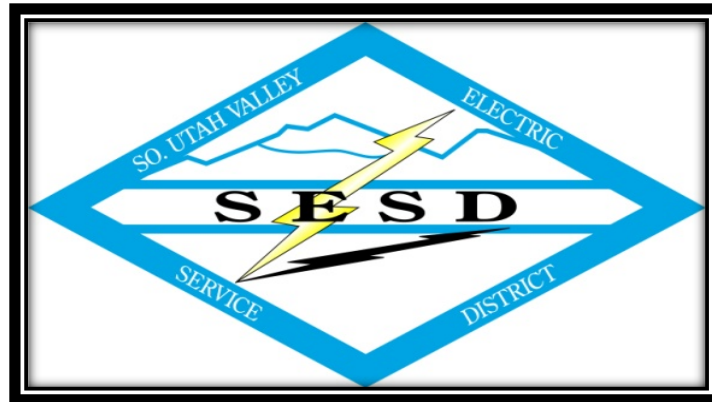


South Utah Valley Electric Service District

Construction Standards Manual July 2012



SESD

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www.sesdofutah.com

South Utah Valley Electric Service District serves areas in Utah County from Springville to Santaquin. The service area encompasses approximately 120 square miles. SESD is currently divided into 9 “districts”.

BOARD OF TRUSTEES

Joel Brown, Blair Hamilton, Toby Harding, Nelson Abbott, Raymond Loveless, Paul Meredith,
George Money, Richard Saunders, Brent Gordon

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Definitions

- **APPA Safety Manual** – American Public Power Association Safety Manual
- **Civil Engineer.** A person registered with the State of Utah to practice as a professional engineer.
- **Construction Plans.** Construction plans include drawings showing all required improvements for a development showing their location, size, grade, and elevations.
- **Contractor.** A person or company hired by the SESD or a Developer to perform construction in or for SESD, having appropriate state licenses to perform said work.
- **County.** Utah County, Utah.
- **Customer-** the individual requesting electrical service from SESD
- **Developer.** Person, persons, partnership or corporation developing residential, commercial or industrial property.
- **Development Review Committee.** The Development Review Committee (DRC) of SESD
- **Disconnecting Means-** A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.
- **Dwelling Unit-** A single unit, providing complete and independent living facilities for one or more persons, including permanent provisions for living, sleeping, cooking and sanitation.
- **Equipment-** A general term, including fittings, devices, appliances, luminaries, apparatus, machinery and the like used as a part of, or in connection with, an electrical installation.
- **FG** – RTRC (Reinforced Thermosetting Resin Conduit) Conduit, elbows & appurtenances made of Fiberglass RTRC.
- **Final Plat.** An original recordable plat drawn on mylar in a form approved by the City and County, showing all lots, streets, utility easements, etc.
- **Free Standing Metering Assembly** - A metering and service assembly or service equipment not attached to a building or structure.
- **Ground-** The earth
- **Grounded Conductor-** A system or circuit conductor that is intentionally grounded.
- **Grounded-** Connected to ground without inserting any resistor or impedance device.
- **Grounding Electrode-** A conducting object through which a direct connection to earth is established.

- **IMC**- Intermediate Rigid Metallic Conduit
- **Improvements**. Includes roads, streets, curb, gutters, sidewalks, grading, landscaping, water and sanitary sewer systems, irrigation systems, drainage systems, power and communication systems, fences, public facilities, trees or other requirements by the County or City.
- **Land Surveyor**. A person registered with the State of Utah to practice as a licensed land surveyor.
- **Lot**. A parcel or tract of land within a subdivision which is or may be occupied by a building or structure and the accessory buildings, structures or uses customarily incident thereto, including such open spaces as are arranged and designed to be used in connection with the building according to the zone within which the lot is located.
- **Meter**- a device that measures and records the summation of electrical quantity of a given period of time.
- **NEC**- National Electric Codes
- **NESC**- National Electric Safety Code
- **Net-Metering**- A debit and credit metering process in which the customer owns and operates a qualified generating device that interconnects with the Utility's electrical system.
- **Non-Residential Service** - Service to any customer who does not qualify for residential service.
- **Offsite Facilities**. Facilities outside of the boundaries of the subdivision or development site which are designated and located to serve the needs of the subdivision or development or adjacent property, usually lying between a development and existing facilities.
- **Onsite Facilities**. Facilities installed within or on the perimeter of the subdivision or development site.
- **OSHA** – Occupational Safety and Health Administration
- **Parcel of Land**. A contiguous area of land in the possession or ownership of one person with one tax identification number.
- **Preliminary Plat**. A map or plat of a proposed subdivision or development with accompanying
- **Primary Voltage**- Nominal voltages over 600 volts
- **Public Utility Easements**. The easements required to place public utilities across any privately owned property.
- **PVC**- Polyvinyl Conduit
- **Residential Service** – Service delivered to customers for domestic purposes in single-family or duplex type dwellings.
- **RMC**- Rigid Metallic Conduit
- **Secondary Voltage** – Nominal voltages more than 50 volts and less than 600 volts
- **Service Conductors**- The conductors from the service point to the service disconnecting means.
- **Service Drop**- The overhead conductors from the utility electric supply system and the service point
- **Service Equipment** – The necessary equipment, usually consisting of circuit breaker(s) or switch(es), fuse(s) and their appurtenances, connected to the load end of service conductors to a building or other structure , or an otherwise designated are, and intended to constitute the main control and cutoff of the supply.
- **Service Lateral**- The underground conductors between the utility supply system and the service point.

- **Service Lateral trench** – A trench provided by the customer for a service lateral.
- **Service Point**- The point of connection between the facilities of the serving utility and the premises wiring. The service point can be described as the point of demarcation between where the serving utility ends and the premises wiring begins. SESD defines the Service Point for residential services as the bottom of the service equipment for overhead installations and the top of the service equipment for underground installations.
- **Service**- The conductors and equipment (see Service Equipment Definition) for delivering electric energy from the serving utility to the wiring system of the premises served. The service is commonly referred to as the “meterbase”, “service main”, or “main disconnect”.
- **Site Plan**. A plan for a commercial, industrial, institutional, governmental or planned residential development in the City.
- **South Utah Valley Electric Service District**- may also be referred to as “SESD” the “district” or “Utility”
- **Subdivision**. Any parcel of land that is divided, re-subdivided or proposed to be divided into two or more lots, parcels, sites, units, plots, or other division of land for the purpose, whether immediate or future, for offer, sale, lease, or development either on the installment plan or upon any and all other plans, terms, and conditions. A subdivision includes (1) the division or development of land whether by deed, metes and bounds description, devise and testacea, lease, map, plat, or other recorded instrument; and (2) divisions of land for all land for all residential and nonresidential uses, including land used or to be used for commercial, agricultural, and industrial purposes.
- **Utilities**. Includes culinary water lines; irrigation lines; sanitary sewer; storm, land and groundwater drains; gas lines; electric power lines; cable television and telephone lines; underground conduits; and junction boxes and all appurtenances to the above.

EP1 Scope

The purpose of this manual is to create guidelines and clarify requirements for contractors, developers, and individual customers prior to, and during installation or construction of electrical distribution projects within the South Utah Valley Electric Service District Service Area. These requirements are intended to apply to new developments.

South Utah Valley Electric Service District (doing business as SESD) reserves the right to alter, change, update or modify this book as industry standards change, new equipment becomes available, safety rules change, or any other updates are necessary to improve or clarify these Standards as determined by SESD.

SESD will typically update these Construction Standards every 2 years in July. The latest edition of this book will supersede all previous editions.

The publication, approval and distribution date of this manual is July, 2012. The requirements of this publication shall be enforced on any electrical installation supplied by SESD made after July, 2012.

EP2 General

All contractors, developers and customers shall conform to the guidelines & requirements within this manual. Any requests for variances shall be directed to the Electrical System Designer.

The requirements of this booklet apply to contractors and developers applying for service relocations, service rewiring, home relocations, subdivisions, commercial and industrial sites, and new services. This booklet was prepared to aid Engineers, Contractors, Developers and Customers, in the establishment of electric service for residential subdivisions, commercial or industrial sites and for new and remodeled structures. If personal assistance is required, please call the SESD office (801) 465-8020.

Codes & Ordinances

It is necessary that the construction of new & remodeled electrical installations conform to applicable provisions of the National Electric Safety Code (NESC), National Electric Code (NEC), State of Utah Electric Service Regulations, SESD Standards, City and County ordinances and codes, and all applicable OSHA rules during construction and maintenance of electrical installations with-in SESD service area. SESD recognizes & has adopted both the National Electric Code and the National Electric Safety Code and the APPA Safety Manual as minimum standards. In addition, SESD has adopted and recognizes most of the standards published by the Utah Chapter of the American Public Works Association (APWA). SESD recognizes these Codes in some cases as a minimum, and as such SESD reserves the right to exceed these Codes.

Changes or Conflicts in Requirements

These requirements are issued with the intent of complying with all applicable codes, ordinances, and tariffs as well as to implement common practices with-in SEDS's service area. Common practices are implemented to: Meet or exceed minimum safety codes and municipal building ordinances; ensure fair and impartial requirements for all customers; use safe work procedures by following established Utility standards. SEDS uses and recognizes the most current editions of the NEC, NESC as minimum standards and may exceed these standards. In addition, these requirements may change if governing codes, ordinances, or tariffs change. SEDS does not assume responsibility for keeping this book current and should be consulted when questions arise on any applicable item.

Customer's Responsibility for Safety

The Customer shall comply with federal, state, and local laws and regulations, the latest edition of the NEC and NESC electrical codes and SEDS's Standards concerning activities in the vicinity of SEDS's electrical lines and equipment. The Customer shall comply with all laws and regulations to protect themselves, their family, their employees, SEDS and its employees and contractors and all third parties from injury, loss, or damage.

If SEDS serves the Customer by means of Primary Voltage or Transformer voltage circuits on the Customer's premises or if the Customer resells power and energy furnished by SEDS, SEDS may require the Customer to obtain and maintain coverage, which SEDS deems adequate to satisfy the duty of indemnification. SEDS may also require a separate indemnification, hold harmless, and/or additional named insured agreement.

Blue Stake One Call Center

Utah law Section 54-8A-1 through 54-8A-11 requires the Blue Stake One Call Location Center is notified at least two working days prior to excavation. The excavation must not be started until locations have been made or the Utility has informed the excavator that they have no facilities in the area. This notification may be made by calling 811 or 1-800-662-4111 (Utah County) more information is available at all Utility business offices.

Work Activity Near High-Voltage Overhead Power Lines

As set forth in Section 54-8c-1 through 54-8c-7 of the Utah code and Federal OSHA laws, no work may take place within 10 feet of a high-voltage power line (some lines may require even greater clearances) unless:

- The responsible party has notified the Utility operating the high voltage line of the intended activity; and
- The responsible party and the Utility have completed mutually satisfactory safety precautions for the activity; and
- The responsible party has made prior arrangements to pay the Utility for the mutually satisfactory safety precautions (if applicable)

-SESD recommends a minimum of 3 business day's notice be given prior to any work near its power lines is schedule to begin.

Quality of Power Service

Electric service supplied by SESD may be subjected to voltage disturbances, which will not normally affect the performance of lighting, appliances, heaters, motors or other typical electrical equipment, but may result in the improper operation of voltage sensitive equipment such as computers or microprocessors. Voltage sensitive equipment is defined as equipment, which is adversely affected by power disturbances (i.e., surges, spikes, interruptions) less than 0.5 seconds duration. It is the responsibility of the Customer to provide power-conditioning devices required to provide the quality of "Power" necessary for optimum performance of his voltage sensitive equipment.

Permanent Service Connection

Only authorized SESD Employees shall make the permanent (or temporary) connection or disconnection of SESD's electric service to a building, structure, or subdivision.

EP3 Application for Service

It is important that the applicant provide accurate information in a timely manner to SESD, and the date when the Customer requires service. Requests for service to new developments require considerable advance planning by SESD in order to serve the load. All applicants should give a 60-day minimum lead-time. Special Transformers or other equipment not in stock may require a 6 six-month lead time or longer, upon availability. The following are general requirements for Single Building Lots, Preliminary Plat Subdivisions, Final Plat Subdivisions, Preliminary Site Plans, and Final Site Plans. The requirements may or may not be, in addition to County and City requirements.

Single Residential Lots, Buildings, and Structures

Filing & Submission.

1. Three 8.5x11 inch copies of the Lot plan with Owner information, & the location of the proposed house or building. The Lot plan shall show Building addresses, street addresses, existing houses, buildings or structures, & fences that may be present on the lot; adjacent features within 250 feet such as houses, buildings, fences, ditches, utilities or other structures.
2. Plan shall show existing visible utilities such as poles, phone boxes, and power boxes within 500 feet in all directions of development

3. Plan shall show existing driveways, roads, streets and proposed or future driveways, roads, streets, or other means of ingress or egress.
4. Plan shall show the proposed & desired location of electrical service, meterbase, poles, or other electrical services & equipment.
5. Locations of any known buried utilities such as gas lines, water lines, telephone lines, etc.

Subdivision Preliminary Plats

Filing & Submission.

1. Two 24x36 inch copies of the preliminary plat drawings
2. Two 11x17 inch copies of the preliminary plat drawings
3. A Computer Aided Design (CAD) file of the plat in AutoCAD dwg or dxf format must be submitted on a CD, or in an email. The CAD file of the subdivision must be in the 1983 North American Datum (NAD83) State Plane Coordinate System, Utah Central Zone, US Survey Foot, with a tie to a section corner.

1. Form & Content.

Preliminary Plat. The preliminary plat of a subdivision shall contain the following information:

- a. The proposed name of the subdivision;
- b. The names and addresses of the Developer, the Civil Engineer of the subdivision, and other persons to whom notice of redlines & correspondence should be sent;
- c. The names of all adjacent subdivisions and property owners;
- d. The location of the subdivision as a part of some larger subdivision or tract of land referred to in the records of the county recorder. In such case, a sketch of the prospective street system of the unplatted parts of the subdivider's land shall be submitted.
- e. A tie to a section corner. All horizontal data shall be based on the 1983 North American Datum (NAD83) State Plane Coordinate System, Utah Central Zone, US Survey Foot. Horizontal datum shall be clearly written on all plat drawings;
- f. A contour map with vertical intervals not to exceed two feet. Contours shall be clearly labeled. All vertical data shall be based on the 1929 North American Vertical Datum (NAVD29). Vertical datum shall be written on plat; and
- g. Show all existing and proposed streets, alleys, easements, watercourses, fence lines, utilities, power lines, power poles, electric meters, buildings, public areas and any other important features within 500 feet of the tract to be subdivided;

- h. A table including: total acreage of area proposed for development, total acreage in lots, total acreage in open space, percent of open space, total number of lots, density in lots per acre.
- i. The date of preparation, a standard engineering scale of not more than 100 feet to the inch, a north arrow, and a vicinity map;
- j. A stamp and signature of a Civil Engineer licensed in the state of Utah.

Subdivision Final Plat.

Filing & Submission.

- 1. Two 24x36 inch copies of the final plat and construction drawings stapled and folded to a 11 x 17 inch size so the name of the subdivision and plat is visible, the final plat on top;
- 2. Two 11x17 inch copies of the Final Plat and construction drawings;
- 3. A computer aided design (CAD) file of the plat must be submitted on a CD or by e-mail in an AutoCAD dwg or dxf format. The CAD file of the subdivision must be in the 1983 North American Datum (NAD83) State Plane Coordinate System, Utah Central Zone, US Survey Foot, with a tie to a section corner.
- 4. If anything is submitted by e-mail the secretary must be contacted for the proper e-mail address and for confirmation the e-mail was received.
- 5. Once accepted by SESD, SESD will design the Electrical System *Note: see (EP4 Electrical Design & Drawings for more information)*. A Pre-Construction Meeting with SESD shall be scheduled by Developer. The developer, contractors, sub-contractors shall attend the Pre-Construction Meeting. After the Pre-Construction Meeting, SESD will approve & stamp the Electrical System Design Map and give four 22x34 inch copies to the Developer. The Developer must insure that a copy of the signed and approved Electrical System Design construction plans is on site at all times during construction.

1. Form & Content.

- a) Final Plat. The Developer must submit a Mylar of the Final plat to SESD in a format approved by SESD and the County. The Final plat of a subdivision shall contain the following:
- b) A tie to a section corner and the state plane coordinates of each point. All horizontal data shall be based on the 1983 North American Datum (NAD83) State Plane Coordinate System, Utah Central Zone, US Survey Foot. Horizontal datum shall be clearly written on the plat;
- c) Accurate dimensions for all lines, angles and curves used to describe boundaries, streets, alleys, easements, areas to be reserved for public use, and other important features; the lines, angles, dimensions, state plane coordinates, bearings, areas and numbers of all lots, blocks and parts reserved for any reason within the subdivision. All dimensions shall be determined by an accurate field survey which shall balance and close as required by the county;

- d) Show all existing and proposed streets, alleys, easements, watercourses, fence lines, utilities, power lines, power poles, electric meters, buildings, public areas and any other important features within 500 feet of the tract to be developed;
- e) A statement that “All electric meters, and all electric service conductors up to the service point on overhead installations and to the top of the meter base for underground service laterals are dedicated to South Utah Valley Electric Service District.”;
- f) Plats and signatures shall be in waterproof ink on a 24x36 inch Mylar sheet. There shall be an unencumbered margin of one and one-half inches on the left-hand side of the sheet and not less than a half inch margin around the outer three sides of the sheets. The scale shall be a standard engineering scale of no more than 100 feet to the inch;
- g) A Stamp and signature of a surveyor licensed in the state of Utah.
- h) Construction Plans. A complete set of construction plans must be submitted with all Final Plats. Construction plans must conform to the standards for construction plans required by the applicable City or County.
- i) All easements and rights-of-way, whether existing or proposed, shall be shown on the final plat.

Site Plans.

Filing & Submission.

Preliminary Site Plans. Submit the following for Preliminary Site plans.

- 1. Two 24x36 inch copies of the final plat and construction drawings stapled and folded to a 11 x 17 inch size so the name of the subdivision and plat is visible, the final plat on top;
- 2. Two 11x17 inch copies of the Final Plat and construction drawings;
- 3. A computer aided design (CAD) file of the plat must be submitted on a CD or by e-mail in an AutoCAD dwg or dxf format. The CAD file of the subdivision must be in the 1983 North American Datum (NAD83) State Plane Coordinate System, Utah Central Zone, US Survey Foot, with a tie to a section corner.
- 4. Review.
 - a) SESD will review the submission and notify the Developer of any changes that must be made. Once these changes are made, & the Site Plan has been accepted by the County or City, submit the following:
 - b) Two 24x36 inch copies, two clearly legible 11x17 inch copies and a CAD file of the plat must be submitted to the SESD engineering secretary. If anything is submitted by e-mail the engineering secretary must be contacted for the proper e-mail address and for confirmation the e-mail was received.
 - c) Once accepted by SESD, SESD will design the Electrical System. A Pre-Construction Meeting with SESD shall be scheduled by Developer. The developer, contractors, sub-contractors shall attend the Pre-Construction Meeting. After the Pre-Construction Meeting, SESD will approve & stamp the Electrical System

Design Map and give four 22x34 inch copies to the Developer. The Developer must insure that a copy of the signed and approved Electrical System Design construction plans is on site at all times during construction.

Form and Content.

1. **Site plan.** A Final Site plan shall contain the following information:
 - a) The proposed name of the development;
 - b) The names of all adjacent property owners;
 - c) A tie to a section corner. All horizontal data shall be based on the 1983 North American Datum (NAD83) State Plane Coordinate System, Utah Central Zone, US Survey Foot. Horizontal datum shall be clearly written on all plat drawings;
 - d) A statement that “All electric meters, and all electric service lines up to the mast on overhead installations and to the top of the meter base for underground installations are dedicated to South Utah Valley Electric Service District.”;
 - e) A contour map with vertical intervals not to exceed two feet. Contours shall be clearly labeled. All vertical data shall be based on the 1929 North American Vertical Datum (NAVD29). Vertical datum shall be written on the plan; and
 - f) The location, areas, and principal dimension of all existing and proposed streets, alleys, easements, watercourses, fence lines, utilities, buildings, public areas and any other important features within 200 feet of the site;
 - g) The date of preparation, a standard engineering scale of not more than 100 feet to the inch, a north arrow, and a vicinity map;
 - h) A stamp and signature of an engineer licensed in the state of Utah.
 - i) Construction Plans. A complete set of construction plans must be submitted with each Site Plan.
 - j) Easements and Deeds. The Developer must provide the legal documents for all easements and deeds required by SESD.
 - k) Commercial or Industrial site plans should show preferred transformer, service and meter location and a single line diagram of the electrical layout. The applicant must fill out SESD’s load sheet & provide all load information including lighting, water heater, cooking, air conditioning, and motor loads. Kilowatt demand of the load should also be included.

EP4 Electrical Design & Drawings

SESD shall design the complete electrical utility system for residential subdivisions, commercial sites, industrial sites and any other application or installation. SESD will design the electrical system in the preliminary plat or

preliminary site plan process. SESD will design the electrical system to provide a cost estimate & bond amount of the electrical infrastructure associated with each development.

1. Design

The following information must be obtained or determined before the electrical system can be designed:

- a) Acceptable electrical facilities routes and easements
- b) Surveyed and marked easements, property lines, property corners
- c) Existing equipment locations, such as transformers, secondary boxes, or switchgear
- d) Proposed Service entrance equipment location
- e) Transformer and service entrance equipment sizes
- f) Possible limitation on pulling equipment or cable reel setup location(s)
- g) Other utility service locations (i.e., gas, water, telephone, CATV)
- h) Existing substructure utility locations
- i) Hazards
- j) Existing easements and rights-of-way

SESD will not approve the final design until;

1. The development has met all City, County, SESD requirements;
2. All fees or bonds have been paid;
3. A preconstruction meeting with SESD has been completed for each development.
4. All necessary easements, rights-of-way and routes have been granted and secured.

Once these conditions have been met, SESD will sign & stamp the final drawings for construction of the electrical system.

SESD has a staff available to advise Customers and Contractors on new service requirements and problems related to electric energy utilization for new, existing, and reconstructed installations.

If changes in the service agreement are required, immediately contact SESD to set up alternative arrangements.

Local ordinances or state laws require that an applicant obtain appropriate permits before SESD can establish service. This may include approval of an electrical installation by the electrical inspection authority. Approval for service will be granted only after all service requirements have been met and all fees have been paid.

EP5 Bonding

If a development is under the Utah County jurisdiction the developer can choose to post a bond with the County meeting the County requirements for the electrical improvements. Or the developer can choose to pay SESD for the electrical improvements costs plus post a 25% cash bond with SESD. The owners and/or developers of property shall deposit security with SESD to guarantee proper installation of all required improvements in accordance with the plans, specifications, time limitations, and conditions relating thereto. Security bond shall be in the form of cash. The amount of the security bond shall be 25% of SESD's estimated costs of the improvements.

The bond must be posted prior to recording. Twenty-five (25%) of the security amount shall be held for a period of one (1) year following final inspection and acceptance to warrant improvements for this time period. The twenty-five percent retained shall be the cash amount required as the minimum security.

EP6 Contact Information

South Utah Valley Electric Service District

P.O. Box 349
803 North 500 East
Payson, UT 84651

Office Phone: (801) 465-8020 Fax: (801) 465-8017

Business Hours:
Monday thru Friday
8:00 am to 5:00 pm

Manager: Dan Ellsworth; dan@sesdofutah.org

Clerk: Maryann James; maryann@sesdofutah.org

Office Manager: Natalie Peacock; Natalie@sesdofutah.org

Office Manager: Michele Cloward; office@sesdofutah.org

Electrical Design & Mapping: Ryan Bagley; ryan@sesdofutah.org

Metering Dept: Brad Gordon; brad@sesdofutah.org

Service Foreman: Duane Curtis; duane@sesdofutah.org

Crew Foreman: Brook Christensen; brook@sesdofutah.org

Warehouse & Inventory: Scott Fillmore; scott@sesdofutah.org

Or email general questions or comments to: mail@sesdofutah.org

Find us on the web at: www.sesdofutah.com

Interruption of Electrical Service after Regular Business Hours

If you have a power outage or other electrical problems after regular business hours, please call

(801) 465-8053.

E1.01 Trenching

Note: Please refer to the Construction Standard Drawings for further clarification of these rules.

TRENCHING

The developer shall provide the trench for all required conduit systems and provide backfill following the installation of the conduits. SESD shall install all primary (high voltage 12.47 kV) cables.

To insure final grades have been established, the trenching shall be started after the curb & gutters have been installed unless otherwise approved by SESD. If curb & gutter is not required in the development, proper & adequate staking shall be provided by developer according to SESD's requirements. All trenching & excavating shall meet OSHA requirements. 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, effect 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 at the project

Joint Use of Trench

Joint use between power utilities and communications utilities is allowed if said utilities meet both vertical and horizontal clearances from one another. Power conduits shall be placed in the trench closest to the street, and communications shall be placed in the trench on the house side of lot. Power conduits shall always be buried below communications conduits, and require at least 1 foot of vertical separation as well as 1 foot of horizontal separation. If multiple power conduits are installed in the same trench, then all power conduits may be installed at the depth of the largest conduit. (See construction drawings)

SESD will not install electrical system cables in a joint or common trench with utilities such as gas, water, sewer, unless unusual conditions or route restrictions exist. All such installations require the prior approval of SESD.

Blue Stakes Call Before You Dig

Utah Law Section 54-8A-1 through 54-8A-11 requires the Blue Stakes One Call Location Center be notified at least two working days prior to excavation or trenching. The excavations must not start until bluestakes have been made.

Depth

Note: See Table 1.01.A for conduit depths:

The trench depth, **to top of conduit**, shall be a **minimum** of 48 inches for primary high voltage conduits, and 48 inches for secondary conduits, measured from final grade. Secondary Service lateral conduits and stubs to homes may be installed at a minimum of 36 inches in depth. If primary and secondary conduits are installed in a joint trench, then all power conduits shall be installed at the depth of the largest diameter conduit. The property owner or developer is responsible to insure that proper burial depths, (see table listed below) are maintained even after excavation of property. Under certain conditions, with prior SESD approval, cable/conduit may be buried at lesser depths provided that additional mechanical protection is installed by the Developer to SESD's specifications. This may include but is not limited to, concrete slurry with a red pigment dye throughout.

Table 1.01.A Electrical Conduit Depths

| Conduit Size & Type | Depth to Top of Conduit |
|-------------------------------|-------------------------|
| SMC, Qwest, CATV | 2 Feet |
| 2 ½"-3" Service Laterals | 3 Feet |
| 3 Inch 600 volt Secondary URD | 4 Feet |
| 3 Inch 1ø 100 Amp Primary | 4 Feet (min.) |
| 4 Inch 3ø 200 Amp Primary | 4 Feet (min.) |
| 6 Inch 3ø 600 Amp Primary | 6 Feet (min.) |

Width

All trenches must meet OSHA requirements. Joint use trenches with primary and secondary power shall be a minimum of 18 inches wide at the bottom. Trenches 12 inches wide will only be approved for single services.

Backfill

The developer shall be responsible for backfilling trenches he provides. The developer must provide 6 inches to 1 foot of "shading" backfill material consisting of screened sand that will be placed directly onto conduits. In addition, 6 inches of screened sand may be required directly under conduits if poor, rocky soil conditions are encountered. Native soils may be used as backfill on top of "shaded" conduits as long as the soils are free from large rocks, meet APPWA standards, meet SESD standards, and will meet the required 95% compaction. All primary power trenches, road crossing trenches shall be compacted to 95% of the maximum dry density as determined by ASHTO T-99 (standard).

Road base or 1" minus gravel shall be used under all electrical boxes. Road base shall be compacted to 95%.

Inspection of the trench, conduits and backfill materials shall be made prior to the installation of select backfill materials.

Road Base or engineered fill shall be required for backfill on top of "shaded" conduits on all road crossings. Road base shall be compacted to 95% of the maximum dry density as determined by ASHTO T-99 (standard). Road base shall be a minimum of 8 inches in depth. Road Base shall also be used as backfill under all electrical boxes and shall be compacted to 95% compaction. (An approved 1 inch minus gravel may be accepted on a case-by-case basis in lieu of road base.)

CAUTION IDENTIFICATION TAPE AND STUB MARKERS

An industry standard 6 inch red caution tape placed a minimum of 12 inches above the conduits. The end of each stubbed conduit, including service laterals, shall be marked to the surface according to the standard drawings.

The SESD conduit system conduits (SMC) shall have an orange caution tape that states "Caution Fiber Optics line buried below" taped or attached directly on the conduits and another orange caution tape placed a minimum of 12 inches above the conduit. Tape shall meet industry standards and the requirements and specifications of APWA

02320. The end of each stubbed conduit, including service laterals, shall be marked to the surface according to the standard drawings.

E1.02 Conduits

SESD requires the use of conduit for all underground primary, secondary power cable installations, including lighting circuits and service laterals. No direct bury cables are allowed.

Only Electrical Grade Rigid metal steel conduit (RMC), Intermediate metal steel conduit (IMC), Gray electrical grade schedule 40 or schedule 80 PVC and schedule 40 Fiberglass (FG) conduits may be used.

High density polyethylene (HDPE) may be used for directional boring applications. HDPE may not be used in open trenches unless approved by SESD.

HDPE shall be either solid red in color or solid black with 3 red stripes. HDPE shall be Schedule 40 or equivalent unless approved by SESD. HDPE must meet NEC, NESC codes in construction and application. HDPE may be used in standard trade sizes up to 6". HDPE shall be clearly marked at least every 10 feet with the type of material and footage. HDPE may be joined mechanically or by heat fusion or electro fusion.

All bends shall use long sweep (36") factory elbows made from PVC or FG.

All underground metal conduits shall be wrapped with a 10 mil. anti-corrosion tape. The tape shall extend 6" above finished grade.

If conduits terminate underground, and are stubbed for future use, a permanent pvc type end cap shall be glued to end of the conduits. The end shall also be marked with a suitable marker.

Prior to backfilling any conduits, developer shall notify SESD for an inspection. Following the inspection, SESD, will issue a notice to proceed slip, allowing backfilling. Inspections will be required at each conduit level before backfilling.

All conduits extending out of the ground outside of an enclosure shall be rigid metal (RMC) or intermediate rigid metal (IMC), or (FG) Fiberglass from the elbow up to the bottom of the service equipment for service installations. All buried metal conduit shall be coated with anti-corrosion tape. Tape shall extend 6" above finished grade.

Riser pole conduits for 3" 1-phase, 4" 3-phase or 6" 3-phase Primary power shall be IMC, RMC or FG for the first (10) ten feet up the pole. Schedule 40 pvc may be used to finish the riser.

Riser pole conduits for 2", 2-1/2" or 3" Secondary or Service power shall be IMC or RMC for the entire length of the pole.

Riser pole conduits for 2" SMC conduit system may be schedule 40 pvc for the entire length of the pole.

Conduit sizes shall be determined by the following table unless otherwise approved or designed:

Note: The conduit sizes in the table are minimum sizes for typical installations. Different or larger sizes may be required for larger cable sizes, larger services, increased distances, or other circumstances.

TABLE-1.02.A TYPICAL ELECTRICAL CONDUIT SIZES

| Conduit Type | Trade Size |
|--|------------|
| Service Lateral Conduits | 2 ½" or 3" |
| 600 Volts or Less Secondary URD Conduits | 3" |
| 7,200 Volts 1 ø Primary less than 500 ft (100 amp) | 3" |
| 12,470 Volts 1 ø Primary greater than 500 ft (100 Amp) | 4" |
| 12,470 Volts 3 ø Primary (200 Amp) | 4" or 6" |
| 12,470 Volts 3 ø Primary (600 Amp) | 6" |

Each transformer or secondary junction box shall have (2) Two 2 ½" service lateral conduits stubbed out at least 10 feet into each lot. The stub to the lot on the opposite side of the transformer shall extend at least 1 foot past property line.

SESD 2" System Conduit (SMC) Requirements

Along with conduit requirements for electrical installation of power cables the Customer must provide 2" conduit system as designed by SESD. The conduit system shall consist of (1) one 2 inch PVC schedule 40 conduit with standard sweep PVC elbows. The conduit system shall parallel the power system to the demarcation point on a building unless otherwise designed by SESD. All other applicable requirements pertaining to the installation of power conduit systems shall apply.

E1.03 Easements, Clearances & Rights-of-Way

General

SESD shall require easements for safety and for the installation of electrical conduit systems, electrical overhead power lines, and other electrical installations. In general a 10 foot Public Utility Easement shall be required around all sides of a lot or parcel of a Residential, Commercial, Industrial subdivision or site. Greater easements may be required for voltages above 12,470 nominal or for other special circumstances. The utility may install, maintain, expand and operate their facilities above and below ground within Public Utility Easements (PUEs). This allowance includes the right of access and the right to require removal of any obstructions, including structures, trees and vegetation, fences. SESD may require the owner to remove any such obstructions within the PUE at the owner's expense, or SESD may remove such obstructions at the owner's expense.

OVERHEAD ELECTRICAL POWER LINE CLEARANCES & EASEMENTS

Overhead power lines require additional clearances and easements for safety, access, and maintenance. Typical SESD easements for overhead power lines operating at 12.47 kV to 22.5 kV nominal shall require a 30' total width easement, 15' on either side of the pole. Overhead power lines operating at over 22.5 kV to 46 kV nominal shall require a 60' total width easement, 30' on either side of the pole. No building, structure, or dwelling shall be placed or constructed in the Electrical Easement without prior approval from SESD. No building, structure or dwelling shall be placed or built directly underneath any overhead power lines. Variances shall only be allowed by written approval at SESD's discretion.

Clearances over driveways, roads, streets, highways and water shall meet National Electric Safety Codes.

Overhead power lines shall follow the clearances in the current edition of the National Safety Code or the clearances in Table 1.03.A. whichever is more stringent.

TABLE 1.03.A ELECTRICAL OVERHEAD CONDUCTOR CLEARANCES

| Nominal Operating Voltage | Horizontal Clearance from Conductors | Vertical Clearance from Conductors |
|------------------------------|--------------------------------------|------------------------------------|
| 600 Volts or less | 10 feet | 10 feet |
| 601 Volts – 22,500 Volts | 15 Feet | 15 Feet |
| 22,501 Volts – 138,000 Volts | 30 Feet | 20 Feet |

Trees and other vegetation

Many people are **not** aware that Electric Utilities have the legal right and authority to maintain their electrical transmission and distribution facilities in a manner that promotes a high standard of safe and reliable service to its customers. In addition, customers whose land these facilities are located have a legal obligation to allow Electric Utilities to perform reasonable maintenance and upkeep of their facilities and may not impede these Electric Utilities ability to do so. The Utah Public Service Commission (PSC) has adopted rules that require Electric Utility customers to allow the Utility to sufficiently perform this maintenance as a condition of service. The customer shall permit access by the Electric Utility at all hours to maintain electric distribution facilities on the customer's premises. The PSC and the National Electric Safety Code require that certain clearances be maintained from trees and other vegetation.

Trees and other vegetation shall not be planted under power lines or planted in the easement or clearance zone unless approved in writing by SESD. Trees create electrical outage hazards, fires and unsafe working conditions for personnel. SESD will aggressively prune, trim, cut or otherwise remove trees or other vegetation that may present an outage possibility or hinder access to the power lines, power poles, transformers or associated appurtenances. SESD may require the owner to remove any such obstructions within the PUE at the owner's expense, or SESD may remove such obstructions at the owner's expense.

ELECTRICAL BOX CLEARANCES

All electrical boxes & enclosures 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.

Meters, metering cabinets & enclosures, service disconnect cabinets & enclosures, & CT cabinets, shall have a minimum of 8 feet of clearance in front & 3 feet on the sides of said cabinets & enclosures.

Switchgear Cabinets shall have 12 feet of clearance in front of both sets of doors and 3 feet of clearance on the other sides.

Additional clearances may be required to meet current NEC or NESC codes depending on the application and circumstance.

E1.04 Voltage, Phase and Energy Regulation

A. Available Voltages. Standard electrical services supplied at 60-hertz, alternating current, single-phase or three-phase nominal voltages are listed below. Developer must contact the SESD for the availability of other service options.

Single-phase, 120 volt, two-wire, grounded

Single-phase, 120/240 volt, three-wire, grounded

Three-phase, 120/208Y, four-wire, grounded wye

Three-phase, 277/480Y, four-wire, grounded wye

SESD reserves the right to deny a customer 3-phase service if the SESD determines that single-phase service will adequately supply Consumer's load requirements. SESD reserves the right to deny a customer 1-phase service if SESD determines 3-phase service is in the best interest and beneficial to SESD's electrical system.

B. 3 Phase Service.

3 phase service may, at SESD'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 Consumer, or where, as determined by SESD, it is economically feasible to extend such 3 phase facilities.

SESD 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 1 phase service for such motors. In such an event, Consumer may elect to install 1 phase to 3 phase conversion equipment to operate 3 phase motors.

In general all services rated over 400 amps shall be required to be installed 3-phase. In addition, services rated over 400 amps shall be required to be routed underground.

C. Power Factor Correction.

SESD reserves the right to require the Consumer to install power factor corrective equipment. This equipment shall maintain the power factor on all of consumer's electric power meters to not less than 95% lagging at all times.

D. Load Control.

SESD reserves the right to require Consumers to install equipment to limit load and reduce voltage fluctuations.

E. Voltage Control.

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

F. Fluctuating Load Limitations.

Where large fluctuating 1 phase loads, such as spot welders, are involved SESD 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 Consumer.

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 consumer.

E1.05 Materials

Electrical Equipment

All equipment, enclosures, cabinets, vaults, ground sleeves, and pads including, but not limited to, 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 and secondary junction boxes shall be 10 inches above final grade.

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, SESD shall re-level the equipment at the Developer's expense.

Each transformer or secondary junction box shall have (2) service conduits stubbed out at least 10 feet to each lot. The stub to the lot on the opposite side of the transformer shall extend at least 1 foot past property line.

Developer shall use road base under all electrical equipment pads, ground sleeves, or other required electrical equipment. Road base shall be compacted to 95% compaction, and be tested by a certified, approved, independent testing company. The developer shall pay for the testing costs. A 1" minus gravel may be used in wet locations on a case-by-case approval by SESD.

All sectionalizers, junction boxes, transformer pads, and other electrical equipment shall be listed for their purpose and meet SESD's requirements.

E1.06 Installation

Contractor Requirements

All electrical facilities will be installed by a licensed electrical contractor or journeyman lineman unless otherwise approved. 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. All electrical installations shall comply with the applicable current National Electric Codes, National Electric Safety Codes, OSHA and these Standards. If any inspection or test indicates that work does not meet SESD standards SESD may require that the work be redone.

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

1. Pulling high voltage underground cable;
2. Installing high voltage cable terminations;
3. Setting transformers and switch gears (contractor shall install sectionalizers);
4. Secondary connections shall be connected in 1 phase transformers (exception: contractor shall connect secondary wires in 3 phase transformers);
5. SESD shall furnish & install transformers, primary cable, primary cable terminations, and utility switchgear (SESD will furnish switchgear ground sleeves for contractor to install).
6. SESD will furnish & install all meters.
7. All overhead facilities including extension of risers as shown in the standard drawings, poles, transformers, terminations, line extensions.

The contractor shall furnish & install to SESD's specifications:

1. Primary sectionalizers with 4-point junctions & mounting plates.
2. Transformer ground sleeves.
3. Transformer concrete pads (3 phase transformers).
4. Secondary junction boxes.
5. Secondary underground 600 volt urd cable meeting SESD's specifications.
6. Secondary insulated watertight connectors (six termination positions unless otherwise approved).
7. All conduits, elbows, couplers, pull ropes and all associated appurtenances.

3 phase commercial or industrial applications:

The electrical contractor shall make the secondary connections in the low voltage secondary side of 3 phase pad mounted transformers.

SESD will furnish meterbase for electrical contractor to install on applications of 800 amps or less.

Electrical Contractor (EC) will furnish & install:

1. CT Cabinets & mounting bars
2. Customer Switchgear
3. Main disconnect equipment
4. Secondary service lateral conductors
5. All conduits, other cabinets, junction boxes, gutters, or other electrical service entrance equipment & appurtenances associated with commercial or industrial installations.

Underground Lines

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

Tracer Wire and Pull Ropes

A 12 gauge solid THHN tracer wire shall be installed in each stubbed conduit according to standard drawings.

All primary conduits shall have a 2500 lb. mule tape pulled inside the conduit & securely tied off in each pad or enclosure.

Underground Metal Conduit

All buried metal conduit shall be coated with a 10 mil anti-corrosion protective tape listed for the purpose. Tape shall be applied to conduits until 6" above finished grade.

Berms, Slopes, and Hillsides

For installation instructions around berms, slopes, and hillsides contact SESD.

Labels

An imprinted, plastic label shall be securely taped to the end of each conduit run. The label shall indicate whether the conduit run is primary or secondary. The label shall also include the footage measurement of the conduit & the address & direction of where the run ends.

Inspection of Work

All work shall be installed in a neat and workmanship-like manner and shall be inspected by SESD's designated inspector.

Any contractor performing conduit installation for SESD shall inform SESD's inspector at least 24 hours prior to the start of each of the following phases of construction; vault or manhole placement, conduit run construction, conduit system burial, and conduit installation completion.

Materials installed and/or workmanship performed without prior adequate notice to SESD's inspector will be subject to rejection by SESD. The contractor shall remove and replace, at their expense, rejected items with materials and workmanship meeting SESD standards. No work shall be backfilled or covered until such work has been approved by SESD's inspector. If any inspection or test indicates that work does not meet SESD standards SESD may require that the work be redone.

Final acceptance of the completed conduit system shall not be done until cables have been installed and SESD is satisfied with the quality of work performed by the contractor.

In general, development inspections will follow the following inspection process:

1. Survey, trench, backfill and conduit inspection;
 - a. Survey markers on lot lines, easements, streets, etc.
 - b. Trench depth, width, etc.
 - c. Conduit sizes, placement, elbows, etc
 - d. Sand, E-fill, Caution tape, etc.
2. Compaction and power box inspection
 - a. Compacted road base or gravel under boxes
 - b. Correct size, type, number of power boxes
 - c. Power box placement, plumb and level
3. Pull ropes, box placement, finished grade inspection
 - a. Mule tape in all conduits
 - b. Conduits labeled, marked, cut to height, etc.
 - c. Power boxes placement with grade, property lines, etc.
4. End of Construction Inspection "Walk Through"
 - a. Recheck of all power boxes for damage, level, placement, etc.
 - b. Recheck all conduits cut to correct heights, etc.
 - c. Recheck mule tape in all conduits, stubs marked, etc.
5. Final Acceptance Inspection
 - a. One year after the Contractor or Developer passes the End of Construction Inspection, he or she must schedule a Final Acceptance Inspection

When a Developer feels the installation is complete and ready for an End of Construction Inspection, the developer shall schedule a Final Construction Inspection with SESD. If the development passes the Final Inspection, the inspector will sign off and turn the development in for a Permanent Power Clearance for Installation and Energization. If the development does not pass inspection, the inspector shall issue a correction/reinspection punch list of the items to be corrected.

SESD will not inspect an installation after the trench is buried. If the trench is buried before the SESD inspection it will be the developer's responsibility to reopen the trench. The developer shall call the office and schedule inspections when inspections are required. Multiple inspections will occur while a development is in progress.

Any broken or damaged electrical facilities will be replaced by the developer or at the developer's expense.

E1.07 System Requirements

Additional Capacity Requirements

In the event a Consumer makes application for additional capacity, subject to provisions of the applicable rate schedule, Consumer shall install the necessary transformer capacity, service wires and other equipment required to adequately serve Consumer's requirements. All applications for service involving the furnishing of additional capacity or equipment by SESD may be required of the Consumer. The application shall state that any service entrance wiring and main switches required for the utilization of such additional capacity to be furnished by consumer shall be considered as permanent fixtures belonging to the property being served and property except for replacement or enlargement if necessary.

Substations

Substation May Be Required of Consumer. SESD reserves the right, where unusual substation capacity or voltage is involved, to require the Consumer to install the necessary complete substation as provided for in SESD's rate schedule. In such an event, the Consumer will receive the substation ownership discount specified in the applicable rate schedule. Where the Consumer furnished the necessary complete substation equipment to take service at primary service voltage, such equipment shall be owned and maintained by the Consumer and shall include the necessary transformers, structure, controls, and protective equipment, and shall be of such quality and construction as meets SESD's approval.

E1.08 Commercial & Industrial Installation Service Requirements

A. General

Service lateral conductors & conduits shall be sized according to applicable NEC, NESC codes. SESD shall approve all locations & installations of conduits, service disconnection means, and meters. All commercial & industrial buildings shall have an accessible, **exterior** main service disconnecting means capable of disconnecting all ungrounded conductors in a building or other structure from the service entrance conductors, unless otherwise approved by SESD. All services and service equipment shall meet current National Electric Codes.

B. Materials

Only electrical grade materials shall be used. Buried RMC/IMC shall be coated with a 10 mil anti-corrosion tape below grade and tape shall extend 6" above finished grade. RMC/IMC shall be used for all above grade service entrance conduits. Consumer shall provide & install underground service lateral conductors from the service at the building to utility power source or service point.

C. Trenching

Service lateral trenches shall be 3 feet in depth. Trenches shall be as straight as possible from the secondary service point to the Customer disconnect, CT cabinet or meterbase. The bottom of the trench shall be as level as possible and free from large rocks & debris

D. 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 foundation by a minimum of (2) two 3/8"x 3" concrete anchors. Service entrance conduits shall be one continuous, unbroken conduit from the elbow to the point of attachment at the meterbase hub.

E. Locations

Locations of service lateral conduits shall be approved by SESD. The locations of the service equipment shall be approved by SESD. Service, service equipment, meter(s) and main disconnect(s) shall be located on the exterior of buildings or structures and remain accessible at all times. Meter(s) and main disconnect(s) shall be kept a minimum of 36 inches of any Natural Gas meters, window wells, windows, doors, stairs and any material deemed to be combustible or unsafe. Service equipment shall meet any and all applicable NEC, NESC codes. SESD reserves the right to accept or reject any locations of metering equipment, services or service equipment.

F. Identification

"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." (Current NEC)

G. Grounding & Bonding

All grounding & bonding of services shall meet current NEC Codes.

H. Ground-Fault Protection of Equipment

- a. Ground fault protection of equipment shall be provided for services of a solidly grounded wye electrical system of more than 150 volts to ground but not exceeding 600 volts phase-to-phase for each main disconnecting means rated 1000 amps or more according to the current NEC.

I. Service Point

- a. Underground service lateral conductors from the SESD's Secondary service point up to the line side of the main disconnecting means shall be installed, maintained, and owned by the Consumer. SESD assumes no liability for replacement of secondary Service entrance conductors for commercial or industrial installations.

E1.09 Metering

A. General

SESD will furnish and install all electric revenue meters. Normally outdoor socket-mounted meters will be used by SESD whenever practical. The meter base will be furnished and installed by Consumer's electrical contractor for all normal installations.

B. Instrument Transformers

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

C. Location

SESD shall approve the location of service and meter(s). The following conditions must be met for the location of all meters:

1. **Visibility.** All entrance wiring connections shall not be concealed and shall always be in plain view for inspection by SESD.
2. **Protection.** No meter 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. Bollards may be required to protect meters and services.
3. **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.
4. **Multiple Meters.** When a combination 3 phase and 1 phase service is supplied to the same premises, all meters and service entrance switches shall be at the same location and permanently and clearly marked or identified.
5. **Clearance.** Meter(s) shall have (8) eight feet of clear, unobstructed, level workspace in front of meter(s).
6. **Accessibility.** Meters shall not be enclosed or covered by awnings, carports, sheds, garages, etc. Meter(s) shall remain accessible at all times.

D. Service Meter Base.

Residential meter bases shall be furnished and installed by the Contractor according to SESD standard drawings. No smaller than a 100 amp service will be accepted other than by approval from the SESD electrical designer. The meter base shall be kept sealed and under the control of the SESD at all times.

E. 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 the Electric Meter Shop. For services rated 200 amps up to 800 amps, SESD will supply the meterbase & test switch for contractor to install. For services rated over 800 amps, contact SESD.

- F. The Contractor's portion shall be completely installed, inspected, and the electrical contract fees paid before SESD will complete the final electrical hookup.

G. Location of Multiple Meters.

Where more than one meter is required for a building, such as an apartment house, all of the meter sockets shall be located side by side at an outside location as determined by the SESD. All meters shall be clearly identified as to which unit they serve.

H. 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. 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 Consumer at Consumer's expense.

I. Meter Accessibility due to structural changes.

In the event a structural change is made by the owner that results, in the opinion of SESD, to be an undesirable meter location, the meter socket, meter cabinet, and/or service entrance installation shall be

moved by the Consumer at his/her expense to an accessible location as determined by SESD. 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 Consumer shall move, at Consumer's expense, the meter socket and service entrance to a location that is acceptable to SESD.

J. Outdoor Meters for Non-Residential General Service.

All single phase meters installed for Non-residential use shall be socket type. The meter socket shall be furnished and installed by Consumer at Consumer's expense.

K. Instrument Transformer Metering.

In all outdoor installations requiring current transformers, whether 1 phase or 3 phase, the Consumer shall provide an approved meter loop for meter connections. SESD shall furnish any instrument transformers, meter bases, or other devices required, to properly meter the Consumer's electrical needs. Such instrument transformers and devices shall be installed by SESD.

L. Current Transformer Cabinet.

Any cabinets required to house said instrument transformers and accessory equipment shall be furnished and installed by Consumer at Consumer's expense. This requirement applies to all installations. All cabinets shall be approved by SESD. Such metering or instrument cabinets are for the exclusive use of SESD, and shall, at all times, be under the control of, and kept sealed by SESD.

M. SESD Net Metering System A debit and credit metering process in which the customer owns and operates a qualified generating device that interconnects with the Utility's electrical system.

E1.10 Street Lighting

A. General.

If street lighting is installed or required, then all associated conduit & wiring shall comply with SESD's standards. SESD may require a metering point to meter street light usage. SESD may require a contract be in place wherein a monthly fee will be charged and paid by City, consumer or Home owners association, as the case may be. Contact SESD for specific requirements for the application.

SESD will review and approve any street lighting layouts and connection points.

B. Grounding & Bonding.

In general street lights shall be grounded and bonded according to the current NEC. A bonding jumper shall be connected from a grounding rod or ufer in the pole base & bonded to the street light pole using NEC approved methods and a separate grounding conductor shall be installed from the pole base to the closest secondary pedestal or transformer. The bonding wire and the grounding wire shall be a minimum #10 awg and meet all other NEC requirements.

C. Wiring & Fusing.

A 10 amp in-line fuse & fuse holder shall be installed in the base of the street light pole on the 120/240 volt ungrounded conductors.

E1.11 Temporary Installations

- A. Temporary electric power installations shall be permitted during the period of construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment, or similar activities.
- B. Temporary power service shall be removed immediately upon completion of construction or purpose for which the wiring was installed.
- C. Temporary power installations shall not be in service longer than 360 days unless otherwise approved by SESD
- D. Temporary power installations installed longer than 360 days are subject to be disconnection by SESD until the service is installed in a permanent condition.

E1.12 Residential Service Requirements

A. General

1. Development Point of Service.

SESD determines the point of delivery for all developments or buildings. SESD 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 drop or service lateral. Multiple services drops or laterals are only allowed at SESD's discretion.

The service point for residential service is the line side of the meter terminals for overhead and underground installations.

2. Service Requirements.

The service shall be defined as the facilities that consist of approved service conduit, equipment, cables and appurtenances for delivering electric energy from the serving utility to the premise wiring system of the buildings being served.

3. Service Equipment.

(Also see definitions) The service equipment shall be defined as the necessary equipment consisting of circuit breaker(s), or switch(es), or fuse(s) and their accessories, connected to the service conductors to a building or other structure, or an otherwise designated area, and intended to constitute the main control and cutoff of the supply.

Residential service equipment shall be an exterior combination meter base and main disconnect device capable of disconnecting all ungrounded conductors in a building or other structure from the service entrance conductors. The service, service entrance cables and appurtenances shall meet current National Electric Codes and these Standards.

4. Service Lateral Conductors & Conduit.

All service entrance conductors and any conduit enclosure shall be continuous, unbroken, and completely exposed for external inspection throughout their entire length, extending from point of termination with SESD's service wires to the meter socket (or meter cabinet if installed) and thence to Consumer's service entry safety switch or main disconnecting means. Service conductor type & size shall meet current NEC, NESC, and SESD Standards.

B. Underground Residential Service Lateral Requirements

Conductor, conduit sizes, & conduit depths; Refer to following table

TABLE 1.12.A RESIDENTIAL SERVICE SIZES

| Service Size | Service Conductor Size | Conduit Size | Conduit Depth (ft) |
|---------------|------------------------|--------------|--------------------|
| 100 amp | #2 alum. | 2 ½" | 3' |
| 125 amp | 1/0 alum. | 2 ½" | 3' |
| 150 amp | 2/0 alum. | 2 ½" | 3' |
| 200 amp | 4/0 alum. | 2 ½" | 3' |
| 201- 400 amps | Contact SESD | | |

See footnote¹

1. Materials

Only electrical grade materials shall be used. Factory schedule 40 pvc or schedule 40 fiberglass long sweep elbows shall be used for any elbows or bends 45 degrees or greater (exception; rigid metal elbows shall be used on a building service riser). Any Rigid Metal Conduit (RMC) or Intermediate Metal Conduit (IMC) shall be coated with a 10 mill. anti-corrosion tape below grade and tape shall extend 6" above finished grade. RMC or IMC shall be used for all above grade service entrance or service lateral conduits. Consumer shall provide service lateral wire from house to power source according to SESD standard drawings.

2. Trenching

Service lateral trenches shall be 3 feet in depth. Trenches shall be as straight as possible from the secondary service point to the Customer disconnect or meterbase. The bottom of the trench shall be as level as possible and free from large rocks & debris. Backfill shall be carefully placed on conduits & shall be free from large rocks or other debris.

3. Service Lateral Conduits Support and Attachments

Service conduits shall be securely attached to the foundation of house or building by means of unistrut, concrete anchors, unistrut type clamps. Unistrut shall be securely attached to foundation by a minimum of (2) two 3/8"x 3" concrete anchors. Unistrut shall be long enough to attach communications conduits, typically 36". Service lateral conduits shall be one continuous, unbroken conduit from the elbow to the point of attachment at the meterbase hub.

4. Location(s)

¹ *Table 1.12. A Note: The conductor & conduit sizes in Table 1.12.A are for typical installations. Larger conductors and conduits may be required for voltage drop, unusual distances, unusual bends or other circumstances. Refer to current NEC for service conductor sizes for other types of conductors & installations.¹*

Meter/main disconnect shall be located on the side of the house within the front 10 feet of a residential dwelling. The Service shall be located on the same side of the dwelling as the power source, the power source being defined as a transformer or junction box.

The service shall not be enclosed or covered by any means. The service shall not be placed under carports or inside garages, sheds or the like. The service shall not be placed in any location that is subject to damage or obstruction. The area around the service shall be level and unobstructed. The service shall have 8 feet of clear access in front of the meter. Meter/main disconnect shall be accessible at all times. Meter/main disconnect shall be kept a minimum of 36 inches from any Natural Gas meters, window wells, windows, doors, stairs.

Meter/main disconnect shall meet any and all applicable NEC, NESC codes. SESD reserves the right to accept or reject any locations of meterbase/ main disconnects.

Service equipment located greater than 300 feet from the utility source shall be installed at primary voltage. Service equipment located greater than 150 feet from the utility source may require a secondary junction box.

Refer to 1.09 Metering for additional requirements

5. Service Lateral Conductor Specifications

The service lateral conductors may be either copper or aluminum, and shall be continuous without any joints, splices or connections, extending from the point of connection at junction box or transformer to the termination of same at the meter socket or meter cabinet and thence same shall continue without joints, etc., to Consumer's service entrance safety switch.

1. The Consumer shall have electrical contractor provide at the power source (source being defined as the junction box or transformer), sufficient excess service lateral conductor length or "tails" (36 inch minimum) so that SESD can connect same directly to the utility secondary feeder conductors.
2. The service lateral installation shall conform in every respect to SESD's specifications, as to conductor connectors, and the method of making connections and all other related matters involved.
3. The service lateral 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: See Table 1.12.A for service conduit & conductor sizes.

C. Overhead Residential Service Drop Requirements

1. General

SESD shall be consulted for all locations of overhead services. Overhead services shall also include mast knob and service grips. Wiring shall meet amperage load and installation requirements as indicated in the NEC, NESC.

- a. Definitions. (Current NEC) The service shall be defined as the facilities that consist of approved service entrance conduit, equipment, cables and appurtenances for delivering electric energy from the serving utility to the wiring system of the premises served.
 - b. The Service Drop is defined as the overhead conductors between the utility electric supply system and the service point.
 - c. The service drop shall extend from the secondary wiring (source) to the top of the customer service mast connection point. Consumer shall install all service conduit and conductors to the weatherhead service point of connection at the service for overhead installations, and from the building to the power source for underground installations according to SESD's standards.
 - d. Services rated over 400 amps 1-phase shall be routed underground.
2. Service Drop Support and Attachments. For one story buildings, or where conditions will not permit proper ground clearance to be maintained by SESD's service wires, Consumer shall install, at consumer's expense, suitable conduit or service entrance mast pipe or other structure or support that will properly support the SESD's service drop conductors and to maintain the minimum ground clearance as required by the NESC.
3. Service Entrance Weatherhead Clearance. The service entrance weatherhead shall be located so as to meet or to exceed NESC clearance from readily accessible windows, doors, or porches. The weatherhead 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. The top of the weatherhead shall be no less than 30 inches and no more than 48 inches above the roof.
4. Service Entrance Mast Pipe. This installation shall be made by Consumer, at his/her expense, and shall conform to SESD's specifications. The service entrance mast pipe shall be of electrical grade galvanized rigid steel (RMC) or Intermediate rigid metal (IMC) of not less than 2 inch inside diameter and shall be attached to the wall of the building by means of an adequate number of approved fastening devices, but no less than (2) two attachment points per riser conduit. 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 weatherhead located at the top of the mast pipe to Consumer's meter socket base. The service mast pipe shall extend above the roof surface (through weatherproof roof flashing) so that the point of attachment of SESD's service wires to the mast pipe will be no less than 30 inches and no more than 48 inches above said roof line, plus such additional height as is necessary so that the point of attachment of SESD's service wires will maintain minimum ground clearance, specified in the NESC.
5. Service Drop Attachment to Buildings. The consumer will furnish and SESD will install the necessary attachment brackets and appurtenances to attach SESD's service wires to Consumer's service drop termination facilities. SESD further reserves the right to require that the installation of the necessary mast pipe or equivalent facilities required supporting SESD's service wires, be made by Consumer 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 SESD's wires and attachments, shall be installed by Consumer at Consumer's expense.

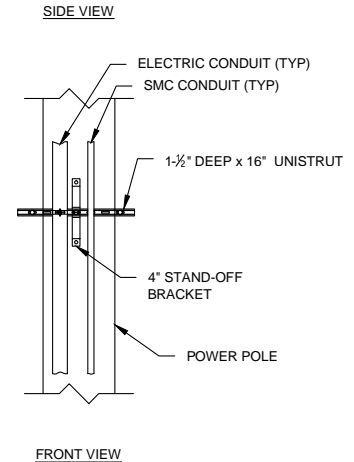
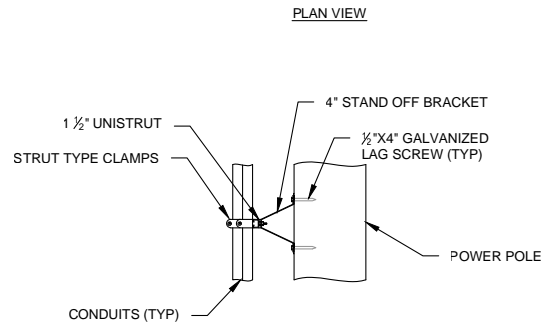
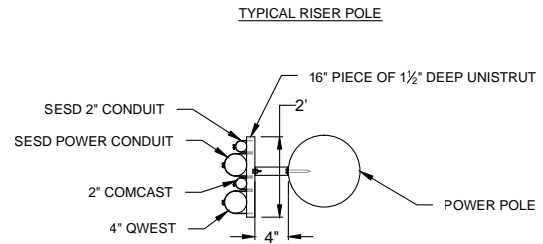
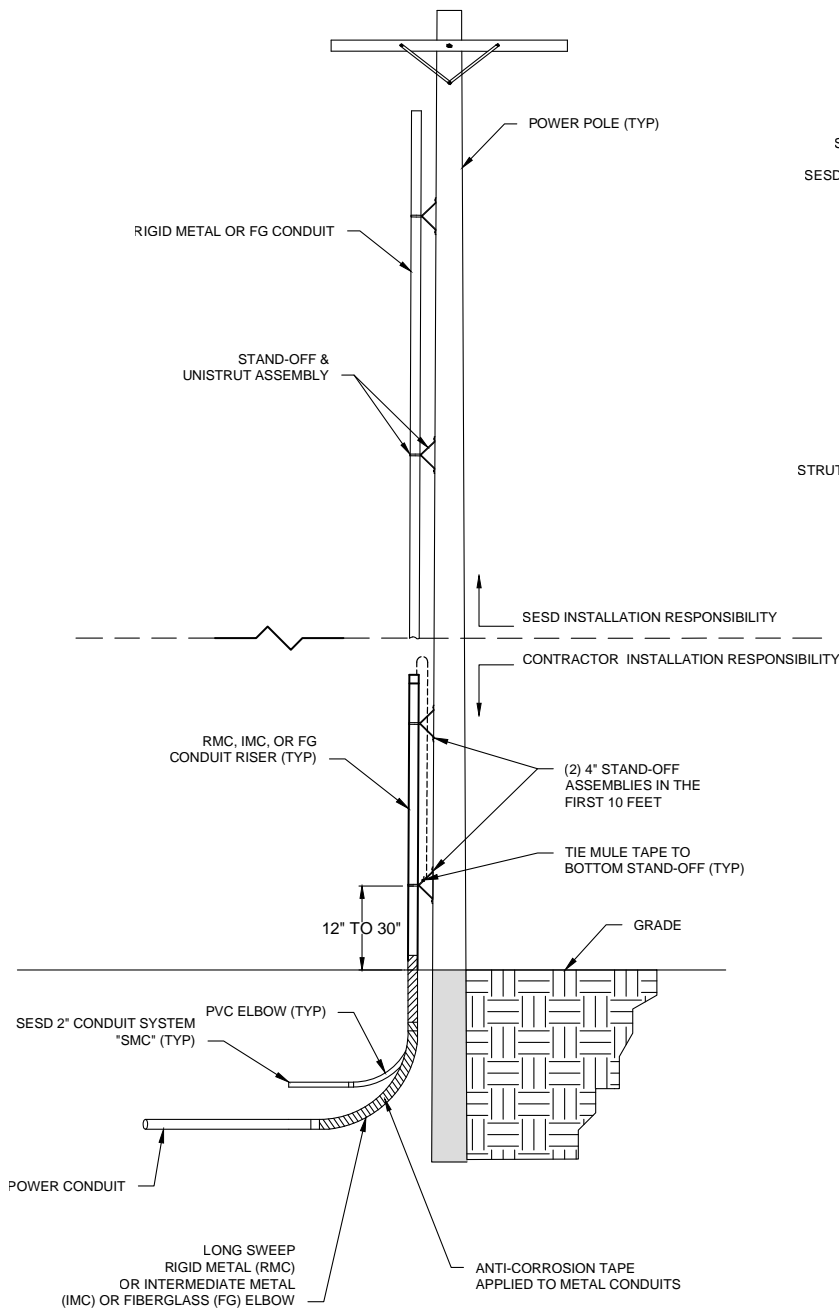
6. Service Drop Conductor Ground Clearance. The service drop conductors must be located at such height as will enable adequate clearance to be maintained through the entire service drop length. The minimum ground clearance shall be as specified by the NESC, but not less than 12 feet over driveways not 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.
7. Service Entrance Conductor Specifications. 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 Consumer's service entrance safety switch, fuse or breaker. The Consumer shall have electrical Contractor provide at the service entrance weatherhead, sufficient excess service entrance conductor length or "tails" (18 inch minimum) so that SESD can connect same directly to the service drop conductors.
 - a. The service entrance installation shall conform in every respect to SESD's specifications, as to conductor connectors, and the method of making connections and all other related matters involved.
 - b. 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 1.12.A for service conduit & conductor sizes.
8. Main Breaker. The entrance safety switch or main breaker ampacity shall be not less than the rated ampacity of the service conductors. Other specifications, including conductors, shall conform to the latest edition of the National Electrical Code.
9. Upon special application, SESD 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 SESD, justify the same. In no event will 2-wire service be furnished except at SESD's option.
10. Temporary Service Drops. 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.) SESD will install a standard temporary service drop, at Consumer's expense. SESD's General Service Rate shall apply. Where the temporary service installation requires additional facilities in excess of the aforesaid standard service drop (such as an extension of SESD's primary line), such installation will be at the consumers expense. Temporary service typically may not remain in service for periods longer than 1 year.
11. 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 is supplied through 1 meter, the furnishing of such service shall be provided and installed by the facility owner.
12. Load to be Balanced on Circuits. The Consumer 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 SESD's service are properly balanced at all times.
13. Temporary Service to be installed on Consumer's Pole. All such temporary service drops shall be supported on a pole or post as approved by SESD and shall be installed by Consumer at his/her expense. No service equipment is allowed on SESD poles.

E1.13 Multi-Family Dwelling Unit Service Requirements

A. General

Service lateral conduits shall be a minimum of 3 inches in size for multi-family dwelling units. Service stubs from SESD's power source shall be increased in size to a minimum of 3 inches in diameter. Secondary junction pedestals may be required to be increased in size to allow for larger conductors. All other residential service requirements apply. A load calculation form shall be filled out for multi-family dwellings and submitted to SESD. All other Residential service requirements apply.

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TYPICAL CONTRACTOR MATERIALS FOR (1) ONE POWER CONDUIT RISER

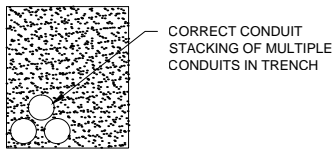
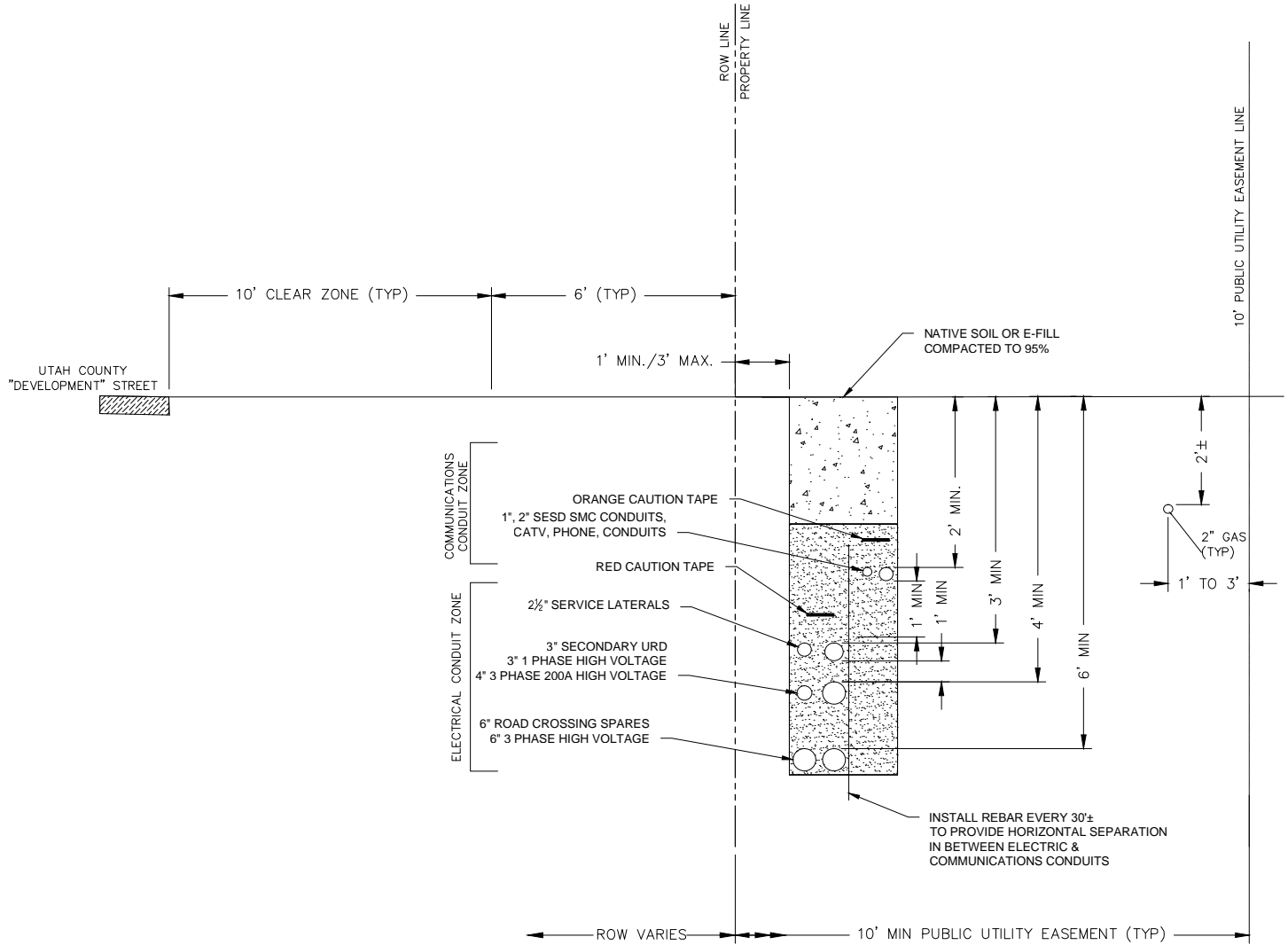
note: additional materials will be required for additional riser conduits

- (4) 10 FOOT LENGTHS OF RIGID METAL(RMC) OR INTERMEDIATE METAL(IMC) OR (2) 20 FOOT LENGTHS FIBERGLASS (FG) CONDUIT FOR RISER CONDUIT(S)
- (4) 4\"/>

- NOTES:**
1. CONTRACTOR TO FURNISH ALL MATERIALS FOR THE COMPLETE RISER(S) INSTALLATION.
 2. CONTRACTOR TO INSTALL THE RISER FOR THE FIRST 10 FEET OF THE RISER & FURNISH MATERIALS FOR SESD TO FINISH RISER.
 3. SESD SHALL INSTALL THE RISER FROM THE FIRST 10 FEET THE REST OF THE WAY UP THE POLE.
 4. ALL POWER CONDUITS TO BE RIGID METAL (RMC) OR INTERMEDIATE METAL (IMC), OR FIBERGLASS (FG) INCLUDING THE ELBOW.
 5. IF FIBERGLASS IS USED IN 20 FOOT SECTIONS THE FIBERGLASS SHALL NOT BE CUT. THE FG CONDUIT SHALL HAVE FACTORY ENDS TO ALLOW CONNECTION.
 6. CONTRACTOR TO INSTALL (2) TWO STAND-OFF ASSEMBLIES ON THE FIRST 10 FEET OF RISER.
 7. ALL METAL CONDUITS BELOW GRADE SHALL BE COATED WITH ANTI-CORROSION TAPE. THE TAPE SHALL EXTEND UNTIL 6\"/>


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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING TYPICAL PRIMARY RISER POLE | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 101 |

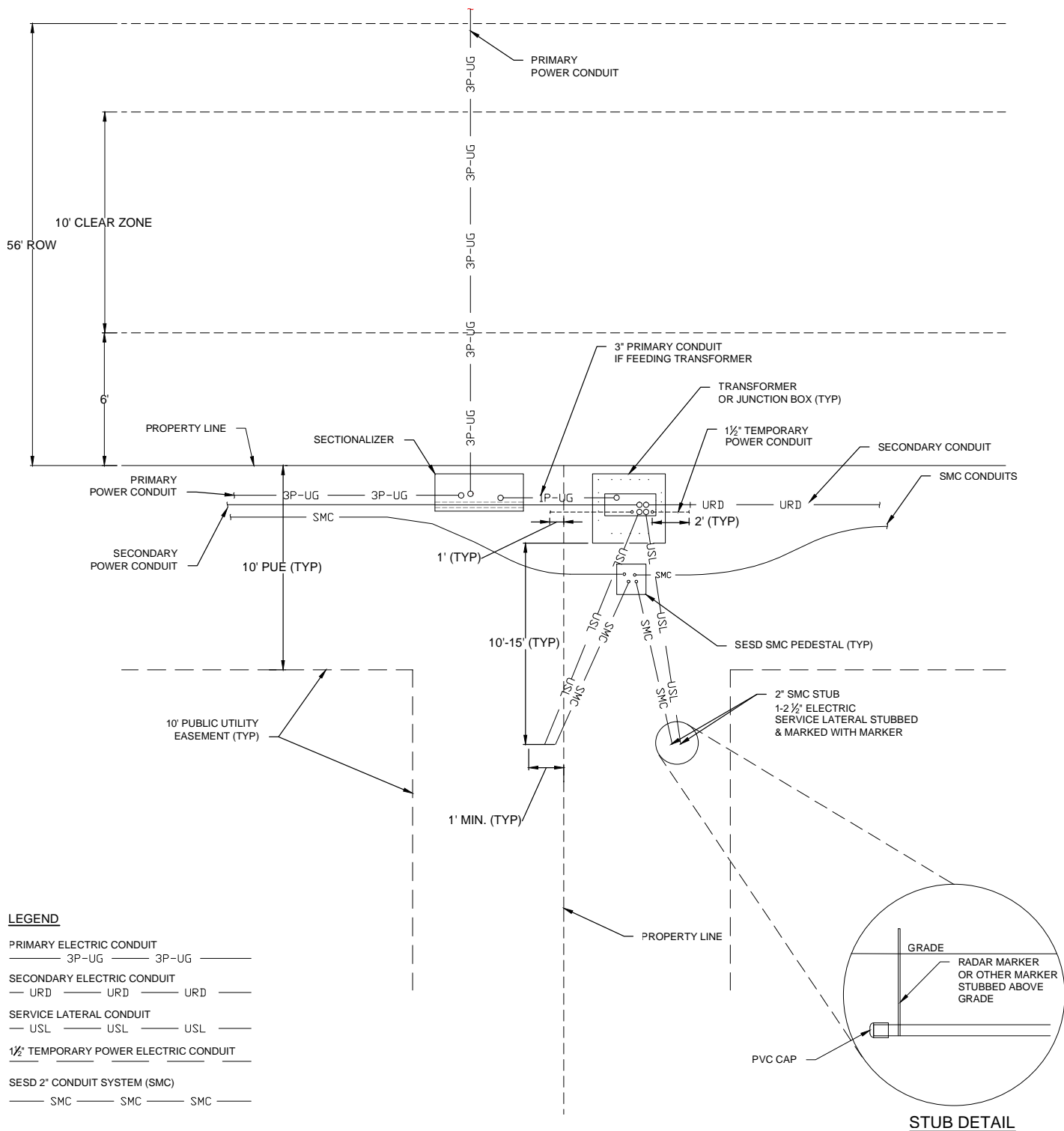
| TYPE OF CONDUIT | (MIN.) DEPTH TO TOP OF CONDUIT |
|---------------------------|--------------------------------|
| CATV, PHONE, SMC | 2' |
| SERVICE LATERALS | 3' |
| 600V SECONDARY ELECTRICAL | 4' |
| 3"-4" 12KV ELECTRICAL | 4' |
| 6" 12KV ELECTRICAL | 6' |



GENERAL TRENCH DETAIL


- NOTES:
- ALL CONDUITS TO BE "SHADED" WITH 6" TO 1' OF SAND.
 - POWER CONDUITS SHALL BE SEPARATED VERTICALLY AND HORIZONTALLY FROM COMMUNICATIONS CONDUITS BY A MINIMUM OF 1' OF SCREENED SAND.
 - TRENCH SHALL BE COMPACTED TO 90% OF DRY DENSITY.
 - 600 VOLTS OR LESS SECONDARY CONDUITS SHALL BE BURIED A MINIMUM OF 4' IN DEPTH.
 - HIGH VOLTAGE PRIMARY CONDUITS SHALL BE BURIED A MINIMUM OF 4' IN DEPTH.
 - IF MULTIPLE POWER CONDUITS ARE INSTALLED IN THE SAME TRENCH THEN ALL POWER CONDUITS WILL BE INSTALLED AT THE DEPTH OF THE LARGEST CONDUIT.
 - POWER CONDUITS SHALL BE PLACED IN THE TRENCH CLOSEST TO THE STREET OR SIDEWALK.
 - COMMUNICATIONS CONDUITS SHALL BE PLACED IN THE TRENCH FURTHEST FROM STREET.
 - TRENCHES SHALL BE KEPT AS STRAIGHT AS POSSIBLE WITH THE BOTTOM OF THE TRENCH LEVEL.
 - MAXIMUM TRENCH DEPTH SHALL BE 7 FEET UNLESS OTHERWISE APPROVED.

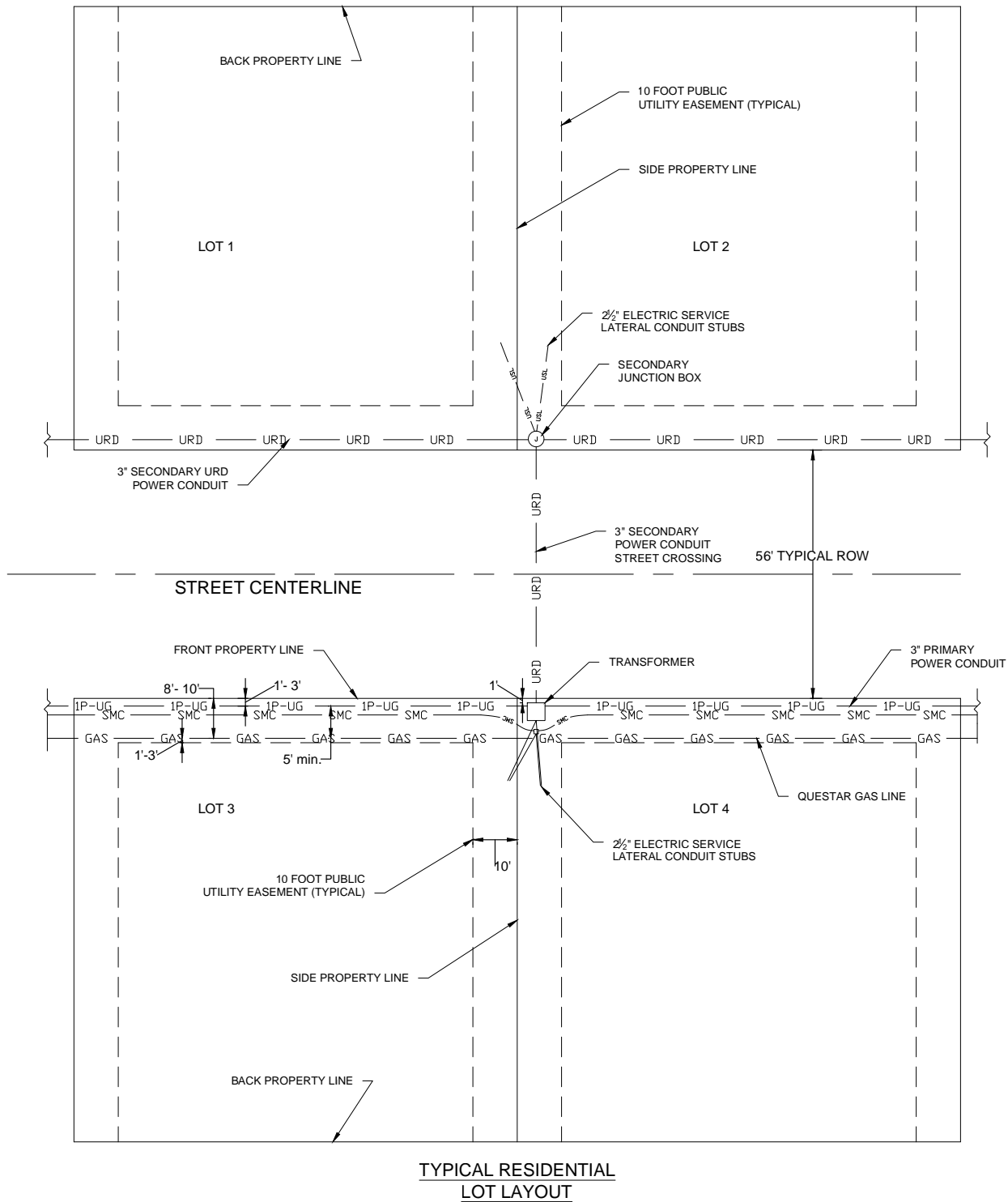
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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING TRENCH DETAIL | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 102 |



NOTES:

- POWER CONDUITS SHALL BE PLACED IN THE TRENCH CLOSEST TO THE STREET & IN THE FRONT OF LOTS, UNLESS OTHERWISE APPROVED.
- SESD 2" SYSTEM CONDUITS, QWEST, COMCAST, OR OTHER COMMUNICATIONS CONDUITS SHALL BE PLACED IN THE TRENCH ON THE SIDE CLOSEST TO THE HOUSE (FURTHEST FROM THE STREET).
- 1 1/2" TEMPORARY POWER CONDUITS SHALL EXTEND 2' FROM THE BOX ON THE SAME PROPERTY AND AT LEAST 1' PAST THE PROPERTY LINE OPPOSITE THE BOX LOCATION. THE TEMPORARY POWER CONDUITS SHALL BE PLACED AT A DEPTH OF 12" BELOW GRADE.
- SERVICE CONDUITS SHALL EXTEND 10' TO 15' INTO THE LOT OR PROPERTY. THE SERVICE CONDUITS SHALL EXTEND AT LEAST 1' PAST THE PROPERTY LINE OPPOSITE OF THE BOX LOCATION.
- ELECTRICAL BOXES SHALL BE PLACED A MINIMUM OF 18" FROM THE PROPERTY LINES SEPARATING PROPERTIES.
- ALL STUBBED CONDUITS SHALL BE CAPPED AND THE ENDS SHALL BE MARKED.


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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING CONDUIT ROUTING TYPICAL LOT | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 103 |

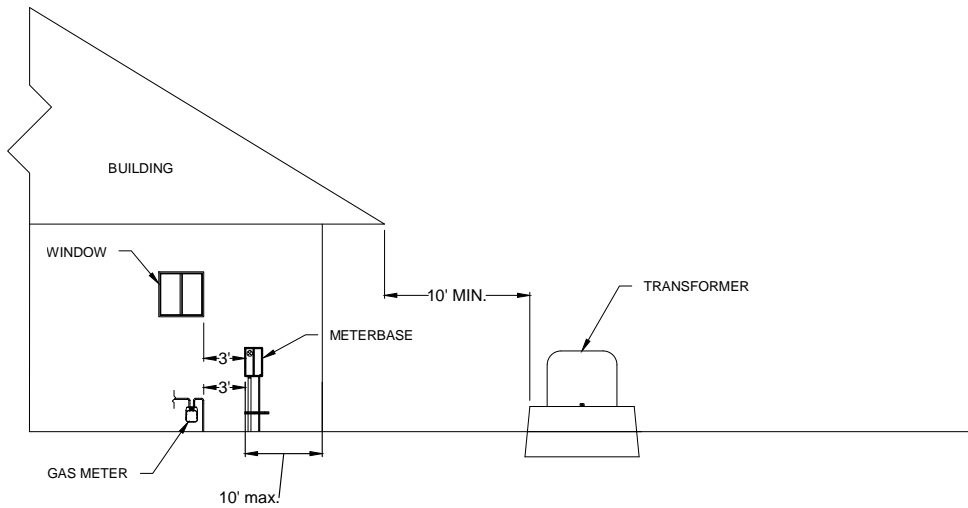


**TYPICAL RESIDENTIAL
LOT LAYOUT**

NOTES:

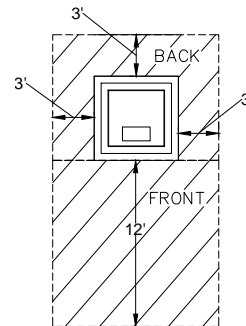
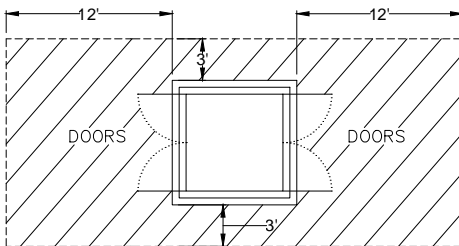
1. ELECTRICAL POWER BOXES WILL TYPICALLY BE INSTALLED IN THE FRONT CORNERS OF LOTS.
2. ELECTRICAL CONDUITS SHOULD BE INSTALLED BEHIND THE FRONT PROPERTY LINE BUT ALSO PARALLEL TO THE FRONT PROPERTY LINES.
3. ELECTRICAL CONDUITS & BOXES SHOULD ALWAYS BE LOCATED WITHIN THE PUBLIC UTILITY EASEMENTS.
4. ELECTRICAL CONDUITS & BOXES SHOULD ALWAYS BE INSTALLED A MINIMUM OF 12" FROM A PROPERTY LINE.
5. FENCES SHALL NOT BE CONSTRUCTED SO AS TO ENCLOSE ANY ELECTRICAL BOX.
6. DOORS OF ELECTRICAL BOXES SHOULD ALWAYS FACE TOWARDS THE STREET.
7. GAS CONDUIT SHOULD BE KEPT AT LEAST 5 FEET FROM ELECTRICAL CONDUITS AND SHOULD BE KEPT WITHIN THE LAST 2 TO 3 FEET OF THE PUBLIC UTILITY EASEMENT.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL LOT LAYOUT | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 103-A |



TYPICAL SWITCHGEAR


TRANSFORMER OR SECTIONALIZER

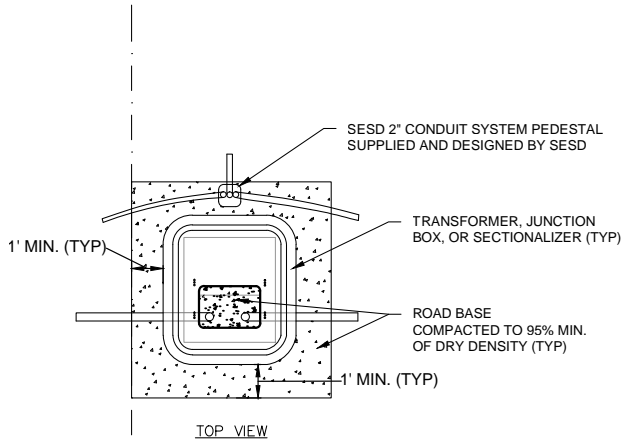


TYPICAL ELECTRICAL CLEARANCES

NOTES:

1. TRANSFORMERS, SECTIONALIZERS & SWITCHGEARS SHALL BE KEPT A MINIMUM OF 10' FROM BUILDINGS MEASURED FROM THE EAVE OVERHANG.
2. TREES, BUSHES, SHRUBS SHALL NOT BE PLANTED IN FRONT OF THE ACCESS DOORS OF ANY ELECTRICAL CABINET.
3. LARGE ROCKS, SHEDS & SIMILAR ITEMS SHALL NOT BE PLACED IN FRONT OF THE ACCESS DOORS OF ANY ELECTRICAL CABINET.
4. THE AREA IN FRONT OF ALL ELECTRICAL CABINETS SHALL BE LEVEL AND KEPT CLEAR FOR AT LEAST 12 FEET.
5. ELECTRICAL ENCLOSURES MAY BE REQUIRED TO BE PROTECTED BY BOLLARDS, ROCKS OR OTHER SUITABLE MEANS.
6. METERBASE SHALL BE KEPT 36" FROM GAS METERS, WINDOWS, DOORS, STAIRS, A/C UNITS. METER SHALL HAVE 8 FEET OF CLEAR SPACE IN FRONT OF METERBASE.
7. NO ELECTRICAL BOXES SHALL BE BURIED OR COVERED.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING TYPICAL ELECTRICAL BOX CLEARANCES | SCALE |
| DESIGN | JRB | | | | | | | NONE |
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| DATE | 5/14/2012 | | | | | | | 104 |



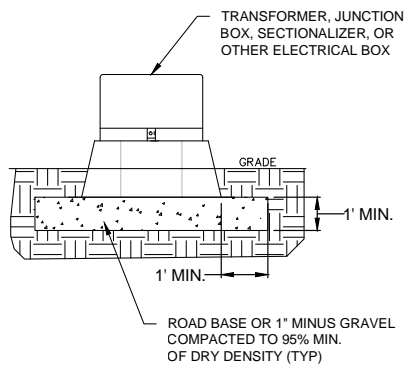
COMPACTED ROAD BASE OR
1" MINUS GRAVEL



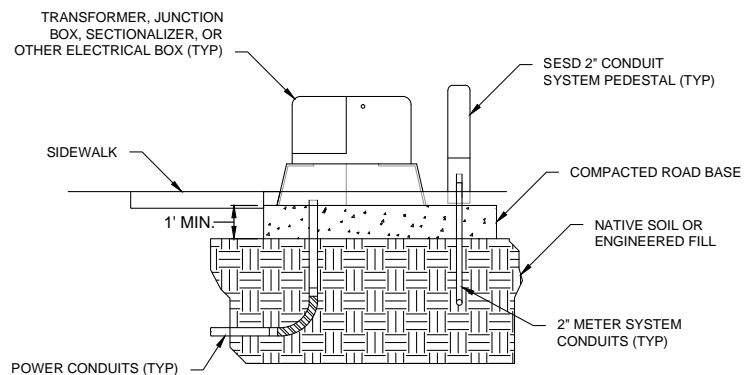
NATIVE SOILS OR E-FILL

TOP VIEW

R-O-W LINE PROPERTY LINE



FRONT VIEW




RIGHT SIDE VIEW

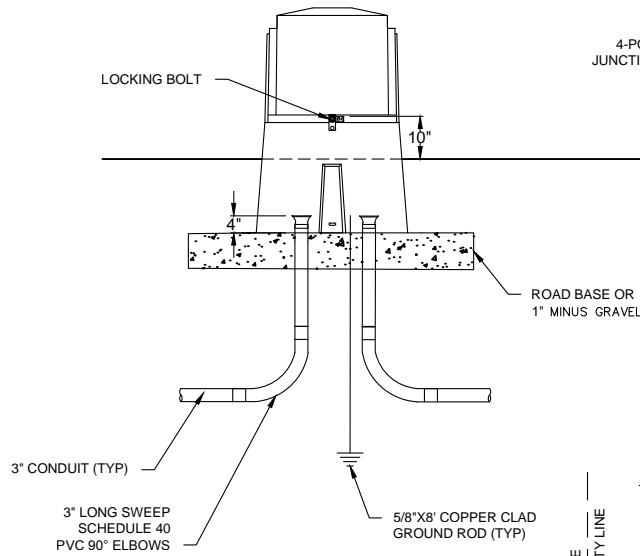
ELECTRICAL BOX COMPACTION

NOTES:

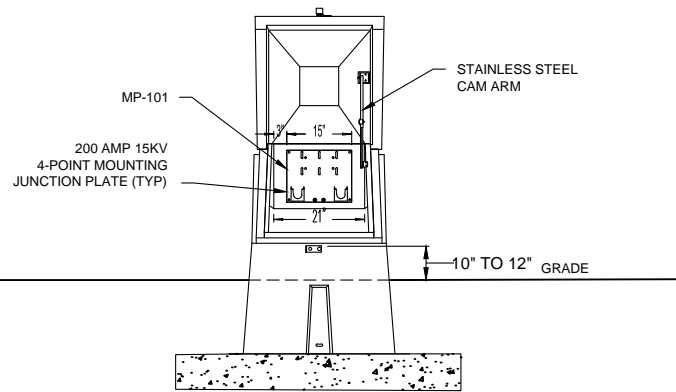
1. ALL ELECTRICAL BOXES, INCLUDING BUT NOT LIMITED TO; SECONDARY JUNCTION BOXES, TRANSFORMERS, SECTIONALIZERS, SWITCHGEARS, 3 PHASE TRANSFORMER CONCRETE PADS, SHALL HAVE ROAD BASE OR 1" MINUS GRAVEL COMPACTIONED TO 95% OF THE DRY DENSITY UNDERNEATH THEM. COMPACTIONED MATERIALS SHALL BE A MINIMUM OF 1 FOOT IN DEPTH, AND SHALL EXTEND A MINIMUM OF 1 FOOT PAST ALL SIDES OF THE ELECTRICAL BOX BEING INSTALLED. IF A SIDEWALK IS PRESENT, THE ROAD BASE SHALL EXTEND TO THE SIDEWALK.
2. SESD MAY REQUIRE A COMPACTION TEST TO BE TAKEN BEFORE THE ELECTRICAL BOXES ARE SET INTO PLACE.
3. ADDITIONAL REQUIREMENTS MAY APPLY. REFER TO SESD FOR QUESTIONS.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING ELECTRICAL BOX BACKFILL & COMPACTION | SCALE |
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| DATE | 5/14/2012 | | | | | | | 105 |

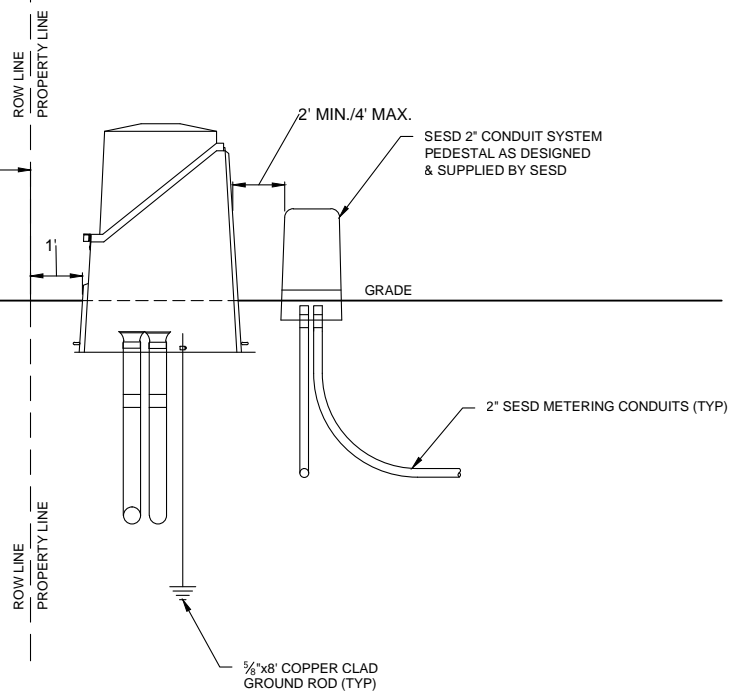
1 PHASE
FRONT ELEVATION VIEW




1 PHASE
FRONT ELEVATION VIEW (DOOR OPEN)



1 PHASE
RIGHT ELEVATION VIEW



- NOTES:
1. SECTIONALIZER SHALL BE **NORDIC ND-150-MG-101-X-X** OR APPROVED EQUIVALENT.
 2. ROAD BASE OR 1" MINUS GRAVEL UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
 3. CONTRACTOR TO INSTALL 1 PHASE FIBERGLASS SECTIONALIZER, 4-POINTS JUNCTIONS AND MOUNTING PLATES.
 4. ONLY APPROVED SECTIONALIZERS MAY BE USED.
 5. SECTIONALIZERS SHALL OPEN TOWARDS THE STREET UNLESS OTHERWISE APPROVED.
 6. 12' OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE SECTIONALIZER AND 3' OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SECTIONALIZERS SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
 7. BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION MAY BE REQUIRED BY SEDS TO PROTECT SECTIONALIZERS FROM DAMAGE.
 8. SECTIONALIZER SHALL BE SET SO THE LOCKING MECHANISM IS 10" TO 12" ABOVE FINISHED GRADE.
 9. CONDUITS INSIDE SECTIONALIZER SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE SECTIONALIZER MEASURED FROM THE INSIDE OF SECTIONALIZER.
 10. A 5/8"X8" COPPER-CLAD GROUND ROD SHALL BE INSTALLED IN EACH SECTIONALIZER.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 1 PHASE SECTIONALIZER | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 106 |

1 PHASE
FRONT ELEVATION VIEW



1 PHASE
RIGHT ELEVATION VIEW



21415 US Hwy 75 NW, Warren, MN 56462
www.nordicbiologicals.com
800-743-5795 ext. — 2018-743-4390 fax

ND-150-MG-101-X-X

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| 0.417% | 0.000% |
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02560.00

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| 206 | | 206 |
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ADDITIONAL AREA

ADDITION, AN AREA

2. FROM DAMAGE

S FROM DAMAGE.

CONCLUSIONS

MEASURED FROM THE


STANDARD DRA

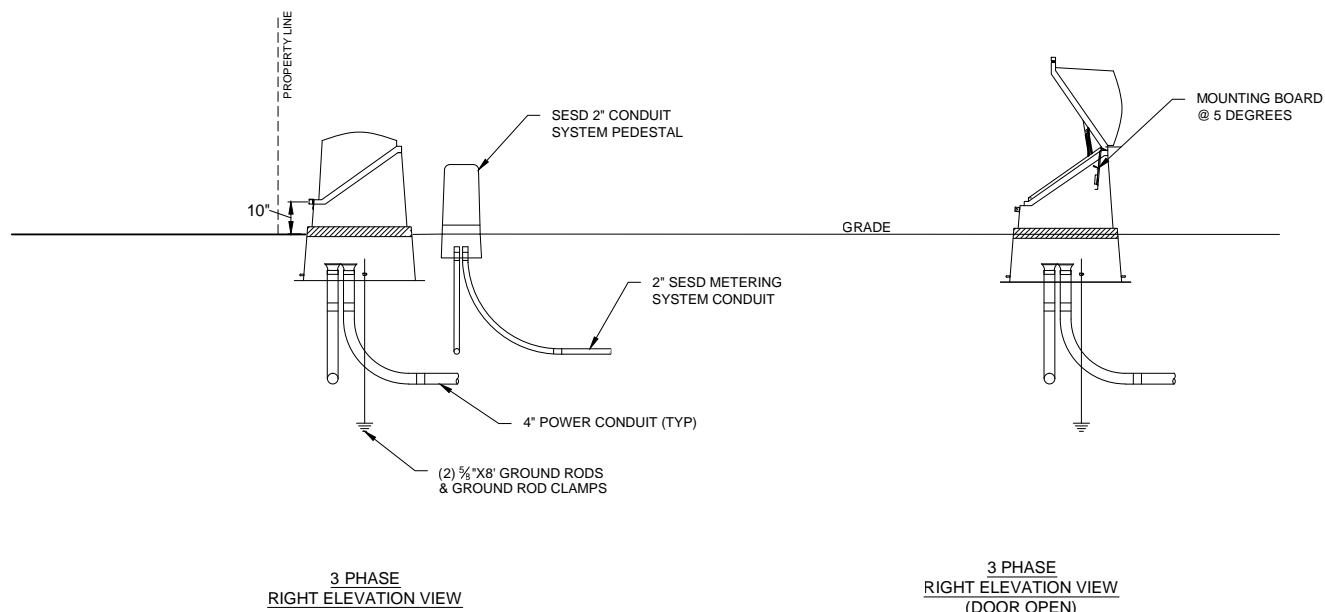
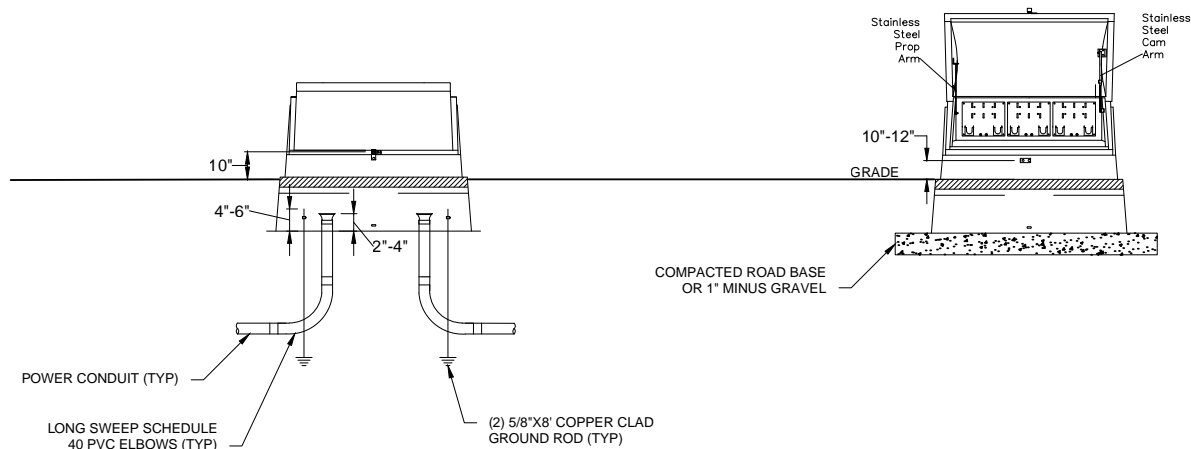
STANDARD DISC

1 PHASE SECTION

NOTES:


1. SECTIONALIZER SHALL BE **NORDIC ND-150-MG-101-X-X** OR APPROVED EQUIVALENT
2. ROAD BASE OR 1" MINUS GRAVEL UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
3. CONTRACTOR TO INSTALL 1 PHASE FIBERGLASS SECTIONALIZER, 4-POINTS JUNCTIONS AND MOUNTING PLATES.
4. ONLY APPROVED SECTIONALIZERS MAY BE USED.
5. SECTIONALIZERS SHALL OPEN TOWARDS THE STREET UNLESS OTHERWISE APPROVED.
6. 12' OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE SECTIONALIZER AND 3' OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SECTIONALIZERS SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
7. BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION MAY BE REQUIRED BY SED TO PROTECT SECTIONALIZERS FROM DAMAGE.
8. SECTIONALIZER SHALL BE SET SO THE LOCKING MECHANISM IS 10" TO 12" ABOVE FINISHED GRADE.
9. CONDUITS INSIDE SECTIONALIZER SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE SECTIONALIZER MEASURED FROM THE INSIDE OF SECTIONALIZER.
10. A 5/8"x8' COPPER-CLAD GROUND ROD SHALL BE INSTALLED IN EACH SECTIONALIZER.

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|--------|-----------|---|--|--|--|----------|--------------|----|---|-------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | | | REVISION | DATE | BY | STANDARD DRAWING 1 PHASE SECTIONALIZER | SCALE |
| DESIGN | JRB | | | | | | NONE | | | |
| CHECK | BC | | | | | | STANDARD NO. | | | |
| DATE | 5/14/2012 | | | | | | 106-A | | | |

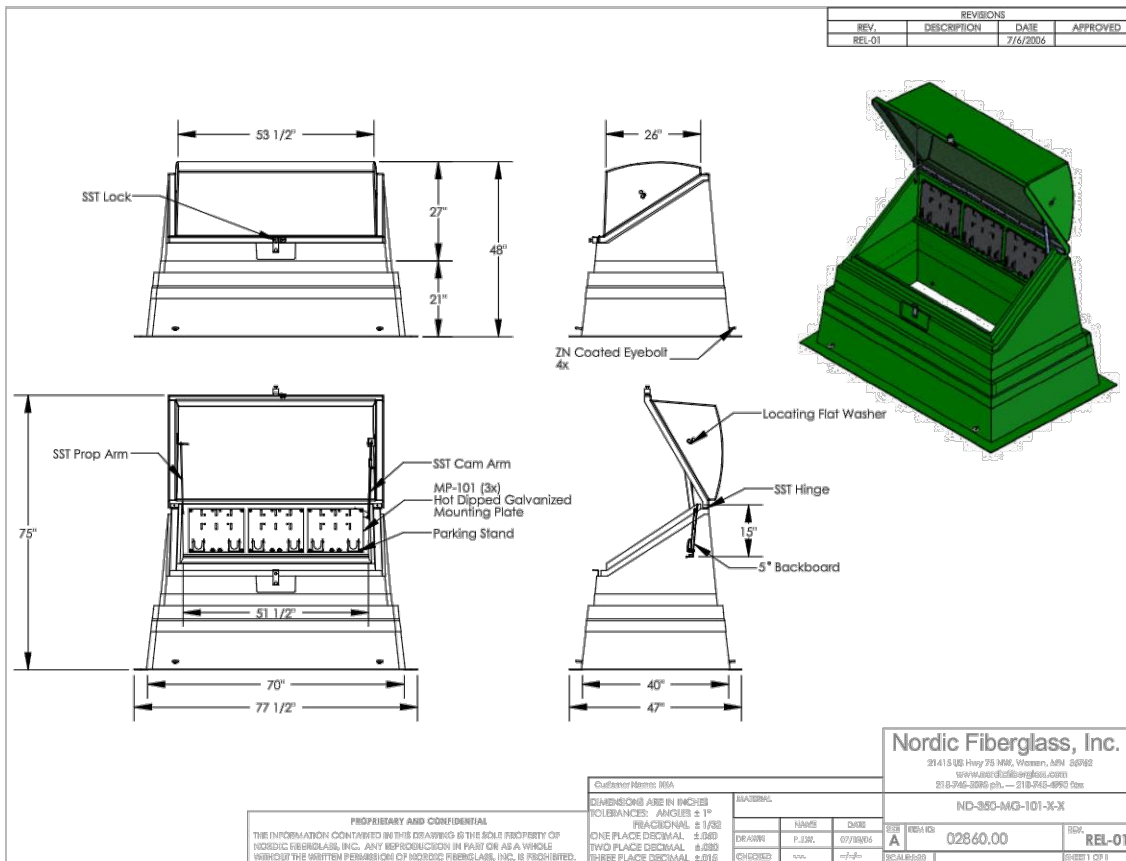


3 PHASE 200 AMP SECTIONALIZER

- NOTES:
1. SECTIONALIZER SHALL BE **NORDIC ND-350-MG-101-X-X** OR APPROVED EQUIVALENT.
 2. ROAD BASE UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
 3. CONTRACTOR TO INSTALL 3 PHASE FIBERGLASS SECTIONALIZER, 4-POINT JUNCTIONS AND MOUNTING PLATES.
 4. ONLY APPROVED SECTIONALIZERS MAY BE USED.
 5. SECTIONALIZERS SHALL OPEN TOWARDS THE STREET UNLESS OTHERWISE APPROVED.
 6. 12 FEET OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE SECTIONALIZER AND 3' OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SECTIONALIZERS SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
 7. SEDS MAY REQUIRE BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION TO PROTECT SECTIONALIZERS FROM DAMAGE.
 8. SECTIONALIZER SHALL BE SET SO THE LOCKING MECHANISM IS 10" TO 12" ABOVE FINISHED GRADE.
 9. CONDUITS INSIDE SECTIONALIZER SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE SECTIONALIZER (MEASURED FROM THE INSIDE OF SECTIONALIZER).
 10. (2) TWO 5/8"X8' COPPER-CLAD GROUND RODS SHALL BE INSTALLED IN EACH SECTIONALIZER.


| | | | | | | | | |
|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 3 PHASE 200 AMP SECTIONALIZER | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 107 |

MOUNTING PLATES

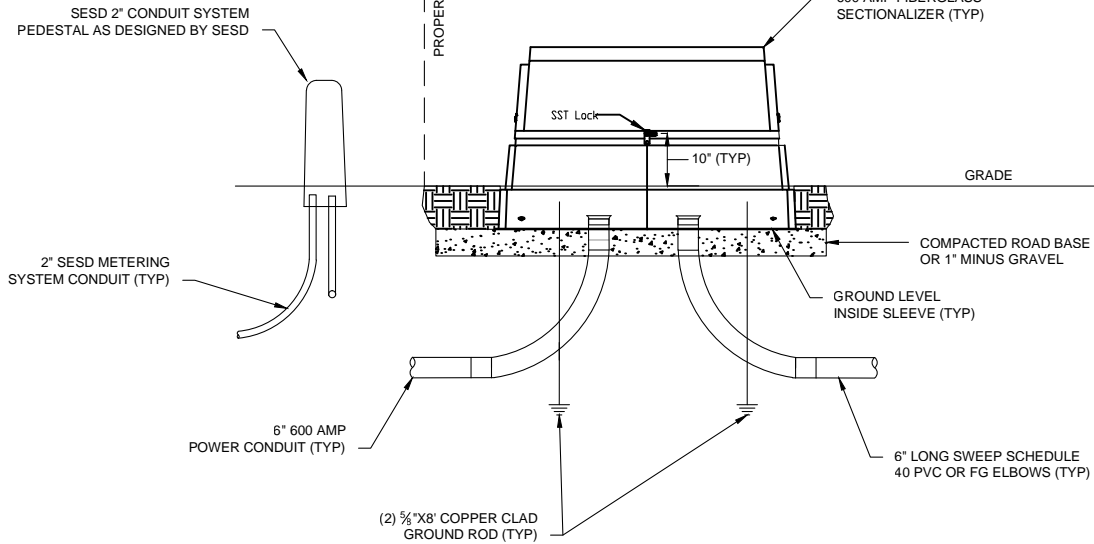
4-POSITION
200A JUNCTIONSMULE TAPE OR
PULL ROPES

NOTES:

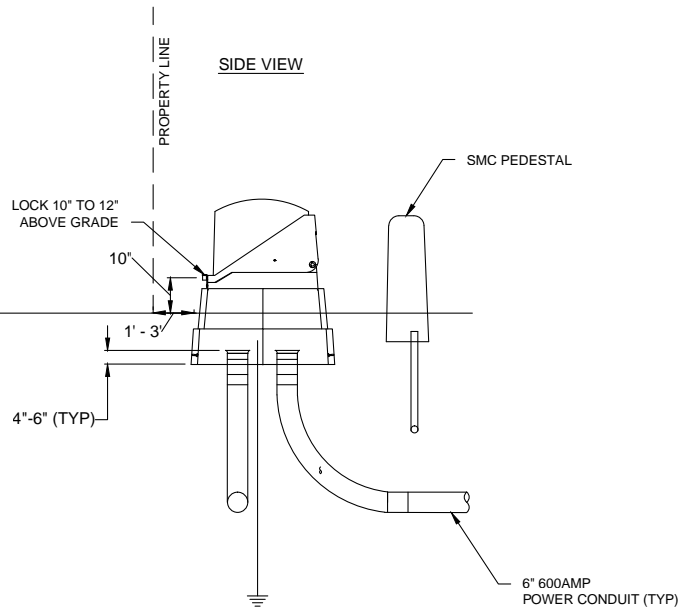
- SECTIONALIZER SHALL BE **NORDIC ND-350-MG-101-X-X** OR APPROVED EQUIVALENT.
- ROAD BASE UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
- SESD TO FURNISH SECTIONALIZER & CONTRACTOR TO INSTALL 3 PHASE FIBERGLASS SECTIONALIZER, 4-POINT JUNCTIONS AND MOUNTING PLATES.
- ONLY APPROVED SECTIONALIZERS MAY BE USED.
- SECTIONALIZERS SHALL OPEN TOWARDS THE STREET UNLESS OTHERWISE APPROVED.
- 12 FEET OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE SECTIONALIZER AND 3' OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SECTIONALIZERS SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
- SESD MAY REQUIRE BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION TO PROTECT SECTIONALIZERS FROM DAMAGE.
- SECTIONALIZER SHALL BE SET SO THE LOCKING MECHANISM IS 10" TO 12" ABOVE FINISHED GRADE.
- CONDUITS INSIDE SECTIONALIZER SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE SECTIONALIZER (MEASURED FROM THE INSIDE OF SECTIONALIZER).
- (2) TWO ½"X8" COPPER-CLAD GROUND RODS SHALL BE INSTALLED IN EACH SECTIONALIZER.

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|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 3 PHASE 200 AMP SECTIONALIZER | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 107-A |

3PH 600A
FRONT VIEW




SIDE VIEW

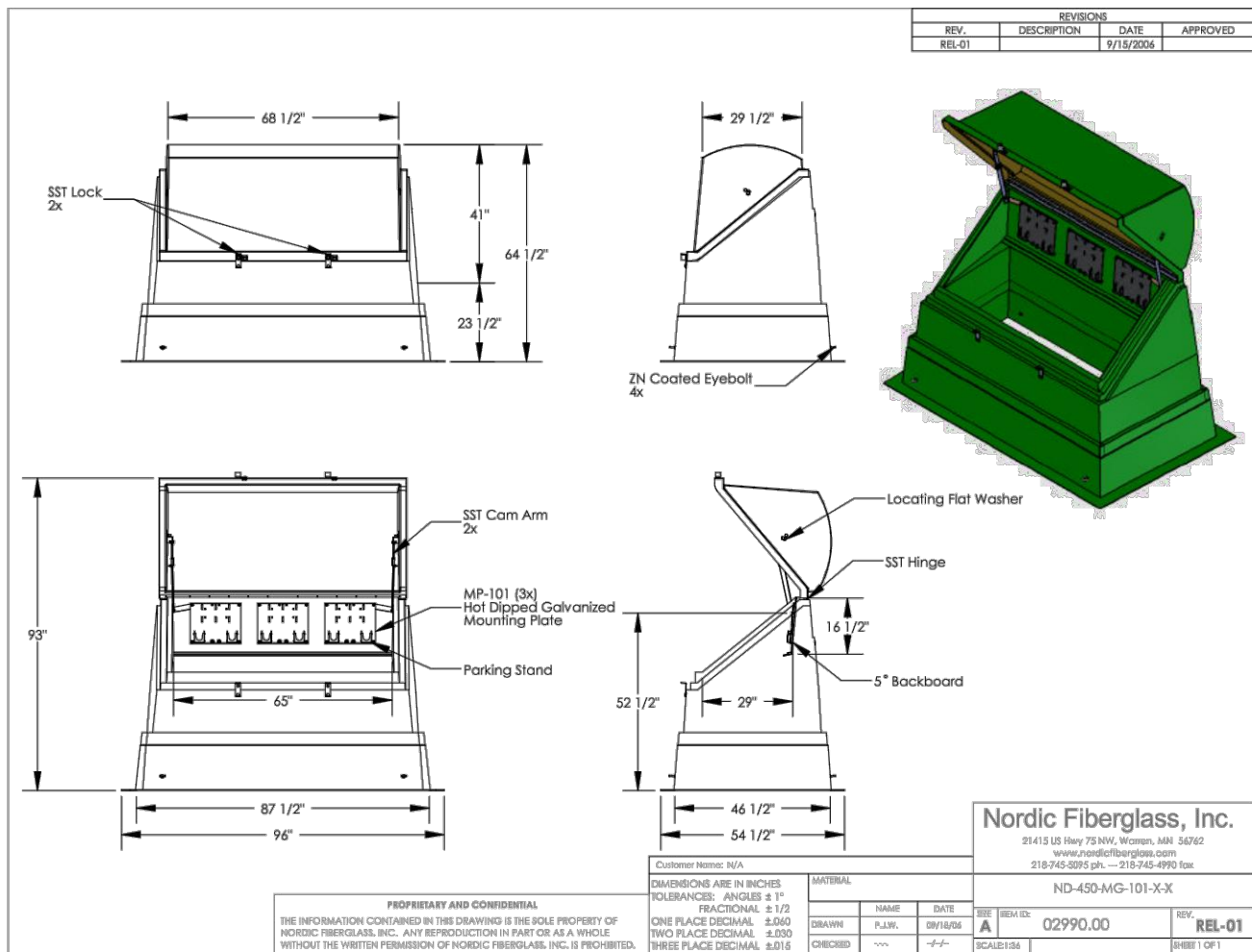


3 PHASE 600 AMP
SECTIONALIZER

NOTES:


1. USE NORDIC 600 AMP SECTIONALIZER P/N: **ND-450-MG-101-X-X** OR APPROVED EQUIVALENT.
2. ROAD BASE UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
3. CONTRACTOR TO INSTALL 3 PHASE 600 AMP FIBERGLASS SECTIONALIZER, 4-POINTS JUNCTIONS AND MOUNTING PLATES.
4. ONLY APPROVED SECTIONALIZERS MAY BE USED.
5. SECTIONALIZERS SHALL OPEN TOWARDS THE STREET UNLESS OTHERWISE APPROVED.
6. 12' OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE SECTIONALIZER AND 3' OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SECTIONALIZERS SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
7. BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION MAY BE REQUIRED BY SEDS TO PROTECT SECTIONALIZERS FROM DAMAGE.
8. SECTIONALIZER SHALL BE LEVEL AND SET SO THE LOCKING MECHANISM IS 10" TO 12" ABOVE FINISHED GRADE.
9. CONDUITS INSIDE SECTIONALIZER SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE SECTIONALIZER MEASURED FROM THE INSIDE OF SECTIONALIZER.
10. (2) TWO 5/8"X8' COPPER-CLAD GROUND RODS SHALL BE INSTALLED IN EACH SECTIONALIZER.
11. SECTIONALIZERS SHALL BE SET A MINIMUM OF 1 FOOT AND A MAXIMUM OF 3 FEET BEHIND PROPERTY LINE UNLESS OTHERWISE APPROVED.

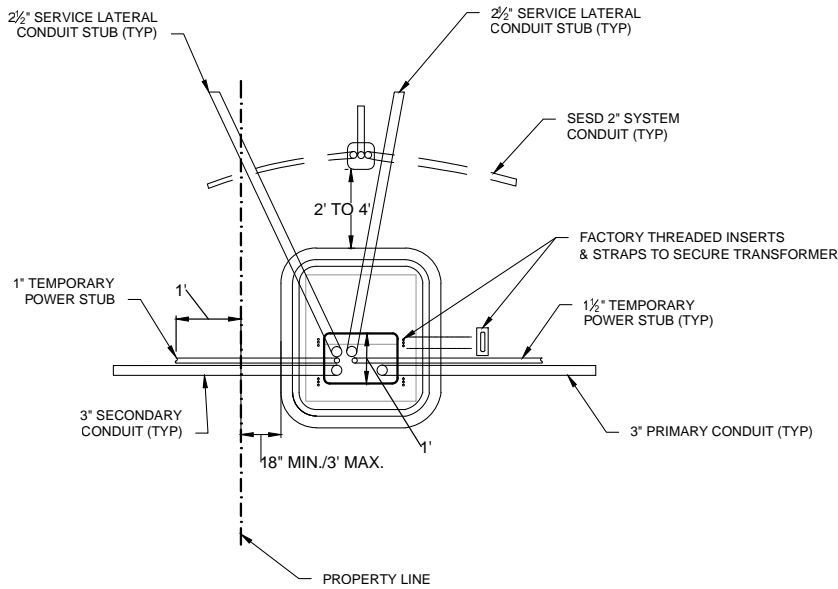
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|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 3 PHASE 600 AMP SECTIONALIZER | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 108 |



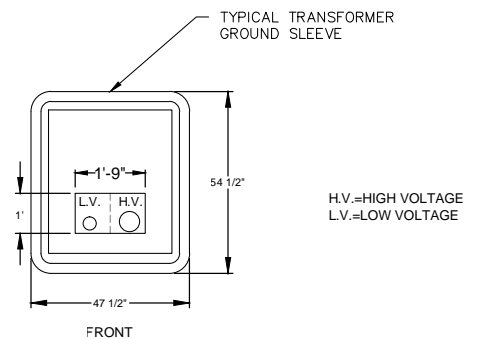
NOTES:

- USE NORDIC 600 AMP SECTIONALIZER P/N: **ND-450-MG-101-X-X** OR APPROVED EQUIVALENT.
- ROAD BASE UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
- CONTRACTOR TO INSTALL 3 PHASE 600 AMP FIBERGLASS SECTIONALIZER, 4-POINTS JUNCTIONS AND MOUNTING PLATES.
- ONLY APPROVED SECTIONALIZERS MAY BE USED.
- SECTIONALIZERS SHALL OPEN TOWARDS THE STREET UNLESS OTHERWISE APPROVED.
- 12" OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE SECTIONALIZER AND 3" OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SECTIONALIZERS SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
- BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION MAY BE REQUIRED BY SESD TO PROTECT SECTIONALIZERS FROM DAMAGE.
- SECTIONALIZER SHALL BE LEVEL AND SET SO THE LOCKING MECHANISM IS 10" TO 12" ABOVE FINISHED GRADE.
- CONDUITS INSIDE SECTIONALIZER SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE SECTIONALIZER MEASURED FROM THE INSIDE OF SECTIONALIZER.
- (2) TWO 5/8"X8" COPPER-CLAD GROUND RODS SHALL BE INSTALLED IN EACH SECTIONALIZER.
- SECTIONALIZERS SHALL BE SET A MINIMUM OF 1 FOOT AND A MAXIMUM OF 3 FEET BEHIND PROPERTY LINE UNLESS OTHERWISE APPROVED.

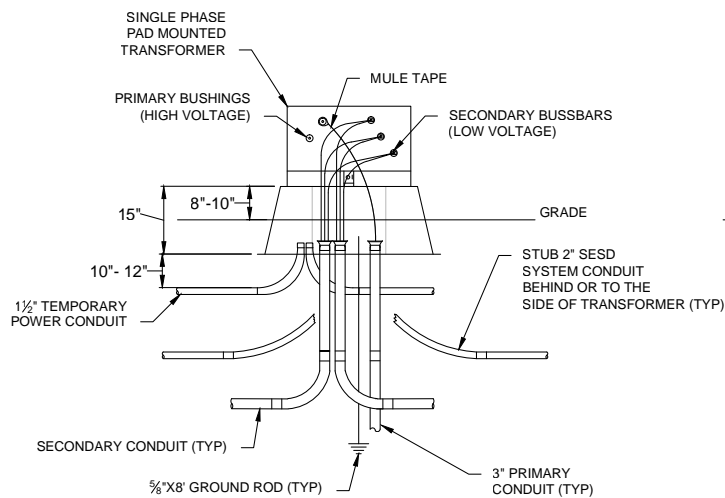
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|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 3 PHASE 600 AMP SECTIONALIZER | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 108-A |



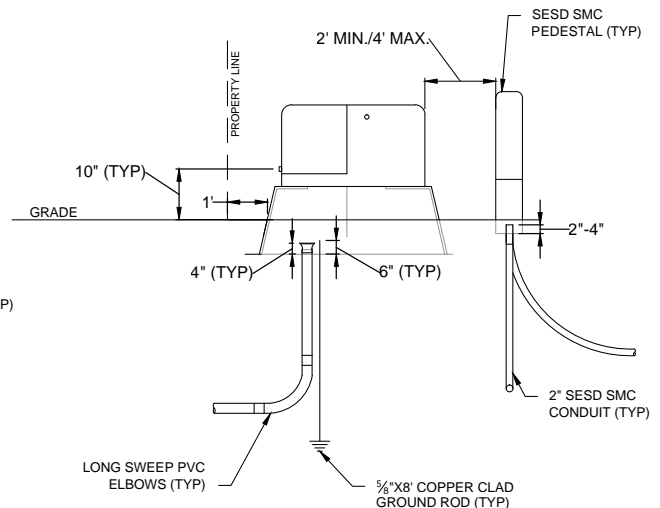
TOP VIEW



TOP VIEW




FRONT VIEW

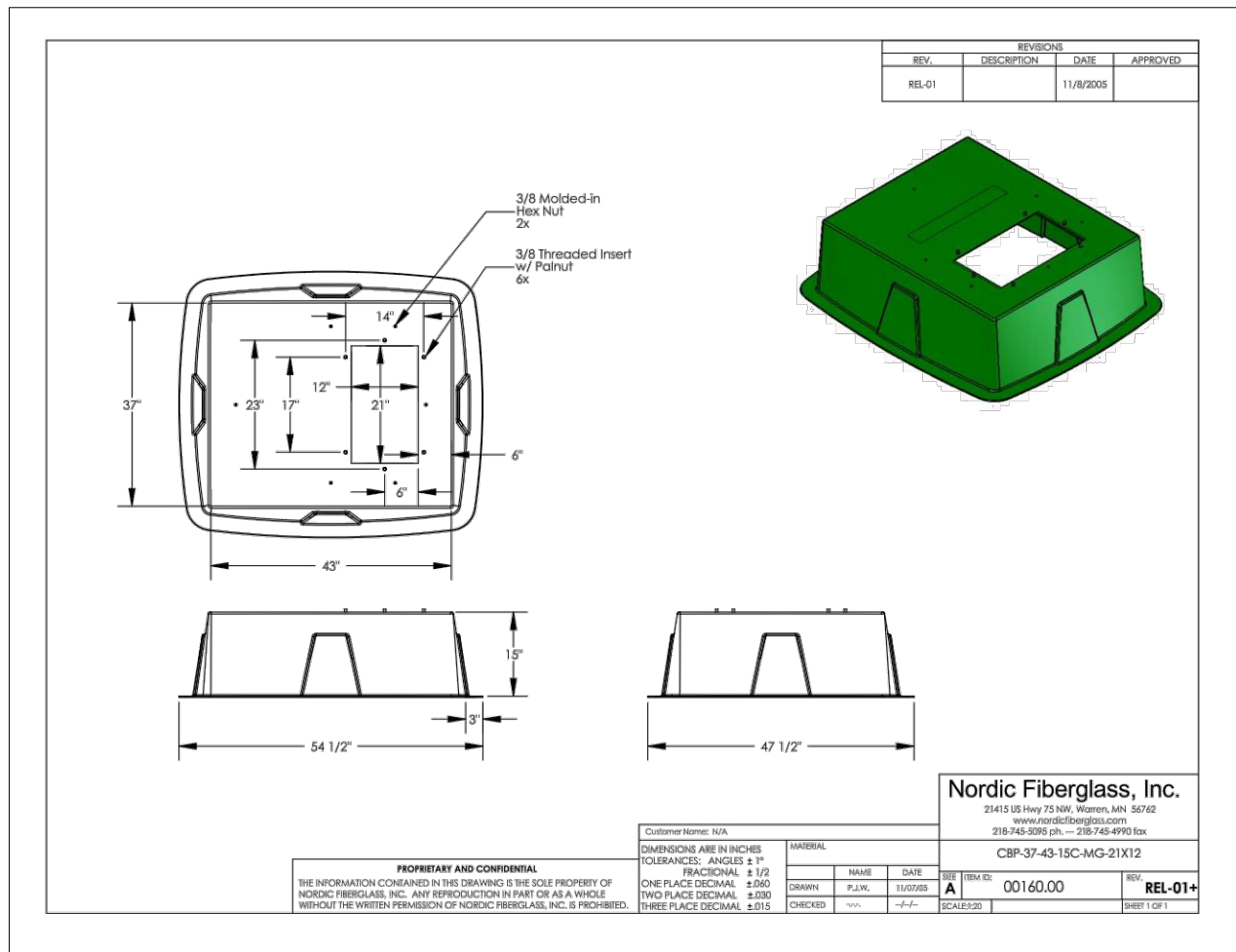
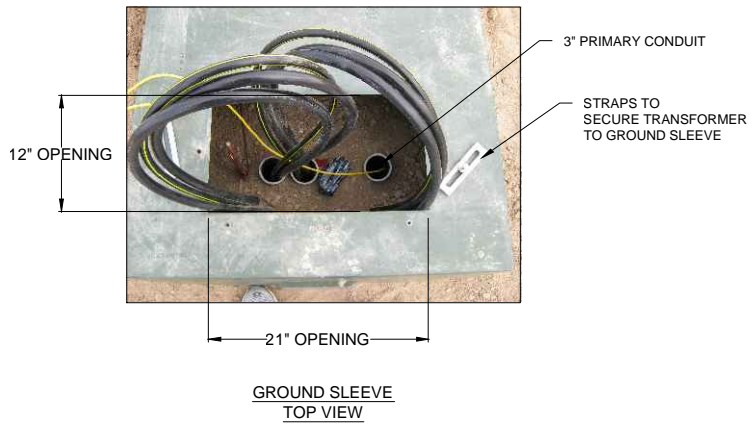


RIGHT SIDE VIEW

NOTES:


1. USE NORDIC FIBERGLASS TRANSFORMER SLEEVE P/N: **CBP-37-43-15C-MG-21X12** OR AN APPROVED EQUIVALENT.
2. FILL UNDER TRANSFORMER SHALL BE ROAD BASE OR APPROVED 1" MINUS GRAVEL COMPACTED TO 95% OF DRY DENSITY.
3. TRANSFORMER DOOR SHALL FACE TOWARDS STREET UNLESS OTHERWISE APPROVED.
4. TRANSFORMER SHALL HAVE 12' OF CLEARANCE IN FRONT AND 3' AROUND ALL OTHER SIDES.
5. TRANSFORMER GROUND SLEEVE CONDUIT WINDOW OPENING SHALL BE 21"X12".
6. TRANSFORMER GROUND SLEEVE SHALL HAVE THREADED INSERTS AND STRAPS TO SECURE TRANSFORMER TO GROUND SLEEVE.
7. CONTRACTOR TO LEAVE A MINIMUM OF 36" OF SECONDARY WIRE MEASURED FROM THE GROUND SLEEVE.
8. TRANSFORMER SHALL MEET CLEARANCES FROM DOORS, WINDOWS, STAIRS, AND GAS METERS. TRANSFORMER SHALL NOT BE PLACED UNDER ROOF EAVES.
9. TRANSFORMER SHALL NOT BE PLACED ON PROPERTY LINES, ENCLOSED BY FENCES & BE KEPT READILY ACCESSIBLE.

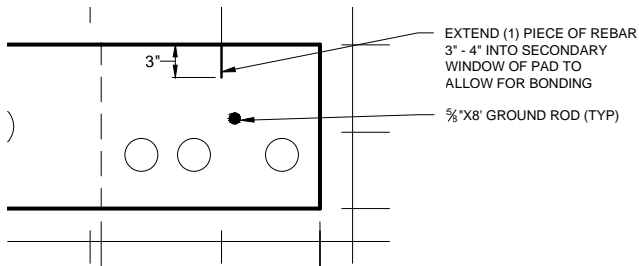
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|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 1 PHASE PAD MOUNT TRANSFORMER | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 109 |



NOTES:

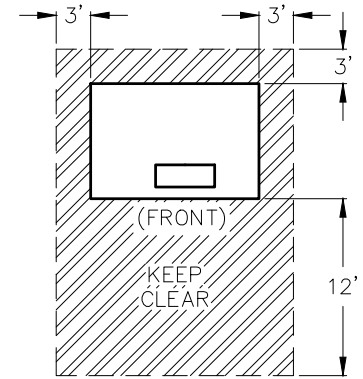
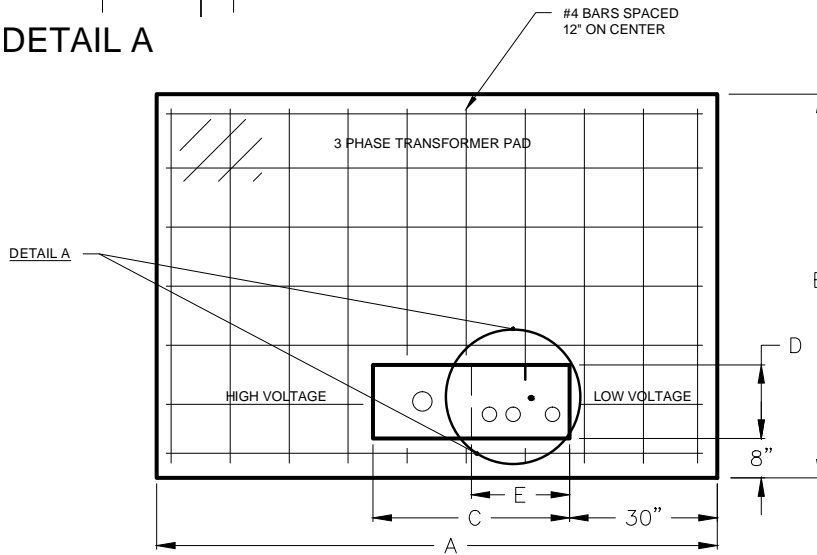
- USE NORDIC FIBERGLASS TRANSFORMER SLEEVE P/N: **CBP-37-43-15C-MG-21X12** OR AN APPROVED EQUIVALENT.
- FILL UNDER TRANSFORMER SHALL BE ROAD BASE OR APPROVED 1" MINUS GRAVEL COMPACTED TO 95% OF DRY DENSITY.
- TRANSFORMER DOOR SHALL FACE TOWARDS STREET UNLESS OTHERWISE APPROVED.
- TRANSFORMER SHALL HAVE 12" OF CLEARANCE IN FRONT AND 3" AROUND ALL OTHER SIDES.
- TRANSFORMER GROUND SLEEVE CONDUIT WINDOW OPENING SHALL BE 21"X12".
- TRANSFORMER GROUND SLEEVE SHALL HAVE THREADED INSERTS AND STRAPS TO SECURE TRANSFORMER TO GROUND SLEEVE.
- CONTRACTOR TO LEAVE A MINIMUM OF 36" OF SECONDARY WIRE MEASURED FROM THE GROUND SLEEVE.
- TRANSFORMER SHALL MEET CLEARANCES FROM DOORS, WINDOWS, STAIRS, AND GAS METERS. TRANSFORMER SHALL NOT BE PLACED UNDER ROOF EAVES.
- TRANSFORMER SHALL NOT BE PLACED ON PROPERTY LINES, ENCLOSED BY FENCES & KEPT READILY ACCESSIBLE

| | | | | | | | | |
|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 1 PHASE PAD MOUNT TRANSFORMER-A | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 109-A |

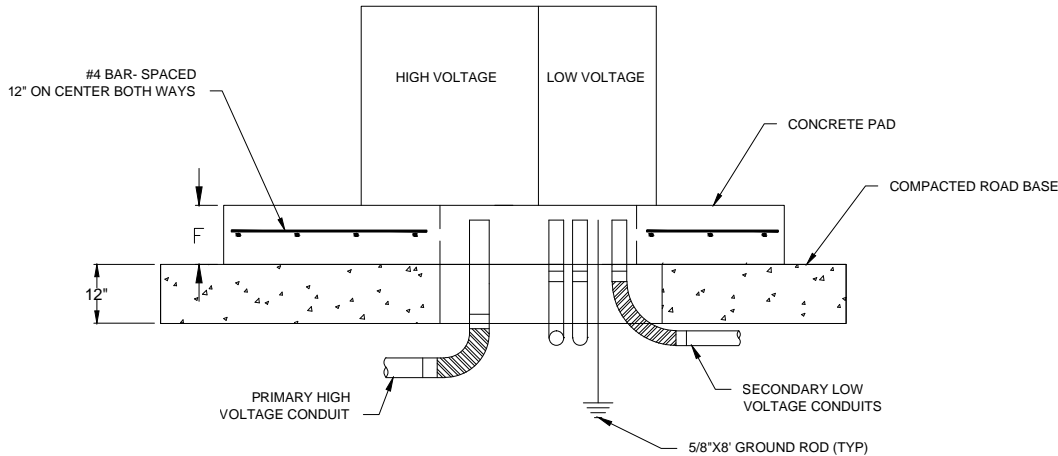


DETAIL A

| TRANSFORMER PAD DIMENSION CHART | | | | | | |
|---------------------------------|------------|------|-----|-----|-----|-----|
| TRANSFORMER RATING | DIMENSIONS | | | | | |
| | A | B | C | D | E | F |
| 75 - 500 KVA | 114" | 78" | 40" | 15" | 20" | 9" |
| 750 - 1500 KVA | 118" | 105" | 52" | 16" | 30" | 11" |
| 2000 KVA | 118" | 105" | 52" | 24" | 24" | 11" |




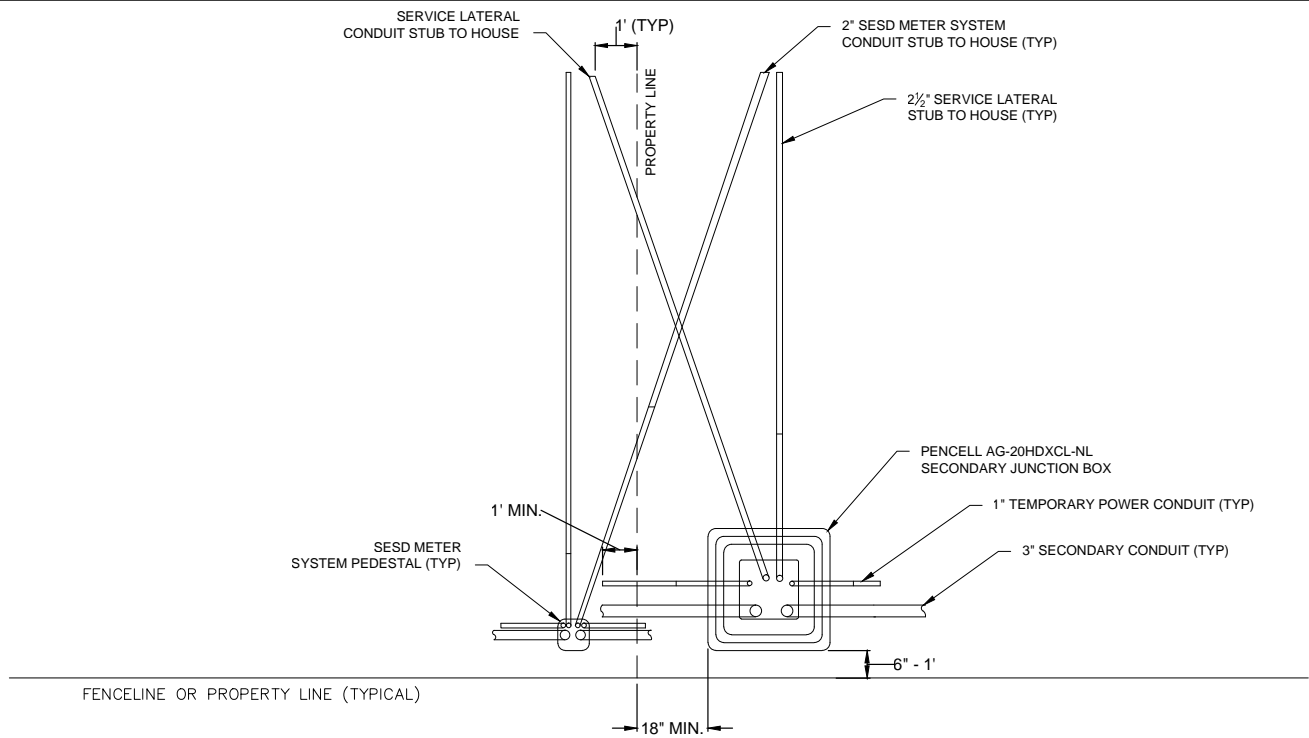
TYPICAL CLEARANCES



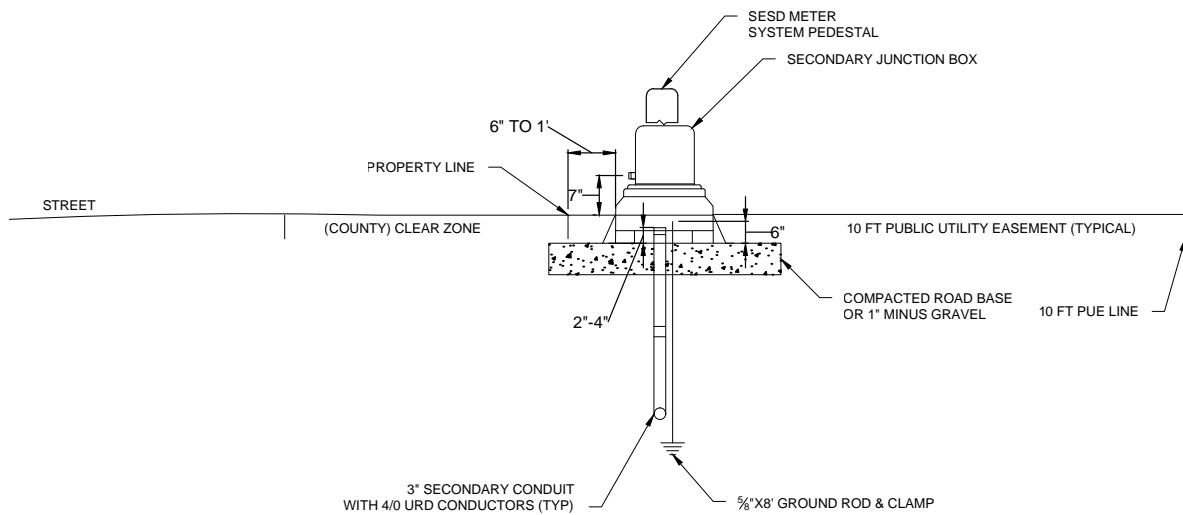
NOTES:

1. TRANSFORMER SHALL MEET ALL CLEARANCES FROM DOORS, WINDOWS, STAIRS, EAVES, BUILDINGS, GAS METERS. THE FRONT OF THE PAD SHOULD ALWAYS FACE AWAY FROM ADJACENT STRUCTURES AND BE FREE OF OBSTRUCTIONS. AT LEAST 3 FEET MUST SEPARATE THE EDGES OF THE PAD FROM ANY ADJACENT STRUCTURE. THE EDGES OF THE PAD MUST BE AT LEAST TEN FEET FROM ANY COMBUSTIBLE STRUCTURE. IF AN ADJACENT STRUCTURE HAS ANY OVERHANG OR EAVE WITHIN 27 VERTICAL FEET OF THE TOP OF THE PAD, CLEARANCE MUST BE MEASURED FROM THE OUTSIDE OF THE OVERHANG. THE PAD MUST NOT BE PLACED IN AN AREA 10 FEET IN LINE WITH OR 3 FEET TO EITHER SIDE OF ANY WINDOW OR DOOR IN AN ADJACENT STRUCTURE. CLEARANCES FOR A DOOR MUST BE 20 FEET IN LINE WITH IT AND 10 FEET ON EITHER SIDE. PADS MUST NOT BE PLACED WITHIN 15 FEET OF ANY VALVE OR WITHIN 20 FEET OF ANY PUMPING OR STORAGE FACILITY CONTAINING FLAMMABLE MATERIAL. NO WALLS, FENCES, OR ANY OTHER OBSTRUCTIONS WILL BE PLACED WITHIN 3 FEET OF THE SIDES OR BACK OF THE PAD, OR WITHIN 12 FEET OF THE FRONT OF THE PAD. THE AREA AROUND THE PAD MUST HAVE 12 FEET OF CLEAR, LEVEL WORKING AREA FOR MAINTENANCE OF THE TRANSFORMER. THE PAD MAY NOT BE PLACED IN LINE WITH AN AIR INTAKE WITHIN 32 VERTICAL FEET OF THE SURFACE OF THE PAD. ALSO, IT MUST NOT BE PLACED WITHIN 12 FEET VERTICALLY OF A DOOR OR WINDOW.
2. PAD SHALL BE CONSTRUCTED ON SITE OR PREFABRICATED ACCORDING TO THESE SPECIFICATIONS.
3. TRANSFORMER PAD SITE SHALL BE EXCAVATED AND BACKFILLED WITH ROAD BASE MEETING STATE SPECIFICATIONS AND SHALL BE COMPACTED TO 95%. THE ROAD BASE SHALL EXTEND A MINIMUM OF 1 FOOT PAST ALL SIDES OF THE PAD. THE ROAD BASE SHALL BE A MINIMUM OF 1 FOOT IN DEPTH UNDER THE PAD. THE GROUND MUST BE LEVEL 3' PAST THE SIDES AND BACK OF PAD, AND 12' IN FRONT OF THE PAD.
4. A COMPACTION TEST SHALL BE TAKEN PRIOR TO CONSTRUCTING CONCRETE FORMS.
5. CONCRETE FORMS, REBAR, SHALL BE INSPECTED PRIOR TO POURING CONCRETE.
6. CONCRETE SHALL BE TYPE E61A. STEEL REINFORCEMENT BARS SHALL BE #4 BARS PLACED AT 12" CENTERS THROUGHOUT THE PAD. ALL REBAR SHALL BE TIED TOGETHER. THE PAD MUST BE POURED AT LEAST SEVEN DAYS PRIOR TO SETTING THE TRANSFORMER.
7. 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 30" ON THE LARGE PADS. NO MORE THAN 8 CONDUITS SHALL BE USED ON THE SECONDARY LOW VOLTAGE SIDE OF 1500 KVA TRANSFORMER OR SMALLER. NO MORE THAN 12 CONDUITS SHALL BE USED ON THE SECONDARY LOW VOLTAGE SIDE FOR 2000 KVA TRANSFORMERS. DO NOT PUT ANY CONCRETE IN OR UNDER THE CONDUIT WINDOW. USE SOIL TO SEPERATE CONDUITS. ALL CONDUITS ENTERING THE PAD SHALL BE SCHEDULE 40 PVC WITH RIGID METALLIC ELBOWS. A 5/8"X8" COPPER CLAD GROUND ROD SHALL BE INSTALLED IN THE LOW VOLTAGE SIDE OF THE PAD FOR GROUNDING.
8. IF THE TRANSFORMER PAD IS TO BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC, (PARKING LOTS, DRIVEWAYS, ETC.) THEN THE TRANSFORMER SHALL BE PROTECTED BY BOLLARDS, CURBING, MASONRY WALLS OR OTHER MEANS, CONTACT SESD FOR THE SPECIFIC APPLICATION.
9. ALL SECONDARY LOW VOLTAGE CONNECTIONS, CABLES, ARE THE CONTRACTOR'S RESPONSIBILITY. SESD WILL INSTALL & TERMINATE THE PRIMARY HIGH VOLTAGE CABLES ONLY.
10. THE TRANSFORMER SHALL BE ANCHORED TO THE CONCRETE PAD WITH A MINIMUM OF 2 ANCHOR POINTS. USE 1/2"X3" CONCRETE ANCHOR BOLTS.
11. GROUNDING & BONDING: ALL REBAR SHALL BE TIED TOGETHER. ONE BAR SHALL EXTEND 2" INTO THE SECONDARY WINDOW OF PAD AND WILL BE USED AS A "UFER" GROUND. THE BAR WILL BE BONDED TO THE TRANSFORMER TANK BY APPROVED METHODS.

| | | | | | | | | |
|--------|-----------|---|--|----------|------|----|--|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING 3 PHASE TRANSFORMER & PAD | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 110 |




PLAN VIEW

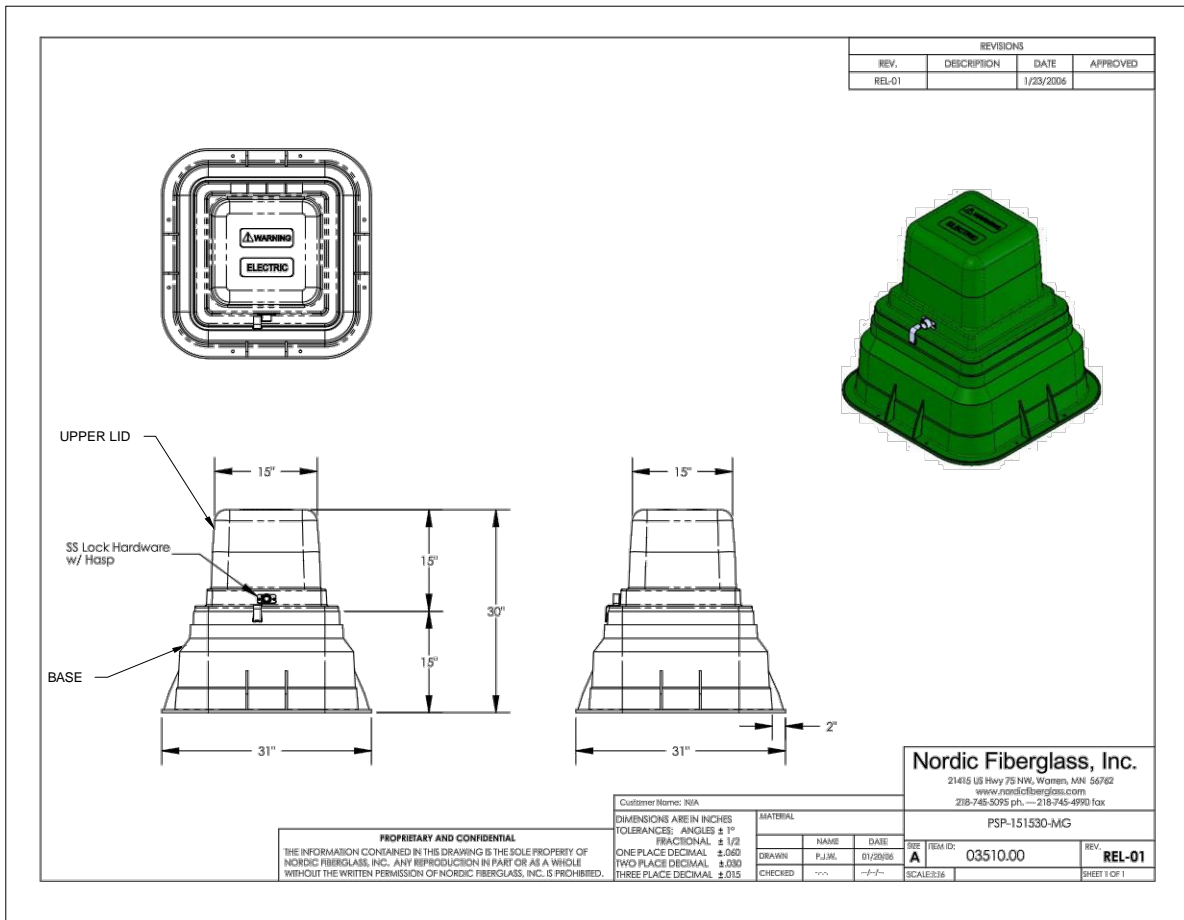
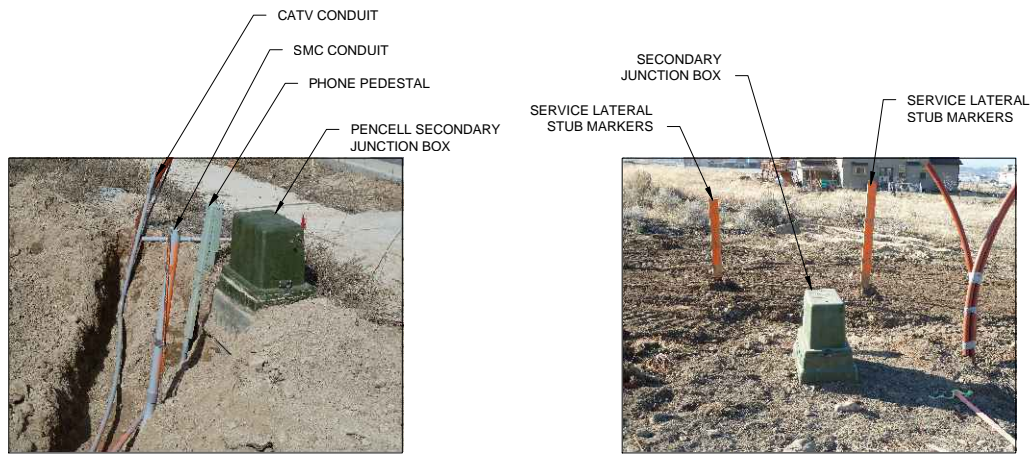


ELEVATION SIDE VIEW

NOTES:

1. SECONDARY JUNCTION BOX SHALL BE **NORDIC PSP-151530-MG OR PENCELL AG20HDXCL-NL** OR APPROVED EQUIVALENT.
2. LOCKING MECHANISM SHALL BE 10"-12" ABOVE FINISHED GRADE.
3. BOX SHALL BE KEPT A MINIMUM OF 18" FROM PROPERTY LINE THAT SEPARATES TWO PROPERTIES.
4. ROAD BASE SHALL BE USED UNDER JUNCTION BOX & SHALL BE COMPACTED TO 95% OF DRY DENSITY.
5. JUNCTION BOXES SHALL BE LEVEL AND LOCKING MECHANISM SHALL FACE TOWARDS STREET WHEN POSSIBLE.
6. CONDUITS SHALL EXTEND INSIDE BOX BY 2" TO 4" FROM INSIDE GRADE LEVEL.
7. A MINIMUM OF 36" OF WIRE SHALL PULLED INTO JUNCTION BOX. THE WIRE SHALL BE MEASURED FROM THE TOP OF THE BASE (WITHOUT LID).
8. SECONDARY BOXES SHALL BE LOCATED BEHIND PROPERTY LINES AND WITHIN PUBLIC UTILITY EASEMENTS.


| | | | | | | | | |
|--------|-----------|---|--|----------|------|----|--|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING SECONDARY JUNCTION BOX | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 111 |



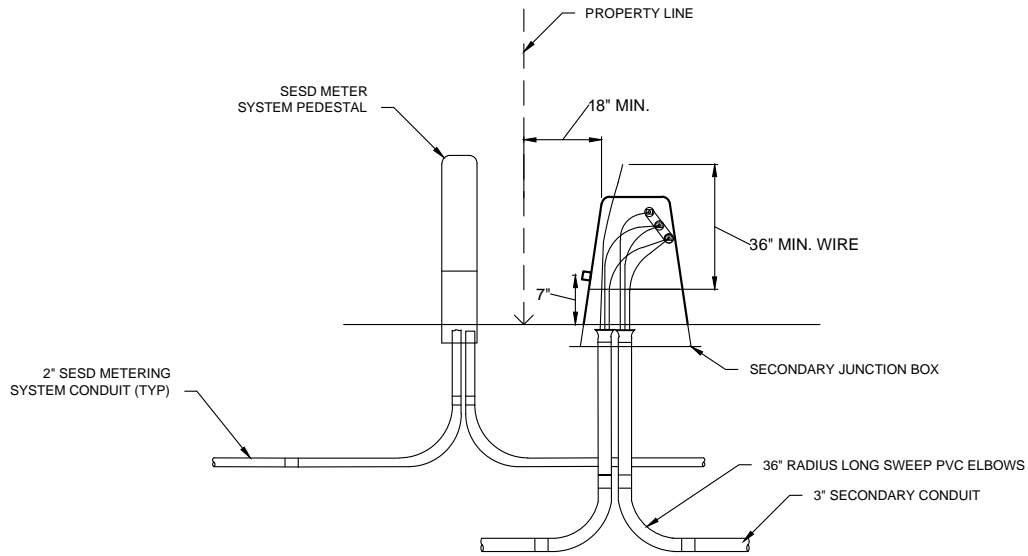
SECONDARY JUNCTION BOX

NOTES:

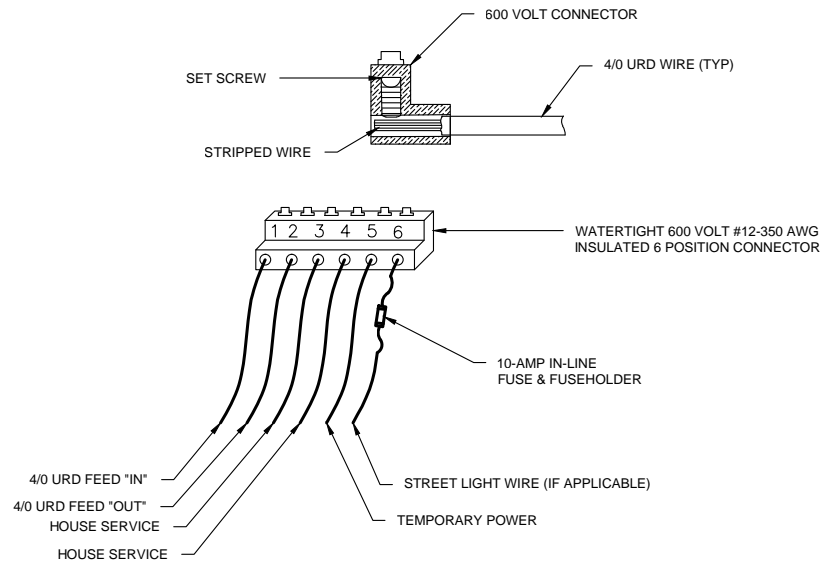
1. SECONDARY JUNCTION BOX SHALL BE **NORDIC PSP-151530-MG OR PENCELL AG20HDXCL-NL** OR APPROVED EQUIVALENT.
2. LOCKING MECHANISM SHALL BE 10'-12" ABOVE FINISHED GRADE.
3. BOX SHALL BE KEPT A MINIMUM OF 18" FROM PROPERTY LINE THAT SEPARATES TWO PROPERTIES.
4. ROAD BASE SHALL BE USED UNDER JUNCTION BOX & SHALL BE COMPACTED TO 95% OF DRY DENSITY.
5. JUNCTION BOXES SHALL BE LEVEL AND LOCKING MECHANISM SHALL FACE TOWARDS STREET WHEN POSSIBLE.
6. CONDUITS SHALL EXTEND INSIDE BOX BY 2" TO 4" FROM INSIDE GRADE LEVEL.
7. A MINIMUM OF 36" OF WIRE SHALL PULLED INTO JUNCTION BOX. THE WIRE SHALL BE MEASURED FROM THE TOP OF THE BASE (WITHOUT LID).
8. SECONDARY BOXES SHALL BE LOCATED BEHIND PROPERTY LINES AND WITHIN PUBLIC UTILITY EASEMENTS.

| | | | | | | | | |
|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING SECONDARY JUNCTION BOX PICS | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 111-A |

FRONT VIEW




SECONDARY CONNECTIONS

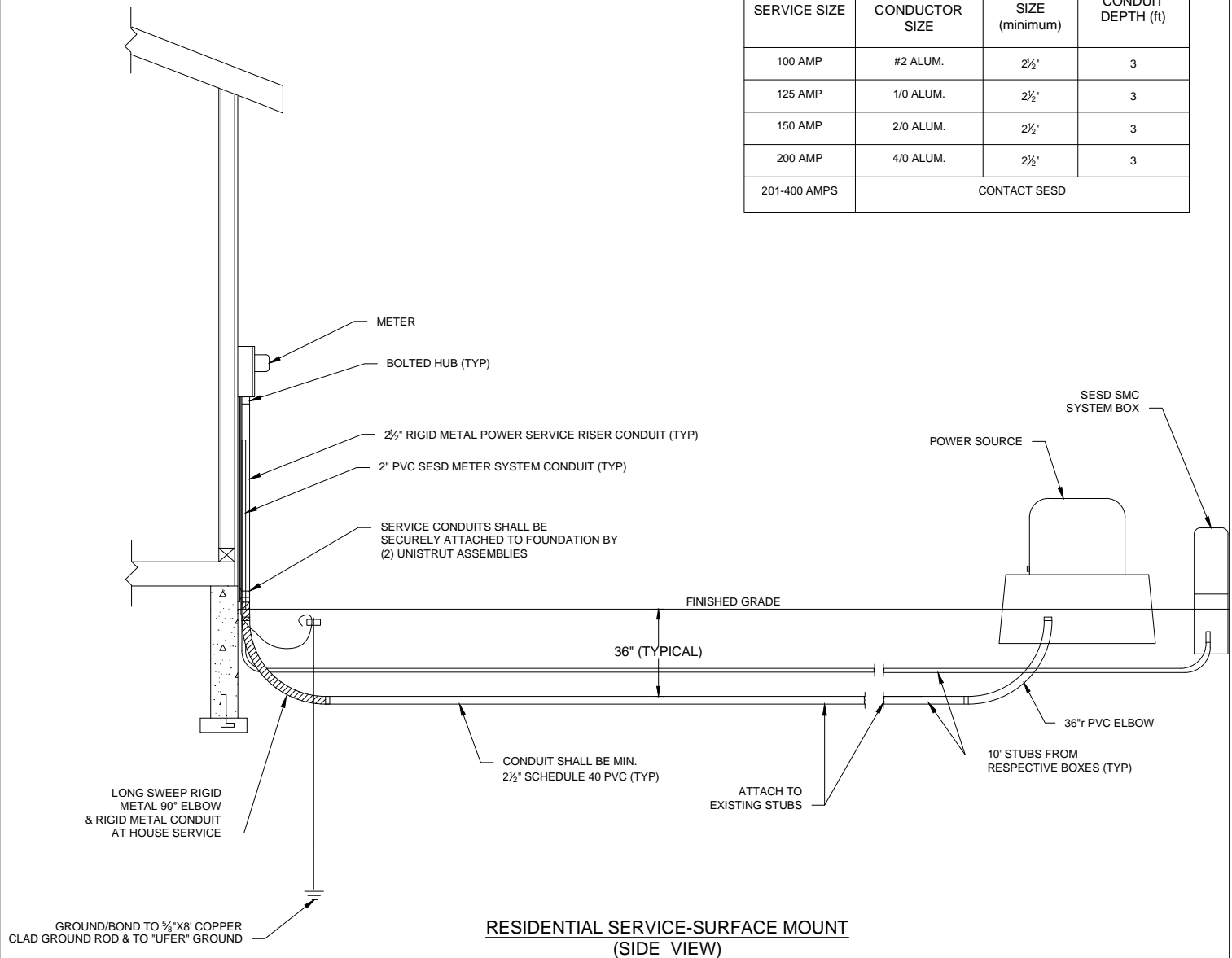


NOTES:

1. SECONDARY WATERTIGHT, INSULATED 6 POSITION CONNECTORS USE ELASTIMOLD USB63S OR UTILCO PED6-350SS OR APPROVED EQUIVALENT.
2. SECONDARY URD WIRE SHALL BE 36" MINIMUM IN LENGTH MEASURED FROM THE TOP OF THE JUNCTION BOX SLEEVE (WITHOUT LID).
3. TYPICAL URD WIRE IN BETWEEN JUNCTION BOXES OR FROM A JUNCTION BOX TO A TRANSFORMER SHALL BE 4/0 KCMIL URD TYPE UNLESS OTHERWISE SPECIFIED.
4. IF APPLICABLE, WIRING FOR STREET LIGHTING SHALL BE 240 VOLT CIRCUIT WITH (3) #10 CU. THHW AND (1) #8 THHW EQUIPMENT GROUNDING CONDUCTOR. STREET LIGHT POLE SHALL BE BONDED TO CONCRETE BASE BY #8 CU. & CONNECTED TO REBAR UFER IN CONCRETE & TO CONNECTOR IN BASE OF STREET LIGHT.
5. CONDUITS SHALL BE TAGGED AND LABELED WITH LENGTH, DIRECTION OF CONDUITS OR ADDRESS. (EXAMPLE; 3" CONDUIT 125' EAST TO TRANSFORMER.)


| | | | | | | | | |
|--------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING SECONDARY JUNCTION BOX WIRE CONNECTION DETAIL | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 112 |

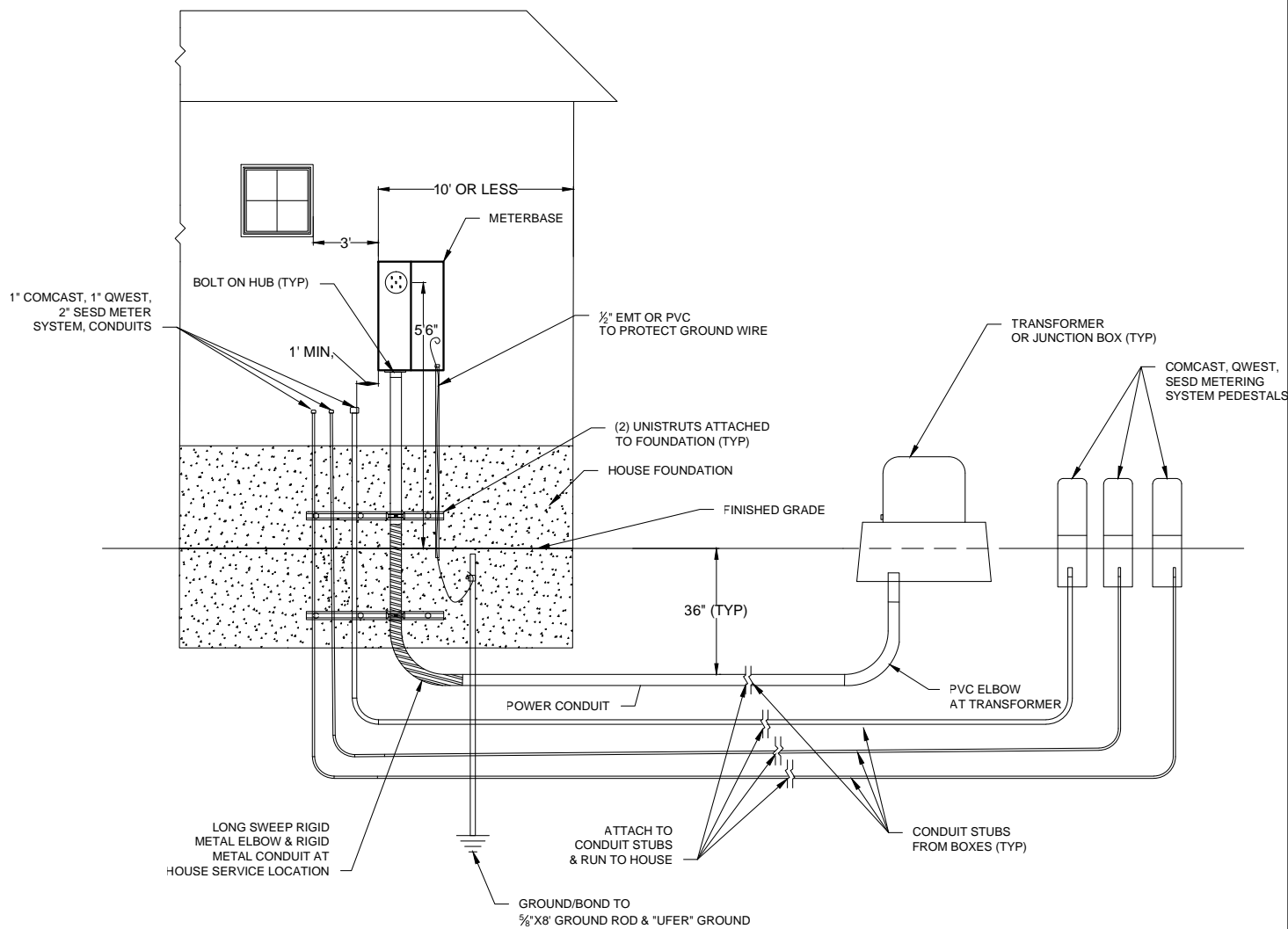
| RESIDENTIAL SERVICE SIZES | | | |
|---------------------------|------------------------|------------------------|--------------------|
| SERVICE SIZE | SERVICE CONDUCTOR SIZE | CONDUIT SIZE (minimum) | CONDUIT DEPTH (ft) |
| 100 AMP | #2 ALUM. | 2½" | 3 |
| 125 AMP | 1/0 ALUM. | 2½" | 3 |
| 150 AMP | 2/0 ALUM. | 2½" | 3 |
| 200 AMP | 4/0 ALUM. | 2½" | 3 |
| 201-400 AMPS | CONTACT SESD | | |



NOTES:

1. TYPICALLY ATTACH TO CONDUIT STUBS FROM RESPECTIVE BOXES. IF CONDUIT STUBS ARE NOT PRESENT, CONTACT SESD FOR ASSISTANCE & DIRECTION BEFORE DIGGING INTO ELECTRICAL BOXES. DANGER! DO NOT DIG OR PUSH WIRE INTO ANY TRANSFORMER! TRANSFORMERS CONTAIN 12,470 VOLTS INSIDE. DEATH OR INJURY MAY RESULT IN UNSAFE PRACTICES. CONTACT SESD & SCHEDULE AN APPOINTMENT FOR ASSISTANCE TO INSTALL ANY CONDUITS OR WIRES INTO TRANSFORMERS.
2. TYPICALLY INSTALL 2½" POWER CONDUIT TO METERBASE. CONTACT SESD FOR SERVICES LARGER THAN 200 AMPS, EXTRAORDINARY DISTANCES, OR OTHER APPLICATIONS.
3. TYPICALLY INSTALL (2) 1" CONDUITS FOR PHONE & CATV. CONTRACTOR MAY OR MAY NOT FURNISH MATERIALS FOR PHONE OR CATV.
4. TYPICALLY INSTALL (1) 2" CONDUIT FOR SESD SMC SYSTEM CONDUIT. CONTRACTOR SHALL FURNISH 2" GRAY SCHEDULE 40 PVC RISER CONDUIT, SERVICE CONDUIT FROM SMC PEDESTAL & 24" PVC ELBOW AT HOUSE FOR THE SMC SYSTEM.
5. TYPICALLY INSTALL A ⅝"X8' GROUND ROD & #6 CU GROUND WIRE, IN ADDITION TO NATIONAL ELECTRIC CODE REQUIREMENTS FOR GROUNDING & BONDING.
6. METERBASE SHALL BE KEPT ON THE FRONT 10' OF THE SIDE OF THE HOUSE.
7. METERBASE SHALL BE LOCATED ON THE SAME SIDE AS THE POWER SOURCE. THE POWER SOURCE BEING THE JUNCTION BOX OR TRANSFORMER.
8. METERBASE SHALL BE KEPT 3' CLEAR OF WINDOWS, WINDOW WELLS, DOORS, GAS METERS, STAIRS UNLESS OTHERWISE APPROVED, AND MEET ANY ADDITIONAL NEC, NESC REQUIREMENTS.
9. POWER SERVICE CONDUIT & COMMUNICATIONS CONDUITS MAY BE INSTALLED IN A JOINT TRENCH. POWER CONDUIT SHALL BE INSTALLED AT 36" IN DEPTH MEASURED FROM TOP OF CONDUIT.
10. CONTRACTOR TO FURNISH TRENCH & INSTALL METERBASE, RIGID METAL (RMC OR IMC) RISER CONDUIT & 36" SWEEP RMC ELBOW AT THE BUILDING. CONTRACTOR SHALL FURNISH & INSTALL ANY CONDUITS NECESSARY FOR POWER, SMC, QWEST, COMCAST TO THE POWER SOURCE OR PEDESTAL.
11. TRENCH SHALL BE 36" (42") IN DEPTH. THE CONDUIT SHALL BE INSTALLED AT 36" TO TOP OF CONDUIT.
12. ALL RIGID METAL ELBOWS OR CONDUITS SHALL BE TAPED WITH ANTI-CORROSION TAPE. THE TAPE SHALL EXTEND 6" ABOVE FINISHED GRADE. HATCHED CONDUITS REQUIRE CORROSION TAPE.
13. SESD TO FURNISH & INSTALL METER & MAKE WIRE CONNECTIONS INSIDE POWER SOURCE.
14. ATTACH (2) PIECES OF UNISTRUT TO FOUNDATION BY ⅜"X3" CONCRETE ANCHORS, & CLAMP CONDUITS USING STRUT CLAMPS. METERBASE SHALL BE SECURELY ANCHORED OR SCREWED TO WALL.
15. METER SOCKET SHALL BE LOCATED AT A HEIGHT NO LESS THAN 4'6" AND NO MORE THAN 6' TO CENTER OF METER SOCKET FROM FINISHED GRADE.


| | | | | | | | | |
|----------|-----------|---|--|----------|------|----|---|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL UNDERGROUND SERVICE (SIDE VIEW) | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| APPROVED | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 113 |

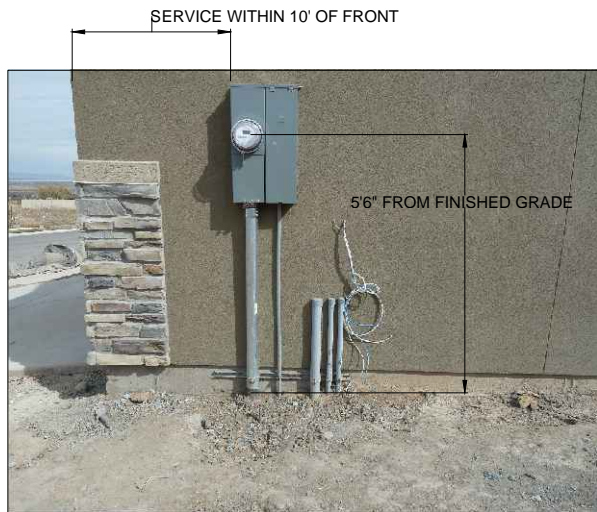


**RESIDENTIAL SERVICE-SURFACE MOUNT
(FRONT VIEW)**

NOTES:

1. TYPICALLY ATTACH TO CONDUIT STUBS FROM RESPECTIVE BOXES. IF CONDUIT STUBS ARE NOT PRESENT, CONTACT SESD FOR ASSISTANCE & DIRECTION BEFORE DIGGING INTO ELECTRICAL BOXES. DANGER! DO NOT DIG OR PUSH WIRE INTO ANY TRANSFORMER! TRANSFORMERS CONTAIN 12,470 VOLTS INSIDE. DEATH OR INJURY MAY RESULT IN UNSAFE PRACTICES. CONTACT SESD & SCHEDULE AN APPOINTMENT FOR ASSISTANCE TO INSTALL ANY CONDUITS OR WIRES INTO TRANSFORMERS.
2. TYPICALLY INSTALL 2 1/2" POWER CONDUIT TO METERBASE. CONTACT SESD FOR SERVICES LARGER THAN 200 AMPS, EXTRAORDINARY DISTANCES, OR OTHER APPLICATIONS.
3. TYPICALLY INSTALL (2) 1" CONDUITS FOR PHONE & CATV. CONTRACTOR MAY OR MAY NOT FURNISH MATERIALS FOR PHONE OR CATV.
4. TYPICALLY INSTALL (1) 2" CONDUIT FOR SESD SMC SYSTEM CONDUIT. CONTRACTOR SHALL FURNISH 2" GRAY SCHEDULE 40 PVC RISER CONDUIT, SERVICE CONDUIT FROM SMC PEDESTAL & 24" PVC ELBOW AT HOUSE FOR THE SMC SYSTEM.
5. TYPICALLY INSTALL A 3/8" X 8' GROUND ROD & #6 CU GROUND WIRE, IN ADDITION TO NATIONAL ELECTRIC CODE REQUIREMENTS FOR GROUNDING & BONDING.
6. METERBASE SHALL BE KEPT ON THE FRONT 10' OF THE SIDE OF THE HOUSE.
7. METERBASE SHALL BE LOCATED ON THE SAME SIDE AS THE POWER SOURCE. THE POWER SOURCE BEING THE JUNCTION BOX OR TRANSFORMER.
8. METERBASE SHALL BE KEPT 3' CLEAR OF WINDOWS, WINDOW WELLS, DOORS, GAS METERS, STAIRS UNLESS OTHERWISE APPROVED, AND MEET ANY ADDITIONAL NEC, NESC REQUIREMENTS.
9. POWER SERVICE CONDUIT & COMMUNICATIONS CONDUITS MAY BE INSTALLED IN A JOINT TRENCH. POWER CONDUIT SHALL BE INSTALLED AT 36" IN DEPTH MEASURED FROM TOP OF CONDUIT.
10. CONTRACTOR TO FURNISH TRENCH & INSTALL METERBASE, RIGID METAL (RMC OR IMC) RISER CONDUIT & 36" SWEEP RMC ELBOW AT THE BUILDING. CONTRACTOR SHALL FURNISH & INSTALL ANY CONDUITS NECESSARY FOR POWER, SMC, QWEST, COMCAST TO THE POWER SOURCE OR PEDESTAL.
11. TRENCH SHALL BE 36" (42") IN DEPTH. THE CONDUIT SHALL BE INSTALLED AT 36" TO TOP OF CONDUIT.
12. ALL RIGID METAL ELBOWS OR CONDUITS SHALL BE TAPED WITH ANTI-CORROSION TAPE. THE TAPE SHALL EXTEND 6" ABOVE FINISHED GRADE. HATCHED CONDUITS REQUIRE CORROSION TAPE.
13. SESD TO FURNISH & INSTALL METER & MAKE WIRE CONNECTIONS INSIDE POWER SOURCE.
14. ATTACH (2) PIECES OF UNISTRUT TO FOUNDATION BY 3/8" X 3" CONCRETE ANCHORS, & CLAMP CONDUITS USING STRUT CLAMPS. METERBASE SHALL BE SECURELY ANCHORED OR SCREWED TO WALL.
15. METER SOCKET SHALL BE LOCATED AT A HEIGHT NO LESS THAN 4'6" AND NO MORE THAN 6' TO CENTER OF METER SOCKET FROM FINISHED GRADE.

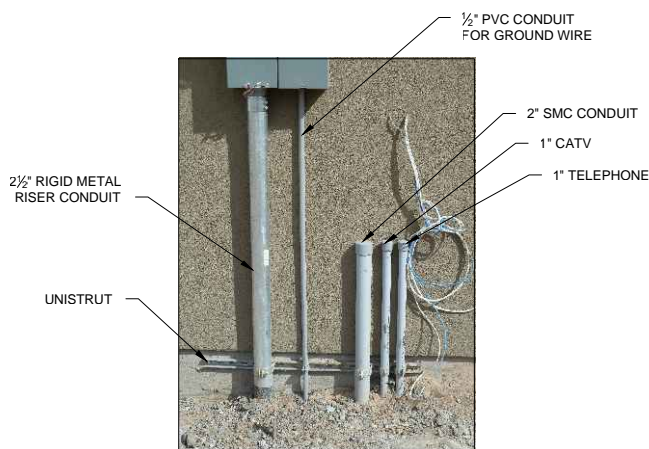
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|--------|-----------|---|--|----------|------|----|--|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL UNDERGROUND SERVICE (FRONT VIEW) | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 114 |



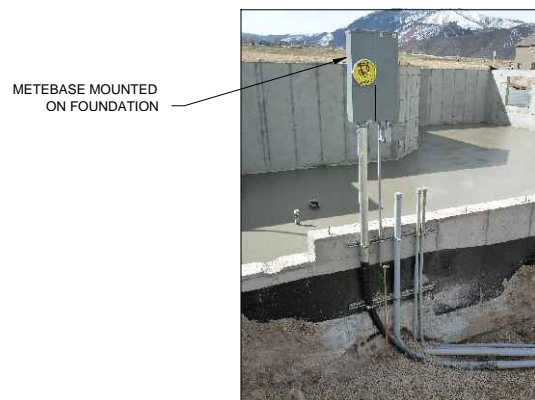
RESIDENTIAL SERVICE-FINISHED



RESIDENTIAL SERVICE-CONDUITS




RESIDENTIAL SERVICE-FINISHED CONDUITS

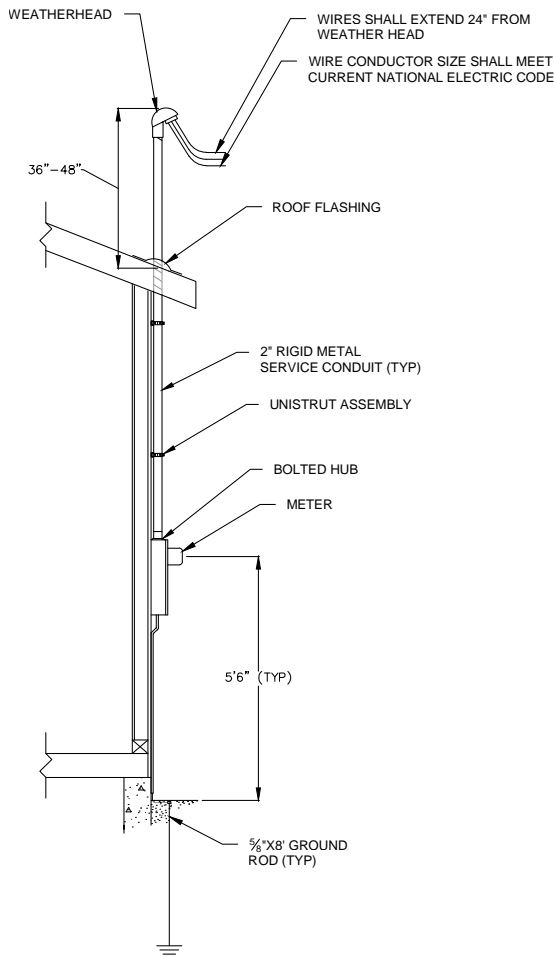


RESIDENTIAL SERVICE ON FOUNDATION

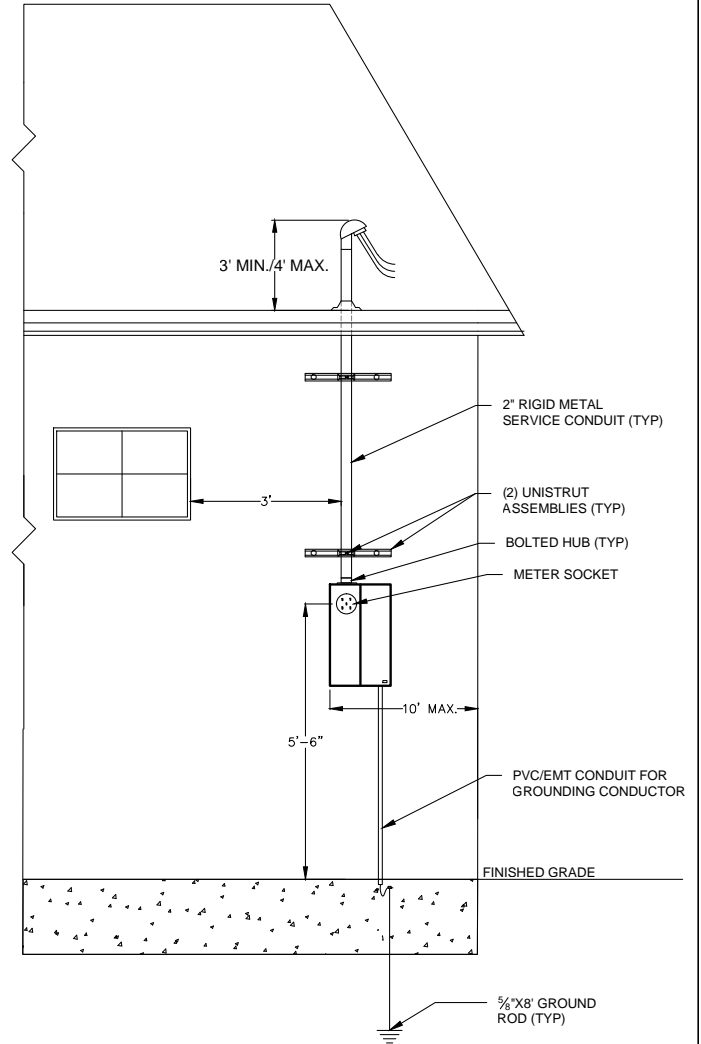
RESIDENTIAL SERVICE PICTURES

- NOTES:
1. TYPICALLY ATTACH TO CONDUIT STUBS FROM RESPECTIVE BOXES. IF CONDUIT STUBS ARE NOT PRESENT, CONTACT SESD FOR ASSISTANCE & DIRECTION BEFORE DIGGING INTO ELECTRICAL BOXES. DANGER! DO NOT DIG OR PUSH WIRE INTO ANY TRANSFORMER! TRANSFORMERS CONTAIN 12,470 VOLTS INSIDE. DEATH OR INJURY MAY RESULT IN UNSAFE PRACTICES. CONTACT SESD & SCHEDULE AN APPOINTMENT FOR ASSISTANCE TO INSTALL ANY CONDUITS OR WIRES INTO TRANSFORMERS.
 2. TYPICALLY INSTALL 2½" POWER CONDUIT TO METERBASE. CONTACT SESD FOR SERVICES LARGER THAN 200 AMPS, EXTRAORDINARY DISTANCES, OR OTHER APPLICATIONS.
 3. TYPICALLY INSTALL (2) 1" CONDUITS FOR PHONE & CATV. CONTRACTOR MAY OR MAY NOT FURNISH MATERIALS FOR PHONE OR CATV.
 4. TYPICALLY INSTALL (1) 2" CONDUIT FOR SESD SMC SYSTEM CONDUIT. CONTRACTOR SHALL FURNISH 2" GRAY SCHEDULE 40 PVC RISER CONDUIT, SERVICE CONDUIT FROM SMC PEDESTAL & 24" PVC ELBOW AT HOUSE FOR THE SMC SYSTEM. .
 5. TYPICALLY INSTALL A ½"x8" GROUND ROD & #6 CU GROUND WIRE, IN ADDITION TO NATIONAL ELECTRIC CODE REQUIREMENTS FOR GROUNDING & BONDING.
 6. METERBASE SHALL BE KEPT ON THE FRONT 10' OF THE SIDE OF THE HOUSE.
 7. METERBASE SHALL BE LOCATED ON THE SAME SIDE AS THE POWER SOURCE. THE POWER SOURCE BEING THE JUNCTION BOX OR TRANSFORMER.
 8. METERBASE SHALL BE KEPT 3' CLEAR OF WINDOWS, WINDOW WELLS, DOORS, GAS METERS, STAIRS UNLESS OTHERWISE APPROVED, AND MEET ANY ADDITIONAL NEC, NESC REQUIREMENTS.
 9. POWER SERVICE CONDUIT & COMMUNICATIONS CONDUITS MAY BE INSTALLED IN A JOINT TRENCH. POWER CONDUIT SHALL BE INSTALLED AT 36" IN DEPTH MEASURED FROM TOP OF CONDUIT.
 10. CONTRACTOR TO FURNISH TRENCH & INSTALL METERBASE, RIGID METAL (RMC OR IMC) RISER CONDUIT & 36" SWEEP RMC ELBOW AT THE BUILDING. CONTRACTOR SHALL FURNISH & INSTALL ANY CONDUITS NECESSARY FOR POWER, SMC, QWEST, COMCAST TO THE POWER SOURCE OR PEDESTAL.
 11. TRENCH SHALL BE 3'6" (42") IN DEPTH. THE CONDUIT SHALL BE INSTALLED AT 36" TO TOP OF CONDUIT.
 12. ALL RIGID METAL ELBOWS OR CONDUITS SHALL BE TAPED WITH ANTI-CORROSION TAPE. THE TAPE SHALL EXTEND 6" ABOVE FINISHED GRADE. HATCHED CONDUITS REQUIRE CORROSION TAPE.
 13. SESD TO FURNISH & INSTALL METER & MAKE WIRE CONNECTIONS INSIDE POWER SOURCE.
 14. ATTACH (2) PIECES OF UNISTRUT TO FOUNDATION BY ¾"x3" CONCRETE ANCHORS, & CLAMP CONDUITS USING STRUT CLAMPS. METERBASE SHALL BE SECURELY ANCHORED OR SCREWED TO WALL.
 15. METER SOCKET SHALL BE LOCATED AT A HEIGHT NO LESS THAN 4'6" AND NO MORE THAN 6' TO CENTER OF METER SOCKET FROM FINISHED GRADE.

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|--------|-----------|---|--|----------|------|----|--|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL UNDERGROUND SERVICE (FRONT VIEW) | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 114-A |




SURFACE MOUNT
SIDE VIEW

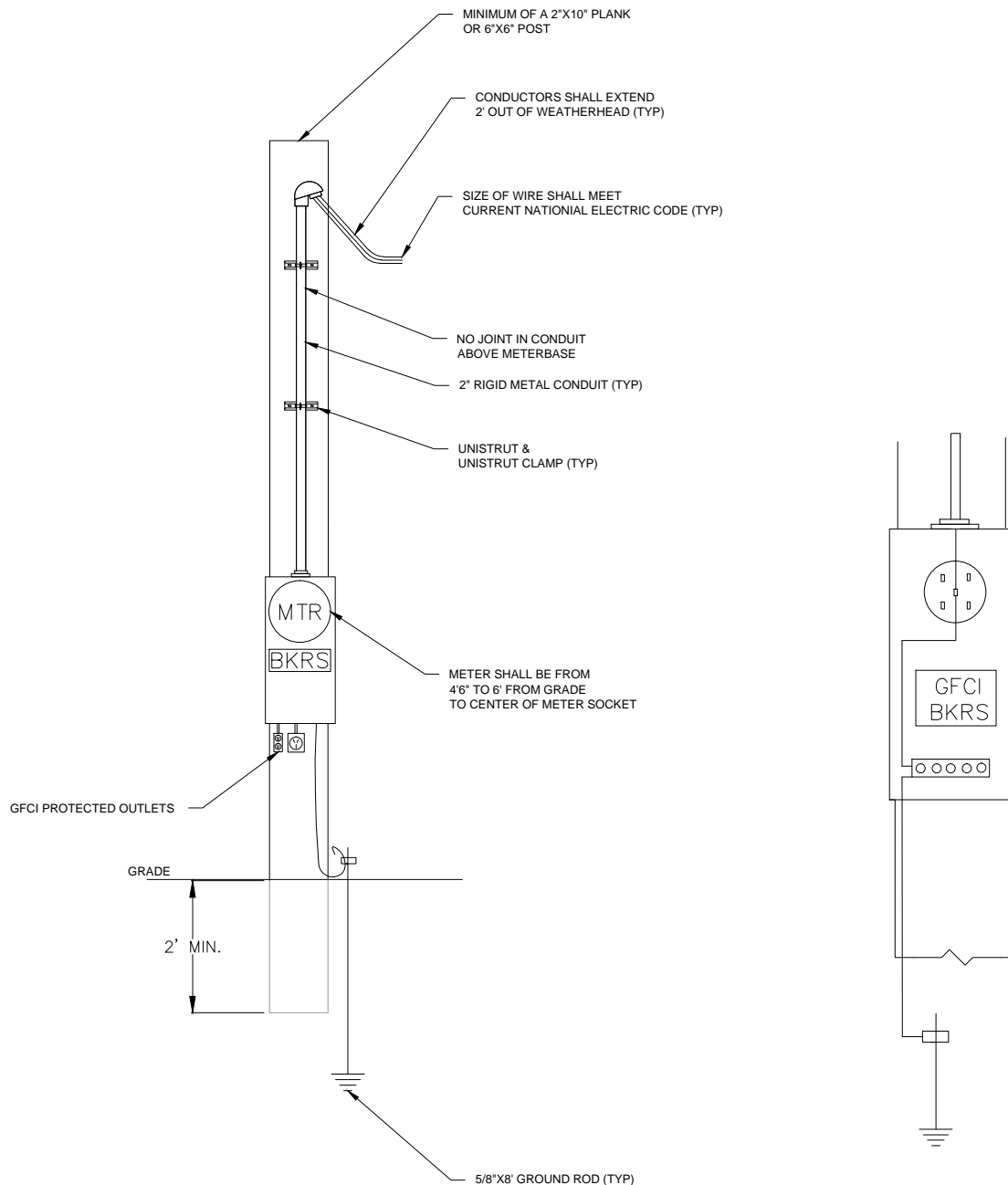


SURFACE MOUNT
FRONT VIEW

NOTES:


1. METERBASE SHALL BE LOCATED WITHIN THE FRONT 10' OF THE SIDE OF THE HOUSE, UNLESS OTHERWISE APPROVED BY SESD.
2. METERBASE SHALL BE KEPT 36" FROM WINDOWS, DOORS, STAIRS, GAS METERS, ETC.
3. SERVICE CONDUIT SHALL EXTEND THROUGH THE EAVES ABOVE THE ROOF A MINIMUM OF 36" AND EXTEND NO MORE THAN 48" UNLESS OTHERWISE APPROVED.
4. SECURELY AND SOLIDLY ATTACH CONDUIT TO HOUSE BY MEANS OF (2) UNISTRUT ASSEMBLIES (LAGS, UNISTRUT, AND CLAMPS). SECURELY ATTACH METERBASE TO HOUSE.
5. METERBASE SHALL BE NO LESS THAN 4" AND NO MORE THAN 6" TO THE CENTER OF THE METER SOCKET FROM FINISHED GRADE.
6. TYPICALLY GROUND TO "UFER" GROUND AND TO (2) 5/8"X8" COPPER-CLAD GROUND ROD. PROTECT GROUNDING CONDUCTOR BY 1/2" PVC OR EMT.
7. ALL METERBASE LOCATIONS SHALL BE APPROVED BY SESD.
8. CUSTOMER TO FURNISH & INSTALL METERBASE, RISER CONDUIT, RISER WIRE, WEATHERHEAD, FLASHING AND OTHER APPURTENANCES FOR SERVICE.
9. GROUNDING & BONDING SHALL MEET CURRENT NATIONAL ELECTRIC CODES, UTAH COUNTY STANDARDS AND SESD STANDARDS.
10. METERBASES SHALL NOT BE RECESSED INTO THE BRICK EXTERIOR OF THE BUILDING. METERBASES SHALL BE SURFACE MOUNTED ON THE EXTERIOR OF THE BUILDING.
11. FOR REMODELS OR SERVICE UPGRADES, CONTACT SESD PRIOR TO PERFORMING ANY WORK. METERS, METERBASES, MAY BE REQUIRED TO BE RELOCATED TO MEET CURRENT SESD STANDARDS, NEC CODES, COUNTY OR CITY STANDARDS.

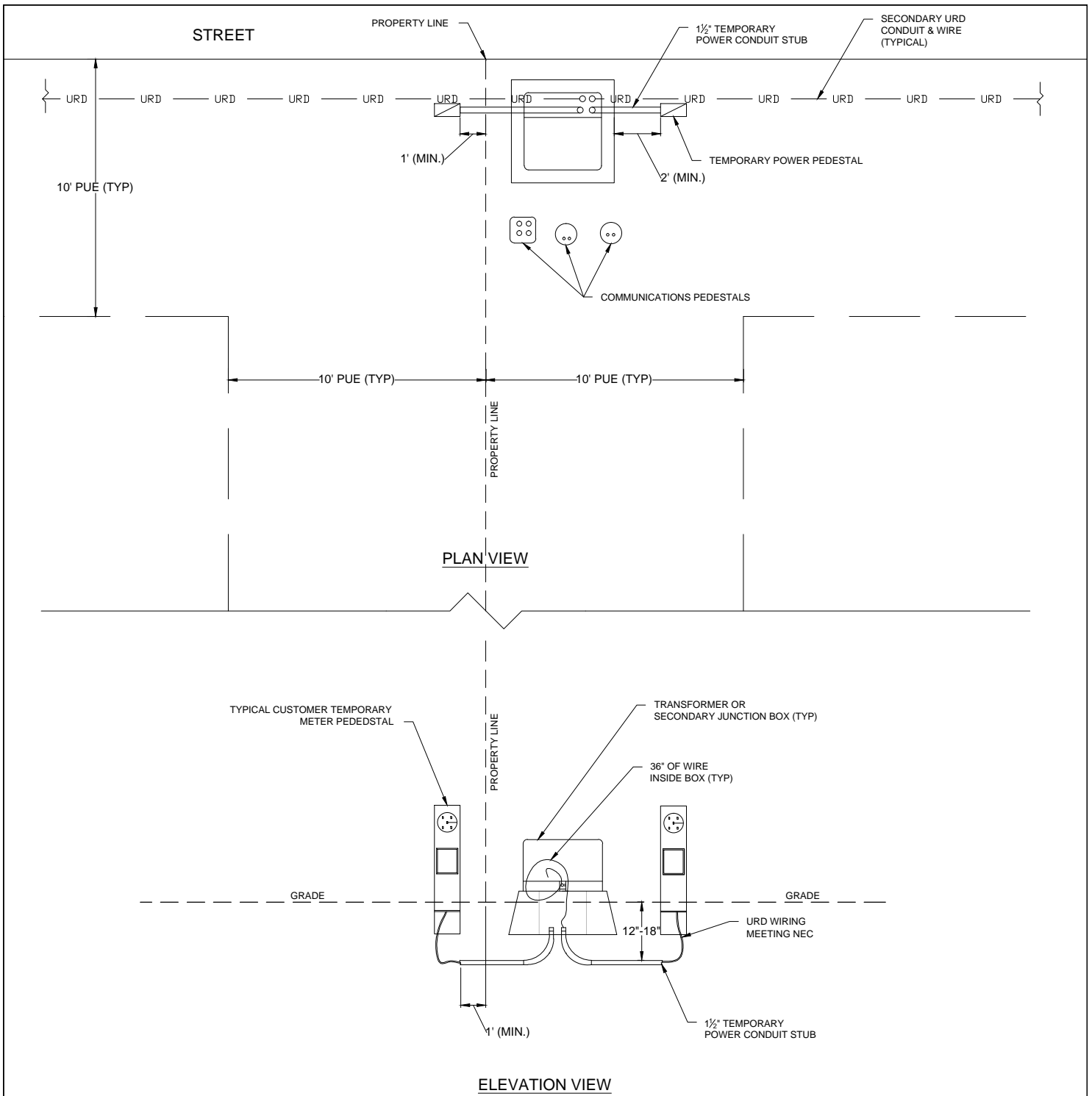
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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL OVERHEAD SERVICE | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 116 |



NOTES:


1. SESD SHALL FIRST APPROVE ALL LOCATIONS FOR TEMPORARY POWER INSTALLATIONS.
2. ALL COSTS TO INSTALL POWER TO TEMPORARY POWER SHALL BE PAID BY CONSUMER.
3. SESD MAY REQUIRE ADDITIONAL GUYING OR BRACING IF POOR SOIL CONDITIONS EXIST.
4. TEMPORARY POWER SHALL BE LOCATED IN A SAFE LOCATION, AWAY FROM POSSIBLE DAMAGE.
5. SERVICE DROPS SHALL MEET NEC, NESC FOR HEIGHT REQUIREMENTS OVER DRIVEWAYS, HIGHWAYS, WATER, BUILDINGS, ETC.
6. GROUND TO 5/8" X 8' GROUND ROD IN ADDITION TO GROUNDING/BONDING REQUIRED BY NEC.
7. TEMPORARY SERVICES SHALL REMAIN IN SERVICE NO LONGER THAN 360 DAYS UNLESS OTHERWISE APPROVED BY SESD.
8. FOR 3 PHASE COMMERCIAL APPLICATIONS CONTACT SESD.
9. IN GENERAL, TEMPORARY SERVICES SHALL NOT BE MOUNTED TO SESD POLES.

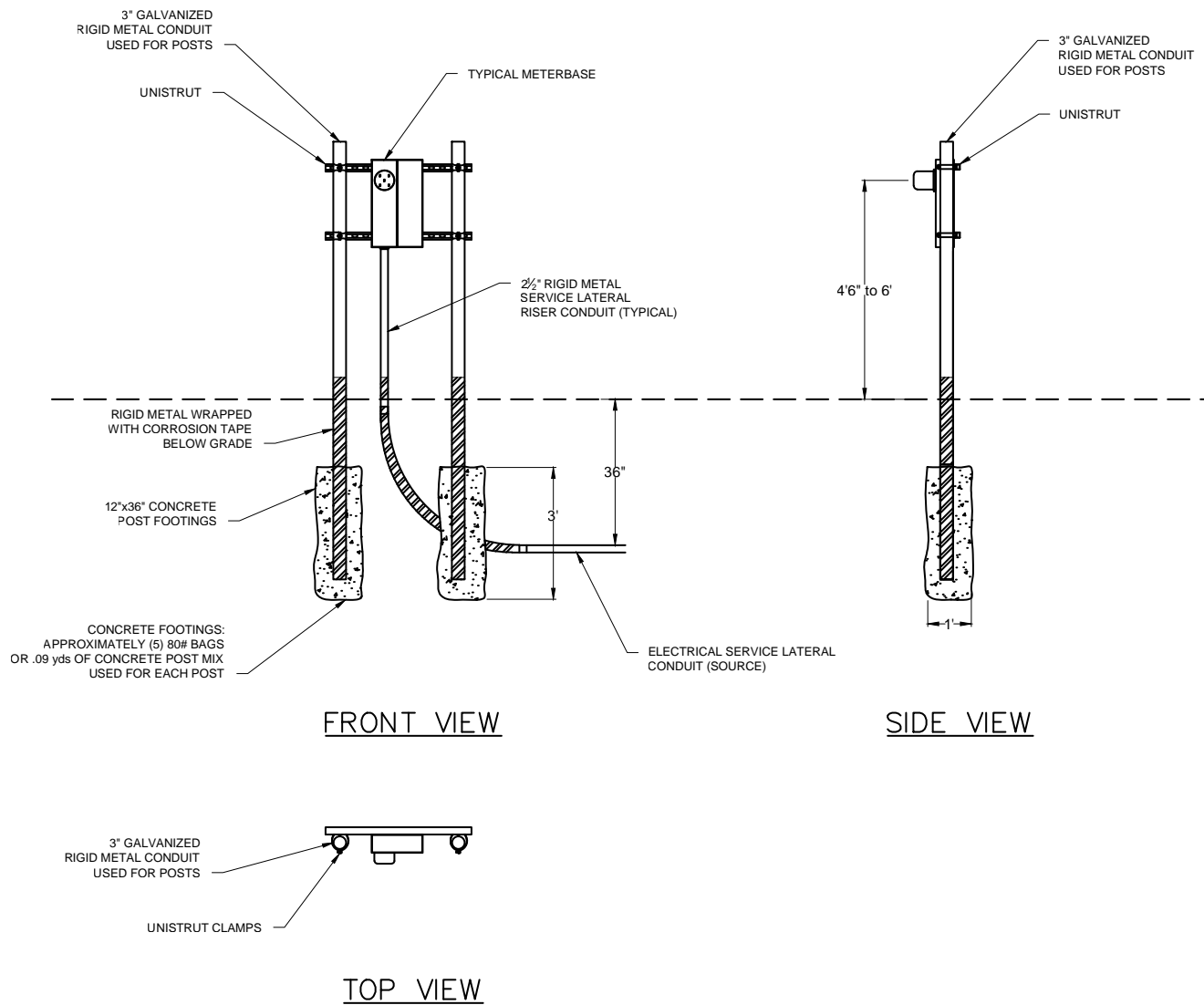
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| DRAWN | JRB |  | REVISION | | | DATE | BY | STANDARD DRAWING RESIDENTIAL TEMPORARY OVERHEAD SERVICE | SCALE |
| DESIGN | JRB | | | | | | | | NONE |
| CHECK | BC | | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | | 117 |



NOTES:


1. TEMPORARY PEDESTAL ASSEMBLIES MAY BE RENTED & INSTALLED BY SESD OR CUSTOMER MAY INSTALL THEIR OWN PEDESTAL
2. ALL COSTS TO INSTALL POWER TO TEMPORARY POWER SHALL BE PAID BY CONSUMER.
3. IF THE CUSTOMER INSTALLS THEIR OWN PEDESTAL, THE INSTALLATION SHALL MEET CURRENT APPLICABLE SESD STANDARDS, NEC CODES AND PASS INSPECTIONS.
4. TEMPORARY PEDESTAL WIRING SHALL BE A MINIMUM OF 36 INCHES IN LENGTH INSIDE OF THE TRANSFORMER OR JUNCTION BOX. CONTACT SESD FOR ASSISTANCE INSTALLING WIRING INTO ENERGIZED TRANSFORMERS OR JUNCTION BOXES.
5. TEMPORARY POWER PEDESTALS SHALL BE LOCATED ADJACENT TO THE POWER SOURCE.
6. 1 1/2" INCH TEMPORARY POWER CONDUIT STUBS SHALL BE STUBBED PAST THE PROPERTY LINE OPPOSITE OF THE POWER SOURCE BY A MINIMUM OF 1 FOOT
7. 1 1/2" TEMPORARY POWER CONDUITS SHALL BE BURIED AT A DEPTH OF 12" TO 18" BELOW FINISHED GRADE.
8. TEMPORARY SERVICES SHALL REMAIN IN SERVICE NO LONGER THAN 360 DAYS UNLESS OTHERWISE APPROVED BY SESD.
9. FOR OTHER THAN RESIDENTIAL APPLICATIONS CONTACT SESD.

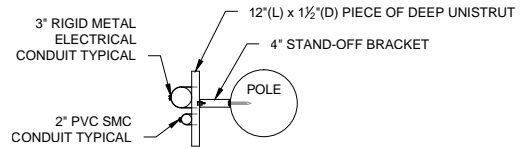
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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL UG TEMPORARY SERVICE | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 118 |



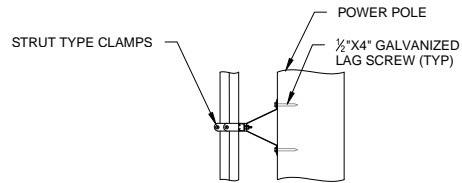
NOTES:

1. SESD SHALL FIRST APPROVE THE USE OF FREE-STANDING METERBASES.
2. SERVICE LOCATION MUST BE APPROVED BY SESD.
3. FOR OTHER THAN RESIDENTIAL APPLICATIONS CONTACT SESD.

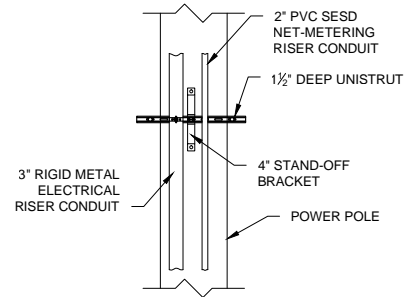
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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING RESIDENTIAL FREE-STANDING UNDERGROUND SERVICE | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 119 |



PLAN VIEW RISER POLE



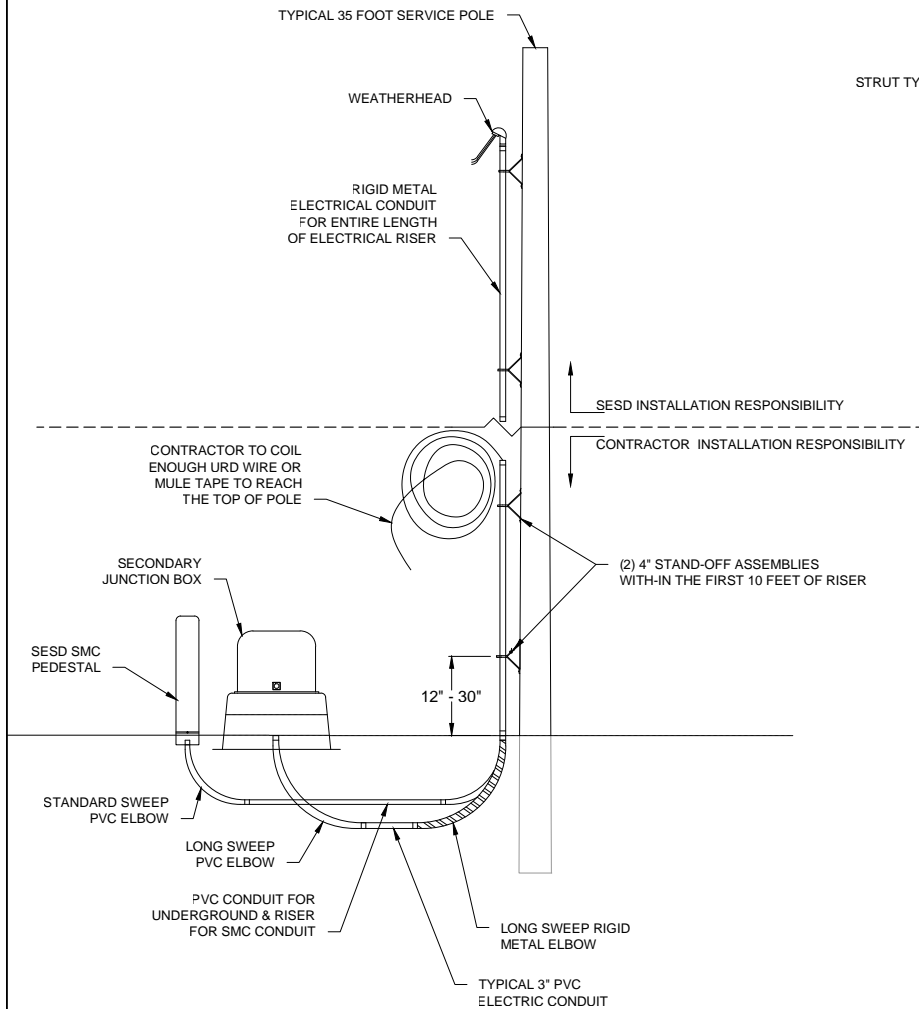
SIDE VIEW RISER POLE



FRONT VIEW RISER POLE

TYPICAL CONTRACTOR MATERIALS FOR (1) ONE POWER CONDUIT RISER
note: additional materials will be required for additional riser conduits


- (3) 10 FOOT LENGTHS OF RIGID METAL(RMC) OR INTERMEDIATE METAL(IMC) CONDUIT FOR RISER WITH METAL THREADED COUPLERS
- (4) 4" STAND-OFFS
- (4) PIECES OF 1 1/2" DEEP UNISTRUT CUT MINIMUM OF 12 INCHES IN LENGTH.
- (8) 1/2"X4" LAG SCREWS
- (4) STRUT TYPE CLAMPS SIZED FOR CONDUIT.
- (1) WEATHERHEAD FOR THE TOP CONDUIT.
- (4) BOLT SETS (BOLTS, NUTS, WASHERS) TO CONNECT UNISTRUT TO STAND-OFFS

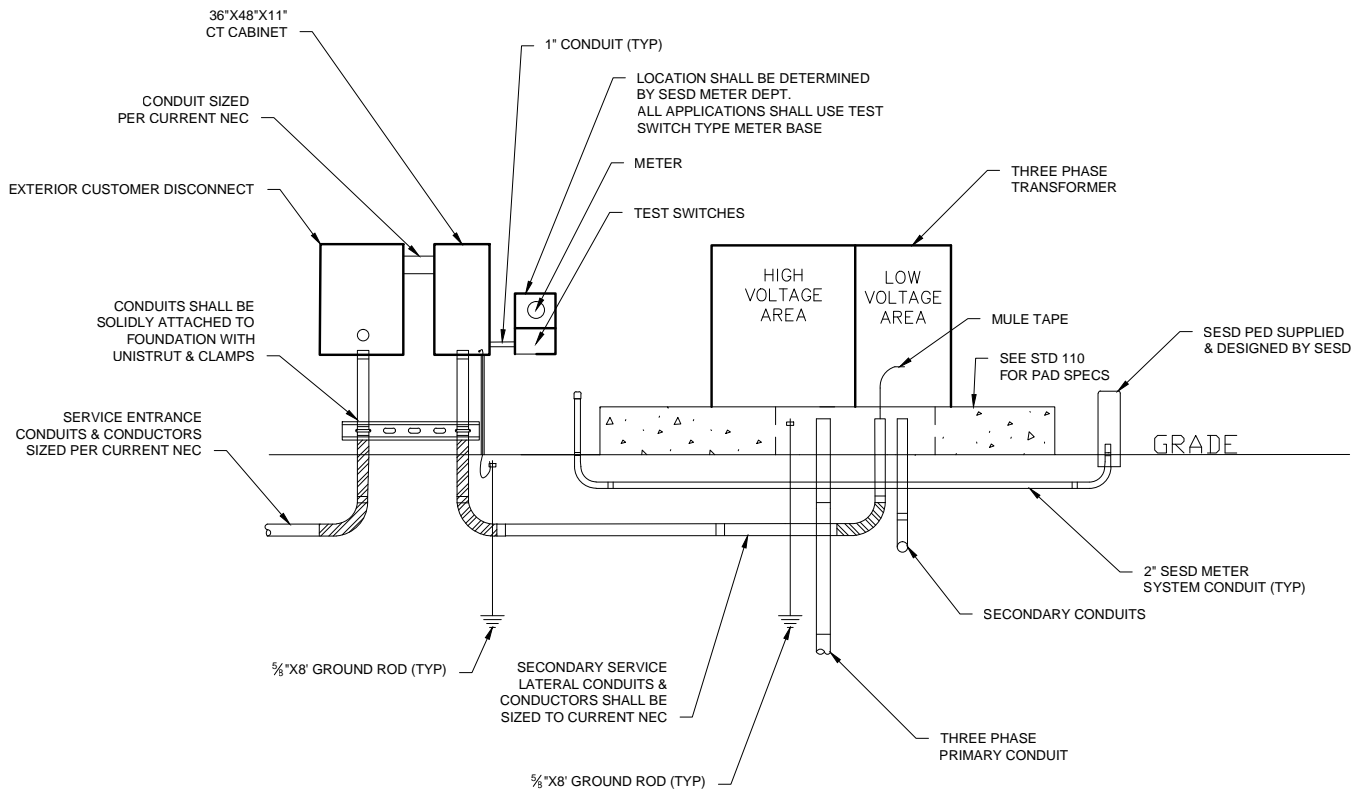


TYPICAL SERVICE POLE
 RISER


NOTES:

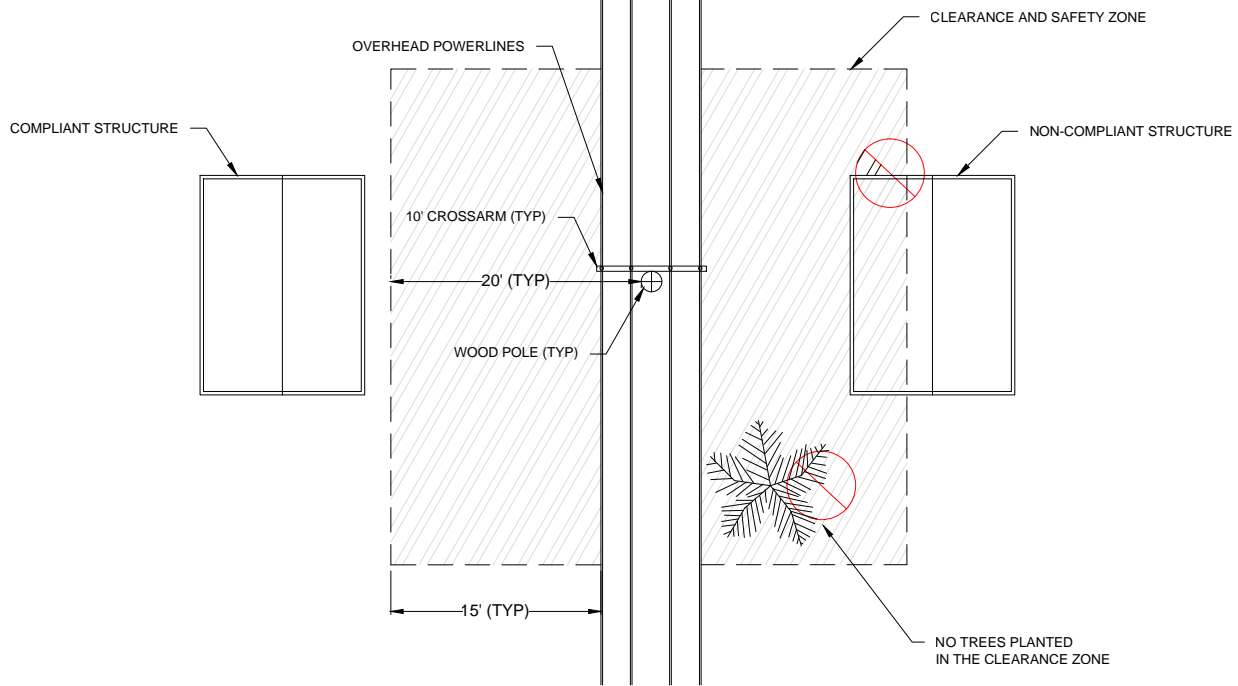
1. CONTRACTOR TO FURNISH ALL MATERIALS FOR THE COMPLETE RISER(S) INSTALLATION.
2. CONTRACTOR TO INSTALL THE RISER(S) FOR THE FIRST 10 FEET OF THE RISER & FURNISH MATERIALS FOR SESD TO FINISH RISER(S).
3. SESD SHALL INSTALL THE RISER(S) FROM THE FIRST 10 FEET THE REST OF THE WAY UP THE POLE.
4. ALL POWER CONDUITS TO BE RIGID METAL (RMC) OR INTERMEDIATE METAL (IMC) INCLUDING THE ELBOW TO THE TOP OF POLE.
5. CONTRACTOR TO INSTALL (2) TWO STAND-OFF ASSEMBLIES ON THE FIRST 10 FEET OF RISER.
6. ALL METAL CONDUITS BELOW GRADE SHALL BE COATED WITH ANTI-CORROSION TAPE. THE TAPE SHALL EXTEND UNTIL 6" ABOVE FINISHED GRADE.
7. IF CONTRACTOR IS PROVIDING URD WIRE, THEN COIL ENOUGH WIRE TO REACH TO THE TOP OF THE POLE.
8. SESD NET-METERING CONDUIT (SMC) SHALL BE PVC FOR ALL ELBOWS, CONDUITS, & RISER CONDUITS.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING TYPICAL SECONDARY RISER POLE | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 120 |

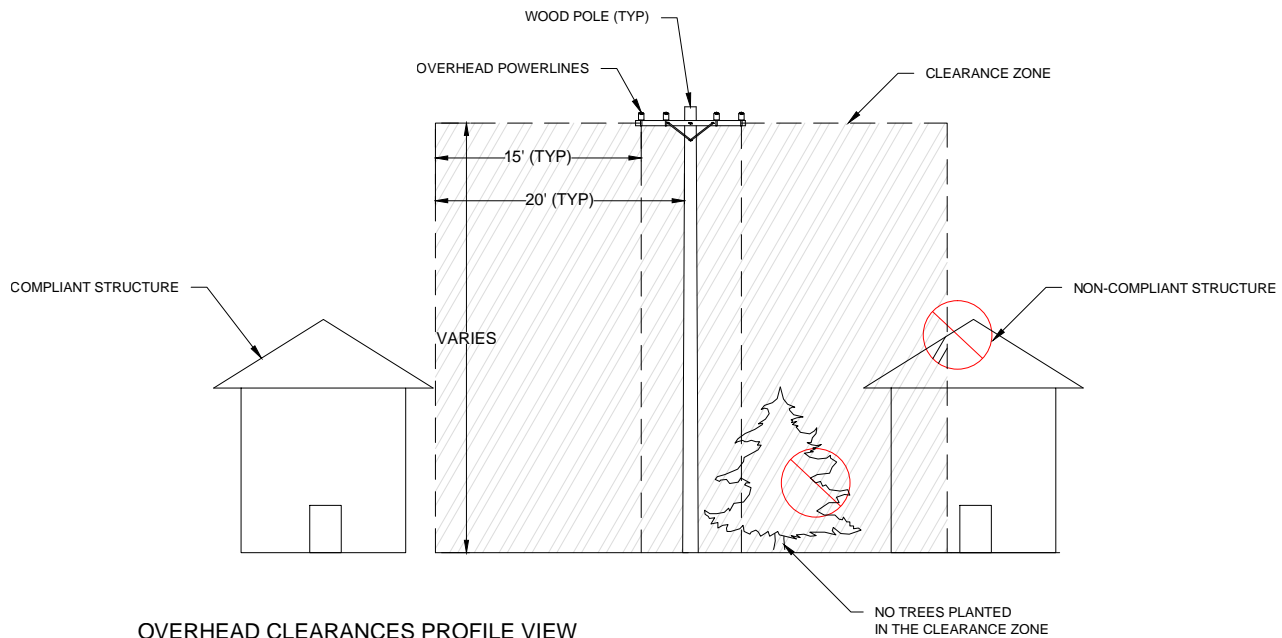


- NOTES:
1. ALL METER, SERVICE, MAIN DISCONNECT LOCATIONS SHALL BE APPROVED BY SESD.
 2. ALL COMMERCIAL OR INDUSTRIAL APPLICATIONS SHALL HAVE AN EXTERIOR MAIN DISCONNECT.
 3. SESD WILL FURNISH METERBASE & TEST SWITCHES FOR CONTRACTOR TO INSTALL. CONTACT SESD WITH QUESTIONS.
 4. FOR SERVICES RATED 800 AMPS OR LESS, A STAND ALONE CT CABINET MAY BE USED. USE MILBANK P/N: CT364811-HC & MOUNTING RACK P/N: K4798 OR AN APPROVED EQUIVALENT.
 5. 200 AMPS OR LESS SHALL USE LINK BYPASS METERBASE.
 6. FOR SERVICES RATED 801 AMPS OR LARGER, CONTACT SESD.
 7. FOR UNDERGROUND SERVICES THE LINE POWER SHALL ENTER THE CT CABINET FROM THE BOTTOM AND THE LOAD POWER SHALL LEAVE THE CT CABINET FROM THE TOP AND INTO THE CUSTOMER MAIN DISCONNECT.
 8. SESD SHALL INSTALL METER(S), CT'S.
 9. CONTRACTOR TO MAKE ALL SECONDARY CONNECTIONS IN THE TRANSFORMER AND AT THE SERVICE.

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|--------|-----------|---|--|----------|------|----|--|--------------|
| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING COMMERCIAL SERVICE 3 PHASE 200 AMPS-800 AMPS | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 121 |




OVERHEAD CLEARANCES PLAN VIEW

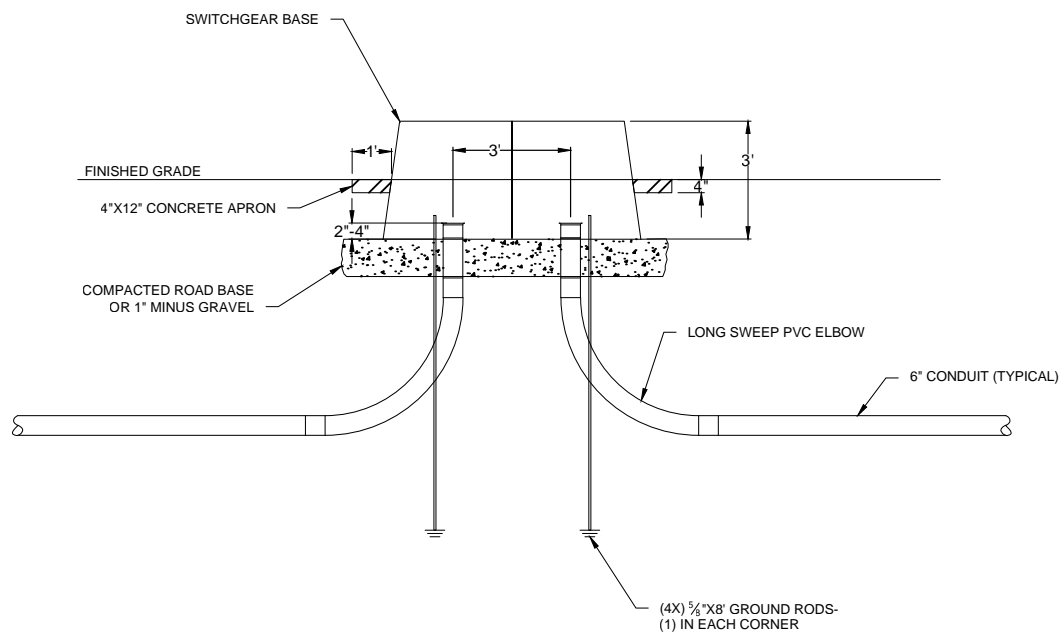
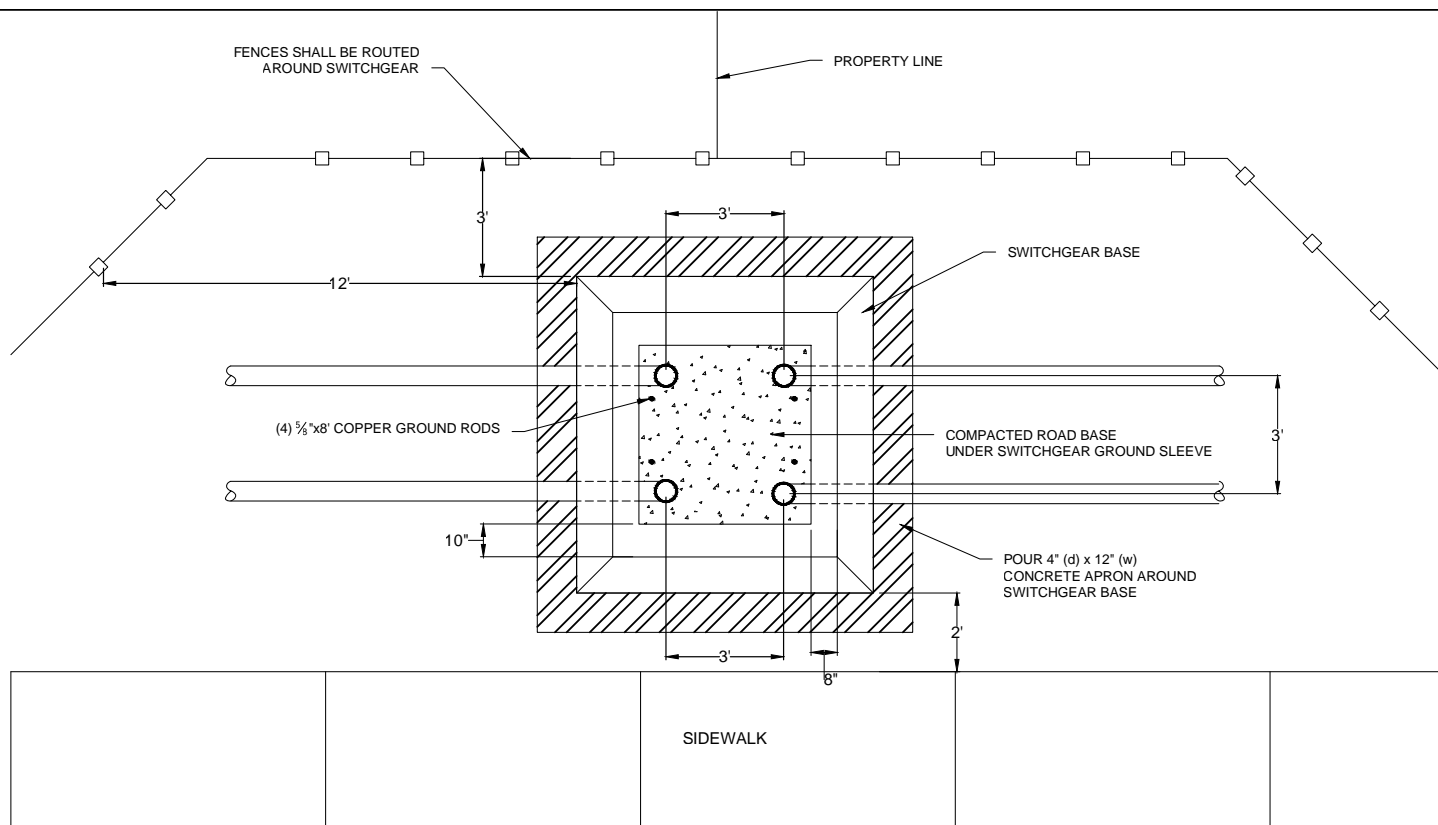


OVERHEAD CLEARANCES PROFILE VIEW

NOTES:


1. NO BUILDING OR STRUCTURE SHALL BE CONSTRUCTED OR PLACED IN THE CLEARANCE ZONE
2. SESD REQUIRES 15' OF CLEARANCE & EASEMENT FROM THE OUTSIDE CONDUCTOR OR 20' FROM THE CENTER OF THE POLE WHICHEVER IS GREATER.
3. IN GENERAL, RECORDED PUBLIC UTILITY EASEMENTS SHALL BE REQUIRED AND ARE TYPICALLY THE SAME AS THE CLEARANCE ZONE.
4. THE CLEARANCE & EASEMENT ZONE SHOWN IS FOR A TYPICAL OVERHEAD POWERLINE OPERATING BETWEEN 750 VOLTS TO 22,500 VOLTS NOMINAL.
5. THE CLEARANCE & EASEMENTS WILL BE INCREASED FROM 20' FROM THE POLE TO 30' ON EITHER SIDE OF THE POLE FOR VOLTAGES OVER 22,501 TO 46,000 VOLTS NOMINAL.
6. OPEN WATER, SWIMMING POOLS, SIGNS, BRIDGES, RAILROADS, AND OTHER HIGH DANGER STRUCTURES MAY REQUIRE ADDITIONAL CLEARANCES AND EASEMENTS.
7. TREES SHALL NOT BE PLANTED IN THE EASEMENT/CLEARANCE ZONE UNLESS APPROVED IN WRITING BY SESD. SESD SHALL MAINTAIN AND PROTECT THE POWER LINES FROM TREES BY AGGRESSIVELY TRIMMING OR REMOVING ANY TREES OR OTHER VEGETATION DEEMED UNSAFE OR OTHERWISE AN ENCUMBRANCE IN MAINTAINING THE POWER LINES.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING OVERHEAD POWERLINE CLEARANCES | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 122 |



NOTES:

1. ROAD BASE UNDER BOXES SHALL BE COMPACTED TO 95% OF DRY DENSITY.
2. SWITCHGEAR BASE WILL BE PROVIDED BY SESD & INSTALLED BY CONTRACTOR.
3. CONDUIT SIZES AND LOCATIONS WILL BE DESIGNED & PROVIDED BY SESD ON THE SUBDIVISION OR SITE PLANS.
4. SWITCHGEAR HAVE DOORS ON TWO SIDES, THEREFORE, PROPER PLANNING SHALL BE CONSIDERED IN MAINTAINING CLEARANCES AND ACCESS.
5. 12' OF CLEARANCE SHALL BE MAINTAINED IN FRONT OF THE DOORS AND 3' OF CLEARANCE ON ALL OTHER SIDES. IN ADDITION, AN AREA OF 12' IN ALL DIRECTIONS AROUND SWITCHGEAR SHALL BE BACKFILLED AND LEVELED TO PROVIDE A SAFE WORKING AREA AND ACCESS.
6. BOLLARDS, RETAINING WALLS, CURBING, OR OTHER PROTECTION MAY BE REQUIRED BY SESD TO PROTECT SWITCHGEAR FROM DAMAGE.
7. SWITCHGEAR BASE SHALL BE LEVEL AND SET SO THE LOCKING MECHANISM IS 18" ABOVE FINISHED GRADE.
8. CONDUITS INSIDE SWITCHGEAR BASE SHALL BE CUT OFF SO THEY ARE 2" TO 4" ABOVE THE BOTTOM OF THE BASE FROM THE INSIDE OF BASE.
9. (4) FOUR 5/8"X8' COPPER-CLAD GROUND RODS SHALL BE INSTALLED IN EACH SWITCHGEAR.
10. FENCES SHALL BE ROUTED AROUND SWITCHGEAR SO AS TO MAINTAIN ACCESS & CLEARANCES.
11. A 4" (depth) X 12" (width) CONCRETE APRON SHALL BE POURED AROUND SWITCHGEAR BASE.
12. WHERE POSSIBLE SWITCHGEAR SHALL SPLIT TWO PROPERTIES.

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| DRAWN | JRB |  | SOUTH UTAH VALLEY ELECTRIC SERVICE DISTRICT 803 NORTH 500 EAST PAYSON, UTAH 84651 801-465-8020 | REVISION | DATE | BY | STANDARD DRAWING SWITCHGEAR LAYOUT | SCALE |
| DESIGN | JRB | | | | | | | NONE |
| CHECK | BC | | | | | | | STANDARD NO. |
| DATE | 5/14/2012 | | | | | | | 123 |