COMMERCIAL QUICK REFERENCE

PROVO CITY POWER STANDARDS

ELECTRICAL ENGINEERING

UPDATED: 2016

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTIFICATION.
STANDARDS

ELECTRICAL SERVICE INFORMATION
(RESIDENTIAL, COMMERCIAL)

TEMPORARY CONSTRUCTION POWER:
ALL TEMPORARY ELECTRICAL SERVICE INSTALLATIONS SHALL MEET PROVO CITY ENERGY DEPARTMENT SPECIFICATIONS, NATIONAL ELECTRICAL CODE, AND NATIONAL ELECTRICAL SAFETY CODE LATEST REVISIONS. ADDRESS TO BE POSTED AT BUILDING SITE.

PROVO CITY REQUIRES OWNER/BUILDER TO SUPPLY AND INSTALL TEMPORARY POWER POLE INCLUDING METER BASE, DISCONNECTS AND OUTLETS. (SEE DRAWING #6 OR #8)

OWNER SHALL CONTACT PROVO CITY POWER. (ENGINEERING DIVISION) AT 251 WEST 800 NORTH PROVO, UT. TO MAKE APPLICATION FOR SERVICE.

TEMPORARY POWER CONNECTS ARE GENERALLY $200.00. ADDITIONAL CHARGES MAY BE NECESSARY DEPENDING ON SIZE AND TYPE OF TEMPORARY POWER REQUEST.

OWNER/BUILDER SHALL HAVE A PROVO CITY BUILDING PERMIT NUMBER PRIOR TO MAKING APPLICATION FOR TEMPORARY POWER.

TEMPORARY POWER INSPECTIONS WILL BE SCHEDULED ON A FIRST COME BASIS, ALL TEMPORARY POWER INSTALLATIONS SHALL BE INSPECTED BY PROVO CITY POWER (ENG. DIVISION) PRIOR TO CONNECTION. CALL 852-6999.

PERMANENT POWER:
ALL PERMANENT ELECTRICAL SERVICE INSTALLATIONS SHALL MEET PROVO CITY POWER SERVICE SPECIFICATIONS, NATIONAL ELECTRICAL CODE AND NATIONAL ELECTRICAL SAFETY CODE LATEST REVISIONS, NO CUSTOMER OWNED EQUIPMENT BETWEEN METER BASE AND METER. ADDRESS TO BE POSTED AT BUILDING SITE.

CONTACT PROVO CITY POWER. (ENGINEERING DIVISION) AT 251 WEST 800 NORTH PROVO, UT. FOR SERVICE SPECIFICATIONS OR CALL 852-6999.

APPLICATION FOR PERMANENT ELECTRICAL SERVICE MUST BE COMPLETED BY OWNER BUILDER/CONTRACTOR PRIOR TO CONNECTION OF PERMANENT ELECTRICAL SERVICE.

MAIN SERVICE DISCONNECT IS REQUIRED OUTSIDE AT THE METER LOCATION FOR ALL ELECTRICAL SERVICE INSTALLATIONS. PROVO CITY POWER SHALL INSPECT TRENCH AND CONDUIT INSTALLATION PRIOR TO BACKFILL. (CALL 852-6999 TO SCHEDULE ELECTRICAL SERVICE TRENCH INSPECTIONS)


ALL UNDERGROUND AND OVERHEAD ELECTRICAL SERVICES SHALL BE INSPECTED BY PROVO CITY BUILDING INSPECTION PRIOR TO CONNECTION BY PROVO CITY POWER. CALL 852-6450 TO SCHEDULE PERMANENT POWER INSPECTION.

ALL NEW DEVELOPMENTS WILL BE SERVICED UNDERGROUND; OWNER/DEVELOPER WILL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL UNDERGROUND CONDUIT, TRANSFORMER PADS/VAULTS, AND SECONDARY BOXES, GROUND SLEEVES WILL BE PROVIDED BY PROVO CITY POWER AND INSTALLED BY CONTRACTOR. THE UNDERGROUND ELECTRICAL DISTRIBUTION LAYOUT SHALL BE COMPLETED OR APPROVED BY PROVO CITY POWER ENGINEERING DIVISION.

ALL SERVICES OVER 200 AMPS REQUIRE SCH. 40 PVC CONDUIT AND CONDUCTOR TO BE SUPPLIED, INSTALLED, TERMINATED & MAINTAINED BY OWNER / CONTRACTOR PER NEC, FROM THE METER BASE TO THE POWER SOURCE SUPPLIED BY PROVO CITY. SERVICES 200 AMPS AND BELOW PROVO CITY WILL PROVIDE THE CONDUCTOR UP TO 75 FEET MAX. THE COST OF THESE CONDUCTORS IS INCLUDED IN THE STANDARD CONNECTION FEES. FOR LONGER LENGTHS CONSULT WITH PROVO CITY POWER FOR ADDITIONAL COST.
STANDARDS

U.G. TEMPORARY POWER
POST TYPE METER INSTALLATION

249 N

- AMETER SOCKET HEIGHT
- 5' TO 6' FROM FINAL GRADE
- GROUND WIRE CONNECTED TO METER SOCKET NEUTRAL/GROUND TERMINAL
- #6 CU MIN. GROUND WIRE STAPLED TO POST
- 2" GRS OR IMC CONDUIT MIN.
- WOODEN POST 4X4 MIN. PRESSURE TREATED. POST TO BE PLUMB. RISER CONDUIT TO BE SECURELY FASTENED TO POST.
- COMPACTED BACK FILL TO STABILIZE PEDESTAL

- ADDRESS TO BE POSTED ON TEMP POST
- ALL NON-CURRENT CARRYING METALLIC PARTS TO BE BONDED TO NEUTRAL AND EFFECTIVELY GROUNDED - SEE DRAWINGS 28 & 29 FOR TYPICAL GROUNDING AND BONDING DETAILS.
- 8" X 5/8" GROUND ROD TO BE LEFT EXPOSED UNTIL AFTER INSPECTION
- STUB 48" OF WIRE INTO DE-ENERGIZED SECONDARY PEDESTAL. IF PEDESTAL IS ENERGIZED REFER TO DWG-36 FOR WIRE INSTALLATION
- SECONDARY PEDESTAL
- APPROPRIATELY SIZED TRIPLEX WIRE

NOTES:
1. WEATHERPROOF, 3 WIRE, 240 VOLT, BREAKER AND OUTLET CABINETS ARE REQUIRED.
   GROUND FAULT CIRCUIT INTERRUPTERS ARE REQUIRED. (GFCI) ON ALL OUTLETS.
2. PEDESTAL AND RELATED EQUIPMENT FURNISHED BY CUSTOMER.
3. INSTALLATION BY CUSTOMER.
4. PEDESTAL MUST BE PLACED WITHIN 10 FEET AND NO CLOSER THAN 2 FEET TO EXISTING TRANSFORMER OR SECONDARY PULL BOX. DO NOT OBLIQUE ACCESS TO POWER BOXES.
5. WIRE AND TRENCH TO BE FURNISHED BY CUSTOMER.
6. METER SHALL FACE STREET.
7. METER PEDESTAL TO BE INSPECTED BY PROVO CITY POWER. CALL 852-6999.
8. CALL 852-6999 FOR ACCESS TO TRANSFORMER ENCLOSURES OR SECONDARY PEDESTALS.
9. TEMPORARY POWER REQUIREMENTS LARGER THAN 200A WILL BE APPROVED BY PROVO CITY BUILDING INSPECTION DEPARTMENT AND INSTALLED BY CUSTOMER.
STANDARDS

O.H. TEMPORARY POWER
POST TYPE METER INSTALLATION

POLE: 4"x4"x16' MIN.
MAXIMUM CAPACITY 200 AMP

OUTLET RECEPTACLES, 2 WIRE, 120 VOLTS AND 3 WIRE, 240 VOLTS. BREAKER AND OUTLET CABINETS ARE REQUIRED TO BE WEATHERPROOF. GROUND FAULT CURRENT INTERRUPTORS ARE REQUIRED FOR ALL CIRCUITS

ADDRESS TO BE POSTED ON TEMP POST

WEATHERPROOF 3 WIRE METER SOCKET

MAXIMUM CAPACITY 200 AMP

CALL PROVO CITY POWER FOR INSPECTION: 852-6999

NOTE:
SERVICE LENGTH TO BE MAXIMUM OF 80' TO NEAREST O.H. DISTRIBUTION POLE.

SECONDARY SERVICE CONDUCTOR BY: PROVO

POLE: 4"x4"x16' MIN.
SUPPLIED & INSTALLED BY: OWNER/CONTRACTOR

WEATHERPROOF 3 WIRE METER SOCKET

CALL PROVO CITY POWER FOR INSPECTION: 852-6999

NOTE:
SERVICE LENGTH TO BE MAXIMUM OF 80' TO NEAREST O.H. DISTRIBUTION POLE.

SECONDARY SERVICE CONDUCTOR BY: PROVO

POLE: 4"x4"x16' MIN.
SUPPLIED & INSTALLED BY: OWNER/CONTRACTOR

WEATHERPROOF 3 WIRE METER SOCKET

CALL PROVO CITY POWER FOR INSPECTION: 852-6999
STANDARDS
TEMPORARY POWER METER PEDESTAL

ALL NON-CURRENT CARRYING METALLIC PARTS TO BE BONDED TO NEUTRAL AND EFFECTIVELY GROUNDED. SEE #10 BELOW.

ADDRESS TO BE POSTED ON TEMP. PEDESTAL

STUB 48" OF WIRE INTO DE-ENERGIZED SECONDARY PEDESTAL. IF PEDESTAL IS ENERGIZED, REFER TO DWG-36 FOR WIRE INSTALLATION

24" MIN. TO BE LEFT EXPOSED UNTIL AFTER INSPECTION

SECONDARY PEDESTAL

72"

8" X 5/8" GROUND ROD

APPROPRIATELY SIZED TRIPLEX WIRE 18" MIN. DEPTH

PEDESTAL SHALL BE WEATHERPROOF

BURY TO GRADE LINE ON PEDESTAL

COMPACTED BACK FILL

#6 CU MIN.

OUTLET RECEPTACLES

3 WIRE METER SOCKET

NOTES:
1. WEATHERPROOF, 3 WIRE, 120/240 VOLT, BREAKER AND OUTLET CABINETS ARE REQUIRED. GFCI PROTECTION REQUIRED ON ALL OUTLETS.
2. PEDESTAL AND RELATED EQUIPMENT FURNISHED BY CUSTOMER.
3. INSTALLATION BY CUSTOMER.
4. PEDESTAL MUST BE PLACED WITHIN 10 FEET AND NO CLOSER THAN 2 FEET TO EXISTING TRANSFORMER OR SECONDARY PEDESTALS. DO NOT OBSTRUCT ACCESS TO POWER BOXES.
5. WIRE AND TRENCH TO BE FURNISHED BY CUSTOMER, WITHIN 2' FROM POWER BOX.
6. METER SHALL FACE STREET.
7. METER PEDESTAL TO BE INSPECTED BY PROVO CITY POWER. CALL 852-6999
8. CALL 852-6999 FOR ACCESS TO TRANSFORMER ENCLOSURES AND SECONDARY PEDESTALS.
9. TEMPORARY POWER REQUIREMENTS LARGER THAN 200 AMPS WILL BE APPROVED BY PROVO CITY BUILDING INSPECTION DEPT AND INSTALLED BY CUSTOMER.
10. NEUTRAL AND GROUNDING CONDUCTORS SHALL BE BONDED AS PER NEC 250.146.
STANDARDS
UNDERGROUND DISTRIBUTION
SPECIFICATIONS (3 PHASE)
FOR NEW DEVELOPMENT

MULE TAPE IN CONDUIT WITH 24" LEAD AT BOTH ENDS. CAP AND/OR TAPE ALL CONDUIT OPENINGS WITH TAPE LEADS SHOWING.

2 STAND OFF BRACKETS FOR EVERY 10' OF CONDUIT. MINIMUN 6" STAND OFF, DO NOT BURY BRACKETS.

RIGID METAL OR IMC CONDUIT FOR FIRST 10' SECTION AT THE POLE.

NOTES:
1. TRENCHES AND PAD MOUNT TRANSFORMER LOCATIONS MUST BE COMPACTED TO 95% COMPACTION.
2. ALL DEPTHS SHOWN MUST BE FROM FINISHED GRADE. YELLOW/RED WARNING TAPE TO BE PLACED IN TRENCH (2' ABOVE CONDUIT) AT ALL STREET CROSSINGS. MINIMUM DEPTH FOR PRIMARY CONDUIT IS 48"; FOR SECONDARY CONDUIT 36" OR 24" FOR STREET LIGHTS. SEE TRENCH DETAIL DRAWING FOR SPECIFICATIONS.
3. PVC SCH. 40 4" OR LARGER REQUIRED FOR PRIMARY.
4. ALL TRENCHES MUST BE LEFT OPEN UNTIL FINAL INSPECTION BY PROVO CITY POWER AT 852-6999.

CONDUIT DETAILS
4" CONDUITS
TOP VIEW
4x8" GROUND ROD
PRIMARY SECTIONALIZER/SWITCH

FINAL GRADE
48" MINIMUM FOR PRIMARY CONDUCTORS
GRS OR IMC ELBOW, 36" MIN. RADIUS FOR PRIMARY.
ALL GRS OR IMC CONDUIT INSTALLED BELOW GRADE SHALL BE WRAPPED WITH CORROSION PROTECTION TAPE.
GRS, IMC OR CHAMPION FIBERGLASS ELBOWS
GROUND RODS: 5/8" x 8' COPPER CLAD UL LISTED.

TRANSFORMER
SEE DRAWING 34B
Services up to 800 Amps.
SEE DRAWING 34A
Services Larger than 800 Amp.

VAULT
TO SERVICE EQUIPMENT
NOTE:
1. PROVO CITY POWER TO APPROVE BACKFILL MATERIAL
2. PROVO CITY POWER SHALL INSPECT TRENCH/CONDUIT PRIOR TO BACKFILL.
3. SECONDARY DEPTH 36" MINIMUM.
4. SERVICE DEPTH 24" MINIMUM.
STANDARDS
REQUIRED TRENCH AND FINAL INSPECTIONS

FOR PROJECTS:

FOR MAIN LINE TRENCH INSPECTIONS:
CALL AFTER CONDUIT HAS BEEN PLACED IN TRENCH AND 12" OF SAND HAS BEEN PLACED ON
CONDUIT. TRENCH MUST BE LEFT OPEN FOR INSPECTION OR YOU WILL BE ASKED TO RE-OPEN
TRENCH FOR INSPECTION AND FOR INSPECTOR TO GPS CONDUIT LOCATION.
CALL THE PROJECT ENGINEER YOU HAVE BEEN WORKING WITH.
PROVO POWER ENGINEERING: 801 852-6852

SERVICE TRENCH INSPECTIONS:
CALL FOR TRENCH INSPECTION BEFORE DOING ANY BACKFILL ON TRENCH.
PROVO CITY POWER DISPATCH: 801 852-6999

TO HAVE CONDUIT ELBOWS PLACED INTO EXISTING POWER EQUIPMENT:
CALL AFTER TRENCH HAS BEEN OPENED TO BASE OF POWER EQUIPMENT, CONDUIT HAS BEEN
INSTALLED AND LEFT 2' SHORT OF POWER EQUIPMENT AND FIBERGLASS ELBOW HAS BEEN LEFT
ON SITE FOR OUR CREW TO INSTALL. NEVER PLACE CONDUIT INTO LIVE EQUIPMENT.
PROVO CITY POWER DISPATCH: 801 852-6999

FOR FINAL PROJECT INSPECTION:
CALL WHEN BOXES ARE INSTALLED AT PROPER HEIGHT AND ARE LEVEL, GROUND RODS HAVE
BEEN INSTALLED, MULE TAPE HAS BEEN PLACED IN CONDUIT, AND CONDUIT IS AT PROPER
HEIGHT. CALL THE PROJECT ENGINEER YOU HAVE BEEN WORKING WITH.
PROVO POWER ENGINEERING: 801 852-6852
STANDARDS

U.G. POWER INSTALLATION
EXISTING ENERGIZED EQUIPMENT

1. CONNECTING TO A SECTIONALIZER
   - OPEN TRENCH (TYPICAL)
   - CONDUIT (TYPICAL)
   - FOR INSTALLATION OF URB CONDUCTORS, COIL 6 FEET OF EXTRA CONDUCTORS OUTSIDE OF ENERGIZED EQUIPMENT

2. CONNECTING TO A PEDESTAL
   - EXISTING ENERGIZED SECONDARY PEDESTAL

3. CONNECTING TO A TRANSFORMER
   - EXISTING ENERGIZED TRANSFORMER
   - PAD

NOTES:
1. FOR SAFETY REASONS DO NOT INSTALL CONDUITS/CONDUCTORS INSIDE ENERGIZED EQUIPMENT.
2. STOP INSTALLATION OF CONDUITS/CONDUCTORS A MAXIMUM OF 2 FEET FROM ENERGIZED EQUIPMENT.
3. EXTEND TRENCH TO THE EDGE OF THE EQUIPMENT.
4. CONTRACTOR TO SUPPLY SWEEP & ADDITIONAL CONDUIT TO COMPLETE INSTALLATION BY PROVO POWER.
5. CONTACT PROVO POWER AND NOTIFY CREWS FOR INSTALLATION OF CONDUIT/CONDUCTORS INTO ENERGIZED EQUIPMENT.
NOTE:
IN THE EVENT OF AN EQUIPMENT FAILURE OR POWER OUTAGE, IT IS NECESSARY FOR PROVO CITY CREWS TO HAVE ADEQUATE ACCESS TO SECONDARY PEDESTAL LIDS. ACCESS TO THE FRONT AND SIDES AND REAR SHALL BE 2 FEET. NO TREES, SHRUBS, FENCES, LARGE LANDSCAPE ROCKS, OR OTHER OBSTRUCTIONS SHALL BE PERMITTED IN ACCESS AREA.

NOTE FOR NEW SERVICES
1. TRANSFORMERS AND SECONDARY PEDESTALS ARE LOCKED FOR PROTECTION AGAINST ELECTRICAL SHOCK.

2. WHEN INSTALLATION OF A NEW SERVICE REQUIRES ACCESS TO A TRANSFORMER OR PEDESTAL, OWNER/CONTRACTOR SHOULD CALL PROVO CITY POWER AT 852-6999.

3. ALL NEW CONDUIT RUNS SHALL BE INSTALLED BY CONTRACTOR INTO TRANSFORMER PEDESTAL WITH PROVO CITY POWER SUPERVISION.

4. BLUE STAKE LAWS PROHIBIT ANY DIGGING WITH EQUIPMENT WITHIN THE 2' SAFETY ZONE. PLEASE HAND DIG AROUND ANY ELECTRICAL EQUIPMENT.
STANDARDS
TRANSFORMER & PADMOUNTED EQUIPMENT ACCESS-CLEARANCES

RESIDENTIAL SINGLE-PHASE TRANSFORMER

PADMOUNTED EQUIPMENT

COMMERCIAL 3-PHASE TRANSFORMER

PADMOUNTED EQUIPMENT

NOTE:
IN THE EVENT OF AN EQUIPMENT FAILURE OR POWER OUTAGE, IT IS NECESSARY FOR UTILITY CREWS TO HAVE ADEQUATE ACCESS TO PADMOUNTED EQUIPMENT AND TRANSFORMERS. ACCESS TO THE FRONT SHALL BE TEN FEET, ACCESS TO THE REAR AND SIDES SHALL BE THREE FEET. NO TREES, SHRUBS, FENCES, LARGE LANDSCAPE ROCKS, OR OTHER OBSTRUCTIONS SHALL BE PERMITTED IN ACCESS AREA.

NOTE FOR NEW SERVICES
1. PADMOUNTED EQUIPMENT, TRANSFORMERS AND SECONDARY PEDESTALS ARE LOCKED FOR PROTECTION AGAINST ELECTRICAL SHOCK.

2. WHEN INSTALLATION OF A NEW SERVICE REQUIRES ACCESS TO A TRANSFORMER OR PEDESTAL, OWNER/CONTRACTOR SHOULD CALL PROVO CITY POWER AT 852-6999.

3. ALL NEW CONDUIT RUNS SHALL BE INSTALLED BY CONTRACTOR INTO TRANSFORMER PEDESTAL WITH PROVO CITY POWER SUPERVISION.

4. BLUE STAKE LAWS PROHIBIT ANY DIGGING WITH EQUIPMENT WITHIN THE 2' SAFETY ZONE. PLEASE HAND DIG AROUND ANY ELECTRICAL EQUIPMENT.
STANDARDS

SERVICES LARGER THAN 800 AMP
3 PHASE TRANSFORMER PAD
SPECIFICATION

3-PHASE TRANSFORMER PAD

GROUNDING INSERTS

12" Ø HDPE SUMP

6x6 VAULT

PAD DIMENSIONS

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<tr>
<th>KVA</th>
<th>A</th>
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<td>75 ³⁄₄&quot;</td>
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NOTES:
1. PROVO CITY POWER TO INSPECT INSTALLATION (CALL 852-6999)
2. 3' MIN. CLEARANCE FOR BOTH SIDES AND REAR OF PAD.
3. 10' MIN. CLEARANCE IN FRONT OF PAD.
4. A MAXIMUM OF 32 CONDUCTORS NOT TO EXCEED 750 MCM MAXIMUM, CONDUCTOR SIZED PER NEC.
5. CONTACT PROVO POWER ENGINEERING DEPARTMENT FOR A LIST OF APPROVED VENDORS OF CONCRETE PAD/VAULTS. (CALL 852-6852)
NOTES:

1. INSTALL #4 RE-BAR 12" O/C ENTIRE PAD.
2. INSTALL 5/8 X 8' COPPER CLAD GROUND ROD WITHIN PRIMARY COMPARTMENT.
3. PROVO CITY POWER TO INSPECT PAD PRIOR TO POUR. CALL 852-6832.
4. 3' MIN. CLEARANCE FOR BOTH SIDES AND REAR OF PAD.
5. 10' MIN. CLEARANCE IN FRONT OF PAD.
NOTES:
1. THE METAL CONDUIT RACEWAY SHALL BE BONDED TO THE NEUTRAL CONDUCTOR BY THE USE OF A GROUNDING BUSHING (WITH BONDING JUMPER), BONDING LOCKNUTS, THREADED CONDUIT HUB, OR OTHER AS APPROVED BY PROVO CITY INSPECTION DEPARTMENT.
2. WHEN A GROUNDING BUSHING IS USED, A BONDING JUMPER SHALL BE INSTALLED TO CONNECT WITH THE NEUTRAL GROUNDING TERMINAL AS REQUIRED BY PROVO CITY INSPECTION DEPARTMENT. SEE NEC TABLE 250-66 FOR BONDING JUMPER SIZES.
3. THE GROUNDING ELECTRODE SYSTEM (CONSISTING OF METAL WATER PIPES, METAL BUILDING FRAME, CONCRETE ENCASED ELECTRODE, GROUND RING, DRIVEN GROUND RODS, ETC.) SHALL BE BONDED TO THE NEUTRAL CONDUCTOR AND INSTALLED AS REQUIRED BY PROVO CITY INSPECTION DEPARTMENT. CALL 852-6450. CONCRETE ENCASED ELECTRODE SHALL BE REQUIRED FOR ALL NEW CONSTRUCTION.
NOTES:

1. THE METAL CONDUIT RACEWAY SHALL BE BONDED TO THE NEUTRAL CONDUCTOR BY THE USE OF A GROUNDING BUSHING (WITH BONDING JUMPER), BONDING LOCKNUTS, THREADED CONDUIT HUB, OR OTHER AS APPROVED BY PROVO CITY BUILDING INSPECTION.

2. WHEN A GROUNDING BUSHING IS USED, A BONDING JUMPER SHALL BE INSTALLED TO CONNECT WITH THE NEUTRAL GROUNDING TERMINAL AS REQUIRED BY PROVO CITY BUILDING INSPECTION. THE BONDING JUMPERS SHALL BE SIZED TO MEET NEC TABLE 250-66 AS REQUIRED BY PROVO CITY BUILDING INSPECTION.

3. THE GROUNDING ELECTRODE SYSTEM (CONSISTING OF METAL WATER PIPES, METAL BUILDING FRAME, CONCRETE ENCASED ELECTRODE, GROUND RING, DRIVEN GROUND RODS, ETC.) SHALL BE BONDED TO THE NEUTRAL CONDUCTOR AND INSTALLED AS REQUIRED BY PROVO CITY BUILDING INSPECTION. CONCRETE ENCASED ELECTRODE SHALL BE REQUIRED FOR ALL NEW CONSTRUCTION.
STANDARDS

ELECTRIC SERVICE REQUIREMENTS

CURRENT TRANSFORMER METERING-800 AMP MAXIMUM

CURRENT TRANSFORMER (C.T.) METERING IS REQUIRED WHEN A THREE-PHASE SERVICE EXCEEDS 400 AMPERES, OR WHEN A SINGLE-PHASE SERVICE EXCEEDS 320 CONTINUOUS AMPERES. FOR SERVICES OVER 800 AMPERES SEE SECTION ON SWITCHBOARD METERING.

MAIN SERVICE DISCONNECT IS REQUIRED TO BE OUTSIDE AT METER LOCATION. THE C.T. METERING EQUIPMENT SHALL BE MOUNTED IN A LOCATION APPROVED BY PROVO CITY. INSTRUMENT TRANSFORMERS SHALL NOT BE INSTALLED INSIDE OF THE PAD MOUNT TRANSFORMER.

WHEN METERING EQUIPMENT IS INSTALLED AT A LOCATION WHERE IT MIGHT BE STRUCK BY A VEHICLE, THE CUSTOMER IS REQUIRED TO INSTALL AND MAINTAIN AN APPROVED BARRIER POST.

THE CUSTOMER WILL PROVIDE AND INSTALL:

THE WEATHER TIGHT METALIC CABINET (NEMA 3R, EUSERC 316 OR EQUAL, 24” x 48” x 11” FOR SINGLE PHASE AND 36”x48”x11” FOR THREE PHASE MINIMUM) SEALABLE WITH A HINGED DOOR, SECURELY MOUNTED ON A RIGID SURFACE. THE TOP OF THE CABINET SHOULD BE NO MORE THAN 6 FEET FROM FINAL GRADE.

EUSERC APPROVED (EUSERC 328A FOR SINGLE PHASE, 329A FOR THREE PHASE) CURRENT TRANSFORMER MOUNTING BASE RATED 50,000 AMPERE FAULT DUTY.

THE CURRENT TRANSFORMER METER SOCKET WITH A SPACE RESERVED BELOW THE SOCKET FOR A TEST SWITCH. (EUSERC 339). THE METER SOCKET SHOULD BE MOUNTED SO THAT THE CENTER OF THE METER IS MORE THAT 5’6” FROM THE FINAL GRADE. METER SOCKETS WITH CIRCUIT CLOSURES OR BYPASS CLIPS WILL NOT BE APPROVED.

THE CONDUIT BETWEEN THE METER SOCKET AND THE C.T. CABINET. RIGID 1” MINIMUM WITH PROPER FITTINGS AND BUSHINGS, NOT TO EXCEED 12” IN LENGTH.

TERMINATE WITH APPROVED CONNECTORS THE CONDUCTORS BETWEEN THE TRANSFORMER AND THE LINE SIDE OF THE CURRENT TRANSFORMER-MOUNTING BASE.

TERMINATE WITH APPROVED CONNECTORS THE CONDUCTORS BETWEEN THE CUSTOMER PANEL AND THE LOAD SIDE OF THE CURRENT TRANSFORMER-MOUNTING BASE.

BARRIER POST (6” DIAMETER, CONCRETE FILLED) WHERE METERING EQUIPMENT IS INSTALLED IN VEHICLE TRAFFIC AREA.

GROUNDING PER NEC (ARTICLE 250 GROUNDING) FOR ALL METER AND CURRENT TRANSFORMER ENCLOSURES.

PROVO CITY POWER WILL OWN, PROVIDE AND INSTALL:

THE METER AND TEST SWITCH.

THE CURRENT TRANSFORMERS AND CURRENT TRANSFORMER BUS BARS.

THE WIRING BETWEEN THE CURRENT TRANSFORMER AND THE METER SOCKET ENCLOSURE.

ANY CHANGES OR DEVIATIONS MUST HAVE PRIOR WRITTEN APPROVAL BY PROVO CITY POWER METERING DIVISION. 852-6855.
STANDARDS

CT CABINET INSTALLATION
(SERVICES 400-800 AMP CT'S LOCATED IN CT CABINET)

MAIN DISCONNECT

LOAD SIDE

RESERVED FOR POWER COMPANY LINE SIDE

12" MAX

CONDUIT AND CONDUCTOR SIZED AS PER NEC. (SIZE ACCORDING TO MAIN DISCONNECT).

EUSERC APPROVED

OPTIONAL METER BASE MAY BE MOUNTED ON THE LEFT. (SEE DRAWINGS 21-A,21-B,21-C & 22-C FOR METER SOCKET DETAILS).

TEST SWITCH

1" CONDUIT

8' MAX

5'6"

ALL GRS OR IMC CONDUIT INSTALLED BELOW GRADE SHALL BE WRAPPED WITH CORROSION PROTECTION TAPE

24" MIN.

ALL NON-CURRENT CARRYING METALLIC PARTS TO BE BONDED TO NEUTRAL AND EFFECTIVELY GROUNDED - SEE DRAWINGS 28 & 29 FOR TYPICAL GROUNDING AND BONDING DETAILS.

SEE DRAWING #26-B FOR DETAIL AT TRANS.

ELBOW TO BE GRS OR IMC

PVC SCH. 40 CONDUIT TO TRANSFORMER

NOTES:
1. CT CABINET & METER BASE TO BE SEALABLE BY PROVO CITY POWER.
2. MAIN SERVICE DISCONNECT IS REQUIRED OUTSIDE AT THE METER LOCATION
3. INSTALLATION LOCATION SHALL BE APPROVED BY PROVO CITY POWER DEPT.
4. CONDUIT CLAMP MUST BE ABOVE GROUND.
5. PROVO CITY ENERGY TO TERMINATE SECONDARY CONDUCTORS AT TRANSFORMER.
6. CALL 852-6999 FOR INSPECTION PRIOR TO BACK FILL OF TRENCH.
7. CALL 852-6450 FOR PERMANENT POWER INSPECTION.
8. CONDUIT AND CONDUCTORS TO BE SUPPLIED, INSTALLED, TERMINATED & MAINTAINED BY OWNER/CONTRACTOR PER NEC, FROM THE CT ENCLOSURE TO THE POWER SOURCE SUPPLIED BY PROVO CITY POWER.
9. FOR 4 WIRE DELTA SERVICE, IDENTIFY RIGHT HAND CT MOUNTING BASE AS THE HIGH (POWER) LEG AND IDENTIFY WITH ORANGE MARKINGS ON RIGHT SIDE OF CT MOUNTING BASE AS REQUIRED BY NEC.
STANDARDS
METER SOCKET WIRING DIAGRAM
THREE PHASE, 4 WIRE WYE DELTA
120/208, 277/480 VOLT
(CLASS 320 AMP, 7 TERMINAL SOCKET WITH LINK BYPASS, LEVER BYPASS & PRESSURE RELEASE)

NOTES:
1. WIRE SIZE RANGE: LUGS SUITABLE FOR 110 - 500 kcmil Cu/Al CONDUCTORS.
2. APPROXIMATE DIMENSIONS: 7"(D) x 16"(W) x 27"(H).
3. METER SOCKET SHALL HAVE BYPASS. (LINK OR MANUAL)
4. CONDUIT AND CONDUCTOR TO BE SUPPLIED, INSTALLED & TERMINATED BY OWNER / CONTRACTOR PER NEC, FROM THE METER BASE TO THE TRANSFORMER OR SECONDARY BOX SUPPLIED BY PROVO CITY. SERVICES 200 AMPS AND BELOW PROVO CITY WILL PROVIDE THE CONDUCTOR.
STANDARDS
METER SOCKET WIRING DIAGRAM
THREE PHASE, 4 WIRE WYE DELTA
120/208, 277/480 VOLT
(200 AMP, 7 TERMINAL SOCKET WITH LINK BYPASS, LEVER BYPASS & PRESSURE RELEASE)

NOTES:
1. WIRE SIZE RANGE: LUGS SUITABLE FOR #2 - 350 kcmil Cu/Al CONDUCTORS.
2. APPROXIMATE DIMENSIONS: 5"(D) x 13"(W) x 19"(H).
3. METER SOCKET SHALL HAVE BYPASS. (LINK OR MANUAL)
4. KNOCKOUTS: THREE ON BOTTOM AND ONE EACH ON BOTH SIDES AND BACK; KNOCKOUTS ARE CONCENTRIC TYPE WITH A MAXIMUM DIAMETER OF 3".
5. FOR OVERHEAD SERVICES, METER SOCKETS ARE FURNISHED WITH A HUB SIZED AS NEEDED; AVAILABLE HUB SIZES ARE 1-¼", 1-½", 2" AND 2-½".
STANDARDS

CT METER SOCKET SPECIFICATION
THREE PHASE, 4 WIRE WYE OR DELTA
120/208, 277/480, VOLT

(200+ AMP SERVICES, CT METERED)

TEST SWITCH MOUNTING BRACKET
(TEST SWITCH SUPPLIED BY PROVO CITY)

NOTES:
1. NO TERMINALS IN THESE 2 POSITIONS ON 13 TERMINAL SOCKET, 13 SOCKET RECOMMENDED.
   15 SOCKET IS ACCEPTABLE (FORM 8S & 9S METERS).
2. APPROXIMATE DIMENSIONS: 4.5"(D) X 12"(W) X 20"(H).
3. METER SOCKET SHALL BE SEALABLE BY PROVO CITY.
4. METER SOCKET SHALL HAVE TEST SWITCH COMPARTMENT TO MOUNT 9.5" TEST SWITCH.
   TEST SWITCH SUPPLIED AND INSTALLED BY PROVO CITY.
5. PROVO CITY POWER TO WIRE METER SOCKET, CT'S AND TEST SWITCH.
STANDARDS

ELECTRIC SERVICE REQUIREMENTS

SWITCHBOARD METERING

A EUSERC (EUSERC 354 OUTDOOR) SWITCHBOARD METERING SECTION IS REQUIRED WHEN THE SERVICE ENTRANCE RATING IS GREATER THAN 800 AMPERES. THE METERING CURRENT TRANSFORMERS WILL BE LOCATED IN THE CURRENT TRANSFORMER COMPARTMENT. THE METER AND TEST SWITCH WILL BE MOUNTED ON THE HINGED COVER OF THE COMPARTMENT. THE AREA BELOW THIS COMPARTMENT’S BARRIER MAY BE USED AS A MAIN SWITCH (BREAKER) COMPARTMENT, OR A LOAD DISTRIBUTION COMPARTMENT. THE METERING COMPARTMENT SHALL BE ON THE SUPPLY SIDE OF THE MAIN SWITCH OR BREAKER.

THE MOUNTING PAD FOR ALL SWITCHBOARD METERING ENCLOSURES WILL BE A MINIMUM 4” THICK CONCRETE PAD, EXTENDING 3’ IN FRONT OF THE ENCLOSURE TO ENSURE AN ADEQUATE AND SAFE WORK AREA.

THE CUSTOMER WILL PROVIDE AND INSTALL:

THE CONDUIT AND CONDUCTORS, A MAXIMUM OF 32 CONDUCTORS NOT TO EXCEED 750 MCM MAXIMUM, CONDUCTOR SIZED PER NEC.

THE SWITCHBOARD SERVICE SECTION, CURRENT TRANSFORMER MOUNTING BASE, PANELS, PULLING SECTION SEPERATE FROM THE CT COMPARTMENT, METER SOCKET AND PROVISIONS FOR A TEST SWITCH.

CURRENT TRANSFORMER BUSS BARS, AND TERMINATING BOLTS MUST BE SECURED IN PLACE AND SHALL BE PROVIDED WITH NUTS, FLAT WASHER, SPRING WASHERS, AND ALL PARTS MUST BE PLATED TO PREVENT CORROSION. BUSS BARS ARE REQUIRED FROM THE PULL SECTION INTO THE SERVICE SECTION.

ALL PULL AND TERMINATION SECTIONS SHALL BE FULL FRONT ACCESS. COVER PANELS SHALL BE REMOVABLE, SEALABLE, AND PROVIDED WITH TWO LIFTING HANDLES, AND LIMITED TO 9 SQUARE FEET IN AREA.

ALL REMOVABLE PANELS AND COVERS TO THE COMPARTMENTS USED FOR TERMINATING OR ROUTING CONDUCTORS SHALL HAVE SEALING PROVISIONS.

GROUNDING MUST MEET NEC REQUIREMENTS. LUGS FOR TERMINATING THE CUSTOMER’S GROUND WIRE SHALL BE LOCATED OUTSIDE OF THE SEALABLE SECTION AND SHALL BE DESIGNED TO READILY PERMIT THE CUSTOMER’S NEUTRAL SYSTEM TO BE ISOLATED, WHEN NECESSARY, FROM PROVO CITY’S NEUTRAL.

THE NEC REQUIRES A CLEAR WORKSPACE OF 78” HIGH BY 70” WIDE BY 48” DEEP IN FRONT OF METERING EQUIPMENT.

PROVO CITY WILL OWN, PROVIDE AND INSTALL:

THE METER AND TEST SWITCH.

THE CURRENT TRANSFORMERS.

THE WIRING BETWEEN THE CURRENT TRANSFORMERS AND THE METER TEST SWITCH.

ANY CHANGES OR DEVIATIONS MUST HAVE PRIOR WRITTEN APPROVAL BY PROVO CITY POWER METERING DIVISION. 852-6855.
NOTES:

1. MINIMUM PULLING SECTION DIMENSIONS: 800-1200 AMP 30" WIDE; 1200-2000 AMP 35" WIDE.

2. FOR SWITCHBOARD RATINGS BELOW 400 AMP & ABOVE 2000 AMP CONSULT PROVO CITY POWER ENGR.

3. BUS BARS, WITH PROVISIONS FOR TERMINATION LUGS AS EUSERC 347 ARE REQUIRED FROM THE PULL SECTION INTO THE SERVICE SECTION.

4. CUSTOMER SHALL PROVIDE A DRAWING WITH DIMENSIONS OF PROPOSED SERVICE EQUIPMENT.

5. METER PANELS SHALL NOT BE HINGED ON A FILLER PANEL. HINGED METER PANEL MUST BE CAPABLE OF BEING OPENED 90° WITH METER IN PLACE.

6. A BARRIER IS REQUIRED INSIDE THE SERVICE SECTION BETWEEN THE CT COMPARTMENT AND THE CUSTOMER PULLING SECTION.

7. A BARRIER IS REQUIRED INSIDE THE SERVICE SECTION BETWEEN THE CT COMPARTMENT AND THE CUSTOMER PULLING SECTION.

8. MAIN SERVICE DISCONNECT IS REQUIRED OUTSIDE AT THE METER LOCATION. METER LOCATION SHALL BE APPROVED BY PROVO CITY POWER DEPT.

9. SERVICE DISCONNECTS RATED 1000 OR MORE AND WITH A VOLTAGE LINE TO GROUND GREATER THEN 150V SHALL BE PROVIDED WITH GROUND FAULT PROTECTION OF EQUIPMENT (GFPE)

10. CONDUIT & CONDUCTOR TO BE SUPPLIED, INSTALLED, TERMINATED & MAINTAINED BY OWNER / CONTRACTOR PER NEC, FROM THE SWITCHBOARD TO THE POWER SOURCE SUPPLIED BY PROVO CITY POWER

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**STANDARDS**

**UNDERGROUND SWITCHBOARD SERVICE**

**MAIN SERVICE(S) LARGER THAN 800 AMP**

**MULTI-METERS UP TO 400 AMP PER METER**

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NOTES:
1. MINIMUM PULLING SECTION DIMENSIONS: 800-1200 AMP 30" WIDE; 1200-2000 AMP 35" WIDE.
2. FOR SWITCHBOARD RATINGS BELOW 400 AMP AND ABOVE 2000 AMP CONSULT PROVO CITY POWER ENGINEERING.
3. BUS BARS, WITH PROVISIONS FOR TERMINATION LUGS AS EUSERC 347 ARE REQUIRED FROM THE PULL SECTION INTO THE SERVICE SECTION.
4. CUSTOMER SHALL PROVIDE A DRAWING WITH DIMENSIONS OF PROPOSED SERVICE EQUIPMENT.
5. EXTERIOR DOORS ON SWITCHBOARDS MUST BE SEALABLE AND HOLD SECURELY AT 90°.
6. METER PANELS SHALL NOT BE HINGED ON A FILLER PANEL. HINGED METER PANEL MUST BE CAPABLE OF BEING OPENED 90° WITH METER IN PLACE.
7. A BARRIER IS REQUIRED INSIDE THE SERVICE SECTION BETWEEN THE CT COMPARTMENT AND THE CUSTOMER PULLING SECTION.
8. CONDUIT AND CONDUCTOR TO BE SUPPLIED, INSTALLED, TERMINATED & MAINTAINED BY OWNER/CONTRACTOR PER NEC, FROM THE SWITCHBOARD TO THE POWER SOURCE SUPPLIED BY PROVO CITY POWER.
9. SERVICE DISCONNECTS RATED 1000 OR MORE AND WITH A VOLTAGE LINE TO GROUND GREATER THAN 150V SHALL BE PROVIDED WITH GROUND FAULT PROTECTION OF EQUIPMENT (GFPE)
SERVICE AT PRIMARY VOLTAGE

1. Service at Primary Voltage (Over 600 Volts)

Every primary voltage installation is unique. Consult Provo Power prior to making final site plans. The following guidelines will assist with preliminary planning.

1.1. General

High-voltage instrument transformers and transformer-rated meters are required for customers taking service at primary voltage under provisions of Provo Power’s rate schedule.

To establish a mutually satisfactory location for the service point and metering details, the customer shall consult Provo Power before construction begins.

Provo Power will provide primary voltage delivery to qualified customers directly, without transformation, from the high-voltage or “primary” distribution system (standard for the location in which service is requested), if the following conditions apply:

1. Service at primary voltage will not, in Provo Power’s judgment, adversely affect the operation of Provo Power’s distribution system or service to other customers.
2. The service supplied is distributed in a safe and reliable manner.
3. The customer provides switching devices with appropriate overcurrent protection to isolate the utility system from disturbance on the customer-owned primary facilities. Such devices shall be within sight, and not more than 100 feet from the metering equipment.

Provo Power will install disconnecting means at (or near) the service point to separate the customer’s system from Provo Power’s system, for Provo Power use only. This disconnecting means may include overcurrent isolation. This equipment is in addition to any disconnects or switches provided by the customer, on customer facilities.
1.2. Customer Equipment

The customer receiving service at primary voltage may own poles, conductors, cables, transformers, switches, and associated protective devices in accordance with rate schedules or special contracts.

The customer is responsible for the operation and maintenance of all customer-owned equipment. Provo Power does not provide replacement parts for customer-owned equipment.

Provo Power will not accept some transformer configurations because of disruptive operating characteristics. The customer shall submit specifications for protective devices and transformers, including core types and winding configurations with associated wiring, for written approval by Provo Power.

Contact Provo Power before installation for details and limitations.

1.3. Underground Primary Metering Equipment (Less than 600 Amps)

The underground service point is at the pad mounted enclosure containing the primary metering equipment in accordance with the current Provo City policies.
Requirements:
1. The meter will be located on the metering station. The customer will provide the metering enclosure as approved by Provo Power.
2. The vault or basement, its size and location must be approved by Provo Power.
3. The customer will provide the instrument current and voltage transformers and test switch approved by Provo Power. (Sizing of CTs and PTs)
4. Provo Power may require a disconnect means at the primary meter. Consult Provo Power and NEC.
5. Ten feet (10’) of clear workspace is required in front of all access doors. Three feet (3’) of clear workspace is required around the sides of the enclosure without doors.
6. Provo Power will provide the meter.
1.4. **Switchgear Enclosure for Primary Metering**

Prior to construction, the customer shall consult Provo Power regarding primary services greater than 600 V. Customers shall meet the requirements of EUSERC Section 400 when switchgear enclosures are required to meter medium-voltage delivery services. Ten feet (10’) of clear workspace is required in front of access doors.

The customer shall submit approval drawings of the metering equipment to Provo Power prior to fabrication. Such drawings shall indicate the company’s name, the job address, the contact address, and the telephone number of the manufacturer’s representative.

**The customer shall provide and install:**
1. All necessary hardware per EUSERC Section 400.
2. A clear work space 78” high, 36” wide and 48” deep in front of distribution metering equipment (per current NEC requirements).
3. A concrete mounting pad for the switchgear metering enclosure, a minimum of 4” thick, or a ground sleeve.

**Provo Power will provide:**
1. The meter

**Note:** The customer shall consult Provo Power for specifications on instrument transformers, the meter test switch and secondary-side wiring of instrument transformers prior to ordering the meter enclosure. Enclosure drawings shall be provided to Provo Power for approval prior to installation.

1.5. **Primary Metering – Customer-Owned Substation**

Prior to construction design, the customer shall consult Provo Power regarding metering at customer-owned substations.

The customer shall submit approval drawings of the metering equipment to Provo Power Meter Engineering Division prior to fabrication. Such drawings shall indicate the company’s name, the job address, the contact address, and telephone number. Provo Power will specify proper metering equipment and placement according to current standards and specifications. Metering equipment installations will not be permitted without written permission from Provo Power.