ELECTRICAL CONNECTION POLICY

1. INTRODUCTION

A. NBU BOARD POLICY

1) This policy is adopted pursuant to the authority conferred by Chapter 130, Art. III of the Code of Ordinances of the City of New Braunfels. Electric rates, provisions, and conditions of service as approved by New Braunfels City Council and NBU Board of Trustees are specified in the Code of Ordinances of the City of New Braunfels.

2) It is the responsibility of NBU management to establish and enforce minimum requirements for installation of electrical equipment within the NBU service area, up to and including the meter. These requirements are updated and modified as deemed necessary by authority of NBU management. NBU or any agent thereof, does not accept or imply any liability in connection with the use of NBU requirements or standards. These standards are to be administered by knowledgeable, certified electricians, qualified to understand and assure proper application of all applicable codes and standards. The equipment and its installation remain the responsibility of the owner of said equipment.

3) NBU will endeavor to provide economical, reliable electric service in accordance with industry standards, within the service area described by the Texas Public Utility Commission. NBU does not guarantee continuous service and accepts no liability for acts of nature or other occurrences beyond its control.

4) NBU retains the right to discontinue electric service as specified in the Code of Ordinances or to prevent hazardous situations within its service area. NBU will only connect or reconnect electric service to meter loops or other equipment, which meet or exceed the requirements of the NEC, NESC, local city ordinances and the minimum standards established by NBU.

5) The authority conferred upon and any action taken by NBU in making inspections and establishing standards is for the benefit of NBU and its electric utility system. NBU shall not be deemed to have assumed any responsibility with respect to any such action herein authorized or taken by NBU, with respect to proper construction or compliance with any code or standard. Responsibility to ensure compliance with all codes and standards remains with the owner/customer.

B. DEFINITIONS

1) Application for Service: The agreement or contract between NBU and the prospective customer under which electric service is supplied by the former and taken by the latter.

2) City: A local governing jurisdictional authority with defined geographical boundaries.

3) Commercial: Pertaining to line construction only, this term shall apply to all business and mercantile enterprises, all educational, institutional and assembly structures (schools, churches, etc.), all hospitals, commercial storage units, unapproved subdivisions, unapproved mobile home parks, and all privately owned residential associations or cooperatives such as condominiums, townhouses, and garden homes whose main access is by way of a private, nondedicated street or drive.

4) Customer: Any entity, including but not limited to, the owner or operator of a business, firm, corporation, industry, or residence connected to and receiving electric, water, or sewer service from New Braunfels Utilities.

5) Distribution Lines: NBU's high voltage (7200/12,470 volts) electric lines located along streets, alleys, highways, easements or on private property when used or intended for use for general distribution of electric service to NBU customers.

6) Easement: The right of NBU to use the land of another for a specific purpose concerning its electric utility system.

7) Electric Service: The availability of electric power and energy, regardless of whether any electric power and energy is actually used.

8) Industrial: Pertaining to line construction only, this term shall apply to all factories, industries, large manufacturing firms or any enterprise which in all probability will be large or very large power users, as defined in the City Ordinance.

9) Meter: An instrument, or instruments, together with auxiliary equipment, for measuring the electric power and energy supplied to a customer.

10) Meter Loop: The opening in and/or extension of a customer's service entrance conductors provided for installation of NBU's meters.

11) NBU: New Braunfels Utilities. A municipal utility established by the City Council of New Braunfels, Texas, in December, 1942, to manage, control, and operate any or all of the electric, water and sewer systems owned or held by the City of New Braunfels. The NBU Board of Trustees consists of five Trustees (one being the Mayor) appointed by the City Council.

12) Owner: When applied to any land, building, or structure, shall include any part owner, joint owner, tenant in common, tenant in partnership, or joint tenant, of the whole or of a part of such land, building, or structure.

13) Point of Delivery: The point where the electric energy first leaves the line or apparatus owned by NBU and enters the line or apparatus owned by the customer. The Point of Delivery shall be determined by NBU, and is not necessarily the point of location of the electric meter. Typical points of delivery include weatherheads, meter sockets, service junction boxes and padmounted transformers. The point of delivery for an NBU owned and maintained underground residential service lateral is the line side of the meter socket, for an NBU owned and maintained overhead service drop the point of delivery is the attachment to the customer's weatherhead.

14) Primary: NBU's high voltage electric system, 7200 volts single-phase or 12,470 volts three-phase, consisting of poles, crossarms, conductors, conduit, junction boxes, transformers, and other associated equipment and hardware; overhead and underground.

15) Residential: Pertaining to line construction only, this term shall apply to all private individual dwellings, all wells and noncommercial barns.

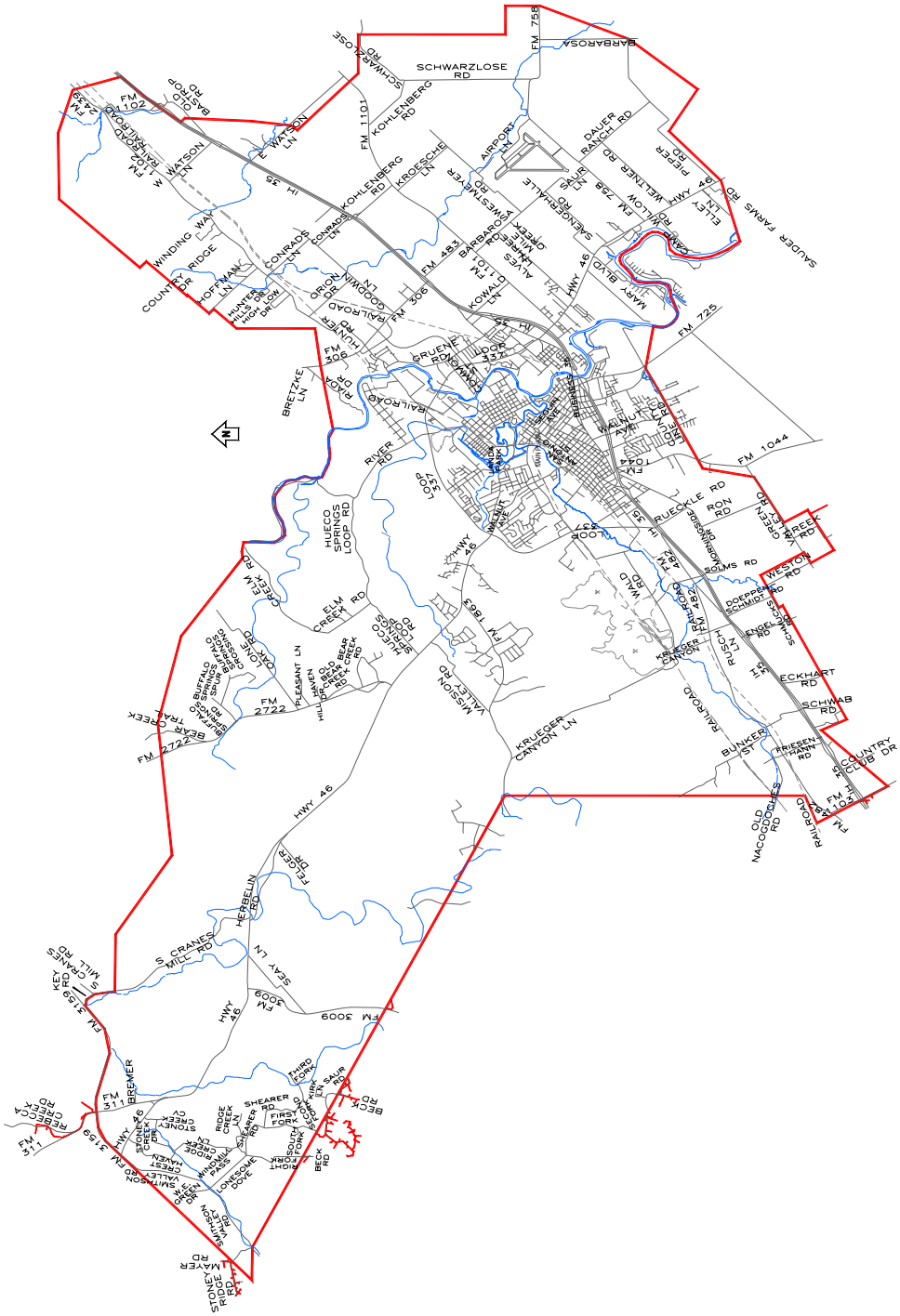
16) Secondary: NBU's electric system from the low voltage connections on the transformers to the customer's service entrance, meter, or main disconnect devices. The maximum voltage is 480 volts. This system consists of conduit, conductors, junction boxes, and connections; overhead and underground.

17) Service Drop: The service drop is that portion of NBU's service conductors extending from NBU's distribution system, whether it be overhead or underground, to the customer's service connection.

18) Service Entrance Conductors: The wires provided by the customer extending from his main line switch, to the terminals of NBU's service connection.

19) Street: Includes streets, avenues, boulevards, roads, alleys, lanes, viaducts, drives, highways, and all other public places commonly used for the purpose of travel.

C. ELECTRIC SERVICE AREA MAP



2. GENERAL CONDITIONS

A. STANDARDS AND DESIGN

1) NBU regulations and policy are subject to periodic revision and fees are subject to change. This publication shall supersede all previous policies concerning connection requirements for electricity, as supplied by New Braunfels Utilities (NBU), and shall supplement the specific Code of Ordinances presently in force within the City of New Braunfels (City), Comal County, and other areas of governmental jurisdiction.

2) NBU regulations and policy conform to accepted standards, and strive to provide satisfactory service at the lowest possible rates and ensure prompt, courteous, and equitable treatment of all customer requirements.

3) In exceptional cases where this policy appears impractical or unjust, to either NBU or its customers, the matter may be referred to NBU management. In addition, if special conditions arise that are not included in this policy, NBU will give individual suggestions upon request. It is imperative that continuous cooperation and coordination be maintained between NBU, owner/customer, other utility companies, and other areas of governmental jurisdiction. Everyone benefits if plans and activities are coordinated well in advance. Coordination of all utility services and permit requirements will result in a better overall design and fewer construction changes.

4) If any standards are in conflict, NBU standards will prevail.

5) NBU specifications and standards drawings conform to, or exceed all minimum requirements of the National Electrical Code (NEC) and are on file at NBU. Any customer not familiar with NBU and/or NEC requirements concerning electric service installations may view all relevant NBU standards. NBU will assist in their interpretation, if requested.

6) For safety reasons, customer's equipment and wiring must conform to NBU, National Electrical Safety Code (NESC) and NEC standards, and all federal, state, and local regulations. In the event that a customer's wiring or installation does not comply with these minimum standards, NBU shall refuse to connect service. If the governing authority condemns a building or it's wiring, NBU will disconnect service at the authority's request.

7) NBU cannot be responsible for the installation or maintenance of electrical equipment or wiring on customer's point of delivery side of NBU's electric service, except for meters and their appurtenances.

8) NBU uses standard protective devices and all reasonable care to ensure a steady and continuous service to its customers, but cannot be responsible or liable for damages due to interruptions and irregularities.

9) NBU does not provide equipment to protect the customer's facilities. The customer is advised to meet or exceed all applicable guidelines of the NEC and manufacturers requirements. NBU will provide fault current and electrical data at the customer's request. Available fault currents may exceed 10,000 amperes in some locations. NBU's power system provides high speed reclosing of protective equipment following power interruptions. Three-phase loads may require protection from single phasing. It is possible for one phase of a three-phase service to be de-energized for an extended period. Ground fault protective equipment should be used where appropriate.

10) NBU reserves the right to interrupt service to perform necessary maintenance, and/or upgrades, or make additions to the electric system. NBU will contact those customers involved with as much notice as is practical. In some instances, it may not be possible to give notice. NBU will make any interruptions in service as short as is reasonably possible. When possible, NBU will work with those involved, trying to find a mutually acceptable time to perform the work.

11) Customer equipment that has the ability to cause a large fluctuation in voltage and interfere with NBU service to other customers shall require a separate installation or suitable apparatus to limit the fluctuation. Otherwise, NBU may refuse service altogether or decline to serve under the established rate schedule. All motors over 25 hp must have their installation approved by NBU before connection.

12) NBU reserves the right to determine whether primary or secondary metering is appropriate for service needs at any requested point of delivery. NBU shall design all primary facilities.

13) NBU poles, wires, towers, structures, and other facilities are provided for supplying electric service. Any radio or television equipment, wire, ropes, signs, banners, or anything of any nature not necessary to the supply of electric service by NBU, which is in proximity or attached to NBU poles, wires, towers, or structures, may be dangerous to life and property and is therefore prohibited. NBU reserves the right to remove any and all such hazards to its service without notice and bill the customer for associated cost.

B. AVAILABILITY OF SERVICE

1) Prospective NBU customers need to confirm the availability of the specific service they will require with NBU. After confirmation of NBU ability to furnish the requested service, prospective customers shall ensure that all necessary permits and plat approvals, if applicable, are obtained from the appropriate City and/or County authorities. Prospective customers must then sign NBU applications for service and receive detailed information concerning their specific service request.

2) In order to ensure NBU's ability to supply service, a prospective customer who requires electric service for any commercial, industrial, or large and/or complex residential project must submit applicable drawings of the system design to NBU for approval before any work is begun. At the time that approval is granted, and applications signed, NBU will, before any work is done by NBU construction forces, prepare drawings for its phase of the project.

3) All installations requiring more than a single-phase 200 amp meter loop shall have their design approved by NBU before installation. During the early stages of building design for large commercial or industrial complexes, contact NBU to establish sizing, location of equipment, and availability of service conditions.

4) NBU will not make a final connection for any customer unless and until all inspections and approvals are granted.

C. THREE-PHASE AVAILABILITY

1) Three-phase service is available to customers with a demand of at least 50 kVA or one three-phase motor larger than 7.5 hp. Devices to convert single-phase to three-phase can be obtained for a wide range of three-phase motors, therefore availability for three-phase service for smaller motors should be discussed in advance with NBU.

3. TEMPORARY SERVICE

1) Temporary electric service may be provided by NBU for construction power or to any one-time venture or project. Temporary service is provided for a maximum of six months. At the end of that period the customer will be notified, and, if no further application is made, a disconnect shall be made by NBU within two weeks. Under certain circumstances, additional fees may be assessed.

2) If temporary service requires installation and removal of facilities not required for permanent electric service, the associated cost shall apply and be estimated by NBU.

3) All temporary meter locations for small commercial and residential service shall be installed close to the permanent meter location so that NBU can use the service wire for both temporary and permanent service. The temporary meter loop shall be installed according to NBU specification drawing EU-110 for underground service or EH-110 for overhead service and inspected by authorized NBU personnel. When disconnecting NBU service wire from a temporary meter loop, NBU will not cut any of the original 36" length of customer's exposed conductor.

4. MODIFICATIONS/NON-STANDARD DESIGN

1) The customer must give notice to NBU, as far in advance as possible, of any substantial proposed increase or change in the customer's load. Protection of NBU supply lines and equipment may necessitate upgrading or alteration of NBU facilities. The customer may be responsible for appropriate fees.

2) Any customer requesting modifications to existing primary and/or secondary electric service lines and/or equipment constructed by NBU shall be held responsible for all modification costs.

3) Any non-standard design considerations or modification of existing equipment shall be paid for by those desiring the work to be done. This work shall be done only with prior approval of NBU. Cost for such work is determined by estimates prepared by NBU.

4) Fees for the relocation of facilities will be based on the cost of labor, equipment, and materials as determined by NBU.

5. FEES FOR NEW SERVICES

A. ESTIMATES/FEES

1) This section addresses standard fees for providing service. Other fees for overhead and underground line construction, relocation of existing facilities, private security lighting, and special designs are addressed elsewhere. Customers shall review each section to determine fees applicable to a project. Metering and miscellaneous fees apply to any new service.

2) NBU endeavors to provide electric service to its customers by the most economical route available. Any customer who requests alternate routing must secure NBU approval and pay any additional expenses.

3) Where unusual circumstances exist, NBU reserves the right to estimate costs based on those circumstances rather than the standard fees. NBU will confer with customers about those circumstances and charges. Other facilities and special considerations (such as rock pole holes) will be estimated by NBU.

4) Fees for installation of NBU services are nonrefundable after work is performed.

5) Under no circumstances do any fees paid to NBU indicate transfer of ownership to the customer. All equipment installed by or for NBU shall become and remain the property of NBU. Fees to customers for special considerations are to defer costs from other NBU customers rather than the selling of services or material.

6) Any estimate furnished by NBU is valid for a period of ninety (90) days from the day the customer receives the estimate or until the application signed for that specific service. Any application for service signed more than ninety (90) days after the estimate was furnished may result in service work done at a price other than that shown on the estimate.

7) No permanent or temporary electric facilities will be installed or connected for any customer who has fees payable to NBU, unless other arrangements are made with authorized NBU personnel.

8) All fees for electric service connections shall be paid in advance of service connection unless other arrangements are made with authorized NBU personnel.

B. RESIDENTIAL LINE EXTENSION

1) The first 500 feet of conductor from a single-family residence or an individually metered multi-family dwelling to public rights-of-way shall be provided at no charge. NBU shall install and assume all costs for any necessary overhead primary facilities that might be required within existing public rights-of-way. NBU shall install and assume all costs for installing and terminating new underground primary conductor in customer installed conduit along new public rights-of-way; e.g., new subdivisions. Other applicable fees shall remain in effect.

2) All fees for residential line extensions on private property shall be paid in advance up to $300.00. Qualified customers will be allowed to defer payment of fees exceeding $300.00 on a monthly billing according to the following schedule.

- $50.00 per month minimum payment.
- Maximum of 60 months payments.
- An administrative fee of $10.00 per month is added to each monthly bill.

C. RESIDENTIAL LINE EXTENSION CREDITS

1) Residential customers receiving electric service after June 30, 1995, which requires a line extension payment, are eligible to receive a credit. This credit is $1,250.00 for each additional residential or commercial customer receiving service from the line within five (5) years. The total credit allowed shall not exceed that of the original line extension fee paid. Other fees will not be eligible for credit. The customer is responsible for requesting this credit annually within five years of the date of their original service connection.

D. METERING EQUIPMENT

1) The following electric meter "sockets are available at NBU for use on any single-phase, 3-wire service installation in the NBU system and will be furnished to the customer at no charge with an approved service request.

- 100 amp, single-phase, 2" hub, square socket
- 200 amp, single-phase, 2" hub, square socket
- 100 amp, single-phase, 1 1/4" hub, square socket
- 200 amp, single-phase, 2" underground socket
- Lugs

2) There is a fee for all three-phase meter sockets or for any socket of greater than 200-amp capacity. Current prices for the following sockets stocked by NBU are available upon request.

- 100 amp, three-phase, 2" hub, square socket
- 200 amp, three-phase, 2" hub, square socket
- 320-amp socket (for overhead or underground service)
- 400-amp socket (for overhead or underground service)
- 480 amp, three-phase
- Lugs

3) Special metering considerations, which shall be approved by NBU, are subject to the following fees.

- Secondary CT meter cabinets, which will accommodate up to 2-#500 kcmil per phase $169.50
- Three-phase CT meter which will accommodate up to 2-#500 kcmil per phase $375.00
- Three-phase CT meter which will accommodate 3 or more #500 kcmil ..... Price on Inquiry
- Primary PT/CT metering.....$4,412.00

4) NBU is responsible for the maintenance, repair, and replacement of all metering equipment installed by NBU.

E. AFTER HOURS CONNECTIONS

1) Service connections are scheduled by NBU and will occur during normal working hours. Service connections requested for times other than normal working hours result in significant additional costs to NBU. If connection of service is requested to be performed after 3:00 p.m. on weekdays, on weekends, or on official NBU holidays, the following fees will be assessed. Connection shall be done only if all applications, required deposits, and fees have been paid and the installation has passed all the necessary inspections.

a) Residential Customers: A minimum fee of $150.00 will be assessed. On overhead installations, this fee includes installing the service from a single point of attachment on a pole to the customer's point of attachment, making the final connections and/or setting the meter. On underground installations this fee includes installing the service from an underground enclosure to the customer's equipment that is less than 80 feet in lateral length and 4/0 or smaller in conductor size, making the final connections, and/or setting the meter. This fee does not include the building of risers, pulling of conductor between service enclosures, installing conductor larger than 4/0, or distances greater than 80 feet in lateral length. If the installation exceeds any of the above guidelines, the additional work will be billed to the customer at actual cost of labor. This cost is in addition to the minimum fee. NBU will furnish a total cost estimate upon request by the customer.

b) Commercial Customers: The customer is billed for actual labor and equipment charges, but not less than $150.00. NBU will furnish a cost estimate upon request by the customer.

F. ELECTRIC METER LOOP INSPECTIONS

1) Inspection General Information

a) All customer required work shall be complete and ready prior to requesting an inspection.

b) Regular business hours for NBU inspections are 7:30 a.m. through 4:00 p.m., Monday through Friday, excluding NBU holidays.

c) Questions regarding the electric secondary inspection process should be directed to the NBU Electrical Engineering Division

2) Meter Loop Inspections

a) Meter loop inspections will be conducted the next business day following the request. Same day inspections may be requested but are subject to inspector availability and an accelerated inspection fee shall apply.

b) Meter loop inspections requested to be performed outside regular business hours shall be assessed a non-business hour inspection fee and are subject to inspector availability.

c) If meter loop is not ready or does not conform to NBU specification, design, and code requirements, a re-inspection fee shall be assessed each additional time it is necessary to make inspections.

3) Inspection Fees

a) First Meter Loop Inspection .....No Charge

b) Accelerated Inspection Fee.....$35.00

c) Meter Loop Re-Inspection Fee $35.00

d) Non-Business Hour Inspection Fee $75.00

4) Inspection Request Process and Contacts

   a) Inspection requests should be made by contacting NBU personnel at 830-608-8815.

   b) NBU inspectors will attempt to coordinate the time of inspection as requested by the customer.

   c) Inspections shall be cancelled no later than 10:00 a.m. the day of the scheduled inspection or it will be considered a failed inspection.

5) Payment of Fees

   a) Inspection related fees are billable through an active NBU service account that is not delinquent. Authorization for direct account billings for inspection fees may be made by the service account holder.

   b) All inspection related fees not billed through an active NBU account must be paid in full before an electric meter will be installed.

6. GENERAL SERVICE STANDARDS

A. METER LOCATION

1) NBU will provide meter locations when plans are reviewed. Within the city limits, plans are reviewed when an application for permit is received. A mutually agreeable location is desired.

2) The meter shall be easily accessible at all times to NBU personnel. It shall not be located behind a fence or other barrier unless special considerations are met. Meters shall not be located where they will interfere with traffic, adjacent to sidewalks or driveways, or where they will obstruct the opening of doors or windows.

3) Where more than one meter is installed, as on multi-family dwellings, or shopping centers, the meters are to be grouped at a point accessible at all times to customers and NBU employees.

4) Some installations may require the meter to be located on a pole (for overhead service) or on a stand (for underground service) as determined by NBU.

B. METERING ASSEMBLY

1) Customer shall be responsible for furnishing and correctly installing all equipment for meter loops, including meter sockets (obtained from NBU) as specified in the following sections. Refer to NBU specification drawings for details.

2) Any enclosures (troughs) required on the supply (NBU) side of the meter shall be lockable by NBU to prevent unauthorized opening.

3) Meter mounting devices shall be installed so that the disc of electro-mechanical meters is exactly level when installed. The face of the meter shall be installed 5 to 6 feet above final ground grade as measured 30 inches in front of the meter. NBU reserves the right to inspect the meter loop to ensure acceptable wiring and termination practices. (See Article 220 and 230, NEC.)

4) Where more than one meter is installed, each meter socket shall be clearly and permanently marked by the person installing it to show the apartment and/or address served by the meter. It shall be the responsibility of the customer/contractor to ensure the accuracy of the markings with respect to the apartment and/or address. The customer shall demonstrate and NBU shall witness verification of the accuracy of these markings.

5) Customers are required to install service disconnects which are accessible to NBU and Fire Department personnel at all times. (See Article 230, Part F, or 230-70 to 230-90, NEC.)

6) A main disconnect switch is required on NBU's (source) side of meters where more than six disconnects are needed. In these locations, NBU does not recommend use of breakers as a main disconnect. Replacement fuses are more accessible than replacement breakers after normal business hours.

7) Equipment maintenance and repair shall remain the responsibility of the property owner.

8) For all service entrance conductors, the grounded neutral conductor shall be electrically continuous. The grounded neutral conductor shall be positively identified with white tape. (See NEC Article 200-6(b).

9) Customer shall furnish bare or insulated copper wire in his service entrance as a bond between the equipment ground and NBU's common neutral system. This conductor shall be appropriately sized but in no case shall it be less than #6 AWG.

10) Customer should verify that phase connections and rotation are correct before starting motors. NBU will verify acceptable voltage levels at the meter location, but assumes no other responsibility or liability on the customer's system.

11) To assure maximum safety, it is necessary that the customer provide an adequate and permanent ground connection attached to a driven ground rod and to the neutral terminal of the meter socket.

12) Ground rods shall be 5/8" diameter, 8' in length, copper-clad type. They shall be driven 2" below final ground grade. All service grounding from the meter socket or main disconnect to the ground rod shall be a minimum #6 copper, enclosed in 1/2" sunlight resistant PVC and continuing 2" below final ground grade.

13) Installation of the above is subject to inspection and approval by NBU.

C. TRANSFORMERS

1) Unless approved otherwise, NBU shall furnish and install pole mounted or pad mounted transformers in accordance with the voltages and maximum kVA capacities listed below. NBU will determine the transformer size to be installed. The customer shall provide the necessary information to make this determination. The largest pole mounted transformer shall be 100 kVA. Maximum capacity at service voltage shall be as follows.

- 120/240 volt, single-phase, 3 wire.....250 kVA
- 120/240 volt, three-phase, 4 wire.....500 kVA
- 120/208Y volt, three-phase, 4 wire.....500 kVA
- 277/480Y volt, three-phase, 4 wire.....2500 kVA
- 480 volt, three-phase, 3 wire.....2500 kVA
- 7200/12470 volt, three-phase, 4 wire..... ✳

✳ Special service is required for loads of this voltage. NBU shall determine special characteristics of the final service, including all costs and customer fees.

2) Transformers and primary pull boxes for permanent electric service shall normally be furnished and installed by NBU at no charge to the customer. A customer may, with NBU approval, purchase the transformer(s) required.

7. OVERHEAD SERVICE

A. CONSTRUCTION STANDARDS

1) Refer to TABLE OF OVERHEAD SPECIFICATION DRAWINGS for appropriate metering assembly specification.

2) Other conditions, as contained in the policy, may apply.

3) Meter loops or any customer facilities shall not be installed on the same pole with primary (7200 volts or above) facilities. This is for protection of the customer, electricians, and public, and for ease of maintenance.

4) The customer shall provide a solid point of attachment for supporting the overhead service drop. The point of attachment shall never have less than twelve and one-half feet (12'6") of clearance, and not more than thirty (30) feet of clearance above final ground grade unless approved by NBU.

5) The point of attachment shall be high enough to provide the indicated clearance over the specified terrain.

TYPE OF TERRAIN	MINIMUM CLEARANCE
Sidewalks	17 feet
Residential Driveways	17 feet
Commercial Driveways & Parking Lots	18 feet
Public Streets, Roads, Highways and Alleys	22 feet
Railroads	27 feet
Waterways	Determined by NBU

6) The NESC, Section 232, allows reduction of this height where it is not possible to meet these values. NBU must determine if it is possible to reduce these clearances.

7) Drip loops shall never have less than ten and one-half feet (10'6") of clearance above final grade.

8) The bottom of weatherhead shall not have less than twelve feet (12') of clearance above final grade. Meter loops on poles shall be installed such that the weatherhead is within 24" of the top of the pole.

9) Conductors shall not cross over or through a building or structure unless it is necessary to provide service to that building or structure, and approved by NBU. Where conductors providing service to a building cross a portion of the roof, the clearance above the roof shall not be less than 18". If conductor cross more than four linear feet of roof, increase the clearance to 36". If conductors cross more than six linear feet of roof, the clearance must be greater than 8 feet. Measurements are to apply along the entire conductor path.

10) Conductor shall have minimum 90°C rated insulation and shall have minimum 3' excess length out of the weatherhead.

11) Under no circumstances will NBU attach its service drop to an intermediate structure installed by the customer between NBU's distribution lines and the customer's point of delivery.

12) Service drops shall be free of possible contact with trees. Customer must initially trim all trees necessary to provide the required clearance and allow NBU to trim trees in the future as needed. If it is necessary to trim or remove trees belonging to other property owners, in order to provide service, the customer requesting the service must obtain permission for NBU to do this.

13) Installation of the above is subject to inspection and approval by NBU.

B. FEES

1) Fees for service requiring installation of permanent overhead electric facilities on private property are as follows. NBU shall estimate any installation requiring conductor larger than 1/0 aluminum wire.

2) Refer to FEES FOR NEW SERVICES for other fees/credits.

Single-Phase Primary	$4.00 per linear foot
Single-Phase Secondary	$1.50 per linear foot
Three-Phase Primary	$5.00 per linear foot
Three-Phase Secondary	$2.50 per linear foot

3) Service poles are required and installed for various reasons as deemed necessary by NBU. There is a fee for installation of these poles. Long secondary runs, angles in route direction, or road crossings create this need. This should be considered when meter location is being determined.

4) When pole mounted meter loops are required, NBU shall install the pole according to the following fees. The customer is responsible for constructing meter loop on the pole.

5) The following fees are for the installation of a new wood pole. All poles remain the sole property of NBU. NBU cannot install poles for uses other than that required by NBU.

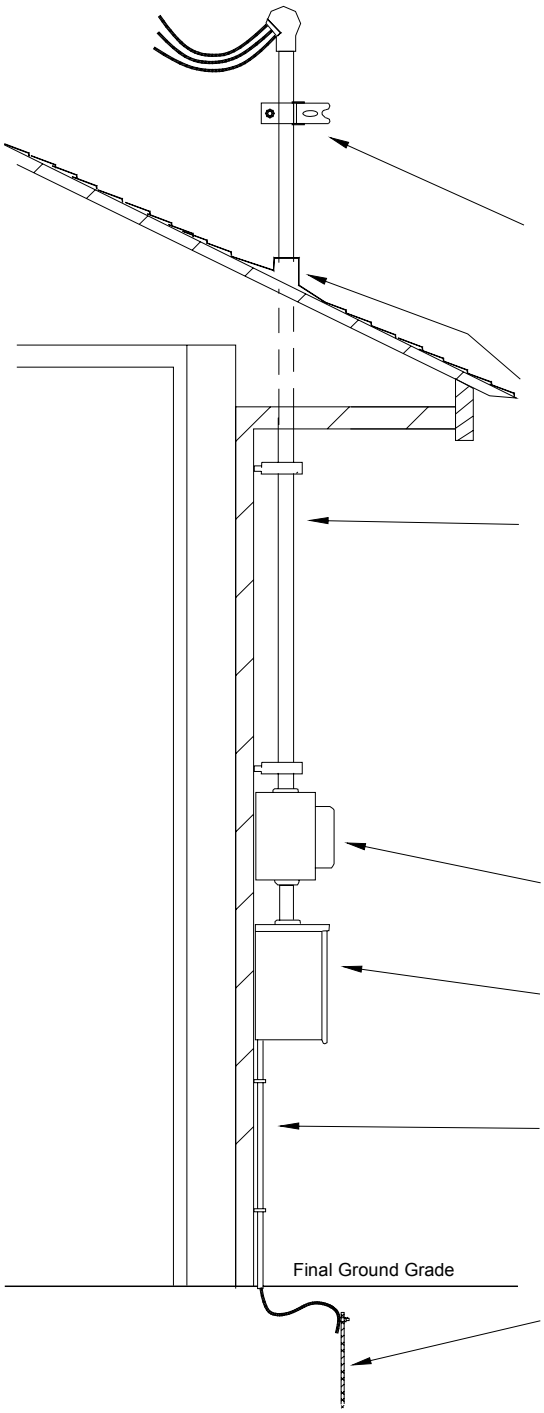
30'	$150
40'	$275
45'	$300
50'	$440
55'	$620
60'	$660
65'	$920

C. TABLE OF OVERHEAD SPECIFICATION DRAWINGS

NUMBER	DESCRIPTION	REVISION
EH-010	Single Metering Assembly, Mast Through Roof	06/27/02
EH-015	Single Metering Assembly, Mast on Wall	06/27/02
EH-020	Single Metering Assembly on Pole	06/27/02
EH-030	Two Metering Assemblies on Pole	06/27/02
EH-045	Multiple Metering Assemblies	03/98
EH-110	Metering Assembly, Temporary Service	06/27/02

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.



If NBU conductors cross more than 4 linear feet of roof, clearance must be increased from 18" to 36". If wires cross more than 6 linear feet of roof, clearance must be greater than 8'.

Point of attachment: 17' above final ground grade recommended; minimum 12'6". Customer to install point of attachment 6" below and opposite weatherhead, facing toward NBU service lead. Attachment eye part Blackburn 6912 or equivalent.

Metal flashing: If metal roof, plastic may be substituted. Special roof problems shall be coordinated with NBU.

Rigid metal conduit: GRC or IMC, secured to wall with two appropriately spaced 2-hole straps, sized to fit conduit, and attached with galvanized lag screws.
100 amp loop: 1 1/4" minimum.
200 amp loop: 2" minimum.

Conductors: Minimum 90°C rated insulation and minimum 3' excess length out of weatherhead.
100 amp loop: Three #2 stranded copper conductors.
200 amp loop: Three #2/0 stranded copper conductors.
Customer to use same copper conductor from weatherhead to meter socket, and from meter socket to main disconnect. Neutral shall be marked with white tape in the meter socket and at the weatherhead.

Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade, when measured 3' in front of socket.

Weatherproof main disconnect: Located below or adjacent to meter socket, with minimum 3' unobstructed clearance in front. House panel may be located below or adjacent to main disconnect or inside building (not inside a closet).

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24(A)(1)). Enclose in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure to wall with two appropriately spaced 2-hole straps, sized to fit conduit, and attached with galvanized lag screws.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

NEW BRAUNFELS UTILITIES
263 MAIN PLAZA
P.O. BOX 310289
NEW BRAUNFELS, TX 78131-0289
ELECTRIC ENGINEERING
(830) 629-8428

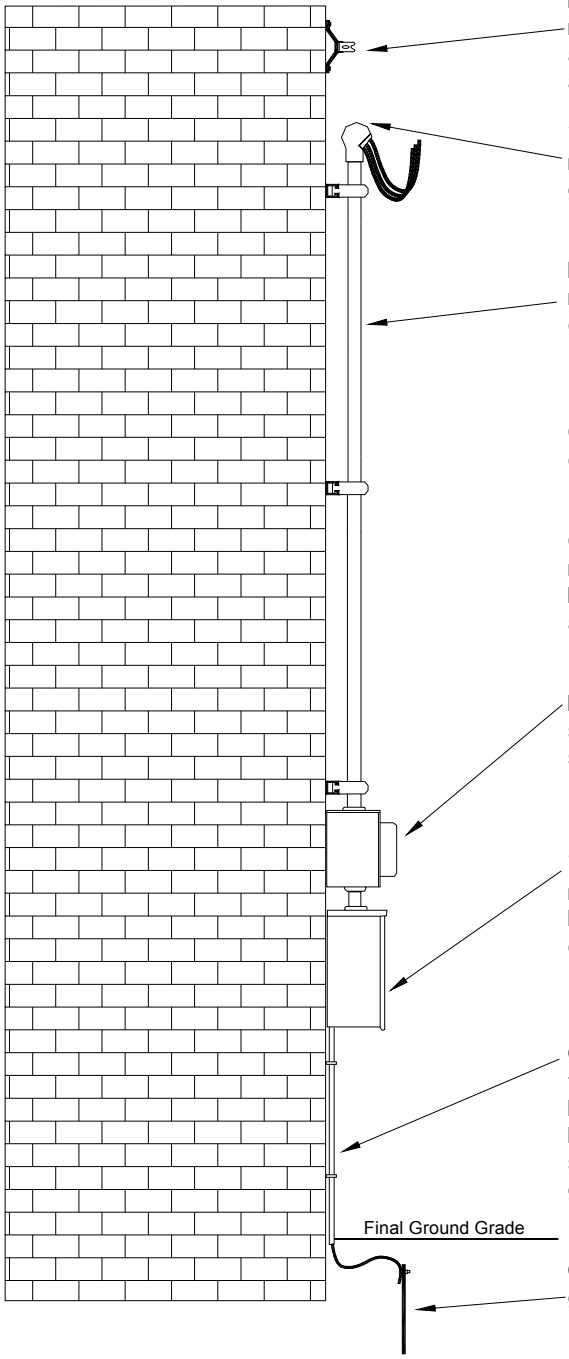
DATE ISSUED	4/98	
REV.	DATE	BY
	06-27-02	LC

TITLE
METERING ASSEMBLY
MAST THROUGH ROOF

SCALE	DRAWING NO.
NTS	EH-010

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.



Point of attachment: 17' above final ground grade recommended; minimum 12'6". Shall not be more than 24" above bottom of weatherhead. Must be capable of withstanding a pull of 300 lbs. Attachment part Blackburn 6912 or equivalent.

Weatherhead: Final ground grade to bottom of weatherhead 12' minimum. Drip loop shall have 10'6" minimum clearance to final ground grade.

Rigid metal conduit: GRC or IMC, secured to wall with a minimum of three appropriately spaced 2-hole straps, sized to fit conduit and attached with galvanized lag screws.
100 amp loop: 1 1/4" minimum.
200 amp loop: 2" minimum.

Conductors: Minimum 90°C rated insulation and minimum 3' excess length out of weatherhead.
100 amp loop: Three #2 stranded copper conductors.
200 amp loop: Three #2/0 stranded copper conductors.
Customer to use same copper conductors from weatherhead to meter socket, and from meter socket to main disconnect. Neutral shall be marked with white tape in the meter socket and at the weatherhead.

Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade, when measured 3' in front of socket.

Weatherproof main disconnect: Located below or adjacent to meter socket, with minimum 3' unobstructed clearance in front. House panel may be located below or adjacent to main disconnect or inside building (not inside a closet).

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24(A)(1)). Enclose in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure to wall with two appropriately spaced 2-hole straps, sized to fit conduit, and attached with galvanized lag screws.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

NEW BRAUNFELS UTILITIES
263 MAIN PLAZA
P.O. BOX 310289
NEW BRAUNFELS, TX 78131-0289
ELECTRIC ENGINEERING
(830) 629-8428

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TITLE
METERING ASSEMBLY
MAST ON WALL

SCALE	DRAWING NO.
NTS	EH-015

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

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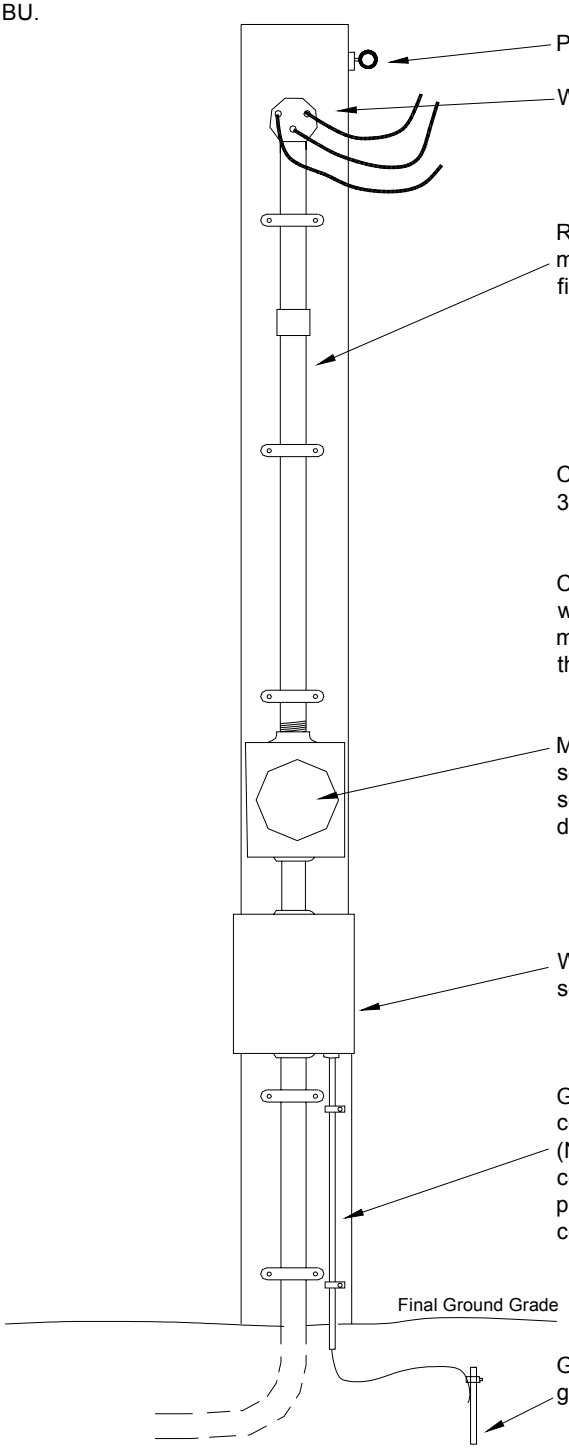

Pole and point of attachment installed by NBU.

Weatherhead: Maximum 24" from top of pole.

Rigid metal conduit: GRC or IMC, secured to pole with a minimum of 3 appropriately spaced 2-hole straps, sized to fit conduit, and attached with galvanized lag screws.
100 amp loop: 1 1/4" minimum.
200 amp loop: 2" minimum.

Conductors: Minimum 90°C rated insulation and minimum 3' excess length out of weatherhead.
100 amp loop: Three #2 stranded copper conductors.
200 amp loop: Three #2/0 stranded copper conductors.
Customer to use same copper conductors from weatherhead to meter socket, and from meter socket to main disconnect. Neutral shall be marked with white tape in the meter socket and at the weatherhead.

Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade, when measured 3' in front of socket. Position to face road or driveway, or as directed/approved by NBU.

Weatherproof main disconnect: Located below meter socket, with minimum 3' unobstructed clearance in front.

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24(A)(1)). Enclose in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure to pole with two appropriately spaced 2-hole straps, sized to fit conduit, and attached with galvanized lag screws.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

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263 MAIN PLAZA
P.O. BOX 310289
NEW BRAUNFELS, TX 78131-0289
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DATE ISSUED 4/98		
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	06-27-02	LC

TITLE: METERING ASSEMBLY ON POLE

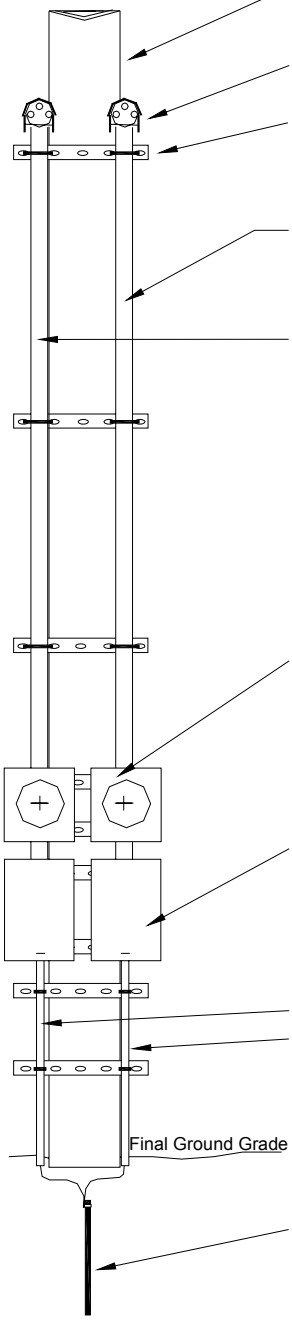
SCALE: NTS

DRAWING NO.: EH-020

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.

Front View



Pole and point of attachment installed by NBU. Maximum of two meter loops per pole.

Weatherhead: Maximum 24" from top of pole.

Galvanized mounting channel(s), Kendorf or equivalent, 1 1/2" x 1 1/2": Secure to pole with 3/8" galvanized lag screws.

Rigid metal conduit: GRC or IMC, secured with Kendorf straps or equivalent, or galvanized U bolts, sized to fit conduit, to a minimum of 3 appropriately spaced mounting channels.
100 amp loop: 1 1/4" minimum.
200 amp loop: 2" minimum.

Conductors: Minimum 90°C rated insulation and minimum 3' excess length out of weatherhead.
100 amp loop: Three #2 stranded copper conductors.
200 amp loop: Three #2/0 stranded copper conductors.
Customer to use same copper conductor from weatherhead to meter socket, and from meter socket to main disconnect. Neutral shall be marked with white tape in meter socket and at the weatherhead.

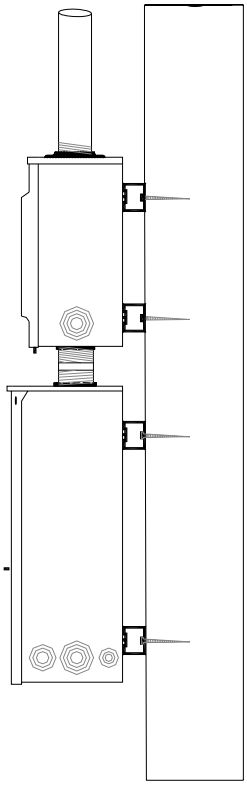
Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade, when measured 3' in front of socket. Position to face road or driveway, or as directed/approved by NBU. Allow 2" space between meter bases. Secure each socket to two mounting channels in four locations.

Weatherproof main disconnect: Located below meter socket, with minimum 3' unobstructed clearance in front. Secure each disconnect in four locations to 2 appropriately spaced mounting channels. Each disconnect device shall have permanent address marking.

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24(A)(1)). Enclose in 1/2" sunlight resistant PVC and continuing 2" below final ground grade. Secure each conduit to two appropriately spaced mounting channels with Kendorf straps or equivalent, or galvanized U bolts, sized to fit conduit.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

Side View



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263 MAIN PLAZA
P.O. BOX 310289
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DATE ISSUED 4/98

REV.	DATE	BY
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TITLE
METERING ASSEMBLY
TWO METER LOOPS ON POLE

SCALE
NTS

DRAWING NO.
EH-030

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

METER LOCATION(S) DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.

Up to 6 meters: May be installed at one location without a main disconnect.

More than 6 meters: Installed at one location require a main disconnect furnished and installed by the customer.

Point of attachment, furnished and installed by customer, shall be properly sized and installed 17' above final ground grade recommended; minimum 12'6".

Meter mounting equipment shall be commercially available horizontal gang or bussed gutter type. Proposed catalog numbers shall be submitted for approval. Any other design or equipment arrangement shall be submitted for approval. Meter mounting equipment shall be installed such that the center of the highest meter socket will be 5' minimum and 6' maximum from final ground grade.

Each metered circuit shall have a weatherproof submain switch or circuit breaker.

Each disconnect device shall have permanent address marking. These markings by the customer should be plain and permanent, giving the street number to the door of the premise served, or the symbol appearing on the entrance door when this door does not carry a street number. The name of the customer will not suffice for identification. The meter sockets in multitenant buildings shall be clearly and durably marked.

Conductor to be sized according to NEC and local code requirements, and have minimum 3' excess length out of weatherhead with neutral marked with white tape. Conductor shall be enclosed in properly sized rigid metal conduit, secured to wall with 2 appropriately spaced straps, sized to fit conduit, and attached with galvanized lag screws.

Properly sized ground wire shall be enclose in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure to wall with 2 appropriately spaced straps, sized to fit conduit, and attached with galvanized lag screws. Metal conduit acceptable, but must comply with NEC 250.92(b).

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

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263 MAIN PLAZA
P.O. BOX 310289
NEW BRAUNFELS, TX 78131-0289
ELECTRIC ENGINEERING
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TITLE
METERING ASSEMBLY
MULTIPLE METERS

SCALE	DRAWING NO.
NTS	EH-045

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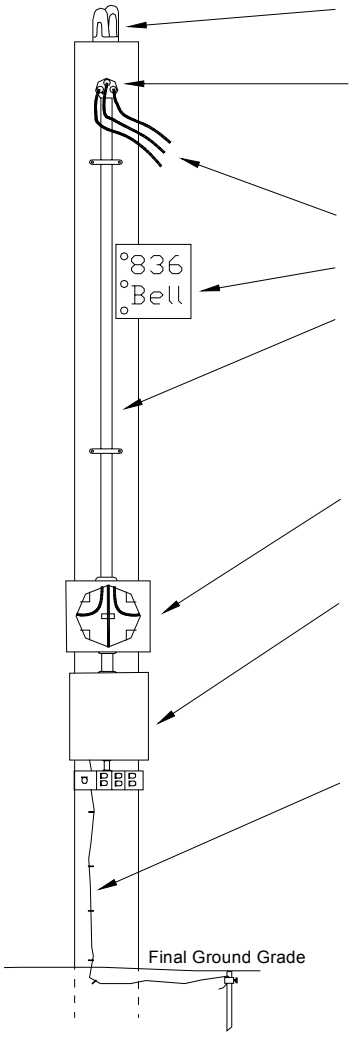
METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.



Point of attachment: One pointer or eye type screw, Blackman SW 33 B or equivalent, furnished and installed by customer.

Treated 4" x 4" post: Minimum length 14'. Final height above final ground grade shall be 12'; minimum below ground of 2'. Four wood braces required, minimum 2" x 4", secured with 2" x 4" stakes or 3/4" metal rods, driven securely into ground. Braces shall not be attached to trees, other NBU poles, etc.

Drip loop: Minimum 10' from final ground grade.

Site Address: Marked with 3" lettering.

Rigid conduit: GRC, AL, IMC, EMT or Schedule 40 PVC. Secure to post with two appropriately spaced straps, sized to fit conduit, and attached with lag screws.
100 amp loop: 1 1/4" minimum.
200 amp loop: 2" minimum.

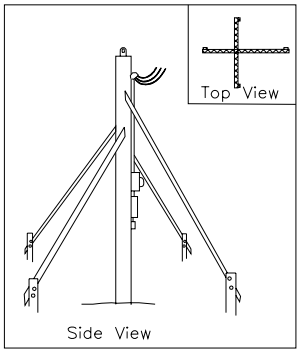
Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade and positioned to face road or driveway, or as directed/approved by NBU.

Approved disconnect device(s) in exterior enclosure. Receptacles shall be in weatherproof enclosure per NEC requirements. Circuits shall have GFCI protection. Customer to install a minimum of one 240V, 20 amp receptacle and one 120V, 20 amp receptacle.

Grounding electrode conductor: Minimum #6 soft drawn copper, stapled to post; butt ground or 5/8" x 8' copper-clad ground rod, driven 2" below final ground grade.

SERVICE MAIN RATING	WIRE TYPE COPPER 75°C	90°C
60 Amp	#6	#6
70 Amp	#4	#6
100 Amp	#3	#3
125 Amp	#1	#2
150 Amp	1/0	#1
200 Amp	3/0	2/0

(NEC Table 310-16)
Note: Other service rating shall be submitted to NBU Electric Engineering for approval.



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TITLE
METERING ASSEMBLY
TEMPORARY SERVICE

SCALE
NTS

DRAWING NO.
EH-110

8. UNDERGROUND SERVICE

A. CONSTRUCTION STANDARDS

1) Refer to TABLE OF UNDERGROUND SPECIFICATION DRAWINGS for appropriate metering assembly specification.

2) Other conditions, as contained in this policy, may apply.

3) Underground service can be provided from both overhead and underground primary facilities. All loads more than 100 kVA single-phase and 300 kVA three-phase must be served from pad mounted transformers. Due to the many clearance and meter location problems, it is imperative that NBU be contacted to design this service.

4) It is the responsibility of the customer to furnish and install, at their expense, conduit that meets all specifications of city ordinances, the NEC, and NBU. NBU shall provide and install all risers to be placed on NBU poles, wire, and cable at such cost to the customer as is specifically indicated herein.

5) Install conduits in accordance with NBU specification EU-910. All conduit depths are minimum and shall be designed such that they are maintained permanently. Special consideration is given to conduits installed in rock. Contact NBU regarding each of these installations. NBU will assume ownership of conduit and trench only after NBU has successfully installed conductors.

6) NBU shall inspect all conduits and its installations. NBU shall install conductors only after the conduit installation is approved.

7) Single-phase riser and conduit from transformers and/or secondary boxes shall have a conduit size of 2" for meter loops up to 200 amps if the total length of the run is less than 100 feet. A 2" conduit can be used where the total length is less than 150 feet and there is one (1) 90-degree sweep and/or one (1) 45-degree sweep in the horizontal run. Conduit runs exceeding the above limitations shall require a 3" conduit. Meter loops over 200 amp shall have a conduit size of 3" or larger. Additional runs of conduit may be required. The customer shall furnish a reducing bushing for the 200 amp meter sockets where 3" conduit is utilized. This is to accommodate a 2" knockout. Sweeps shall have 18" radius, or as approved by NBU.

8) Three-phase risers and conduit from transformers and/or secondary boxes shall have a minimum conduit size of 3" for meter loops up to 200 amps and 4" for meter loops greater than 200 amp. Additional runs of conduit may be required for larger loads. Sweeps shall have 18" radius.

9) CT meter services shall have a minimum of 1 1/4" conduit between the padmounted transformer and the meter socket.

10) Streetlight service conduit shall be a minimum of 1 1/4".

11) All exposed conduit to be GRC, IMC, sunlight resistant Schedule 40 PVC, or rigid aluminum only per the following specifications. For installations subject to possible physical damage, substitute Schedule 80 PVC (per NEC). All PVC will meet NEMA PC-2 for electrical use.

12) At the discretion of NBU concrete encasement or special backfill may be required for any conduit at any depth carrying a primary and/or secondary line extension to ensure the longevity and integrity of the circuit and the safety of customers and personnel. Concrete encasement so required shall be furnished and installed by the customer. All concrete encasement must meet NBU specifications.

13) The customer shall furnish and install, at his expense, a pull string of minimum 1000# test, whose length is at least 10' longer than the conduit run. The pull string will remain the property of the customer at the conclusion of its use by NBU.

14) Plastic identification tape, red or yellow in color and with black lettering reading, "CAUTION: BURIED ELECTRIC CABLE BELOW", shall be placed in the cable trench at a depth of 12" to 18" above electric conduit and below any communication cable or conduit. The customer shall supply this tape. In the event that the tape is inadvertently cut, notify NBU so that replacement may be made, if necessary.

15) Customer shall obtain and install all meter troughs and secondary pedestals or enclosures for permanent underground service according to NBU specifications as illustrated herein.

16) Installation of the above is subject to inspection and approval by NBU.

B. FEES

1) All customers must furnish and install, at their expense, all appropriate conduit, pull strings, and pads in accordance with other appropriate sections of this policy.

2) Listed below are the fees for conductor. This length is not ground distance. It includes riser cable and other conductors installed by NBU. NBU shall estimate any installation requiring larger than 1/0 aluminum wire.

3) Refer to FEES FOR NEW SERVICES for other fees/credits.

Single-Phase Primary	$2.75 per linear foot
Single-Phase Secondary	$2.00 per linear foot
Three-Phase Primary	$5.75 per linear foot
Three-Phase Secondary	$3.00 per linear foot

4) NBU will furnish and install risers as follows:

Primary Riser	$300.00
Secondary Riser (2"-3")	$100.00
Secondary Riser (4")	$180.00

C. TABLE OF UNDERGROUND SPECIFICATION DRAWINGS

NUMBER	DESCRIPTION	REVISION
EU-010	Single Metering Assembly on Building	06/27/02
EU-020	Single Metering Assembly on Stand	06/27/02
EU-045	Multiple Metering Assembly	06/27/02
EU-070	Metering Assembly, CT Stand	06/27/02
EU-110	Metering Assembly, Temporary	06/27/02
EU-210	Secondary Enclosure	06/27/02
EU-310	Pull Box Pad, Primary, Three-Phase, 4 Place	06/27/02
EU-315	Pull Box Pad, Primary, Three-Phase, 3 Place	06/27/02
EU-330	Pull Box Pad, Primary, Single-Phase	06/27/02
EU-410	Foundation, Aluminum Light Standard	06/27/02
EU-420	Pole Riser, Lighting on Pole	3/98
EU-500	Equipment Barrier Clearances	3/98
EU-510	Transformer Pad, Three-Phase, 75 – 300 kVA	06/27/02
EU-520	Transformer Pad, Three-Phase, 500 – 2000 kVA	06/27/02
EU-530	Transformer Pad, Single-Phase	06/27/02
EU-800	Riser, Bracket and Stub Out Installation	06/27/02
EU-910	Underground Trenching and Conduit	06/27/02

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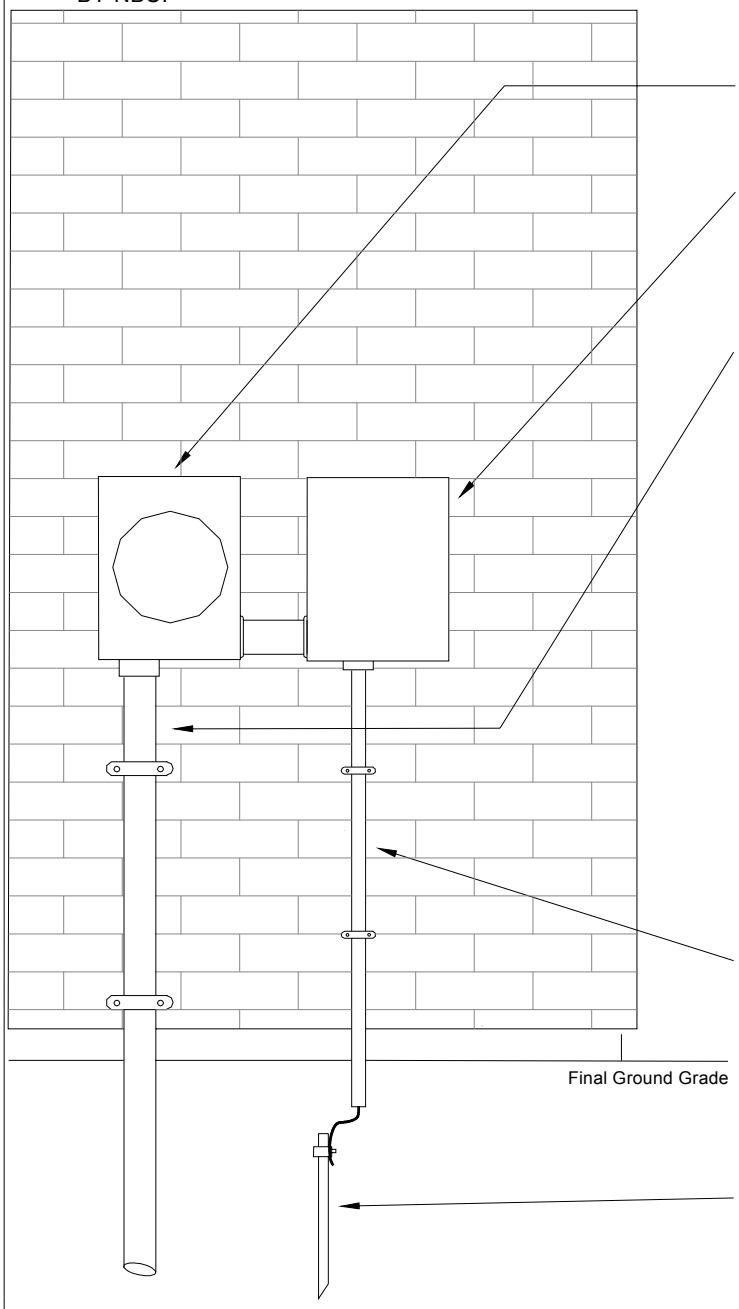

Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade, when measured 3' in front of socket.

Weatherproof main disconnect: Located adjacent to meter socket, with minimum 3' unobstructed clearance in front. House panel may be located adjacent to main disconnect or inside building (not inside a closet).

Customer to install conductors from main disconnect to meter socket per NEC specifications. Neutral to be marked with white tape in meter socket.

Conduit: To be sized by NBU. Conduit should be placed on the opposite side of meter socket from main disconnect. Secure conduit with two appropriately spaced 2-hole straps, sized to fit conduit and attached with galvanized lag screws.

All exposed conduit to be sunlight resistant Schedule 40 PVC. For installations subject to possible physical damage, Schedule 80 PVC shall be substituted per NEC. All PVC will meet NEMA TC-2-1998 for electrical use.

Underground conduit installed according to NBU specification EU-910. Customer shall connect to NBU installed conduit stub. 1000# test pull string to be installed in conduit by customer.

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24 (A)(1)). Enclose in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure to wall with two appropriately spaced 2-hole straps sized to fit conduit and attached with galvanized lag screws.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

NEW BRAUNFELS UTILITIES
263 MAIN PLAZA
P.O. BOX 310289
NEW BRAUNFELS, TX 78131-0289
ELECTRIC ENGINEERING
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DATE ISSUED 4/98		
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TITLE
METERING ASSEMBLY
UNDERGROUND SERVICE

SCALE	DRAWING NO.
NTS	EU-010

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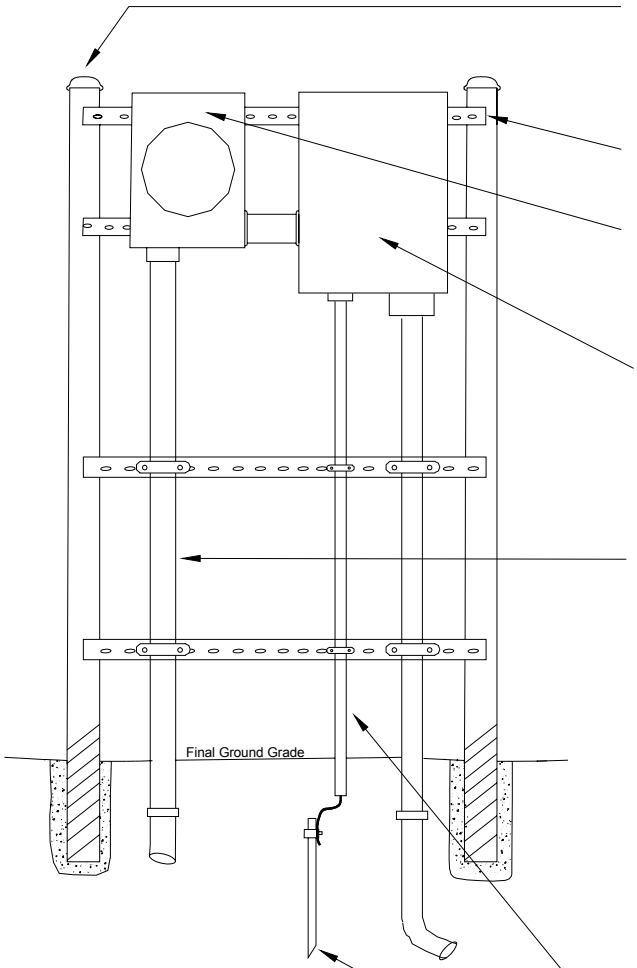

Meter stand: 2" GRC, or IMC, continuing a minimum of 2' below final ground grade with protective tar tape or polywrap extending 2" above and encased in concrete, 4 sack mix minimum. Top of pipe to have rain proof cap. As an alternative, a commercially available meter/disconnect pedestal will be acceptable. Proposed catalog numbers with complete description shall be submitted for approval.

Galvanized mounting channel, Kendorf or equivalent, 1 1/2" x 1 1/2": Welded or bolted to stand with galvanized bolts.

Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade when measured 3' in front of meter. Secure at four points to two appropriately spaced mounting channels.

Weatherproof main disconnect: Located adjacent to meter socket, with minimum 3' unobstructed clearance in front. Secure at four points to two appropriately spaced mounting channels.

Conduit: To be sized by NBU. Conduit should be placed on the opposite side of meter socket from main disconnect. Secure conduit to one appropriately spaced mounting channel with Kendorf strap or equivalent, or galvanized U bolt sized to fit conduit.

All exposed conduit to be sunlight resistant Schedule 40 PVC. For installations subject to possible physical damage, Schedule 80 PVC shall be substituted per NEC. All PVC will meet NEMA TC-2-1998 for electrical use.

Customer to install conductors from disconnect to meter socket per NEC specifications. Neutral to be marked with white tape in meter socket.

Underground conduit installed according to NBU specification EU-910. Customer shall connect to NBU installed conduit stub. 1000# test pull string to be installed in conduit by customer.

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24 (A)(1)). Enclose in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure conduit to mounting channel with Kendorf strap or equivalent, or galvanized U bolt, sized to fit conduit.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

SERVICE MAIN RATING	WIRE TYPE ALUMINUM 75°C	ALUMINUM 90°C	COPPER 75°C	COPPER 90°C
60 Amp	#4	#6	#6	#6
70 Amp	#3	#4	#4	#6
100 Amp	#1	#2	#3	#3
125 Amp	1/0	1/0	#1	#2
150 Amp	3/0	2/0	1/0	#1
200 Amp	250 MCM	4/0	3/0	2/0

(NEC Table 310-16)
Note: Other service rating shall be submitted to NBU Electric Engineering for approval.

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263 MAIN PLAZA
P.O. BOX 310289
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TITLE
METERING ASSEMBLY
UNDERGROUND SERVICE, ON STAND

SCALE	DRAWING NO.
NTS	EU-020

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METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.

Up to 6 meters: May be installed at one location without a main disconnect.

More than 6 meters: Installed at one location require a main disconnect furnished and installed by the customer.

Meter mounting equipment shall be commercially available horizontal gang or bussed gutter type. Proposed catalog numbers and complete description shall be submitted for approval. Any other design or equipment arrangement shall be submitted for approval. Meter mounting equipment shall be installed such that the center of the highest meter will be 5' minimum and 6' maximum from final ground grade.

Each metered circuit shall have a weatherproof submain switch or circuit breaker.

Each disconnect device shall have permanent address marking. These markings by the customer should be plain and permanent, giving the street number to the door of the premise served, or the symbol appearing on the entrance door when this door does not carry a street number. The name of the customer will not suffice for identification. The meter sockets in multitenant buildings shall be clearly and durably marked.

Conductor to be sized according to NEC and local code requirements. Conductor shall be enclosed in properly sized conduit, secured to wall with 2 appropriately spaced straps, sized to fit conduit, and attached with galvanized lag screws.

All exposed conduit to be sunlight resistant Schedule 40 PVC. For installations subject to possible physical damage, Schedule 80 PVC shall be substituted per NEC. All PVC will meet NEMA TC-2 for electrical use.

Underground conduit: Installed according to NBU specification EU-910. Customer shall connect to NBU installed conduit stub. 1000# test pull string to be installed in conduit by customer.

Where a separate conduit is required for the ground wire, a properly sized ground wire shall be enclosed in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade. Secure to wall with 2 appropriately spaced straps, sized to fit conduit, and attached with galvanized lag screws. Metal conduit acceptable, but must comply with NEC 250.92(b).

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.

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TITLE
METERING ASSEMBLY
MULTIPLE METERS
UNDERGROUND SERVICE

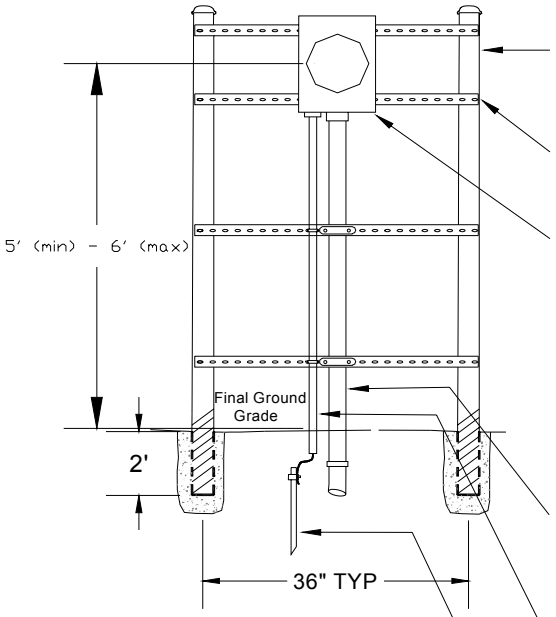
SCALE	DRAWING NO.
NTS	EU-045

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.

This meter stand is used when metering PT's and CT's are located within the secondary compartment of the padmount transformer.

Meter assembly stand must be positioned 4' to the side of the transformer pad. Meter **CANNOT** be located in front of the transformer pad due to hot stick access requirements.



Meter stand: 2" GRC or IMC, continuing a minimum of 2' below final ground grade with protective tar tape or polywrap extending 2" above and encased in concrete, 4 sack mix minimum. Top of pipe to have rain proof cap.

Galvanized mounting channel: Kendorf or equivalent, 1 1/2" x 1 1/2", welded or bolted to stand with galvanized bolts.

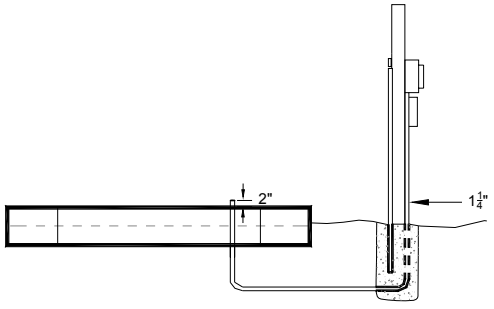
Meter socket: 5" minimum and 6' maximum from center of socket to final ground grade when measured 3' in front of meter. Secure at four points to two appropriately spaced mounting channels.

All exposed conduit to be 1 1/4" sunlight resistant Schedule 40 PVC. For installations subject to possible physical damage, Schedule 80 PVC shall be substituted per NEC. All PVC will meet NEMA TC-2-1998 for electrical use. Secure conduit to two appropriately spaced mounting channels with Kendorf straps or equivalent, or galvanized U bolts, sized to fit conduit.

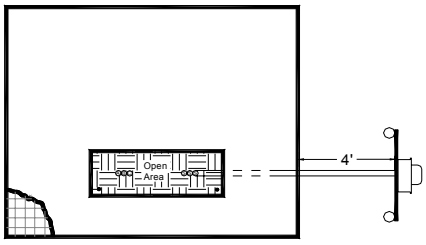
Underground conduit: 1 1/4" Schedule 40 PVC, installed according to NBU specification EU-910. Customer shall connect to NBU installed conduit stub. 1000# test pull string to be installed in conduit by customer.

Grounding electrode conductor: Minimum #6 copper, connected to neutral lug in meter socket or neutral bar (NEC 250.24 (A) (1)), enclosed in 1/2" sunlight resistant PVC conduit, continuing 2" below final ground grade and secured to two mounting channels with Kendorf straps or equivalent, or galvanized U bolts, sized to fit conduit.

Ground rod: 5/8" x 8' copper-clad, driven 2" below final ground grade.



SIDE VIEW



FRONT VIEW

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263 MAIN PLAZA
P.O. BOX 310289
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(830) 629-8428

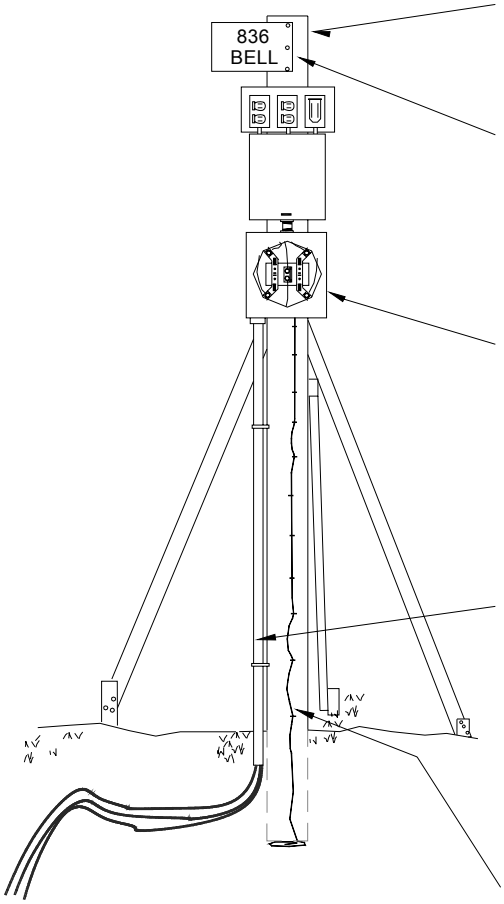
DATE ISSUED 4/98		
REV.	DATE	BY
	06-27-02	LC

TITLE
METERING ASSEMBLY
CT STAND

SCALE	DRAWING NO.
NTS	EU-070

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

METER LOCATION IS DETERMINED BY NBU. ALL CUSTOMER INSTALLATIONS REQUIRE INSPECTION BY NBU.



Treated 4" x 4" post: Height above final ground grade shall be 7' and a minimum below ground of 2'. Three wood braces required, minimum 2" x 4", secured with 2" x 4" stakes driven securely into ground. Braces shall not be attached to trees or other structures.

Site Address: Marked on 1' x 1' exterior (painted) or marine plywood.

Conductors: Service lateral conductors shall be sized according to the table below, as a minimum, based upon the main bus rating of the disconnect device; unless otherwise approved by NBU. Conductor insulation shall be rated for direct burial (wet locations).

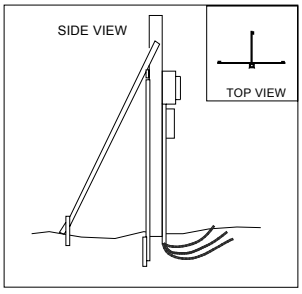
Meter socket: 5' minimum and 6' maximum from center of socket to final ground grade and positioned to face road or driveway, or as directed/approved by NBU. Source connections shall be made on top side of meter socket.

Approved disconnect device(s) in exterior enclusure. Receptacles shall be in weatherproof enclosure per NEC requirements. Circuits shall have GFCI protection. Customer to install a minimum of one 120 V, 20 amp receptacle and one 240 V, 20 amp receptacle.

Electrical conduit for service lateral conductors shall be GRC, Alum., IMC, EMT, or Schedule 40 sunlight resistant PVC.
100 amp loop: 1 1/4" minimum; 200 amp: 2" minimum.
The conduit shall extend 6" below ground grade at temporary post. Conduit shall be secured to post with 2 appropriately spaced straps, sized to fit conduit, and attached with lag screws.

Conductor shall be buried from post to within 6" of service equipment, at a minimum depth of 24" and have 5' leads at service equipment.

Grounding electrode conductor: Butt ground utilizing minimum #6 soft drawn copper, stapled to post.



SERVICE MAIN RATING	WIRE TYPE ALUMINUM 75°C	ALUMINUM 90°C	COPPER 75°C	COPPER 90°C
60 Amp	#4	#6	#6	#6
70 Amp	#3	#4	#4	#6
100 Amp	#1	#2	#3	#3
125 Amp	1/0	1/0	#1	#2
150 Amp	3/0	2/0	1/0	#1
200 Amp	250 MCM	4/0	3/0	2/0

(NEC Table 310-16)
Note: Other service rating shall be submitted to NBU Electric Engineering for approval.

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DATE ISSUED 4/98

REV.	DATE	BY
A	4/08/2000	RR/GO
	06-27-02	LC

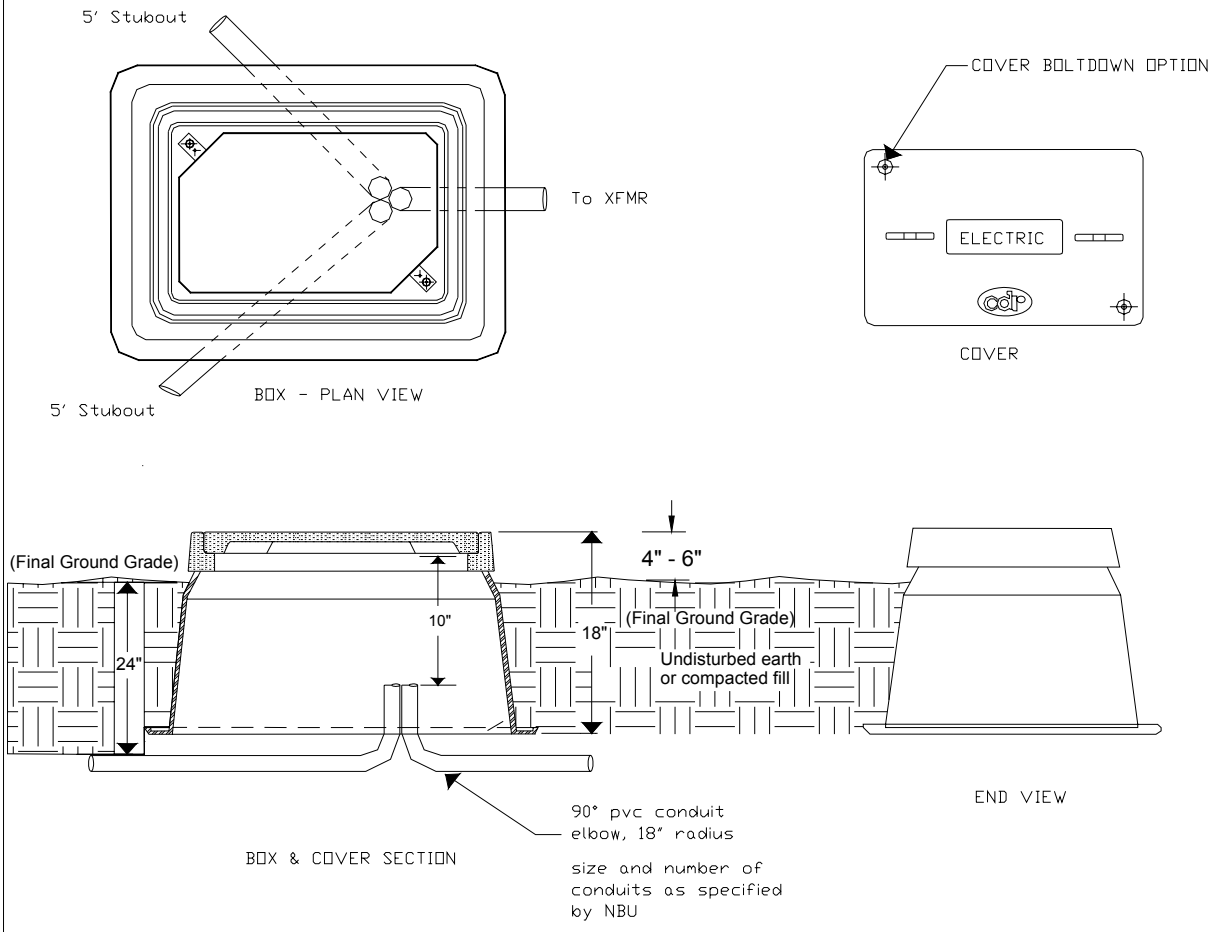
TITLE
METERING ASSEMBLY
UNDERGROUND TEMPORARY

SCALE
NTS

DRAWING NO.
EU-110

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

The electric system layout design, to include secondary enclosure locations, is determined by NBU.



Enclosure furnished and installed by customer. Enclosure shall be manufactured by CDR Systems Corporation; cat. no. PA-101324-18. If installed in street, alley, or driveway, cat. no. PA-121324-18 required.

Note: Size of enclosure shall be determined by NBU.
Make sure that conduit is not located under lip of box.
Primary and Secondary stubouts shall be 5' minimum.

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DATE ISSUED		
REV.	DATE	BY
Added cdr	11-01	LC

TITLE: SECONDARY ENCLOSURE

SCALE: NTS

DRAWING NO.: EU-210

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

Locations are determined by NBU. All customer installations require inspection by NBU.

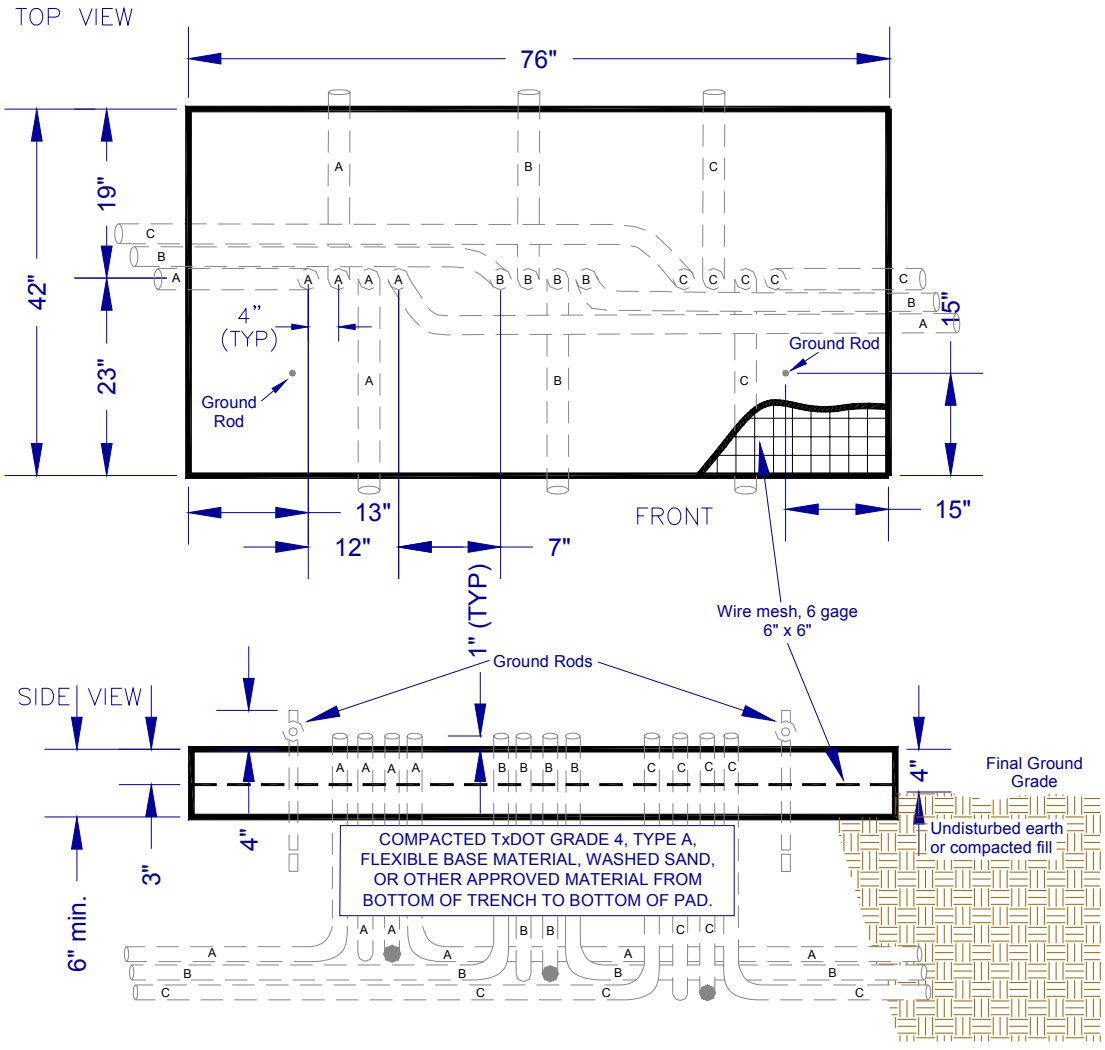
A, B, C = Conductor phase; Phase orientation shall be verified prior to installation.

Underground conduit to be installed according to NBU specification EU-910. Conduit to be sized by NBU and have 1" projection above concrete, 36" radius, 90° sweeps. 1000# test pull string to be installed in each conduit by the customer.

Copper-clad ground rods, 5/8" x 8', 2 required, to have 4" projection above top on concrete.

Concrete to be 4 sack mix minimum.

All primary stub outs shall be 5' minimum.



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DATE ISSUED		
REV.	DATE	BY
	06-27-02	LC

TITLE: PRIMARY, THREE PHASE, 4 PLACE PULLBOX PAD

SCALE: NTS

DRAWING NO.: EU-310

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

Locations are determined by NBU. All customer installations require inspection by NBU.

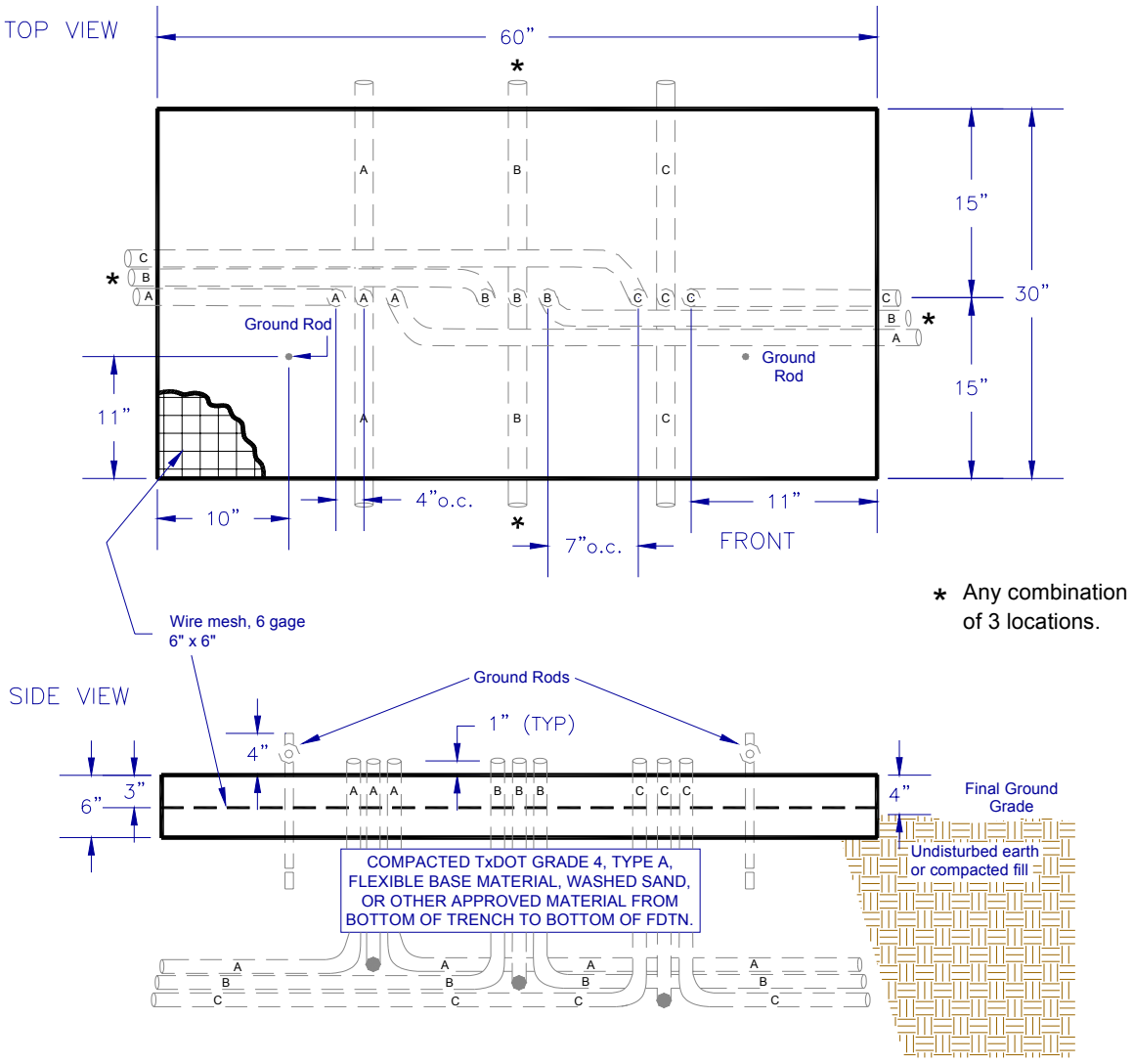
A, B, C = Conductor phase; Phase orientation shall be verified prior to installation.

Underground conduit shall be installed according to NBU specification EU–910. Conduit to be sized by NBU and have 1" projection above concrete, 36" radius, 90° sweeps. 1000# test pull string to be installed by customer.

Copper–clad ground rods, 5/8" x 8', 2 required, to have 4" projection above top on concrete.

Concrete to be 4 sack mix minimum.

All primary stub outs shall be 5' minimum.



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TITLE: PRIMARY, THREE PHASE, 3 PLACE PULLBOX PAD

SCALE: NTS

DRAWING NO.: EU-315

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

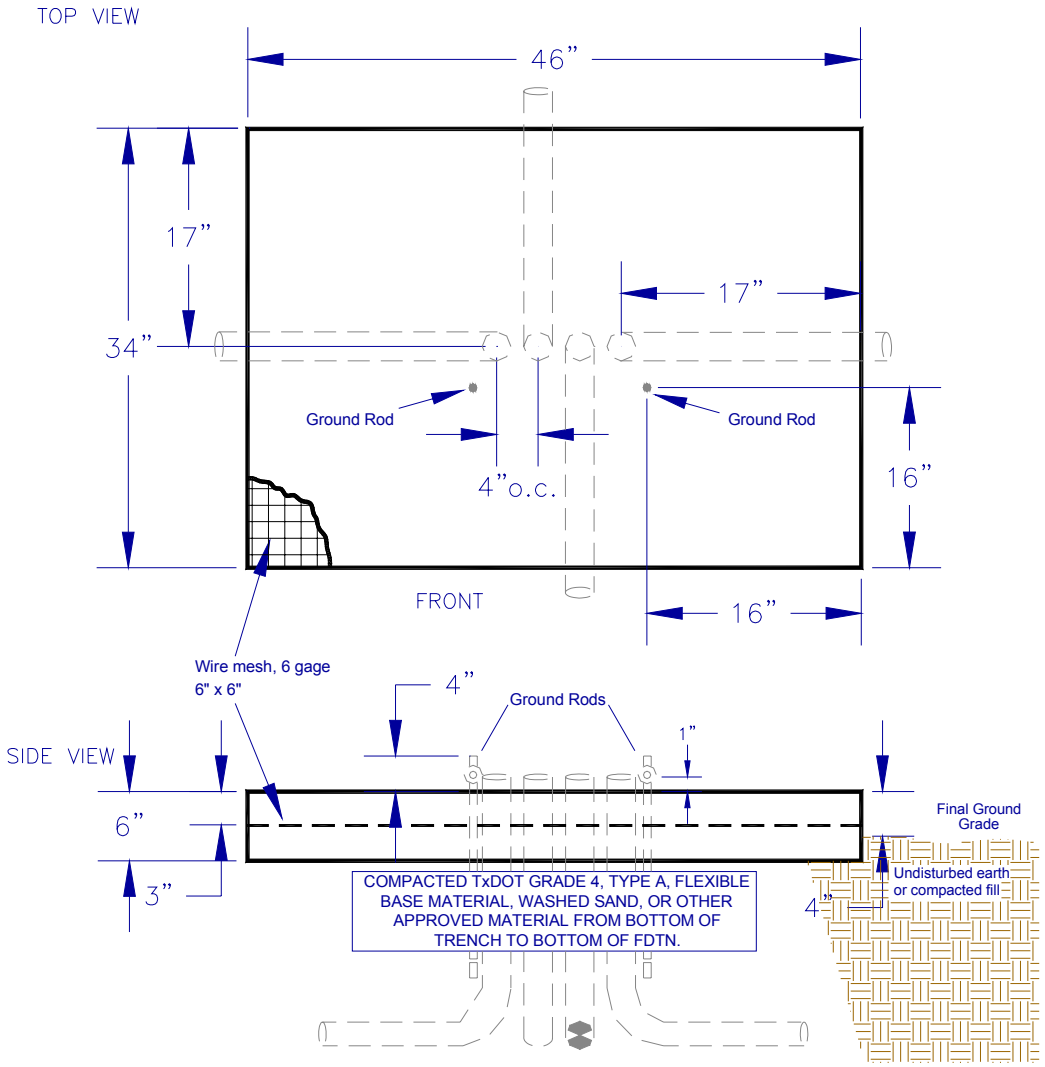
Locations are determined by NBU. All customer installations require inspection by NBU.

Underground conduit to be installed according to NBU specification EU–910. Conduit to be sized by NBU and have 1" projection above concrete, 36" radius, 90° sweeps. 1000# test pull string to be installed by customer.

Copper–clad ground rods, 5/8" x 8', 2 required, to have 4" projection above top on concrete.

Concrete to be 4 sack mix minimum.

All primary stub outs shall be 5' minimum.



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DATE ISSUED		
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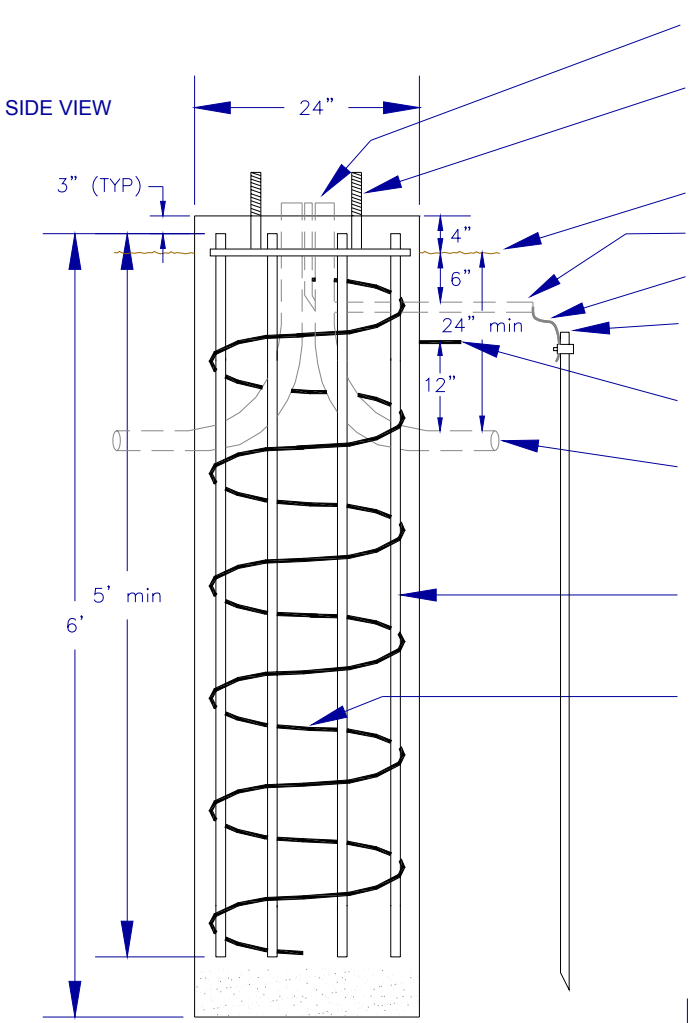
TITLE: PRIMARY, SINGLE PHASE, PULLBOX FOUNDATION

SCALE: NTS

DRAWING NO.: EU-330

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation

Locations are determined by NBU. All customer installations require inspection by NBU.



1" Projection above top of concrete

Bolt kit provided by NBU. Bolts from bolt kit, 1" - 8 UNC, to have 3 1/2" projection above top of concrete.

Final Grade

$\frac{1}{2}$" Sch 40 PVC conduit

#6 copper installed by NBU

$\frac{5}{8}$" x 8' Ground Rod

6" Wide Caution Tape

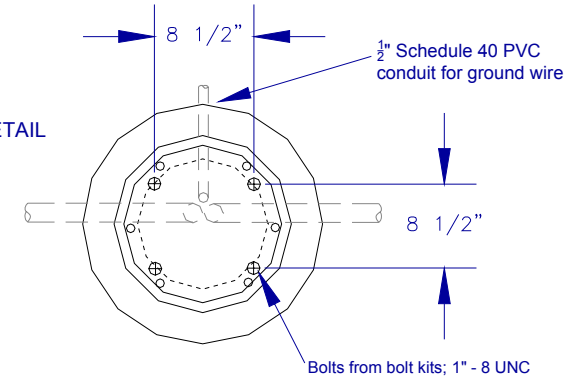
1 1/4" Schedule 40 PVC with 90° sweeps, extended 2' from concrete and/or connected to conduit system.

(6) $\frac{5}{8}$" x 5' rebar with $\frac{3}{8}$" rebar ties at 12" O.C. or $\frac{3}{8}$" spiral rebar with 12" pitch.

$\frac{3}{8}$" Rebar coiled steel tied at 12" spacing

Concrete to be 3000 PSI with a 4" tooled radius on edge.

TOP VIEW DETAIL



$\frac{1}{2}$" Schedule 40 PVC conduit for ground wire

Bolts from bolt kits; 1" - 8 UNC

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DATE ISSUED 4/98		
REV.	DATE	BY
	06-27-02	LC

TITLE: STANDARD METAL LIGHT FOUNDATION

SCALE: NTS

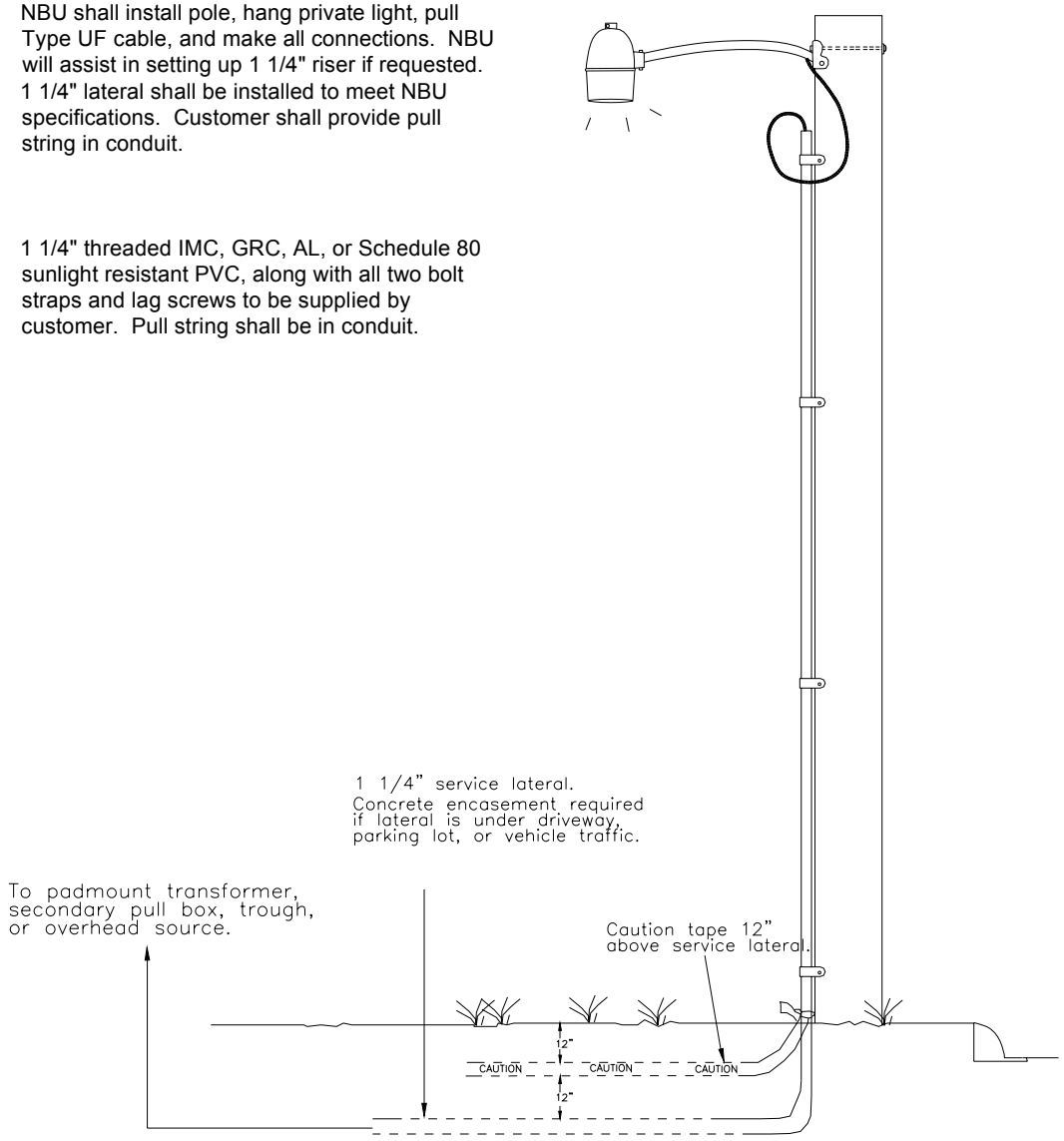
DRAWING NO.: EU-410

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

Locations are determined by NBU. All customer installations require inspection by NBU.

NBU shall install pole, hang private light, pull Type UF cable, and make all connections. NBU will assist in setting up 1 1/4" riser if requested. 1 1/4" lateral shall be installed to meet NBU specifications. Customer shall provide pull string in conduit.

1 1/4" threaded IMC, GRC, AL, or Schedule 80 sunlight resistant PVC, along with all two bolt straps and lag screws to be supplied by customer. Pull string shall be in conduit.



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DATE ISSUED 4/98		
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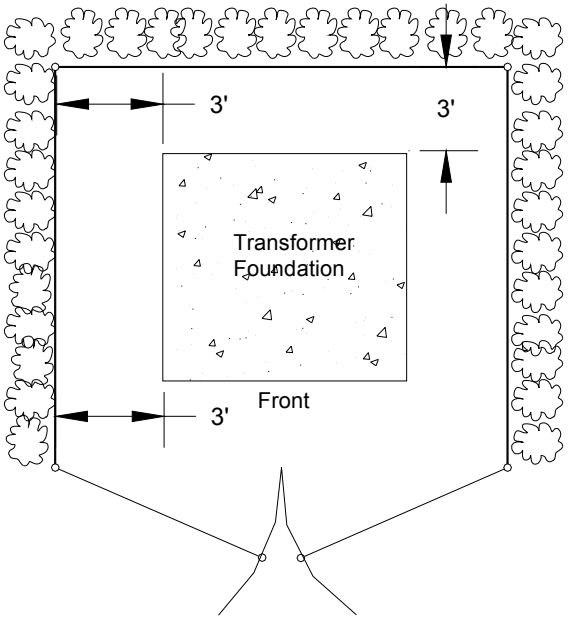
TITLE
PRIVATE LIGHT
UNDERGROUND SERVICE

SCALE	DRAWING NO.
NTS	EU-420

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

Top View

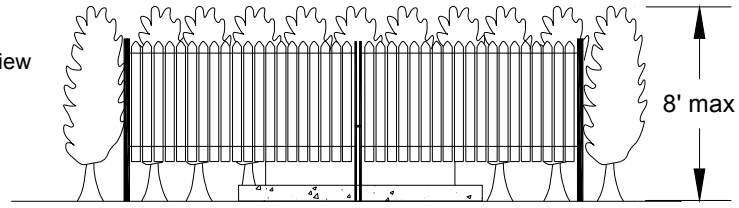


Transformer location must be accessible at all times. Clearance around NBU equipment to any barrier shall be 3' minimum.

Any installation that would enclose any metering/disconnect assemble within the barrier shall be approved by NBU.

Barrier can be vegetation, chain link, wood, concrete block, or appropriate material. Fencing/gate material shall be designed to allow for adequate air circulation around equipment and is subject to NBU approval.

Side View



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DATE ISSUED 4/98		
REV.	DATE	BY

TITLE
PADMOUNT TRANSFORMER CLEARANCES

SCALE	DRAWING NO.
NTS	EU-500

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

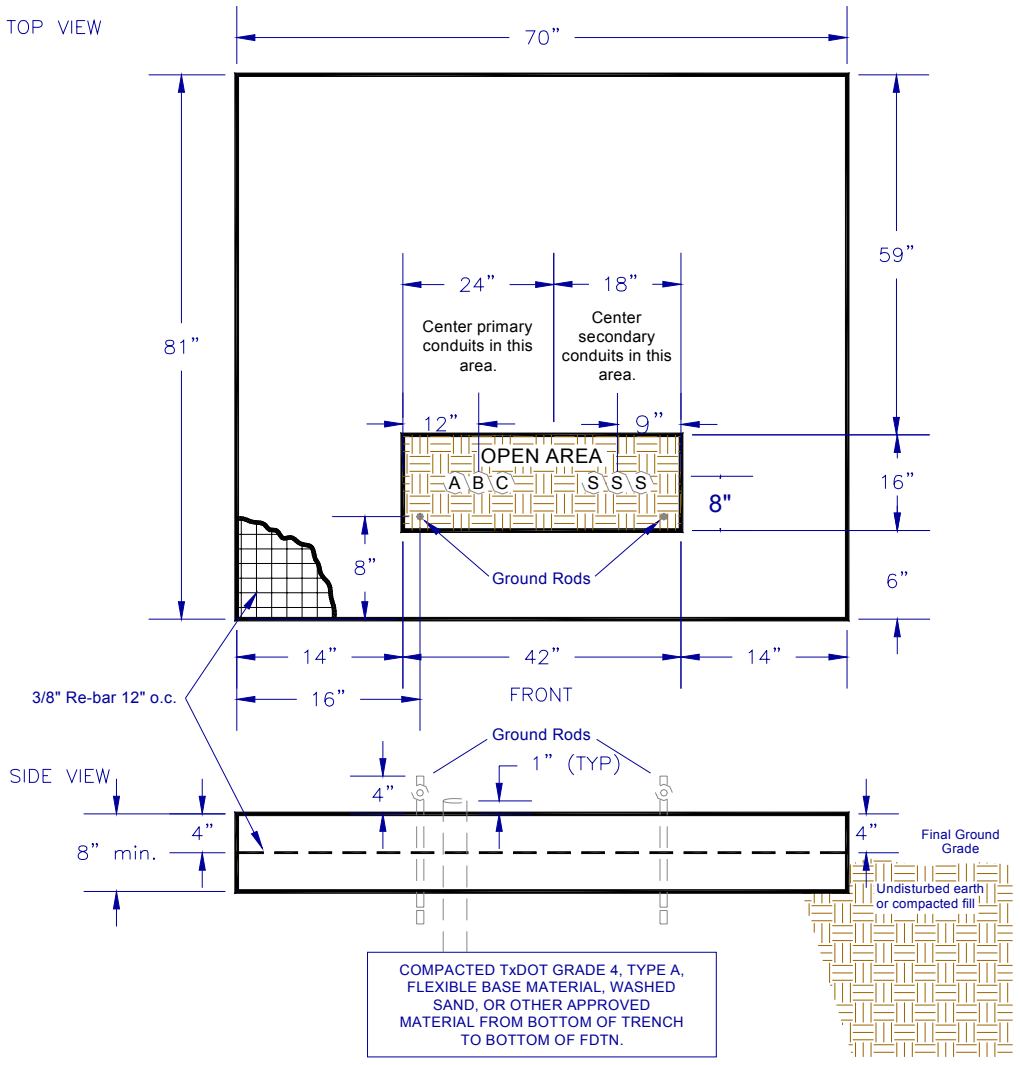
Locations are determined by NBU. All customer installations require inspection by NBU.

Underground conduit to be installed according to NBU specification EU–910. Conduit to be sized by NBU and have 1" projection above concrete, 36" radius, 90° sweeps. 1000# test pull string to be installed by customer.

Copper–clad ground rods, 5/8" x 8', 2 required, to have 4" projection above top on concrete.

Concrete to be 4 sack mix minimum.

All primary and secondary stub outs shall be 5' minimum.



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DATE ISSUED 4/98

REV.	DATE	BY
	06-27-02	LC

TITLE: THREE PHASE TRANSFORMER FOUNDATION 75 - 300 KVA

SCALE: NTS

DRAWING NO.: EU-510

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

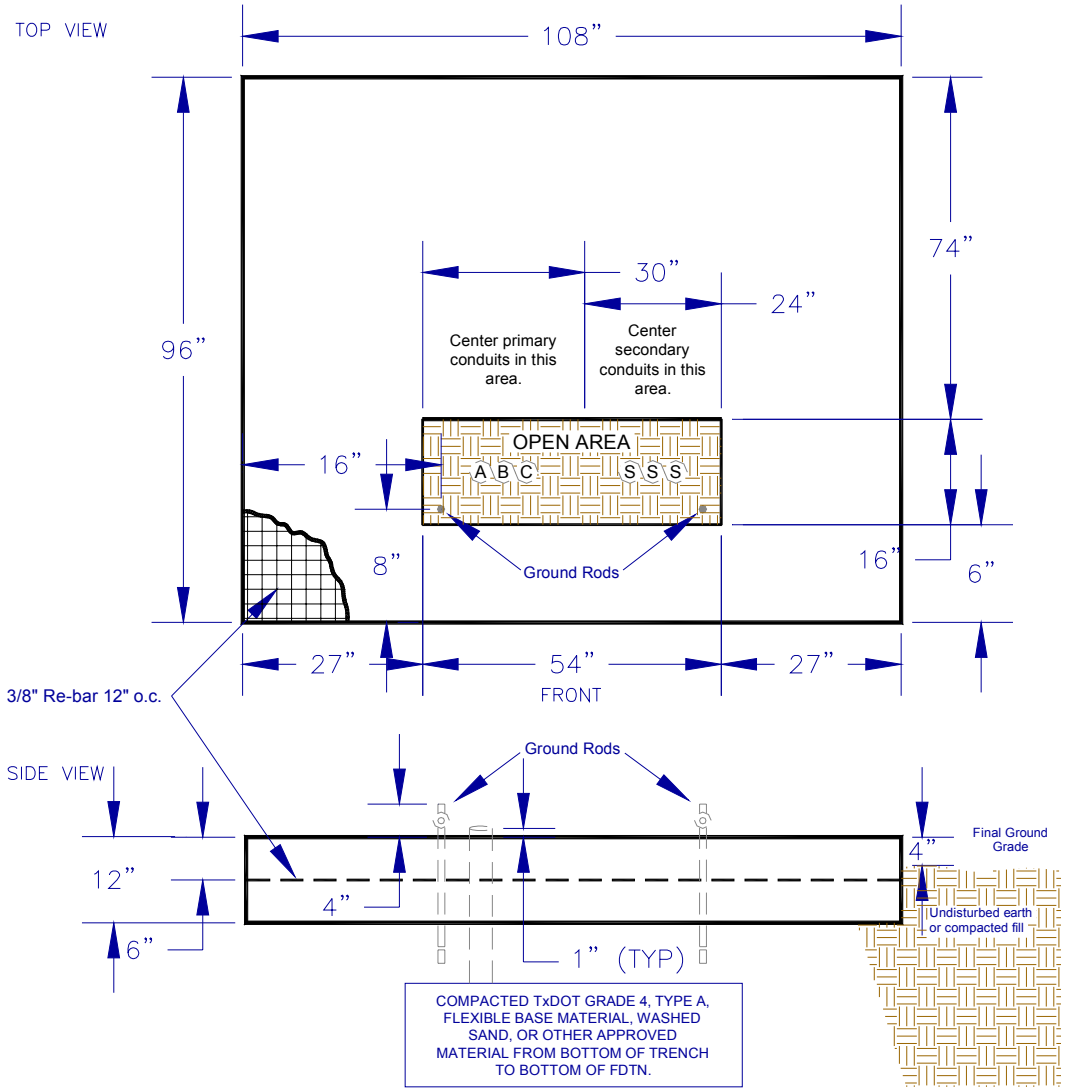
Locations are determined by NBU. All customer installations require inspection by NBU.

Underground conduit to be installed according to NBU specification EU–910. Conduit to be sized by NBU and have 1" projection above concrete, 36" radius, 90° sweeps. 1000# test pull string to be installed by customer in each conduit.

Copper–clad ground rods, 5/8" x 8', 2 required, to have 4" projection above top on concrete.

Concrete to be 4 sack mix minimum.

All primary and secondary stub outs shall be 5' minimum.



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DATE ISSUED		
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TITLE: THREE PHASE TRANSFORMER FOUNDATION 500 - 2000 KVA

SCALE: NTS

DRAWING NO.: EU-520

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

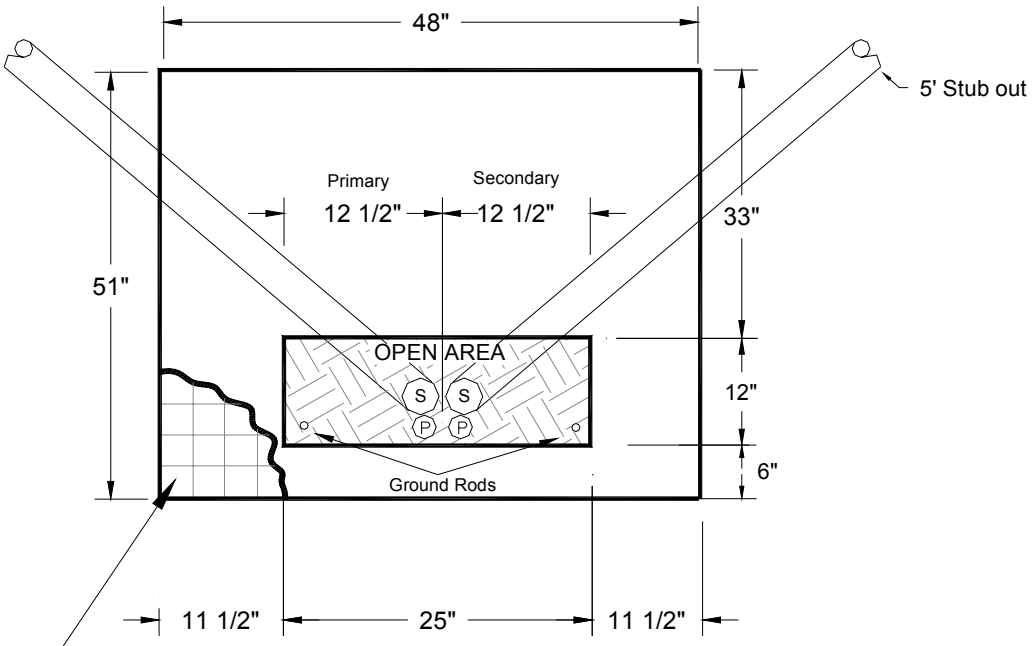
Locations are determined by NBU Electrical Engineering. All customer installations require inspection by NBU.

Underground conduit installed according to NBU specification EU-910. Conduit to be sized by NBU and have 1" projection above top of concrete.

Copper-cladd ground rods, 5'8" x 8', 2 required, to have 4" projection above top of concrete.

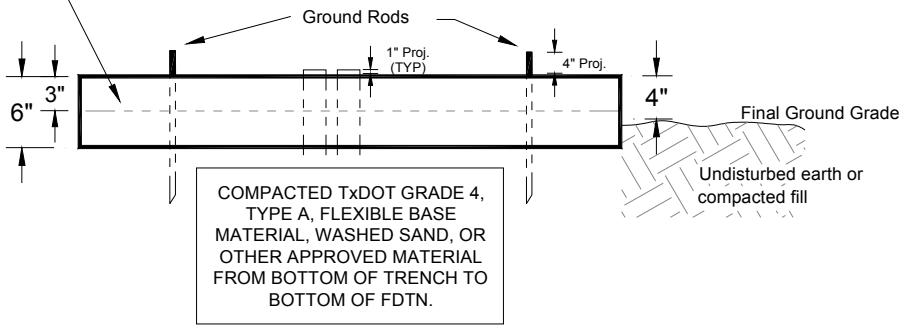
Concrete to be 4 sack mix minimum.

TOP VIEW



Wire mesh, 6 x 6 x 6 guage

SIDE VIEW



COMPACTED TxDOT GRADE 4, TYPE A, FLEXIBLE BASE MATERIAL, WASHED SAND, OR OTHER APPROVED MATERIAL FROM BOTTOM OF TRENCH TO BOTTOM OF FDTN.

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DATE ISSUED 4/98		
REV.	DATE	BY

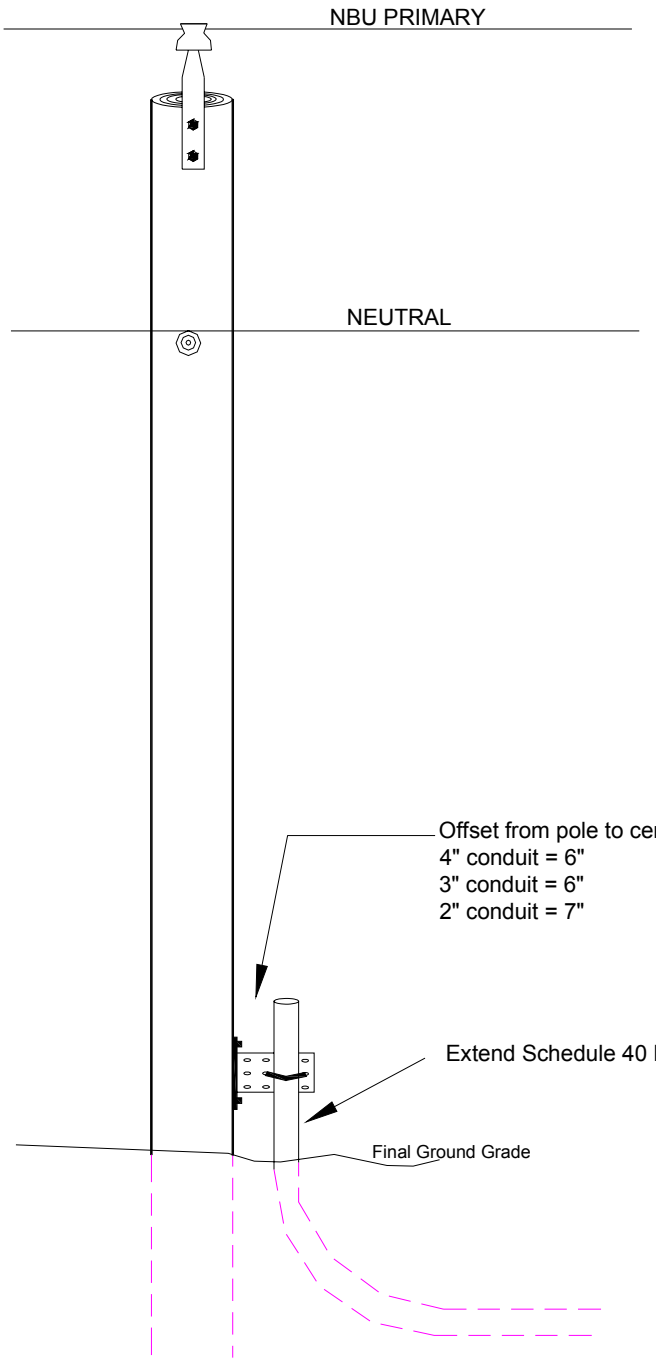
TITLE: FOUNDATION, TRANSFORMER SINGLE-PHASE

SCALE: NTS

DRAWING NO.: EU-530

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific installation.

Locations are determined by NBU. All customer installations require inspection by NBU.



Pole and brackets installed by NBU.

Conduit size will be specified for each project.

Riser must be plumb with pole and attached to stand off bracket.

Underground conduit installed according to NBU specification EU-910. Conduit to be sized by NBU. Customer shall connect to NBU installed conduit stub. Conduit sweep to be minimum 18" radius at pole. 1000# test pull string to be installed in by customer.

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DATE ISSUED	4/98	
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TITLE: STUB OUT ON POLE RISER

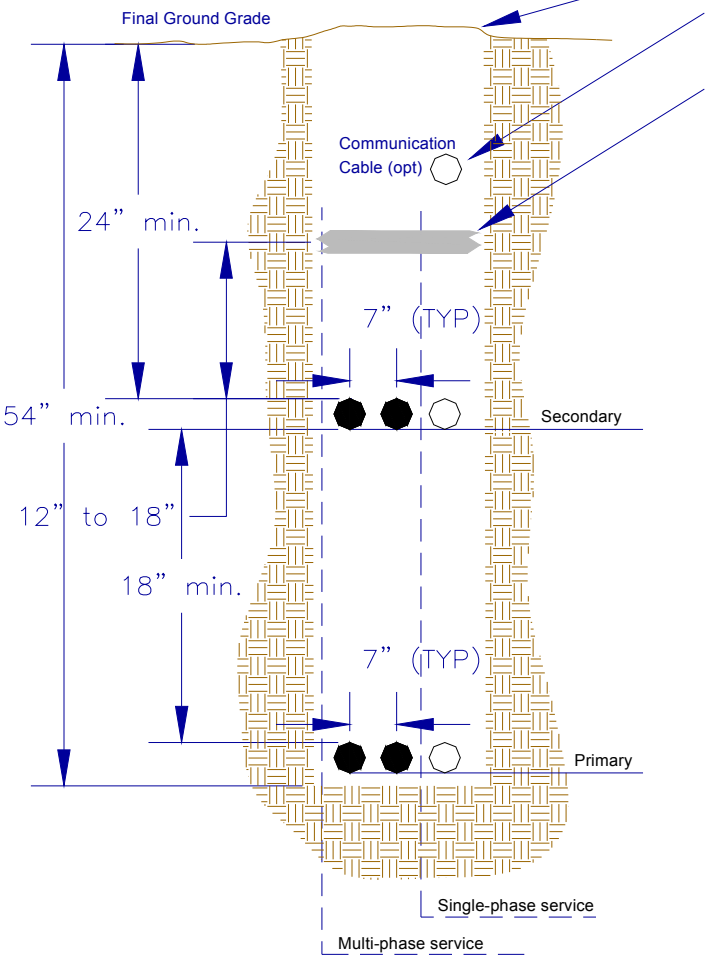
SCALE: NTS

DRAWING NO.: EU-800

This specification shall be used only in conjunction with the NBU Electrical Connection Policy and may not reflect all requirements of a specific job.

Locations are determined by NBU. All customer installations require inspection by NBU.

All Primary and Secondary stubouts shall be 5' minimum.



Mound earth 3" to 4" above final ground grade.

Communication cable/conduit shall be installed above all electrical conduit(s) and caution tape.

A 6" wide plastic caution tape, red or yellow in color with black lettering reading, "Caution: Buried Electric Cable Below", will be placed in the trench 12" to 18" above electrical conduit but below any communication cables. For more than 2 conduits horizontally in trench, 2 tapes shall be installed.

Customer shall excavate trench to proper depth and install PVC Schedule 40 Electrical Conduit NEMA TC 2. Conduit elbows (sweeps) for primary shall have 36" radius. Conduit elbows for secondary shall have 18" radius. Conduit shall be sized by NBU.

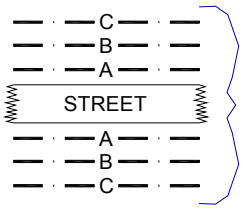
Where electrical equipment foundations (for transformers, junctions boxes, switchgear) lie on top of trench line, the foundation area shall be back filled with compacted base for the entire depth of the trench.

Trenches which cross or will be under streets, commercial driveways, or parking lots shall be back filled with compacted base material or washed sand.

Customer to furnish and install 1000# test pull string.

No pipe, gas, or water line shall be closer than 36" vertically or horizontally from any underground electrical conductor.

At no time shall any electric line, primary or secondary, be connected for service if found to cross under any building foundation.



For multi-phase service, conductor phase orientation shall be as shown unless approved otherwise by NBU.

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DATE ISSUED		
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	06-27-02	LC

TITLE: UNDERGROUND CONDUIT INSTALLATION

SCALE	DRAWING NO.
NTS	EU-910

9. PRIMARY METERING STANDARDS

1) NBU is capable of supplying primary service directly to the customer through NBU metering equipment. Requests for such service must have the approval of NBU. Available voltage is 7.2/12.47 kV, 4 wire, grounded Y, or upon special application 138 kV 3 wire, delta.

2) Customers requiring service at 7200 volts and above must provide an NBU approved disconnecting means and proper overload and short-circuit protection at the point of delivery.

10. RIGHTS-OF-WAY AND EASEMENTS

1) Use of easements include, but is not limited to access, electric, water and/or wastewater. Easements are set aside in a written agreement between NBU and the property owner for construction and maintenance of the facility located within the easement. The easement shall remain free of any obstructions, including fences, which may hinder or interfere with its intended use by NBU.

2) Primary electric facilities installed in newly developed areas, subdivisions, and on streets/highways shall be installed in defined utility easements adjacent to public rights-of-way. All facilities shall be easily accessible at any time and in any type weather, and cleared of woody vegetation. The width, centerline, and specific clearing details shall be as approved by NBU. No installations will be made adjacent to back or rear property/lot lines. Installations along side property/lot lines will be made only after approval by NBU.

3) The initial clearing of the easement is the responsibility of the customer and shall be done before any construction by NBU.

11. MISCELLANEOUS SERVICES

A. STREET LIGHTING

NBU shall provide general lighting of dedicated streets, both within and outside the city limits of New Braunfels, consistent with the certified service area of NBU. Necessary right-of-ways are to be provided by developers.

1) Standard Installation

a) The standard NBU Street Lighting Service is comprised of street light fixtures installed on 30' wood poles with 4' galvanized mounting arms, 150-Watt High Pressure Sodium (HPS) Cobrahead fixtures and overhead secondary conductors. NBU shall determine the location of street light fixtures, generally located at street intersections, cul-de-sacs and at 300' intervals. NBU may adjust the pole spacing, pole height, lamp wattage, or arm length depending on service conditions, street width and other design factors.

b) Customer is responsible for installation of all necessary conduits in subdivisions with underground service. Conduits shall be installed per NBU specifications.

c) The customer is required to reimburse NBU a fee of $300.00 if the streetlight can be attached to an existing pole, otherwise the fee shall be $715.00 per installed light.

2) Optional Metal Pole Installation

a) At the customer's option and with NBU approval, NBU will install a 26' aluminum standard with 4' arm and 150 Watt HPS standard Cobrahead fixture. The customer is required to reimburse NBU a fee of $930.00 per light fixture.

b) The customer shall, at his expense and with NBU approval, furnish and install all necessary conduit, underground facilities, and concrete foundations according to NBU specifications. NBU shall determine the location of street light fixtures, generally located at street intersections, cul-de-sacs and at 300' intervals. NBU shall install the pole, wire and light fixture, and make all connections.

3) Ornamental Street Lights

a) At the customer's option and with NBU approval, NBU will install a 14' antique ornamental standard with 100 Watt HPS fixture. The customer is required to reimburse NBU a fee of $2100.00 per light fixture.

b) The customer shall, at his expense and with NBU approval, furnish and install all necessary conduit, underground facilities, and concrete foundations according to NBU specifications. NBU shall determine the location of street light fixtures, generally located at street intersections, cul-de-sacs and at 150' intervals. NBU shall install the pole, wire and light fixture, and make all connections.

B. PRIVATE LIGHTS

1) Area lighting can be provided by NBU to its customers. Light fixtures shall be 150 watt, High Pressure Sodium (HPS). NBU will provide, install, and maintain all necessary equipment and provide the energy for the light based on the following fee schedule. This service can be discontinued at any time at the customer's request.

Installation Fees:

Light Installation with 3' arm ..... $50.00 each
Existing pole with up to 100' of wire ..... No Charge
Service pole plus first 100' of 6/2 duplex wire $175.00
Excess Wire over 100' ..... $1.00/ft.
Monthly Fees ..... $10.00/mo. plus tax

2) It is the customer's responsibility to prevent vandalism of the equipment. NBU will maintain the light for normal operation failure. Report failure to NBU Electric Division.

C. BANNERS

1) The City of New Braunfels has designated various locations within the City as being appropriate for installation of overhead banners. NBU will take applications from persons or organizations that fit eligibility requirements as set down by City Ordinance, and will schedule necessary NBU personnel for the installation. NBU will follow all City of New Braunfels rules and regulations pertaining to banner installation, and requests that customers abide by the following guidelines.

Designated locations are:

- Seguin & Jahn
- Landa & LCRA
- W. San Antonio & Hackberry
- San Antonio & Liberty

2) The customer must furnish City of New Braunfels with proof of public liability insurance and bring a copy to NBU. Reserve banner locations not more than 6 months in advance. The customer shall give NBU at least 1 week's notice to schedule personnel to hang the banners. Banner shall not be scheduled for periods longer than two consecutive weeks. The customer is required to deliver banners to and pick up from NBU at 333 Klingemann.

3) Banners shall be made of nylon mesh with clips on the top spaced every 2'. Banners shall have a minimum 10' of rope on each corner. Banners are normally 36 by 4 feet. NBU shall pre-approve other sizes.

4) Fees for banner installation for 2 weeks or less are as follows:

One Banner	$60.00
Two Banners	$120.00
Three Banners	$180.00
Four Banners	$240.00

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