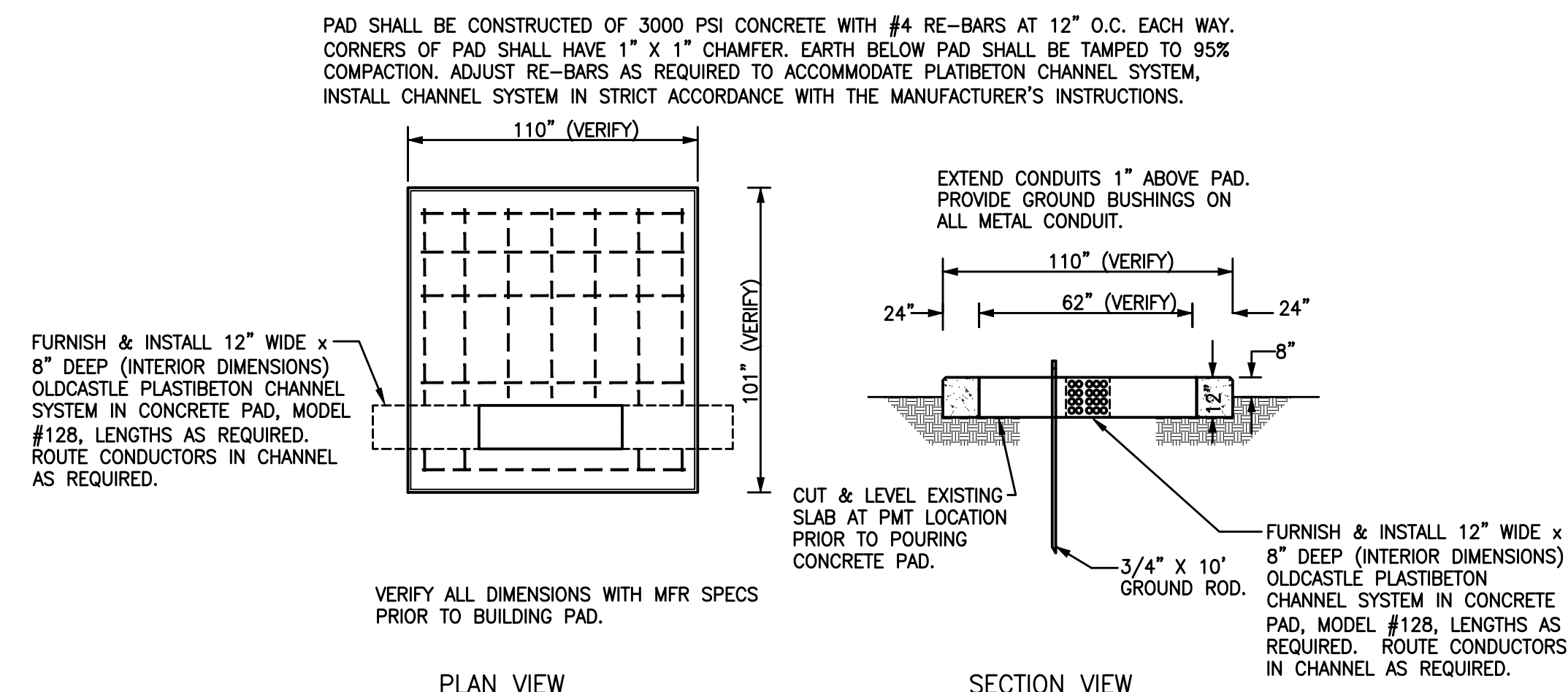


SCOPE OF WORK
 THE WORK OF THIS SECTION SHALL PROVIDE COMPLETE ELECTRICAL SYSTEMS WHICH SHALL INCLUDE THE PROVIDING OF ALL CONDUCTORS, RACEWAYS, FITTINGS, CIRCUIT PROTECTIVE DEVICES, LIGHT FIXTURES, BOXES, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES AND MISCELLANEOUS EQUIPMENT NECESSARY, ALL OF WHICH SHALL BE COMPLETELY CONNECTED, TESTED, ADJUSTED AND LEFT IN PROPER OPERATING CONDITION. THE ELECTRICAL SYSTEM TO BE PROVIDED SHALL INCLUDE SERVICE AND DISTRIBUTION FACILITIES POWER FOR MOTOR OPERATED EQUIPMENT, LIGHTING SYSTEMS, AND ALL OUTLETS AS COVERED HEREINAFTER.

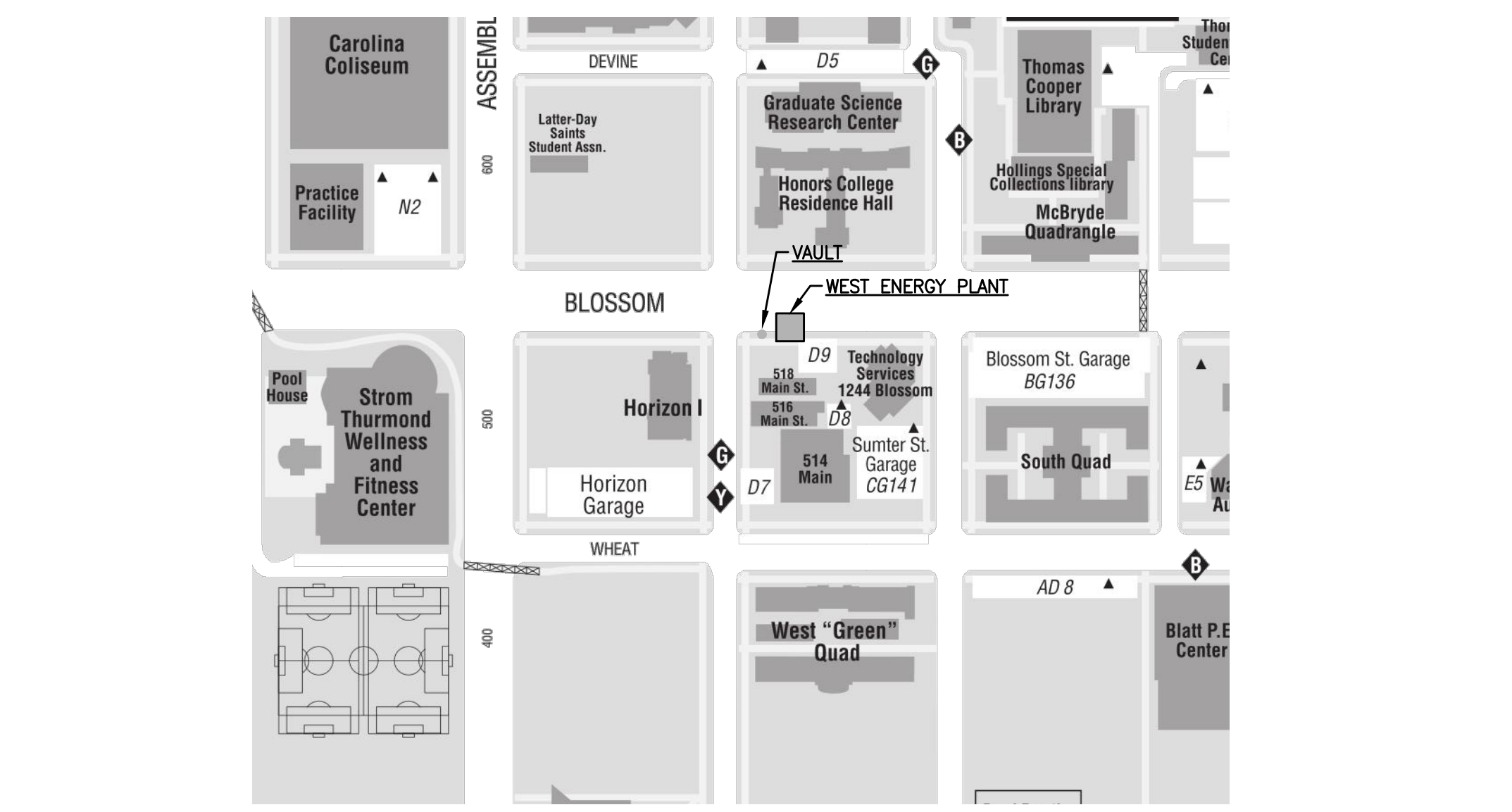
- GENERAL NOTES:**
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE 2011 NATIONAL ELECTRICAL CODE (NEC), THE 2012 INTERNATIONAL BUILDING CODE (IBC), AND ANY LOCAL CODES, LAWS AND ORDINANCES WHICH MAY APPLY. WHERE DIFFERENCES EXIST BETWEEN THE CODES, THE STRICTER CODE SHALL APPLY.
 - ALL CONDUITS SHALL CONTAIN A GROUNDING CONDUCTOR REGARDLESS OF USE.
 - THE CONTRACTOR FOR THE WORK UNDER THIS SECTION SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND LICENSES REQUIRED FOR THE EXECUTION OF THIS WORK. SATISFACTORY EVIDENCE OF COMPLIANCE WITH THE REQUIREMENT AND ALL CERTIFICATES OF INSPECTION SHALL BE DELIVERED TO THE OWNER PROMPTLY UPON REQUEST.
 - ELECTRICAL METALLIC TUBING AND RIGID GALVANIZED STEEL CONDUIT SHALL BE THE ONLY TYPES OF CONDUIT INSTALLED WITHIN THE BUILDING. PVC IS PERMITTED UNDERGROUND.
 - ALL FIRE RATED WALLS, FLOORS, ETC WHICH HAVE A CONDUIT OR OTHER ELECTRICAL PENETRATION SHALL BE SEALED TO EQUAL THE RATING OF THE WALL, FLOOR, ETC. THAT IS PENETRATED. CONTRACTOR SHALL USE A U.L. RATED AND LISTED ASSEMBLY FOR THE SEALING MATERIAL AND METHOD. COORDINATE MANUFACTURER WITH THE GENERAL CONTRACTOR SO THAT ALL TRADES ON THE PROJECT USE THE SAME MANUFACTURER.
 - REFER TO EXISTING CONDITIONS AND EQUIPMENT SHOP DRAWINGS FOR DIMENSIONS, LOCATIONS, CABINETS, ETC.
 - CONCEAL ALL CONDUIT AND FITTINGS EXCEPT WHERE THE OWNER GRANTS SPECIFIC PERMISSION.
 - ALL WORK AND MATERIALS SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM DATE OF ACCEPTANCE. ADDITIONAL WARRANTY PERIODS FROM THE EQUIPMENT MANUFACTURER EXCEEDING ONE YEAR SHALL ALSO APPLY. PROVIDE ALL WARRANTY INFORMATION TO THE OWNER WITH REQUIRED CLOSEOUT DOCUMENTS.
 - PROVIDE ONE COMPLETE SET OF ELECTRICAL DRAWINGS MARKED UP FOR RECORD DRAWINGS. SHOW ALL LOCATIONS OF EQUIPMENT AND MATERIALS.
 - INSTALL ALL MATERIALS PER MANUFACTURER'S INSTRUCTIONS.
 - IDENTIFY MAJOR EQUIPMENT INSTALLED WITH LAMICOR LABELS. VERIFY WORDING OF EACH LABEL WITH THE OWNER.
 - VISIT SITE TO DETERMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID.
 - ALL RACEWAYS, FITTINGS, WIRING, DEVICES, AND EQUIPMENT RENDERED USELESS BY THIS WORK SHALL BE REMOVED AND DELIVERED TO THE OWNER'S STORAGE FACILITY AS DIRECTED. ANY MATERIAL NOT WANTED BY THE OWNER SHALL BE DISPOSED OF BY THE CONTRACTOR. REFER TO SPECIFICATIONS AND DRAWINGS FOR DISPOSAL OF EXISTING PCB-FILLED TRANSFORMER.
 - CONTRACTOR SHALL DO ALL CUTTING, PATCHING, AND PAINTING AS REQUIRED TO INSTALL HIS WORK. FINISH PATCHING AND PAINTING TO MATCH EXISTING FINISHES.
 - PRIOR TO DIGGING ANY TRENCHES, NOTIFY ALL UTILITIES AND OBTAIN LOCATIONS OF UNDERGROUND UTILITIES. ANY DAMAGES DONE TO UNDERGROUND UTILITIES OR PIPING BY THIS CONTRACTOR WILL BE REPAIRED BY THE OWNER OF THE LINE IN A SATISFACTORY MANNER. THIS CONTRACTOR WILL BEAR ALL COSTS FOR REPAIRS.
 - CONDUITS TO BE RUN UNDER WALKWAYS AND PAVINGS SHALL BE INSTALLED BY JACKING OR BORING, UNLESS NOTED. DO NOT CUT WALKWAYS OR PAVEMENTS, UNLESS ACCEPTABLE TO THE ENGINEER. ALLOWED CUTS IN PAVEMENT OR CONCRETE SHALL BE MADE USING A PAVEMENT SAW, AND SHALL BE PATCHED TO MATCH THE EXISTING SURFACE.
 - WHERE DISAGREEMENTS EXIST ON THE DESIGN DOCUMENTS, THE ITEM OR ARRANGEMENTS OF BETTER QUALITY, GREATER QUANTITY, OR HIGHER COST SHALL BE INCLUDED IN THE BASE BID. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, AND FIELD CONDITIONS SHALL BE RESOLVED WITH THE ENGINEER PRIOR TO COMMENCING WORK. ALL AGREEMENTS SHALL BE VERIFIED IN WRITING.
 - ALL WORK UNDER THIS SECTION SHALL BE COORDINATED WITH OTHER TRADES AND EXISTING CONDITIONS TO INSURE PROPER LOCATION OF EQUIPMENT AND EQUIPMENT CONNECTIONS, AND TO MINIMIZE CONFLICTS WITH STRUCTURAL MEMBERS, DUCT WORK, PIPING, ETC. CONFLICTS BETWEEN EQUIPMENT AND/OR MATERIAL LOCATIONS SHALL BE CORRECTED AS DIRECTED BY THE ENGINEER AT NO COST TO THE OWNER.

ELECTRICAL DEMOLITION NOTES

- IT IS THE GENERAL INTENTION OF THESE DRAWINGS TO COVER ALL SITUATIONS WHERE AN ITEM IS TO BE REMOVED, WHETHER IT HAPPENS TO BE A SWITCH, TRANSFORMER, OR OTHER ELECTRICAL ITEM.
- PRIOR TO SUBMITTING BID, THE CONTRACTOR SHALL SURVEY THE EXISTING BUILDING AND MAKE NOTE OF ANY ADDITIONAL DEMOLITION AND/OR ANY ADDITIONAL REMOVAL AND RELOCATION WHICH MAY BE REQUIRED IN ORDER TO ACCOMPLISH RENOVATIONS INDICATED IN CONTRACT DOCUMENTS. NO CHANGE ORDER WILL BE ISSUED FOR ADDITIONAL WORK REQUIRED FOR DEMOLITION, REMOVAL, OR RELOCATION WORK NOT INDICATED ON THESE DRAWINGS BUT NECESSARY TO COMPLETE WORK.
- EXISTING CONDUIT RUN CONCEALED IN EXISTING WALLS NOT BEING REMOVED AND/OR REPLACED MAY BE ABANDONED. ALL DEMOLITION MUST BE COORDINATED WITH THE OWNER AND WITH EXISTING CONDITIONS TO AVOID CONFLICTS. DEMOLITION TO BE PHASED TO MINIMIZE DOWN TIME.
- NO EXISTING ELECTRICAL MATERIALS, EQUIPMENT, WIRING, OR CONDUIT BEING REMOVED MAY BE REUSED ON THIS PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE DRAWINGS. ALL EXISTING ELECTRICAL MATERIALS AND EQUIPMENT NOT BEING REUSED SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTES.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE REMOVAL OR REWORKING OF ANY EXISTING ELECTRICAL SERVICES WITH THE OWNER. ALL ASSOCIATED MATERIALS AND EQUIPMENT NOT BEING REUSED OR NOT BEING REMOVED BY THE UTILITIES SHALL BE REMOVED BY THE ELECTRICAL CONTRACTOR. PROVIDE NEW SERVICES AS INDICATED ON THE DRAWINGS.



2 TRANSFORMER PAD DETAIL
 NOT TO SCALE



PARTIAL CAMPUS KEY PLAN
 NOT TO SCALE

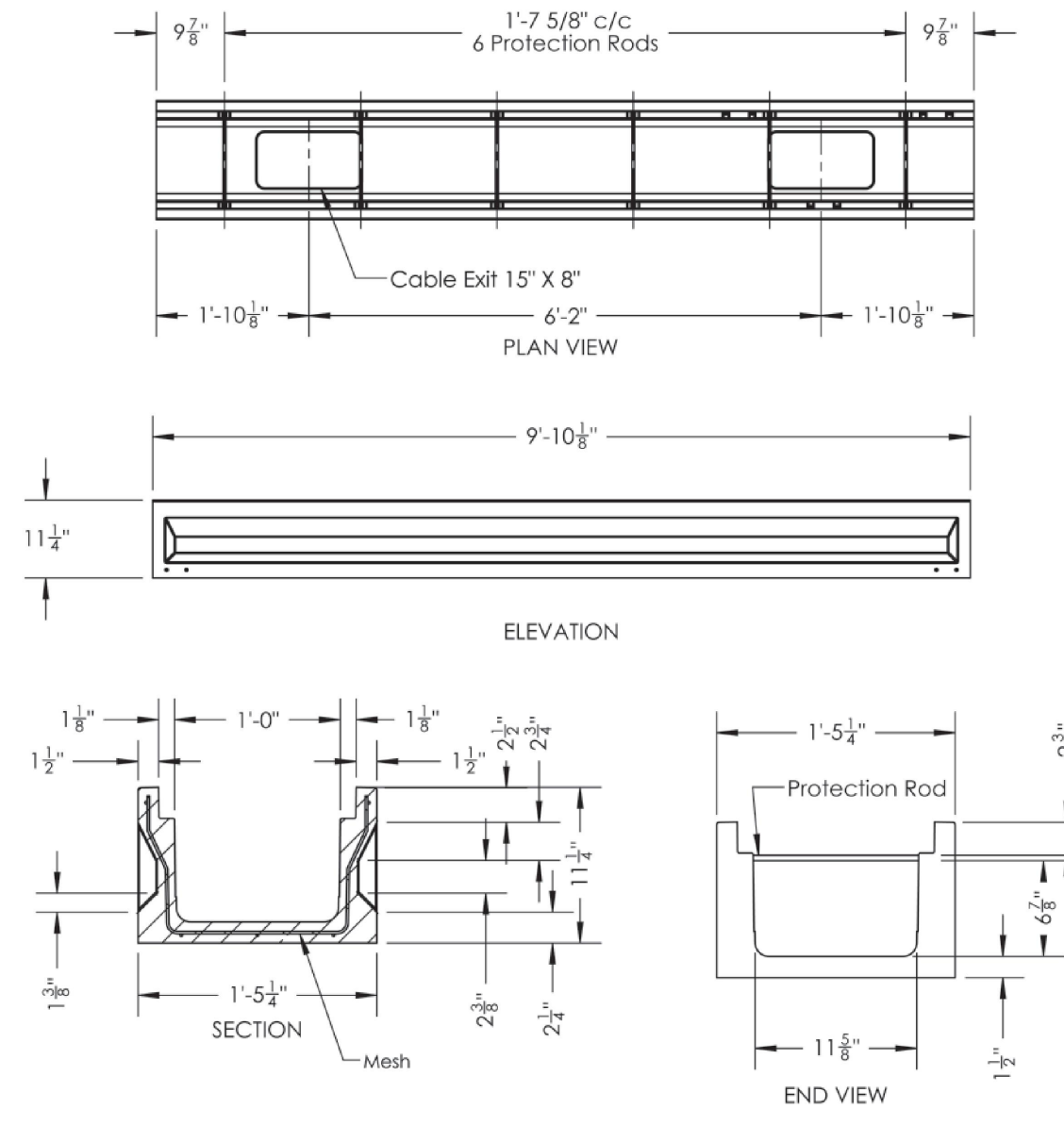
| REGULAR STRANDED & COMPRESSED WIRE SIZE | ANDERSON CAT. NO. | KEARNEY DIE SIZE | BURNDY CAT. NO. | KEARNEY DIE SIZE | PENN-UNION CAT. NO. | KEARNEY DIE SIZE |
|---|-------------------|------------------|-----------------|------------------|---------------------|------------------|
| 1/0 STR. | CHL-170-BN | 9/16 | YA25-2N | 1/2 | BBLU-170D3 | 1/2 |
| 2/0 STR. | CHL-270-BN | 5/8-1 | YA26-2N | 9/16 | BBLU-270D | 9/16 |
| 3/0 STR. | CHL-370-BN | 11/16 | YA27-2N | 5/8-1 | BBLU-370D | 9/16 |
| 4/0 STR. | CHL-470-BN | 7/8 | YA28-2N | 5/8-1 | BBLU-470D | 5/8-1 |
| 250 KCMIL | CHL-250-BN | 840 | YA29-2N | 737 | BBLU-025D | 11/16 |
| 300 KCMIL | CHL-300-BN | 29/32 | YA30-2N | 737,781 | BBLU-030D | 7/8 |
| 350 KCMIL | CHL-350-BN | 1 1/8-1 | YA31-2N | 840 | BBLU-035D | 840 |
| 400 KCMIL | CHL-400-BN | 1 1/8-1 | YA32-2N | 840 | BBLU-040D | 1 5/16 |
| 500 KCMIL | CHL-500-BN | 1 1/8-2 | YA34-2N | 1-2 | BBLU-050D | 1 |
| 600 KCMIL | CHL-600-BN | 1 1/8-2 | YA36-2N | 1 1/8-2 | BBLU-060D | 1 1/8-2 |
| 750 KCMIL | CHL-750-BN-TT | 1 5/16 | --- | --- | --- | --- |

| REGULAR STRANDED & COMPRESSED WIRE SIZE | BLACKBURN CAT. NO. | KEARNEY DIE SIZE | HOMAC CAT. NO. | KEARNEY DIE SIZE | PANDUIT CAT. NO. | KEARNEY DIE SIZE |
|---|--------------------|------------------|----------------|------------------|------------------|------------------|
| 1/0 STR. | LCN10 | 1/2 | L1/ON | 1/2 | LCC1/0-12-X | 1/2 |
| 2/0 STR. | LCN20 | 9/16 | L2/ON | 9/16 | LCC2/0-12-X | 9/16 |
| 3/0 STR. | LCN30 | 5/8 | L3/ON | 5/8 | LCC3/0-12-X | 5/8 |
| 4/0 STR. | LCN40 | 5/8-1 | L4/ON | 5/8-1 | LCC4/0-12-X | 5/8-1 |
| 250 KCMIL | LCN 250 | 11/16 | L250/ON | 737 | LCC250-12-X | 11/16 |
| 300 KCMIL | LCN 300 | 781 | L300/ON | 737,781 | LCC300-12-X | 781 |
| 350 KCMIL | LCN 350 | 840 | L350/ON | 840 | LCC350-12-X | 840 |
| 400 KCMIL | LCN 400 | 15/16 | L400/ON | 840 | LCC400-12-X | 15/16 |
| 500 KCMIL | LCN 500 | 1-2 | L500/ON | 1-2 | LCC500-12-X | 1-2 |
| 600 KCMIL | LCN 600 | 1 1/8-2 | L600/ON | 1 1/8-2 | LCC600-12-X | 1 1/8-2 |
| 750 KCMIL | --- | --- | L750/ON | 1 5/16 | --- | --- |

| REGULAR STRANDED & COMPRESSED WIRE SIZE | NSI CAT. NO. | KEARNEY DIE SIZE | HOMAC CAT. NO. | KEARNEY DIE SIZE |
|---|--------------|------------------|----------------|------------------|
| 1/0 STR. | L10N | 1/2 | L1/ON | 1/2 |
| 2/0 STR. | L20N | 9/16 | L2/ON | 9/16 |
| 3/0 STR. | L30N | 5/8 | L3/ON | 5/8 |
| 4/0 STR. | L40N | 5/8-1 | L4/ON | 5/8-1 |
| 250 KCMIL | L250N | 11/16 | L250/ON | 11/16 |
| 300 KCMIL | L300N | 781 | L300/ON | 781 |
| 350 KCMIL | L350N | 840 | --- | --- |
| 400 KCMIL | L400N | 15/16 | L400/ON | 840 |
| 500 KCMIL | L500N | 1-2 | L500/ON | 1-2 |
| 600 KCMIL | L600N | 1 1/8-2 | L600/ON | 1 1/8-2 |
| 750 KCMIL | L750NG | 1 5/16 | --- | --- |

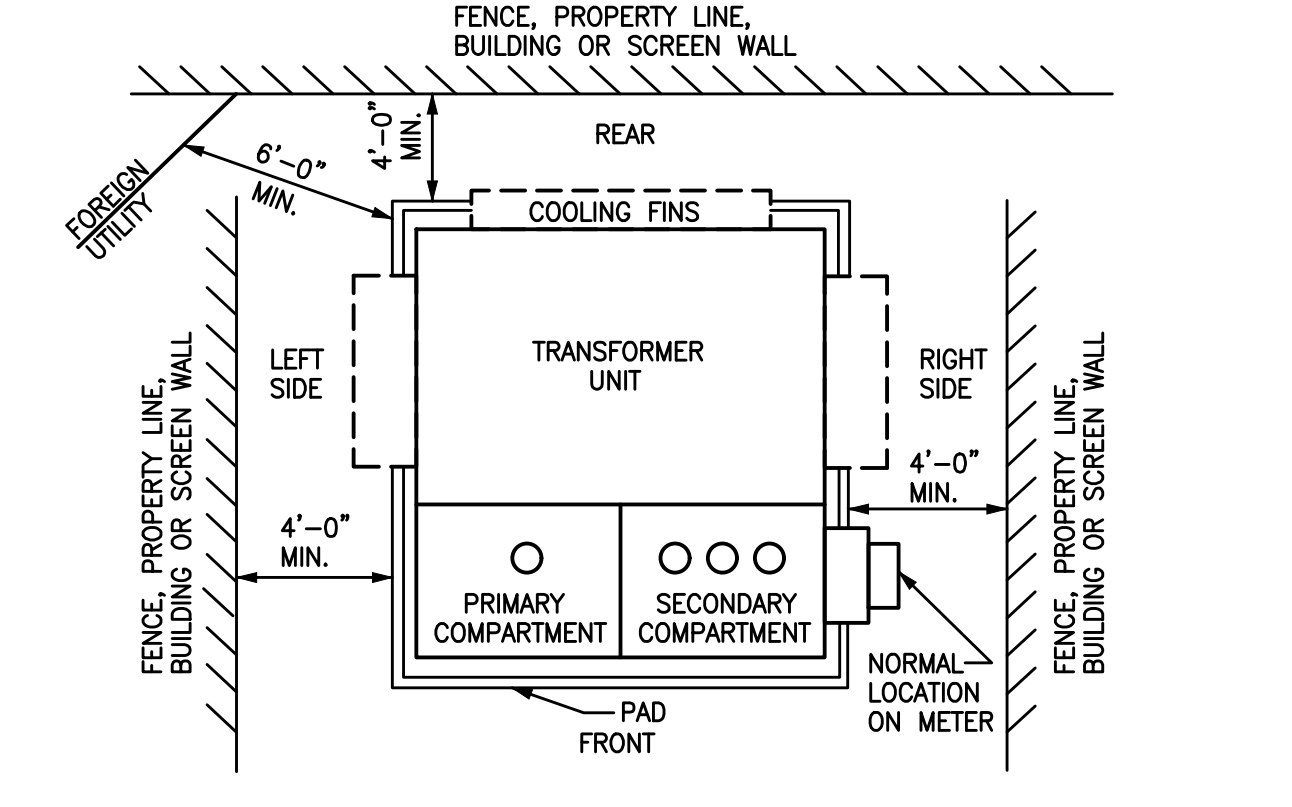
TABLES ARE BASED ON SCE&E REQUIREMENTS AND ARE FOR BIDDING PURPOSES ONLY. COORDINATE ACTUAL LUG REQUIREMENTS WITH THE TRANSFORMER MANUFACTURER AND FURNISH & INSTALL ACCORDINGLY.

1 TWO HOLE SECONDARY CABLE LUGS FOR USE ON COPPER CABLE IN 3 PHASE PAD MOUNTED XFMRs
 NOT TO SCALE



FURNISH & INSTALL 12" WIDE x 8" DEEP (INTERIOR DIMENSIONS) OLDCASTLE PLASTIBETON CHANNEL SYSTEM IN CONCRETE PAD, MODEL #128. LENGTHS AS REQUIRED. ROUTE CONDUCTORS IN CHANNEL AS REQUIRED. EXTEND CHANNEL PAST PAD TO CONDUIT AS INDICATED.
<http://www.oldcastleprecast.com/plants/Enclosures/products/electric/Pages/plastibeton.aspx>

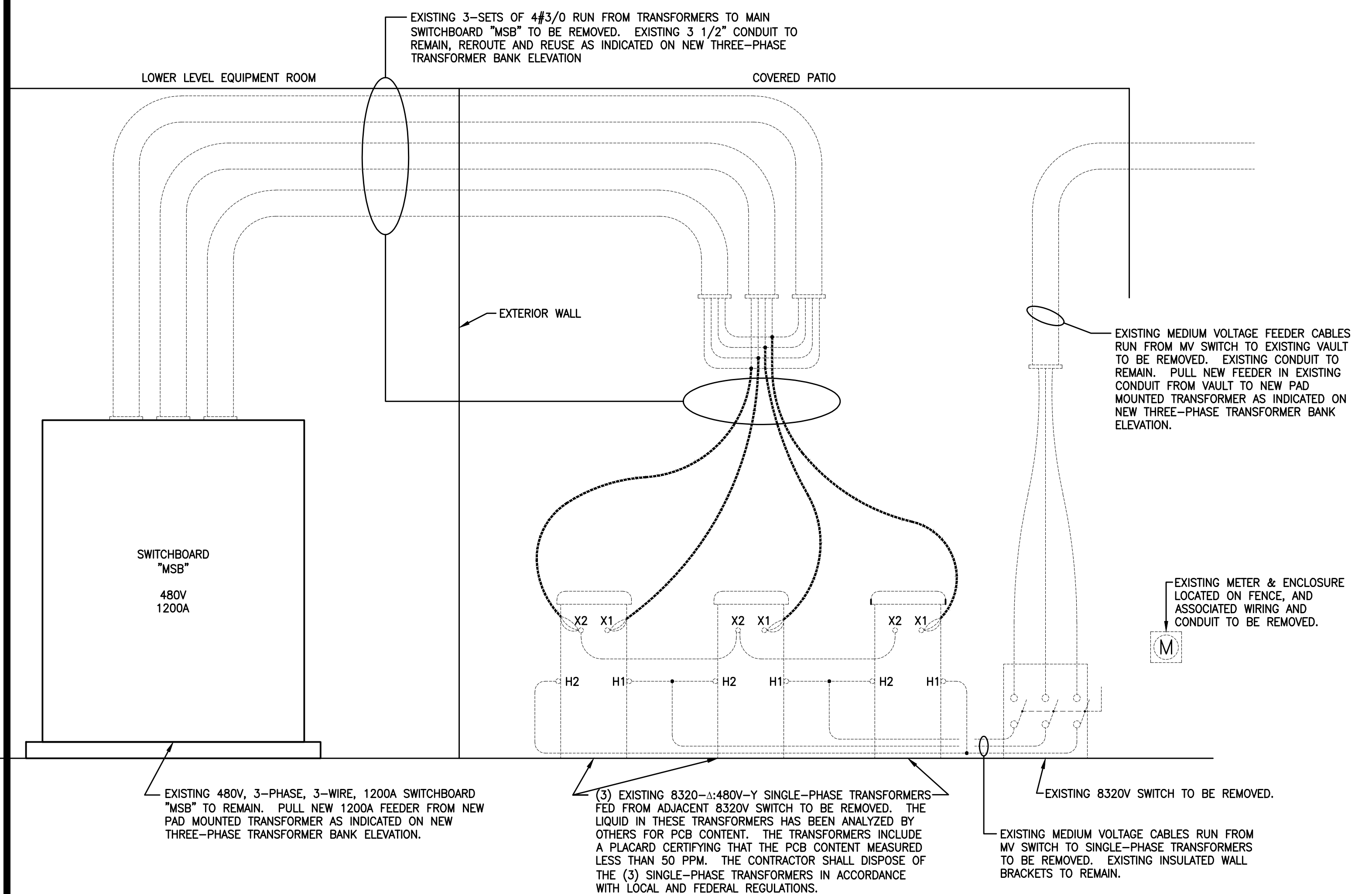
3 CHANNEL SYSTEM DETAIL
 NOT TO SCALE



- NOTES:**
- FINAL PAD LOCATION AND ORIENTATION TO BE SPOTTED ON JOB SITE BY CONTRACTOR AND USE REPRESENTATIVE PRIOR TO STARTING WORK. PAD MUST BE LEVEL.
 - METER SHOULD BE READILY VISIBLE AND ACCESSIBLE FROM ENTRANCE TO AREA.
 - NO FOREIGN UNDERGROUND UTILITY LINES SHALL PASS UNDERNEATH OR WITHIN 6 FT. FROM THE EDGE OF THE CONCRETE TRANSFORMER PAD.

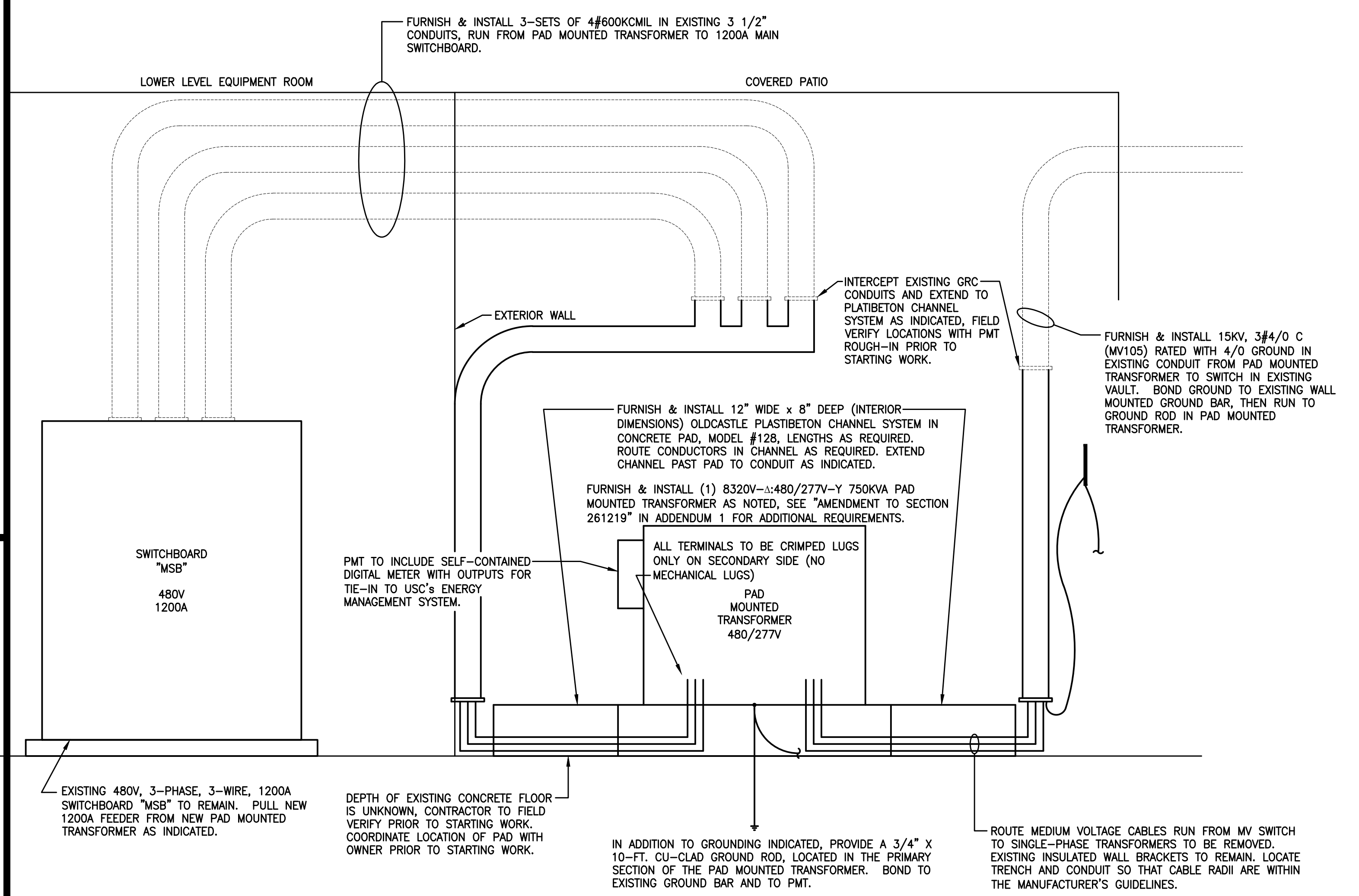
4 LOCATING 3 PHASE TRANSFORMER DETAIL
 NOT TO SCALE

DETAIL IS FOR BIDDING PURPOSES ONLY. COORDINATE ACTUAL REQUIREMENTS WITH THE TRANSFORMER MANUFACTURER AND INSTALL ACCORDINGLY.



5 EXISTING THREE-PHASE TRANSFORMER BANK ELEVATION
 NOT TO SCALE

- INSTALLATION NOTES:**
- HIGH VOLTAGE TERMINATIONS TO BE PERFORMED BY THE CONTRACTOR.
 - CONTRACTOR IS RESPONSIBLE FOR TURN ON AND START UP OF SYSTEM.
 - CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL WIRING REMOVED AS A RESULT OF THIS WORK.
 - COORDINATE LOCATION OF NEW PAD WITH OWNER PRIOR TO STARTING WORK.



6 NEW PAD MOUNTED TRANSFORMER ELEVATION
 NOT TO SCALE

ACTUAL DIMENSIONS TO BE PROVIDED BY PAD MOUNTED TRANSFORMER MANUFACTURER - SHOWN FOR INFORMATIONAL PURPOSES ONLY.
 REFER TO PROJECT MANUAL FOR TRANSFORMER AND CABLE SPECIFICATIONS. PROVIDE NAMEPLATES AND WARNING LABELS FOR EQUIPMENT AS INDICATED IN THE SPECIFICATIONS.

TRANSFORMER LOAD SIDE METER SUMMARY (TYPICAL FOR 1):

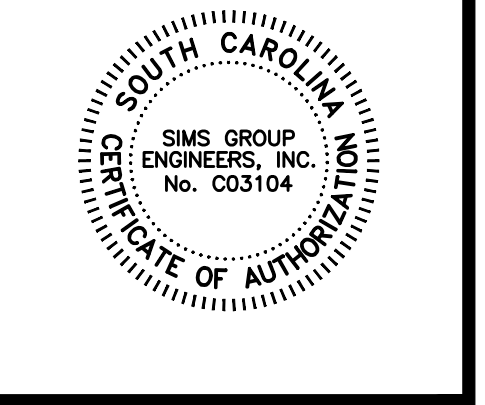
FURNISH & INSTALL (1) ELECTRONIC POWER METER FOR THE LOAD SIDE OF THE TRANSFORMER. METER TO INCLUDE A LOCAL DISPLAY AND REMOTE COMMUNICATIONS TO METASYS. COMMUNICATIONS PROTOCOLS TO BE BAGNET MSTP or Ethernet WITH BAGNET IP. THE METER SHOULD PROVIDE AT A MINIMUM THE FOLLOWING DATA:

VOLTAGE: ALL 3 PHASES / PEAK
 Current: ALL 3 PHASES / PEAK
 KVA: NORMAL / PEAK DEMAND
 KW: NORMAL / PEAK
 KWH: RUNNING TOTAL
 PF: NORMAL / MAX/MIN

| NO. | REVISION | DATE | BY |
|-----|----------|------|----|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

sims group
 SIMS GROUP ENGINEERS, INC.
 100 South Carolina 29063
 Phone: (803) 765-1007 Fax: (803) 765-1030
 www.simgroupusa.com

04/26/2016 - RE-BID SET



RE-BID USC WEST ENERGY-INSTALL 750KVA, 480 VOLT, 3PH TRANSFORMER UNIVERSITY OF SOUTH CAROLINA COLUMBIA, SOUTH CAROLINA

PAD MOUNTED TRANSFORMER INSTALLATION PLAN

DRAWN: CLP
 CHECKED: CLP
 SIMS PROJECT No. C15010
 DATE: APRIL 2016

E-101

DRAWING No. 1 OF 1