

BRIGHAM CITY PUBLIC POWER
ELECTRICAL REQUIREMENTS
AND
STANDARDS MANUAL



FEBRUARY 2026~~AUGUST 2025~~

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GENERAL

SECTION 1 GENERAL

1.01 Ordinances Govern

Nothing in this document shall be construed to be contrary to Brigham City Ordinances. Should a conflict exist between this document and the Ordinances, the Ordinances shall govern.

1.02 Conformance with Federal, State, and Local Laws

Nothing in this document shall relieve the Developer, Engineer, or Contractor from abiding by any and all Federal, State and local laws

1.03 Definitions

- A. APWA. The American Public Works Association
- B. City. The City of Brigham City, Utah.
- C. County. Box Elder County, Utah
- D. Construction Plans. Construction plans include drawings showing all required improvements for a development showing their location, size, grade, and elevations.
- E. Customer. A person or company receiving service from any City utilities
- F. Contractor. A person or company hired by the city or a Developer to perform construction in or for the city, having appropriate state licenses to perform said work.
- G. Council or City Council. The governing body of the city.
- H. Development Review Team. The Review Team (DRT) of Brigham City.
- I. Developer. Person, persons, partnership or corporations developing residential, commercial or industrial property.
- J. Improvements. Includes roads, streets, curbs, gutters, sidewalks, grading, landscaping, water and sanitary sewer systems, irrigation systems, drainage systems, power systems, fences, public facilities, trees or other requirements by this chapter or by the city.
- K. Land Surveyor. A person licensed with the State of Utah to practice as a licensed land surveyor.
- L. Lot. A parcel or tract of land within a subdivision.
- M. MUE. A Municipal Utility Easement acquired by the city for city utilities.
- N. MUTCD. Manual on Uniform Traffic Control Devices.
- O. NEC. The National Electrical Code is a United States standard for the safe installation of electrical wiring and equipment.
- P. NEMA. National Electrical Manufacturers' Association
- Q. NESC. The National Electrical Safety Code
- R. Net billing. A debit and credit metering process in an account.
- S. Offsite Facilities. Facilities outside of the boundaries of the subdivision or development.

- T. Onsite Facilities. Facilities installed within or on the perimeter of the subdivision or development site.
- U. OSHA. The Occupational Safety and Health Administration.
- V. Power Department. The division of City government responsible for the city owned Electric utilities.
- W. Public Power Director. The Public Power Director for Brigham City or authorized representative.
- X. Public Utility Easements. The easements required to place public utilities across any privately owned property.
- Y. ROW. Right of Way

1.04 Easements

Developers shall provide municipal utility easements (MUEs) for all utility extensions through private property and for 10 feet along public right-of-ways. Developments other than single family home developments shall provide 10-foot MUEs along all property lines. If setbacks are less than 10 feet, then MUEs shall be the extent of the setback. Single family lots shall have 10-foot MUEs along public right-of-ways or streets and not necessarily along the other property lines unless a utility is planned there. Developer shall not be allowed to nor shall they include any type of protection easement intended to provide exclusivity to their development.

1.05 Traffic Control

A traffic control plan shall be submitted to the City prior to construction in or along public streets. All traffic control shall comply with APWA 01 55 26 (Traffic Control) and the MUTCD.

1.06 Survey

The alignment of the side property lines for each lot in a subdivision shall be marked in the top back of curb with a lot line witness marker that meets the requirements and specifications of APWA 31 05 10 (Boundary Markers and Survey Monuments). Developers shall provide survey benchmarks and monuments as required by the Public Power Director.

1.07 Temporary Controls

Temporary controls such as noise, dust, mud, surface water, ground water, pollution and erosion controls shall be made. Controls shall meet the requirements and specifications of APWA 01 57 00 (Temporary Controls). Pumping groundwater into the sanitary sewer system is prohibited. Ground water and/or surface water must be kept on the construction site. If either leave the site by any manner, additional temporary controls must be implemented to protect the storm water drain system. A Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) may also be required. See Brigham City's SWPPP Requirements on the public website for more information.

SECTION 2 IMPROVEMENT REQUIREMENTS

2.01 General

This policy defines the general requirements for improvements to be built by the Developer, sub-divider, owner, or Contractor for all types of construction (including residential, commercial, industrial, institutional, governmental and professional office). All improvements which are in areas that are or will become public rights-of-way and/or easements, or that will be under the responsibility of a homeowner's association, shall meet the requirements of these specifications.

2.02 Variations, Substitutions, Exceptions and Changes

Any variation, substitution or exception from the standards in this policy must be authorized in writing by the Public Power Director. Product options and substitutions must meet the requirements of APWA 01 25 00 (Product Options and Substitutions). Any item of construction not covered in these standards must have plans and specifications approved by the Public Power Director. Requests for changes to the Construction Standards shall be made in writing to the Public Power Director. These requests will be reviewed during the revision process conducted in conjunction with the APWA, NESC and NEC revisions. There is no appeal from the decision of the Public Power Director.

2.03 Protection of Existing Improvements

The Contractor shall be responsible for the protection of any existing improvements on public or private property at the start of work or placed there during the progress of the work. Existing improvements shall include but are not limited to permanent surfacing, curbs, ditches, driveways, culverts, fences, walls and landscaping. Any surface improvements damaged because of construction shall be restored or replaced to an equal or better condition than before. This shall be accomplished in a timely manner.

2.04 New Materials

Only new materials may be used during construction unless otherwise authorized by the Public Power Director.

2.05 City Furnished Products

If the City furnishes any products the Contractor shall conform to requirements and specifications of APWA 01 64 00 (Owner-furnished Products), NESC and NEC.

2.06 Product Delivery and Handling

The Contractor shall conform to requirements and specifications of APWA 01 65 00 (Product Delivery and Handling), NESC and NEC.

2.07 Product Storage and Protection

The Contractor shall conform to requirements and specifications of APWA 01 66 00 (Product Storage and Protection), NESC and NEC.

2.08 Other Specifications and Standards

City standards and ordinances shall supersede all other Standards whenever they conflict.

SECTION 3 SPECIALIZED ENGINEERING

3.01 General

Any specialized engineering beyond the expertise of city staff such as, but not limited to, geotechnical, traffic, environmental, hillside, floodplain, bank stabilization and erosion control will require the review of qualified consultants. All review costs shall be paid by the property owner/developer.

Locate utilities within areas of explorations by notifying the appropriate local one-call state utility locate service (Blue Stakes). Independent private utility locates may be required for utilities not identified by the local one-call service. Complete subsurface explorations in accordance with the minimum requirements outlined in this section.

SECTION 4 CONSTRUCTION PLANS

4.01 General

The following instructions are for the purpose of standardizing the preparation of construction plans to obtain uniformity in appearance, clarity, size, and style. Plans and designs shall meet the standards defined in the specifications and drawings hereinafter outlined. All drawings and/or prints shall be clear and legible and conform to good engineering and drafting room practice.

Include the following in construction plans for all developments:

1. A copy of the proposed final plat or site plan.
2. A plan view of the entire project showing all utilities, roads, and appurtenances.
3. Plan and profiles of all storm, land and groundwater drains, sanitary sewer, curb, gutter, and irrigation.
4. Detail drawings of street cross sections according to the standard drawings and other detail drawings only for items not found in the city standard drawings. Detail drawings shall be to scale and completely dimensioned and described. All items shall be designed in accordance with minimum requirements established by the Public Works Standards.
5. Complete plans for all off-site work to be done in conjunction with the project.
6. A stamp and signature of a Civil Engineer licensed in the state of Utah on each plan sheet, detail drawing, and design sheet.

4.02 Electric Plans

Construction plans must include the location of all existing poles, transformers, secondary junction boxes, sectionalizers, and overhead electrical wire. After plans

are updated to meet the approval of the DRT, the Developer shall submit a computer aided design (CAD) file of the plans to the Power Department. CAD file must be in a .dwg or .dxf format. Thereafter the Power Department will design and make available plans for the proposed electric lines for the development. City electrical utility design shall supersede any design provided by developer.

SECTION 5 POWER UTILITY IMPROVEMENTS

5.01 General

It shall be the responsibility of the Developer to connect to existing utilities or improvements wherever they are located and extend those improvements to and through the development. This requirement includes hooking up existing homes within the development to all utilities. Existing buildings impacted by development which are currently fed overhead shall be required to be rerouted and metering directly connected to new underground electrical grid at developer's expense. Workmanship and details of construction shall be in accordance with the Public Power Standards and/or other codes adopted by the City. All work shall be done under the supervision of the Public Power Director.

5.02 Electric

Electrical lines shall be underground except when the Public Power Director feels that such underground lines are not in the best interest of the City.

SECTION 6 INSPECTION AND TESTING

6.01 Quality Control

The following work shall be subject to the inspection and testing requirements of this chapter:

1. Work on existing or proposed City property.
2. Work on property that will be owned by a property owners association.
3. Work on existing or proposed streets, easements, or right-of-ways.
4. Work on existing or proposed City utilities.

The Contractor is responsible for performing all inspection and testing required to verify installed materials meet these standards and must verify the materials are accepted by the Public Power Director. The Contractor must also ensure that any additional inspection and testing required by the city or a testing company is performed and accepted by the City.

6.02 Inspection and Testing Notification

The City may contract with a private company to conduct any inspections or testing specified to be performed by the City. All inspections and tests must be scheduled with the City or company contracted by the City a minimum of 1 full business day

before needed. Requests for inspection on work requiring continuous inspection shall be made 3 full business days prior to commencing the work.

6.03 Work Without Required Inspection and Testing

Failure to provide proper notification or to perform work without inspection will result in rejected material. Rejected material will be subject to additional verification requirements including, but not limited to, post-placement sampling and laboratory testing for material conformance, in-place testing for concrete strength and air content. All post-placement testing for uninspected work will be at no additional cost to the city.

Additionally, any work performed without required inspection or testing will give the city the option to hold the bond covering that portion of the improvements in violation, or require the removal and replacement of the uninspected work. The City shall have the option of retaining part or all the bond for up to 10 years after installation of improvements constructed without required inspection or testing. The Public Power Director may also accept the work at a reduced price.

6.04 Inspection and Testing Fees

Connection fees required shall be paid and permits required shall be obtained prior to the preconstruction meeting.

6.05 Weekly Progress Meetings

The City may require, at their discretion, construction projects in the City to have a weekly progress meeting at the Public Power office. The Public Power Director, City inspectors, the Contractor, and subcontractors shall be in attendance.

6.06 As-Built Survey

The Contractor shall notify the City to survey all underground utilities either installed or uncovered during construction. Contractor shall give the City 24-hour notice to survey utilities.

6.07 Earthwork: Compaction and Moisture Content Tests (Refer to Sheet E10)

The city will test all sub-grade and fill material for compaction and moisture content. Test locations shall be determined by the city.

6.08 Inspections

6.08.1 Conduit Inspections

The Public Power Director must inspect all conduit before backfilled.

6.08.2 Service Stub Inspections

The Public Power Director must inspect all service stubs before backfilled.

6.08.3 Street Light Base Inspections

The Public Power Director must inspect all street light bases prior to concrete placement and before they are backfilled around.

6.08.4 Bedding Inspections

The Public Power Director must inspect the bedding in all electrical trenches.

6.08.5 Final Electrical Inspection

Once all electrical work for a development is completed to City standards, a final electrical inspection must be done by the Public Power Director prior to permanent power installation.

SECTION 7 PORTLAND CEMENT CONCRETE WORK (Refer to Sheets E5-E9, E12-E14 and E16)

7.01 General

All materials and processes involved in concrete work shall be subject to inspection and testing as detailed in general compliance with ASTM E105-54T. For additional information refer to the Public Works Standards manual.

SECTION 8 EARTHWORK AND TRENCHES (Refer to Sheets E4 and E5)

8.01 Excavation

8.01.1 General

Excavation shall meet the requirements and specifications of APWA 31 23 16 (Excavation) unless otherwise indicated.

8.01.2 Safety

All construction shall be done in accordance with the provisions of the Utah State Industrial Commission, OSHA regulations and APWA 31 23 16 (Excavation). No trenches deeper than 4 feet shall be left open at any time unless construction is in process. When construction is in process only 200 feet of trench may be open at one time and must be completely backfilled before proceeding. Any variation will require the approval of the Public Power Director. No trenches shall be left open at any time unless guarded with adequate barricades, warning lamps and signs.

Any injury or damage resulting from lack of adequate bracing and shoring shall be the responsibility of the Developer/Contractor and the Developer/Contractor shall, at his/her own expense, affect all necessary repairs or reconstruction resulting from such damage. No inspections will be done in unsafe trenches and will be the cause for immediate shutdown of the project until the trench is deemed to be safe by the Public Power Director.

8.02 Subsurface Pipe Installation

8.02.1 General

Pipes, conduits or casings, 4 inches in diameter or less, may be bored, jacked, augured or jetted under sidewalk, curb, gutter if authorized by the Public Power Director. The resulting hole diameter shall not exceed 1 inch plus the outside diameter of the pipe or sleeve installed.

8.02.2 Boring or Jacking

Boring or jacking work shall meet the requirements and specifications of APWA 33 05 23 (Trenchless Utility Installation).

8.02.3 Tunneling

Where sidewalk, curb, and gutter exist, excavation may be made by tunneling provided the following requirements are met:

1. Excavation shall be vertical and as near to the curb or sidewalk as possible.
2. The length of the tunnel shall not exceed the width of the sidewalk, curb, and gutter.
3. Where a separate sidewalk and curb exist, an excavation shall be made between the sidewalk and the curb.
4. At least three feet of undisturbed earth shall be left under the sidewalk or curb; and
5. Where the sidewalk has been tunneled, the hole shall be filled from each end with flowable fill. Where the excavation cannot meet these requirements, a section of sidewalk, curb, or gutter, from joint to joint shall be removed and replaced.

8.03 Fill Material

8.03.1 General

All fill material shall be placed on sub-grade prepared according to the specifications of this chapter. All fill material shall be compacted according to the specifications of this chapter.

All fill material under and within a foot of electrical boxes shall be untreated base course. In other areas native excavated material may normally be used unless such material cannot be properly compacted according to specifications in this chapter. All fill material, including native fill material, must be free from debris, organic material, and rocks larger than 6 inches in diameter.

8.03.2 Bedding Material

Use sand as a bedding material for electrical conduit. Bedding sand must compact sufficiently to support the pipe and shall meet the following gradation:

Sand Gradation

Sieve/Screen Size	% Passing
No. 4	100
No. 200	10 to 20

8.04 Installation and Compaction of Earth Materials

8.04.1 General

The installation of all fill material shall meet the requirements and specifications of APWA 33 05 20 (Backfilling Trenches), APWA 31 23 23 (Backfilling Structures), APWA 32 05 10 (Backfilling Roadways) and APWA 31 23 26 (Compaction). Fill material outside of pavement areas, as defined by APWA 32 05 10 (Backfilling Roadways), and more than 24 inches from any utility box shall be compacted to not less than 90% of the maximum dry density.

8.04.2 Backfill in Trenches

Backfill shall be carefully placed around and over pipes and shall not be permitted to fall directly on a pipe from such a height or in such a manner as to cause damage.

8.04.3 Conduit Zone (Refer to Sheet E11)

The conduit zone includes the full width of trench from 3 inches below the conduit to 12 inches above the conduit for all conduit. Electrical conduit may be placed to 3" off the sides of trenches. Trenches shall be wide enough to compact fill material according to the specifications in this chapter.

Electrical Service

SECTION 9 GENERAL

9.01 Standards and Specifications

All electrical work shall be installed in accordance with these development standards, the most current edition of the National Electrical Code (NEC) and the National Electric Safety Code (NESC), and applicable State, County and OSHA codes and ordinances.

These specifications cover the installation of the electrical system. See Section 2 for improvement and design requirements, Section 6 for inspection and testing requirements, and Section 8 for earthwork and trench requirements. See standard drawings related to electrical system.

9.02 Construction Costs

All costs to install or relocate facilities to provide electrical service shall be paid by the Customer.

If a temporary electrical service is needed the contractor/developer is responsible for providing and installing the required conduit, grounding, transformer pad, and metering equipment as directed by the City. There will be a rental fee for the transformer needed that will be determined based off of the length of time the unit is needed. Brigham City Power will provide and install all primary wiring and transformer at the developers/contractor's expense. Any fees paid to the City for these purposes will not be refundable or be applied to any other electrical fees.

9.03 Attaching to Existing City Facilities Prohibited

Customer shall install no wiring or attachments on poles or other equipment of the City unless specifically authorized, in writing, by the City.

9.04 Unusual Service Extensions

Special and unusual service extension requirements for equipment or structures are treated as separate items and are not included in these standards.

9.05 Permits and Inspections

Service will not be established until all necessary permits have been obtained and not until Customer's wiring installation has been inspected and approved by the Public Power Director. Any variations of this must be preapproved by the Public Power Director. The City reserves the right to inspect wiring and to refuse service to any installation that is, in the opinion

of the Public Power Director, unsafe or if the operation of same may be detrimental to the service furnished to other Customers or the City. All conduits shall be inspected prior to backfilling. All concrete street light bases, concrete transformer pads and other required concrete shall be inspected prior to pouring concrete. A compaction test shall be taken by the City or an approved engineering firm prior to setting any electrical enclosures, cabinets, or other structures. In addition, a test shall be taken on the concrete used for electrical pole bases, and pads.

9.06 Access to Premises

Any properly identified representative of the City shall, at all hours, have free access to and from the premises of the Customer for the purpose of inspecting Customer's installations and electric equipment and for the purpose of reading, repairing, testing, or removing the City's meter or its other property. When, as declared by the Public Power Director, emergency conditions exist with respect to City's service, City's representative shall have immediate and free access to Customer's premises.

9.07 Electrical Plan Drawings

Brigham City Public Power shall design the electrical system and provide approved electrical plan drawings. Requests for any changes to these drawings can be made by contacting Brigham City Public Power with a proposal. Approved electrical drawings must be initialed by an approved electrical division supervisor and signed by Brigham City Public Power to be valid for construction of the electrical system improvements. Photocopies of approved drawings will not be considered valid. Revisions, if needed, must also include the date the revision was approved.

9.08 Electrical Box Clearance

All electrical boxes shall have 12 feet clearance to the front and 3 feet clearance to the back and on either side. Secondary pedestals shall only require 3 feet of clearance on all sides. Switchgears shall have 12 feet clearance in front of the doors and 3 feet of clearance on the sides. Meters, metering cabinets & enclosures, service disconnect cabinets & enclosures, & CT cabinets, shall have a minimum of 8 feet of clearance in front of said cabinets & enclosures. All electrical sectionalizers, transformers, switchgear, etc. shall have a clear and level working space around them. The area shall be backfilled and leveled a minimum of 12 feet in all directions from the respective electrical device.

Meters, meter cabinets, services and related electrical cabinets shall not be enclosed by carports, sheds, out buildings, additions or remodels or other such buildings. Brigham City Public Power shall have ready access to such equipment for safety & maintenance. The City reserves the right to

disconnect the City electrical service to meter bases, services, etc. if in the opinion of the City the service is inaccessible or unsafe until the service & safety issues are resolved to the City's satisfaction. This may include, but is not limited to relocating the service, or upgrading the service to meet current City codes.

9.09 Overhead Electrical Power Line Clearances (Refer to Sheet E21)

As set forth in Section 54-8c-1 through Section 54-8c-7 of the Utah Code, no person or thing may be brought within 15 feet of any high voltage overhead power line unless:

The responsible party has notified Brigham City Public Power of the intended activity; and

The responsible party and Brigham City Public Power have completed mutually satisfactory safety precautions for the activity; and

The responsible party has made prior arrangements to pay Brigham City Public Power for the mutually satisfactory safety precautions (if applicable).

No building, dwelling, sign, bridge, antennae, or structure shall be constructed, or placed underneath any overhead electrical power lines, and shall meet current NESC/NEC and City clearance requirements, both vertically and horizontally, from said power lines. Variances shall only be allowed at the City's discretion.

If existing buildings or structures exist under power lines, those same buildings or structures shall not be modified, remodeled or constructed to further encroach upon the clearances from said power lines.

In general, for overhead high voltage open supply conductors operating from 750 volts to 22,000 volts nominal, the space extending from grade level to the height of the conductor vertically and 15 feet horizontally from the further most outside conductor from the pole shall be kept clear from the power lines. Furthermore, for overhead high voltage open supply conductors operating from 22,001 volts to 138,000 volts nominal, the space extending from grade level to the height of the conductor vertically, and 30 feet horizontally from the further most outside conductor from the pole shall be kept clear from the power lines. Open water, swimming pools, combustible materials or hazardous locations may have additional clearances required.

Additional clearances may be required depending on the installation or application.

SECTION 10 VOLTAGE AND ENERGY REGULATION (Refer to E19)

10.01 Available Voltages

Standard Electrical Services

Residential	Commercial and Industrial
1 Phase	3 Phase
3 Wire	4 Wire
120/240 Volts	208Y/120 or 480Y/277 Volts

Developers must contact the Public Power Director regarding the availability of other service options.

The Public Power Director reserves the right to deny a customer 3-phase service if the Public Power Director determines that single-phase service will adequately supply Customer's load requirements. The Public Power Director reserves the right to deny a customer single phase service if the Public Power Director determines 3-phase service is in the best interest and beneficial to the City's electrical system.

10.02 Phase Service

3 phase service may, at the City's option, be furnished where 3 phase facilities of adequate capacity are already installed immediately adjacent to the point where service is to be delivered to Customer, or where, as determined by the City, it is economically feasible to extend such 3 phase facilities.

The City reserves the right to refuse to extend or install 3 phase facilities to serve motors individually rated at 20 HP or less and to furnish only single-phase service for such motors. In such an event, Customer may elect to install single- phase to 3 phase conversion equipment to operate 3 phase motors.

10.03 Power Factor Correction

The City reserves the right to require the Customer to install power factor corrective equipment. This equipment shall maintain the power factor on all of Customers electric power meters to not less than 95% lagging at all times.

10.04 Load Control

The Public Power Director reserves the right to require developers to install equipment to limit load and reduce voltage fluctuations.

10.05 Voltage Control

Where Customer installs power factor corrective equipment, the City reserves the right to require Customer to install controls and equipment to prevent voltage, frequency, and/or harmonics problems that may be detrimental to other Customers or the City.

10.06 Fluctuating Load Limitations

Where large fluctuating single-phase loads, such as spot welders, are involved, the City reserves the right to require such loads to be supplied by means of a 3 phase to a single-phase converter or other similar equipment. All conversion equipment shall be installed, owned, operated and maintained by the Customer.

In the event a separate service or transformer installation or additional transformer capacity is required to adequately serve fluctuating loads (such as X-ray equipment, welders, etc.). Such equipment costs and installations shall be the responsibility of the Customer.

10.07 Penalties

If, such voltage control equipment is not installed by Customer, Customer may be required to pay a power factor penalty and/or all electric service shall be subject to disconnection as provided by Title 50 of the Brigham City Public Power Municipal Code. Customer's wiring used to supply such fluctuating loads shall be installed in a continuous run of rigid conduit and cable as approved by the City.

SECTION 11 MATERIALS

11.01 Materials

Only electrical grade materials and apparatus shall be used. The materials and apparatus shall be UL Listed and designed for their purpose.

11.02 Conduit

All conduits shall be electrical grade conduit. Conduit shall be Schedule 40 PVC unless otherwise specified by the Public Power Director. Electrical grade Schedule 40 fiberglass and/or PVC conduit shall be used under collector and arterial streets and for all sweeps. Fiberglass conduits shall not be used for riser poles. All conduits extending out of the ground outside of an enclosure shall be rigid metal and the elbows attaching to those risers shall be either rigid metal or fiberglass. All conduits entering any cabinet,

enclosure, vault, or ground sleeve shall have end bells attached to the ends of conduits to protect wire from damage. All buried metal conduit shall be coated with anti-corrosion tape. Tape shall be a minimum of 2 inches wide. Tape shall extend 6 inches above finished grade.

11.03 Enclosures (Refer to Sheets E5-E9 and Sheets E12-E14)

All enclosures, including primary and secondary junction boxes, shall be level. Opening mechanisms and locking devices on all transformer equipment shall be 4 to 6 inches above final grade. Opening mechanisms and locking devices on all primary sectionalizers, switchgear and secondary junction boxes shall be 10 inches above final grade. Only approved enclosures, pads, and vaults shall be used.

11.04 Soils & Compaction (Refer to Sheet E10)

All soils under enclosures shall be approved road base and be compacted to 95% of dry density. The compaction area must extend at least 1 foot past the enclosure in all directions and be a minimum of 1 foot in depth under the enclosure. A compaction test shall be required before any enclosure, box, sleeve, or pad is set into place. The compaction test shall be taken by the City or by the City's approved engineering firm. If ground sleeves or pads settle, Developer shall be required to re-level to the above specifications. If primary enclosures or transformers settle after being energized, the City shall re-level the equipment at the Developer's expense.

SECTION 12 INSTALLATION (Refer to Sheets E5 – E9 and Sheets E12-E14)

12.01 General

All electrical facilities shall be installed under the supervision of a licensed electrical contractor or journeyman lineman. **A certified journeyman electrician or lineman shall be on site during all conduit installation, cable pulling and connecting of electrical wiring.** All electrical installation & equipment shall be installed in a neat and workmanlike manner.

Curb & gutter shall be installed before excavation of electrical trenches. The curb should have property corners pinned in the top of the curb by approved methods. The curb will give reference for proper conduit depths & locations, and proper placement of electrical and communications boxes. **Developer required to notify communication company and give up to 1 week to install communication lines. Open trench will be backfilled up to communication lift during waiting period.**

Contractor shall construct all electrical facilities in a development except for the following which shall be completed by the Utility:

1. Pulling high voltage underground cable.
2. Installing high voltage cable terminations.

3. Setting transformers and switch gears (contractor shall furnish & install sectionalizers).
4. Secondary connections shall be connected in transformers (exception: contractors shall connect secondary connectors in 3 phase transformers);

All overhead facilities, including extension of risers as shown in the standard drawings. (Refer to Sheet E20)

12.02 Underground Lines

All new facilities shall be constructed underground unless otherwise authorized by the City. Existing buildings & facilities that have a change of use, or extensive remodeling, may, at the Public Power Director's discretion, be required to install underground power lines. No overhead power will be allowed unless required or approved by the Utility.

12.03 Conduit Depths

High voltage (12.47kV) primary conduits shall always be installed below secondary (600 volts or less) conduits & communications conduits if installed in a joint trench application. No primary high voltage conduits shall be installed at less than 4 feet in depth to top of conduits unless otherwise approved.

In general, the following table of depths shall be used for electrical conduit: (Note: depths are to the top of conduits)

**Table 12.03.A
Electrical Conduit Depths**

Conduit Size	Depth to Top of Conduit
1" Street Light	2 Feet
2" Secondary	2 Feet
3" & 4" Secondary	2 Feet
4" Primary	4 Feet
6" Primary	4 Feet*

*Depths may increase depending upon application.

12.04 Pull Strings

All primary conduits shall have 1,350 lb. mule tape in the conduit securely tied off in each pad or enclosure.

12.05 Identification Tape and Stub Markers

All conduits shall have a caution tape buried 12 inches below grade directly above conduit. Tape shall meet the requirements and specifications of APWA

23.20. The end of each stubbed conduit, including service laterals, shall be marked to the surface according to the standard drawings.

12.06 Underground Metal Conduit

If underground metal conduit were allowed, all buried metal conduit shall be coated with anti-corrosion protective tape. Tape shall extend 6 inches above finished grade.

12.07 Road Crossings

Conduit shall be schedule 80 gray PVC or rigid fiberglass conduit. Shadow conduit shall be installed at road crossings at Public Power Director's discretion.

12.08 Berms, Slopes, and Hillside Conditions

For installation instructions around berms, slopes, and hillsides contact Brigham City Public Power.

12.09 Labels

A label shall be securely taped to the end of each conduit run where it emerges into any cabinet or enclosure. The label shall indicate whether the conduit run is primary or secondary and the direction & footage of conduit.

SECTION 13 SYSTEM REQUIREMENTS

13.01 Additional Capacity Requirements

In the event a Customer makes application for additional capacity, subject to provisions of the applicable rate schedule, Customer shall install the necessary transformer capacity, service wires and other equipment required to adequately serve Customer's requirements. Customer will be required to submit a Brigham City Load Sheet to be completed by electrical engineer, architect, or master electrician. Report shall include all existing and future load.

Customer shall be required to participate in system load study to ensure needed capacity is available through City's transmission system. Customer shall be responsible for all costs associated with said study.

All applications for service involving the furnishing of additional capacity or equipment by the City may be required of the Customer. The application shall state that any service entrance wiring and main switches required for the utilization of such additional capacity to be furnished by Customer, shall be considered as permanent fixtures belonging to the property being served and property except for replacement or enlargement if necessary.

13.02 Substations

Substation may be required of Customer. The City reserves the right, where unusual substation capacity or voltage is involved, to require the Customer to install the necessary complete substation as provided for in City's rate schedule.

Where the Customer furnished the necessary complete substation equipment to take service at primary service voltage, such equipment shall be owned and maintained by the Customer and shall include the necessary transformers, structure, controls, and protective equipment, and shall be of such quality and construction as meets City approval. Customer shall supply main transmission breaker to City for ownership and operation providing interconnection to transmission system. Operation of said breaker will be controlled by the city.

SECTION 14 SERVICES

14.01 Point of Service

The Public Power Director determines the point of delivery for all developments. Public Power Director reserves the right to meter service at either primary or secondary voltage. For large or unusual loads, Public Power Director reserves the right to require Customer to take service at primary voltage and to require Customer to furnish the necessary complete substation equipment. The Public Power Director will decide if multiple buildings, business and residential, or portions of buildings will be metered from one or from multiple metering points. Each building or structure served shall be supplied by only one service. Multiple services are only allowed at the Public Power Director's discretion.

14.02 Service Entrance Requirements

The service entrance shall be defined as the facilities that consist of approved service entrance conduit and cable enclosing conductors and apparatuses. Said conductors shall extend from the point of contact with the City's secondary point of service and thence to and include Customer's service entrance safety switch or disconnection means.

Customer shall install all conduit and wire from the building to the pole or transformer according to the City standards.

1. Service Entrance Safety Switch or Main Disconnect for new construction and remodel. A residential service safety switch shall be an exterior service combination meter base and main disconnect device. For commercial & industrial installations a service safety switch shall be an exterior service main disconnect device or devices, which will always

remain accessible. This device shall be a main breaker, but minimum requirement shall be a safety switch, which will disconnect all service power from the premise wiring to the entire facility. The location of the main disconnecting device shall be approved by the City.

2. Identification. (Current NEC) Where a building or structure is supplied by more than one service, or any combination of branch circuits, feeders, and services, a permanent plaque or directory shall be installed at each service disconnect location denoting all other services, feeders, and branch circuits supplying that building or structure and the area served by each.
3. Service Entrance Conductors. All service entrance conductors and any conduit enclosure shall be continuous, unbroken, and completely exposed for external inspection throughout their entire length, extending from said point of contact with City's service wires to the meter socket (or meter cabinet if installed) and thence to Customer's service entry safety switch or main disconnecting means. Service entrance conductor type & size shall meet current NEC, NESC, and City Standards. Brigham City Public Power reserves the right to make an allowance as needed.

Underground service lateral conductors from the City's Secondary service point up to the line side of the main disconnecting means shall be installed, maintained, and owned by the Customer. The City assumes no liability for replacement of secondary service lateral conductors.

14.03 Underground Residential Service Requirements (Refer to Sheets E2 and E15)

14.03.1 Conductor,* conduit sizes, & conduit depths

Refer to following table:

Service Size	Service Conductor Size (AWG)	Conduit Size	Conduit Depth
100 amp	2/0 alum.	3"	2'
125 amp	2/0 alum.	3"	2'
150 amp	2/0 alum.	3"	2'
200 amp	2/0 alum.	3"	2'
201-400 amps	Contact Brigham City Public Power	Contact Brigham City Public Power	Contact Brigham City Public Power

*Table 14.03.1.A Note: The current National Electric Code may supersede these conductor sizes based upon service size. Refer to current NEC for service conductor sizes for other types of conductors & installations.

14.03.2	Conduit (Refer to Sheet E11) Only continuous factory lengths of conduit shall be used. Conduit may be cut or spliced; however the couplers & bends shall not exceed a 360-degree pull on the overall length of the conduit run. Conduit shall be installed in a neat and workman-line manner. All service lateral conduits shall be inspected prior to backfilling.
14.03.3	Materials Only electrical grade materials shall be used. Rigid metal conduits (RMC), schedule 40 fiberglass and schedule 40 PVC shall be used for any elbows or bends 45 degrees or greater. RMC shall be coated with an anti-corrosion tape below grade and tape shall extend 6 inches above finished grade. RMC shall be used for all above grade service entrance conduits. Customer shall provide and install service wire from house to junction box, transformer or pole according to City standard drawings. Service wire type shall be approved by Brigham City Public Power.
14.03.4	Trenching Service lateral trenches shall be 24 inches in depth. Trenches shall be as straight as possible from the secondary service point to the Customer disconnect or meter base. The bottom of the trench shall be as level as possible and free from rocks & debris. Backfill placed directly on conduits shall be free from large rocks.
14.03.5	Service Entrance Conduits Support and Attachments Service Entrance conduits shall be securely attached to the foundation of house or building by means of unistrut, concrete anchors, and unistrut type clamps. Unistrut shall be securely attached to foundation by a minimum 3/8 inches x 3 inches concrete anchors. Unistrut shall typically be 24 inches. Service entrance conduits shall be one continuous, unbroken conduit from the elbow to the point of attachment at the meter base hub.
14.03.6	Location(s) Note: Refer to 15.02 Metering for additional requirements. Meter/main disconnect shall be located within the front 6 feet of the side of a residential dwelling. Meter/main disconnect shall always be accessible. Meter/main disconnect shall be kept a minimum of 36 inches from any natural gas meters, window wells, windows, doors, stairs and any material deemed

to be combustible or hazardous. For remodels, service upgrades, building additions or other instances or applications affecting the existing electrical service, **CT cabinet**, meter base, meter and disconnect contact the Brigham City Public Power for requirements. Brigham City Public Power will require a meter main disconnect to be installed anytime electrical upgrade work is performed on the residence. The service, meter, meter base, or disconnect may be required to be relocated to meet current Standards and Codes. Meter/main disconnect shall meet all applicable NEC and NESC codes. The Public Power Director reserves the right to accept or reject any locations of meter base/main disconnects.

14.03.7

Temporary Underground Service (Refer to Sheet E18)

For temporary service furnished to individual small single-phase loads, such as house trailers, small construction projects (such as house and small buildings, portable tools, etc.) City will install a standard temporary service drop, at Customer's expense. City's General Service Rate shall apply.

Where the temporary service installation requires additional facilities more than the previously mentioned standard service drop (such as an extension of the City's primary line), such installation will be at the Customers' expense.

14.04 Overhead Residential Service Requirements (Refer to Sheet E3)

14.04.1

General

Overhead services shall also include mast knob and service grips. Wiring shall meet load and installation requirements as indicated in the NESC/NEC.

14.04.2

Service Drop Support and Attachments

For one story buildings, or where conditions will not permit proper ground clearance to be maintained by City's service wires, Customer shall install, at Customer's expense, suitable conduit or service entrance mast pipe or other structure or support that will properly support the City's service drop conductors and to maintain the minimum ground clearance as required by the NESC/NEC. If clearances cannot be met, the service may be required to be relocated or otherwise rerouted underground.

14.04.3

Service Entrance Weather head Clearance

The service entrance weather head shall be located to meet or to exceed NESC/NEC clearance from readily accessible

windows, doors, or porches. The weather head must also be located so that when the service drop conductors are attached to the building structure or other service drop support, adequate clearance will be maintained away from telephone or other wires, windows, awnings, drainpipes, chimneys, or other obstructions.

14.04.4 Service Entrance Mast Pipe

This installation shall be made by Customer, at his/her expense, and shall conform to City's specifications. The service entrance mast pipe shall be of electrical grade galvanized rigid steel of not less than 2 inches inside diameter and shall be attached to the wall of the building by means of an adequate number of approved fastening devices. All service conduits shall be 2 inches in diameter, or larger.

The mast pipe and/or conduit shall be continuous, extending from the service entrance weather head located at the top of the mast pipe to Customer's meter socket base.

The service entrance mast pipe shall extend above the roof surface (through weatherproof roof flashing) so that the point of attachment of City's service wires to the mast pipe will be not less than 18 inches above said roof line, and not to exceed 36 inches without guy support to structural frame plus such additional height as is necessary so that the point of attachment of City's service wires will maintain minimum ground clearance, specified in the NESC/NEC.

14.04.5 Service Drop Attachments to Buildings

The Customer will furnish and the city will install the necessary attachment brackets and apparatuses to attach City's service wires to Customer's service drop termination facilities.

The City further reserves the right to require that the installation of the necessary mast pipe or equivalent facilities required supporting city's service wires, be made by Customer during the course of building construction.

Where the exterior of buildings is finished with brick facing, concrete, plastered metal lathe, sheet iron, stucco, tile or similar material, suitable facilities of adequate strength to hold City's wires and attachments, shall be installed by Customer at Customer's expense.

14.04.6	<p>Service Drop Conductor Ground Clearance</p> <p>The service drop conductors must be located at such height as will enable adequate clearance to be maintained through the entire service drop length. The minimum ground clearance shall be as specified by the NESC/NEC, but not less than 12 feet over driveways not subject to truck traffic; 16 feet over commercial areas, parking lots and other areas subject to truck traffic; and 22 feet over public streets, alleys and roads. The final height attachment determination shall take into consideration conductor sag due to weather fluctuations & lengths of spans.</p>
14.04.7	<p>Service Entrance Conductor Specifications</p> <p>The service entrance conductors may be either copper or aluminum, and shall be continuous without any joints, splices or connections, extending from the point of connection with service drop conductors to the termination of same at the meter socket or meter cabinet and thence same shall continue without joints, etc., to Customer's service entrance safety switch.</p> <p>The Customer shall have electrical Contractor provide at the service entrance weather head, sufficient excess service entrance conductor length or "tails" (18 inch minimum) so that the City can connect directly to the service drop conductors. The service entrance installation shall conform in every respect to City's specifications, as to conductor connectors, and the method of making connections and all other related matters involved.</p>
14.04.8	<p>Main Breaker or Disconnect</p> <p>The service entrance conductor size for the ampere load to be carried shall be based on a maximum conductor operating temperature of 75°C (type RH, RHW, XHHW, or equivalent.) Note: Refer to Table 14.03.1.A regarding service conduit & conductor sizes.</p> <p>The entrance safety switch or main breaker ampacity shall not be less than the rated ampacity of the service conductors. Other specifications, including conductors, shall conform to the latest edition of the NEC.</p> <p>Upon special application, City may permit 2 or 3 wire service entrance installations of less than 100 ampere capacity for signs, etc., where the load requirements, as determined by</p>

City, justify the same. In no event will 2 wire service be furnished except at city's option.

14.04.9 **Temporary Service Drops (Refer to Sheet E18)**
For temporary service furnished to individual small single-phase loads, such as house trailers, small construction projects (such as house and small buildings, portable tools, etc.) City will install a standard temporary service drop, at Customer's expense. City's General Service Rate shall apply.

Where the temporary service installation requires additional facilities more than the previously mentioned standard service drop (such as an extension of the city's primary line), such installation will be at the Customers' expense.

14.04.10 **Service to Mobile Homes and Trailer Courts through one meter**
For service to trailer courts where more than 1 dwelling unit, mobile home, or trailer exists, the campus shall be supplied through 1 meter and the furnishing of such service shall be provided and installed by the facility owner.

14.04.11 **Load to be Balanced on Circuits**
The Customer shall use reasonable care in designing electric wiring and circuits; also, the connection of the loads to the circuits, so that the loads on the individual phases and circuits of City's service are properly balanced at all times.

14.04.12 **Temporary Service to be Installed on Customer's Pole**
All such temporary service drops shall be supported on a pole or post as approved by the Public Power Director and shall be installed by Customer at his/her expense.

14.05 Underground Service Requirements for Multi-Family Dwelling Units

14.05.1 **General**
Service lateral conduits from the City's point of secondary service shall be 4 inches minimum for multi-family dwelling units. A load calculation study shall be performed for multi-family dwellings units and submitted to Brigham City Public Power. All other residential service requirements apply.

14.06 Underground Service Requirements for Commercial & Industrial Applications

14.06.1 **General**
Service entrance conductors & conduits shall be sized according to applicable NEC and NESC codes. The City shall

approve all locations & installations of conduits, service disconnection means, and meters.

- a. All commercial & industrial buildings shall have an accessible, exterior main disconnecting means that is capable of disconnecting (opening) all service entrance conductors from the building or structure premises wiring.
- b. All services rated 801 amps or more supplied by a 4-wire three phase 480Y/277 volt connected system shall have a ground fault test performed for protection of equipment.
- c. All services, equipment, cabinets, conduits, etc. shall be grounded & bonded according to applicable NEC & City codes.
- d. The service disconnecting means shall be identified as suitable for use as service equipment.
- e. A building or structure may only be served by one service lateral or service drop, unless otherwise approved by Brigham City Public Power.
- f. There shall not be more than 6 service disconnects for each service. Each service disconnect shall be permanently marked to identify it as part of the service disconnecting means. All service disconnecting means for each service shall be grouped together.
- g. The center of the operating handle of switch or breaker, when in its highest position, shall not be more than 5 feet and not less than 4 feet above finished grade.

14.06.2

Materials

Only electrical grade & UL listed materials shall be used. Rigid metal conduits (RMC), schedule 40 fiberglass and schedule 40 PVC shall be used for any elbows or bends 45 degrees or greater. RMC shall be coated with an anti-corrosion tape below grade and tape shall extend 6 inches above finished grade. RMC shall be used for all above grade service entrance conduits. Customer shall provide service wire from building to utility transformer or pole. All electrical equipment, cabinets, panels, etc. shall be UL listed and approved for the installation.

14.06.3

Trenching

Service lateral trenches shall be 2 feet in depth. Trenches shall be as straight as possible from the secondary service point to the Customer disconnect or meter base. The bottom of the trench shall be as level as possible and free from large rocks & debris

14.06.4 Service Entrance Conduits Support and Attachments
Service Entrance conduits shall be securely attached to the foundation of building by means of unistrut concrete anchors, unistrut type clamps or other approved methods. Unistrut shall be securely attached to the foundation by a minimum 3/8 inches x 3 inches concrete anchors. Service entrance conduits shall be one continuous, unbroken conduit from the elbow to the point of attachment at the meter base, CT cabinet, or main disconnect cabinet. Service lateral conduits shall be installed at a depth of 2 feet to top of conduits. All installations shall be installed in a neat and workman-like manner.

14.06.5 Locations
Locations of service lateral conduits shall be approved by the Public Power Director. Locations of outside main disconnecting equipment shall be approved by the Public Power Director. Meter/main disconnect shall always be accessible. Meter/main disconnect shall be kept a minimum of 36 inches away from any natural gas meters, window wells, windows, doors, stairs and any material deemed to be combustible. Meter/main disconnect shall meet all applicable NEC and NESC codes. The Public Power Director reserves the right to accept or reject any locations of meter base main disconnects. If the Public Power Director determines the service location is inaccessible or otherwise unsafe, the Customer shall relocate or upgrade service to City standards at Customer's expense. The Public Power Director further reserves the right to disconnect electrical power to the Customer's service until the service is brought into compliance.

14.06.6 Ownership of Conductors
For commercial underground installations the secondary service conductors and conduit paths shall be owned & maintained by the Customer from the secondary connections inside the transformer up to the termination point of the service disconnect. For commercial overhead installations the secondary service conductors shall be owned & maintained up to the overhead secondary connection point. City shall own the overhead drop up to the connections at the service mast.

14.06.7 Energizing Development
Developments may be energized when the following is completed and accepted by the city.

1. Curb, gutter and an all-weather road surface.
2. Electric conduit.
3. Electrical boxes and proper access to the boxes.
4. Secondary wiring, except that required for street lighting.

SECTION 15 METERING (Refer to Sheet E22)

15.01 General

The city will furnish and install all electric revenue meters. Normally outdoor socket-mounted meters will be used by the city whenever practical. The meter base will be furnished and installed by Customer's electrical contractor for all normal residential installations. The meter base with test switch shall be provided by the City and installed by Customer's electrical contractor for commercial or industrial applications.

If instrument transformers are required, the City reserves the right to require customers to furnish and install a suitable steel cabinet to house City's instrument transformers and accessories. Said cabinet shall contain only the City's metering equipment and shall be equipped so that it can be sealed and locked by the City. The City shall have sole access to this cabinet.

15.02 Location

The City shall approve the location of service entrance and meter. The following conditions must be met for the location of all meters & services:

1. Visibility. All entrance wiring connections shall not be concealed and shall always be in plain view for inspection by the City.
2. Residential properties shall have the point of service externally installed on the primary residence of the property. If a residential property needs multiple services the amount of services must be approved by the City and be contained in one location inside one meter base that is located on the exterior of the primary residence. Any variation of this may be approved by the Public Power Director.
3. Industrial/Commercial businesses are allowed to have up to two points of service with multiple meters at each location. If more than two points of service are required due to the original design of the property or the property is expanded, then the campus will be required to install a primary metering cabinet. Electrical service to the property will be delivered at the City's distribution voltage. The location of the primary metering cabinet will be determined by the city. The City will maintain ownership and control of the metering cabinet but all conductors feeding out of the metering cabinet will be owned and maintained by the property owner.

4. A property that is undergoing renovation and has pulled a building permit or new construction will be required to relocate the electrical meter and main disconnect point (MDP) of the building to the outside of the building. The metering equipment and MDP shall be mounted to the building if under 801 amps. If service is 801 amps or greater than a freestanding MDP switchgear cabinet will be required. The MDP switchgear cabinet will need to be approved by the Public Power Director before equipment order is placed by the contractor.
5. Protection. No meter or service equipment shall be installed in any location where it may be unnecessarily exposed to heat, cold, dampness or other cause of damage, or in any unduly dirty or inaccessible location.
6. Height. The meter socket shall be mounted at a height of not less than 4½ feet, no more than 6 feet above finished grade, as the case may be. Where multiple meters are installed, care shall be taken to ensure the lowest meter is no less than 4 ½ feet and no higher than 6 feet from finished grade.

When a combination 3 phase and single-phase service is supplied to the same premises, all meters and service entrance switches shall be at the same location.

15.03 Meter Base

Residential meter bases shall be furnished and installed by the Contractor according to City standard drawings. No smaller than a 100-amp service entrance will be accepted other than by approval from the Public Power Director. The meter base shall always be kept sealed and under the control of the City.

15.04 Commercial Meters

Single-phase and three-phase self-contained meter bases shall be installed by the Developer and shall have bypass capability in the meter base. For details and specific information regarding this requirement, please contact Brigham City Public Power. For services rated 200 amps up to 800 amps, the Brigham City Public Power will supply the meter base & test switch for contractor to install at Customer's expense. No smaller than a 200-amp 3 phase service entrance will be accepted unless otherwise approved by the Public Power Director. For services rated over 800 amps, a manufacturer's shop drawing of the MDP switchgear cabinet with main disconnect and adequate metering provisions will need to be provided for approval. Contact Brigham City Public Power for specific requirements and submission details.

The Contractor's portion shall be completely installed, inspected, and the electrical hook-up fee paid before the City will complete the final electrical hookup.

15.05 Location of Multiple Meters

Where more than one meter is required for a building, such as an apartment complex, all meter sockets shall be located side by side at an outside location as determined by the Public Power Director.

15.06 Meter Location Regarding Remodeling

When remodeling, where 2 or more houses or dwelling units are combined to form one building, the meter socket shall be moved to a single location. Meter and service locations shall first be approved by Brigham City Public Power. Existing meters and services may require relocation to meet current City standards. In all remodeling where the meter is changed or moved, or wiring changes made, outdoor meter sockets and an approved new service entrance shall be installed by Customer at Customer's expense.

15.07 Meter Accessibility

In the event a structural change is made by the owner that results, in the opinion of the Public Power Director, to be an undesirable meter location, the meter socket, meter cabinet, and/or service entrance installation shall be moved by the Customer at his/her expense to an accessible location as determined by the City.

Whenever the construction of a building on an adjacent lot prevents proper access to any meter, or access to the point of attachment of service drop conductors, or results in inadequate service drop clearance, the Customer shall move, at Customer's expense, the meter socket and service entrance to a location that is acceptable to City. The meter shall not be enclosed by any portion of a building. The meter shall not be placed under carports or enclosed by sheds, garages, outbuildings or other buildings. The meter shall always remain readily accessible to the City.

15.08 Outdoor Meters for Non-Residential General Service

All single-phase meters installed for non-residential use shall be socket type. The meter base shall have bypass links installed. The meter socket shall be furnished and installed by Customer at Customer's expense.

15.09 Instrument Transformer for Metering

In all outdoor installations requiring current transformers, whether single phase or 3 phase, the Customer shall provide an approved meter loop for meter connections. The City shall furnish any instrument transformers, meter bases, or other devices required, to properly meter the Customer's electrical needs at the Customer's expense. Such instrument transformers and devices shall be installed by the City.

15.10 Current Transformer Cabinet (Refer to Sheet E19)

Any cabinets required to house said instrument transformers and accessory equipment shall be furnished and installed by Customer at Customer's expense. This requirement applies to all installations. All cabinets shall be approved by the City.

Such metering or instrument cabinets are for the exclusive use of City, and shall always be under the control of, and kept sealed by City.

15.11 Unacceptable Meter Locations

For reasons of public safety, maintenance of service equipment, and reliability of metering, meters shall not be installed in any of the following locations:

1. Inside any building, unless located within an acceptable meter room.
2. In any location that is not readily accessible.
3. Directly over any stairway, ramp or steps.
4. In any substation or transformer vault.
5. Accessible only by a trap door or in any location which may be hazardous to personnel.
6. On any surface subject to excessive vibration.
7. In or accessed through any rest, bath, shower, powder, or toilet room.
8. In any elevated area.
9. In any location not providing a clear and continuously unobstructed working space extending a minimum of eight (8) feet from the face of the meter panel and having a width to permit ready access to the complete metering installation.
10. In any location where moisture, fumes, or dust may interfere with the operation of the meter or damage it.
11. In any location giving less than three feet clearance to any property line, or with less than three feet clearance to any sidewalk, alley or driveway giving access to non-residential or industrial property.
12. In any basement or depressed area.
13. Within carport or patio areas which are or can become enclosed, when served overhead or underground.
14. Mounted on BCPP poles.
15. In a room containing mechanical equipment.
16. In any elevator shaft or hatchway.
17. Mounted on any trees.
18. In any unsanitary areas in reference to farm animals and products.
19. In a plenum or any portion of a return or supply air ducting system.
20. Areas where entry may be restricted or controlled because of medical, health, environmental or other safety-related issues.

SECTION 16 LIGHTING AND SIGNAL POLES (Refer to Sheets E16-E17)

16.01 General

The City shall provide the street light poles, fixtures & associated parts to install the streetlights. The contractor is responsible for transport of the streetlights from the Public Power Department to their respective developments. Furthermore, the contractor shall be responsible for pouring the concrete bases, assembling and erecting the streetlights.

All local streets, minor & major collectors, and arterial streets shall have the decorative streetlight as shown in the standard drawings or as designed. 25-foot steel galvanized poles with a 6-foot arm, and either a 100-watt or a 250-watt equivalent LED cobra head type fixture may be used or substituted for a decorative type pole & fixture at the City's discretion. All fixture types will be of the Luminaire type with 90-degree cutoff lens.

All traffic signal poles shall be powder coated black.

16.02 Dark Sky

All street and parking lot lighting shall meet the IDA (International Dark-Sky Association) recommendation and City ordinance for dark sky compliance. This will require that all lighting, streetlight, parking lot lighting, walkway lighting, etc., cannot broadcast light above 180° from the parallel ground surface. It is advised that all lighting on buildings, such as security lighting, also meets this requirement.

16.03 Location

In general, streetlights will be installed at all intersections except where a four-way intersection has an offset of less than 100 feet from another intersection. Streetlights shall be installed on the top of all traffic signal poles. Streetlights for local streets will be installed with a maximum spacing of 400 feet between lights. All mid-block streetlights shall be installed 18 inches from a property line. Collector and arterial streets shall have lights spaced at 175 feet apart on alternating sides of the street. In addition to the typical location design and layout, street light locations may also be designed by Brigham City Public Power. Commercial right-of-way lighting needs to be staggered 125 feet with a maximum of 250 feet of spacing on each side of the ROW.

Each streetlight will be installed so that the street light pole is centered in the planter strip or within 18 inches of the sidewalk if no planter strip exists.

16.04 Orientation

Streetlights at intersections of local streets shall aim at the center of the intersection. On collector or arterial streets streetlights shall be set at a 90-degree angle at regular intervals determined by the City.

16.05 Grounding & Bonding

A bonding wire shall be connected from the rebar "Ufer" rings in the concrete pole base to the street light pole grounding/bonding screw or termination point using NEC approved methods and a separate grounding wire will be installed from the pole to the closest secondary pedestal or transformer. The grounding conductor shall be terminated with the neutral conductor.

16.06 Wiring & Fusing

A 10-amp in-line fuse & fuse holder shall be installed in the junction box on the 120/240-volt ungrounded conductors.

VEGETATION MANAGEMENT

SECTION 17 VEGETATION MANAGEMENT

17.01 Overview

When feasible, BCPP prioritizes the removal of tall-growing trees and vegetation to prevent future conflicts with overhead power lines, while supporting the establishment of low-growing species that will never interfere with the high-voltage lines. Considering the interests of property owners and other land use objectives, it is not always possible to remove incompatible trees.

Tall-growing trees that cannot be removed must be pruned to maintain clearance around power lines through use of arboriculturally sound pruning practices.

17.02 Professionalism

In accordance with ANSI Z133, all personnel working in proximity to overhead conductors at any time are required to hold one of the following designations: Qualified Line Clearance Arborist or Qualified Line Clearance Arborist Trainee.

17.03 Safety

The safety of workers and the public should always be given the highest priority. Federal and state requirements governing vegetation management activities shall always be followed, including all OSHA requirements. ANSI Z133 (2107 or most current) and OSHA 1910.269 are examples of these requirements. Activities shall be conducted to minimize tree crew and public safety risks.

Table 17.03.A Minimum approach distances for Qualified Line Clearance Arborists and Qualified Line Clearance Arborist Trainees.

Voltage (kV) (Phase-to-Phase)	Minimum Approach Distance Sea Level to 5,000 ft.	Minimum Approach Distance 5,000 to 10,000 ft.	Minimum Approach Distance 10,000 to 14,000 ft.	Source*
0.05-0.300	Avoid contact	Avoid contact	Avoid contact	APM/Z133
0.301-0.750	1'- 6"	1'- 7"	1'- 7"	APM/Z133
0.751-15.0	2'- 6"	2'- 7"	2'- 10"	APM/Z133
15.1-46.0	3'- 6"	3'- 7"	3'- 8"	APM/Z133
46.1-72.5	3'- 6"	4'- 0"	4'- 4"	Z133
72.0-121.0	3'- 11"	4'- 6"	4'- 10"	Z133
121.1-145.0	4'- 6"	5'- 2"	5'- 7"	Z133
145.1-169.0	5'- 1"	5'- 9"	6'- 3"	Z133
169.1-242.0	7'- 0"	7'- 11"	8'- 7"	Z133
242.1-362.0	11'- 9"	13'- 6"	14'- 7"	Z133
362.1-420.0	14'- 8"	16'- 9"	18'- 2"	Z133
420.1-550.0	17'- 6"	20'- 0"	21'- 8"	Z133
550.1-800.0	23'- 9"	27'- 2"	29'- 5"	Z133

17.04 Fire Protection

Federal, state, and local fire protection laws and regulations shall be followed, and the Tree Crew Foreman performing the work must obtain necessary work permits. Crews shall have all fire suppression tools and equipment required by the governmental agency responsible. Tree Crew Foreman shall also adhere to fire restrictions concerning work hours, fire watch following work, and other policies of the pertinent jurisdiction. Tree Crew Foreman with crews working in fire-prone rural areas shall provide basic fire prevention and suppression training to their crews annually. Documentation of this training shall be submitted annually to the BCPP Director July 1st.

17.05 Species of concerns

Vegetation maintenance shall not disturb or harm any rare, threatened, endangered, or protected plant or animal species. Nesting season work restrictions exemplify important scheduling considerations necessary to accommodate protected species. If there are rare, threatened, endangered, or protected plant or animal species present at a location where work is planned, the Tree Crew Foreman must stop work and immediately inform the BCPP Director.

17.06 Bird Protection

Migratory birds are protected by the Migratory Bird Treaty Act of 1918 (16 USC 703-712) (MBTA). Most bird species are protected under the MBTA; therefore, in an abundance of caution, all bird species should be considered subject to

the law's provisions. The Tree Crew Foreman shall conduct vegetation maintenance consistent with the MBTA.

The MBTA prohibits removal of bird nests that have eggs or chicks and killing any birds which are members of any protected species. Active nests may not be disturbed unless the BCPP Director, after consultation with U.S. Wildlife Services has provided authorization. If tree crews identify a possible immediate risk (e.g., active nest in the vicinity of vegetation listed for work), the Tree Crew Foreman shall contact the BCPP Director. The Director will consult with U.S. Wildlife Services regarding whether work may proceed. If work is postponed until after young have left the nest, the location must be recorded and tracked to ensure completion at the appropriate time.

The nests of eagles threatened and endangered species, and colonial waterbird nests (such as those of herons) may not be disturbed – whether or not they are active. Eagles are subject to additional protection; it is illegal to disturb them near their nests or winter roosting sites. If large stick nests, suspected to be protected nests, are in vegetation identified for removal, the Tree Crew Foreman must contact the BCPP Director who will consult with the U.S. Wildlife Services.

Raptors (birds of prey) and herons require buffers around active nests to prevent them from being disturbed, unless instructed otherwise by U.S. Wildlife Services or applicable regulatory authority.

Table 17.06.A Work buffers around active nests of eagles, hawks, and herons.

Species	Work buffer
Bald Eagles (Jan 1-Aug 31)	660 feet
Bald Eagle roosts (Nov 1-Mar 31)	0.25 mile
Golden Eagles (Jan 1-Aug 31)	0.25 mile
Hawks (exceptions below)	600 feet
Ferruginous hawk	0.5 mile
Northern goshawk (Mar 1-Aug 31)	0.5 mile
Swainsons hawk	0.25 mile
Owls	300 feet
Great Gray Owl	0.25 mile
Northern Spotted Owl	0.25 mile
Osprey	600 feet
Herons/Colonial Nesters	600 feet
Songbirds	50 feet

In general, if a bird leaves a nest and does not return within an hour, it is being disturbed, and the buffer should be increased. In these cases, U.S.

Wildlife Services should be contacted within 24 hours to monitor the nest and respond appropriately if the adults fail to return.

Active bird nests and inactive bird nests should be reported to the BCPP Director and U.S. Wildlife Services.

17.07 Tree Removal

In certain circumstances, it is necessary or appropriate to remove trees (i.e., removed the threat posed to electrical infrastructure or remove the tree from the “inventory” of future work). When a tree is removed, the stump shall be cut to within 6 inches of the ground or as close to it as practical (for example, at the top of a barbed wire fence that has become imbedded in the trunk). Stumps of all deciduous trees, brushes, and vines that are removed shall be treated with an approved herbicide, unless otherwise indicated by landowner or restricted by the land managing agency. Tree removal may be discretionary or necessitated by the presence of Hazard Trees.

17.07.1 Hazard Trees

“Hazard Trees” are defined as a tree in whole or in part, that might fail, and which is identified as a likely source of harm. Trees that are dead, dying, diseased, deformed, or unstable, which have a high likelihood of falling and contacting a specific target (electrical infrastructure) should be assessed for removal. The Tree Crew Foreman shall conduct a visual assessment, consistent with ANSI A300. Hazard Trees pose a safety and reliability risk and must be removed (or pruned to the extent that the tree is no longer a Hazard Tree). BCPP reserves the right to deny chipping of any dead wood and will leave the dead wood on property for customer to clear. Federal and state agencies sometimes request that trees subject to removal be topped to create “wildlife trees.” BCPP may honor such requests, provided the safety of the tree workers or the integrity of facilities are not compromised. Any Hazard Trees removed to accommodate this request should be reduced to a height so that the tree would never contact any BCPP Facilities should it fall.

17.07.2 Discretionary Tree Removal

Discretionary tree removal reduces the total tree inventory and can, therefore, reduce long-term risks to safety and reliability; improve access to facilities, clear lines of sight, and moderate future workloads. In general, removal of trees near power lines are encouraged and are to be pursued by the Tree Crew Foreman.

17.08 Debris Disposal

Before leaving a particular worksite, all debris must be brought to ground, with no severed limbs left in the tree canopy (hangers). Work locations shall be left in a safe and orderly condition at the end of the workday. “Debris” is cut vegetation remaining after maintenance operations.

Debris is typically disposed of in multiple ways. First, debris may be chipped using a mechanical chipper and then transported off-site. Second, debris may be chipped using a mechanical chipper and then broadcast on-site. Third, debris may be lopped into maximum lengths of 3 feet and scattered (if necessary to pile debris, piles shall be no more than 18 inches high). The appropriate method of disposal depends on the area where vegetation maintenance is being performed. Additional debris management requirements may be identified by land managing agencies.

17.08.1 Inaccessible Areas

In remote off-road areas without reasonable vehicle access, debris can be disposed of on-site. Use the lop and scatter method mentioned above.

17.09 Directional Pruning

Directional pruning is a natural target pruning applied to redirect tree growth away from utility lines (Gilman 2012). ANSI A300 and ISA’s best management practices (Kempter 2004) instruct that pruning to clear the utility space involves thinning cuts: removing at natural targets entire branches that are growing toward (or once cut will produce sprouts that will grow toward) the power lines.

While heading cuts produce sprouts that grow quickly back into the power lines, branch removal and reduction promote growth away from conductors. Because one objective of utility pruning is to train trees away from power lines wherever practical, branches growing away from the electric facility should not be pruned. Instead, these stems should be allowed to develop to their natural height or length, provide that growth does not create unreasonable safety risks. This cannot be accomplished with strongly excurrent trees trapped directly beneath conductors.

Topping, round-overs, flush cuts, branch tipping, and rip cuts are improper as they result in damage to the trees. Directional pruning is consistent with natural tree structure. Remaining branches retain their taper, strong attachments, growth regulators, and spacing. They continue to grow and function normally, allowing the tree to reach its natural height.

“V” shapes often result in properly pruned trees growing under power lines, particularly on decurrent, deciduous trees (Gilman 2012; Kempter 2004;

Miller 1998; Shigo 1990). Limbs growing upward and toward the facility should be cut back to the trunk or to limbs growing away from the conductors. Remaining branches should have sufficient clearance, so they do not damage the conductors in inclement weather common for the locality (high wind, freezing rain, snow, or other conditions). Excurrent trees (such as main conifers) are more problematic but should be reduced to appropriate laterals or whorls. “L” or one-sided shapes often result in properly pruned trees to the side of conductors (Shigo 1990; Gilman 2012). Limbs on the wire side of trees located adjacent to facilities should be cut back to the trunk; or to limbs growing vertically, sideways or downward; depending on the distance to the line or available natural target.

17.10 Tree Houses

Tree houses built in trees growing near power lines present electric safety risks. Children or others may contact the line, either directly or indirectly, if a tree house is built too close to conductors. Indirect contact may occur through any conductive object, including a tree or tree parts that are contacting power lines. Minimum tree house distances are set at twice the “Minimum approach distances to energized conductors for arborists not qualified by training and experience to work within 10 feet of electrical conductors” as established in Table 1 of ANSI Z133.

17.11 Distribution Cycle Maintenance

Trees and vegetation are pruned from distribution facilities on scheduled cycles. Facilities are worked systematically, either by circuit or grid. The duration of a cycle is dependent on local conditions, as determined by BCPP. BCPP typically schedules distribution cycle maintenance work on a three-year cycle for most circuits in BCPP service territories.

Refer to Sheet V-1.

In performing distribution cycle maintenance, the Tree Crew Foreman is required to:

Systematically prune and remove trees and other vegetation at a specified distance from all primary conductors and non-primary conductors, consistent with this section,

Comply with all other specifications generally applicable to all vegetation maintenance under these SOPs, including without limitation

Identify and remove (or remediate) Hazard Trees and discretionary tree removals.

Identify and correct readily climbable trees that are too close to power lines.

Identify and remedy or remove tree houses violating the criteria.

Remove all brush, which include volunteer trees (naturally seeded, non-landscaped trees) and woody plants (including vines).

17.11.1 Distribution Cycle Maintenance - Clearance Distances – Primary (Refer to sheets V-1 and V-2)

Each work cycle, trees and other vegetation are pruned or removed to achieve clearance distances to comply with the NESC, state regulation clearance requirements, and BCPP guidelines.

Specified vegetation clearance distances from primary conductors in the distribution system should allow sufficient space to prevent contact with primary conductors or regulatory mandated clearance distances throughout the cycle.

The Tree Crew Foreman is responsible for identifying all vegetation that would encroach upon conductors, BCPP required distances, or regulatory mandated minimum clearance distances throughout the cycle.

Neutral conductors in a raised position, which includes above or on a crossarm, are treated as primary-conductors for purposes of this section. Low neutral position is treated as a hot conductor.

17.11.2 Distribution Cycle Maintenance – Clearance Distances – Non-Primary

17.11.2.1 A secondary line is a line typically energized to less than 750 volts. Specified distances from secondary conductors in the distribution system are designed to prevent strain (severe deflection) or abrasion. The “Work Threshold,” which is the point at which action must be taken) and Post Work Clearance distances for non-primary are set forth as follows:

Table 17.11.2. A non-primary wire vegetation clearance distances.

Line Type	Work Threshold	Minimum Post-Work Clearance
Non-insulated wire pole-to-pole secondary	N/A	3 feet
Neutral low position	Contact	2 feet
Insulated pole-to-pole secondary	Deflection or abrasion	2 feet
Non-insulated secondary service line/streetlight	N/A	1 foot
Insulated secondary service/streetlight	Deflection or abrasion	1 foot
Guy wire	2-inch or grated diameter limb applying pressure	Relieve pressure

These practices can be changed at any time at the discretion of the BCPP Director.

In addition to the specification clearances (Table 17.11.2.A), the following requirements also apply to distribution cycle maintenance work on distribution non-primary.

17.11.2.2 Tree Limbs Between Conductors. Any tree limbs between a primary conductor and any secondary conductor, regardless of type, shall be removed or pruned to Post-Work Clearances for primary.

17.11.2.3 Customer Work. If a customer expresses a desire to remove other limbs or trees around any non-primary, in addition to the work to complete under these specifications, vegetation maintenance workers should inform the customer to call BCPP to arrange for a temporary disconnection of the facilities to allow safe completion of the desired tree work, as required by law.

17.11.3 Distribution Cycle Maintenance – Other Facility Clearances

In addition to pruning trees to maintain clearances, certain vegetation maintenance is required on utility poles (and supporting guy wires) as part of distribution cycle maintenance work. One-third of the circumference around poles shall be cleared of vegetation to 5 feet from the pole to allow lineman a climbing path. The remaining two-thirds of the pole circumference should be cleared of all vegetation 1 foot from the pole.

Vines growing on poles and guy wires shall be:

- Cut at ground level
- Treated with an approved herbicide
- Removed from the bottom 5 feet of the pole or guy wire
- Reported as brush or tree removed

Vines clearly part of a landscape and rooted well away from the pole may be:

Pruned to provide sufficient climbing path and 5 feet of separation (e.g., 5 feet of separation between the top of a fence and facility)

Reported as brush pruned (not to exceed 100 brush ft. pruned)

Where vines remain on facilities after work is completed, the Tree Crew Foreman will document the exception and report it to BCPP Director to clear the remainder of the pole.

17.12 Transmission procedures

Transmission facilities are overhead lines energized at a higher voltage. Typical transmission voltages on BCPP's system are 46kV and 138kV. Facility voltage and type determine the amount of transmission clearance needed. Vegetation maintenance performed on transmission lines shall comply with ANSI A300. In addition, vegetation maintenance performed on transmission lines shall conform with the NERC Reliability Standard FAC-003-5. Consistent with requirement R4 of NERC Standard FAC-003-5 and the procedures set forth in BCPP transmission grid operations. BCPP line patrolmen are responsible to complete inspections on certain transmission lines. When doing their inspections, line patrolmen will identify any vegetation that poses a threat of causing a transmission outage. In addition, BCPP vegetation management department completes vegetation inspections of the Right of Way for transmission lines. BCPP vegetation management completes an annual vegetation inspection on main grid transmission lines. All other transmission lines are inspected at least once

every year. Vegetation maintenance on transmission lines is then scheduled according to the results of those inspections.

17.12.1 Transmission Clearances

The objective of systematic transmission work is to safeguard the reliability of BCPP transmission system by preventing outages from contact with vegetation. Clearance work on a transmission line is guided by three concepts: Minimum Vegetation Clearance Distances, Action Thresholds, and Minimum Clearances Following Work.

Minimum Vegetation Clearance Distance (MBVCD) represents radial distances from the conductors inside of which trees shall not encroach.

17.13 Chemical Procedures

Herbicides and tree growth regulators (TGR) are an important part of BCPP Vegetation Management Program. Herbicides are chemicals used to manipulate or control undesirable vegetation. When safely used, herbicides are effective and efficient, minimize soil disturbance, and enhance plant and wildlife diversity. Herbicide applications can benefit wildlife by improving forage as well as escape and nesting cover. In some instances, noxious weed control is a desirable objective in utility ROW that can be accomplished through herbicide treatment. Herbicide use can control individual plants that are prone to resprout or sucker after removal. When trees that resprout or sucker are removed without herbicide treatment, dense thickets develop, impeding access, swelling workloads, increasing costs, blocking lines-of-site, and deteriorating wildlife habitat (Yahner and Hutnik 2004). Treating suckering plants allows early successional, compatible species to dominate the ROW and out-compete incompatible species, reducing work. “Tree growth regulators” refers to chemical treatments that slow the growth of some tree species.

Chemical applications shall always be performed according to federal, state, and local regulations and consistent with all labeling requirements.

17.13.1 Notification to Property Owners

Before chemical use on a property, Tree Crew Foreman shall give notice to the property owner(s). Notice shall be provided at least five days before work but no more than six weeks in advance, whenever chemicals are to be used on their property.

17.13.2 Licensed Applicators

Crew members in Brigham City service territory shall hold a valid Commercial pesticide applicator License. The Tree Crew

Foreman performing work is always responsible to ensure that any application of chemicals is performed by an applicator with a valid applicator's license, as required by state law where the property is located.

17.13.3 **Closed Chain of Custody**
The Tree Crew Foreman making the application is responsible for chemical purchase, storage, and container disposal. Closed chain of custody is required, including the use of returnable, reusable supply containers.

17.13.4 **Chemical Reporting**
All chemical applications shall be documented as required by law for a licensed applicator. In addition, chemical applications shall be documented as instructed by BCPP. The Tree Crew Foreman making the application shall be responsible for maintaining reports and shall produce reports for review by the state departments of agriculture upon request.

17.13.5 **Herbicide Application Efficiency**
Ninety-five percent control shall be assumed on all herbicide applications to be considered effective.

17.13.6 **Wetland and Waterbodies**
Product label shall be followed and approved for use near wetlands and waterbodies.

17.13.7 **Spills**
Applicator is responsible for preventing any chemical spills from occurring. Special attention should be made while mixing, loading, and cleaning equipment, which are activities that carry more risk for accidents or spills. Spills can be avoided by using closed chain of custody best management practices. Spill kits are required on every truck when any herbicide is used or being transported.

In the event of a spill:

1. Stop, contain and isolate the spill
2. Report the spill to the BCPP Director, who will notify the environmental services; the following information must be provided to the TREE CREW FOREMAN:
 - a. Caller and manager
 - b. Name
 - c. Date and time of spill

- d. Location (address or longitude and latitude)
- e. EPA number (product spilled)
- f. Cause of spill
- g. Amount of spill
- h. Types of surfaces contaminated
- i. Containment and/or clean-up activities performed so far

3. Remediate the spill
4. Cleanup at or near BCPP generating sites or substations must comply with site-specific spill prevention and remediation plans.

17.14 Approved Herbicides

In all circumstances, the licensed applicator is responsible for following label requirements. In addition, specific chemical products must be approved by the BCPP Director, based on pre-approved chemical products. Any approved chemical products must be based on one or a combination of the following active ingredients:

Stump Application	Low Volume Basal Application
2, 4-D	Imazapyr
Glyphosate	Triclopyr
Picloram	
Triclopyr	
Foliar Application	Soil Application
2, 4-D	Diuron
Aminopyralid	Indaziflam
Fosamine ammonium	Imazapyr
Glyphosate	Picloram
Imazapyr	Sulfentrazone
Metasulfuron methyl	Tebuthiuron
Picloram	
Sulfometuron methyl	
Triclopyr	
Tree Growth Regulators (TGR)	
Fluprimidol	
Paclobutrazol	

17.14.1 Substations Herbicide Treatment

Substations will be sprayed and treated multiple times throughout the year.

BRIGHAM CITY PUBLIC POWER DEPARTMENT

ELECTRICAL CONSTRUCTION STANDARD DRAWINGS

SUBMITTED & RECOMMENDED



APPROVAL

TOM COOPER
PUBLIC POWER DIRECTOR

TROY DAHLGREN
PUBLIC POWER SUPERINTENDENT

CASEY SMITH
PUBLIC POWER SUPERINTENDENT

APPROVAL

TOM COOPER
PUBLIC POWER DIRECTOR

CASEY SMITH
PUBLIC POWER SUPERINTENDENT

TROY DAHLGREN
PUBLIC POWER SUPERINTENDENT

CASEY SMITH
PUBLIC POWER SUPERINTENDENT

KRISTINA RASMUSSEN
ATTEST, CITY RECORDER

KRISTINA RASMUSSEN
ATTEST, CITY RECORDER

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- E3....RESIDENTIAL OVERHEAD SERVICE 200 AMPS OR LESS
- E4....ELECTRIC CONDUIT TRENCH DETAIL
- E5....SECONDARY JUNCTION PEDESTAL
- E6....SINGLE PHASE PAD MOUNT TRANSFORMER
- E7....200-AMP 1-PHASE SECTIONALIZER
- E8....200-AMP 1 AND 3-PHASE FIBERGLASS SECTIONALIZER
- E9....600-AMP 3-PHASE FIBERGLASS SECTIONALIZER
- E10....ELECTRICAL BOX BACKFILL & COMPACTION
- E11....CONDUIT ROUTING
- E12....3-PHASE TRANSFORMER & CONCRETE PAD
- E13....600 AMP PSE 9/11 SWITCHGEAR
- E14....600 AMP PSE 3/5 SWITCHGEAR
- E15....SECONDARY PEDESTAL, WIRE & CONNECTIONS
- E16....DECORATIVE STREET LIGHT POLE FOOTING DETAIL
- E17....STREET LIGHT POLES AND FIXTURES
- E18....TEMPORARY SERVICE FOR OVERHEAD & UNDERGROUND LINES
- E19....3-PHASE UNDERGROUND SERVICE 201-800 AMPS
- E20....TYPICAL RISER POLE
- E21....OVERHEAD POWER LINE CLEARANCES OVER 600 VOLTS TO 22,000 VOLTS
- E22....1-PHASE FREE STANDING METER BASE & 3-PHASE FREE STANDING METER BASE
- E23....PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM CENTRAL INVERTER (RESIDENTIAL)
- E24....PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM MICRO INVERTER (RESIDENTIAL)
- E25....PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM ENERGY STORAGE - CENTRAL INVERTER (RESIDENTIAL)
- E26....PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM ENERGY STORAGE - MICRO INVERTER (RESIDENTIAL)
- E27....PHOTOVOLTAIC THREE-PHASE SYSTEM DIAGRAM USING MULTIPLE TWO-LINE SINGLE-PHASE INVERTERS WITH NEUTRAL CONNECTION
- E28....PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM USING A SINGLE THREE-PHASE INVERTER
- E29....PV DISCONNECT LABELS & PV SERVICE PANEL WARNING LABELS
- E30....EUSERC DWG NO. 501 - AC DISCONNECT GUIDELINES

- ELECTRICAL - VEGETATION MANAGEMENT STANDARDS
- V1....TREE AND VEGETATION TRIMMING AND CLEARING DETAILS
- V2....TREE PLANTING AND ELECTRICAL BOX CLEARANCE DETAILS

FEBRUARY 2026

GENERAL INFORMATION

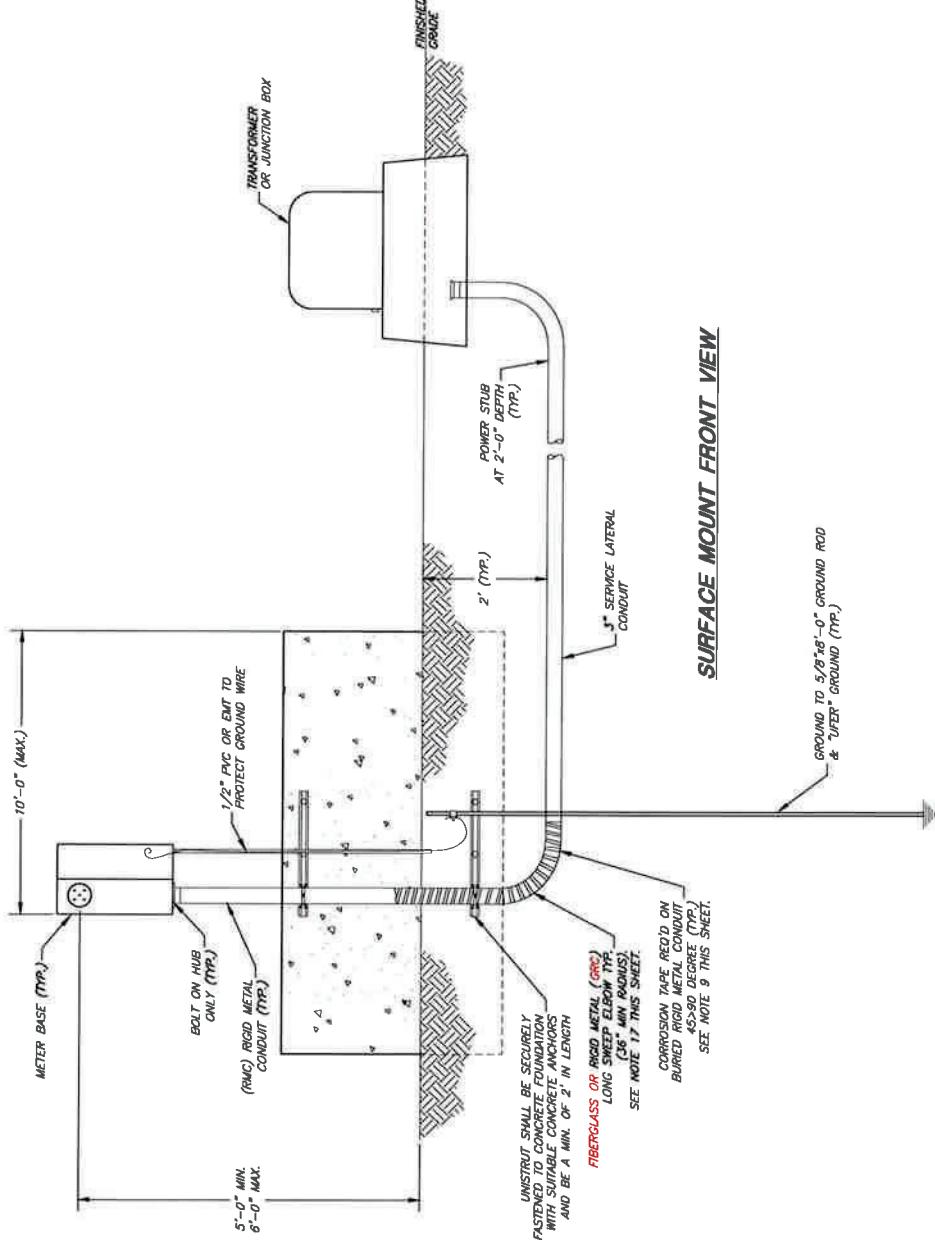
PURPOSE

THE PURPOSE OF THE ELECTRICAL CONSTRUCTION DRAWINGS IS TO AID CUSTOMERS, CONTRACTORS, DEVELOPERS, AND ENGINEERS IN DESIGN, CONSTRUCTION, AND INSTALLATION OF ELECTRICAL SYSTEMS AND SERVICES TO NEW AND REMODELED WITH THE CITY OF BRIGHAM CITY STANDARDS AND DRAWINGS, OR BRIGHAM CITY PUBLIC POWER TO PROVIDE SAFE, EFFICIENT, AND RELIABLE ELECTRICAL SERVICE TO ALL CUSTOMERS.

GENERAL GUIDELINES AND RULES

1. CURB & GUTTER SHALL BE INSTALLED ON ANY PROJECT BEFORE THE MAIN ELECTRICAL TRENCH IS EXCAVATED. THE CURB & GUTTER SHALL HAVE PROPER ELEVATIONS MARKED AND PAINTED IN APPROVED METHODS. THE CURB MUST GIVE A REFERENCE MARK TO THE ELECTRICAL CONDUIT, ELECTRICAL BOX PLACEMENT AND OTHER LOCATIONS IMPORTANT FOR ELECTRICAL INSTALLATION.
2. IF THE ELECTRICAL INSTALLATION, APPLICATIONS, OR OTHER MATTERS ARE NOT COVERED IN THIS BOOK, THEN IN GENERAL, THE INSTALLATION, APPLICATION, OR MATTER IS NOT APPROVED.
3. ALL ELECTRICAL CONSTRUCTION, AND INSTALLATION SHALL CONFORM TO APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC), THE NATIONAL ELECTRICAL SAFETY CODE (NESC), OSHA, STATE, COUNTY, AND CITY ORDINANCES, STANDARDS, AND CODES.
4. ANY AND ALL WORK IN THE VICINITY OF OVERHEAD POWER LINES SHALL NOT BE ALLOWED UNLESS THE CONTRACTOR OR CONTRACTOR'S PARTY FIRST NOTIFIES BRIGHAM CITY PUBLIC POWER OF THE INTENDED WORK OR ACTIVITY. NO PERSON SHALL CLIMB OR SIT ON ANY OVERHEAD POWER LINES. NO PERSON SHALL CLIMB OR SIT ON ANY HIGH VOLTAGE OVERHEAD POWER LINES, UNLESS THE POWER DEPARTMENT, APPLICATION, OR MATTER IS NOT APPROVED.
5. THE NATIONAL ELECTRICAL SAFETY CODE AND BRIGHAM CITY PUBLIC POWER CODE REQUIRES THAT HOUSES, BUILDINGS, SIGNS, BRIDGES, ANTENNAS, ETC. HAVE SUFFICIENT HORIZONTAL AND VERTICAL CLEARANCES TO OVERHEAD POWER LINES. CONSULT WITH THE POWER DEPARTMENT FOR APPLICABLE DISTANCES AND CLEARANCES.
6. CALL BLUE STAKES BEFORE YOU DIG! UTAH LAW SECTION 54-8A-1 THROUGH 54-8A-11 REQUIRES THE BLUE STAKES ONE CALL LOCATION CENTER TO BE NOTIFIED AT LEAST 72 BUSINESS DAYS PRIOR TO EXCAVATION. THE EXCAVATION SHALL NOT BE STARTED UNTIL LOCATIONS HAVE BEEN MADE.
7. IN GENERAL, JOINT TRENCHING OF POWER AND COMMUNICATIONS IS ALLOWED AS LONG AS THE INSTALLATION CONFORMS TO THE CONSTRUCTION STANDARDS.
8. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED A MINIMUM OF 4 FEET TO TOP OF CONDUIT FROM FINISHED GRADE. ADDITIONAL DEPths MAY BE REQUIRED IF HIGH VOLTAGE PRIMARY (12-27KV) CABLES ARE INSTALLED IN A JOINT TRENCH WITH LOW VOLTAGE (600V OR LESS) CABLES, AND COMMUNICATIONS CABLES. IN GENERAL, HIGH VOLTAGE PRIMARY (12-27KV) CONDUITS SHALL BE INSTALLED 1 FOOT DEEP FROM EARTH TO TOP OF CONDUIT. EXCEPT, EXAMPLE 6 INCH CONDUIT, WHICH IS 6 FEET IN DEPTH, BUT IN NO CASE SHALL PRIMARY CONDUITS BE INSTALLED LESS THAN THE MINIMUM OF 4 FEET IN DEPTH, UNLESS APPROVED BY THE POWER DEPARTMENT.
9. THE ELECTRICAL DISTRIBUTION SYSTEM FOR ALL NEW CONSTRUCTION OF RESIDENTIAL, COMMERCIAL, INDUSTRIAL, POWER DEPARTMENT, REMODELING, CHANGES OTHERWISE APPROVED BY THE BRIGHAM CITY PUBLIC POWER DEPARTMENT, ADDITIONS, ALTERATIONS, AND OTHER CHANGES THAT EFFECT THE ELECTRICAL SYSTEM, MAY REQUIRE THAT THE ELECTRICAL SYSTEM BE REMODELED, OR UPGRADED UNDERGROUND, AND/OR BE BROUGHT UP TO CURRENT NEC, NESC, AND CITY PUBLIC POWER STANDARDS. ADDITIONAL REQUIREMENTS MAY APPLY.
10. THE DEVELOPER IS TO PROVIDE THE TRENCH FOR ALL REQUIRED CONDUIT SYSTEMS, AND FOLLOWING THE INSTALLATION OF THE CONDUITS BY THE DEVELOPER, PROVIDE SAND AND BACKFILL TO MEET THE CONSTRUCTION STANDARDS. ALL TRENCHES SHALL BE COMPACTED TO 95% AND PASS THE COMPACTION TEST BEFORE THE TRENCH FINAL GRADE HAS BEEN ESTABLISHED, THE CURB & GUTTER SHALL BE INSTALLED BEFORE THE ELECTRICAL TRENCH IS STARTED.
11. PRIOR TO BACKFILLING ANY CONDUITS, THE DEVELOPER SHALL SCHEDULE AND REQUEST AN INSPECTION FROM A PASSED OR TAILED[®] SLIP TO PROCEED BACKFILLING OR NOT TO PROCEED.
12. STATE-SPECIFIED ROAD BASE SHALL BE USED UNDER ALL ELECTRICAL BOXES, ENCLOSURES, PADS, OR VAULTS. THE ROAD BASE SHALL BE COMPACTED TO 95% MINIMUM AND PASS A COMPACTION TEST BEFORE ANY BOXES, ENCLOSURES, PADS, OR VAULTS ARE SET. THE ROAD BASE SHALL BE A MINIMUM OF 1 FOOT IN DEPTH AND EXTEND A MINIMUM OF 1 FOOT PAST ALL SIDES OF THE BOXES, ENCLOSURES, PADS OR VAULTS. ADDITIONAL REQUIREMENTS MAY APPLY.
13. IN GENERAL, ALL ELECTRICAL BOXES SHALL BE PLACED A MINIMUM OF 18 INCHES FROM A PROPERTY LINE AND SET BACK 6 INCHES TO A FOOT BEHIND SIDEWALKS.

BRIGHAM CITY PUBLIC POWER	ELECTRICAL CONSTRUCTION STANDARDS	E1
Brigham City Public Power 1455 East Power Plant Road Brigham City, UT 84322 Tel: (435) 723-6250 Utility Emergency: (435) 723-5864 www.bcpower.gov	Brigham City Corporation 1455 East Power Plant Road Brigham City, UT 84322 Tel: (435) 723-6250 Utility Emergency: (435) 723-5864 www.bcpower.gov	Brigham City Corporation 1455 East Power Plant Road Brigham City, UT 84322 Tel: (435) 723-6250 Utility Emergency: (435) 723-5864 www.bcpower.gov



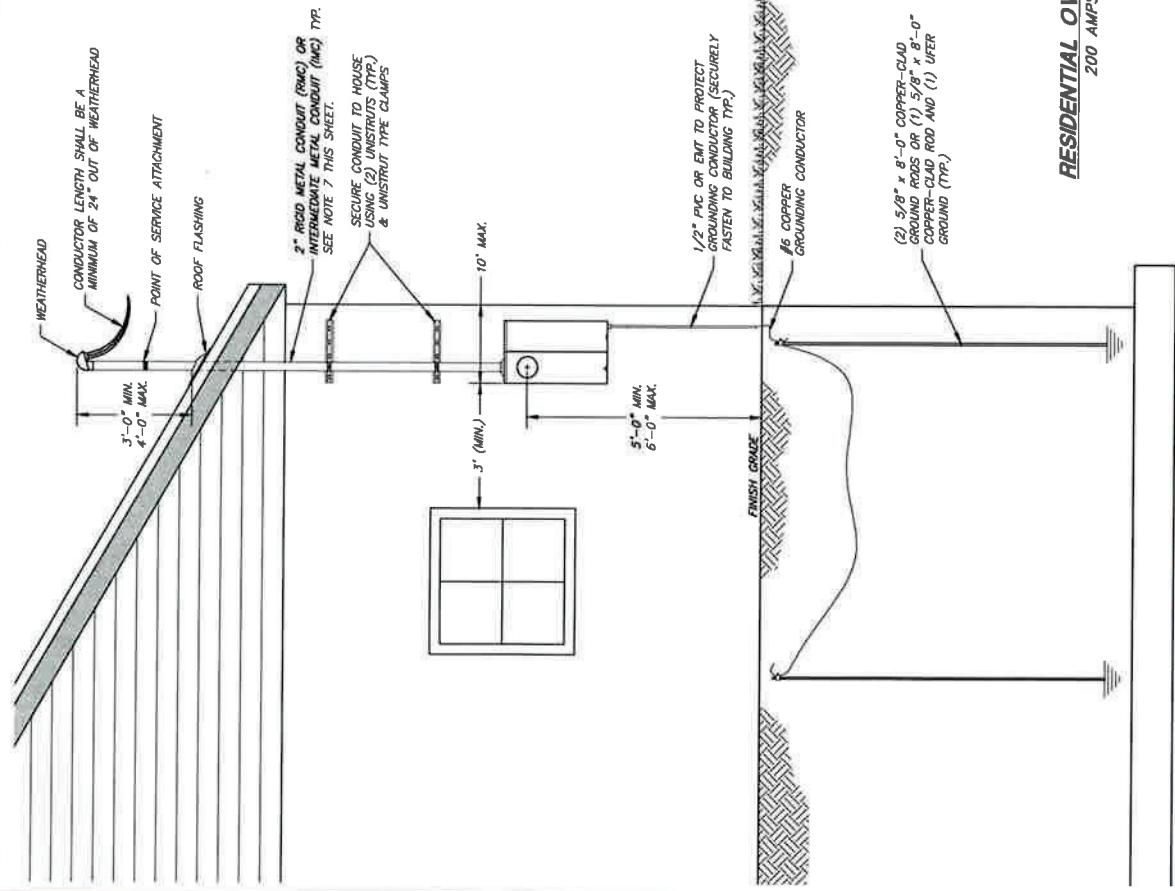
NOTES:

1. ALL MATERIALS TO BE SUPPLIED BY CUSTOMER EXCEPT METER.
2. ALL TEMPORARY PERMANENT EQUIPMENT SHALL COMPLY WITH CURRENT N.E.C., N.E.S.C., BRIGHAM CITY PUBLIC POWER AND CITY PUBLIC POWER STANDARDS.
3. SERVICE IN TRANSFORMER OR JUNCTION BOX.
4. SERVICE CONDUCTORS SHALL MEET CURRENT NATIONAL ELECTRIC CODE AND BRIGHAM CITY PUBLIC POWER REQUIREMENTS.
5. CORROSION INHIBITING COMPOUND SHALL BE USED ON ALL ELECTRICAL WIRE CONNECTIONS INSIDE METER BASE.
6. GROUND ROD TO BE DRIVEN A MINIMUM OF 6'-0" IN UNDISTURBED SOIL. GROUNDING CONDUCTOR CONNECTED TO GROUND ROD SHALL BE A MINIMUM OF $\frac{1}{16}$ COPPER. IF UPATED SERVICE (2) GROUND RODS SHALL BE INSTALLED AT LEAST 10' APART.
7. INSTRUMENT TO BE OF ONE PIECE AND 2'-0" IN LENGTH.
8. ENOUGH WIRE SHALL BE PROVIDED TO EXTEND A MINIMUM OF 4' PAST THE TRANSFORMER OR SECONDARY PEDESTAL GROUND SLEEVE.
9. ~~ARMED METAL CONDUITS SHALL BE TAPE WRAPPED WITH 10-16 IN. ANTI-CORROSION TAPE. TAPE SHALL EXTEND 6"- ABOVE FINISHED GRADE.~~
10. ALL POWER SERVICE LATERAL CONDUITS SHALL BE 3" ².
11. METER BASE SHALL BE LOCATED WITHIN THE FRONT 10'-0" OF THE SIDE OF THE HOUSE. OTHER LOCATIONS SHALL BE APPROVED BY BRIGHAM CITY PUBLIC POWER.
12. METER SOCKET SHALL BE PLACED A MINIMUM OF 5'-0" AND A MAXIMUM OF 6'-0" TO CENTER OF SOCKET FROM FINISHED GRADE.
13. CONTACT BRIGHAM CITY PUBLIC POWER TO SCHEDULE APPOINTMENT FOR ASSISTANCE IN PULLING IN WIRE INTO ENERGIZED TRANSFORMERS.
14. MAIN DISCONNECT BREAKER TO BE INSTALLED AT TIME OF INSPECTION.
15. IN GENERAL ONLY CONTINUOUS LENGTHS OF CONDUIT SHALL BE USED. NO JOINTS OR COUPLERS ARE PERMITTED IN SERVICE CONDUITS UNLESS OTHERWISE APPROVED.
16. ALL TRENCHES SHALL BE BACKFILLED AND COMPAKTED PRIOR TO FINAL POWER INSPECTION.
17. ~~GALVANIZED IRON-STEEL CONDUIT (GRC) OR INFERIORITY METAL-CONDUIT (IMC) ELBOWS SHALL BE USED FOR SERVOS AS DESIRES AND CERTAIN BRIGHAM CITY PUBLIC POWER (KAPPAH) WILL BE CONSIDERED ON BASE BY BASE.~~

FIBERGLASS OR GALVANIZED IRON-STEEL CONDUIT (GRC) OR INFERIORITY METAL-CONDUIT (IMC) 45 DEGREES OR GREATER ON ALL CONDUITS EXTENDING OUT OF THE GROUND

RETELETS OR GALVANIZED IRON STEEL CIRCUIT (LTC) SHALL BE USED FOR BENDS 45 DEGREES OR GREATER ON ALL CONDUITS EXTENDING OUT OF THE GROUND OUTSIDE OF AN ENCLOSURE.

BRIHAM CITY PUBLIC POWER		ELECTRICAL CONSTRUCTION STANDARDS		RESIDENTIAL UNDERGROUND SERVICE 200 AMPS OR LESS	
IN	BRIGHAM CITY PUBLIC POWER	IN	BRIGHAM CITY PUBLIC POWER	IN	BRIGHAM CITY PUBLIC POWER
11	1455 East Power Plant Road	11	1455 East Power Plant Road	11	1455 East Power Plant Road
12	Brigham City, UT 84302	12	Brigham City, UT 84302	12	Brigham City, UT 84302
DATE	Norm MacEwan	DATE	Norm MacEwan	DATE	Norm MacEwan
01/09/2026	TD & CS	01/09/2026	TD & CS	01/09/2026	TD & CS
TIME	10:00 AM	TIME	10:00 AM	TIME	10:00 AM
DESCRIPTION	TC	DESCRIPTION	TC	DESCRIPTION	TC

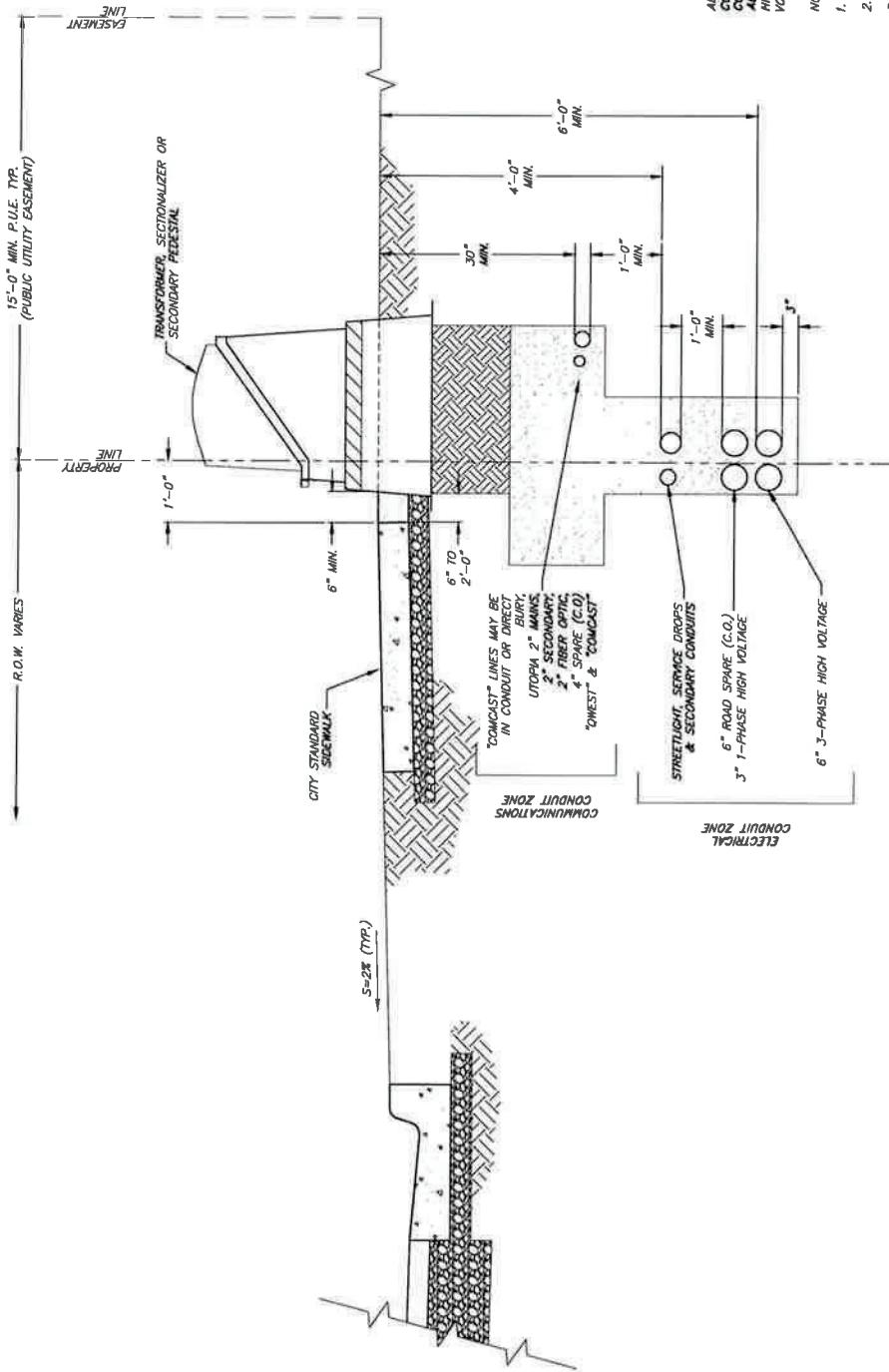


SERVICE OR FEEDER RATING (AMPERES)	NEC WIRE SIZE			CONDUIT SIZE
	COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM	2"	
100 AMP	4	2	2"	
110 AMP	3	1	2"	
125 AMP	2	1/0	2"	
150 AMP	1	2/0	2"	
175 AMP	1/0	3/0	2"	
200 AMP	2/0	4/0	2"	
201 AMP-400 AMPS	SEE PUBLIC POWER DIVISION			

NOTES:

- ALL METER BASE SERVICE LOCATIONS MUST FIRST BE APPROVED BY THE PUBLIC POWER DEPARTMENT.
- IN GENERAL, ALL METER BASES SHALL BE LOCATED ON THE FRONT 10'-0" OF THE SIDE OF THE HOUSE.
- METER HEIGHT SHALL BE A MINIMUM OF 5'-0" AND A MAXIMUM OF 6'-0" TO CENTER OF METER SOCKET.
- ALL BONDING SHALL BE KEPT A MINIMUM OF 3'-0" FROM DOORS, WINDOWS, STAIRS, GAS METERS, ETC.
- ALL BONDING AND GROUNDED SHALL MEET CURRENT NEC AND BRIGHAM CITY PUBLIC POWER REQUIREMENTS FOR ERECTING HOMES. (2) GROUND RODS SHALL BE REQUIRED IN ADDITION TO ANY OTHER NEC GROUNDED REQUIREMENTS.
- ALL SERVICE CONDUCTOR SIZES AND TYPES SHALL MEET CURRENT NEC.
- IN GENERAL, ONLY CONTINUOUS LENGTHS OF CONDUIT SHALL BE USED. NO JOINTS OR COUPLERS ARE PERMITTED IN SERVICE CONDUITS UNLESS OTHERWISE APPROVED. ALL COUPLERS MUST BE BELOW ROOF LINE.





TYPE OF CONDUIT	CONDUTT SIZE	MIN. DEPTH TO TOP OF CONDUIT
STREET LIGHT	2" SECONDARY	2'-0"
ELECTRICAL SERVICE	3" SECONDARY	2'-0"
	1"	2'-0"
SECONDARY	2"	2'-0"
	3"	2'-0"
	4"	2'-0"
PRIMARY	6"	4'-0"

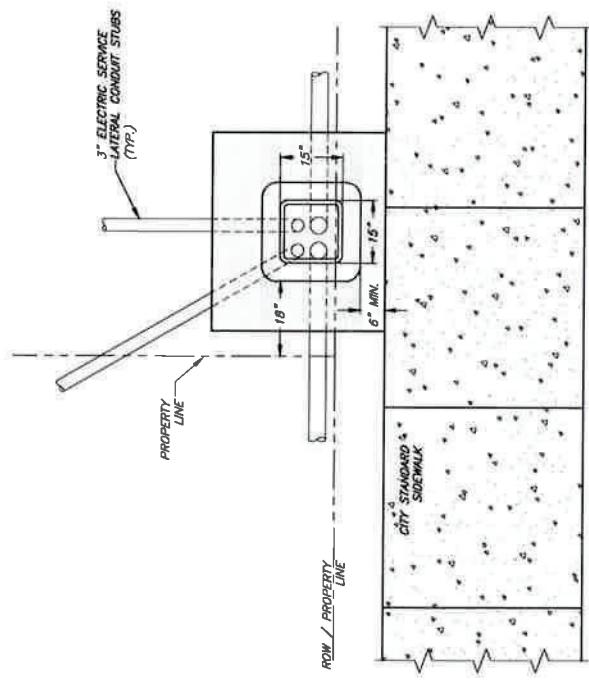
POWER CONDUIT SHALL BE BURIED A MINIMUM OF 4" IN DEPTH TO TOP OF CONDUIT. IF A HIGH VOLTAGE CONDUIT IS BURIED ON THE SAME TRENCH AS A LOW VOLTAGE CONDUIT, IT SHALL BE BURIED 12" DEEP. POWER CONDUITS SHALL BE INSTALLED IN THE LOW VOLTAGE CONDUIT. IF THERE ARE MULTIPLE HIGH VOLTAGE CONDUITS (3" PHASE, 6" 3-PHASE) IN THE SAME TRENCH, POWER CONDUITS MAY BE INSTALLED AT THE DEPTH OF THE LARGEST CONDUIT (6")

NOTES:

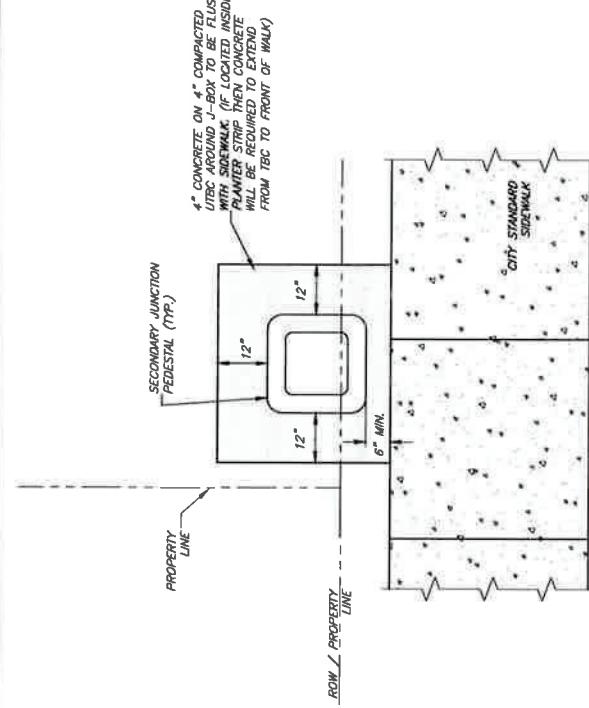
1. HIGH VOLTAGE PRIMARY CONDUITS SHALL ALWAYS BE BELOW SECONDARY CONDUITS.
2. REBAR SHALL BE CAPPED UNTIL BACKFILLED.
3. BACKFILL SHALL MEET THE REQUIREMENTS OF EARTHWORK AND TRENCHES AND OTHER STANDARDS IN THE CONSTRUCTION AND DEVELOPMENT STANDARDS.
4. ALL CONDUITS SHALL BE INSPECTED AT EACH LIFT, AT THE COMPACTION LEVEL AND FOR A FINAL INSPECTION.
5. A CAUTION TAPE SHALL BE PLACED DIRECTLY ON CONDUIT, AND A CAUTION TAPE SHALL BE PLACED 1' BELOW GRADE FOR CITY POWER.
6. ONLY CONTINUOUS CONDUIT RINGS ARE PERMITTED. FACTORY JOINTS SHALL BE USED FOR ATTACHING FULL LENGTH CONDUITS TOGETHER, UNLESS OTHERWISE APPROVED.

**TYPICAL JOINT TRENCH OF HIGH VOLTAGE,
LOW VOLTAGE, & COMMUNICATIONS CONDUITS**

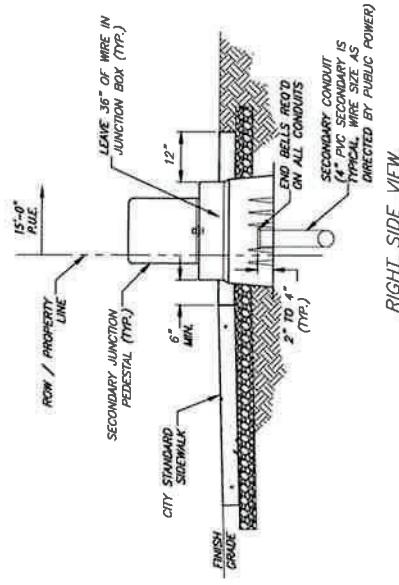
ELECTRIC CONDUIT TRENCH DETAIL						E4
BRI Brigham City Public Power			ELECTRICAL CONSTRUCTION STANDARDS			SHEET 1 OF 1 SHEETS
DATE:	01/03/2026	DRIVEN BY:	DRIVEN BY:	DRIVEN BY:	DRIVEN BY:	DRIVEN BY:
DATE:	N.T.S.	DRIVEN BY:	B&B	DRIVEN BY:	TD & C5	DRIVEN BY:



TOP VIEW



CONCRETE PAD DETAIL



RIGHT SIDE VIEW

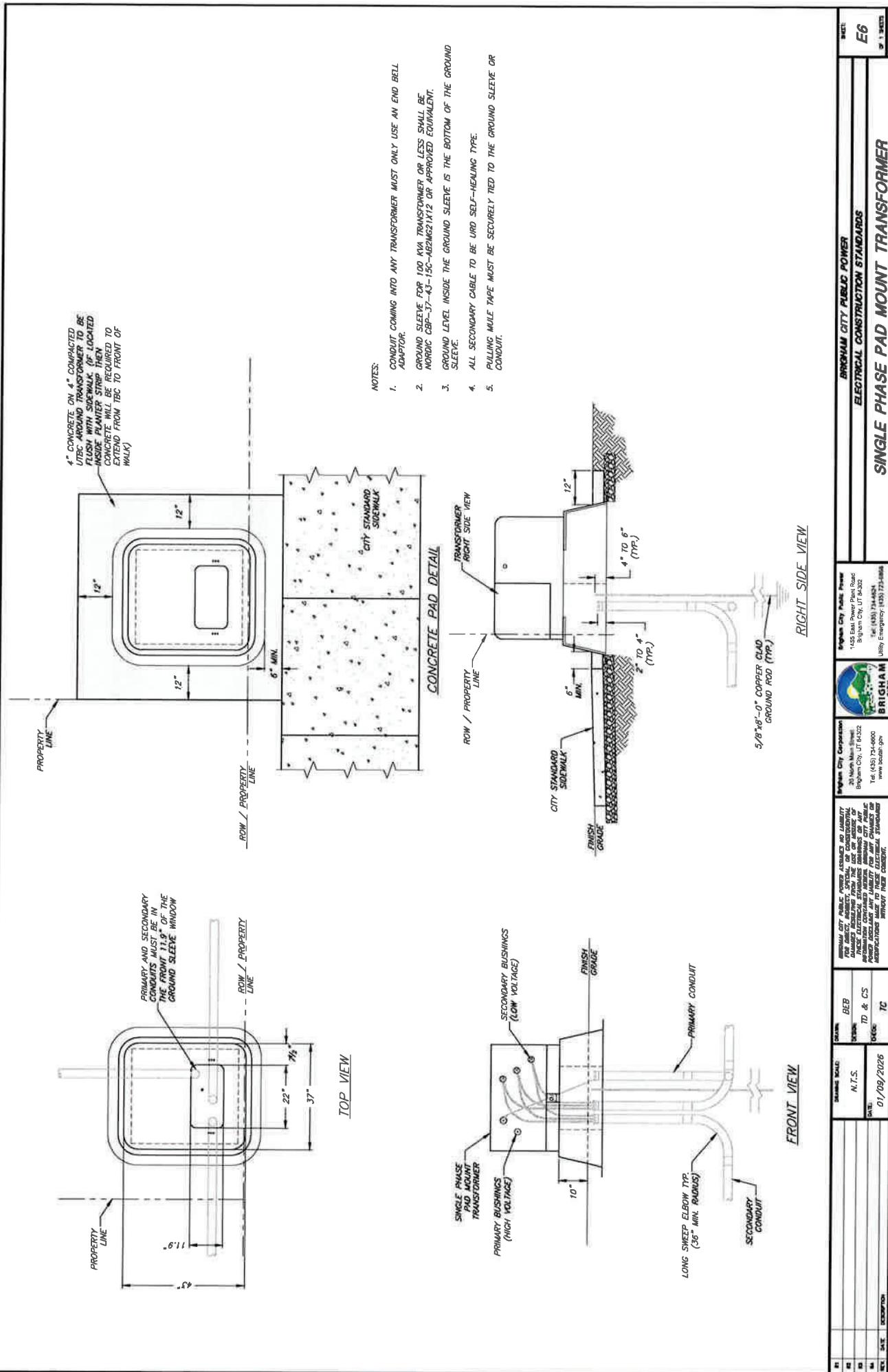
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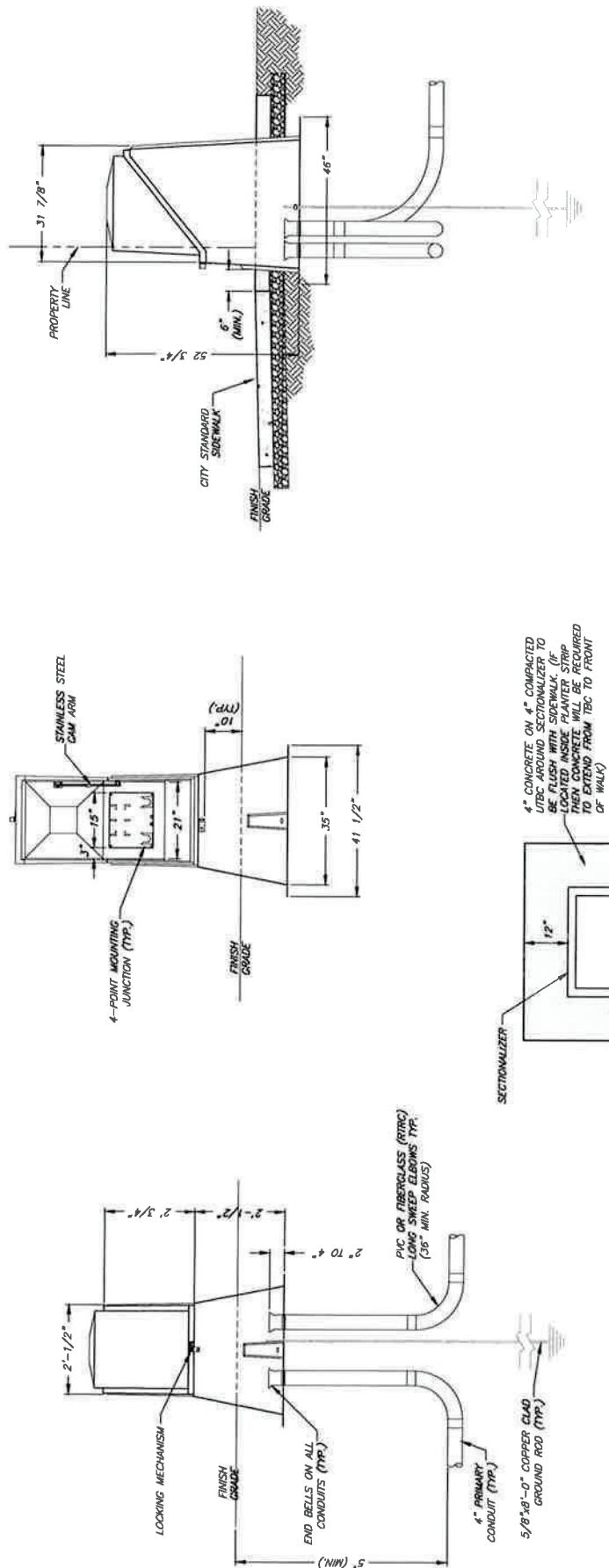
1. CONDUITS ENTERING ANY JUNCTION BOX SHALL HAVE END BELLS TO PROTECT WIRE FROM DAMAGE.
2. SECONDARY WIRE SHALL BE RATED FOR 600 VOLTS AND BE THE WIRE TYPE. CARE SHALL BE TAKEN IN INSTALLATION AS NOT TO DAMAGE WIRE INSULATION.
3. ALL SECONDARY WIRE SHALL EXTEND A MINIMUM OF 36" & A MAXIMUM OF 48" FROM TOP OF BOX (WITHOUT THE LID).
4. SECONDARY PEDESTALS SHALL FACE TOWARDS THE STREET AND SHALL BE LEVEL.
5. ROADBASE SHALL BE USED UNDER ALL PEDESTALS. ROADBASE SHALL BE COMPACTED TO 95% OF DRY DENSITY. COMPACTION TESTS SHALL BE TAKEN PRIOR TO ANY PEDESTALS BEING SET INTO PLACE.
6. CONDUITS SHALL BE 2" TO 4" HIGHER THAN INSIDE GRADE OF PEDESTAL (INSIDE GRADE IS THE BOTTOM OF THE PEDESTAL).
7. LOCKING MECHANISM SHALL BE 10' FROM FINISHED GRADE.
8. USE ONLY APPROVED JUNCTION PEDESTALS: PENCIL ARCH/EXCL-NL & MARAC FSP-15-15-30-46 OR APPROVED EQUIVALENT.
9. SECONDARY SERVICE LATERAL CONDUITS SHALL BE SEPARATED HORIZONTALLY IN THE TRENCH FROM COMMUNICATIONS CONDUITS.

DRAWING TITLE:		DRAWN BY:		APPROVED BY:		REVISED BY:		DATE:		DESCRIPTION:		SCALE:		SECTION:	
1		N.T.S.												E5	
2														OF 1 SHEET	
3														2	



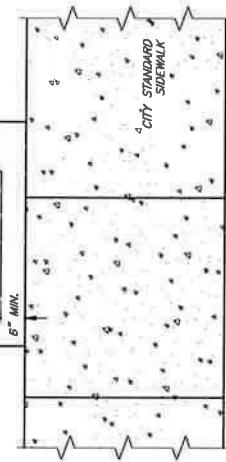
Brigham City Public Power
1455 East Power Plant Road
Brigham City, UT 84322
Tel: (435) 723-6200
www.bcpow.org
UKey Emergency: (435) 773-5999



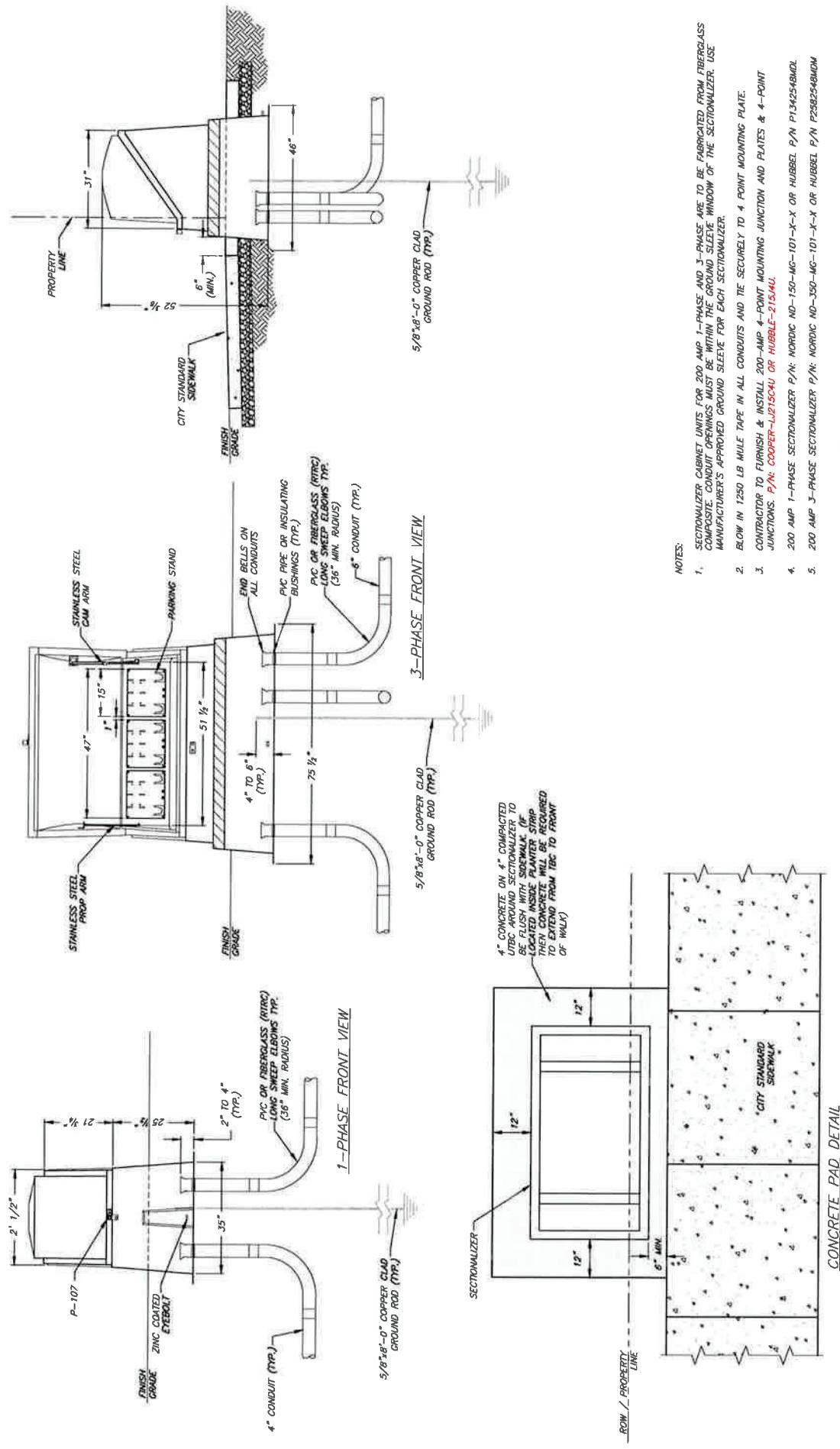


1. SECTIONALIZER CABINET UNITS FOR 200 AMP 1-PHASE ARE TO BE FABRICATED FROM FIBERGLASS COMPOSITE & MEET BRIGHAM CITY PUBLIC POWER SPECIFICATIONS. CONDUIT OPENINGS MUST BE WITHIN THE GROUND SLEEVE WINDOW OF THE SECTIONALIZER.
2. BLOW IN 1250 LB. MULF TAPE IN ALL CONDUITS AND TIE SECURELY TO 4 POINT MOUNTING PLATE.
3. 200 AMP 1-PHASE SECTIONALIZER P/N: NORRIC NO-150-MG-101-X-X, HUBBLE P/N: P1-3425-54801. OR AN APPROVED EQUIVALENT.
4. CONTRACTOR TO FURNISH & INSTALL 200-Amp 4-POINT MOUNTING JUNCTION PLATES & 4 POINT JUNCTIONS. P/N: **COOPER-LU1254U OR HUBLEE-2154UL**.
5. PVC OR FIBERGLASS (RTRC) ELBOWS SHALL BE USED FOR BENDS 45 DEGREES OR GREATER.
6. SECTIONALIZER SHALL BE SET A MINIMUM OF 6" BEHIND SIDEWALK.
7. CONCRETE SHALL BE Poured IN FRONT OF THE SECTIONALIZER IN BETWEEN THE SECTIONALIZER & SIDEWALK.
8. AREA AROUND SECTIONALIZER SHALL BE BACKFILLED AND LEVELED A MINIMUM OF 12" IN ALL DIRECTIONS AROUND THE SECTIONALIZER TO PROVIDE A SAFE WORKING AREA FOR THE ELECTRIC CONTRACTOR.

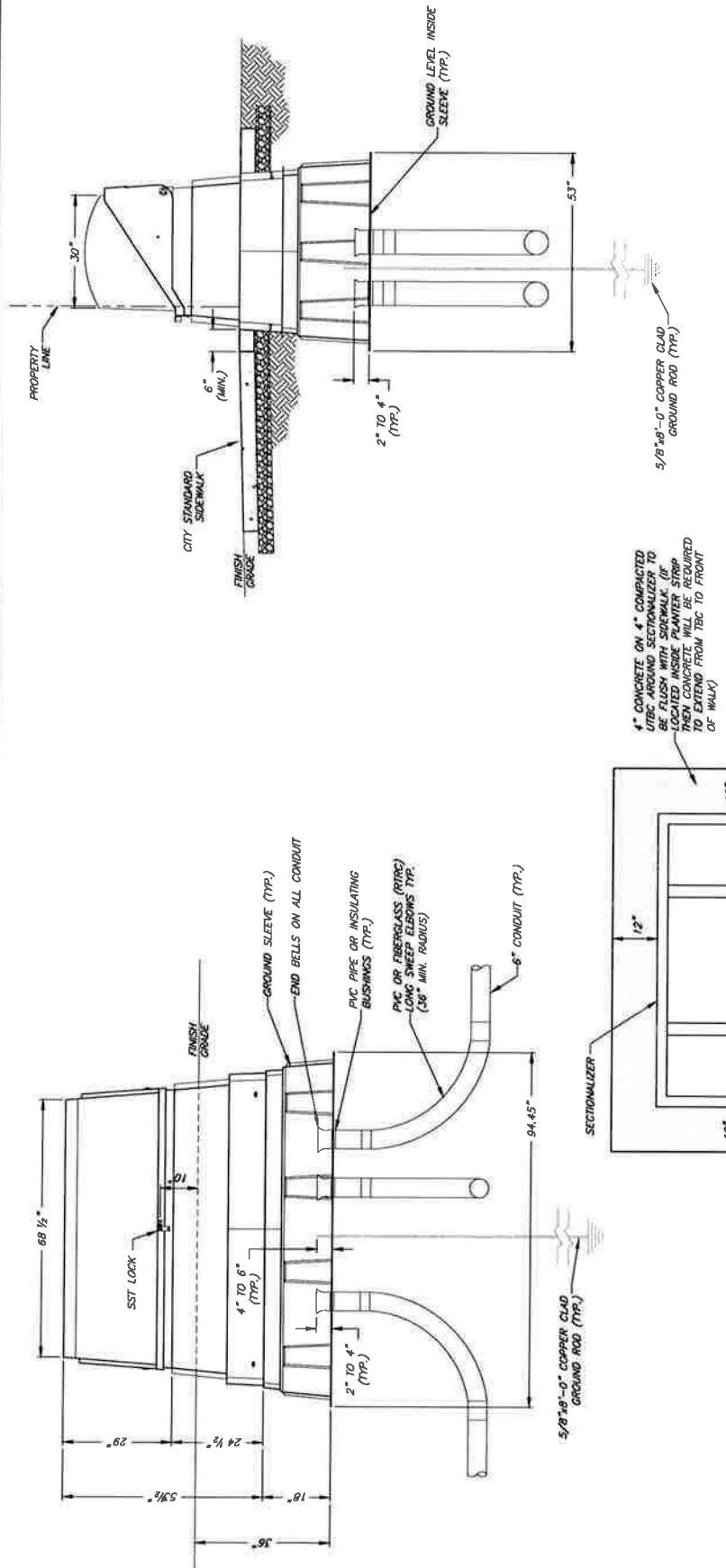
CONCRETE PAD DETAIL



BRIGHAM CITY PUBLIC POWER		ELECTRICAL CONSTRUCTION STANDARDS	
200-AMP 1-PHASE SECTIONALIZER		E7	
BRIGHAM CITY CORPORATION	BRIGHAM CITY PUBLIC POWER	BRIGHAM CITY CORPORATION	BRIGHAM CITY PUBLIC POWER
155 East Power Plant Road	155 East Power Plant Road	155 East Power Plant Road	155 East Power Plant Road
Brigham City, UT 84302	Brigham City, UT 84302	Brigham City, UT 84302	Brigham City, UT 84302
Tel. (435) 774-4600	Tel. (435) 774-4600	Tel. (435) 774-4600	Tel. (435) 774-4600
www.bcpa.gov	www.bcpa.gov	www.bcpa.gov	www.bcpa.gov
DESIGN SCALE		DESIGN SCALE	
1/8	1/4	1/2	1/8
N.T.S.	B&B	1D & C5	TC
DATE:	01/09/2026		
REV.	0	0	0
PRINTED	E7		
BY	BRIGHAM CITY PUBLIC POWER		



DRAWING SCALE		DRAWING NUMBER		DRAWING DATE		DRAWING DESCRIPTION		BRIEF	
1/2"		BEB		N.T.S.		01/09/2026		BRIHAM CITY PUBLIC POWER	
1/4"		TD & CS		T.C.		01/09/2026		E8	
1/8"		Office		01/09/2026		ELECTRICAL CONSTRUCTION STANDARDS		1 sheet	
1/16"		Main		01/09/2026		BRIHAM CITY		BRIHAM CITY PUBLIC POWER	
1/32"		20 North Main Street		1445 East Power Plant Road		BRIHAM CITY, UT 84322		BRIHAM CITY	
1/64"		Brigham City, UT 84322		Tel: (801) 742-4520		Tel: (801) 742-4520		Utah Energy Agency (UEA)	
1/128"		www.bcpower.org		www.uea.ut.gov		www.uea.ut.gov		www.uea.ut.gov	

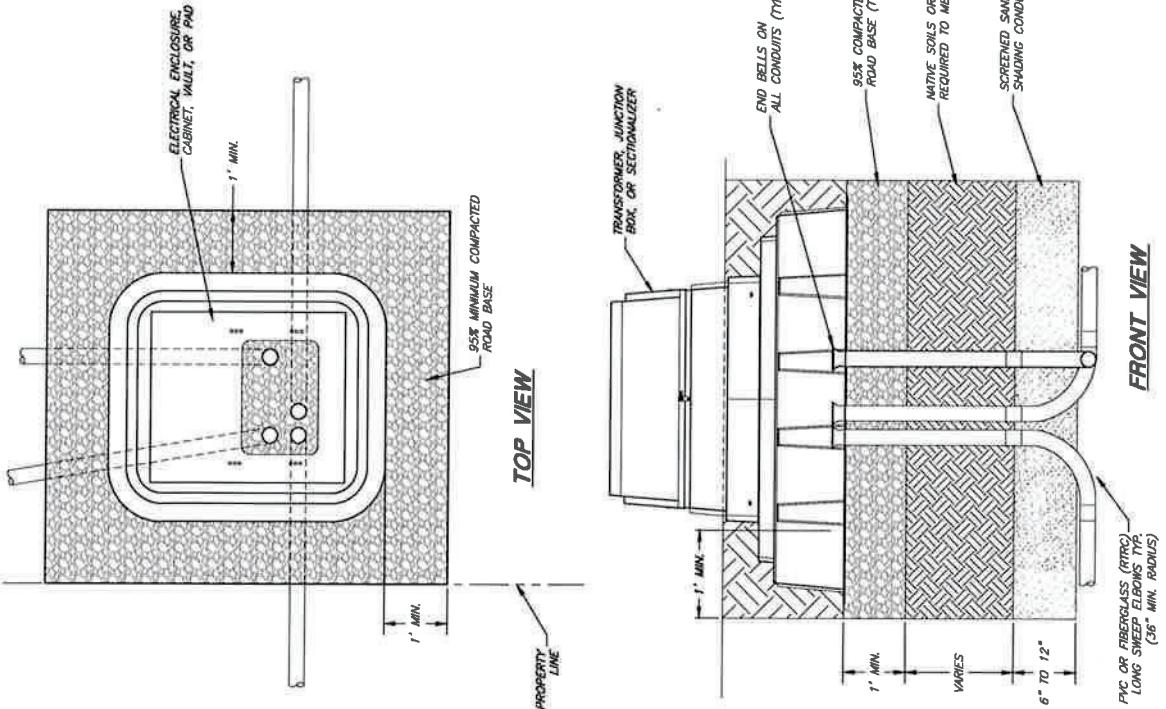


NOTES:

1. SECTIONALIZER CABINET UNITS FOR 600 AMP 3-PHASE ARE TO BE FABRICATED FROM FIBERGLASS COMPOSITE & MEET BRIGHTON CITY PUBLIC POWER SPECIFICATIONS. CONDUIT OPENINGS MUST BE WITHIN THE GROUND SLEEVE WINDOW OF THE SECTIONALIZER.
2. WIRE IN 2500 LB WIRE TAPE AND TIE SECURELY TO 4 POINT MOUNTING PLATE.
3. CABINET TO BE NURSING HOME/50A/50A/PA71-X AND 18" GROUND SLEEVE INDEEDS/HAC-1-BRKT.
4. CONTRACTOR TO FURNISH & INSTALL 600-AMP 4-POINT MOUNTING JUNCTION AND PLATES & 4-POINT JUNCTION. P/N: G4W-1B162-22615U.

NOTES:

CONCRETE PAD DETAIL



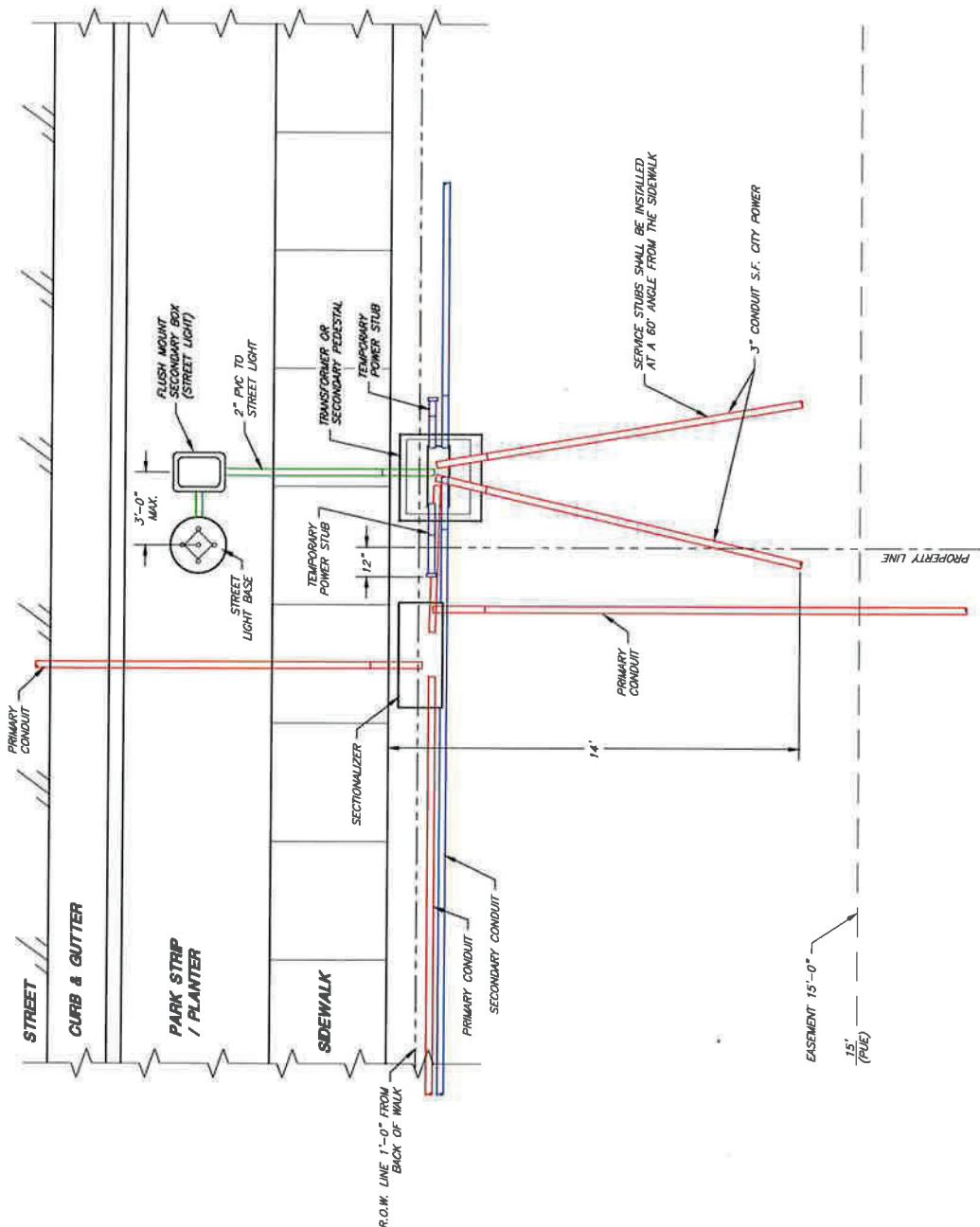
NOTES:

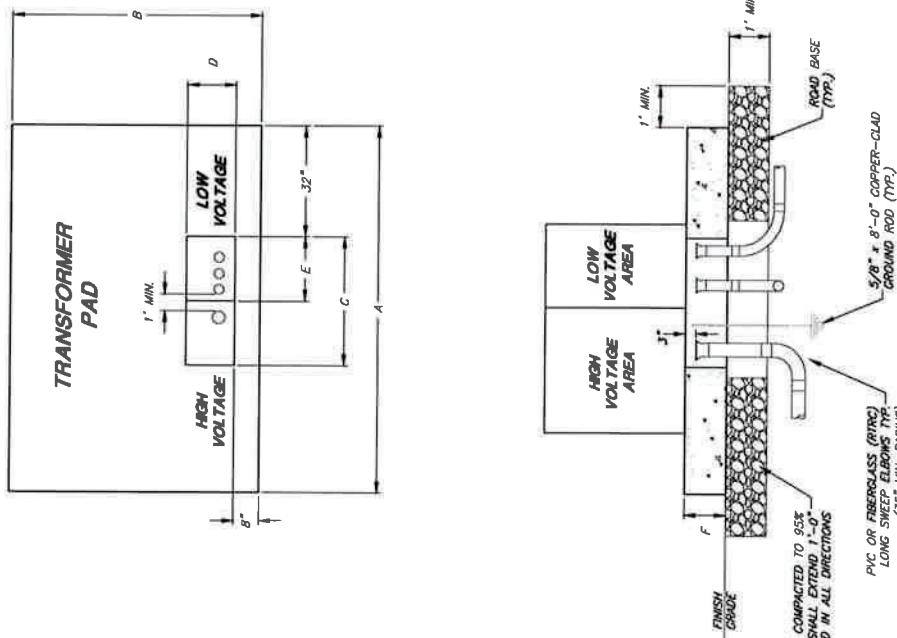
1. ALL ELECTRICAL BOXES INCLUDING, BUT NOT LIMITED TO, SECTIONALIZERS, SECONDARY JUNCTION BOXES, TRANSFORMERS AND TRANSFORMER CONCRETE PADS SHALL HAVE UNTREATED BASE COURSE COMPACTED TO A MINIMUM OF 55% UNDER ALL BOXES. FILL SHALL BE A MINIMUM OF 1' IN DEPTH, AND SHALL EXTEND A MINIMUM OF 1' PAST ALL SIDES AND BACK AND 1' IN FRONT (6" IF A SIDEWALK IS PRESENT) OF ALL BOXES OR PADS.
2. ALL COMPACTION TESTS SHALL BE TAKEN BEFORE ELECTRICAL BOXES ARE SET INTO PLACE.
3. ALL SAND, ROADBASE AND ENGINEERED FILL SHALL MEET BRIGHAM CITY PUBLIC POWER STANDARDS.
4. REFER TO "EARTHWARK AND TRENCHES" SECTION IN THE CONSTRUCTION STANDARDS FOR ADDITIONAL REQUIREMENTS FOR BACKFILL, TRENCHING AND COMPACTION.
5. AREA AROUND ELECTRICAL BOXES SHALL BE BACKFILLED & LEVELED A MINIMUM OF 12" IN ALL DIRECTIONS TO PROVIDE A SAFE WORKING AREA FOR THE ELECTRIC DEPARTMENT.

1	DRAWING SCALE	1/4"	BRIGHAM CITY PUBLIC POWER
2	DESIGNER	BEB	ELECTRICAL CONSTRUCTION STANDARDS
3	DATE	N.T.S.	10/04/2010
4	REVISION	TD & CS	01/09/2025
5	RE-REV.	TC	TC
6	DATE	01/09/2025	
7	RE-REV.	RE-REV.	

NOTE: E10
OF 1 SHEET

BRIGHAM CITY PUBLIC POWER
ELECTRICAL CONSTRUCTION STANDARDS
ELECTRICAL BOX BACKFILL & COMPACTION

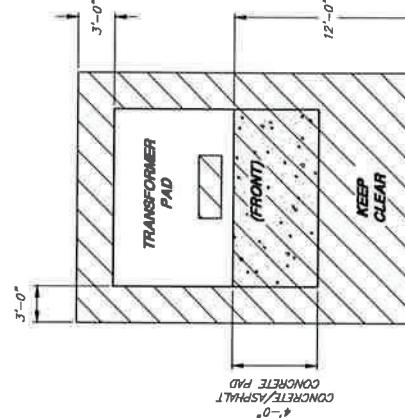




NOTES:

1. SITE PREPARATION & INSPECTIONS. AFTER EXCAVATION, ALL EXCAVATED AREA 1' PAST PAD SHALL BE BACK FILLED WITH ROAD BASE AND MUST BE COMPACTED TO 95%. THE GROUND MUST BE LEVEL AN ADDITIONAL 12" PAST THE EDGE OF THE PAD ON ALL SIDES AND THEN TAPER OFF. ALL PADS SHALL BE INSPECTED PRIOR TO POURING CONCRETE, AND THE GROUND SHALL HAVE A COMPACTION TEST DONE PRIOR TO THE FORM BEING CONSTRUCTED.
2. CONCRETE. CONCRETE SHALL BE IN ACCORDANCE WITH BRIGHAM CITY PUBLIC POWER STANDARD #135-65 DPO. STEEL REINFORCEMENT SHALL BE #4 BARS PLACED AT 12" CENTERS THROUGHOUT THE PAD. THE PAD MUST BE Poured AT LEAST SEVEN FULL DAYS PRIOR TO SETTING THE TRANSFORMER. THE FINISHED SURFACE MUST BE COMPLETELY FLAT AND LEVEL. CONCRETE SHALL BE TESTED BY THE CITY OR THE CITY'S ENGINEERING FIRM PRIOR TO POURING CONCRETE. CONCRETE SHALL CONFORM TO CITY STANDARDS.
3. FABRICATION. THE PAD SHALL BE CONSTRUCTED ON THE SITE ACCORDING TO THE SPECIFICATIONS.
4. CONDUIT WINDOW LAYOUT. LOW VOLTAGE CONDUITS SHALL BE FORMED AS TIGHTLY AS POSSIBLE AGAINST THE RIGHT SIDE OF THE OPENING AND SHALL IN NO CASE EXTEND FURTHER THAN 20" FROM THE RIGHT SIDE OF THE CONDUIT WINDOW ON THE SMALL PAD, OR 50" ON THE LARGE PADS. NO MORE THAN EIGHT CONDUITS WILL BE USED ON THE LOW VOLTAGE SIDE. CONDUITS MUST BE Poured IN CONCRETE. NO CONDUITS SHALL BE USED UNDER THE CONDUIT WINDOW. USE SOIL NAIL CONDUITS TO SEPARATE CONDUITS. ALL CONDUITS ENTERING THE PAD SHALL BE SCHEDULE 40 PVC WITH PVC OR FIBERGLASS (FRIGIC) ELBOWS.
5. GROUNDING. A 5/8" X 8' GROUND ROD SHALL BE USED ON THE SMALL PAD AND A 3/4" X 10' ROD ON THE LARGE PADS. THE GROUND ROD SHALL BE INSTALLED ON THE PRIMARY SIDE OF THE TRANSFORMER.
6. CLEARANCES. THE FRONT OF THE PAD SHOULD ALWAYS FACE AWAY FROM ADJACENT STRUCTURES. AGAINST THE RIGHT SIDE OF THE OPENING AND SHALL IN NO CASE EXTEND FURTHER THAN 20" FROM THE RIGHT SIDE OF THE CONDUIT WINDOW ON THE SMALL PAD, OR 50" ON THE LARGE PADS. NO MORE THAN EIGHT CONDUITS WILL BE USED ON THE LOW VOLTAGE SIDE. CONDUITS MUST BE Poured IN CONCRETE. NO CONDUITS SHALL BE USED UNDER THE CONDUIT WINDOW. USE SOIL NAIL CONDUITS TO SEPARATE CONDUITS. ALL CONDUITS ENTERING THE PAD SHALL BE SCHEDULE 40 PVC WITH PVC OR FIBERGLASS (FRIGIC) ELBOWS.
7. CLEARANCES FOR A DOOR MUST BE TWENTY FEET IN LINE WITH IT AND TEN FEET ON EITHER SIDE. PADS MUST BE TWENTY FEET OF VALUE OR WITHIN TWENTY FEET OF ANY OTHER CONSTRUCTION OR OBSTRUCTIONS. NO WALLS, FENCES, OR ANY OTHER OBSTRUCTIONS WILL BE PLACED WITHIN THREE FEET OF THE SIDES OR BACK OF THE PAD, OR WITHIN TWELVE FEET OF THE FRONT OF THE PAD. THE AREA SURROUNDING THE PAD MUST HAVE TWELVE FEET OF CLEAR LEVEL WORKING AREA FOR MAINTENANCE OF THE TRANSFORMER. THE PAD MAY NOT BE PLACED IN LINE WITH AN ANVIL RAKE WITHIN 30 FEET VERTICALLY OF THE SURFACE OF THE PAD. ALSO, IT MUST NOT BE PLACED WITHIN 12 FEET VERTICALLY OF A DOOR OR WINDOW.
8. BARRIERS. IF THE TRANSFORMER PAD IS TO BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, (PARKING LOTS, DRIVEWAYS, ETC.) CONTACT BRIGHAM CITY PUBLIC POWER FOR PROTECTIVE BARRIER REQUIREMENTS.
9. METERING. IN GENERAL, THE METERING SHALL BE PLACED ON BUILDINGS OR STRUCTURES.
10. CONNECTIONS. ALL SECONDARY (LOW VOLTAGE) CABLES & SECONDARY CONNECTIONS ARE THE CONTRACTOR'S RESPONSIBILITY. BRIGHAM CITY PUBLIC POWER WILL INSTALL & TERMINATE PRIMARY CABLES & CONNECTIONS ONLY.
11. ADJACENTING CONTRACTOR TO ANCHOR TRANSFORMER TO PAD WITH MINIMUM OF TWO ANCHOR PINS.
12. PRECAST TRANSFORMER PADS MUST BE APPROVED BY THE PUBLIC POWER DEPARTMENT.

GENERAL TRANSFORMER CLEARANCES

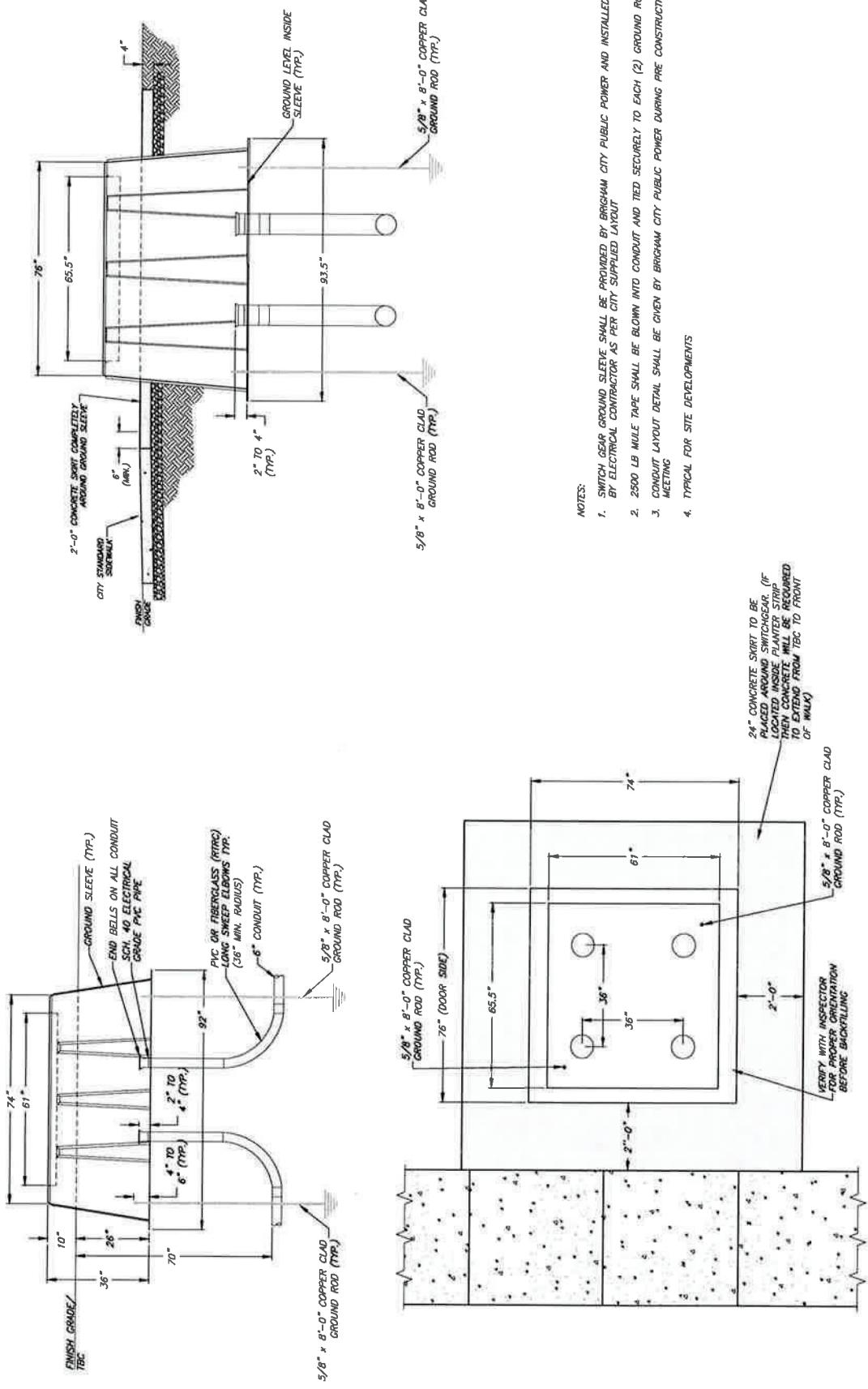


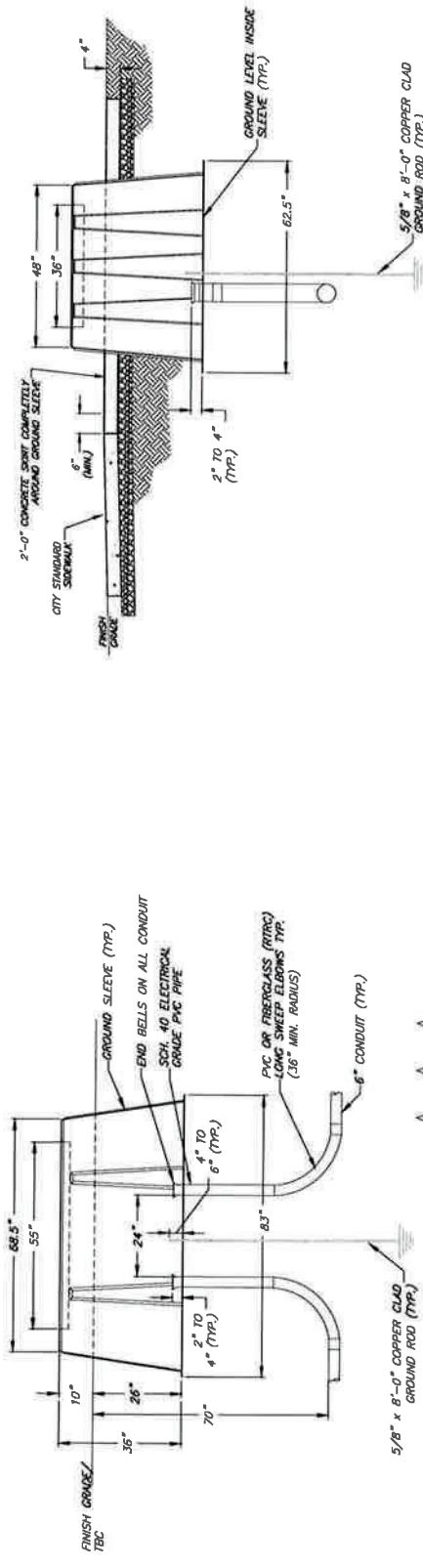
TRANSFORMER KVA RATING	DIMENSIONS				
	A	B	C	D	E
114" KVA	114"	78"	36"	15"	18"
75-500 KVA	118"	105"	52"	16"	20"
750-1500 KVA	118"	105"	52"	16"	20"
2000 KVA	118"	105"	52"	16"	20"

TRANSFORMER POWER DEPT. CONTACT

BRIGHAM CITY PUBLIC POWER		E12			
ELECTRICAL CONSTRUCTION STANDARDS					
 <p>Brigham City Public Power 145 East Broad Street Brigham City, UT 84302 Tel: (435) 781-5800 www.bcpower.org</p>					

3-PHASE TRANSFORMER & CONCRETE PAD





NOTES:

1. SWITCH GEAR GROUND SLEEVES SHALL BE PROVIDED BY BRIGHAM CITY PUBLIC POWER AND INSTALLED BY ELECTRICAL CONTRACTOR AS PER CITY SUPPLIED LAYOUT
2. 2500 LB MULE TAPE SHALL BE BLOWN INTO CONDUIT AND TIED SECURELY TO GROUND
3. CONDUIT LAYOUT DETAIL SHALL BE GIVEN BY BRIGHAM CITY PUBLIC POWER DURING PRE-CONSTRUCTION MEETING

4. PERMIT AND COMMERCIAL TRADE CONTRACTOR FOR SERVICE AND EQUIPMENT

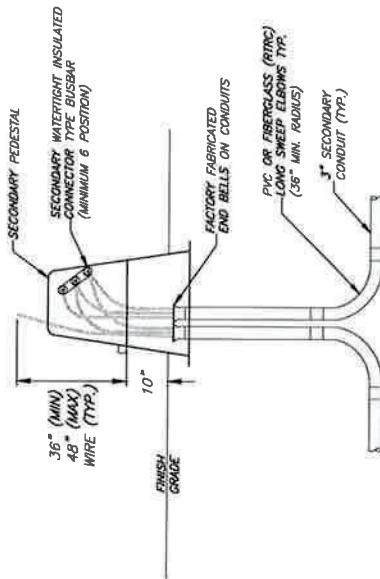
11 APRIL 1971 DUMONT ET AL. 1007

LOCATED INSIDE PLANTER STAMP
WHEN CONCRETE WILL BE RECOUPED
EXTEND FROM TBC TO FRONT
OF WALK)

5/8" x 8'-0" COPPER CLAD
GROUND ROD (TYPE)
VERIFY WITH INSPECTOR
FOR PROPER ORIENTATION
BEFORE BACHTHIL INC.

GRABHAM CITY PUBLIC POWER
ELECTRICAL CONSTRUCTION STANDARDS

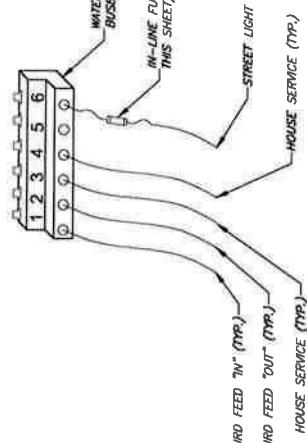
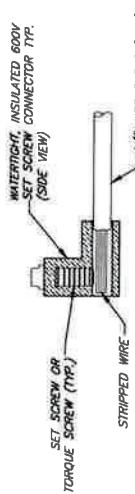
NAME	ADDRESS	PHONE	EMAIL
BRIGHAM CITY PUBLIC SCHOOLS	150 S 1st St, Brigham City, UT 84302	(435) 774-6624	info@brighamschools.org
BRIGHAM CITY PUBLIC SCHOOLS	70 North Main Street, Brigham City, UT 84302	(435) 774-6624	info@brighamschools.org
BRIGHAM CITY PUBLIC SCHOOLS	70 North Main Street, Brigham City, UT 84302	(435) 774-6624	info@brighamschools.org
BRIGHAM CITY PUBLIC SCHOOLS	70 North Main Street, Brigham City, UT 84302	(435) 774-6624	info@brighamschools.org



SECONDARY CONNECTIONS

NOTES:

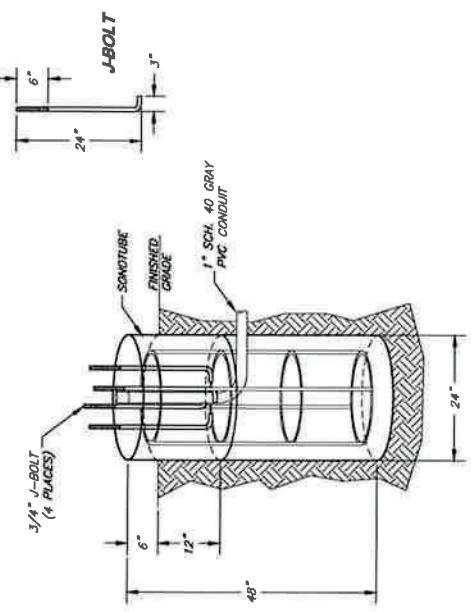
1. INSTALL AN IN-LINE TO AMP FUSE & FUSE HOLDER ON THE UNGROUNDED 120/240V STREET LIGHT CONDUCTOR(S).
2. CONDUIT ENTERING INTO ANY SECONDARY PEDESTAL MUST HAVE A FABRICATED BELL END.
3. SECONDARY PEDESTAL SHALL BE NORDIC PSP-15-15-30-MG OR FENCELL 4620HDCL-NL APPROVED EQUIVALENT.
4. GROUND LEVEL INSIDE THE GROUND SLEEVE IS THE BOTTOM OF THE GROUND SLEEVE.
5. ALL SECONDARY CABLE SHALL EXTEND A MINIMUM OF 36" & A MAXIMUM OF 48" FROM TOP OF SECONDARY BOX (WATER TIGHT) AND SHALL BE THE URD TYPE CABLE.
6. ROAD BASE SHALL BE USED UNDER SECONDARY BOXES. ROAD BASE SHALL BE COMPACTED TO 95% AND BE TESTED PRIOR TO BOX BEING SET INTO PLACE.
7. ALL SERVICE STUDS SHALL EXTEND 10' PAST PROPERTY LINE.
8. SECONDARY WATERTIGHT, INSULATED SET SCREW CONNECTORS (RAYCHEM GPT-250-60-C98) OR EQUIVALENT SHALL ACCEPT A MINIMUM OF SIX INDIVIDUAL WIRES, UNLESS OTHERWISE APPROVED BY ELECTRICAL DEPARTMENT.



BIGHAM CITY PUBLIC POWER		BIGHAM CITY PUBLIC POWER	
ELECTRICAL CONSTRUCTION STANDARDS		ELECTRICAL CONSTRUCTION STANDARDS	
SECONDARY PEDESTAL, WIRE & CONNECTIONS			
REV:	E15	REV:	E15
DATE:	01/09/2026	DATE:	01/09/2026
EXPIRE DATE:		EXPIRE DATE:	



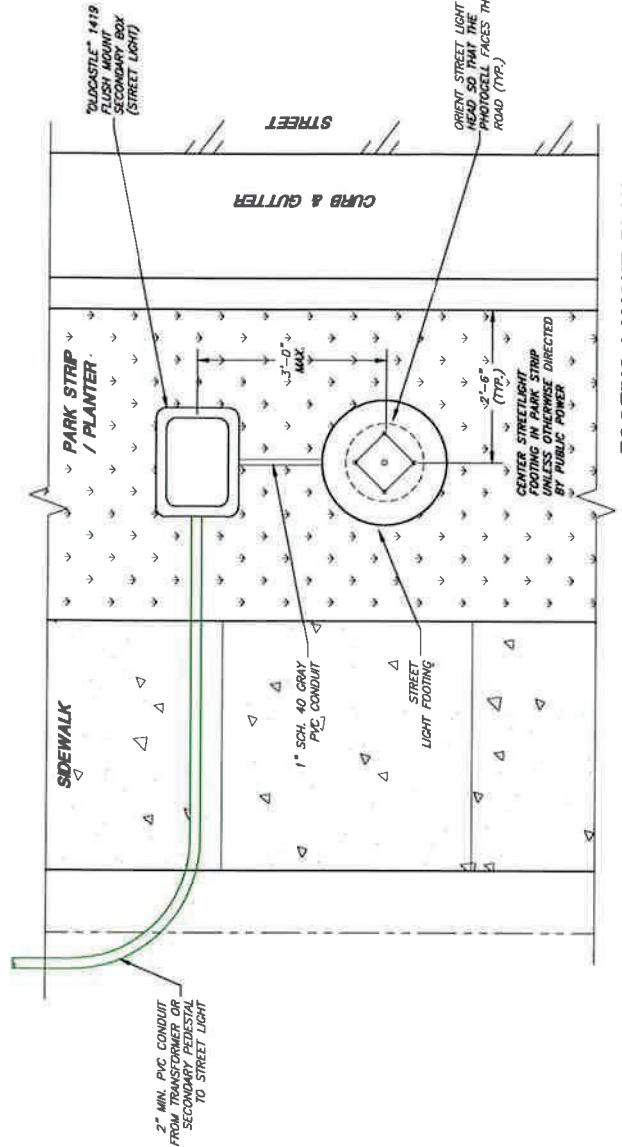
BIGHAM CITY PUBLIC POWER	1455 East Power Plant Road
	Bingham City, UT 84022
	Tel: (435) 734-6500
	Utility Emergency: (435) 733-3464



DECORATIVE STREETLIGHT FOOTING

FOOTING NOTES:

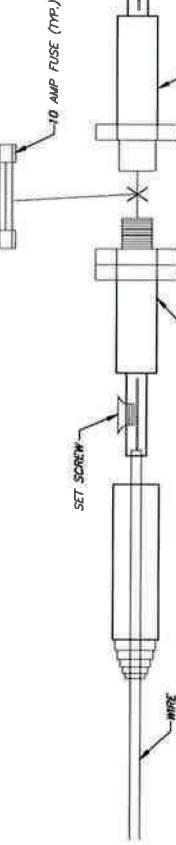
1. J-BOLTS: 4 - 24" x 3/4" J-BEND 6" EXPOSED THREAD TOP 9" GALVANIZED
2. REBAR: 4 - VERTICAL #4 18" LONG
 - 1 - 3" RINGS #4 18" DIAMETER
 - 1 - 3" FROM TOP OF CONCRETE
 - 1 - 3" FROM BOTTOM OF CONCRETE
 - 2 RINGS BETWEEN EVENLY SPACED ALL REBAR TO MAINTAIN 3" FROM OUTSIDE OF CONCRETE.
3. CONCRETE: LADLE SMOOTH FINISH WITH A CORPED OR CHAMFERED EDGE.
4. SONOTUBE: US3 24" SONOTUBE TOP 18" OF POUR, WITH 6" EXPOSED ABOVE FINAL GRADE.
5. ALL REBAR TIED IN NORMAL FASHION.
6. J-BOLTS NOT TIED TO REBAR CAGE.
7. STREET LIGHT BASES SHALL BE INSPECTED PRIOR TO POURING CONCRETE.
8. STREET LIGHT BASES SHALL BE 2" IN DIAMETER AND 4" IN DEPTH WITH 6" OF BASE EXPOSED ABOVE FINISHED GRADE.
9. SONOTUBE SHALL BE KEPT DRY AND SHALL NOT BE ALLOWED TO DEFORM IN ANY WAY.
10. CONCRETE COVER OVER REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE APPROVED.
11. BASES SHALL HAVE A SMOOTH FINISH, FREE FROM HONEYCOMB & CRACKS.



FOOTING LAYOUT PLAN VIEW

GENERAL NOTES:

1. STREET LIGHT CONDUCTOR(S) SHALL HAVE AN INLINE 10 AMP FUSE & SET SCREW TYPE FUSE HOLDER INSTALLED IN JUNCTION BOX OR TRANSFORMER.
2. 1" PVC CONDUIT WITH PVC ELBOWS TO RUN FROM BASE OF STREET LIGHT TO CLOSEST TRANSFORMER OR SECONDARY PEDESTAL.
3. BOLT PATTERN SHALL BE ON A DIAMOND TO THE CURB UNLESS OTHERWISE SPECIFIED.
4. STREET LIGHT POLE, FIXTURE, LUMINARE, PHOTOCELL, BOLTS, NUTS, WASHERS SHALL BE PROVIDED BY THE CITY AND PAID FOR BY THE CONTRACTOR/DEVELOPER. CONTRACTOR/DEVELOPER TO INSTALL STREET LIGHT PER MANUFACTURER SPECIFICATIONS.
5. STREET LIGHT BASE SHALL BE BONDED TO STREET LIGHT POLE BY A "WIFER" TYPE #6 CU BONDING CONDUCTOR.
6. THE GROUNDING CONDUCTOR SHALL BE TERMINATED WITH THE GROUNDED (NEUTRAL) CONDUCTOR AT THE SOURCE.
7. INSTALL GROUND ROD IN LIGHT POLES FOR GROUNDING LIGHT POLES (N.P.R.)



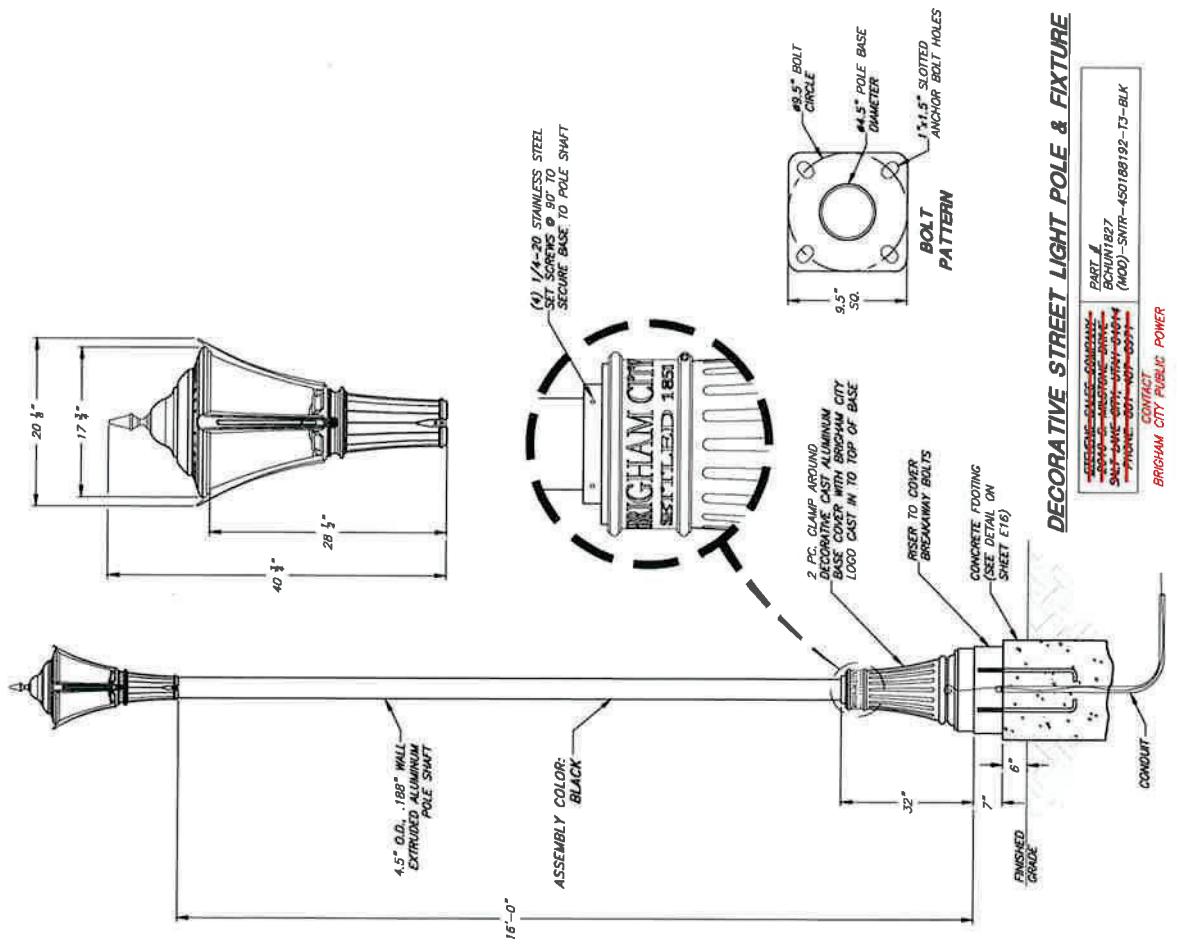
STREET LIGHT FUSING

DRAWING SCALE:		DRAWING NO.:		DRAWING DATE:		DRAWING NO.:		DRAWING DATE:		DRAWING NO.:	
1	1/4"	2	2E9	3	10/09/2026	4	TD & CS	5	10/09/2026	6	TC
7		8		9		10		11		12	
13		14		15		16		17		18	
19		20		21		22		23		24	

BRIHAM CITY PUBLIC POWER		BRIHAM CITY PUBLIC POWER	
ELECTRICAL CONSTRUCTION STANDARDS		ELECTRICAL CONSTRUCTION STANDARDS	
1. BRIHAM CITY PUBLIC POWER ASSUMES NO LIABILITY FOR DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OR ANY TYPE OF EXPENSES, EXPENSES OF RECONSTRUCTION, OR OTHER EXPENSES INCURRED AS A RESULT OF ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS. BRIHAM CITY PUBLIC POWER IS NOT LIABLE FOR ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS UNLESS THE CONTRACTOR MAILED TO BRIHAM CITY PUBLIC POWER A WRITTEN FORMAL COMPLAINT WITHIN 30 DAYS OF THE DATE OF THE CONTRACTOR'S RECEIPT OF THESE ELECTRICAL STANDARDS.	2. BRIHAM CITY PUBLIC POWER ASSUMES NO LIABILITY FOR DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OR ANY TYPE OF EXPENSES, EXPENSES OF RECONSTRUCTION, OR OTHER EXPENSES INCURRED AS A RESULT OF ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS. BRIHAM CITY PUBLIC POWER IS NOT LIABLE FOR ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS UNLESS THE CONTRACTOR MAILED TO BRIHAM CITY PUBLIC POWER A WRITTEN FORMAL COMPLAINT WITHIN 30 DAYS OF THE DATE OF THE CONTRACTOR'S RECEIPT OF THESE ELECTRICAL STANDARDS.	3. BRIHAM CITY PUBLIC POWER ASSUMES NO LIABILITY FOR DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OR ANY TYPE OF EXPENSES, EXPENSES OF RECONSTRUCTION, OR OTHER EXPENSES INCURRED AS A RESULT OF ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS. BRIHAM CITY PUBLIC POWER IS NOT LIABLE FOR ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS UNLESS THE CONTRACTOR MAILED TO BRIHAM CITY PUBLIC POWER A WRITTEN FORMAL COMPLAINT WITHIN 30 DAYS OF THE DATE OF THE CONTRACTOR'S RECEIPT OF THESE ELECTRICAL STANDARDS.	4. BRIHAM CITY PUBLIC POWER ASSUMES NO LIABILITY FOR DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OR ANY TYPE OF EXPENSES, EXPENSES OF RECONSTRUCTION, OR OTHER EXPENSES INCURRED AS A RESULT OF ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS. BRIHAM CITY PUBLIC POWER IS NOT LIABLE FOR ANY DAMAGE TO PROPERTY, PERSONAL OR OTHERWISE, ARISING OUT OF OR RELATED TO THESE ELECTRICAL STANDARDS UNLESS THE CONTRACTOR MAILED TO BRIHAM CITY PUBLIC POWER A WRITTEN FORMAL COMPLAINT WITHIN 30 DAYS OF THE DATE OF THE CONTRACTOR'S RECEIPT OF THESE ELECTRICAL STANDARDS.

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ELECTRICAL CONSTRUCTION STANDARDS		ELECTRICAL CONSTRUCTION STANDARDS	
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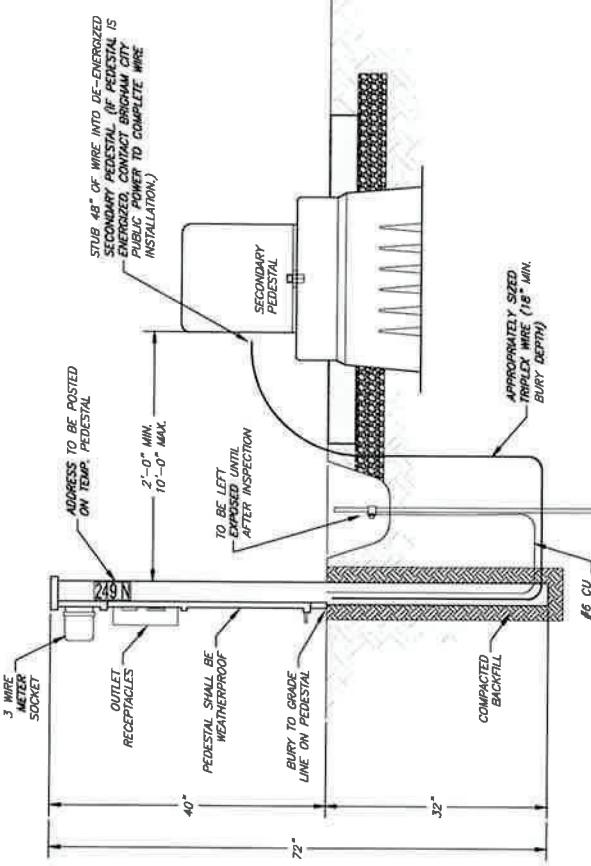
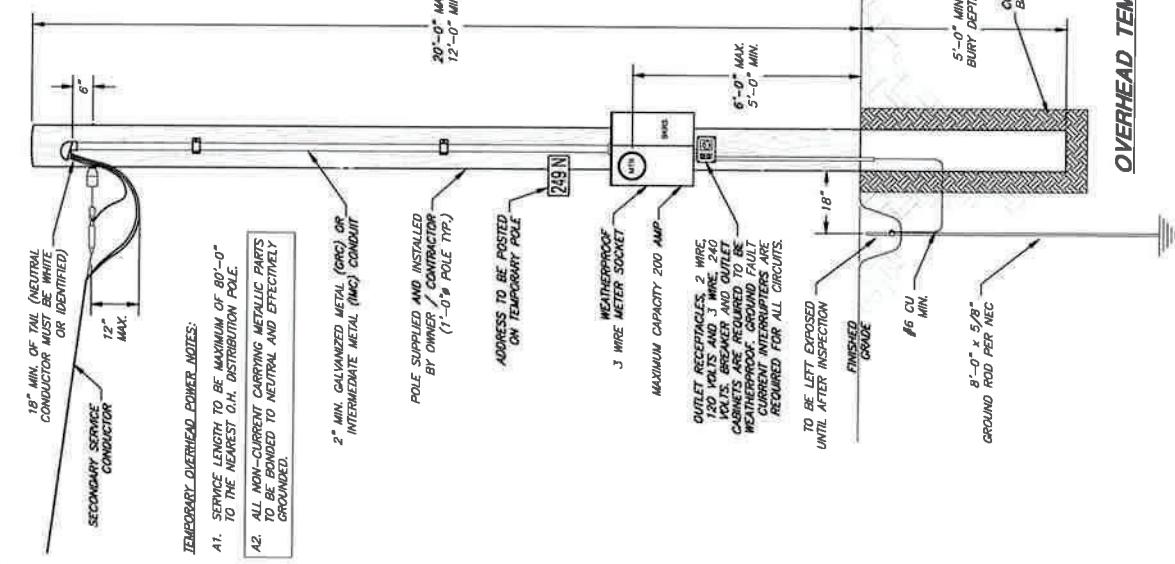
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1 SHEET



COBRA HEAD LIGHT POLE & FIXTURE

OBRA HEAD LIGHT POLE & FIXTURE
TO BE DETERMINED = CONTACT BRICKMAN CITY PUBLIC POWER

BRIGHAM CITY PUBLIC POWER	
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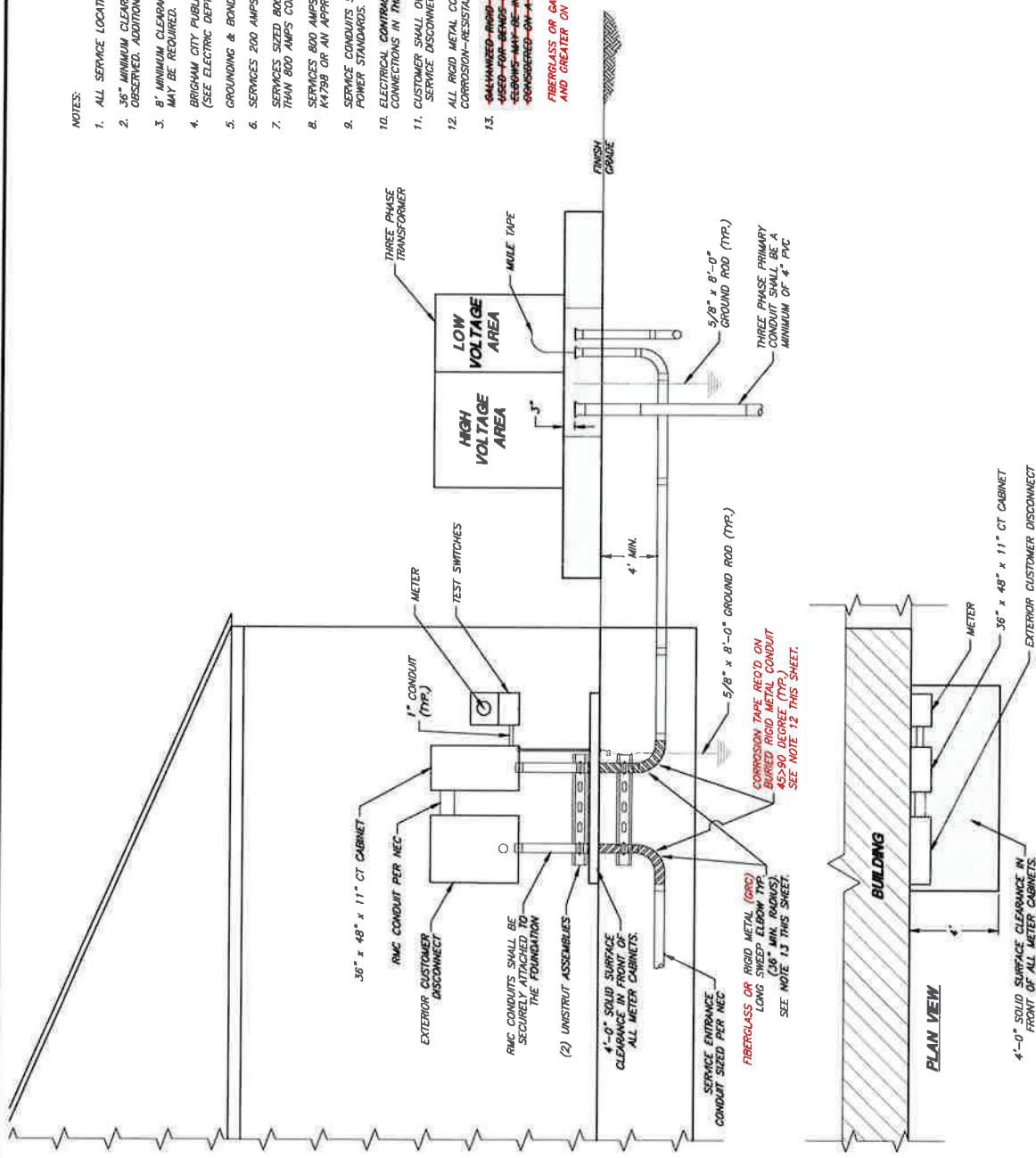


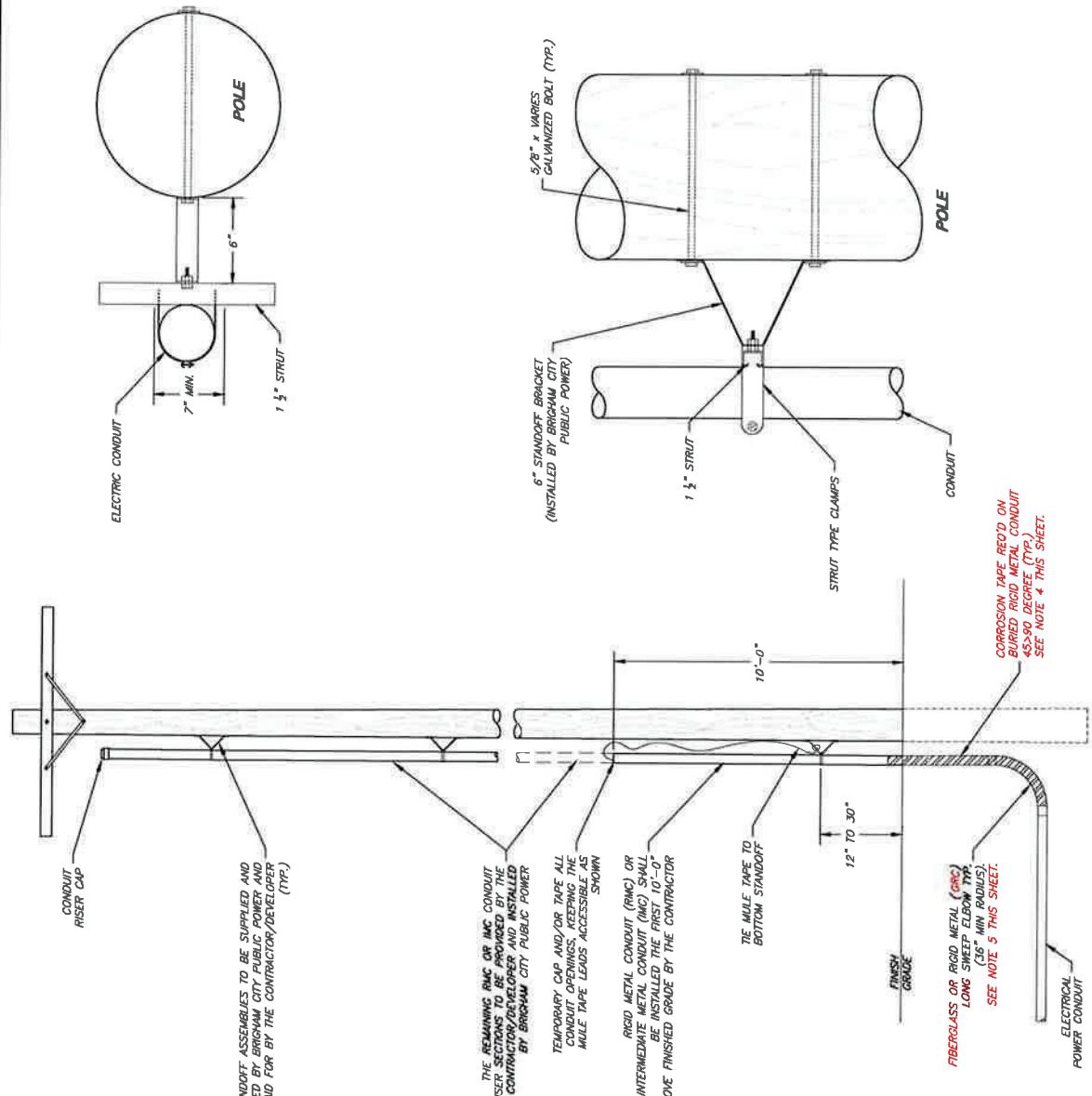
OVERHEAD TEMPORARY POWER

UNDERGROUND TEMPORARY POWER

TEMPORARY SERVICE FOR OVERHEAD & UNDERGROUND LINES		BRIGHTON CITY PUBLIC POWER		E18	
		ELECTRICAL CONSTRUCTION STANDARDS		or 1 sheet	
REF. NO.	DATE	DRAWING NUMBER	DESIGNATION	BRIGHTON CITY CORPORATION	BRIGHTON CITY PUBLIC POWER
1	01/09/2026	N.T.S.	BEB	BRIGHTON CITY, UTAH, 84022 20 North Main Street BRIGHTON CITY, UT 84022 Tel: (435) 723-4680 www.brighton-pow.com Utility Emergency: (435) 723-5564	BRIGHTON CITY PUBLIC POWER 1455 East Power Plant Road BRIGHTON CITY, UT 84022 Tel: (435) 723-4680 www.brighton-pow.com

WOMEN'S

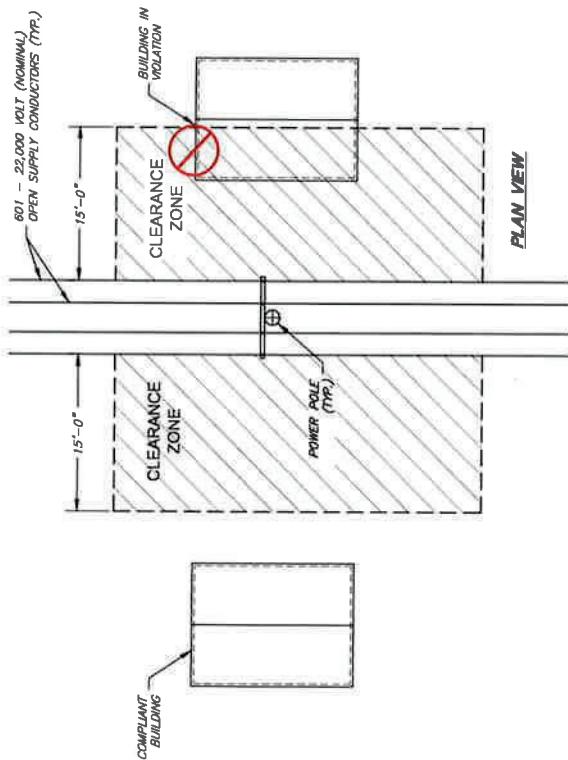




NOTES:

1. CONTRACTOR/DEVELOPER SHALL PROVIDE THE RMC (GRC) OR MC CONDUIT AND ANY ADDITIONAL REQUIRED MATERIALS FOR THE RISER POLE ASSEMBLY ABOVE THE INITIAL 10'-0" RIGID METAL SECTION OF THE RISER TO BRIGHAM CITY PUBLIC POWER FOR INSTALLATION.
2. FOR RISERS WHERE THE CONTRACTOR IS REQUIRED TO BUILD LOW VOLTAGE CAP 1/20/240 VOLT, 3 OR 4 WIRE, ENOUGH WIRE SMALL EXTEND FROM POLE.
3. FIBERGLASS CONDUITS AND FIBERGLASS TELBONS™ (KTRC) ARE NOT PERMITTED ON ANY RISER POLE APPLICATION UNLESS OTHERWISE APPROVED.
4. ALL RIGID METAL CONDUIT INSTALLED BELOW GRADE SHALL BE WRAPPED WITH TO MIL CORROSION-RESISTANT TAPE. TAPE SHALL EXTEND 6" MIN. ABOVE FINISH GRADE.
5. FIBERGLASS OR GALVANIZED RIGID STEEL CONDUIT (GRC) SHALL BE USED FOR BENDS 45 DEGREES AND GREATER ON ALL CONDUITS EXTENDING OUT OF THE GROUND OUTSIDE OF AN ENCLOSURE.

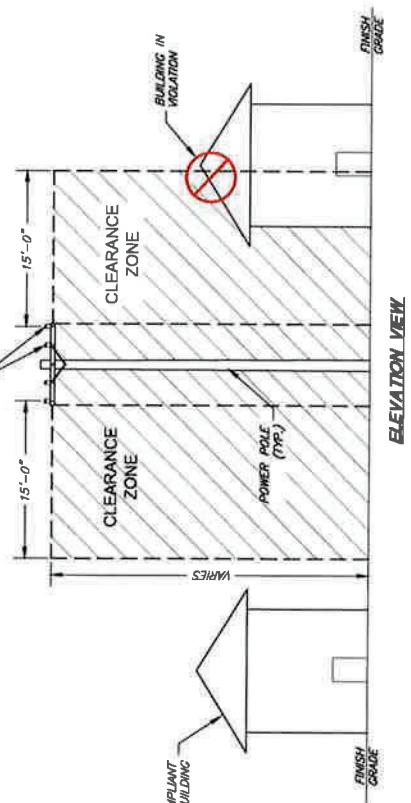
BRIGHAM CITY PUBLIC POWER		ELECTRICAL CONSTRUCTION STANDARDS		E20	
Brigham City Public Power 1455 East Power Plant Road Brigham City, UT 84302 Tel: (435) 734-6264 Fax: (435) 734-5858 www.bcpower.org	Brigham City Corporation 20 North Main Street Brigham City, UT 84302 Tel: (435) 734-6260 www.bcpower.org	Brigham City CITY			OF 1 SHEET 9
REVISION NUMBER: 005 N.T.S. DATE: 07-12-05 SAC: TC	REVISION NUMBER: 005 N.T.S. DATE: 01/09/2026 SAC: TC	REVISION NUMBER: 005 N.T.S. DATE: 01/09/2026 SAC: TC	REVISION NUMBER: 005 N.T.S. DATE: 01/09/2026 SAC: TC	REVISION NUMBER: 005 N.T.S. DATE: 01/09/2026 SAC: TC	REVISION NUMBER: 005 N.T.S. DATE: 01/09/2026 SAC: TC



NOTES:

1. NO BUILDING OR STRUCTURE SHALL BE PLACED, OR CONSTRUCTED IN THE POWER LINE CLEARANCE ZONE.
2. CLEARANCES GIVEN ARE TYPICAL AND APPLY TO OPEN SUPPLY PRIMARY CIRCUITS OPERATING AT OVER 600 VOLTS UP TO 22,000 VOLTS, AND MAY NOT APPLY TO ALL CASES OR CIRCUMSTANCES.
3. CLEARANCES DO NOT APPLY TO SECONDARY INSULATED SERVICE CIRCUITS OPERATING AT 600 VOLTS OR LESS.
4. TYPICAL CLEARANCES INCLUDE THE COMPLETE VERTICAL & HORIZONTAL SPACE AROUND POWER LINES FROM THE OUTSIDE CONDUCTOR TO ANY BUILDING, SIGN, OR STRUCTURE.
5. TYPICAL CLEARANCES FOR 12KV PRIMARY OVERHEAD DISTRIBUTION CIRCUITS ARE 15' FROM THE OUTSIDE CONDUCTOR IN ANY DIRECTION FROM ANY BUILDING, SIGN, OR STRUCTURE.
6. TYPICAL CLEARANCES FOR 48KV PRIMARY OVERHEAD TRANSMISSION CIRCUITS ARE 30' FROM THE OUTSIDE CONDUCTOR IN ANY DIRECTION FROM ANY BUILDING, SIGN, OR STRUCTURE.
7. SPECIAL APPLICATIONS, HIGHER VOLTAGES, RAILROAD TRACKS, SWIMMING POOLS, AND OPEN WATER POWER, MAY RESULT IN ADDITIONAL CLEARANCES, AND SHALL BE APPROVED BY BRIGHAM CITY PUBLIC POWER.
8. ANY VARIANCE TO THESE STANDARDS SHALL BE AS APPROVED BY THE PUBLIC POWER DIRECTOR ON A CASE-BY-CASE BASIS.

ANY VARIANCE TO THESE STANDARDS SHALL BE AS APPROVED BY THE PUBLIC POWER DIRECTOR ON A CASE-BY-CASE BASIS.



DRAWING NUMBER:		DRAWING NUMBER:		DRAWING NUMBER:		DRAWING NUMBER:		DRAWING NUMBER:		DRAWING NUMBER:		DRAWING NUMBER:	
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61	62	63	64	65	66	67	68	69	70	71	72	73	74
N.T.S.	62	63	64	65	66	67	68	69	70 & CS	71	72	73	74
01/09/2026									TC				
TECH. DATE	REVISION												

BRIGHTON CITY PUBLIC POWER

1455 East Power Plant Road
Brigham City, UT 84302
Tel: (435) 724-5600
After Emergency: (435) 723-5890
www.brighton.gov

BRIGHTON CITY CORPORATION
20 North Main Street
Brigham City, UT 84302
Tel: (435) 724-5600
After Emergency: (435) 723-5890

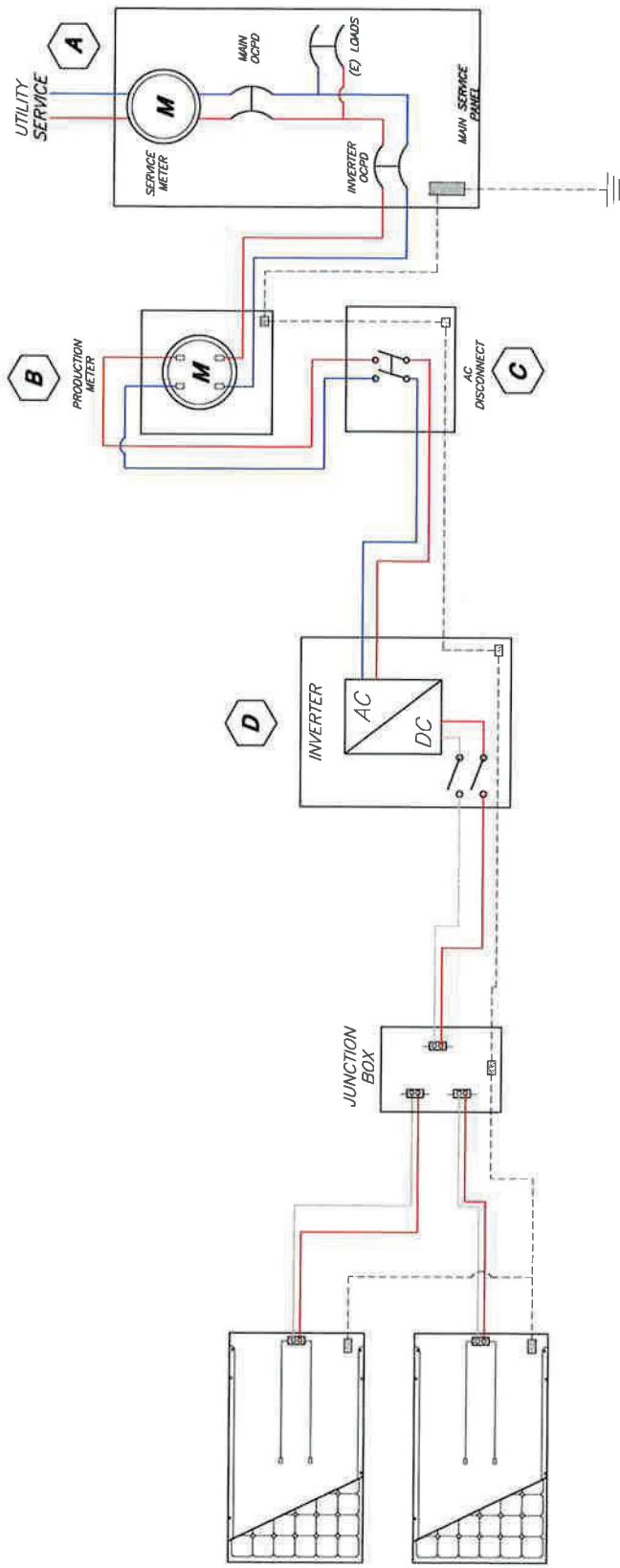
E21

ELECTRICAL CONSTRUCTION STANDARDS

OVERHEAD POWER LINE CLEARANCES

OVER 600 VOLTS TO 22,000 VOLTS

THIS DETAIL SHOWS THE REQUIREMENTS FOR A PHOTOVOLTAIC SINGLE-PHASE BASIC SYSTEM WITH A CENTRAL INVERTER



NOTE

A. MAIN SERVICE PANEL MUST COMPLY WITH CEC LATEST REVISION AND OPERATE IN A SAFE MANNER.

B. 1. BRIGHAM CITY PUBLIC POWER WILL NOT ALLOW INTERCONNECTIONS WITH ANY UNSAFE CONDITIONS.
2. PRODUCTION METER TO BE PROVIDED AND INSTALLED BY BRIGHAM CITY PUBLIC POWER AT CUSTOMERS EXPENSE. METER SOCKET TO BE PROVIDED BY INSTALLER.

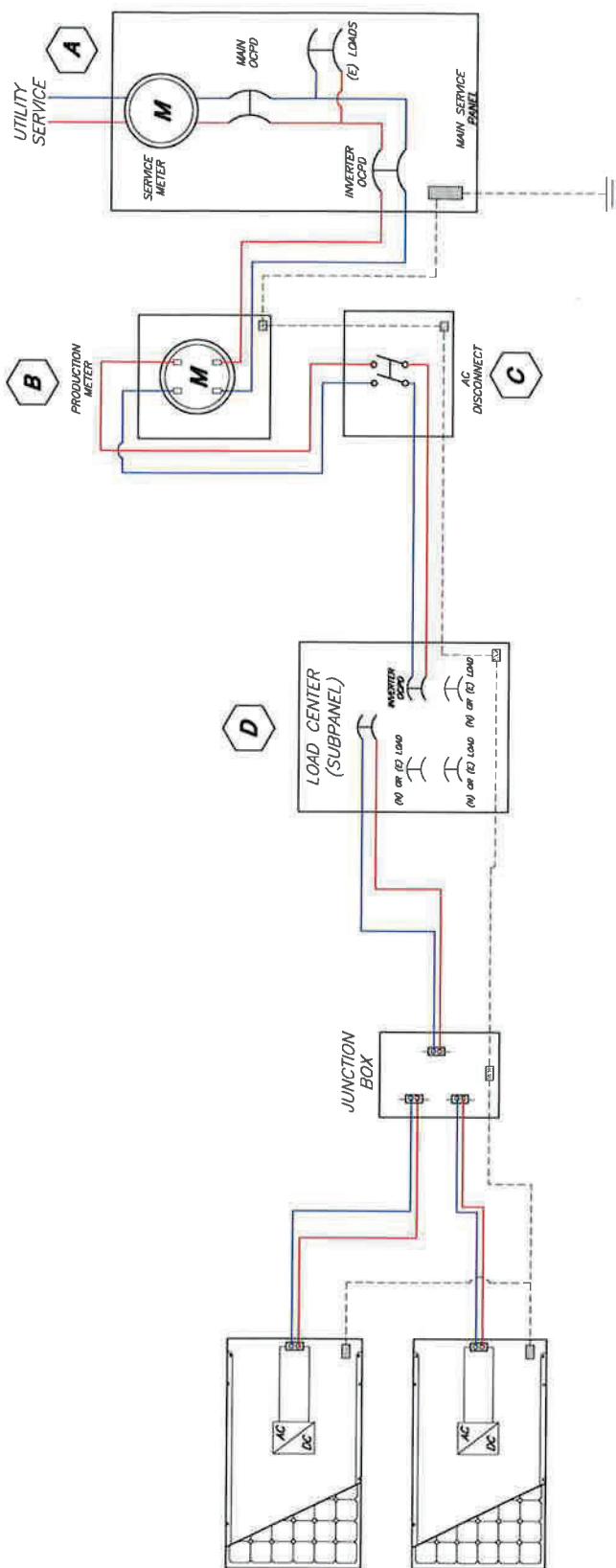
C. BRIGHAM CITY PUBLIC POWER WILL ACTIVATE THE PV SYSTEM AFTER IT MEETS ALL REQUIREMENTS, AND PASSES ALL INSPECTIONS.

D. 1. CENTER OF METER MUST BE INSTALLED BETWEEN 4'-0" AND 6'-3" ABOVE FINAL GRADE.
2. LOCKABLE KNIFE-BLADE UTILITY AC DISCONNECT TO BE LOCATED WITHIN 10'-0" AND LINE OF SIGHT OF SERVICE PANEL AND MUST COMPLY WITH EUSERC DING 5.
3. INVERTER MUST COMPLY WITH UL1741 REQUIREMENTS. GROUNDING ELECTRODE SYSTEM MUST COMPLY WITH LATEST REVISION OF CEC ARTICLE 690.47.

E. 1. SEPARATE DC DISCONNECT AT GRADE LEVEL REQUIRED ONLY IF INVERTER DOES NOT HAVE AN INTERGRATED DC DISCONNECT
2. NOTE: A LEASED SYSTEM MAY INCLUDE A SEPARATE METER PROVIDED AND INSTALLED BY THE LEASING COMPANY.

F. 1. LEASED METER WILL NOT BE INSTALLED BETWEEN PRODUCTION METER AND MAIN SERVICE PANEL.
2. ALL PV SYSTEMS MUST COMPLY WITH THE LATEST REVISION TO CEC ARTICLES 690 AND 705.
3. ALL NECESSARY CLEARANCES SHALL BE ATTACHED TO THE ELECTRIC EQUIPMENT OR LOCATED ADJACENT TO THE IDENTIFIED EQUIPMENT (AS APPROVED BY THE AMU).
4. ALL SIGNS OR DIRECTORIES SHALL BE ATTACHED TO THE EQUIPMENT TO WITHSTAND THE ENVIRONMENT, SUITABLE FOR THE ENVIRONMENT (SCREWS OR RIVETS ARE NOT ALLOWED).
5. ALL SIGNS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT.
6. ALL SIGNS SHALL BE PERMANENTLY ATTACHED BY MEANS OF EPOXY OR EQUIVALENT.
7. ALL SIGNS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED LETTERS, MACHINE PRINTED LETTERS, OR ELECTRO-PHOTO PLATING LETTERS IN RED WITH WHITE LETTERING.

THIS DETAIL SHOWS THE REQUIREMENTS FOR A PHOTOVOLTAIC BASIC SYSTEM WITH MICRO INVERTERS



NOTES:

- A. MAIN SERVICE PANEL MUST COMPLY WITH CEC LATEST REVISION AND OPERATE IN A SAFE MANNER.
1. BRIGHAM CITY PUBLIC POWER WILL NOT ALLOW INTERCONNECTIONS WITH ANY UNSAFE CONDITIONS.
- B. PRODUCTION METER TO BE PROVIDED AND INSTALLED BY BRIGHAM CITY PUBLIC POWER AT CUSTOMERS EXPENSE. METER SOCKET TO BE PROVIDED BY INSTALLER.
1. CENTER OF METER MUST BE INSTALLED BETWEEN 4'-0" AND 6'-3" ABOVE FINAL GRADE.
- C. LOCABLE KNIFE-BLADE UTILITY A.C. DISCONNECT TO BE LOCATED WITHIN 10'-0" AND LINE OF SIGHT OF SERVICE PANEL AND MUST COMPLY WITH USERC DMC 501.
- D. INVERTER MUST COMPLY WITH UL1741 REQUIREMENTS. GROUNDING ELECTRODE SYSTEM MUST COMPLY WITH LATEST REVISION OF CEC ARTICLE 690.4/7.
1. SEPARATE D.C. DISCONNECT AT GRADE LEVEL REQUIRED ONLY IF INVERTER DOES NOT HAVE AN INTEGRATED D.C. DISCONNECT

NOTE: A LEASED SYSTEM MAY INCLUDE A SEPARATE METER PROVIDED AND INSTALLED BY THE LEASING COMPANY.

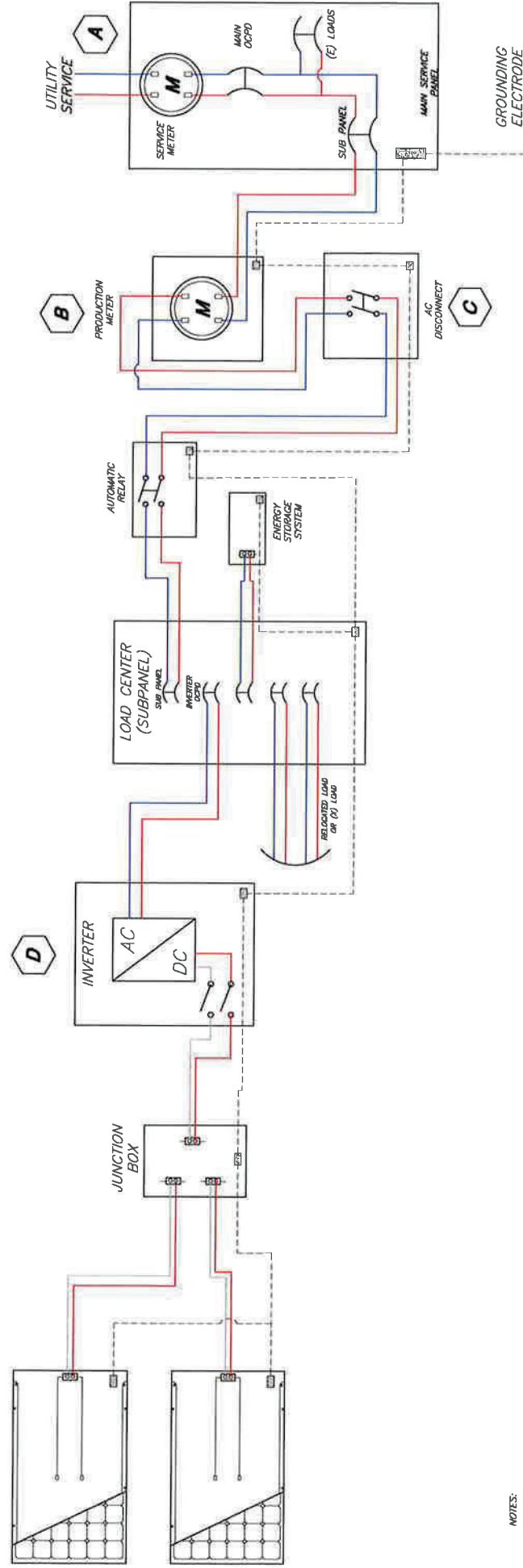
1. LEASED METER WILL NOT BE INSTALLED BETWEEN PRODUCTION METER AND MAIN SERVICE PANEL.
1. PV SYSTEMS MUST COMPLY WITH THE LATEST REVISION TO CEC ARTICLES 690 AND 705.
1. ALL NECESSARY CLEARANCES SHALL COMPLY WITH CEC ARTICLE 110.26.
1. ALL SIGNS OR DIRECTORIES SHALL BE ATTACHED TO THE ELECTRIC EQUIPMENT OR LOCATED ADJACENT TO THE IDENTIFIED EQUIPMENT (AS APPROVED BY THE AHJ).
1. ALL SIGNS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT.
1. ALL SIGNS SHALL BE PERMANENTLY ATTACHED BY MEANS OF EPOXY OR EQUIVALENT.
1. ALL SIGNS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED LETTERS, MACHINE PRINTED LETTERS, OR ELECTRO-PHOTO PLATING LETTERS IN RED WITH WHITE LETTERING.

DRAWING SCALE:		DRAWING NUMBER:		DRAWING DATE:		DRAWING NUMBER:		DRAWING DATE:		DRAWING NUMBER:		DRAWING DATE:	
1/8	1/8	BEB	BEB	1/8	1/8	TD & CS	TD & CS	1/8	1/8	TC	TC	1/8	1/8
N.T.S.	N.T.S.	01/09/2026	01/09/2026										
DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:	DATE:

BRIGHAM CITY PUBLIC POWER
ELECTRICAL CONSTRUCTION STANDARDS
PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM
MICRO INVERTER (RESIDENTIAL)

E24

THIS DETAIL SHOWS THE REQUIREMENTS FOR A PHOTOVOLTAIC SINGLE-PHASE SYSTEM WITH ENERGY STORAGE (CENTRAL INVERTER)



GROUNDING ELECTRODE

NOTES:

- A. MAIN SERVICE PANEL MUST COMPLY WITH CEC LATEST REVISION AND OPERATE IN A SAFE MANNER.
- B. BRIGHAM CITY PUBLIC POWER WILL NOT ALLOW INTERCONNECTIONS WITH ANY UNSAFE CONDITIONS.
- C. PRODUCTION METER TO BE PROVIDED AND INSTALLED BY BRIGHAM CITY PUBLIC POWER AT CUSTOMERS EXPENSE. METER SOCKET TO BE PROVIDED BY INSTALLER.
- D. PRODUCTION METER TO BE PROVIDED AND INSTALLED AFTER THE PV SYSTEM MEETS ALL REQUIREMENTS, AND PASSES ALL INSPECTIONS.

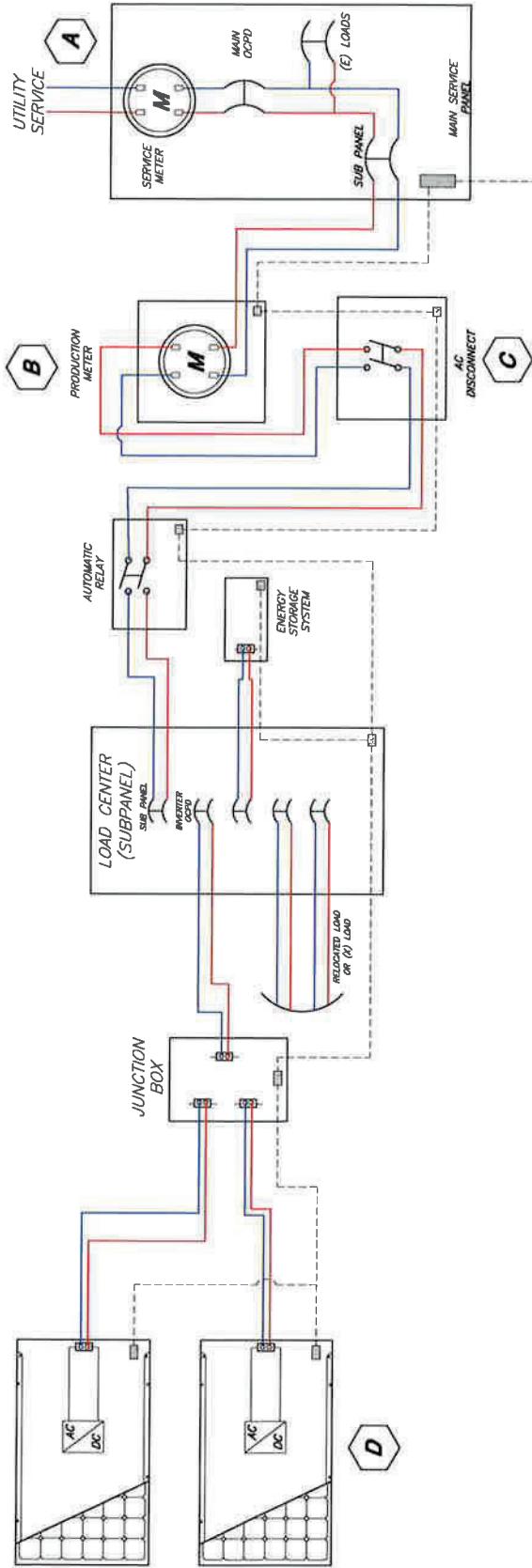
1. CENTER OF METER MUST BE INSTALLED BETWEEN 4'-0" AND 6'-3" ABOVE FINAL GRADE.
2. LOCKABLE KNIFE-BLADE UTILITY A.C. DISCONNECT TO BE LOCATED WITHIN 10'-0" AND LINE OF SIGHT OF SERVICE PANEL AND MUST COMPLY WITH EUSERC DNG 501.
3. SEPARATE D.C. DISCONNECT AT GRADE LEVEL REQUIRED ONLY IF INVERTER DOES NOT HAVE AN INTEGRATED D.C. DISCONNECT
4. LEASED METER WILL NOT BE INSTALLED BETWEEN PRODUCTION METER AND MAIN SERVICE PANEL.

- ALL PV SYSTEMS SHALL COMPLY WITH CEC ARTICLE 110.26.
- ALL NECESSARY CLEARANCES SHALL BE ATTACHED TO THE ELECTRIC EQUIPMENT OR LOCATED ADJACENT TO THE IDENTIFIED EQUIPMENT (AS APPROVED BY THE AM).
- ALL SIGNS OR DIRECTORIES SHALL BE ATTACHED BY MEANS OF EPOXY OR EQUIVALENT SUITABLE FOR THE ENVIRONMENT (SCREWS OR RIVETS ARE NOT ALLOWED).
- ALL SIGNS SHALL BE PERMANENTLY ATTACHED BY MEANS OF EPOXY OR EQUIVALENT SUITABLE FOR THE ENVIRONMENT (SCREWS OR RIVETS ARE NOT ALLOWED).
- ALL SIGNS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED LETTERS, MACHINE PRINTED LETTERS, OR ELECTRO-PHOTO PLATING LETTERS IN RED WITH WHITE LETTERING.

BRIGHAM CITY PUBLIC POWER		ELECTRICAL CONSTRUCTION STANDARDS		PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM	
E&B		TD & CS		ENERGY STORAGE - CENTRAL INVERTER (RESIDENTIAL)	
NAME:	BRIGHAM CITY PUBLIC POWER	NAME:	TD & CS	NAME:	PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM
ADDRESS:	1455 East Power Plant Road	ADDRESS:	TD & CS	ADDRESS:	ENERGY STORAGE - CENTRAL INVERTER (RESIDENTIAL)
PHONE:	Brigham City, UT 84302	PHONE:	TD & CS	PHONE:	TD & CS
TELE:	Tel: (435) 724-6500	TELE:	TD & CS	TELE:	TD & CS
FAX:	Fax: (435) 724-6500	FAX:	TD & CS	FAX:	TD & CS
EMAIL:	www.bcpower.org	EMAIL:	TD & CS	EMAIL:	TD & CS
WEBSITE:	brigham-city.gov	WEBSITE:	TD & CS	WEBSITE:	TD & CS
DATE:	01/09/2026	DATE:	TD & CS	DATE:	TD & CS
EXC. DATE:		EXC. DATE:		EXC. DATE:	
EXC. NAME:		EXC. NAME:		EXC. NAME:	

Sheet 1 of 1
E25

THIS DETAIL SHOWS THE REQUIREMENTS FOR A PHOTOVOLTAIC SINGLE-PHASE SYSTEM WITH ENERGY STORAGE (MICRO INVERTER)



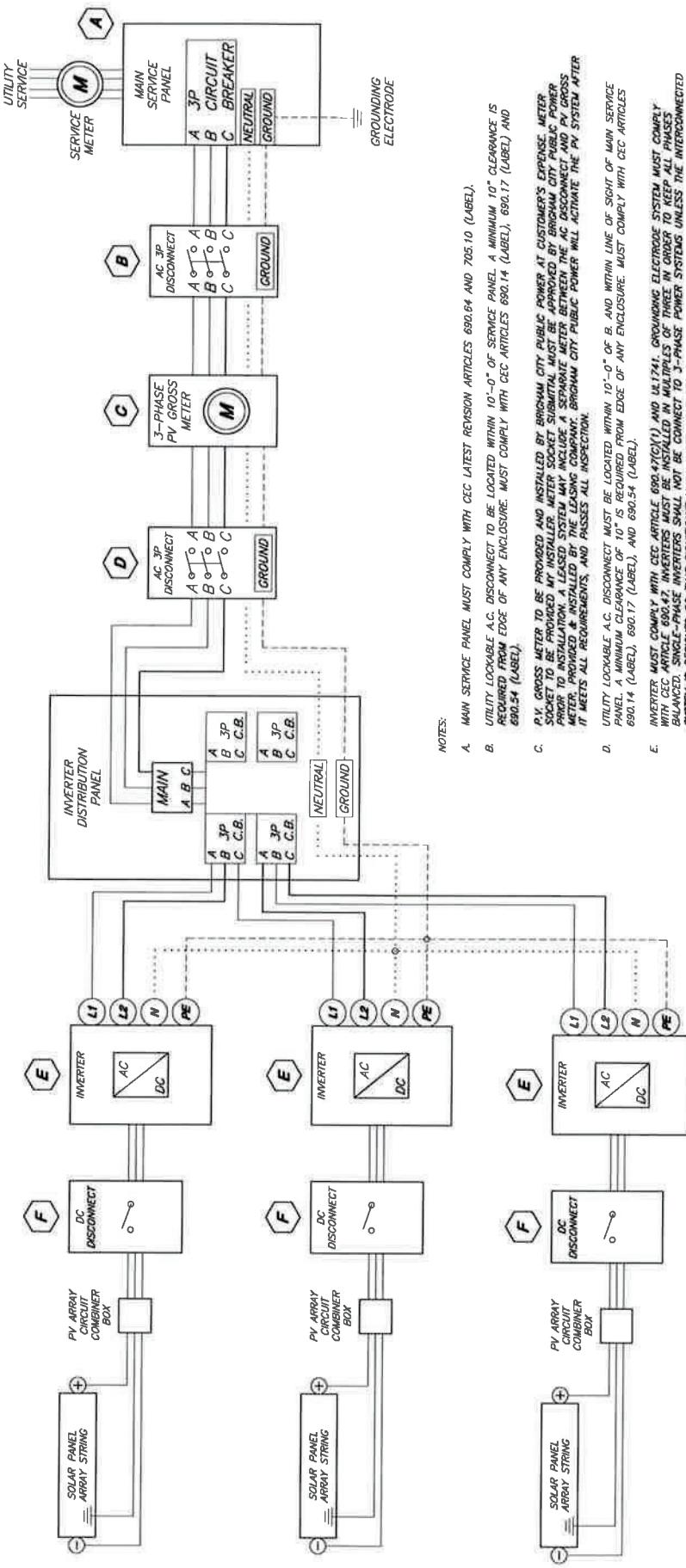
NOTES:

- A. MAIN SERVICE PANEL MUST COMPLY WITH CEC LATEST REVISION AND OPERATE IN A SAFE MANNER.
1. BRIGHAM CITY PUBLIC POWER WILL NOT ALLOW INTERCONNECTIONS WITH ANY UNSAFE CONDITIONS.
- B. PRODUCTION METER TO BE PROVIDED AND INSTALLED BY BRIGHAM CITY PUBLIC POWER AT CUSTOMERS EXPENSE. METER SOCKET TO BE PROVIDED BY INSTALLER.
1. BRIGHAM CITY PUBLIC POWER WILL ACTIVATE THE PV SYSTEM AFTER IT MEETS ALL REQUIREMENTS, AND PASSES ALL INSPECTIONS.
- C. CENTER OF METER MUST BE INSTALLED BETWEEN 4'-0" AND 6'-3" ABOVE FINAL GRADE.
1. LOCKABLE KNIFE-BLADE UTILITY A.C. DISCONNECT TO BE LOCATED WITHIN 10'-0" AND LINE OF SIGHT OF SERVICE PANEL AND MUST COMPLY WITH EUSERC DING 501.
- D. INVERTER MUST COMPLY WITH UL1741 REQUIREMENTS. GROUNDING ELECTRODE SYSTEM MUST COMPLY WITH LATEST REVISION OF CEC ARTICLE 690.47.
1. SEPARATE D.C. DISCONNECT AT GRADE LEVEL REQUIRED ONLY IF INVERTER DOES NOT HAVE AN INTEGRATED D.C. DISCONNECT.
- E. A LEASED SYSTEM MAY INCLUDE A SEPARATE METER PROVIDED AND INSTALLED BY THE LEASING COMPANY.
1. LEASED METER WILL NOT BE INSTALLED BETWEEN PRODUCTION METER AND MAIN SERVICE PANEL.
- F. PV SYSTEMS MUST COMPLY WITH THE LATEST REVISION TO CEC ARTICLES 690 AND 705.
 - ALL NECESSARY CLEARANCES SHALL COMPLY WITH CEC ARTICLE 110.26.
 - ALL SIGNS OR DIRECTORIES SHALL BE ATTACHED TO THE ELECTRIC EQUIPMENT OR LOCATED ADJACENT TO THE IDENTIFIED EQUIPMENT (AS APPROVED BY THE AHJ).
 - ALL SIGNS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT.
 - ALL SIGNS SHALL BE PERMANENTLY ATTACHED BY MEANS OF EPOXY OR EQUIVALENT. SUITABLE FOR THE ENVIRONMENT (SCREWS OR RIVETS ARE NOT ALLOWED).
 - ALL SIGNS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED LETTERS, MACHINE PRINTED LETTERS, OR ELECTRO-PHOTO PLATING LETTERS IN RED WITH WHITE LETTERING.

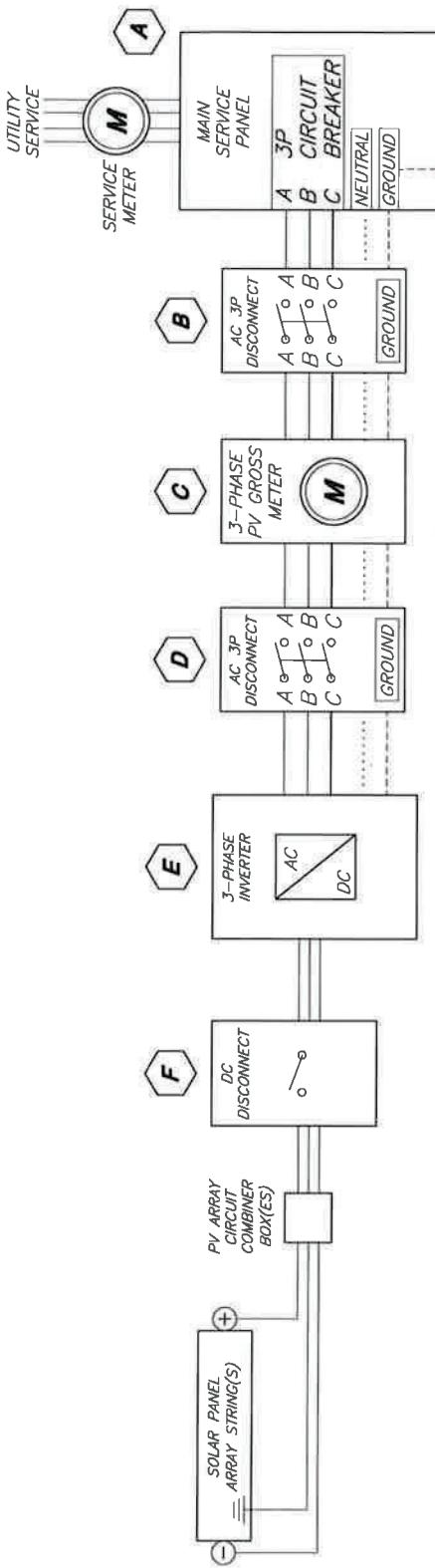
BRIGHAM CITY PUBLIC POWER		ELECTRICAL CONSTRUCTION STANDARDS		PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM	
N.T.S.		TD & CS		ENERGY STORAGE - MICRO INVERTER (RESIDENTIAL)	
DATE	01/09/2026	DATE	TC	BRIGHAM CITY PUBLIC POWER	BRIGHAM CITY PUBLIC POWER
ENR. DATE	20260109	ENR. DATE	20260109	1455 East Power Plant Road Brigham City, UT 84322 Tel: (435) 734-6224 Email: E-energy@bcpd.gov	1455 East Power Plant Road Brigham City, UT 84322 Tel: (435) 734-6224 Email: E-energy@bcpd.gov

Sheet
E26
of 1 sheets

THIS DETAIL SHOWS THE REQUIREMENTS FOR A PHOTOVOLTAIC THREE-PHASE SYSTEM USING MULTIPLE 2-LINE 1-PHASE INVERTERS WITH A NEUTRAL CONNECTION



THIS DETAIL SHOWS THE REQUIREMENTS FOR A PHOTOVOLTAIC THREE-PHASE SYSTEM USING A SINGLE THREE-PHASE INVERTER



NOTES:

- A. MAIN SERVICE PANEL MUST COMPLY WITH CEC LATEST REVISION ARTICLES 690.64 AND 705.10 (LABEL).
- B. UTILITY LOCATABLE A.C. DISCONNECT TO BE LOCATED WITHIN 10'-0" OF SERVICE PANEL. A MINIMUM 10" CLEARANCE IS REQUIRED FROM EDGE OF ANY ENCLOSURE. MUST COMPLY WITH CEC ARTICLES 690.14 (LABEL), 690.17 (LABEL) AND 690.54 (LABEL).
- C. P.V. GROSS METER TO BE PROVIDED AND INSTALLED BY BRIGHAM CITY PUBLIC POWER AT CUSTOMER'S EXPENSE. METER SOCKET TO BE PROVIDED BY MY INSTALLER. METER SOCKET SUBSTANTIALLY MUST BE APPROVED BY BRIGHAM CITY PUBLIC POWER. PRIOR TO INSTALLATION, A LEASED SYSTEM MAY INCLUDE A SEPARATE METER BETWEEN THE AC DISCONNECT AND PV GROSS METER, PROVIDED & INSTALLED BY THE LEASING COMPANY. BRIGHAM CITY PUBLIC POWER WILL ACTIVATE THE PV SYSTEM AFTER IT MEETS ALL REQUIREMENTS, AND PASSES ALL INSPECTION.
- D. UTILITY LOCATABLE A.C. DISCONNECT MUST BE LOCATED WITHIN 10'-0" OF B. AND WITHIN LINE OF SIGHT OF MAIN SERVICE PANEL. A MINIMUM CLEARANCE OF 10" IS REQUIRED FROM EDGE OF ANY ENCLOSURE. MUST COMPLY WITH CEC ARTICLES 690.14 (LABEL), 690.17 (LABEL), AND 690.54 (LABEL).
- E. INVERTER MUST COMPLY WITH CEC ARTICLE 690.47(C)(1) AND UL1741. GROUNDING ELECTRIC SYSTEM MUST COMPLY WITH CEC ARTICLE 690.47. INVERTERS MUST BE INSTALLED IN MULTIPLES OF THREE IN ORDER TO KEEP ALL PHASES BALANCED. SINGLE-PHASE INVERTERS SHALL NOT BE CONNECT TO 3-PHASE POWER SYSTEMS UNLESS THE INTERCONNECTED SYSTEM IS DESIGNED SO THAT SIGNIFICANT UNBALANCED VOLTAGES CANNOT RESULT. (PER CEC ARTICLE 705.10)(D). INVERTER-INTTEGRATED PROTECTION MUST INCLUDE THE FOLLOWING MINIMUM PROTECTIVE FUNCTIONS: PHASE OVERCURRENT, OVERVOLTAGE, UNDERVOLTAGE, OVERFREQUENCY, AND AC GND FAULT.
- F. D.C. DISCONNECT MUST COMPLY WITH CEC ARTICLES 690.14(A-D), 690.53 (LABEL), 690.7 (LABEL) AND 690.8.
- G. SEPARATE DC DISCONNECT IS REQUIRED ONLY IF INVERTER HAS AN INTEGRATED (BUT NOT SEPARATE) DC DISCONNECT. SIGNS OR DIRECTORIES SHALL BE ATTACHED TO THE IDENTIFIED EQUIPMENT. SIGNS SHOULD BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT. ALL PLATES SHALL BE PERMANENTLY ATTACHED TO SURFACE OR ELECTRICAL EQUIPMENT BY MEANS OF EPOXY, SCREWS, OR RIVETS. OUTDOOR SIGNS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED OR MACHINE PRINTED LETTERS, OR ELECTRO-PHOTO PLATING. IN A CONTRASTING COLOR TO THE SIGN BACKGROUND. SPACE REQUIREMENTS FOR ELECTRICAL EQUIPMENT SHALL COMPLY WITH CEC ARTICLE 710.25.

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1		690		690	
2		TD & CS		TD & CS	
3	01/09/2025	TC		TC	
4					
5					

BRIGHAM CITY PUBLIC POWER
1455 East Power Plant Road
Brigham City, UT 84322
Tel: (435) 749-6000
www.bcpw.org
Utility # 100001172577274966

E28
or 1 sheet

ELECTRICAL CONSTRUCTION STANDARDS

PHOTOVOLTAIC SINGLE-PHASE SYSTEM DIAGRAM
USING A SINGLE THREE-PHASE INVERTER

**THIS DETAIL SHOWS THE LABELING REQUIREMENTS
FOR A PHOTOVOLTAIC SYSTEM'S AC AND
DC DISCONNECT DEVICES**

**THIS DETAIL SHOWS THE WARNING LABEL REQUIREMENTS
FOR THE PV SERVICE PANEL**

**UTILITY INTERACTION POINT
AC DISCONNECT**

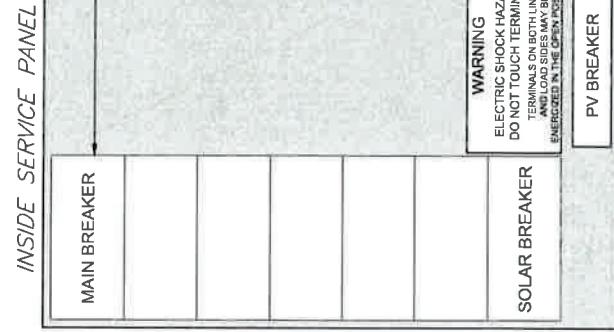
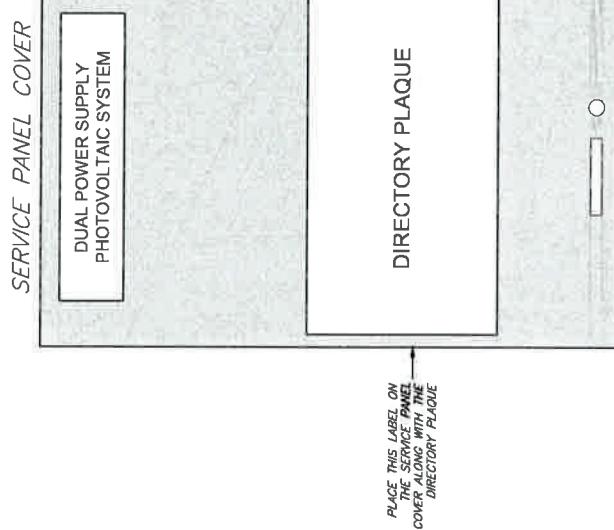
RATED AC OUTPUT CURRENT =
NOMINAL OPERATING AC VOLTAGE =

**PV POWER SOURCE
DC DISCONNECT**

RATED MAXIMUM POWER-POINT CURRENT =
RATED MAXIMUM POWER-POINT VOLTAGE =
MAXIMUM SYSTEM VOLTAGE =
SHORT-CIRCUIT CURRENT =

NOTES:

- A. REQUIRED PLACARDS SHALL BE ATTACHED TO THE ELECTRIC EQUIPMENT WITHOUT COVERING MANUFACTURER LABELING OR LOCATED ADJACENT TO THE IDENTIFIED EQUIPMENT (PER AH APPROVAL)
1. ALL PLACARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT.
2. ALL PLACARDS SHALL BE PERMANENTLY ATTACHED TO THE SURFACE OF THE ELECTRICAL EQUIPMENT BY MEANS OF EPOXY OR EQUIVALENT
3. ALL PLACARDS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PHOTO PLATING IN RED OR ELECTRO-PHOTO PLATING IN RED WITH WHITE LETTERING
4. ALL PLACARDS SHALL NOT BE SMALLER THAN 2" x 5" AND NO LARGER THAN 3" x 6" (WITH THE EXCEPTION OF THE DIRECTORY PLACARD)
5. ALL PLACARDS FONT STYLE SHALL BE Arial WITH THE FONT SIZE NO SMALLER THAN SIZE 12 OR NO LARGER THAN SIZE 28.
- B. EACH AC DISCONNECT SHALL HAVE ITS OWN PLACARD AND MUST COMPLY WITH NEC 690.13, 690.17, AND 690.54
- C. EACH DC DISCONNECT SHALL HAVE ITS OWN PLACARD AND MUST COMPLY WITH CEC ARTICLES 690.53.

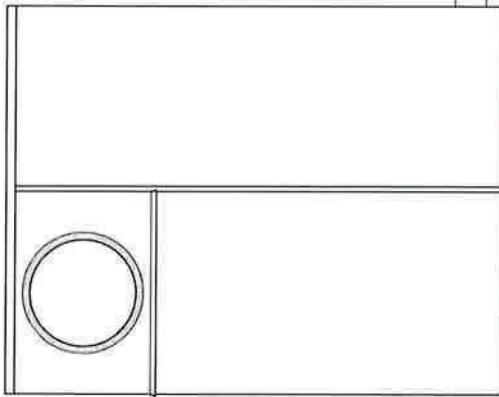


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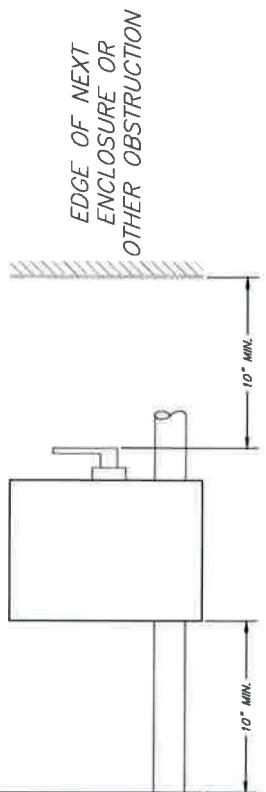
- A. REQUIRED PLACARDS SHALL BE ATTACHED TO THE ELECTRIC EQUIPMENT WITHOUT COVERING MANUFACTURER LABELING OR LOCATED ADJACENT TO THE IDENTIFIED EQUIPMENT (PER AH APPROVAL)
1. ALL PLACARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT.
2. ALL PLACARDS SHALL BE PERMANENTLY ATTACHED TO THE SURFACE OF THE ELECTRICAL EQUIPMENT BY MEANS OF EPOXY OR EQUIVALENT SUITABLE FOR THE ENVIRONMENT (SCREWS OR RIVETS ARE NOT ALLOWED)
3. ALL PLACARDS SHALL BE EITHER METAL OR PLASTIC WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PHOTO PLATING IN RED WITH WHITE LETTERING.
4. ALL PLACARDS SHALL NOT BE SMALLER THAN 2" x 5" AND NO LARGER THAN 3" x 6" (WITH THE EXCEPTION OF THE DIRECTORY PLACARD)
5. ALL PLACARDS FONT STYLE SHALL BE Arial WITH THE FONT SIZE NO SMALLER THAN SIZE 12 OR NO LARGER THAN SIZE 28.

BRIGHTON CITY PUBLIC POWER		ELECTRICAL CONSTRUCTION STANDARDS		PV DISCONNECT LABELS & PV SERVICE PANEL WARNING LABELS	
Brigham City Corporation 1450 East 18th Street, Brigham City, UT 84322 Tel: (435) 724-6624 Unit Emergency: (435) 724-6600 www.bcpower.org	BRIGHTON CITY PUBLIC POWER				E29 OF 1 PAGES

MAIN SERVICE PANEL



UTILITY AC
DISCONNECT
SWITCH(ES)*



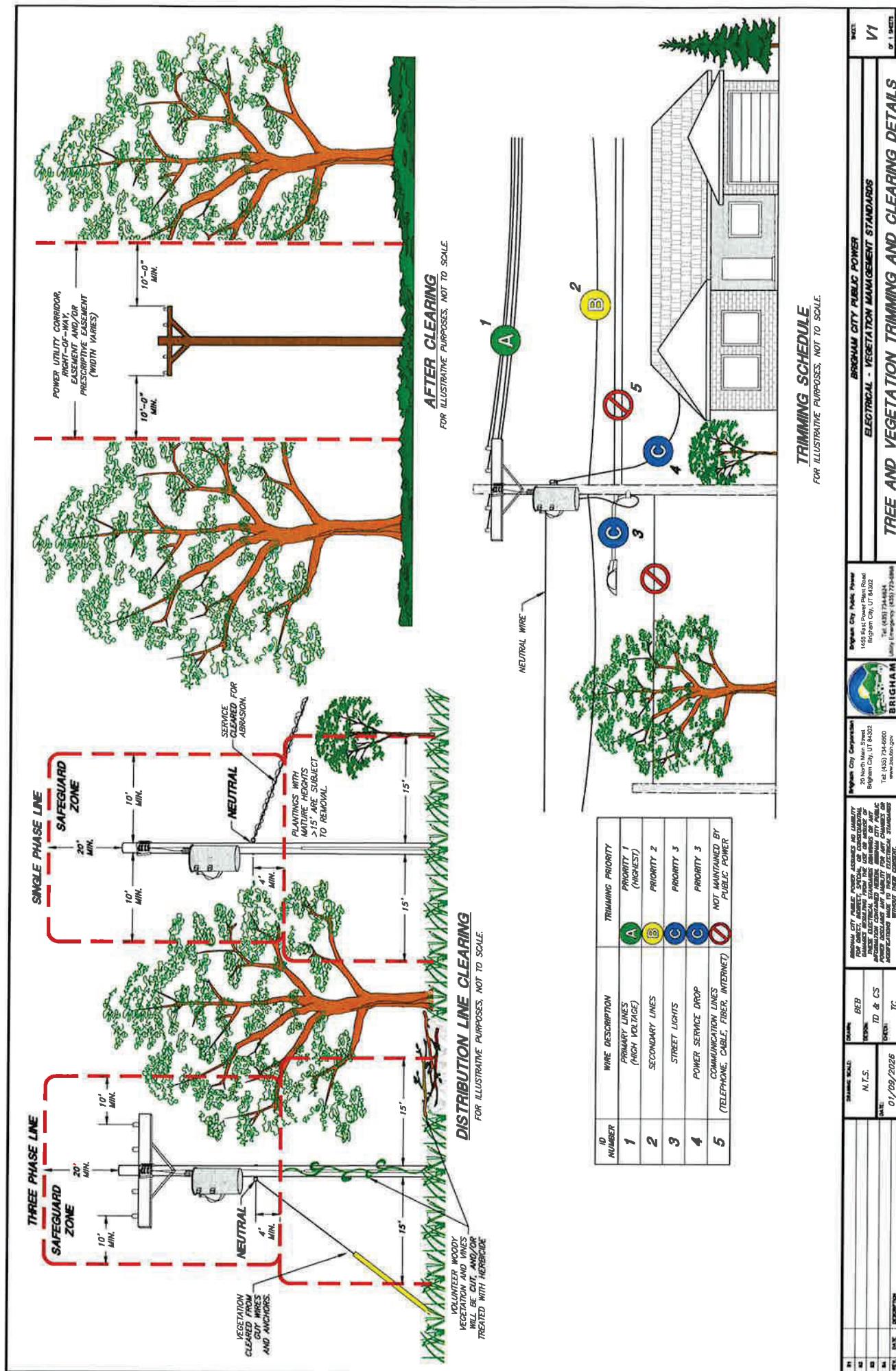
EDGE OF NEXT
ENCLOSURE OR
OTHER OBSTRUCTION

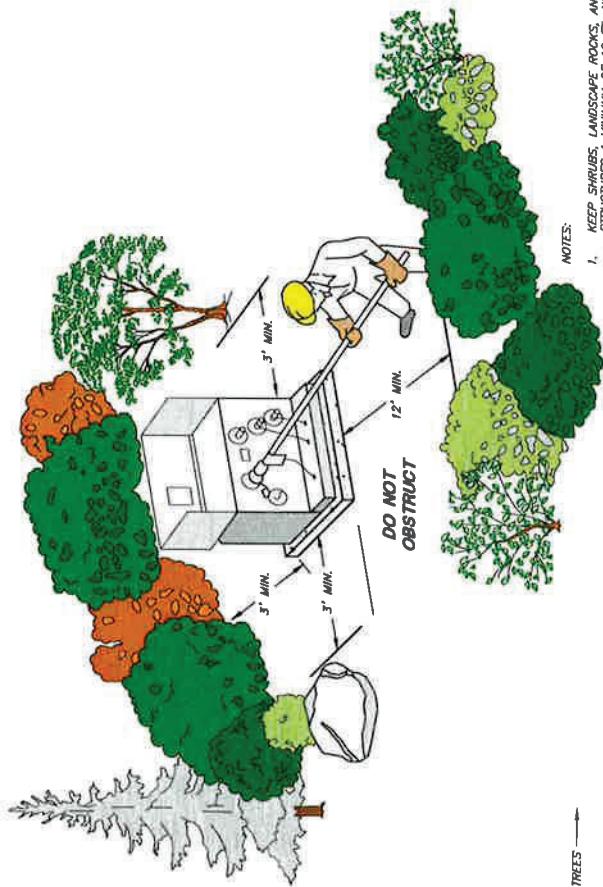
EUSERC DWG NO. 501

NOTES:

1. * CHECK THE ACCEPTABILITY TABLES FOR UTILITY REQUIREMENTS.
2. THE AC DISCONNECT SWITCH MAY BE FUSED OR UNFUSED.
3. THE AC DISCONNECT SWITCH SHALL BE LOCATED WITHIN 10'-0" OF THE MAIN SERVICE PANEL AND WITHIN LINE OF SIGHT.
4. A MINIMUM 10" CLEARANCE IS REQUIRED FROM THE EDGE OF ANY ENCLOSURE.

RECEIVED:	E30	
BY:	ELECTRICAL CONSTRUCTION STANDARDS	
DATE:	EUSERC DWG NO. 501 - AC DISCONNECT GUIDELINES	
 BRIGHAM CITY PUBLIC POWER 1455 East Power Plant Road Brigham City, UT 84322 Tel: (435) 724-6741 Utility # 849111 (435) 724-5858		



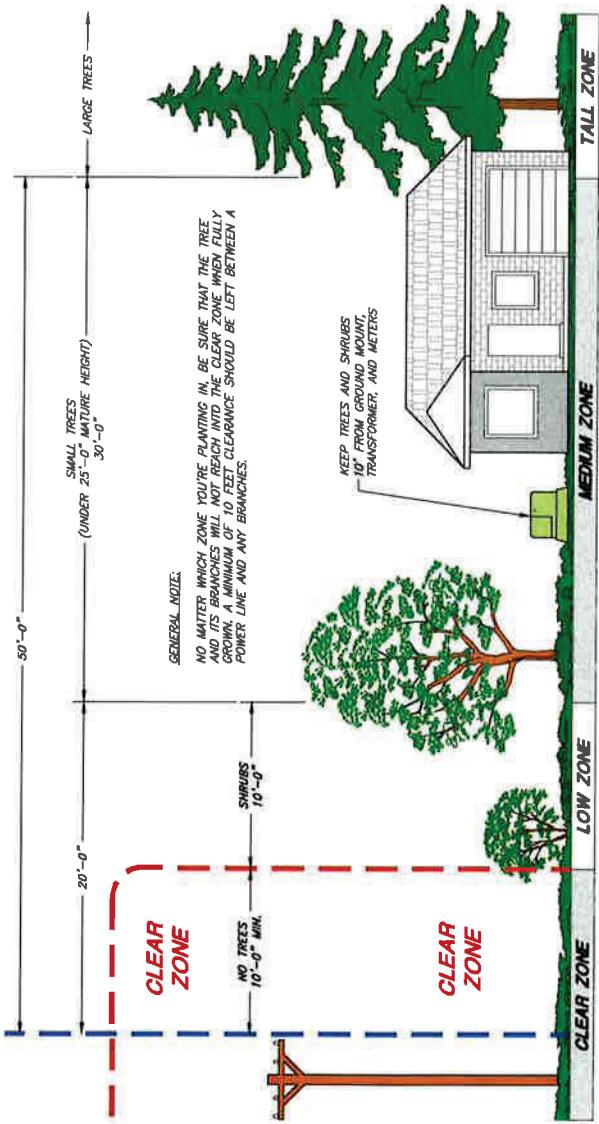


NOTES:

1. KEEP SHRUBS, LANDSCAPE ROOFS, AND STRUCTURES A MINIMUM OF 12 FT. AWAY FROM THE FRONT OF ANY ELECTRICAL BOX/STRUCTURE AND A MINIMUM OF 3 FT. FROM ALL OTHER SIDES.
2. BRIGHTON CITY PUBLIC POWER NEEDS ROOM TO WORK SAFELY AND QUIETLY IN LANDSCAPE AREAS. DURING ELECTRIC SERVICE, CONTACT PUBLIC POWER FOR PLANTING INSTRUCTIONS.

ELECTRICAL BOX CLEARANCE DETAIL

FOR ILLUSTRATIVE PURPOSES, NOT TO SCALE.



PLANTING THE RIGHT TREE IN THE RIGHT PLACE

FOR ILLUSTRATIVE PURPOSES, NOT TO SCALE.

DRAWING NUMBER:		DRAWING DATE:		DRAWING NUMBER:		DRAWING DATE:		DRAWING NUMBER:		DRAWING DATE:	
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12

BRIGHTON CITY PUBLIC POWER	ELECTRICAL - VEGETATION MANAGEMENT STANDARDS	1/2 or 1 meter
TREE PLANTING AND ELECTRICAL BOX CLEARANCE DETAILS		