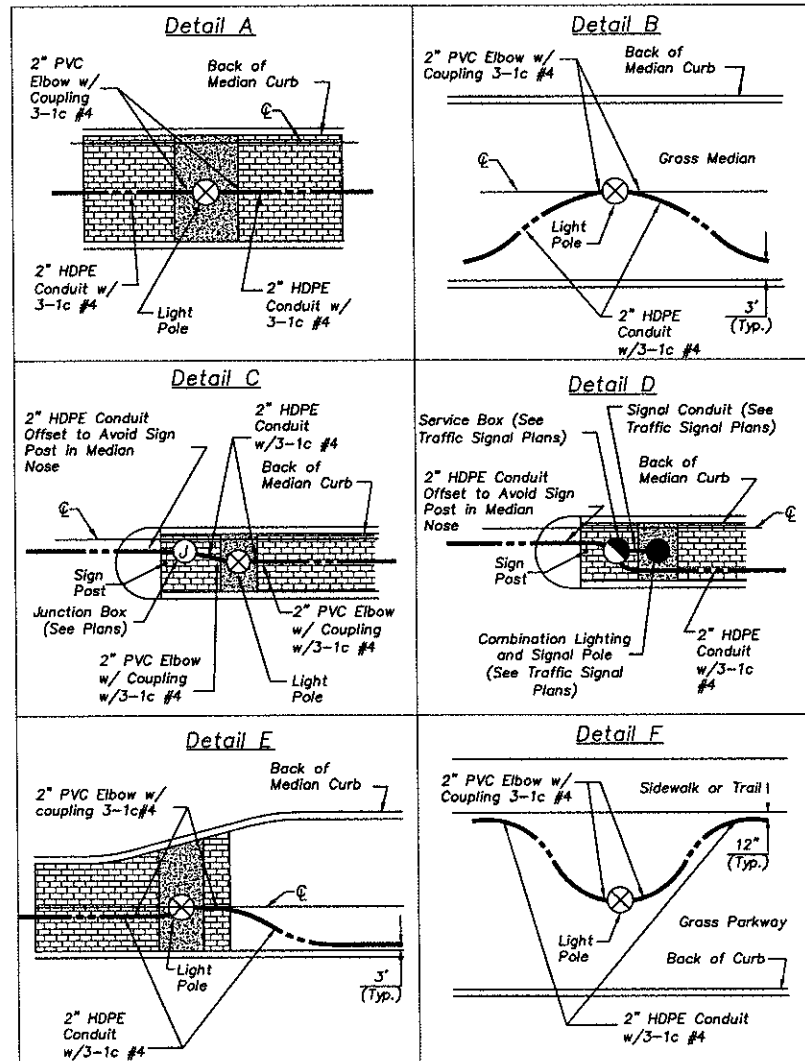
- All luminaires must be removed from streetlight arms or poles and be salvaged.
- All luminaire arms shall be removed from the streetlight poles without cutting the arms and be salvaged with the pole. Pole caps shall remain attached to the pole.
- All cable located in the pole and arms must be disconnected from luminaires, removed from the streetlight pole and arm and discarded.
- All breakaway couplings shall be removed from the streetlight pole and screw-in base and discarded. Fragible bases with hardware shall be salvaged.
- All screw in bases shall be cleaned of dirt and debris and salvaged with anchor studs or bolts threaded into the base plate.
- All streetlight control centers must be salvaged with all circuit breakers, relays, removable entry panels and other internal equipment still installed.
- All streetlight equipment hardware (i.e. arm bolts, multi-tap connectors, fuse holders and other small accessories) shall be discarded.
- All junction boxes, service boxes and lids shall be removed and salvaged if in good condition.
- Disassembly of any traffic signal equipment attached to streetlight equipment shall follow the guidelines as stated in the "Instructions for Disassembly and Removal of Salvaged Traffic Signal Equipment".

Streetlighting General Notes

- All work and material shall conform to the latest edition of the City of Overland Park Design and Construction Manual and shall be from the City of Overland Park pre-approved materials list available at City Hall.
- All traffic control in conjunction with the streetlighting construction shall be in conformance with the Manual On Uniform Traffic Control Devices and the Overland Park Traffic Control Handbook for Street Maintenance and Construction Operations, latest revisions.
- The Contractor shall stake the locations for all poles, controllers and junction boxes to be installed. The stations and offsets provided are to the center of the streetlighting equipment. The contractor shall provide elevations. If obstructions are encountered during installation, the contractor will re-stake those locations affected by the obstruction. The city streetlighting inspector shall inspect the staking prior to any excavation/construction.
- 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.
- The City of Overland Park is on the KS One Call System. The contractor shall call 811 to obtain locates for streetlighting, traffic signal, and fiber optic conduits/cables.
- All circuit cables in junction boxes and poles shall be identified with color-coded tape as follows:
North Cable: Tape Color Code Blue
East Cable: Tape Color Code Yellow
South Cable: Tape Color Code Purple
West Cable: Tape Color Code Red
Ground Cable: Tape Color Code Green.
- The contractor shall be responsible for removing and salvaging existing equipment as noted. See instructions for Disassembly and Return of Salvaged Streetlighting Equipment.
- Rock and shale may be encountered and thus the bid items shall reflect the extra work necessary to accomplish the installation. No additional payments ("extras") will be made for excavation of rock or shale and suitable backfill materials.
The following conditions shall prevail:
Screw-in foundations have been assumed for all areas. In the event a screw-in foundation may not be installed, then the contractor may at his option install the screw-in foundation in a pre-drilled hole. All pre-drilled holes within rock/shale shall be backfilled with flowable fill up to the bottom of the conduit slot, in accordance with the specifications.
- 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. Multiple conduits cannot be pulled back through the same bore unless otherwise approved.
- The conduit placement shall be coordinated with the paving operation, when applicable. Conduit installation and conduit connections shall be inspected and approved by the City streetlighting inspector. The contractor shall pay any and all extra costs of installing conduits by alternate construction methods after pavement has been placed or for any damages to pavement that may occur during conduit installation. All trenches for conduit under proposed paved surfaces (drives, streets and sidewalks) shall be backfilled with flowable fill unless otherwise directed, to below the proposed pavement surface.
- Continuous 2" HDPE conduit shall be installed between all streetlighting appurtenances prior to paving within the limits of the street improvements. Conduit splices between appurtenances shall not be allowed unless fusion couplings or other fusion methods are used.
- All existing streetlight poles to be relocated shall be reinstalled from their present location to their new location according to the address stenciled on the pole. All existing streetlighting equipment to be relocated shall become the responsibility of the contractor for safe storage. The contractor, at his own expense, shall replace any materials to be reused that have been damaged with approved materials in accordance with the current standard details, specifications, policies and practices.
- The conduit and cable shall be installed under underdrain pipe crossings and under the underdrain blankets. Refer to the street plans for underdrain pipe and blanket locations and appropriate details, if applicable. Where pole foundations are to be installed through an underdrain blanket, the blanket shall be pre-cut to prevent damage of the blanket. In the event the blanket is damaged, the fabric shall be replaced.
- All cable connections at junction boxes shall be watertight.
- All cable re-connections at existing light poles shall require new connector kits (i.e., multi-tap connectors and fused and non-fused connectors).
- The connections of the new system made at an existing junction box, light pole or control center for the continuation of the existing circuit shall be made in the presence of the streetlighting inspector for approval.
- The contractor shall take all precautions necessary to minimize the downtime of the existing streetlighting systems to be modified. Any existing streetlighting system shall be maintained during construction as long as possible until the new city-owned streetlighting system is installed and operating.
- Damage to any existing streetlighting equipment due to the construction shall be the responsibility of the contractor. The equipment shall be replaced or repaired (as directed by the City) with materials equal or better than the existing material.
- All existing streetlighting equipment is to be used in place (U.I.P.) unless otherwise noted in the plans.
- The contractor shall notify the City of Overland Park, KS, Department of Public Works (Bruce Wacker (913) 895-6027) of the exact construction schedule so that inspection of the streetlight installation can be made, including conduit installations.
- The contractor shall be responsible for any damage to existing underground sprinkler systems during construction. All affected pipes or fittings shall be restored to original condition and location with new materials similar to existing. All restoration work shall be acceptable to the engineer and property owner.
- The contractor shall install service conduit with electrical service cable from the control center to the KCP&L power source. (See Streetlighting Service Connection Detail).
- All unpaved areas damaged during construction shall be restored to the original condition. Unless otherwise directed, grassy areas shall be re-sodded.
- The contractor shall be required to apply stick-on street address numerals on the poles and controller cabinet as indicated in the plans. Letters and numerals should be 2 inch high. (See Stencil Detail)
- Contractor shall use a polymer lubricating agent to facilitate conduit bores under paved streets. Failure to do so will result in a denial to retrieve bore head, in the case of loss, under any paved street by excavation methods.
- All existing concrete foundations, shown to be removed, shall be removed a minimum of 24" below final grade.
- The ends of all conduit in service boxes, junction boxes, and in the controller cabinet shall be plugged with duct seal.
- If the final streetlight pole is less than ten (10) feet away from the nearest overhead power line, the contractor shall contact KCP&L and request them to sleeve their line prior to pole installation. All associated costs shall be the responsibility of the contractor.

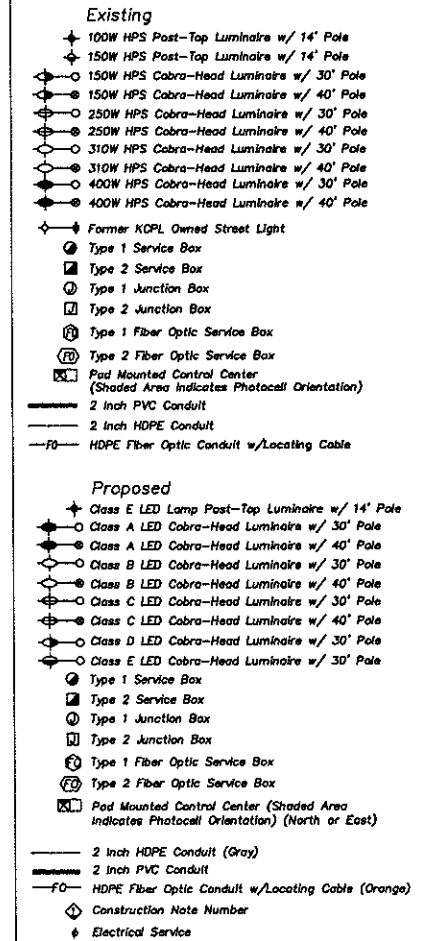
Design Parameters

- A. Applications
{Project Street Locations}
- B. Design Luminaires:
All luminaires used in the design analysis shall be from the City of Overland Park pre-approved materials lists for the various classes and/or wattages.
- C. Design Requirements:
- Design Criteria
Pedestrian Conflict Area ~
Functional Street Classification ~
 - Luminance Design Criteria
Avg. Maintained Luminance ___ cd/m²
Avg. to Min. Uniformity ___:1
Max. to Min. Uniformity ___:1
Veiling Luminance Ratio ___:1
 - Luminance Design Results
Avg. Maintained Luminance ___ cd/m²
Avg. to Min. Uniformity ___:1
Max. to Min. Uniformity ___:1
Veiling Luminance Ratio ___:1
 - Illuminance Design Results
Avg. Maintained Illuminance ___ Fc
Avg. to Min. Uniformity ___:1
3. Design Calculation Factors
Light Loss Factor (LLF) ~ 0.91
Mounting Height ~ ___ Ft.



Miscellaneous Conduit Details

Streetlight Legend



March 6, 2018 - 1:33 PM
C:\Users\jgibson\OneDrive\CAD Folder\0316 Traffic Standard Details\Streetlights.dwg

Streetlighting General Notes – Developer Projects

- All work and material shall conform to the latest edition of the City of Overland Park Design and Construction Manual and shall be from the City of Overland Park pre-approved materials list available at City Hall.
- All traffic control in conjunction with the streetlighting construction shall be in conformance with the Manual on Uniform Traffic Control Devices and the Overland Park Traffic Control Handbook for Street Maintenance and Construction Operations, latest revisions.
- The Contractor shall stake the locations for all poles, controllers and junction boxes to be installed. The stations and offsets provided are to the center of the streetlighting equipment. The contractor shall provide elevations. If obstructions are encountered during installation, the contractor will re-stake those locations affected by the obstruction. The city streetlighting inspector shall inspect the staking prior to any excavation/construction.
- 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.
- The City of Overland Park is on the KS One Call System. The contractor shall call 811 to obtain locates for streetlighting, traffic signal, and fiber optic conduits/cables.
- All circuit cables in junction boxes and poles shall be identified with color-coded tape as follows:
North Cable: Tape Color Code Blue
East Cable: Tape Color Code Yellow
South Cable: Tape Color Code Purple
West Cable: Tape Color Code Red
Ground Cable: Tape Color Code Green.
- The contractor shall be responsible for removing existing equipment as noted and delivering all salvageable equipment to the City of Overland Park Blue Valley Maintenance Facility, 6869 W. 153rd Street. The contractor shall contact Marvin Furgison (913) 327-6603 to coordinate delivery (at least 24-hour advance notice shall be provided). All returned equipment shall be disassembled per the instructions of the Traffic Services Division of the City of Overland Park Department of Public Works (See this Sheet). The contractor shall be responsible for any damage or loss of salvageable equipment.
- Rock and shale may be encountered and thus the bid items shall reflect the extra work necessary to accomplish the installation. No additional payments ("extras") will be made for excavation of rock or shale and suitable backfill materials.
The following conditions shall prevail:
Screw-in foundations have been assumed for all areas. In the event a screw-in foundation may not be installed, then the contractor may at his option install the screw-in foundation within a pre-drilled hole. All pre-drilled holes within rock/shale shall be backfilled with flowable fill up to the bottom of the conduit slot, in accordance with the specifications.
- 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. Multiple conduits cannot be pulled back through the same bore unless otherwise approved.
- The conduit placement shall be coordinated with the paving operation, when applicable. Conduit installation and conduit connections shall be inspected and approved by the City streetlighting inspector. The contractor shall pay any and all extra costs of installing conduits by alternate construction methods after pavement has been placed or for any damages to pavement that may occur during conduit installation. All trenches for conduit under proposed paved surfaces (drives, streets and sidewalks) shall be backfilled with flowable fill unless otherwise directed, to below the proposed pavement surface.
- Continuous 2" HDPE conduit shall be installed between all streetlighting appurtenances prior to paving within the limits of the street improvements. Conduit splices between appurtenances shall not be allowed unless fusion couplings or other fusion methods are used.
- All existing streetlight poles to be relocated shall be reinstalled from their present location to their new location according to the address stenciled on the poles. All existing streetlighting equipment to be relocated shall become the responsibility of the contractor for safe storage. The contractor, at his own expense, shall replace any materials to be reused that have been damaged with approved materials in accordance with the current standard details, specifications, policies and practices.
- The conduit and cable shall be installed under underdrain pipe crossings and under the underdrain blankets. Refer to the street plans for underdrain pipe and blanket locations and appropriate details, if applicable. Where pole foundations are to be installed through an underdrain blanket, the blanket shall be pre-cut to prevent damage of the blanket. In the event the blanket is damaged, the fabric shall be replaced.
- All cable connections at junction boxes shall be watertight.
- All cable re-connections at existing light poles shall require new connector kits (i.e., multi-tap connectors and fused and non-fused connectors).
- The connections of the new system made at an existing junction box, light pole or control center for the continuation of the existing circuit shall be made in the presence of the streetlighting inspector for approval.
- The contractor shall take all precautions necessary to minimize the downtime of the existing streetlighting systems to be modified. Any existing streetlighting system shall be maintained during construction as long as possible until the new city-owned streetlighting system is installed and operating.
- Damage to any existing streetlighting equipment due to the construction shall be the responsibility of the contractor. The equipment shall be replaced or repaired (as directed by the City) with materials equal or better than the existing material.
- All existing streetlighting equipment is to be used in place (U.I.P.) unless otherwise noted in the plans.
- The contractor shall notify the City of Overland Park, KS, Department of Planning and Development Services, (913) 895-6220 of the exact construction schedule so that inspection of the streetlighting installation can be made, including conduit installations.
- The contractor shall be responsible for any damage to existing underground sprinkler systems during construction. All affected pipes or fittings shall be restored to original condition and location with new materials similar to existing. All restoration work shall be acceptable to the engineer and property owner.
- The contractor shall install service conduit with electrical service cable from the control center to the KCP&L power source. (See Streetlighting Service Connection Detail)
- All unpaved areas damaged during construction shall be restored to the original condition. Unless otherwise directed, grassy areas shall be re-sodded.
- The contractor shall be required to apply stick-on street address numerals on the poles and controller cabinet as indicated in the plans. Letters and numerals should be 2 inches high. (See Stencil Detail)
- Contractor shall use a polymer lubricating agent to facilitate conduit bores under paved streets. Failure to do so will result in a denial to retrieve bore head, in the case of loss, under any paved street by excavation methods.
- All existing concrete foundations, shown to be removed, shall be removed a minimum of 24" below final grade.
- The ends of all conduit in service boxes, junction boxes, and controller cabinets shall be plugged with duct seal.
- The streetlighting contractor shall mark the locations of junction boxes at the end of platted streets with City supplied markers. This junction box shall remain in both the initial phase and the adjoining phase. Two inch HDPE conduit with a pull string shall be installed from the Type 1 junction box to the nearest light pole, junction box or control center through the existing conduit and connect the same cable to existing cable in the presence of the City Streetlighting Inspector for approval.
- The contractor shall be required to submit catalog cuts or shop drawings for all equipment to be installed on this project. All submittals shall conform to the Overland Park pre-approved materials list which is available at City Hall.
- The streetlighting contractor shall be responsible for removal of all undesirable material rock and debris encountered during streetlight construction. The Owner or his/her representative will designate a location on the Owner's property for placing of all excess rock, debris, etc. Before proceeding with construction, the streetlighting contractor shall verify that the right-of-way has been properly graded and in a mowable condition.
- The streetlighting contractor shall be required to furnish evidence that their insurance meets the requirements of Chapter 13.10 of the City of Overland Park, Kansas, Municipal Code.
- If the final streetlight pole is less than ten (10) feet away from the nearest overhead power line, the contractor shall contact KCP&L and request them to sleeve their line prior to pole installation. All associated costs shall be the responsibility of the contractor.

Instructions for Disassembly and Return of Salvaged Streetlighting Equipment

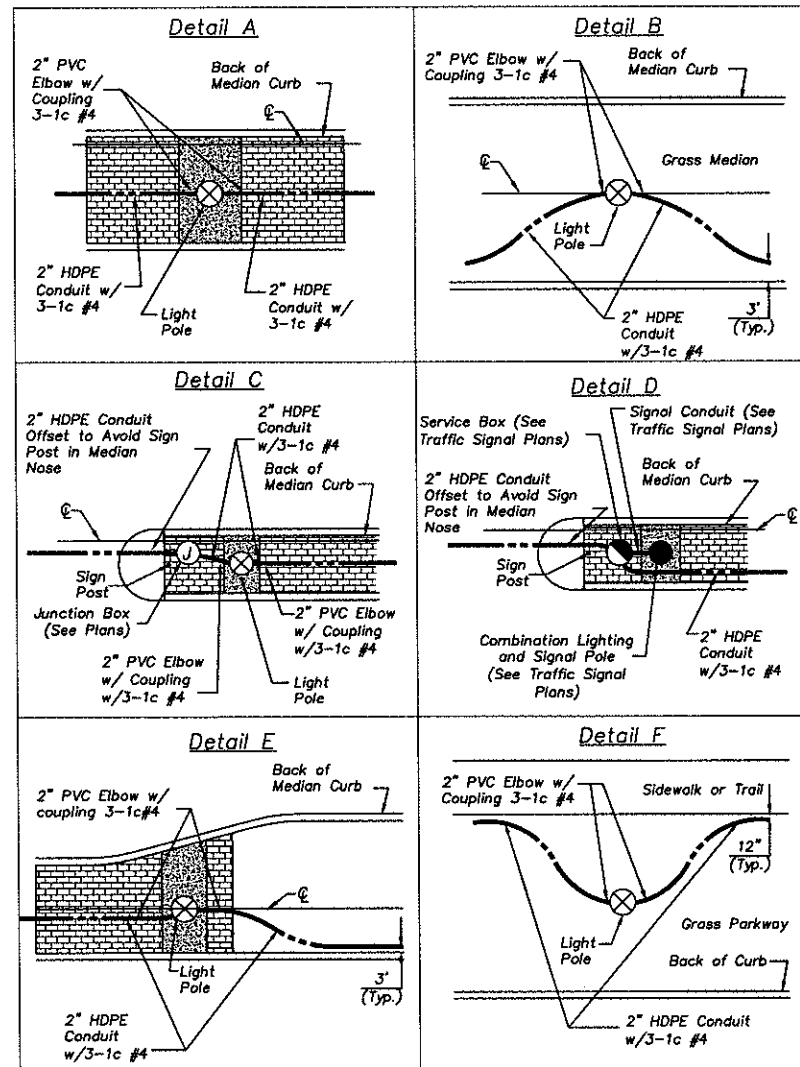
The following is a list of streetlighting equipment which shall be salvaged and returned to the City of Overland Park, unless otherwise instructed by the inspector. The City maintains the first right of refusal of any of the equipment listed. The project inspector will make an on-site assessment to determine if the equipment should be salvaged or disposed. Any equipment that will not be salvaged shall become the property of the contractor.

- All luminaires must be removed from streetlight arms or poles and be returned.
- All luminaire arms shall be removed from the streetlight poles without cutting the arms and be returned with the pole. Pole caps shall remain attached to the pole.
- All cable laced in the pole and arms must be disconnected from luminaires, removed from the streetlight pole and arm and discarded.
- All breakaway couplings shall be removed from the streetlight pole and screw-in base and discarded. Fragile bases with hardware shall be returned.
- All screw in bases shall be cleaned of dirt and debris and returned with anchor studs or bolts threaded into the base plate.
- All streetlight control centers must be returned with all circuit breakers, relays and other internal equipment still installed. Any removable entry panels shall be returned with the control center.
- All streetlight equipment hardware (i.e. arm bolts, multi-tap connectors, fuse holders and other small accessories) shall be discarded.
- All junction boxes, service boxes and lids shall be removed and returned if in good condition.
- Disassembly of any traffic signal equipment attached to streetlight equipment shall follow the guidelines as stated in the "Instructions for Disassembly and Removal of Salvaged Traffic Signal Equipment".

All streetlight equipment to be returned shall be returned in the same condition as it was prior to removal. Disassembly of equipment shall be done prior to returning the equipment to the Blue Valley Public Works Maintenance Facility 6869 W. 153rd Street.

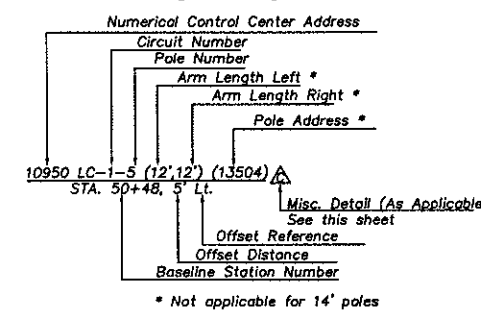
Design Parameters

- A. Applications
{Project Street Locations}
- B. Design Luminaires:
All luminaires used in the design analysis shall be from the City of Overland Park pre-approved materials lists for the various classes and/or wattages.
- C. Design Requirements:
- Design Criteria
Pedestrian Conflict Area –
Functional Street Classification –
 - Luminaire Design Criteria
Avg. Maintained Luminance ___ cd/m²
Avg. to Min. Uniformity ___:1
Max. to Min. Uniformity ___:1
Veiling Luminance Ratio ___:1
 - Luminaire Design Results
Avg. Maintained Luminance ___ cd/m²
Avg. to Min. Uniformity ___:1
Max. to Min. Uniformity ___:1
Veiling Luminance Ratio ___:1
 - Illuminance Design Results
Avg. Maintained Illuminance ___ Fc
Avg. to Min. Uniformity ___:1
3. Design Calculation Factors
Light Loss Factor (LLF) – 0.91
Mounting Height – ___ Ft.



Miscellaneous Conduit Details

Streetlight Designation



* Not applicable for 14' poles

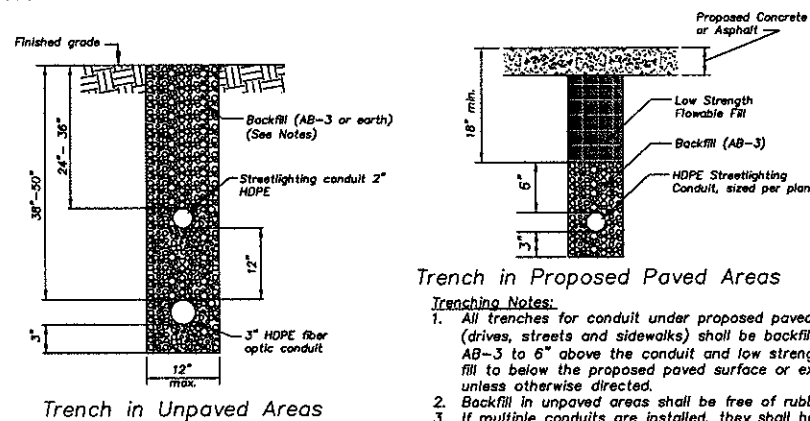
Streetlight Legend

- Existing
- 100W HPS Post-Top Luminaire w/ 14' Pole
 - 150W HPS Post-Top Luminaire w/ 14' Pole
 - 150W HPS Cobra-Head Luminaire w/ 30' Pole
 - 150W HPS Cobra-Head Luminaire w/ 40' Pole
 - 250W HPS Cobra-Head Luminaire w/ 30' Pole
 - 250W HPS Cobra-Head Luminaire w/ 40' Pole
 - 310W HPS Cobra-Head Luminaire w/ 30' Pole
 - 310W HPS Cobra-Head Luminaire w/ 40' Pole
 - 400W HPS Cobra-Head Luminaire w/ 30' Pole
 - 400W HPS Cobra-Head Luminaire w/ 40' Pole
 - Former KCP&L Owned Street Light
 - Type 1 Service Box
 - Type 2 Service Box
 - Type 1 Junction Box
 - Type 2 Junction Box
 - Type 1 Fiber Optic Service Box
 - Type 2 Fiber Optic Service Box
 - Pad Mounted Control Center (Shaded Area Indicates Photocell Orientation)
 - 2 Inch PVC Conduit
 - 2 Inch HDPE Conduit
 - HDPE Fiber Optic Conduit w/Locating Cable
- Proposed
- Class E LED Lamp Post-Top Luminaire w/14' Pole
 - Class A LED Cobra-Head Luminaire w/ 30' Pole
 - Class A LED Cobra-Head Luminaire w/ 40' Pole
 - Class B LED Cobra-Head Luminaire w/ 30' Pole
 - Class B LED Cobra-Head Luminaire w/ 40' Pole
 - Class C LED Cobra-Head Luminaire w/ 30' Pole
 - Class C LED Cobra-Head Luminaire w/ 40' Pole
 - Class D LED Cobra-Head Luminaire w/ 30' Pole
 - Class E LED Cobra-Head Luminaire w/ 30' Pole
 - Type 1 Service Box
 - Type 2 Service Box
 - Type 1 Junction Box
 - Type 2 Junction Box
 - Type 1 Fiber Optic Service Box
 - Type 2 Fiber Optic Service Box
 - Pad Mounted Control Center (Shaded Area Indicates Photocell Orientation) (North or East)
 - 2 Inch HDPE Conduit (Gray)
 - 2 Inch PVC Conduit
 - HDPE Fiber Optic Conduit w/Locating Cable (Orange)
 - Construction Note Number
 - Electrical Service

Bill of Materials (1)

Item	Unit	Quantity
Steel Combination Lighting/Signal Pole	Each	X
40' Aluminum Pole w/ ___ Bracket Arm	OP401	Each
40' Aluminum Pole w/ ___ Bracket Arm	OP402	Each
40' Aluminum Pole w/ Twin ___ Bracket Arms	OP403	Each
40' Aluminum Pole w/ ___ and ___ Bracket Arms	OP403	Each
30' Aluminum Pole w/ ___ Bracket Arm	OP301	Each
30' Aluminum Pole w/12' Bracket Arm	OP302	Each
30' Aluminum Pole w/ Twin 8' Bracket Arms	OP303	Each
14' Aluminum Pole	OP14	Each
Concrete Pole Foundation Cap	Each	X
Concrete Foundation for 40' Pole	Each	X
Concrete Foundation for 30' Pole	Each	X
Concrete Foundation for 14' Pole	Each	X
3/8" x 10' Ground Rod w/ Clamp for Concrete Foundation	Each	X
Type F1 Screw-in Foundation	Each	X
Type F2 Screw-in Foundation	Each	X
Type T1 Screw-in Foundation	Each	X
Type R Screw-in Foundation	Each	X
Class A LED Cobra-Head Luminaire	Each	X
Class B LED Cobra-Head Luminaire	Each	X
Class C LED Cobra-Head Luminaire	Each	X
Class D LED Cobra-Head Luminaire	Each	X
Class E LED Cobra-Head Luminaire	Each	X
Class E Post-Top Luminaire w/ LED Lamp	Each	X
Post-Top Luminaire w/ ___ Watt H.P.S. Lamp	Each	X
Type 1 Service Box	Each	X
Type 1 Junction Box	Each	X
Type 2 Junction Box	Each	X
Control Center - Pad Mounted (1-Circuit) (100 Amp; 240 V)	Each	X
Control Center - Pad Mounted (4 Circuit) (100 Amp; 240 V)	Each	X
Concrete Control Center Foundation (1-Circuit Control Center)	Each	X
Concrete Control Center Foundation (4-Circuit Control Center)	Each	X
1/2" x 10'-0" Ground Rod with Clamp for Control Center	Each	X
Photo Cell	Each	X
Metallic Conduit 2" (for Extension of Existing Conduit Only)	Ln. Ft.	X
Schedule 40 PVC Conduit, 1" (for Equipment Ground Cable)	Ln. Ft.	X
Schedule 40 PVC Conduit, 2" or SDR 13.5 HDPE (Black w/ Red Stripes) KCP&L Electrical Service Conduit, 2"	Ln. Ft.	X
Schedule 40 PVC Conduit, 3" or SDR 13.5 HDPE (Black w/ Red Stripes) KCP&L Electrical Service Conduit, 3"	Ln. Ft.	X
SDR 13.5 HDPE (Gray) Conduit, 2"	Ln. Ft.	X
SDR 13.5 HDPE (Gray) Conduit, 3"	Ln. Ft.	X
Distribution Cable 3-1c No. 4 AWG Type USE	Ln. Ft.	X
Pole and Bracket Cable 1c No. 10 AWG Type THHN/THWN	Ln. Ft.	X
Solid Copper Ground Cable (Bare # 6 AWG)	Ln. Ft.	X
Locating Cable (Red) 1c No. 10 AWG Type THHN/THWN	Ln. Ft.	X
Electrical Service Power Cable 3-1c #2 AWG	Ln. Ft.	X
8 AMP Fuse	Each	X
Break-Away Non-Fused Connector Kits	Each	X
Break-Away Fused Connector Kits	Each	X
Multiple Streetlight Tap Connector	Each	X
Remove Existing Equipment	Each	X
Relocate Existing Equipment	Each	X
Break-Away Pole Device	Set/Each	X

- Notes:
- 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.
 - Approved break-away couplings or frangible bases are acceptable. Frangible bases shall be measured per each and couplings shall be measured as four units per set.
 - Refer to Chart B "Traffic Signal Pole Summary" on Traffic Signal Detail Sheet for design parameters.
 - All LED Cobra-Head luminaires shall have a minimum 10 year manufacturer's warranty.

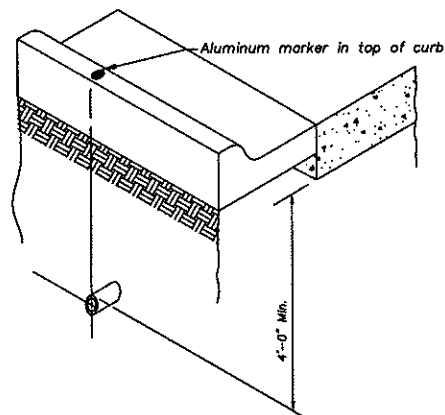


Trench in Proposed Paved Areas

Trenching Notes:

- All trenches for conduit under proposed paved surfaces (drives, streets and sidewalks) shall be backfilled with AB-3 to 6" above the conduit and low strength flowable fill to below the proposed paved surface or existing terrain, unless otherwise directed.
- Backfill in unpaved areas shall be free of rubble and rock.
- If multiple conduits are installed, they shall have a minimum of 12" horizontal or vertical clearance between them.
- Details are typical and information for the separation of multiple conduits are applicable whether trenching in unpaved or paved areas.

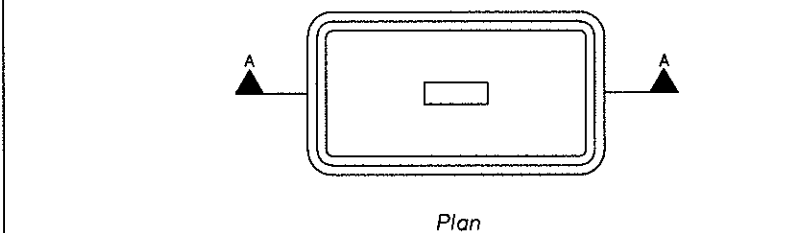
Trenching Details



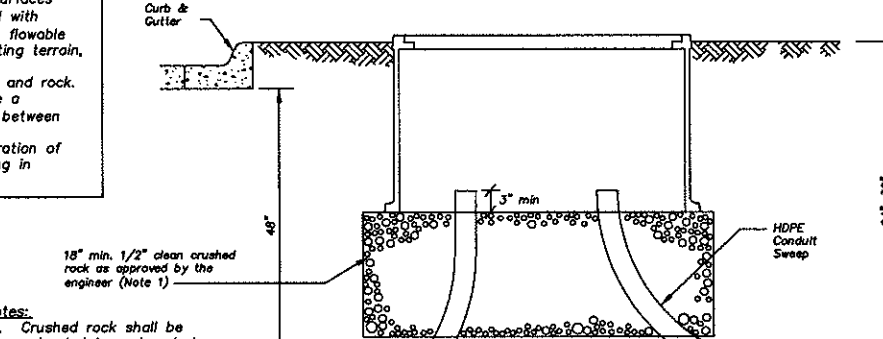
Conduit Marking Detail Notes:

- Conduit under all roadway surfaces shall be placed a minimum of 4'-0" below the bottom of pavement and shall extend to a junction box or service box. Refer to The City of Overland Park Horizontal Directional Drilling Guidelines Handbook, latest edition for further requirements for conduit installation under roadway surfaces. The conduit shall be installed to drain. All ends shall be capped if not used. An aluminum marker shall be placed in the top of the curb directly over the conduit. Markers shall be embedded such that the top is flush. Aluminum markers will be furnished by The City of Overland Park.
- The contractor shall notify the City of Overland Park, Department of Public Works Traffic Services Division, 895-8000, for inspection of the conduit installation by the City inspector. At least 24 hours notice shall be provided. The conduit shall not be covered so as to ensure proper depth, correct conduit material, and proper conduit end treatment as described above.

Conduit Marking Detail



Plan



Section A-A

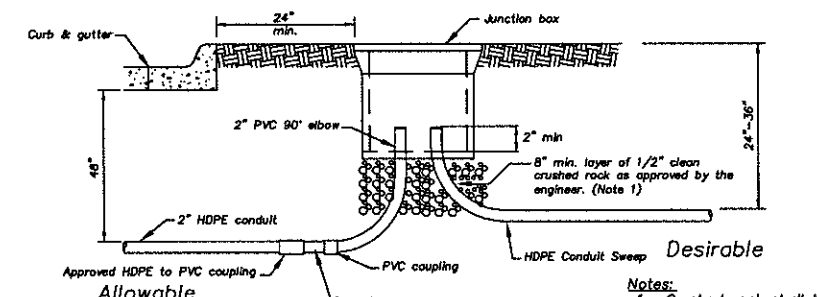
Service Box Installation Detail

Notes:

- Crushed rock shall be extended toward curb to underdrain if present.

Allowable

Desirable



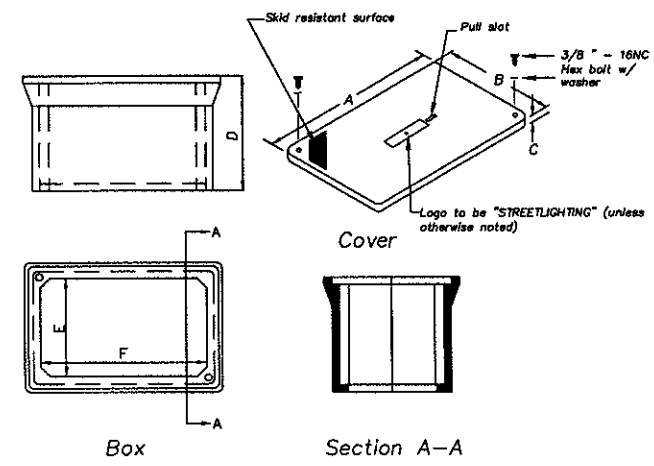
Junction Box Installation Detail

Notes:

- Crushed rock shall be extended toward curb to underdrain if present.

Box Notes:

- Boxes shall be stackable for extra depth.
- All junction boxes, service boxes, and covers shall be rated at no less than 22,500 lbs. test load (Tier 15) per ANSI/SCTE-77.
- Material to be an aggregate consisting of sand and gravel bound together with a polymer and reinforced with continuous woven glass strands. It shall have the following properties:
Compressive Strength-11,000 psi ASTM C-109/D-3410
Tensile Strength-1,700 psi ASTM C-496/D-638/D-2343
Flexural Strength-7,500 psi ASTM C-580/D-790
- The Type 2 Service Box shall have a two-piece overlapping cover.



Cover

Section A-A

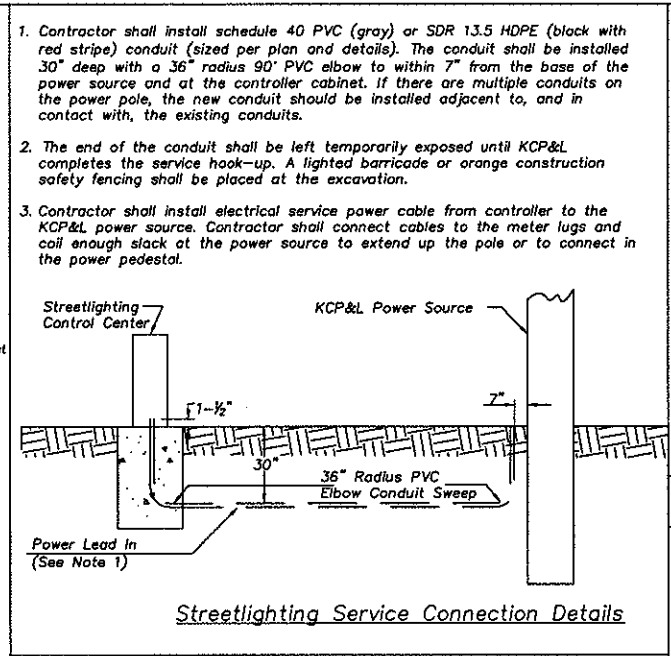
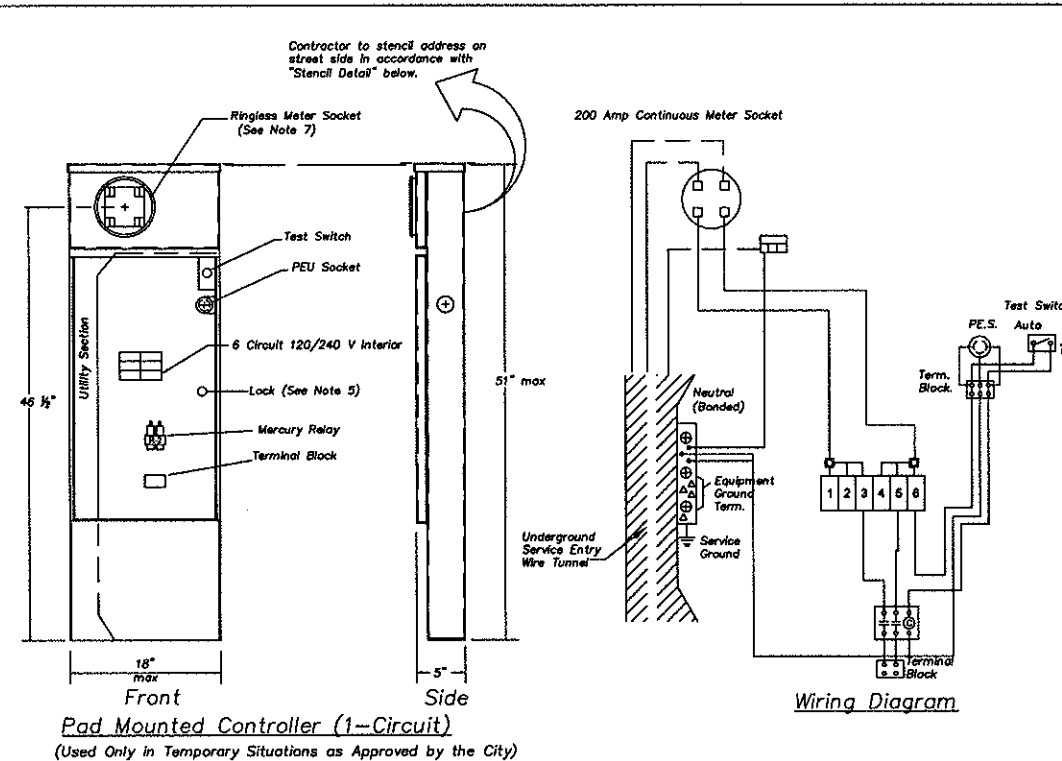
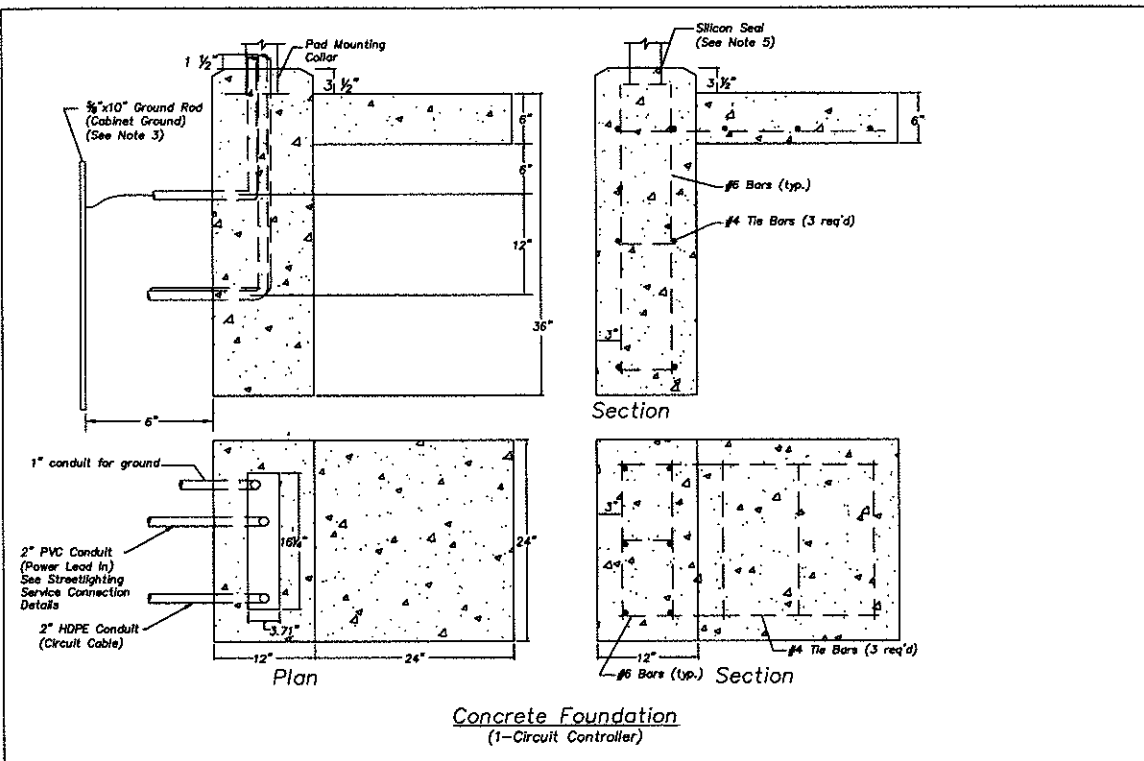
Box

Type	Approximate Dimensions (Inches)					
	A	B	C	D	E	F
1-Junction	12 1/2	12 1/2	3/4	12 1/2	9 1/2-10 1/2	9 1/2-10 1/2
2-Junction	18-18 1/2	11 1/4-11 1/2	2	12	9 1/2-10 1/2	16 1/2-17 1/2
1-Service	35 3/8	24	3	24	22 1/2	33 3/4
2-Service (4)	47 3/8	30 1/2	3	24	28 1/2	45 1/2

Fiberglass Reinforced Polymer Concrete Junction & Service Box Details

NO.	DATE	REVISIONS
1	01/01/2018	2018 Standard Details Revised Ground Rod Size
2	10/17/2018	
3		

V/G	V/G	BY
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2	10/17/2018	
NO.	DATE	REVISIONS

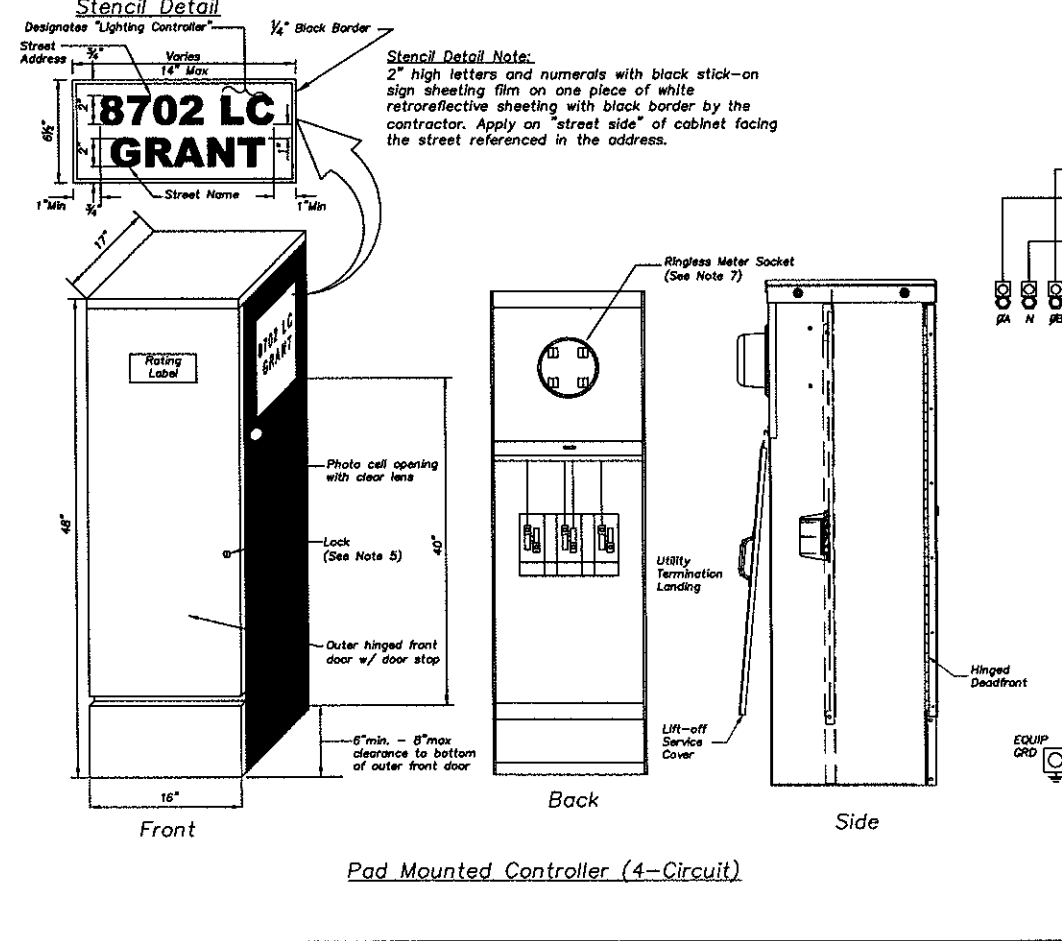
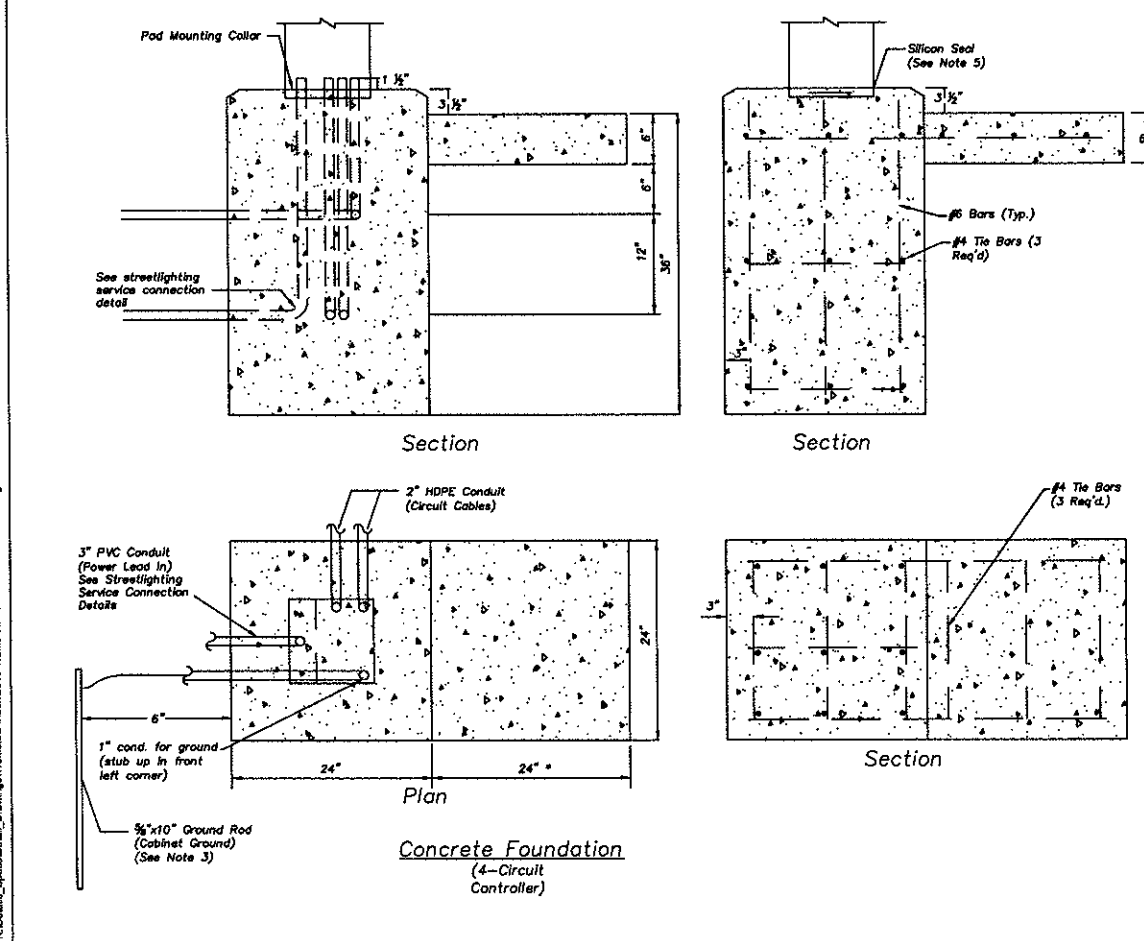
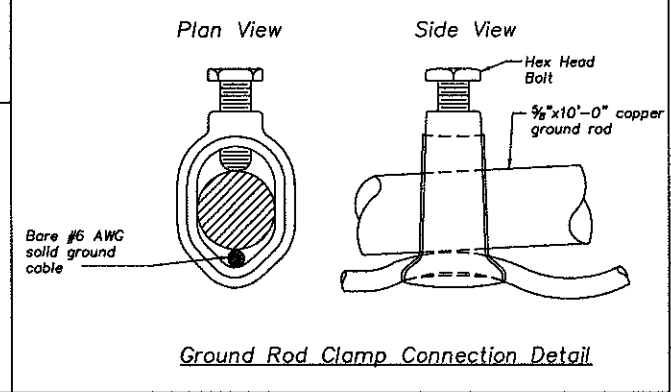


Concrete Foundation Notes:

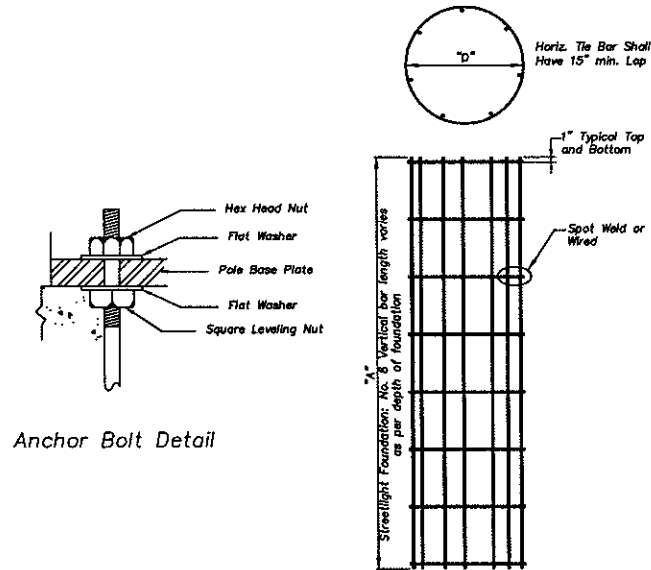
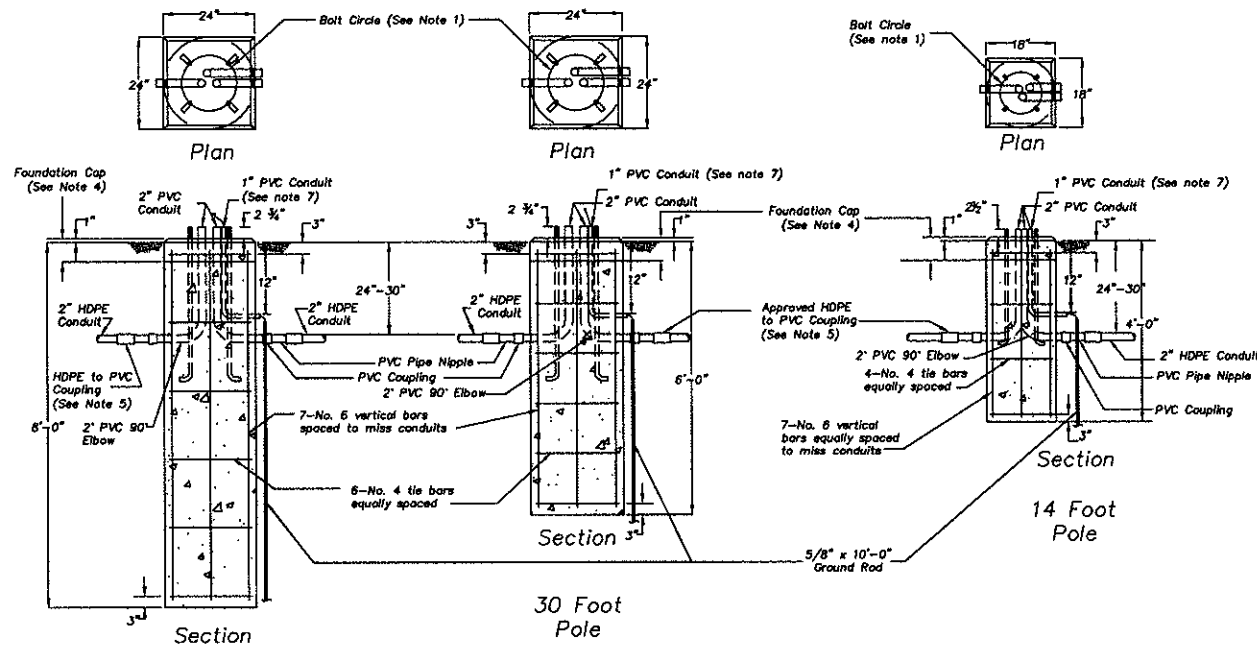
- See the plan sheets for specific details (i.e. pad size, conduit requirements for circuit cables) for each individual control center.
- All concrete used in this work shall meet the requirements of the Overland Park Municipal Code and shall be KCMMB4K concrete.
- Contractor to provide ground rod(s) as required for maximum of 25 ohms resistance to ground.
- Duct Seal shall be applied at all conduit entrances after cable installation.
- Seal the bottom edge of the cabinet at the contact point with the concrete pad with silicon sealant.
- All reinforcing steel shall be ASTM A615 GR60.
- All concrete surfaces shall be brushed and sealed w/curing compound.

1-Circuit & 4-Circuit Controller Notes:

- 3R Enclosure to be code 0.125 inch corrosion resistant aluminum.
- All factory installed wire to be copper.
- All terminals approved for copper or aluminum wire #6 to 350 MCM AWG.
- Silver-plated copper bussed circuit breaker interior.
- Factory installed Corbin lock assembly designed for standard No. 2 key with tapered latch.
- Finish: Natural Aluminum unless otherwise specified.
- Exposed 200A 240V 5 terminal meter socket w/horn bypass and ringless cover.
- Contractor performing work on any streetlight circuit shall be required to install a city approved lockout device for each respective circuit affected. A City approved tag, indicating contractor's name and contact information shall be attached to the lockout device.
- Photocell and pad shall be oriented to the north or east. Photocell is located on the right side of the cabinet.
- Shall be UL listed for 5,000 amp short circuit current rating.
- Include mounting collar with cabinet.



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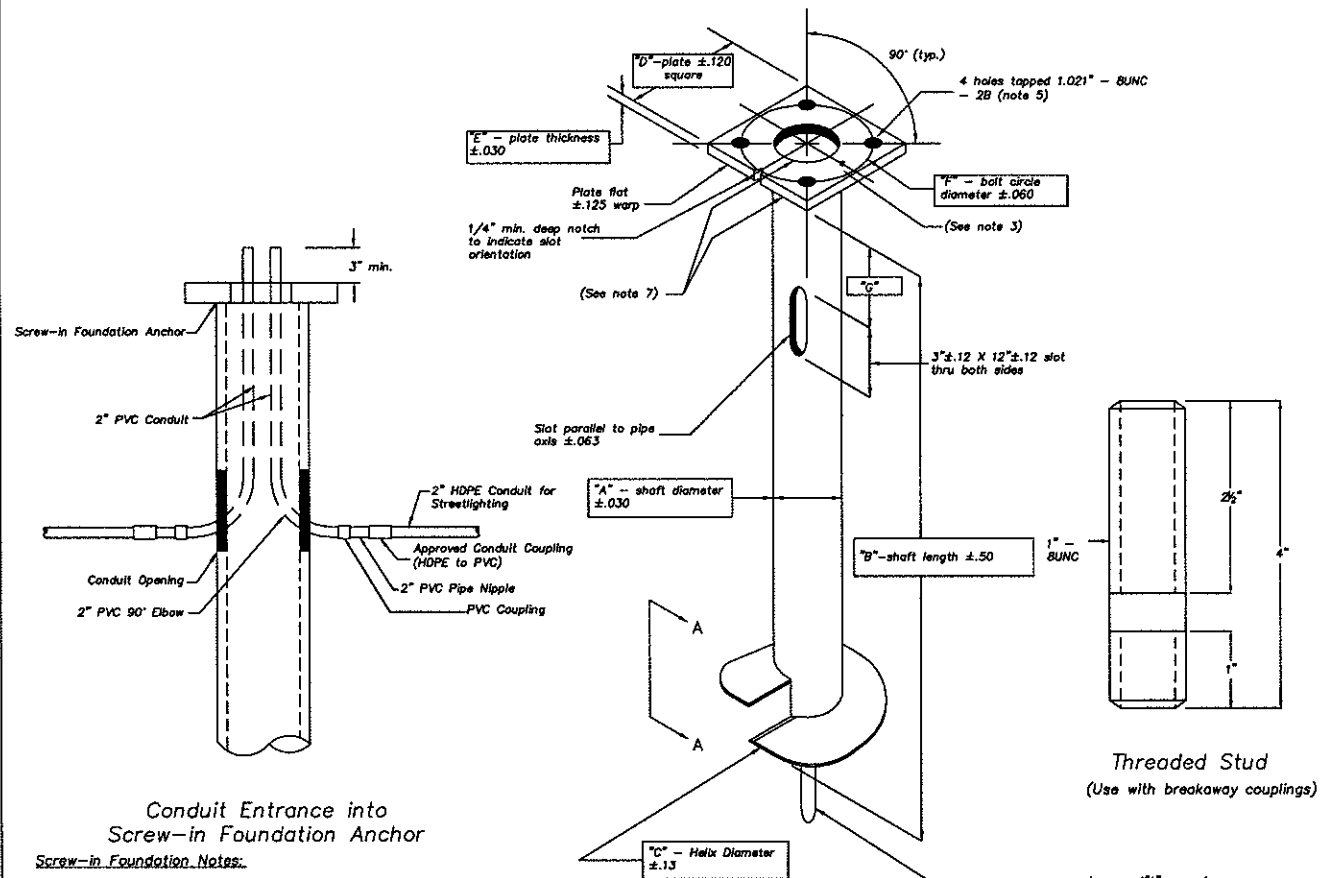
Concrete Foundation Notes:

- Final pole, anchor bolt size, anchor bolt projection, and bolt circle shall be as per manufacturer's recommended practices.
- All conduits and anchor bolts for all the new pole bases shall be rigidly installed before concrete is placed. Anchor bolts shall be spaced by means of a factory certified template or drawing, the center of which shall coincide with the center of the base.
- All concrete pole bases shall be consolidated by an internal type vibrator.
- Final 6" of concrete foundation (pole cap) shall be formed square. The cap shall be formed and poured after the arms are attached and the pole plumb.
- PVC conduit elbows in concrete foundations shall be connected to HDPE conduit with PVC pipe nipple and approved PVC to HDPE coupling. All conduit elbows shall be considered subsidiary to the traffic signal pole base.
- All concrete used in this work shall meet the requirements of the Overland Park Municipal Code and shall be KCMMB4K concrete.
- Bare No. 6 solid copper ground conductor from internal pole grounding nut to clamp on ground rod.
- All reinforcing steel shall be ASTM A615 GR60.

Streetlighting Foundation Horizontal Rebar			
Pole Fnd. Dia.	Pole Fnd. Depth	Rebar Cir. "D"	Spacing
18"	4'	15"	12" max.
24"	6'	20"	12" max.
24"	8'	20"	12" max.

Streetlighting Foundation Vertical Rebar	
Pole Foundation Depth	Length "A"
4'-0"	3'-8"
6'-0"	5'-8"
8'-0"	7'-8"

Concrete Foundation Details



Conduit Entrance into Screw-in Foundation Anchor

Screw-in Foundation Notes:

- Finish: Hot dip galvanize per ASTM-A153 (Latest Revision).
- Baseplate to be perpendicular to shaft axis ($\pm 1^\circ$) and hole and concentric ($\pm 1/88$ I.D. FIM) to shaft axis.
- All bases shall be identified by the manufacturer name, abbreviation, or symbol engraved on the shaft and/or top plate. The anchor type (R, T1, F1 & F2) shall be engraved into the top plate with 1/4" to 1/2" lettering.
- Pilot point and shaft axes to be concentric ($\pm 1/25$ FIM) and in line ($\pm 2^\circ$).
- Top 1" holes on the specified bolt circle perpendicular to the baseplate. Clean and chase the threads after hot-dip galvanizing so that a bolt may be hand installed.
- Preheat (room temperature 70°F), tumbleblast, handgrind, and clean baseplate, helix, and core on all welded areas.
- Flamecut Irregularities Permissible:
 - Valleys not to exceed 3/32 in. below nominal surface level.
 - Peaks or positive irregularities not to exceed 1/32 in. above nominal surface level or intersections of nominal surfaces.
- Manufacturer to have in effect industry recognized written quality control for all materials and manufacturing processes.
- All 30' and 40' aluminum light poles shall be furnished with breakaway pole device. Breakaway pole devices are not required for 14' light poles.
- All material is to be new, unused and mill traceable meeting the following specifications:

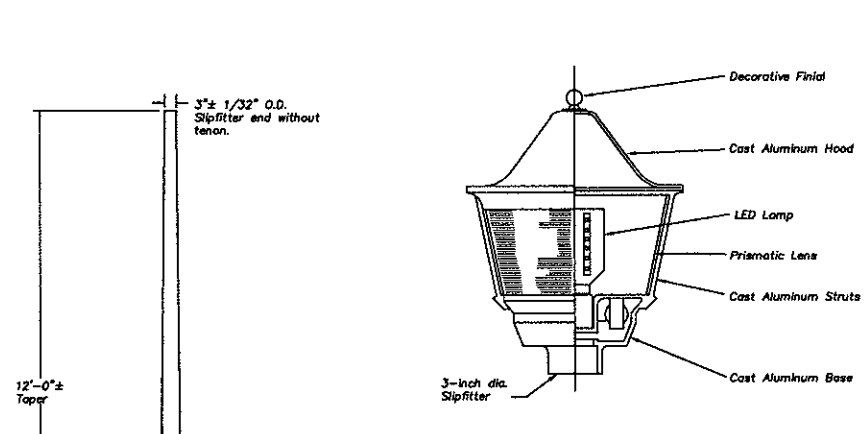
- Baseplate:** ASTM A36-(Latest Revision) hot rolled steel plate
- Shaft:** Steel pipe piles, seamless or straight welded, grade 2 per ASTM A252. Alternate Material: steel pipe Type E or S, grade B per ASTM A53.
- Helix:** ASTM A635-(Latest Revision) hot rolled steel plate
- Pilot Point:** ASTM A575-(Latest Revision) hot rolled steel
- Stud:** ANSI C 1045 hot rolled steel. Special 1" diameter hot dip galvanized stud threaded at both ends for T and F Type foundations when used with breakaway couplings. Stud diameter without threads shall be large enough to avoid slipping through threaded hole.
- Bolt:** ASTM A325 or grade 5 SAE J429 - 1" diameter hot dip galvanized hex head bolt for Type R screw-in foundation or T and F Type foundations when using frangible breakaway bases. Bolt shall include one each lock and flat washer.

Type	Pole Type(s)	Max Torque Rating (lbs ft)	A Shaft Dia	B Shaft Length	C Helix Dia	D Plate Size	E Plate Thickness	F Bolt Circle	G Slot Location
R	OP14	15,000	6"	48"	12"	10"	0.75"	9.5"	12"
T1	OP301,302,303	15,000	6"	60"	12"	12"	1.0"	11"	18"
F1	OP401,OP402	20,000	8"	60"	14"	12"	1.0"	11.5"	18"
F2	OP403	20,000	8"	60"	14"	15"	1.25"	14.5"	18"

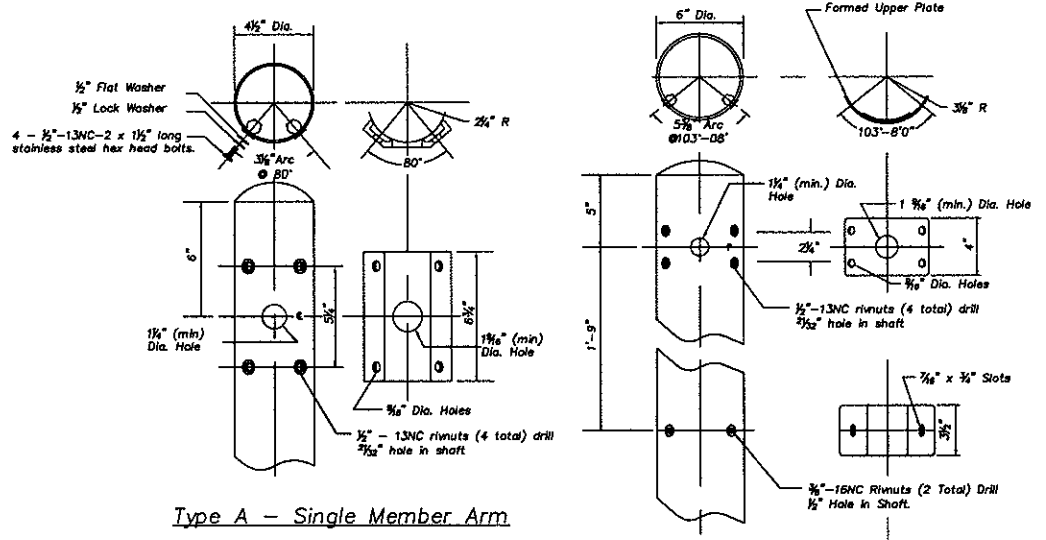
Screw-in Foundation Details

NO.	DATE	BY
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2	10/17/2018	V/G
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NO.	DATE
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2	10/17/2018
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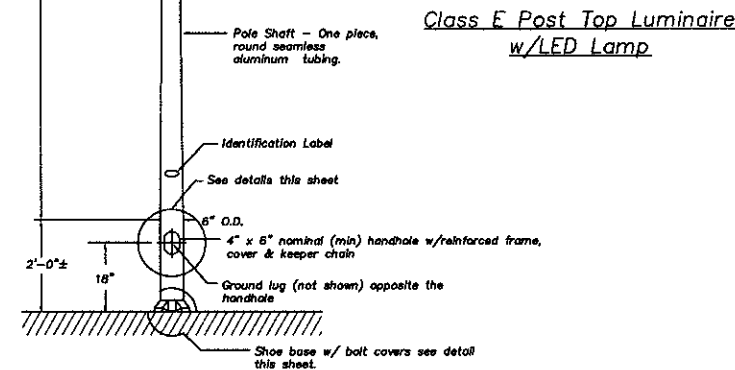


Class E Post Top Luminaire w/LED Lamp

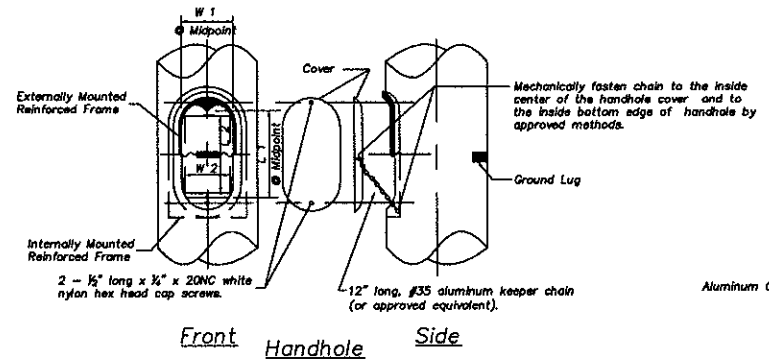


Type A - Single Member Arm

Type B - Truss Arm



14' Pole Elevation (OP14)



Front Handhole Side

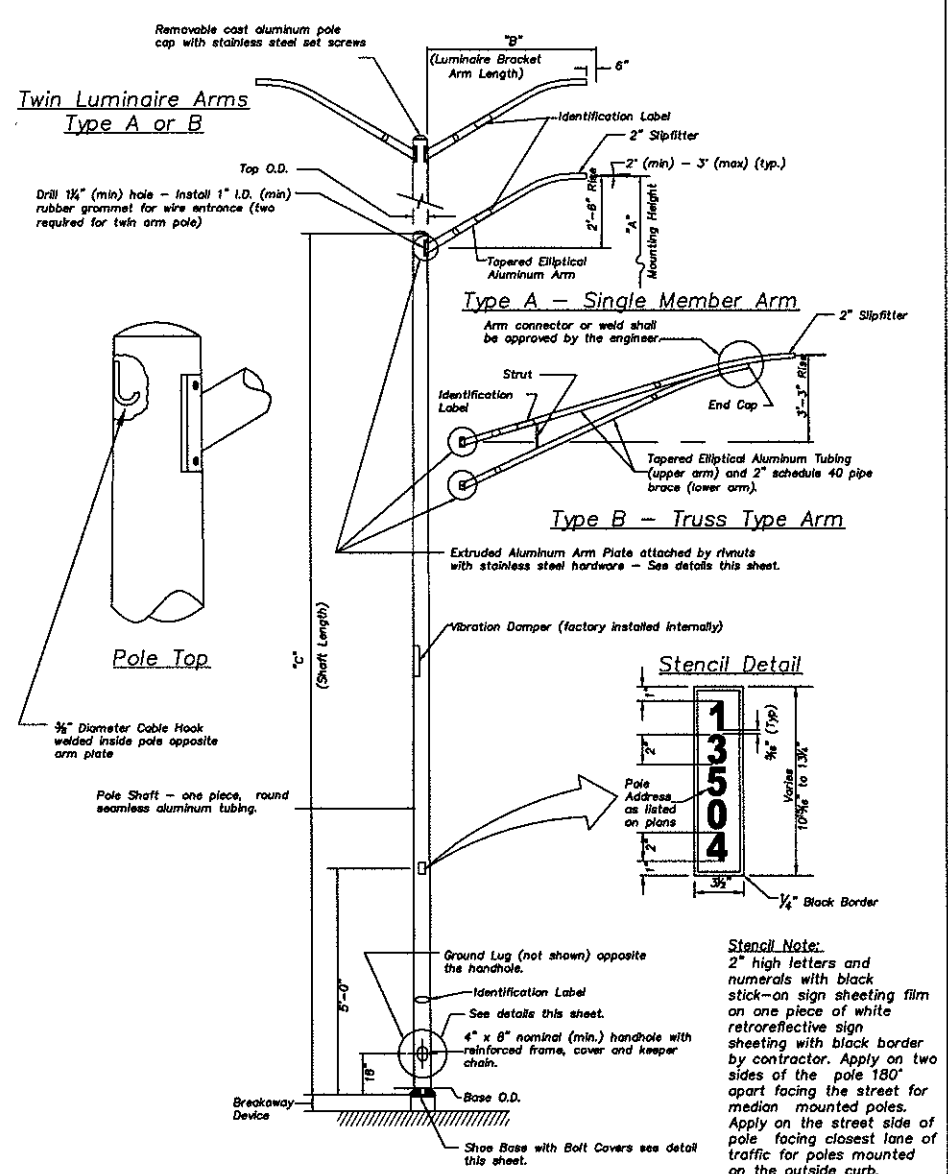
Ground Lug

Handhole Notes:

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

Handhole Opening Dimensions (min)

	4" x 6"	4" x 8"
W1	3 3/4"	4"
L1	5 1/4"	7 1/4"
W2	3"	3 3/8"
L2	3 1/8"	6 3/16"



30' & 40' Pole Elevation
(See Table 1 for Designations & Dimensions)

Material Data

Component	Aluminum Alloy Designation	Specification
Shoe Base	356-T6, Cast	ASTM B26 or B108
Frangible Bases	356-T6	ASTM B108
Breakaway Couplings	6061-T6, Extruded	1985 AASHTO
Skirt (Breakaway Coupling Assembly)	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
Luminaire Arm - Tubing - Pipe*	6063-T6	ASTM B221 or B241
	6063-T6	ASTM B429
Luminaire Arm Plate	6061-T6 or 6063-T6	ASTM B221
Luminaire Arm, Strut & Connector*	6061-T6 or 6063-T6	ASTM B221, B241, or B429
Pole Cap	356 F or 443, CAST	ASTM B26 or B108
Anchor Bolts	N/A	ASTM A-578 Steel, Galvanized per ASTM A-153

*Truss-Type Luminaire Arms (Type B) Only.

Material Notes:

- Pole shaft shall have a satin ground finish.
- 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 BB.
- 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. threaded stud (see pole foundation detail sheet) shall be used with type T and F screw-in foundation anchor when using breakaway couplings. Hex head bolt (see pole foundation detail sheet) shall be used with type R screw-in foundation anchor or T and F foundations when using frangible breakaway base.
- 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 - Luminaire Arm, Pole, Shoe Base & Anchor Bolt Data

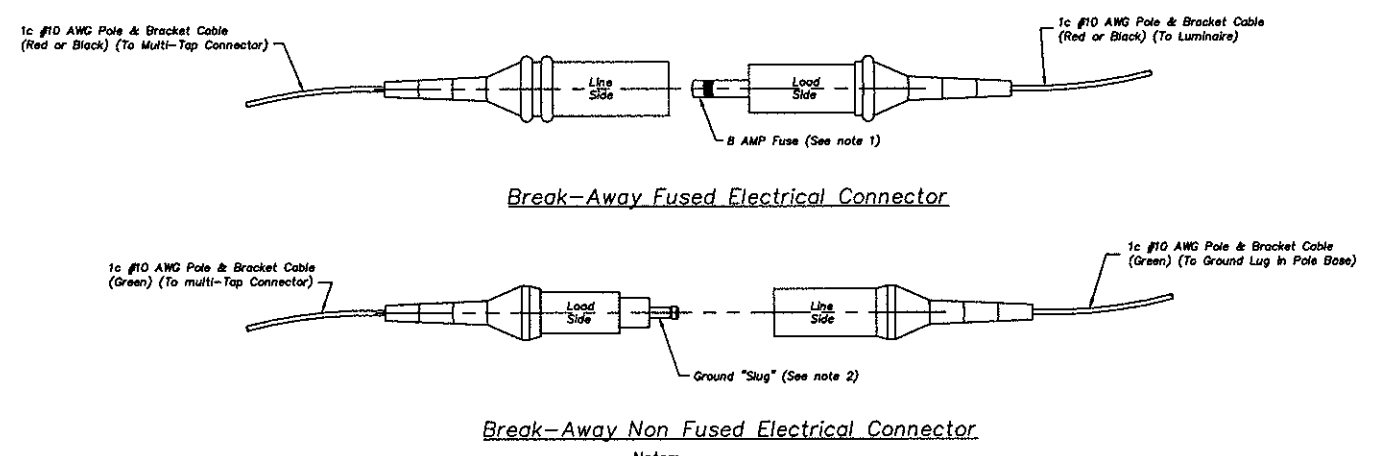
OP Designation	Mounting Height (A)	Luminaire Arm(s)				Pole Shaft				Shoe Base		Anchor Bolt for Concrete Foundation		Screw-in Anchor Foundation
		Luminaire 1		Luminaire 2		Base O.D.	Top O.D.	Minimum Wall Thickness	Shaft Lengths (C)	Bolt Circle (BC)	Diameter	Length	Hook	Type
		Length (B)	Type	Length (B)	Type									
OP14	14	NA	NA	NA	NA	6"	3"	0.156"	14'	9.5"	0.75" 10NC	25"	3"	R
OP301	30	6, 8	A	NA	NA	7"	4.5"	0.188"	27'-6"	11"	1.0" BNC	36"	4"	T1
OP302	30	12	B	NA	NA	8"	6"	0.188"	26'-8"	11"	1.0" BNC	36"	4"	T1
OP303	30	8	A	8	A	8"	4.5"	0.188"	27'-6"	11"	1.0" BNC	36"	4"	T1
OP401	40	6, 8	A	NA	NA	8"	4.5"	0.219"	37'-6"	11.5"	1.0" BNC	36"	4"	F1
OP401	40	6, 8	A	6, 8	A	8"	4.5"	0.219"	37'-6"	11.5"	1.0" BNC	36"	4"	F1
OP402	40	10,12,15	B	NA	NA	8"	6"	0.219"	36'-8"	11.5"	1.0" BNC	36"	4"	F1
OP403	40	8,12,15	B	8,12,15	B	10"	6"	0.219"	36'-8"	14.5"	1.0" BNC	48"	4"	F2

Table 1 Notes:

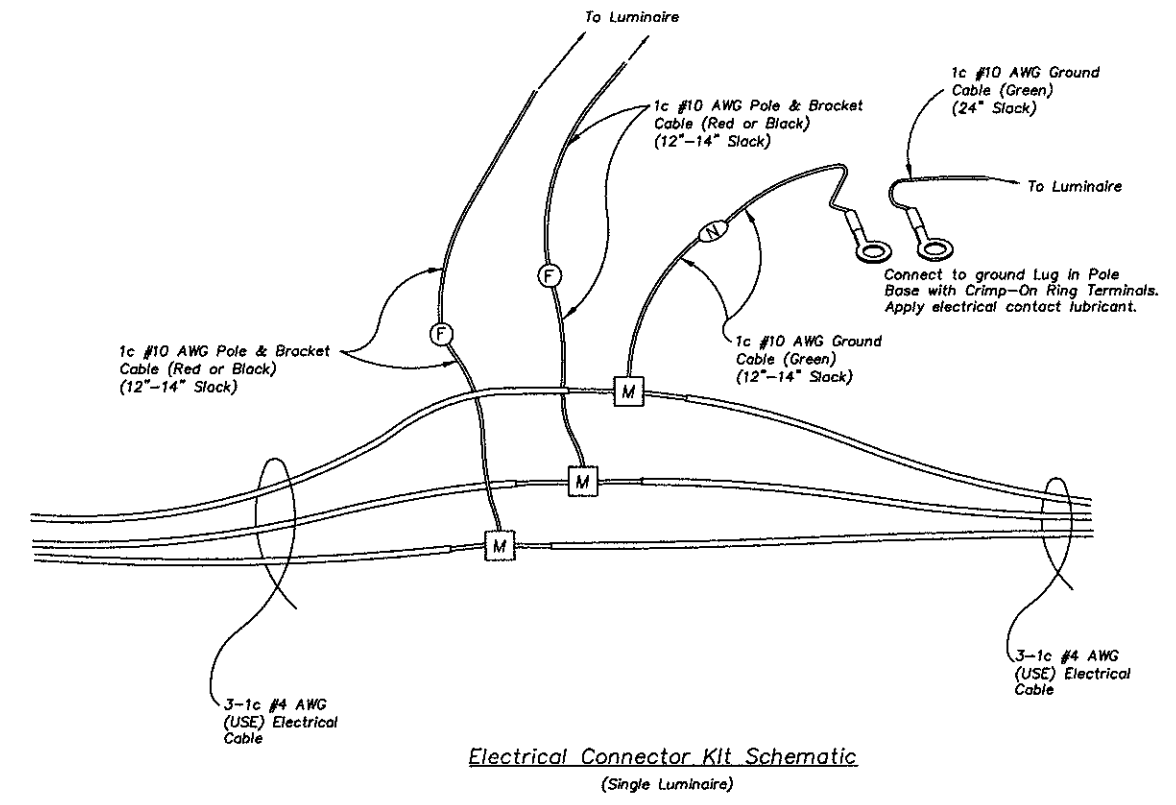
- The intent of these material restrictions is to provide interchangeability of both types of luminaire arms for mounting on either the 30' or 40' pole.
- Luminaire arms - 6' & 8' arms shall be single member (Type A) unless otherwise noted on the plans; 10, 12 & 15' arms shall be truss-type (Type B).
- Table 1 represents pole shaft dimensions for a 30' and 40' pole to be installed with breakaway 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).
- Anchor bolts/threaded studs 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.
- Pole OP403 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'.

General Notes:

- All poles, arms, and miscellaneous equipment shall conform to these details and as specified in the latest edition of the Overland Park Streetlighting Specification. The poles and arms shall be dimensioned to enable interchangeability.
- 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.
- 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.
- 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.
- All 14' poles shall be installed with the handhole oriented 180 degrees from the direction vehicles approach.

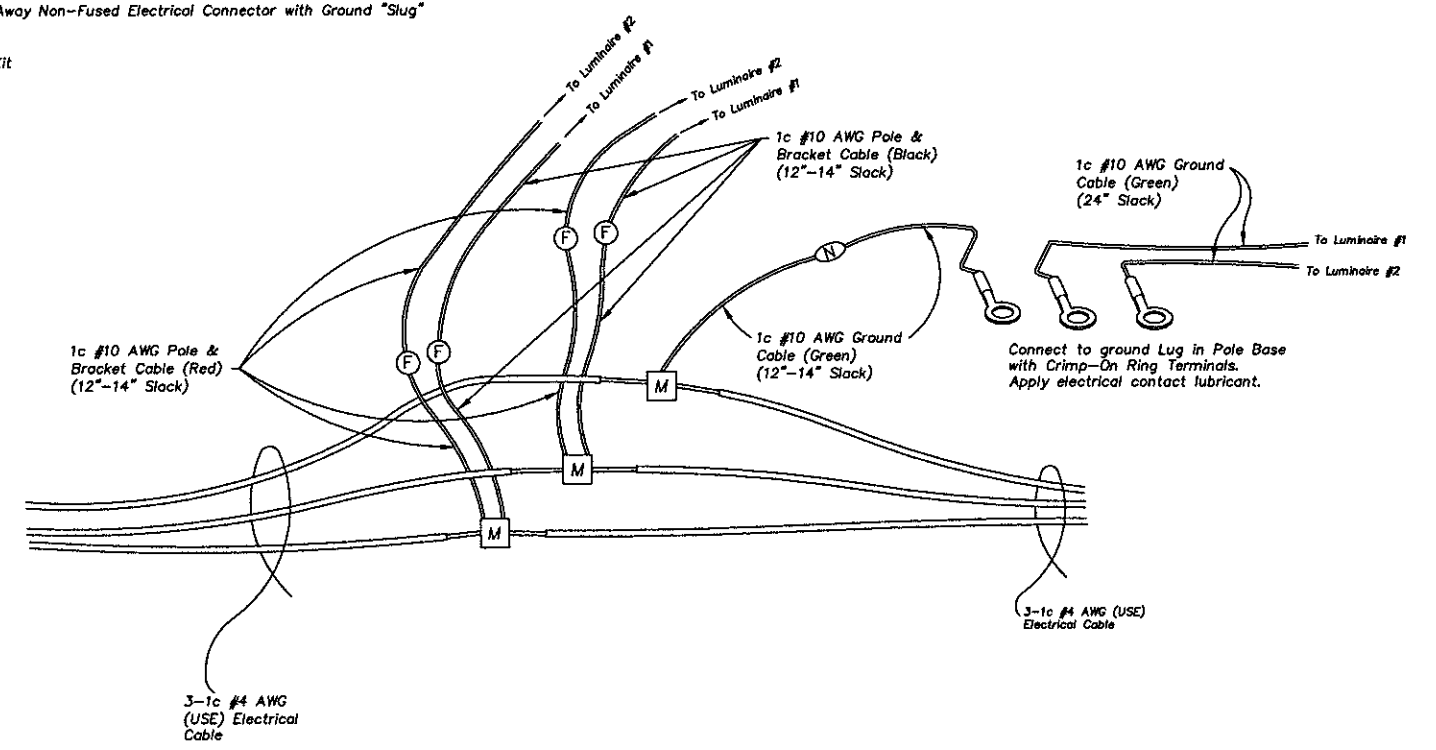


- Notes:
1. Fuse remains in "Load Side" after break-away.
 2. Ground "Slug" remains in "Load Side" after break-away.



Legend

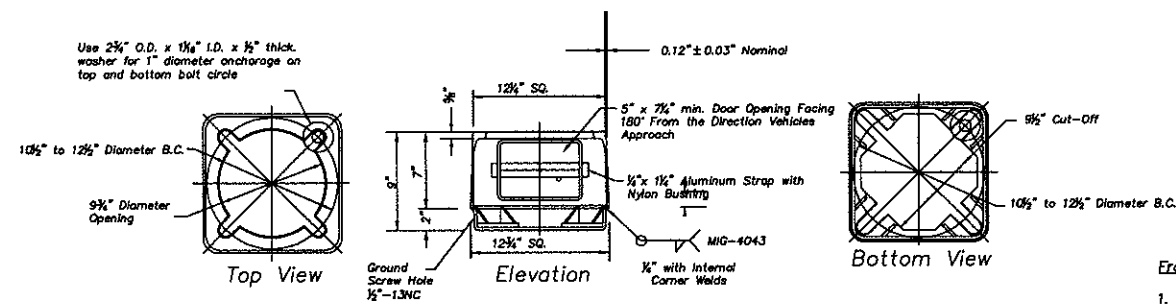
- M Multi-Tap Electrical Connector
- F Break-Away Fused Electrical Connector with 8 Amp Fuse
- N Break-Away Non-Fused Electrical Connector with Ground "Slug"
- S Splice Kit



- Notes:
1. Red cables shall be connected to west or north oriented luminaire. Black cables shall be connected to east or south oriented luminaire.
 2. The specified cable slack shall be provided on each side of the fused and un-fused connectors.

Electrical Connector Kit Schematic (Twin Luminaires)

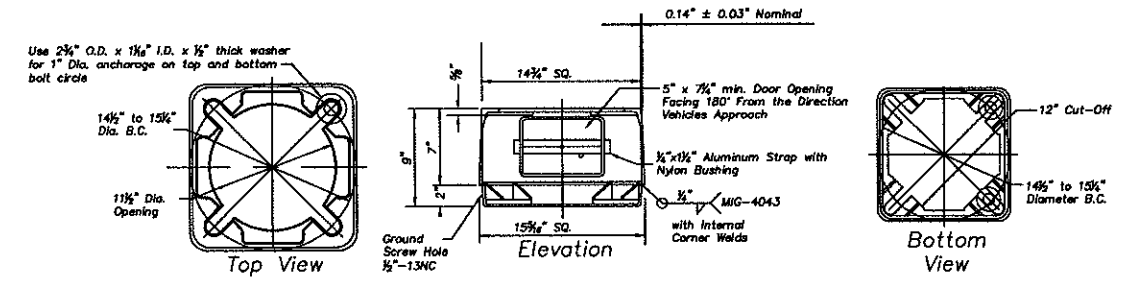
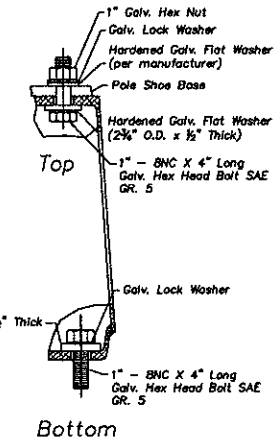
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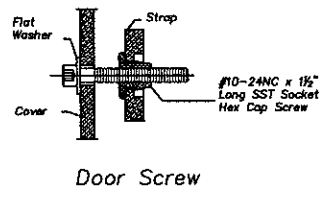
Frangible Base (30' Pole - Series 301, 302, & 303)
and (40' Pole - Series 401 & 402)

Frangible Base Notes:

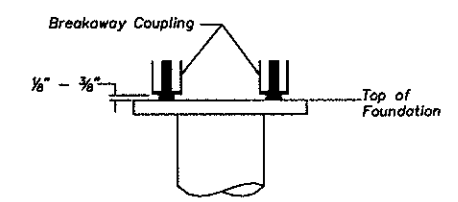
- Material shall conform to ASTM designation B108 Alloy 356-T6.
- Base shall conform to breakaway criteria of AASHTO Standard Specifications for structural supports for highway signs, luminaires and traffic signals (Latest Edition)
- Fastener Quantities:
 - (8) 1" - BNC x 4" long Galvanized Hex Head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



Frangible Base (40' Pole - Series 403)

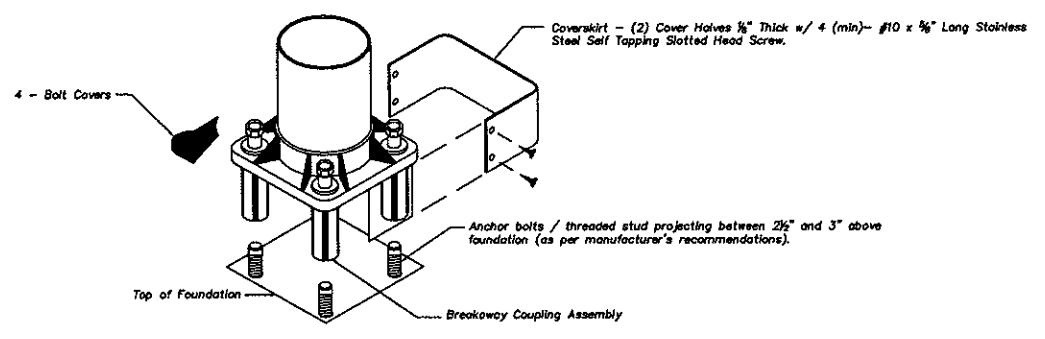


Frangible Base Details



Breakaway Coupling Installation

- Coupling Notes:
- Shall be as per manufacturer's recommended procedures.
 - All 30' & 40' poles shall be furnished with breakaway couplings or breakaway bases as detailed



Breakaway Coupling Assembly & Coverskirt Detail