

PROFESSIONAL SEAL



MEP CONSULTANT
IMEG
1600 BALTIMORE, SUITE 300
KANSAS CITY, MO 64108
P: 816-842-8437
PROJECT # 23002446.00

MISSOURI STATE FAIR EV CHARGERS

Missouri State Fairgrounds
2503 W 16th Street
Sedalia, MO 65301



OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

DEPARTMENT OF
AGRICULTURE

PROJECT
MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGNER: IMEG, CORP.

PROJECT NUMBER: F2305-01

DESIGNER: IMEG, CORP.

SITE NUMBER: 1501
ASSET NUMBER: 3511501147

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
AGRICULTURE

MISSOURI STATE FAIR
EV CHARGERS
SEDALIA, MO

Missouri State Fairgrounds
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PROJECT # F2305-01
SITE # 1501
ASSET # 3511501147

REVISION: BID DOCUMENTS
DATE: 11/16/2023
REVISION: _____
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DATE: _____

DRAWN BY: ZMB
CHECKED BY: PIP
DESIGNED BY: ZMB

SHEET TITLE:

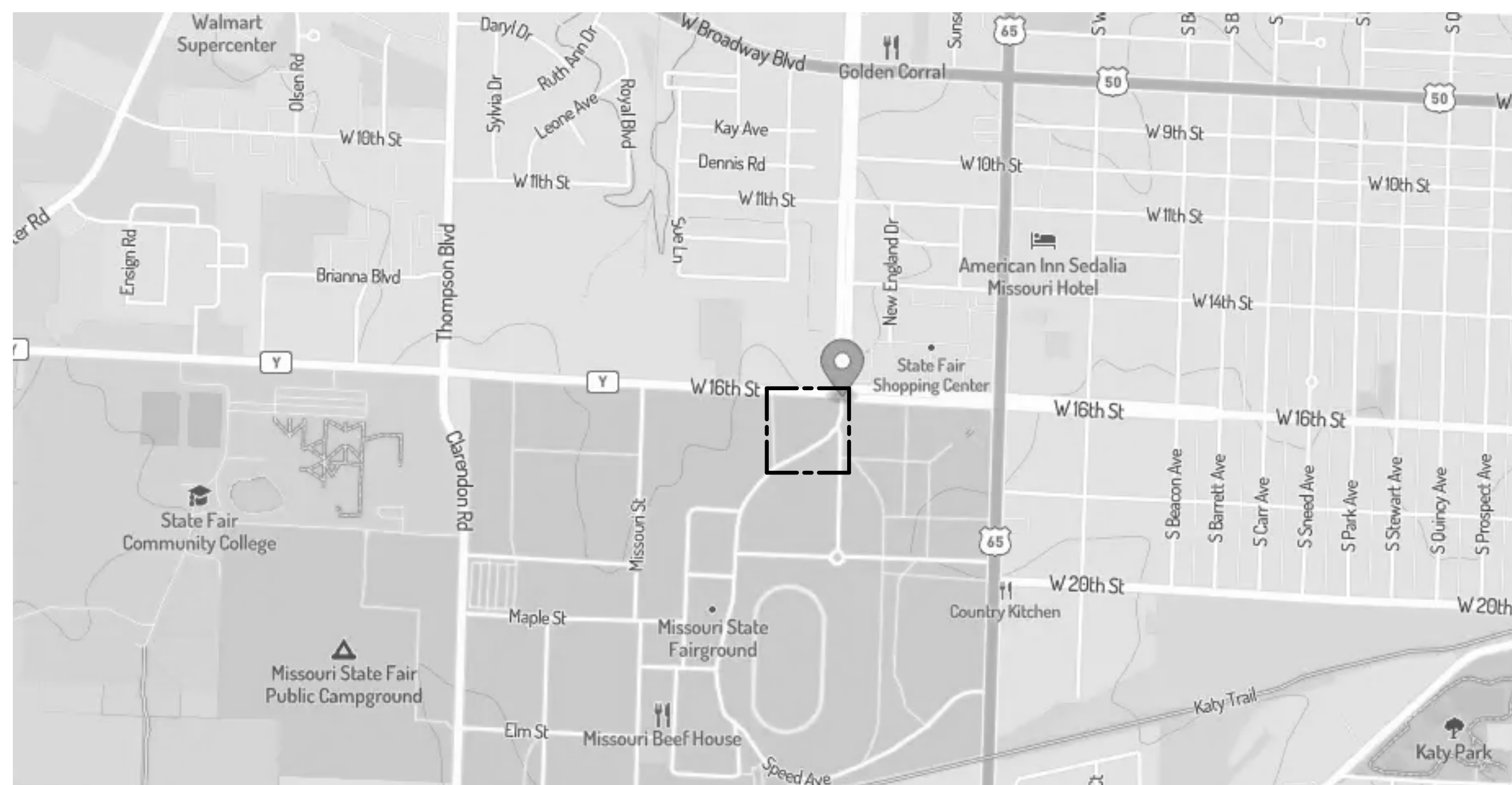
GENERAL
COVERSHEET

SHEET NUMBER:

G-001

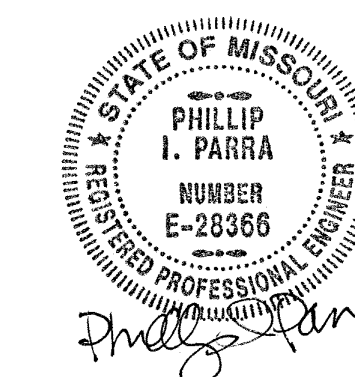
1 OF 6 SHEETS
11/16/2023

MAP LOCATION:



NOTES

1. THE MATCHLINE INDICATES AREA WHERE SCOPE OF WORK WILL OCCUR WITHIN THE MISSOURI STATE FAIRGROUNDS.



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SHEET TITLE:

ELECTRICAL
COVERSHEET

SHEET NUMBER:

E-000

2 OF 6 SHEETS

11/16/2023

ELECTRICAL INSTALLATION NOTES:

- THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
- CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
- EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE SITE AND LANDSCAPING. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
- ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLEWIRE, AND EQUIPMENT.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS.
- A SITE SURVEY OF THE AREA SHALL BE PERFORMED TO LOCATE ALL EXISTING BURIED SITE UTILITIES.

ELECTRICAL EQUIPMENT TAGS

| TAG: | DESCRIPTION: | RELATED SPECIFICATION |
|----------|---|--|
| ATS-# | AUTOMATIC TRANSFER SWITCH. REFER TO TRANSFER SWITCH SCHEDULE | 26 36 00 |
| BAT-# | BATTERY RACK | 26 32 13 |
| C-# | GENERAL PURPOSE CONTACTOR | 26 28 21 |
| CR-# | CORD REEL | 26 27 26 |
| CT-# | CABLE TRAY | 26 05 36 |
| CUP-# | CUSTOM UTILITY PEDESTAL | 26 27 16 |
| DIM-# | DC DIMMING PANEL | 26 09 33 |
| DP-# | DISTRIBUTION PANEL | 26 24 16 |
| DR-# | DIMMING RACK | 26 09 33 |
| DT-# | GENERATOR DAY TANK | 26 32 13 |
| DTR-# | TRANSFORMER - DISTRIBUTION TYPE REFER TO TRANSFORMER SCHEDULE | 26 12 19 26 12 13 26 12 16 26 12 21 26 27 29 |
| EVCS-# | ELECTRICAL VEHICLE CHARGING STATION | 26 32 13 |
| GCC-# | TEMP. GENERATOR/LOAD BANK CONNECTION CABINET | 26 32 13 |
| GCP-# | GENERATOR CONTROL PANEL | 26 32 13 |
| GEN-# | GENERATOR | 26 32 13 |
| GPS-# | GENERATOR PARALLELING AND DISTRIBUTION SWITCHBOARD | 26 24 14 26 13 35 |
| GANN-# | GENERATOR REMOTE RADIATOR | 26 32 13 |
| HH-# | HANDHOLE | 26 05 33 |
| HT-# | HEAT TAPE | 26 05 17 |
| INV-# | LIGHTING INVERTER | 26 52 00 |
| M-# | METER DISTRIBUTION CENTER | 26 20 00 |
| MC-# | EXTERIOR MOUNTED METERING CABINET | 26 20 00 |
| MCC-# | MOTOR CONTROL CENTER, REFER TO MOTOR CONTROL SCHEDULE | 26 14 19 |
| MH-# | MANHOLE | 26 05 37 |
| MPC-# | PACKAGED POWER CENTER | 26 24 23 |
| MTS-# | MANUAL TRANSFER SWITCH, REFER TO TRANSFER SWITCH SCHEDULE | 26 36 00 |
| MVSG-# | MEDIUM VOLTAGE SWITCHGEAR | 26 13 13 26 13 34 |
| MX-# | MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE | 26 24 19 |
| PDU-# | POWER DISTRIBUTION UNIT | 26 26 00 |
| PS-# | PAD-MOUNT MEDIUM VOLTAGE SWITCH | 26 13 15 |
| R-# | RELAY | 26 09 39 |
| RA-ATS-# | REMOTE ANNUNCIATOR FOR ATS | 26 36 00 |
| RFFS-# | REMOTE FUEL FILL STATION | 26 32 13 |
| SB-# | SWITCHBOARD | 26 24 13 |
| SC-# | SECTIONALIZING CABINET | 26 13 14 |
| SG-# | SWITCHGEAR | 26 23 00 |
| SMP-# | SNOW MELT CONTROL PANEL | 26 05 17 |
| SMS-# | PAVEMENT MOUNTED DEICING CONTROLLER | 26 05 17 |
| SPD-# | SURGE PROTECTION DEVICE | 26 43 00 |
| UD-# | UNDERFLOOR DUCT - TRENCH DUCT - CELLULAR FLOOR DUCT | 26 05 38 |
| UPS-# | UNINTERRUPTIBLE POWER SUPPLY | 26 33 53 |
| US-# | UNIT SUBSTATION | 26 11 00 |
| VFD-# | VARIABLE FREQUENCY DRIVE - REFER TO VFD SCHEDULE | 26 29 23 |
| WD-# | WALL DUCT | 26 05 38 |

ELECTRICAL SYMBOL LIST

| SYMBOL: | TAG: | SPEC SECTION: | DESCRIPTION: |
|---------|----------------------|-----------------------|--|
| | GB | 26 05 26 | GROUND BUS |
| | IBT | 26 05 26 | INTERSYSTEM BONDING TERMINATION |
| | ECONN | 26 05 33 | ELECTRICAL CONNECTION |
| | JB | 26 05 33 | JUNCTION BOX |
| | RI-TECH | 26 05 33 | TECHNOLOGY OUTLET # - INDICATES NUMBER OF CATEGORY 6A CABLES AND PORTS PROVIDED WITHIN SAME FACEPLATE |
| | DEM | 26 09 13 | ENERGY METER |
| | DPM | 26 09 13/ 26 24 13 | DIGITAL POWER METER |
| | ITDM | 26 24 13 | IMPULSE-TOTALIZING DEMAND |
| | EEM | 26 09 13 | EXTERNAL ENERGY METER |
| | PQM | 26 09 13 | POWER QUALITY METER |
| | CPC | 26 09 16 | CONTROL POWER CABINET |
| | PB | 26 09 16 | MOMENTARY PUSHBUTTON OPERATOR |
| | PANEL_### | 26 24 16 | PANELBOARD - RECESS MOUNT |
| | PANEL_### | 26 24 16 | PANELBOARD - SURFACE MOUNT |
| | MX-#MS-# CB-#CS-# | 26 24 19 | MANUAL SWITCH / STARTER / COMBINATION STARTER / CIRCUIT BREAKER. REFER TO DISC/STA SCHEDULE |
| | IPP-# | 26 24 21 | ISOLATED POWER PANEL |
| | TR-#DTR-# | 26 22 00 | TRANSFORMER. REFER TO TRANSFORMER SCHEDULE |
| | CB-# | 26 28 16 | CIRCUIT BREAKER - SURFACE MOUNTED. REFER TO DISC/STA SCHEDULE |
| | CB-# | 26 28 16 | CIRCUIT BREAKER - FLUSH MOUNTED. REFER TO DISC/STA SCHEDULE |
| | DS-#FDS-#DSS-# | 26 28 16 | DISCONNECT. REFER TO DISC/STA SCHEDULE |
| | MD-SD-# | 26 28 16 | MOBILE DIAGNOSTICS SERVICE DISCONNECT. REFER TO DISC/STA SCHEDULE |

ELECTRICAL SYMBOL LIST

| SYMBOL: | TAG: | SPEC SECTION: | DESCRIPTION: |
|---------|--------------|---------------|---|
| | REC-DUP | 26 27 26 | DUPLEX RECEPTACLE, 125V |
| | REC-DUP-GFI | 26 27 26 | DUPLEX GFI RECEPTACLE, 125V |
| | REC-DUP-GFHR | 26 27 26 | GROUND FAULT DEVICE |
| | REC-DUP-WP | 26 27 26 | DUPLEX GFI WEATHERPROOF RECEPTACLE 125V |
| | REC-SIM-520R | 26 27 26 | SIMPLEX RECEPTACLE, 125V |
| | REC-SIM-530R | 26 27 26 | RECEPTACLE, 125V |
| | REC-SIM-550R | 26 27 26 | RECEPTACLE 125V, 50A, 125V |
| | REC-SIM-620R | 26 27 26 | RECEPTACLE, 6-20R, 250V |
| | REC-SIM-630R | 26 27 26 | RECEPTACLE, 6-30R, 250V |
| | REC-SIM-650R | 26 27 26 | RECEPTACLE, 6-50R, 250V |
| | REC-QUAD-WP | 26 27 26 | QUAD GFI WEATHERPROOF RECEPTACLE, 125V |

CONDUIT INSTALLATION SCHEDULE

THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONSTITUTE A VIOLATION OF APPLICABLE CODES OR ARE NOTED OTHERWISE ON THE DRAWINGS. THE INSTALLATION OF RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED IN THIS SCHEDULE. REFER TO CONDUIT AND BOXES SPECIFICATION 26 05 33 FOR ADDITIONAL INFORMATION.

| INSTALLATION TYPE | RMC | IMC | EMT | RTRC | PVC COATED RMC | PVC | PVC CONCRETE ENCASED | HDPE | ASR |
|---|-----|-----|-----|------|----------------|-----|----------------------|------|-----|
| UNDERGROUND SITE CONDUITS: | | | | | | | | | |
| WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION | X | | | X | | | X | | |
| 5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION | X | | | X | | X | | | |
| UNDER ROADS, DRIVES, AND VEHICLE TRAVELED WAYS. WHEN HDPE DIRECTIONAL BORING IS ALLOWED; PROVIDE PRESSURIZED GROUT | | | | | X | X | | X | |
| DUCTBANKS (REFER TO DUCTBANK DETAILS WHEN APPLICABLE) | | | | | | | | | |
| REINFORCING SHALL CONSIST OF ONE-HALF INCH DEFORMED BARS SPACED 12 INCHES ON CENTER, PARALLELING THE DUCTS ON BOTTOM, WITH ONE-HALF INCH DEFORMED TIE BARS SPACED TWELVE INCHES ON CENTERS. | | | | | | | X | | |
| BARS SHALL OVERLAP 40 DIAMETERS AND SHALL EXTEND 5' BEYOND ROADS, DRIVES, TRAVELED WAYS, ETC. | | | | | | | X | | |
| PROVIDE MINIMUM 3" CONCRETE COVER ON ALL SIDES OF REINFORCING. | | | | | | | X | | |
| ENTIRE DUCTBANK SHALL BE INSTALLED ON PRECAST CONCRETE PAVERS ON 3' CENTERS. | | | | | | | X | | |
| HAZARDOUS (CLASSIFIED LOCATIONS AS DEFINED BY THE NATIONAL ELECTRICAL CODE; COMPLETE WITH SCREWED FITTINGS AND CONDUIT SEALS) | X | | | | | | | | |
| DEFINITIONS: | | | | | | | | | |
| CONCRETE ENCASEMENT: CONDUIT WITH A MINIMUM OF 3" THICKNESS BETWEEN THE SURFACE OF THE CONCRETE AND THE NEAREST CONDUIT. CONCRETE TO BE DOWELED INTO THE FOUNDATION. | | | | | | | | | |

VIEW KEY

NAME → LEVEL NAME
10'-0" → HEIGHT ABOVE PROJECT 0'-0"

INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH

PLAN OR DETAIL NUMBER

PLAN OR DETAIL NAME

VIEW NAME

1/8" = 1'-0"

PLAN OR DETAIL SCALE

INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS

DETAIL REFERRED TO BY SECTION CUT

SHEET DETAIL IS LOCATED ON → T101

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)

NEW

EXISTING TO BE REMOVED (SHORT DASHED PATTERN)

NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)

EXISTING

EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN)

EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

HALFTONING DOES NOT MODIFY SCOPE.

TAG-E TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

APPLICABLE CODES

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

ELECTRICAL CODE: NFPA 70 (NEC) 2014 EDITION

LOCAL BUILDING CODE: 2015 EDITION

CONTRACTOR ABBREVIATION KEY

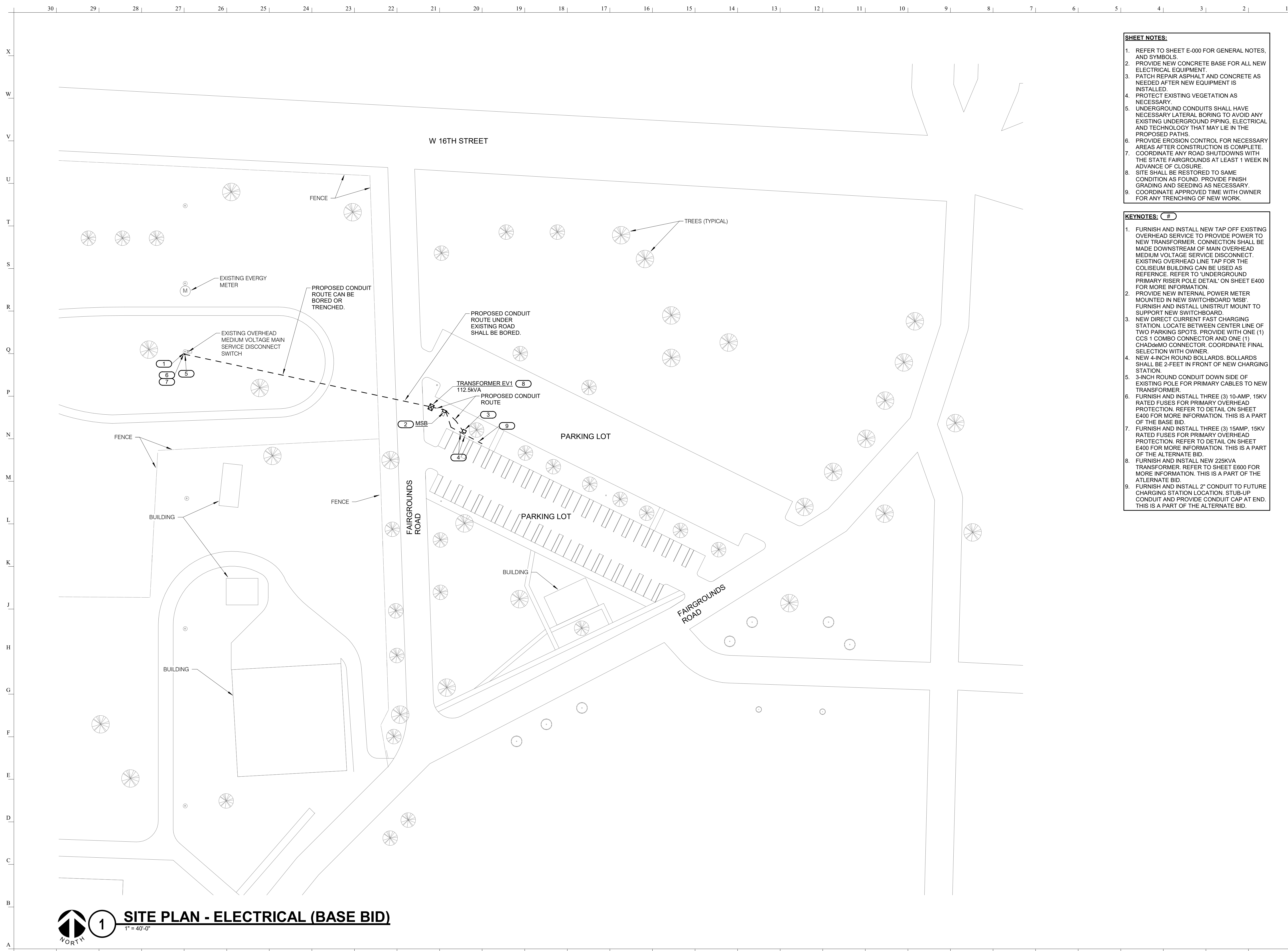
| ABBR: | DESCRIPTION: |
|--------|---------------------------------|
| A.C. | ASBESTOS ABATEMENT CONTRACTOR |
| A.V.C. | AUDIO/VISUAL CONTRACTOR |
| C.C. | CIVIL CONTRACTOR |
| C.M. | CONSTRUCTION MANAGER |
| E.C. | ELECTRICAL CONTRACTOR |
| F.P.C. | FIRE PROTECTION CONTRACTOR |
| F.S.C. | FOOD SERVICE CONTRACTOR |
| G.C. | GENERAL CONTRACTOR |
| H.C. | HEATING CONTRACTOR |
| M.C. | MECHANICAL CONTRACTOR |
| N.C.C. | NURSE CALL CONTRACTOR |
| P.C. | PLUMBING CONTRACTOR |
| S.C. | SECURITY CONTRACTOR |
| T.C. | TECHNOLOGY CONTRACTOR |
| T.C.C. | TEMPERATURE CONTROLS CONTRACTOR |
| V.C. | VENTILATION CONTRACTOR |

ELECTRICAL ABBREVIATION KEY

| ABBR: | DESCRIPTION: |
|-------|--------------------------|
| AFF | ABOVE FINISHED FLOOR |
| C | CONDUIT |
| GFI | GROUND FAULT INTERRUPTER |
| N.C. | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT |
| N.O. | NORMALLY OPEN |
| SV | SOLENOID VALVE |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |

ELECTRICAL SHEET INDEX

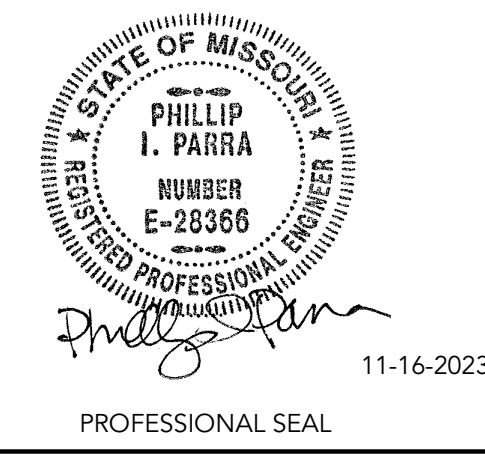
| | |
|----------------|-------------------------------|
| G-001 | GENERAL COVERSHEET |
| E-000 | ELECTRICAL COVERSHEET |
| E-100 | SITE PLAN - ELECTRICAL |
| E-400 | ELECTRICAL DETAILS |
| E-401 | ELECTRICAL DETAILS |
| E-600 | ELECTRICAL RISERS & SCHEDULES |
| GRAND TOTAL: 6 | |



- SHEET NOTES:**
1. REFER TO SHEET E-000 FOR GENERAL NOTES, AND SYMBOLS.
 2. PROVIDE NEW CONCRETE BASE FOR ALL NEW ELECTRICAL EQUIPMENT.
 3. PATCH REPAIR ASPHALT AND CONCRETE AS NEEDED AFTER NEW EQUIPMENT IS INSTALLED.
 4. PROTECT EXISTING VEGETATION AS NECESSARY.
 5. UNDERGROUND CONDUITS SHALL HAVE NECESSARY LATERAL BORING TO AVOID ANY EXISTING UNDERGROUND PIPING, ELECTRICAL AND TECHNOLOGY THAT MAY LIE IN THE PROPOSED PATHS.
 6. PROVIDE EROSION CONTROL FOR NECESSARY AREAS AFTER CONSTRUCTION IS COMPLETE. COORDINATE ANY ROAD SHUTDOWNS WITH THE STATE FAIRGROUNDS AT LEAST 1 WEEK IN ADVANCE OF CLOSURE.
 7. SITE SHALL BE RESTORED TO SAME CONDITION AS FOUND. PROVIDE FINISH GRADING AND SEEDING AS NECESSARY.
 8. COORDINATE APPROVED TIME WITH OWNER FOR ANY TRENCHING OF NEW WORK.

- KEYNOTES: (#)**
1. FURNISH AND INSTALL NEW TAP OFF EXISTING OVERHEAD SERVICE TO PROVIDE POWER TO NEW TRANSFORMER. CONNECTION SHALL BE MADE DOWNSTREAM OF MAIN OVERHEAD MEDIUM VOLTAGE SERVICE DISCONNECT. EXISTING OVERHEAD LINE TAP FOR THE COLISEUM BUILDING CAN BE USED AS REFERENCE. REFER TO 'UNDERGROUND PRIMARY RISER POLE DETAIL' ON SHEET E400 FOR MORE INFORMATION.
 2. PROVIDE NEW INTERNAL POWER METER MOUNTED IN NEW SWITCHBOARD 'MSB'. FURNISH AND INSTALL UNISTRUT MOUNT TO SUPPORT NEW SWITCHBOARD.
 3. NEW DIRECT CURRENT FAST CHARGING STATION. LOCATE BETWEEN CENTER LINE OF TWO PARKING SPOTS. PROVIDE WITH ONE (1) CCS 1 COMBO CONNECTOR AND ONE (1) CHAD-AMMO CONNECTOR. COORDINATE FINAL SELECTION WITH OWNER.
 4. NEW 4-INCH ROUND BOLLARDS. BOLLARDS SHALL BE 2-FEET IN FRONT OF NEW CHARGING STATION.
 5. 3-INCH ROUND CONDUIT DOWN SIDE OF EXISTING POLE FOR PRIMARY CABLES TO NEW TRANSFORMER.
 6. FURNISH AND INSTALL THREE (3) 10-AMP, 15KV RATED FUSES FOR PRIMARY OVERHEAD PROTECTION. REFER TO DETAIL ON SHEET E400 FOR MORE INFORMATION. THIS IS A PART OF THE ALTERNATE BID.
 7. FURNISH AND INSTALL THREE (3) 15AMP, 15KV RATED FUSES FOR PRIMARY OVERHEAD PROTECTION. REFER TO DETAIL ON SHEET E400 FOR MORE INFORMATION. THIS IS A PART OF THE ALTERNATE BID.
 8. FURNISH AND INSTALL NEW 225KVA TRANSFORMER. REFER TO SHEET E600 FOR MORE INFORMATION. THIS IS A PART OF THE ALTERNATE BID.
 9. FURNISH AND INSTALL 2" CONDUIT TO FUTURE CHARGING STATION LOCATION. STUB-UP CONDUIT AND PROVIDE CONDUIT CAP AT END. THIS IS A PART OF THE ALTERNATE BID.

STATE OF MISSOURI
MICHAEL L. PARSON,
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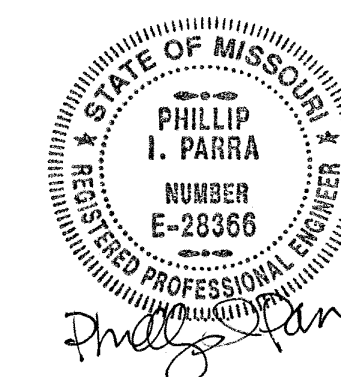
SITE PLAN -
ELECTRICAL

SHEET NUMBER:

E-100

3 OF 6 SHEETS
11/16/2023

1 SITE PLAN - ELECTRICAL (BASE BID)
1" = 40'-0"



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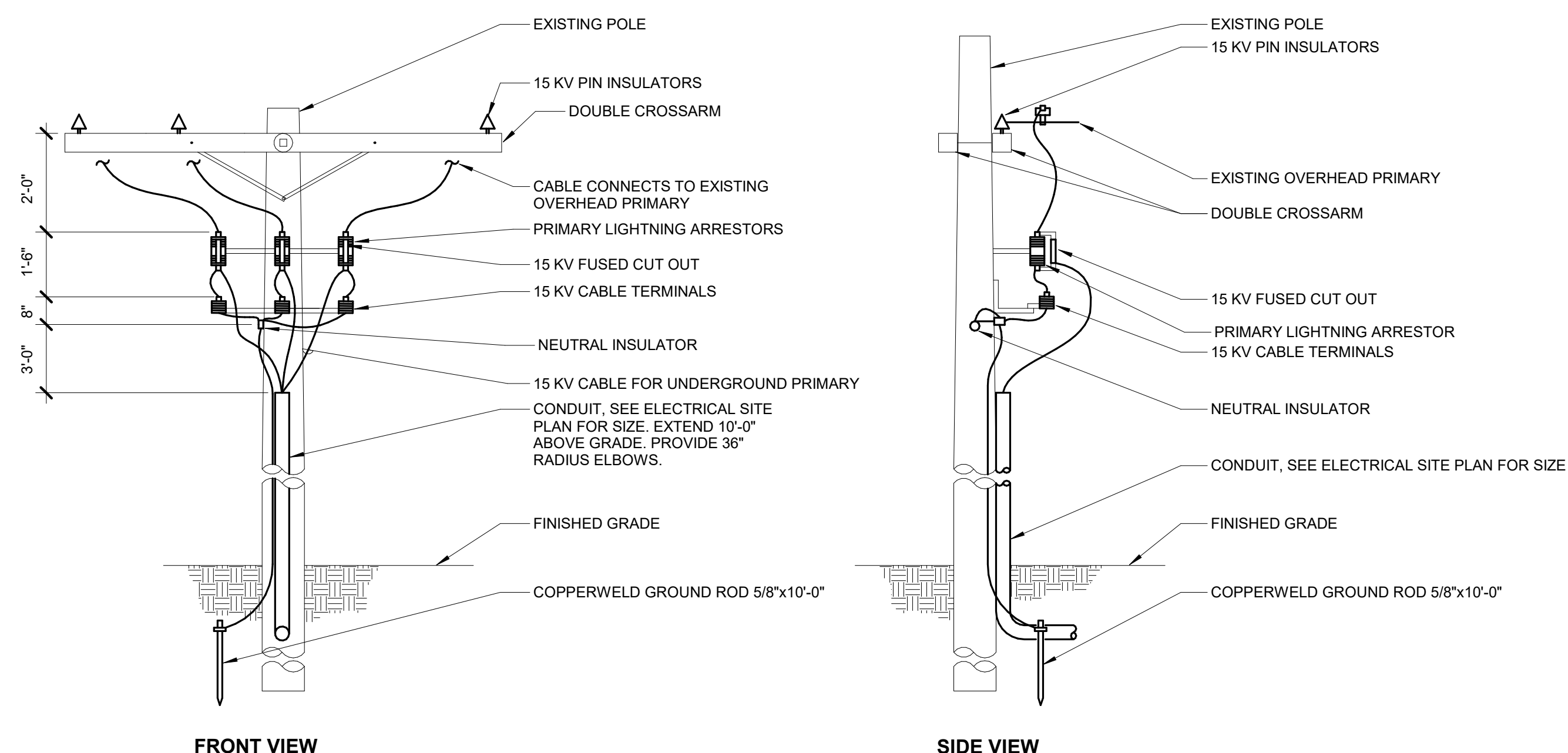
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ELECTRICAL
DETAILS

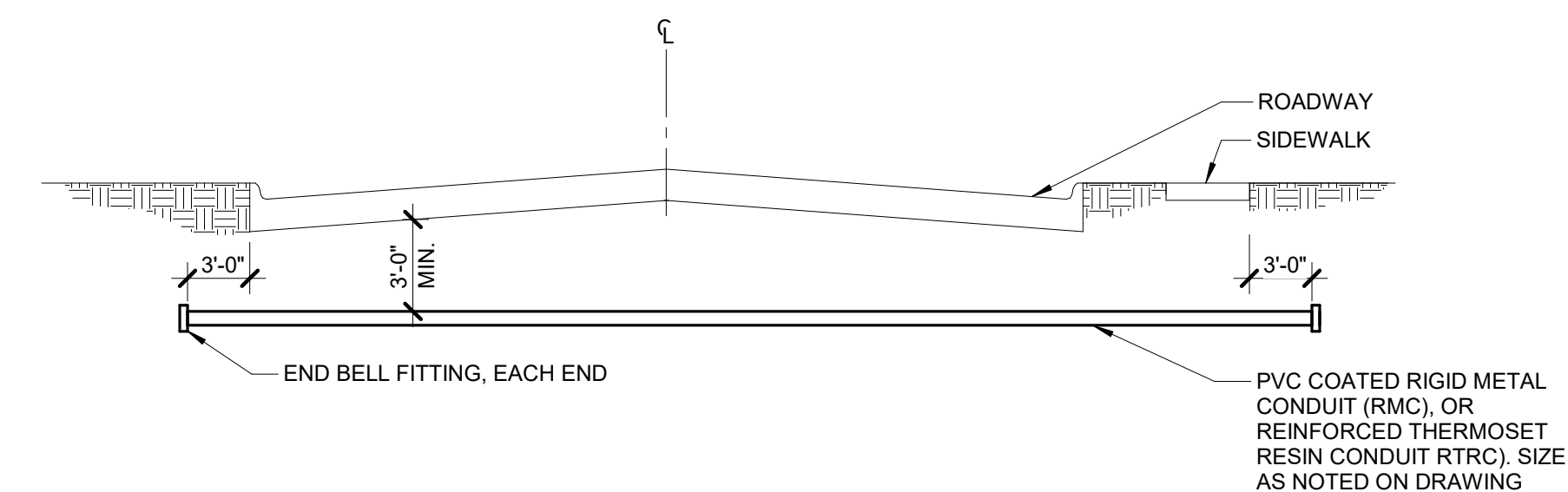
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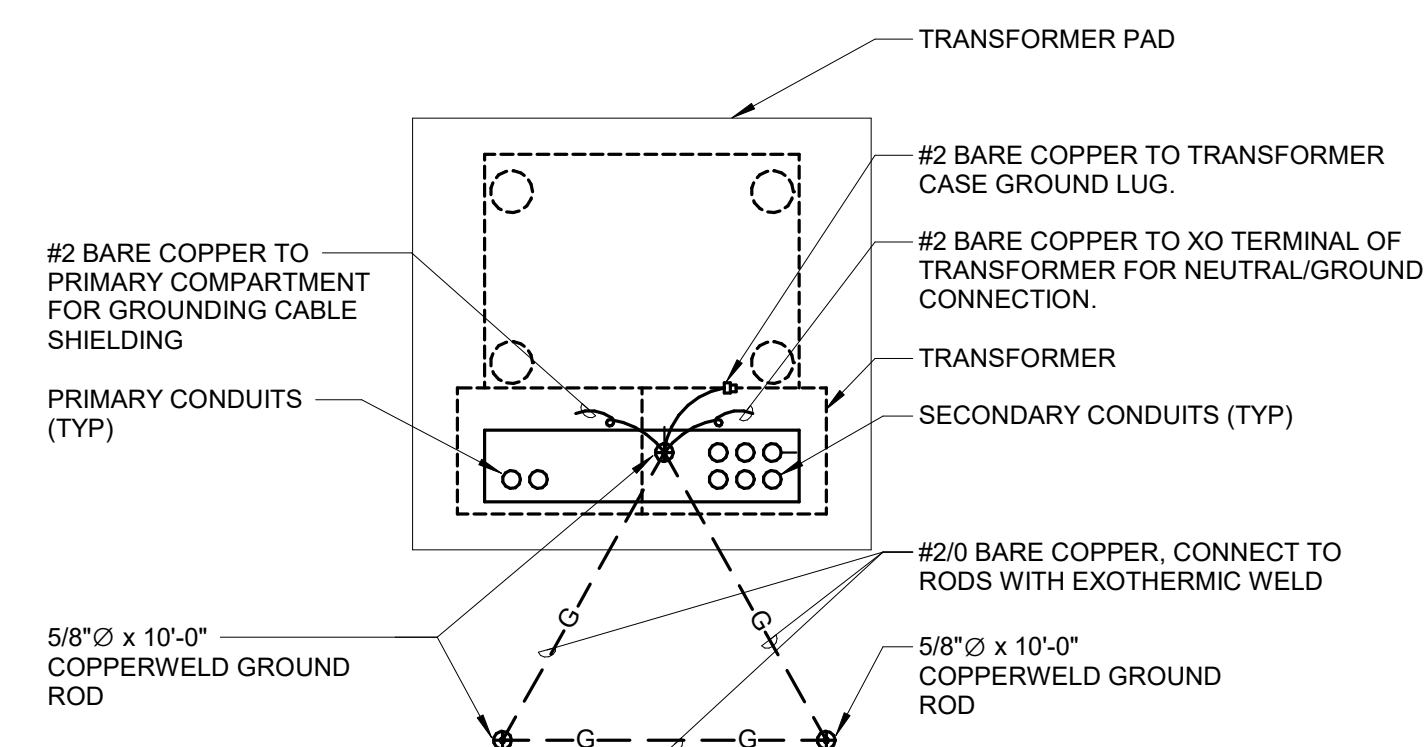
4 OF 6 SHEETS
11/16/2023



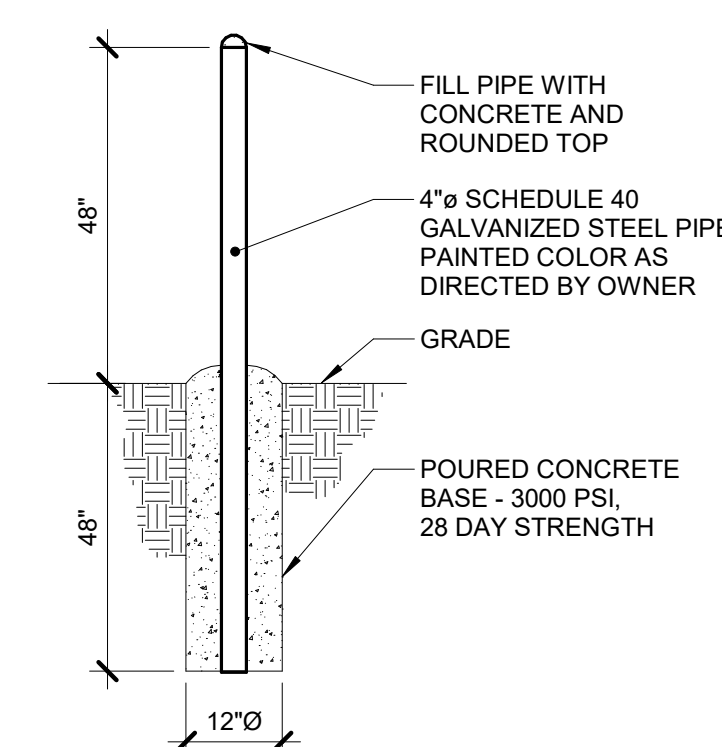
1 UNDERGROUND PRIMARY RISER POLE DETAIL
NO SCALE
E_DM29



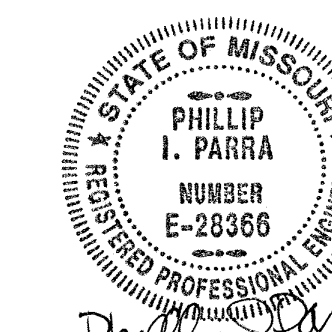
2 ROADWAY UNDERGROUND CROSSING DETAIL
NO SCALE
E_DM29



3 PAD MOUNTED TRANSFORMER GROUNDING DETAIL
NO SCALE
E_G30



4 PROTECTIVE BOLLARD DETAIL
NO SCALE
E_P20



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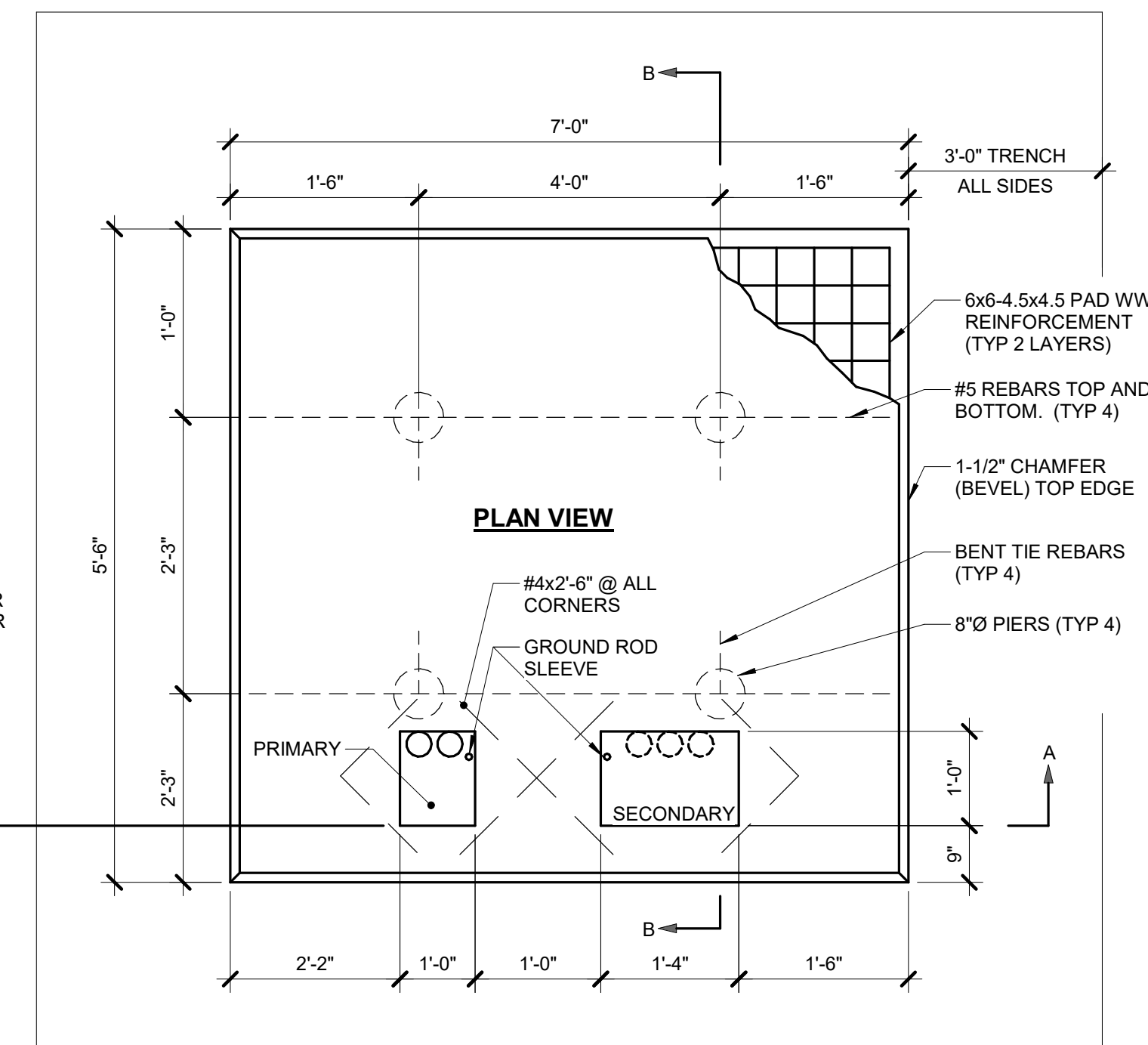
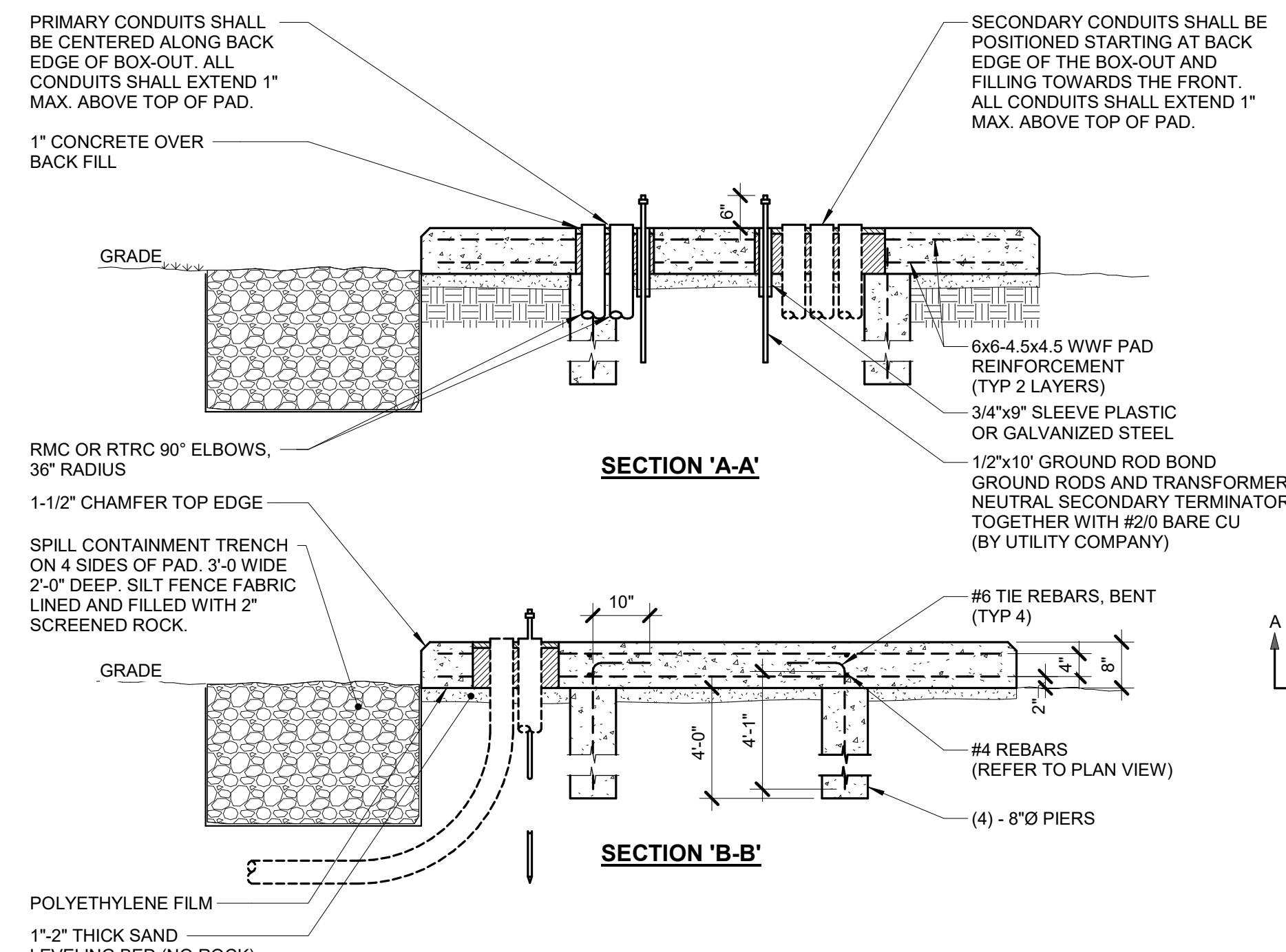
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ELECTRICAL
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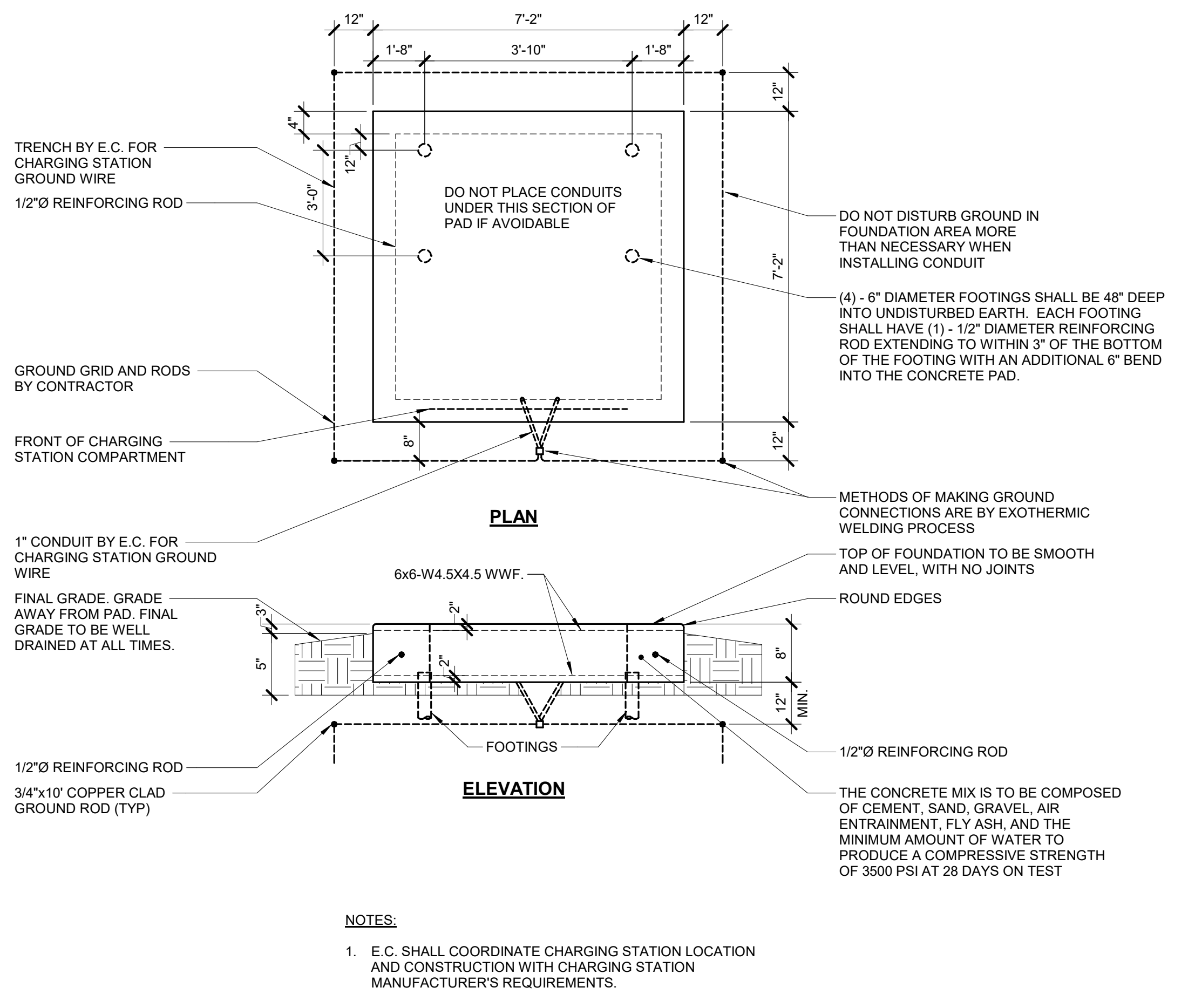
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5 OF 6 SHEETS
11/16/2023



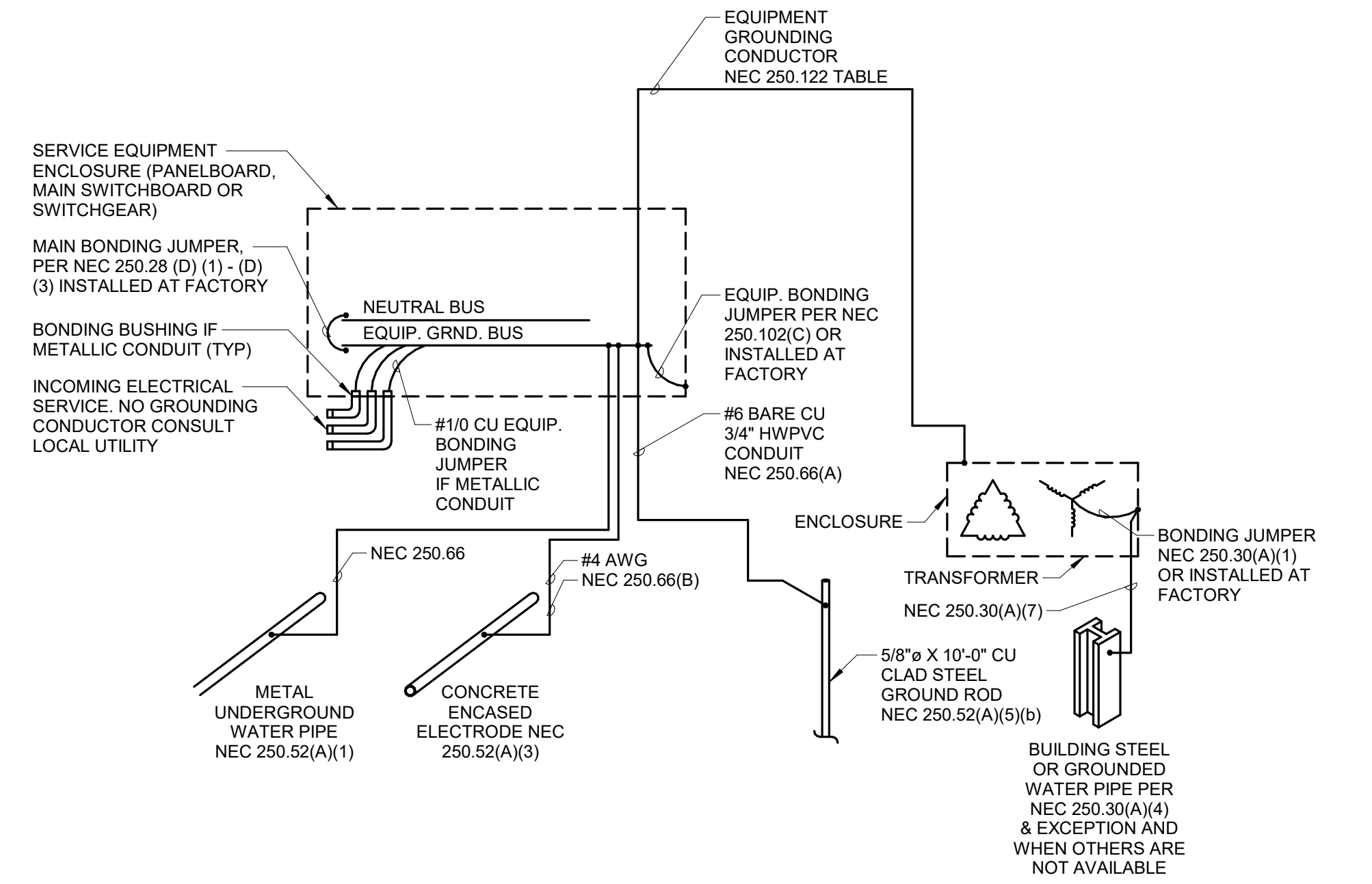
- NOTES:
1. CONCRETE: $f_c > 3500$ PSI AT 28 DAYS.
 2. REINFORCING STEEL: ASTM A 615-60.
 3. 6x6-4.5x4.5 WELDED WIRE FABRIC (WWF): ASTM A 185.
 4. SOIL: ≥ 95 PERCENT PROCTOR DENSITY OR 55 PSI PBV.
 5. GENERAL CONTRACTOR TO PROVIDE TRANSFORMER PAD AS SHOWN. E.C. TO COORDINATE CONDUIT ROUGH-IN WITH G.C.
 6. VERIFY FINAL REQUIREMENTS AND DIMENSIONS WITH UTILITY COMPANY.

1 TRANSFORMER PAD DETAIL (75-150 KVA)
NO SCALE



- NOTES:
1. E.C. SHALL COORDINATE CHARGING STATION LOCATION AND CONSTRUCTION WITH CHARGING STATION MANUFACTURER'S REQUIREMENTS.

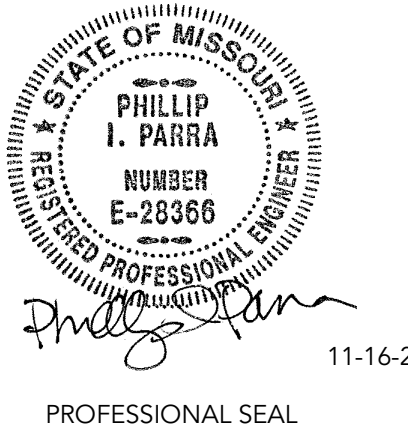
2 CHARGING STATION CONCRETE PAD DETAIL
NO SCALE



3 ELECTRICAL SYSTEM GROUNDING DETAIL
NO SCALE

X
W
V
U
T
S
R
Q
P
N
M
L
K
J
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G
F
E
D
C
B
A

30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1



MEP CONSULTANT
IMEG
1600 BALTIMORE, SUITE 300
KANSAS CITY, MO 64108
P: 816-842-8437
PROJECT # 23002446.00

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
AGRICULTURE

MISSOURI STATE FAIR
EV CHARGERS
SEDALIA, MO

Missouri State Fairgrounds
2503 W 16th Street
Sedalia, MO 65301

PROJECT # F2305-01
SITE # 1501
ASSET # 3511501147

REVISION: BID DOCUMENTS
DATE: 11/16/2023
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

DRAWN BY: ZMB
CHECKED BY: PIP
DESIGNED BY: ZMB

SHEET TITLE:

ELECTRICAL
RISERS &
SCHEDULES

SHEET NUMBER:

E-600

6 OF 6 SHEETS
11/16/2023

SWITCHBOARD MSB

ENCLOSURE: NEMA 3R
FED FROM: TRANSFORMER EV1 (112.5KVA)
LOCATION:

SOLID NEUTRAL
GROUND BUS

MAIN: 175 A MCCB
VOLTS: 480/277 Wye
PHASE: 3
WIRE: 4
SCCR: 18 kA
ISC: 2.00 KA

NOTES: THIS IS A PART OF THE BASE BID. FURNISH SWITCHBOARD WITH INTERNAL TVSS. PROVIDE POWER METER IN SECTION OF SWITCHBOARD. PROVIDE ADJUSTABLE MAIN CIRCUIT BREAKER RATING.

| CKT | LOAD DESCRIPTION | Load | POLES | FRAME | TRIP | TYPE | ACC. | WIRE AND RACEWAY | CIRCUIT KEY |
|---|---------------------|-----------------------|----------------------|-------------------------|-------|----------------|------|------------------------------|-------------|
| 1 | EV CHARGE STATION 1 | 65.8 kVA | 3 | 125 A | 100 A | | | 4#1W & 1#8 GND, IN 2" C. | |
| 2 | TVSS | 0 kVA | 3 | 100 A | 30 A | -- | -- | | -- |
| 3 | SPACE | | 3 | | | | | | |
| 4 | SPACE | | 3 | | | | | | |
| LOAD SUMMARY (INCLUDES ALL TUBS IN THIS PANEL) | | | | | | | | | |
| LOAD CLASSIFICATION | | CONNECTED LOAD | DEMAND FACTOR | ESTIMATED DEMAND | | TOTALS* | | | |
| Power | | 65.8 kVA | 100.00% | 65.8 kVA | | | | TOTAL CONNECTED LOAD: | 65.80 kVA |
| | | | | | | | | TOTAL ESTIMATED DEMAND LOAD: | 65.8 kVA |
| | | | | | | | | TOTAL CONNECTED AMPS: | 79.15 A |
| | | | | | | | | TOTAL ESTIMATED DEMAND AMPS: | 79.1 A |

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

SWITCHBOARD MSB-1

ENCLOSURE: NEMA 3R
FED FROM: TRANSFORMER EV-1 (225KVA)
LOCATION:

SOLID NEUTRAL
GROUND BUS

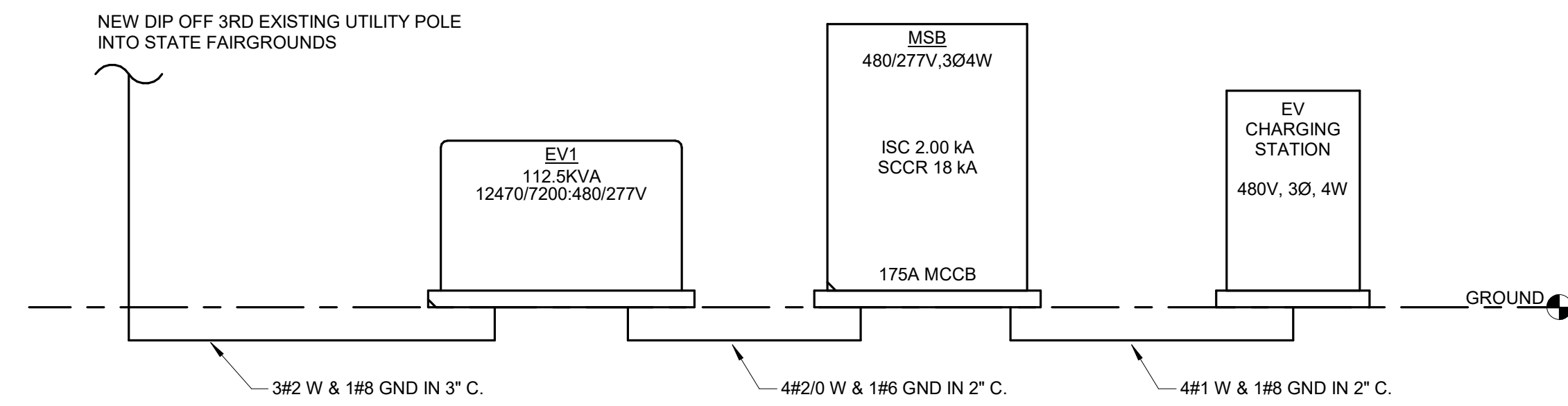
MAIN: 350 A MCCB
VOLTS: 480/277 Wye
PHASE: 3
WIRE: 4
SCCR: 18 kA
ISC: 3.60 KA

NOTES: THIS IS A PART OF THE ALTERNATE BID. FURNISH SWITCHBOARD WITH INTERNAL TVSS. PROVIDE POWER METER IN SECTION OF SWITCHBOARD. PROVIDE ADJUSTABLE MAIN CIRCUIT BREAKER RATING.

| CKT | LOAD DESCRIPTION | LOAD | POLES | FRAME | TRIP | TYPE | ACC. | WIRE AND RACEWAY | CIRCUIT KEY |
|---|---------------------|-----------------------|----------------------|-------------------------|-------|----------------|------|------------------------------|-------------|
| 1 | EV CHARGE STATION 1 | 65.8 kVA | 3 | 125 A | 100 A | | | 4#1W & 1#8 GND, IN 2" C. | |
| 2 | TVSS | 0 kVA | 3 | 100 A | 30 A | -- | -- | | -- |
| 3 | SPARE | 65.8 kVA | 3 | 125 A | 100 A | | | 2" C. | A |
| 4 | SPACE | | 3 | | | | | | |
| LOAD SUMMARY (INCLUDES ALL TUBS IN THIS PANEL) | | | | | | | | | |
| LOAD CLASSIFICATION | | CONNECTED LOAD | DEMAND FACTOR | ESTIMATED DEMAND | | TOTALS* | | | |
| Power | | 65.8 kVA | 100.00% | 65.8 kVA | | | | TOTAL CONNECTED LOAD: | 131.60 kVA |
| Spare | | 65.8 kVA | 80.00% | 52.64 kVA | | | | TOTAL ESTIMATED DEMAND LOAD: | 118.44 kVA |
| | | | | | | | | TOTAL CONNECTED AMPS: | 158.29 A |
| | | | | | | | | TOTAL ESTIMATED DEMAND AMPS: | 142.5 A |

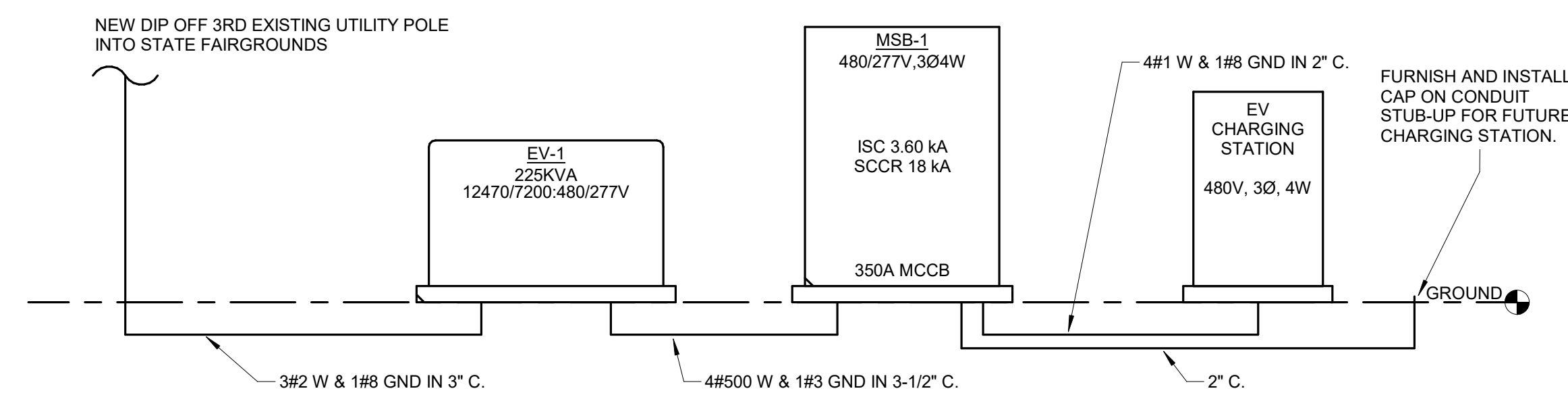
*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: A - FURNISH AND INSTALL CONDUIT STUB-UP FOR FUTURE CHARGING STATION.



1 NEW ELECTRICAL RISER DIAGRAM (BASE BID)

NO SCALE



2 NEW ELECTRICAL RISER DIAGRAM (ALTERNATE BID)

NO SCALE

| EV CHARGERS INFORMATION | |
|--|--|
| DESCRIPTION: | |
| <ul style="list-style-type: none"> THIS PROJECT WILL INCLUDE ONE (1) DIRECT CURRENT FAST CHARGING (DCFC) STATION. THE CHARGING STATION WILL INCLUDE TWO (2) INTERNAL POWER MODULES THAT PROVIDE 31.25KW OUTPUT EACH, WITH A MAX OF 62.5KW OUTPUT. THE POWER DISTRIBUTION OF THE TWO MODULES CAN HAVE THE FUNCTIONALITY SETUP AT THE TIME OF INSTALLATION AND SHALL BE VERIFIED WITH THE OWNER. TWO (2) DIFFERENT CONNECTORS CAN BE INSTALLED BY THE CHOICE OF THE OWNER. THE FOLLOWING CONNECTORS SHALL BE INSTALLED: <ol style="list-style-type: none"> (1) CCS 1 COMBO (1) CHADdeMO | |
| APPROVED MANUFACTURERS | |
| <ul style="list-style-type: none"> THE BASIS OF DESIGN FOR THIS PROJECT WAS THE CHARGE POINT EXPRESS 250 BUT THE FOLLOWING MANUFACTURERS ARE APPROVED FOR THIS PROJECT: <ol style="list-style-type: none"> CHARGE POINT SIEMENS EV CHARGING BOSCH EV SERIES BLINK CHARGING JUICE BAR | |