General Notes:

1. All work shall conform to the latest edition of the City of Overland Park Design and Construction Manual and all material shall be from the City of Overland Park Approved Materials List available at City Hall.

2. All traffic control in conjunction with the EV Charging System 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.

3. The Contractor shall stake the locations for all equipment to be installed. The stations and offsets provided are to the center of the EV Charging System 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 traffic inspector 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 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.

6. All circuit cables in junction & service boxes and poles shall be identified with color-coded tape around individual cables 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.

7. The contractor shall be responsible for removing and salvaging existing equipment as noted.

8. 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.

9. Conduit shall be bored under all street and parking lot pavements that are in place at the time of installation. Saw cutting existing street or parking lot 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.

10. 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 traffic 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 diggable flowable fill unless otherwise directed, to below the proposed pavement surface.

11. All cable connections at junction boxes and service boxes shall be watertight.

12. 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 installation can be made, including conduit installations.

13. 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.

14. The contractor shall install service conduit with electrical service cable from the control center to the Evergy power source.

15. All areas disturbed by construction shall be sodded as directed by the Engineer. The grass medians shall be seeded and brick pavers restored, unless otherwise noted or directed. Sidewalk damaged by construction or removed due to construction shall be replaced as directed, in accordance with the Overland Park Municipal Code requirements.

16. The contractor shall be required to apply stick-on street address numerals on the controller cabinet as indicated in the plans. Letters and numerals should be 2 inch high. (See Stencil Detail)

17. 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.

18. The ends of all conduit in service boxes, junction boxes, and in the controller cabinet shall be plugged with duct seal.

19. Forms (including rebar cages, etc.) conduit and anchor bolts shall be installed and in place for review by the inspector a minimum of 24 hours in advance of the proposed concrete placement. No concrete placement shall begin after 3:00 pm.

20. The contractor, or their supplier, shall at the contractor's expense, submit a concrete mix design for approval by the Kansas City Metro Materials Board (KCMMB) prior to placement of any concrete. Additional information regarding KCMMB approved concrete mix designs is available on the following website: www.kcmmb.org.

21. The Contractor shall use City of Overland Park Approved Materials List, and submit catalog cuts for materials not on the approved materials list.

EV Charging Legend

Existing

- 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
- 1.5" HDPE Conduit
- 2" HDPE Conduit
- 3" HDPE Conduit
- HDPE Fiber Optic Conduit w/Locating Cable
- Evergy Service Pedestal

Proposed

- 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
- EV Pad Mounted Control Center
- EV Station Equipment
- 1.5" HDPE Conduit
- 2" HDPE Conduit
- 3" HDPE Conduit
- HDPE Fiber Optic Conduit w/Locating Cable
- Construction Note Number
- Electrical Service
- Evergy Service Pedestal

26 0000 - Basic Electrical

1. All requirements under division one and the general and supplementary conditions of these specifications shall be a part of this section. Each contractor shall be responsible to become thoroughly familiar with all its contents as to requirements which affect this division or section. The work required under this section includes all material, equipment, appliances, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate each systems functioning as indicated by the design and the equipment specified.

2. Coordinate all work with other contractors, subcontractors and existing conditions so that various components of the electrical systems will be installed at the proper time; will fit the available space; and will allow proper service access to all equipment.

3. All work shall comply with the locally adopted electrical code and all applicable laws, codes, recommendations, regulations, and interim amendments, of the governmental bodies having jurisdiction including ada compliance. All electrical work shall be performed in compliance with all applicable governing safety regulations, including OSHA regulations. All permits, licenses, fees and inspections required for the work under this contract shall be obtained and paid for by the contractor. All safety lights, guards and signs required for the performance of the electrical work shall be provided by and operated by the electrical contractor.

4. The drawings are schematic in nature, but show the various components of the systems approximately to scale and attempt to indicate how they are to be integrated with other parts of the building. Figured dimensions shall be taken in preference to scaled dimensions. Determine exact locations by job measurements, checking the requirements of other trades, and by reviewing all contract documents. The contractor will be held responsible for errors which could have been avoided by proper checking and inspection. Provide all fixtures, devices, accessories, offsets, and materials necessary to facilitate the system's functioning as indicated by the design and the equipment furnished by others.

5. Material and workmanship:
   A. All material and apparatus shall be new and in first class condition. All material and apparatus shall have markings or a nameplate identifying the manufacturer and providing sufficient reference to establish quality, size and capacity. All workmanship shall be of the finest possible by experienced mechanics of the proper trade. In general, all materials and equipment shall be of commercial specification grade in quality. Light duty and residential type equipment will not be acceptable. All hoists, staging, runways, tools, machinery and equipment required for the performance of the electrical work shall be furnished by this contractor. Material and equipment shall be stored and maintained in clean condition, and protected from weather, moisture, and physical damage. All electrical materials used in this work shall be approved by a nationally recognized testing laboratory and shall bear their label of approval.

6. Submittals:
   A. Shop drawings shall be submitted electronically in pdf format. All electronic submittals shall be sent to the engineer. Each shop drawing shall include a letter indicating all deviations from the drawings and/or specifications.
   B. Before submitting a shop drawing or any related material to engineer for review, contractor shall:
      B.1. Review each submission for conformance with the means, methods, techniques, sequences and operations of construction, safety precautions and programs incidental thereto, all of which are the sole responsibility of the contractor.
      B.2. Approve each such submission before submitting it to the engineer; and so stamp each such submission before submitting it. Engineer shall assume that no shop drawing or related submittal comprises a variation unless contractor advises engineer otherwise via a written instrument, which is acknowledged by engineer in writing.
      B.3. Any shop drawing being resubmitted shall be flagged and clouded where changed.
   C. Mark any features/options being provided. Delete or put a line through features/options that are not being provided.
   D. Checking of shop drawings is a gratuitous assistance by the engineer and shall not relieve any responsibility for deviations, errors, or omissions which may exist in the shop drawings.
   E. Contractor shall be responsible for all quantities and dimensions to be confirmed and correlated at the jobsite.

7. Substitutions
   A. The engineer shall be the sole and final judge as to the suitability of items substituted for those specified. Requests for substitutions shall be submitted no later than ten (10) days prior to the day of bid opening. If prior approval is not granted, equipment shall be furnished as specified or as shown on the plans.
   B. The entire cost of all changes of any type due to substitutions for materials specified shall be borne by the contractor at no extra cost to the owner and shall reimburse other trades of additional cost due to substitution.

8. Adjusting, aligning and testing
   A. All electrical equipment furnished under this division and all electrical equipment furnished by others shall be adjusted, aligned and tested for proper operation. Complete wiring systems shall be free from short circuits.
   B. Maintain, on the project premises, the following at all time: a ture rms reading voltmeter, a true rms reading ammeter, and a megger insulation resistance tester. Provide test data ratings as requested or as required.

26 0519 - LV conductors and cables

1. Contractor shall use City of Overland Park Approved Materials List. Cable sizes may be increased from standard streetlight cable sizes per the EV station plans.

2. Connectors for conductors: provide UL type factory-fabricated, metal connectors of sizes, ratings, materials, type and classes for each service. Connectors are to be designed and sized so as to have a current rating equal or greater than the cable being connected. Where not indicated, provide proper selection as determined by installer and approved by engineer to comply with installation requirements and electrical code standards.

3. Installation of wires and cables:
   A. Pull conductors simultaneously where more than one is being installed in same raceway. Use NRTL listed pulling compound or lubricant, where necessary.
   B. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than no. 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.
   C. Where raceways containing conductors no. 4 AWG or larger enter a cabinet, box enclosure, or raceway; the conductors shall be protected by a substantial fitting providing a smoothly rounded insulating surface.
   D. Where more than one ground, common neutral, or common phase conductor enters a box, all like conductors shall be in good electrical contact with each other and the arrangement shall be such, that the disconnecting or removal of a device fed from the box, will not interfere with or interrupt service to the remainder of the branch circuit wiring.
   E. Connect EV manufacturer provided wire either in EV head using Blackburn CSB 4-2 or Polaris ITO-4 Multi Tap Connectors or in the nearest service box or junction box using street light waterproof submersible splice kits. Extend wiring as required to match manufaturer in compliance with NEC. Provide 1.5" conduit to each EV station.

26 0526 - Grounding

1. The electrical service, all transformers, conductors, conduits, and similar conducting surfaces in this contract which require grounding shall be permanently and effectively grounded in a thorough and efficient manner in conformance to the adopted electrical code.

2. Extent of electrical grounding and bonding work is indicated by drawings and as specified herein. Grounding and bonding work is defined to encompass systems, circuits, and equipment.

3. Except as otherwise indicated, provide electrical grounding and bonding systems indicated with assembly of materials, including, but not limited to, cables/wires, connectors, solderless lug terminals, grounding electrodes and plate electrodes, bonding jumper braid, and additional accessories needed for a complete installation. Where more than one type component product meets indicated requirements, selection is installer's option. Where materials or components are not indicated, provide products which comply with building codes, UL, and IEEE requirements and with established industry standards for those applications indicated.

4. Install electrical grounding and bonding systems as indicated, in accordance with manufacturer's instructions and applicable portions of the building codes, NECA's "standard of installation", and in accordance with recognized industry practices to ensure that products comply with requirements.

5. Ground "service entrance" system neutral to:
   A. Driven ground rod
      A.1. 5/8" x 10' copper clad steel core rod.

6. Raceway systems shall not be used as grounding method. All branch and feeder conduits to have a grounding conductor installed with phase and neutral conductors. Size of ground conductor to be in accordance with the adopted electrical code. Terminate feeder and branch circuit insulated equipment grounding conductors with grounding lug, bus, or bushing.

7. Grounding electrode conductors, where not installed as part of a branch circuit or feeder, shall be installed in PVC conduit, to protect the wiring from physical damage.

8. Route grounding connections and conductors to ground and protective devices in shortest and straightest paths as possible to minimize transient voltage rises.

9. Apply corrosion-resistant finish to field-connections, buried metallic grounding and bonding products, and places where factory applied protective coatings have been destroyed, which are subjected to corrosive action

26 0533 - Raceways and Boxes

1. This section includes raceways and boxes for electrical wiring. Types of raceways are as follows:
   A. Rigid Metal Conduit (RMC)
   B. Electrical Metallic Tubing (EMT)
   C. High Density Polyethylene (HDPE)
   D. Rigid Polyvinyl Chloride Conduit (PVC)

2. Installation of MC and AC cabling is not allowed.

3. Contractor shall use City of Overland Park Approved Materials List and submit catalog cuts for materials not on the approved list.

4. Installation:
   A. Install electrical raceways in accordance with manufacturer's written installation instructions, applicable requirements of the electrical code, complying with recognized industry practices.
   B. Conduit shall be installed as a complete system, continuous from cabinet or fitting, and be so mechanically and electrically connected that adequate electrical continuity from one conduit to another is secured.
   C. For all power wiring, install insulated ground wire, sized per adopted electrical code, unless shown larger.
   D. Where PVC conduit is used for individual ground conductor, do not use metallic supports that completely encircle conduit.

26 2743 - Electric-Vehicle Service Equipment - AC Level 2 Rev.

1. This section includes EVSE that provides AC Level 2 EV charging.
   A. Field conditions
   Wireless survey: complete wireless survey to determine if wireless provider signals meet or exceed manufacturer's recommended minimum values.
   Basis-of-design product: subject to compliance with requirements, provide Series 7 Level 2 commercial charging solution by SEMAConnect/Blink
   Comply with the following:
   NFPA 70.
      A.1. UL 991.
      A.2. UL 1998-3.
      A.3. UL 2594.
      A.4. IEC 60335
      A.5. IEC 60364.
      A.6. IEC 61851-1.
      A.7. IEC 61851-22.
      A.8. SAE J1772 for two-vehicle chargers.
      A.9. CHADEMO for CHADEMO chargers.

   Comply with the United States access board's ADA-ABA accessibility guidelines.

   B. Metering: Revenue-Grade Meter.
   C. Input power:
   Standard charger: 60A, 208/240 V AC, 60 HZ, single phase per vehicle.
   Shared charger on shared circuit: 60A, 208/240 V AC, 60 HZ, single phase per vehicle.

   D. Output power:
   Standard charger: 11.52 KW for each connected vehicle.
   E. Integral GFCI.
   Auto-GFCI fault retry.
   EVSE mounting: pedestal mount.
   F. Enclosures:
   Rated for environmental conditions at installed location.
      F.1. Indoor dry and clean locations: NEMA 250, type 1.
      F.2. Outdoor locations: UL 50, Type 3R.
      F.3. Tamper resistant.
   G. EV cable and connectors:
   SAE J1772 connector.
      G.1. Double connectors with locking holster.
      G.2. Lockable connectors.
      G.3. 18-ft. Cable.

   H. Status indicators:
      H.1. LEDS to indicate power, charging, charging complete, system status, faults, and service.

   I. Display screen:
      I.1. LCD; day/night mode viewable; UV-protected display; automatic wakeup.
      I.2. Displays power, charging, charging complete, remote control, system status, faults, and service.

   J. Networking:
      J.1. WAN Communications: Cellular LTEe-fdd b2/b4/b12 + umts/hspda b2/b5 - LTE-fdd b4/b13.
      J.2. Capable of remote configuration and reporting.

   K. Payment system:
      K.1. PCI compliant.
      K.2. Capable of remote control and authorization.

   L. Communication protocol: OCPP 1.6 or higher.
      L.1. Provide multiple units having one unit designated as master unit that is configured as a gateway unit between EVSE and charging network.

CITY OF OVERLAND PARK
DEPARTMENT OF PUBLIC WORKS

NO.	DATE	REVISIONS	BY
1	03/17/2023	2023 Standard Details	JLL
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EV CHARGING STATION GENERAL NOTES

SHEET NO. 01 | TOTAL SHEETS 03

March 17, 2023 4:21 PM
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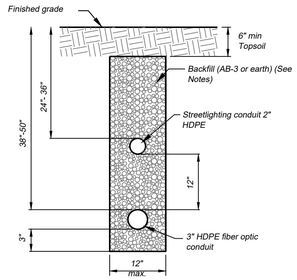
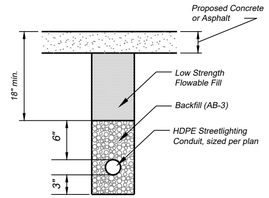
Bill of Materials (1)

Item	Unit	Quantity	
EV Station Equipment (Single Port)	Each	-	(2)
EV Station Equipment (Dual Port)	Each	-	(2)
Type 1 Service Box	Each	-	
Type 2 Service Box	Each	-	
Type 1 Junction Box	Each	-	
Type 2 Junction Box	Each	-	
EV Control Center (8 (Circuit) (400 amp; 240 V)	Each	-	
EV Control Center Station Foundation (8 Circuit)	Each	-	
⅝" x 10'-0" Ground Rod with Welded Connection for EV Control Center	Each	-	
Schedule 40 PVC Conduit, 1" (for Equipment Ground Cable)	Ln. Ft.	-	
SDR 13.5 HDPE (Black w/ Red Stripes) Evergy Electrical Service Conduit, 3" or Schedule 40 PVC, 3"	Ln. Ft.	-	
SDR 13.5 HDPE (Gray) Conduit, 1.5"	Ln. Ft.	-	(3)
SDR 13.5 HDPE (Gray) Conduit, 2"	Ln. Ft.	-	(3)
SDR 13.5 HDPE (Gray) Conduit, 3"	Ln. Ft.	-	(3)
SDR 13.5 HDPE (Gray) Conduit, 4"	Ln. Ft.	-	
Electrical Service Power Cable #500 MCM USE-2, RHW-2 COPPER	Ln. Ft.	-	
#4 USE-2, RHW-2 COPPER	Ln. Ft.	-	
#6 USE-2, RHW-2 COPPER	Ln. Ft.	-	
#8 USE-2, RHW-2 COPPER	Ln. Ft.	-	
#10 USE-2, RHW-2 COPPER	Ln. Ft.	-	
Solid Copper Ground Cable (#1/0 AWG)	Ln. Ft.	-	
Locating Cable (Red) 1c No. 10 AWG	Ln. Ft.	-	
Waterproof Cable Splice Kit	Each	-	
Remove Existing Equipment	Each	-	
Relocate Existing Equipment	Each	-	

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.*
2. *Provided by the City.*
3. *If PVC is used it shall be trenched.*



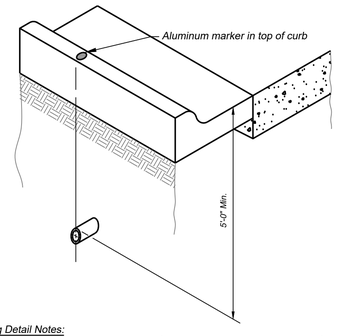
Trench in Unpaved Areas



Trench in Proposed Paved Areas

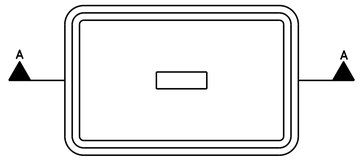
Trenching Notes:
1. *All trenches for conduit under proposed paved surfaces (drives, streets and sidewalks) shall be backfilled with AB-3 to 6" above the conduit and low strength flowable fill to below the proposed paved surface or existing terrain, unless otherwise directed.*
2. *Backfill in unpaved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

Trenching Details

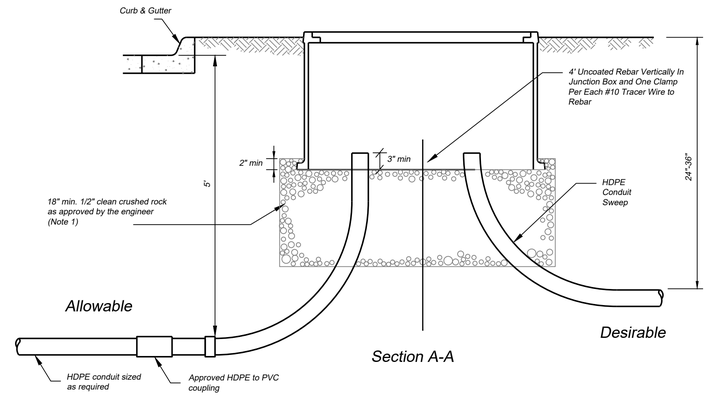


Conduit Marking Detail Notes:
1. *Conduit under all roadway and parking lot surfaces shall be placed a minimum of 5'-0" below the top of pavement and shall extend to a junction box or service box. Refer to The City of Overland Park Horizontal Directional Drilling Guidelines Handbook, latest edition for 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, or outside edge of shoulder, directly over the conduit with epoxy. Markers shall be embedded such that the top is flush. Aluminum markers will be furnished by The City of Overland Park.*
2. *The contractor shall notify the City of Overland Park, Department of Public Works Traffic Services Division, 895-6000, 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.*

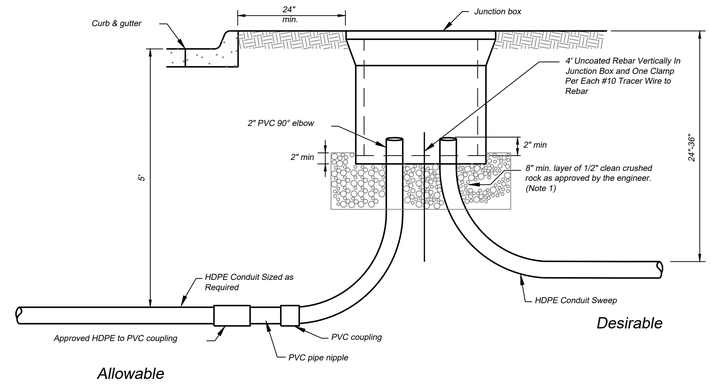
Conduit Marking Detail



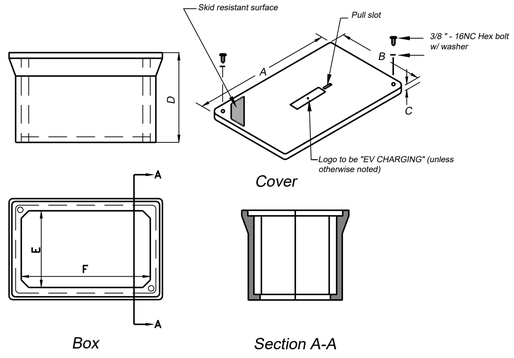
Plan



Service Box Installation Detail



JUNCTION BOX INSTALLATION DETAIL



Type	Approximate Dimensions (Inches)					
	A	B	C	D	E	F
1-Junction	12⅞	12⅞	¾	12¾	9¾-10½	9¾-10½
2-Junction	18-18½	11¼ -11½	2	12	9½-10¼	16½-17¼
1-Service	35⅝	24	3	24	22¼	33⅛
2-Service (1)	47⅝	30⅛	3	24	28⅛	45⅝

Box Notes:
1. *The Type 2 Service Box shall have a two-piece overlapping cover.*
2. *Cover label shall be applied with epoxy.*

Fiberglass Reinforced Polymer Concrete Junction & Service Box Details

FIBERGLASS REINFORCED POLYMER CONCRETE JUNCTION BOX DETAIL

CITY OF OVERLAND PARK
DEPARTMENT OF PUBLIC WORKS

NO.	DATE	REVISIONS	BY
1	03/17/2023	2023 Standard Details	JLL
2			
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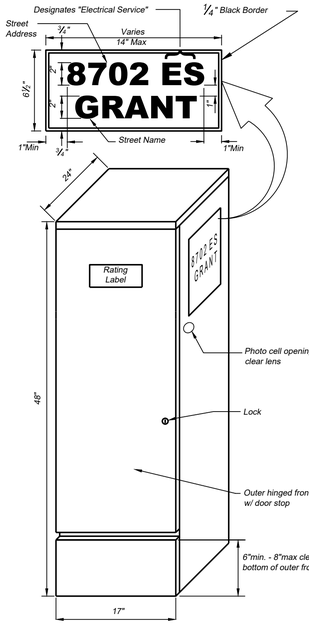
EV CHARGING BILL OF MATERIALS/ BOX DETAILS

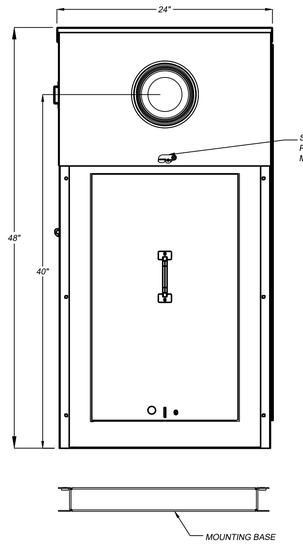
SHEET NO. 02 | TOTAL SHEETS 03

Stencil Detail

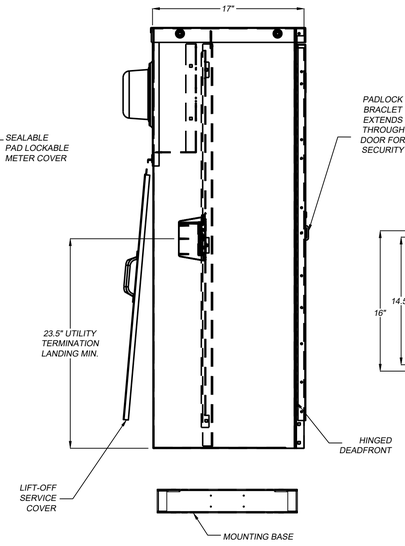


Front

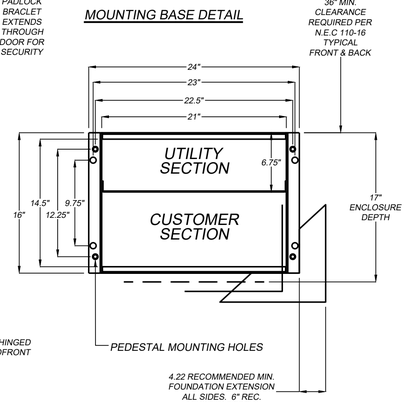
Stencil Detail Note:
2" high black EC film letters and numerals applied to a one piece Type XI retro-reflective sheeting with a black EC film border by the contractor. Apply on "street side" of cabinet facing the street referenced by the address.

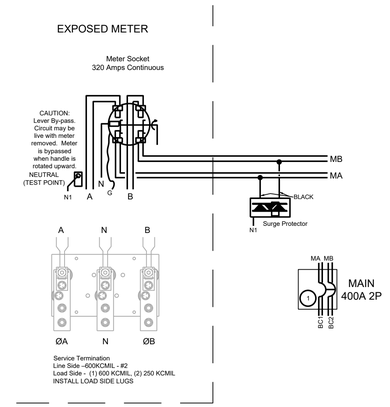


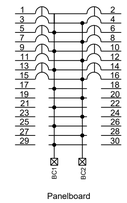
Back



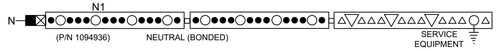
Side



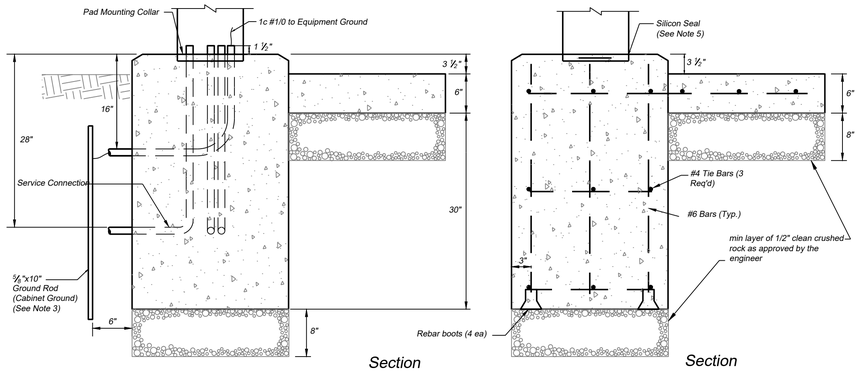




NOTE:
60A Breaker Lugs can accept the following wire sizes:
Copper: Sizes 8 to 4 AWG



PAD MOUNTED PEDESTAL



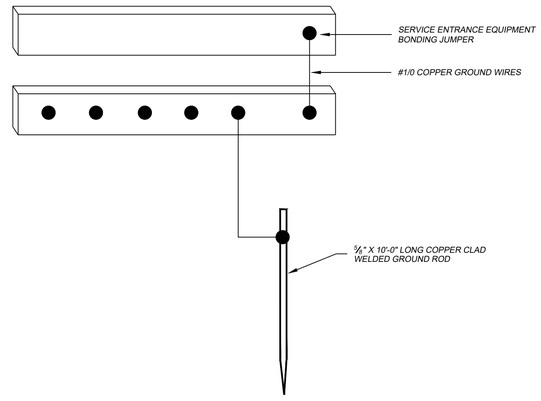
Concrete Foundation

Concrete Foundation Notes:

1. *See the plan sheets for specific details (i.e. pad size, conduit requirements for circuit cables) for each individual control center.*
2. *All concrete used in this work shall meet the requirements of the Overland Park Municipal Code and shall be KCMMB4K concrete (f'c = 4,000 psi) with a 4" slump.*
3. *Contractor to provide ground rod(s) as required for maximum of 25 ohms resistance to ground. Contractor shall be required to test with inspector present.*
4. *Duct Seal shall be applied at all conduit entrances after cable installation.*
5. *Seal the bottom edge of the cabinet at the contact point with the concrete pad with silicon sealant.*
6. *All reinforcing steel shall be ASTM A615 GR40.*
7. *All concrete surfaces shall be brushed and sealed w/curing compound.*
8. *All reinforcing steel shall be set 3" clear from all forms and trench walls. Rebar boots shall be used on the vertical steel in each of the four corners to maintain proper clearance.*
9. *Dimensions of the mounting collar varies between manufacturers, consult actual mounting collar prior to setting any conduits.*

Electric Vehicle Controller Notes:

1. *Contractor performing work on any electric vehicle 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.*
2. *A mounting collar shall be included with cabinet.*



Ground Rod Connection Detail

CITY OF OVERLAND PARK
DEPARTMENT OF PUBLIC WORKS

NO.	DATE	REVISIONS	BY
1	03/17/2023	2023 Standard Details	JLL
2			
3			

EV CHARGING PEDESTAL DETAILS

SHEET NO. 03 | TOTAL SHEETS 03