NEW CONSTRUCTION HANDBOOK





Customer Builder Commercial Developer Information



If you have any questions, please contact a Black Hills Energy construction representative in your area.

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Black Hills Energy

New Commercial Customer Packet

Thank you for contacting Black Hills Energy about your power needs. This packet contains valuable information to help you acquire needed electrical services. Below is an index to the packet.

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Responsibilities for New Commercial Service – BHE/Customer

BHE Responsibility

- A. BHE will supply
 - a. Primary Conductors
 - i. Either overhead or underground
 - ii. Located on Right-of-Way(s) or utility easement.
 - b. Secondary conductors from overhead transformer to point of attachment
 - c. Transformer
 - d. Meter
- B. Installation of the above

Customer Responsibility

- A. Initial Information
 - a. Service Size (voltage, amperage, phase)
 - b. Type of load (gas heat, electric heat, total electric home, demand controller, seasonal, commercial, etc)
 - c. Location of service
- B. Signed Court House copy of following for each parcel crossed. Owner of record may need to sign an easement
 - a. Warranty Deed and Certified Plat (showing book and page)

OR

- b. Contract for Deed
- c. Pay any applicable fees before construction
- C. Sign and return the Electric Service Extension contract
- D. Wiring affidavit sent to State
 - a. Affidavit sticker to be mounted on service
- E. Trench, Conduit and Backfill (for underground cable)
 - a. Proper sized conduit per BHE specifications
 - b. Proper bedding per BHE specifications
 - c. Backfill over bedding
- F. All tree trimming per BHE specifications
- G. Meter base, CT enclosures, meter pedestals, transitions cabinets, and conductors from meter to main panel
- H. Install transformer pad
- I. Furnish and install secondary conductors from underground transformer customer owned facilities
- J. Completion of Grade Agreement



Responsibilities for New Commercial Service Property Documents

Before Black Hills Energy can extend our power lines to your new commercial service we need to have permission to build on your property and possibly your neighbor's property. The permission would be either in the form of an already existing "easement" or a signed "Easement".

Existing Utility Easement

A <u>utility easement</u> gives a utility the right to place their equipment on your property within the easement. There may be an existing easement on or near your property. The easement may be located along roads, along lot lines or as other defined areas. Easements come in the form of drawn easements or described (written) easements. If your property is in a "platted" development, existing utility easements may be shown or noted on a document known as a <u>plat</u>. The official plat is located at your county court house in the **Register of Deeds**.

If your property has not been platted it is known as "described" property. Easements for described property may also be in the form of drawn easements or as described (written) easements.

Easements on both described and platted properties may be shown or noted either on a drawn or described (written) "exhibit". This document may be filed as a "miscellaneous document".

If it is unknown whether a utility easement exists on your property a search may need to be done in the Register of Deeds.

Signed Easement

If a utility easement does not exist, an Easement needs to be produced and signed. An Easement gives a utility the right to place their equipment on your property. The Easement document may be produced using copies of existing plats or described property as found in the **Register of Deeds**. Any Easement needs to be signed by the owner of the property. In the case of a <u>Contract for Deed</u> the Easement needs to be signed by the person(s) selling the property and the person(s) purchasing the property through the contract. BHE will provide the needed Easement form for you to use to either execute an Easement or obtain one from neighboring property owners that the power line will need to cross.

In order for Black Hills Energy to know who owns the property our power lines will cross to serve you, a deed is also needed from the Register of Deeds. A deed can be in the form of a Warranty Deed, a Quitclaim Deed or a Contract for Deed. Any of these show who the owner or owners are of platted or described real estate.

Warranty Deed

This document names the current owner(s) and who the property was purchased from. The Warranty Deed also describes exactly what property is owned. The official Warranty Deed is located at your county courthouse in the **Register of Deeds**.

Quitclaim Deed

This document names the current owner(s) and who the property was purchased from. The Quitclaim Deed also describes exactly what property is owned. The official Quitclaim Deed is located at your county courthouse in the **Register of Deeds**.

Contract for Deed

This document names the current owner(s) and who is currently purchasing the property. The Contract for Deed also describes exactly what property is owned. The official Contract for Deed is located at your county courthouse in the **Register of Deeds**.

It is the responsibility of the person requesting new electrical service to gather the required documents from the county courthouse. For every separate piece of real estate crossed by the new electric extension a copy of the deed,

as described above, needs to be supplied to BHE. If the real estate noted on the deed copy has been platted then another document, a plat (copy of), is also required from the courthouse.

There are two ways for you to gather the documents needed for Black Hills Energy to extend our power lines to your new service.

Do it Yourself

The first way is for you to go to the courthouse to find and purchase copies of the Deed(s) and/or Plat(s). This may take the least out-of-pocket money but may also take the most time.

Hire it done

The second way is for you to hire someone skilled in this occupation to go to the courthouse to find and purchase copies of the Deed(s) and/or Plat(s) for you. This may be the quickest way but will cost you more. The following companies, among others, can assist you in gathering these documents:

Companies and Individuals able to do title, deed, and easement searches

BUTTE COUNTY

Belle Butte Title Co 713 6th Ave Belle Fourche, SD 57717 (605) 892-3949

LAWRENCE COUNTY

Black Hills Land Title Co 2011 N Main St Spearfish, SD 57783 (605) 642-7304

BLACK HILLS LAND TITLE CO

83 Sherman St. Deadwood, SD 57732 (605) 578-2376 **CUSTER COUNTY**

Custer Title Co 322 Mt Rushmore Rd Custer, SD 57730 (605) 673-4838, talk to Joyce

FALL RIVER COUNTY

Fall River Abstract PO Box 908 Hot Springs, SD 57747 (605) 745-5187, talk to Shelly

MEADE COUNTY

Meade County Title Co 1530 Junction Ave Sturgis, SD 57785 (605) 347-4402 Toll Free 1-800-732-7694

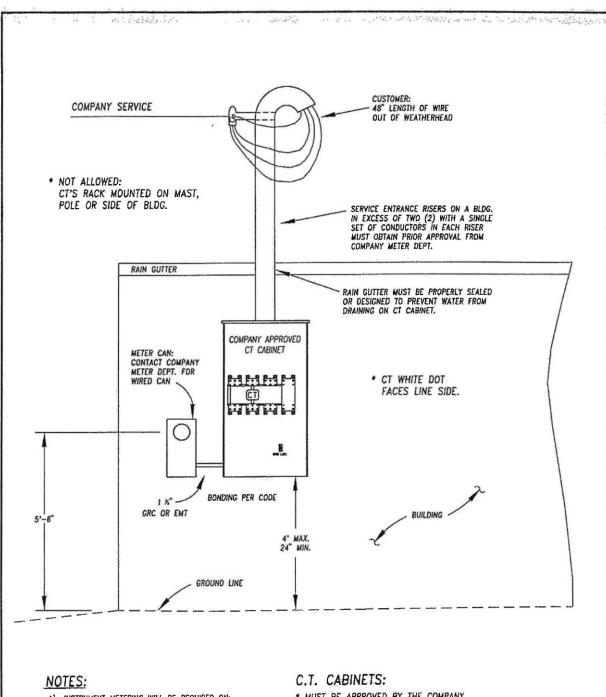
- THE CUSTOMER IS URGED TO MAKE EARLY CONTACT WITH THE COMPANY FOR PERMANENT SERVICE.
- AN AFFIDAVIT OR INSPECTION MUST BE OBTAINED FROM THE AUTHORITY HAVING JURISDICTION BEFORE SERVICE CAN BE PROVIDED.
- PERMANENT SERVICES MUST BE LOCATED WHERE THE METER WILL BE PROTECTED FROM MECHANICAL INJURY. SHOULD RELOCATION OF A PERMANENT SERVICE BECOME NECESSARY, THE RELOCATION COST WILL BE THE RESPONSIBILITY OF THE CUSTOMER.
- 4 OVERHEAD PERMANENT SERVICE DROPS SHALL BE SUPPORTED ON COMPANY APPROVED POLE, WALL, OR STRUCTURE. THE MAXIMUM SERVICE DROP LENGTH FROM COMPANY POLE TO THE SERVICE DEPENDS UPON CONDUCTOR SIZE. CONSULT WITH YOUR COMPANY REPRESENTATIVE TO DETERMINE THE MAXIMUM DISTANCE. PERMANENT SERVICE MUST MEET COMPANY STANDARDS.
- CUSTOMER OWNED METERING EQUIPMENT, SWITCHING DEVICES, CONDUITS, CONDUCTORS, LUMINARIES, ETC., ARE NOT TO BE MOUNTED ON COMPANY POLES.
- THREE (3) FEET MINIMUM WORKING SPACE REQUIRED BETWEEN ELECTRICAL METER AND ANY OTHER OBSTRUCTION ATTACHED TO THE BUILDING. (SEE®NEC REQUIREMENTS)
- 7. <u>CUSTOMER HAS RESPONSIBILITY</u> TO PROVIDE AND MAINTAIN A THREE (3) FOOT CLEARANCE FROM ALL TREE LIMBS FOR THE ELECTRICAL OVERHEAD SERVICE FROM THE POLE TO THE SERVICE ATTACHMENT ON THE CUSTOMERS BUILDING OR DWELLING.
- WHEN PRACTICAL, EQUIPMENT OR OTHER OBSTRUCTIONS SHALL MAINTAIN A MINIMUM CLEARANCE OF TEN (10) FEET AWAY FROM A COMPANY POLE. THIS INCLUDES ITEMS SUCH AS TEMPORARY SERVICE PEDESTALS OR POLES, METER PEDESTALS, COMMUNICATION PEDESTAL, PADMOUNT TRANSFORMERS, FENCES, ETC..
- 9. GROUNDING REQUIREMENTS:
 - A. GROUND WIRE NO. 6 COPPER MINIMUM IN SEPARATE CONDUIT NOT IN WITH COMPANY WIRE.
 - B. GROUND RODS -- 8' LONG -- 5/8" GROUND ROD, AS PER CURRENT ISSUE OF N.E.C.
 - C. ALL GROUND RODS TO BE INSTALLED IN UNDISTURBED EARTH.
 - D. ALL GROUND RODS TO BE EMBEDDED BELOW PERMANENT MOISTURE LEVEL PER N.E.C.
- 10. METERING REQUIREMENTS: (METER FURNISHED BY COMPANY)
 - A. ALL METER HOUSINGS TO BE RING-LESS, NO RING TYPE.
 - B. ANY COMMERCIAL METER HOUSING MUST HAVE BYPASS HANDLE.
 - C. ANY RESIDENTIAL METER HOUSING MUST HAVE HORN TYPE BYPASS.
 - D. ALL UNDER GROUND METER HOUSINGS MUST BE AT LEAST 200 AMP AS PER COMPANY STANDARDS AND INSTALLED LEVEL IN ALL DIRECTIONS.
 - D. ALL PERMANENT OVER HEAD METER HOUSINGS MUST BE AT LEAST 150 AMP AS PER COMPANY STANDARDS AND INSTALLED LEVEL IN ALL DIRECTIONS.
 - F. METER HOUSINGS SHALL TO CONFORM TO ALL COMPANY CRITERIA. (REFER TO SECTION 4, METERING)
 - G. ALL METERS TO BE OUTSIDE OF BUILDINGS NOT INSIDE.
 - H. METER LOCATIONS SHALL BE DETERMINED BY THE COMPANY REPRESENTATIVE AND MAY VARY DEPENDING ON REAR OR FRONT LOCATION OF DISTRIBUTION FACILITIES.
 - I. IF SELF CONTAINED METER HOUSING IS NOT ATTACHED TO A BUILDING, A SERVICE DISCONNECT WILL BE REQUIRED ON THE LOAD SIDE OR ADJACENT TO THE METER HOUSING. BOTH DISCONNECT AND WIRE ON THE LOAD SIDE WILL BE CUSTOMER OWNED.
 - J. WHEN USING MULTIPLE METER HOUSINGS THE SERVICE ADDRESS SHALL BE CLEARLY MARKED AND SECURELY ATTACHED TO METER SOCKET BY MEANS OF A PERMANENT STAMPED BRASS, ALUMINUM OR STAINLESS STEEL TAG.
- 11. CONDUIT:
 - A. PVC MINIMUM IS SCHEDULE 40.
 - B. NO LB ELBOWS ON LINE SIDE CONDUIT ALLOWED, ALL CORNERS SHALL BE OF THE SWEEP VARIETY.
 - C. SLIP SLEEVES ARE REQUIRED ON ALL PVC RISERS.
- CUSTOMER OWNED GUYING, WHEN REQUIRED, TO BE ADEQUATE FOR WIRE SIZE AND SPAN LENGTHS. SEE YOUR COMPANY REPRESENTATIVE FOR RECOMMENDATIONS.

CT BOOK:	REVISION DATE	APPROVED BY:
METER	6/4/19	LS
DRAWN BY:	REVISION NO.	DATE
AP	9	6/4/19

REQUIREMENTS FOR PERMANENT ELECTRIC SERVICE

METERING STANDARDS DRAWING # 1410-SV1





- A) INSTRUMENT METERING WILL BE REQUIRED ON:
 - . 10 LOADS ABOVE 400 AMPS AND
 - . 30 LOADS ABOVE 200 AMPS.
 - . 480 VOLT SERVICES DUAL COMPARTMENT METER HOUSING MUST BE USED ON 480V SERVICES
- B) SERVICE ENTRANCE CONDUCTORS SHALL NOT PASS THROUGH ANY OTHER ENCLOSURE PRIOR TO CT CABINET.
- C) CONDUCTORS SHALL NOT PASS IN FRONT OF BUSS OR CT.
- D) TOP LUGS IN CT CABINET SHALL BE LINE SIDE.

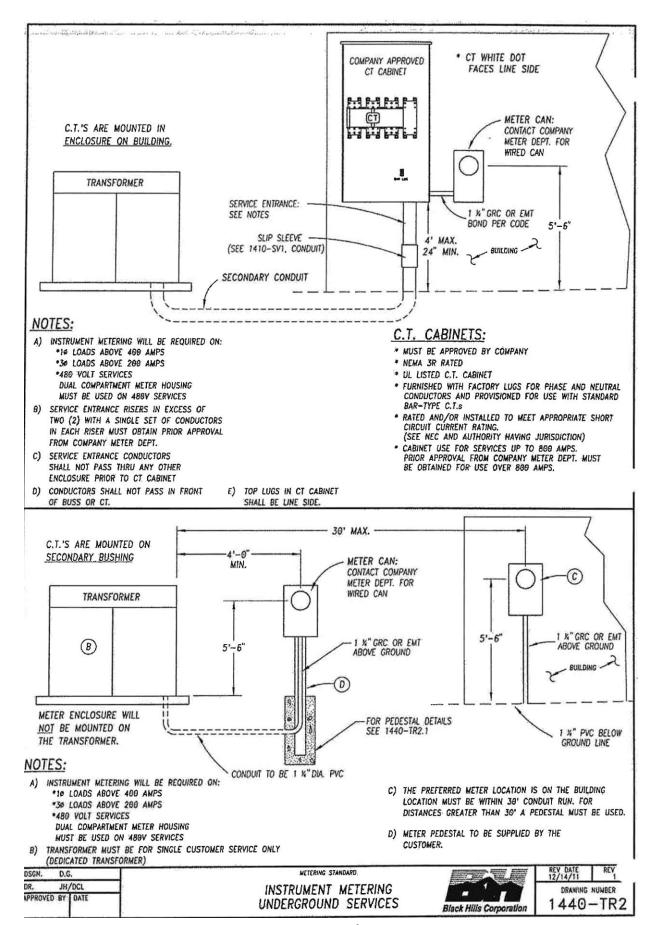
- * MUST BE APPROVED BY THE COMPANY
- * NEMA 3R RATED
- * UL LISTED C.T. CABINET
- FURNISHED WITH FACTORY LUGS FOR PHASE AND NEUTRAL CONDUCTORS AND PROVISIONED FOR USE WITH STANDARD BAR-TYPE C.T.s
- * RATED AND/OR INSTALLED TO MEET APPROPRIATE SHORT CIRCUIT CURRENT RATING. (SEE NECO AND AUTHORITY HAVING JURISDICTION)
- * CABINET USE FOR SERVICES UP TO 800 AMPS. PRIOR APPROVAL FROM COMPANY METER DEPT. MUST BE OBTAINED FOR USE OVER 800 AMPS.

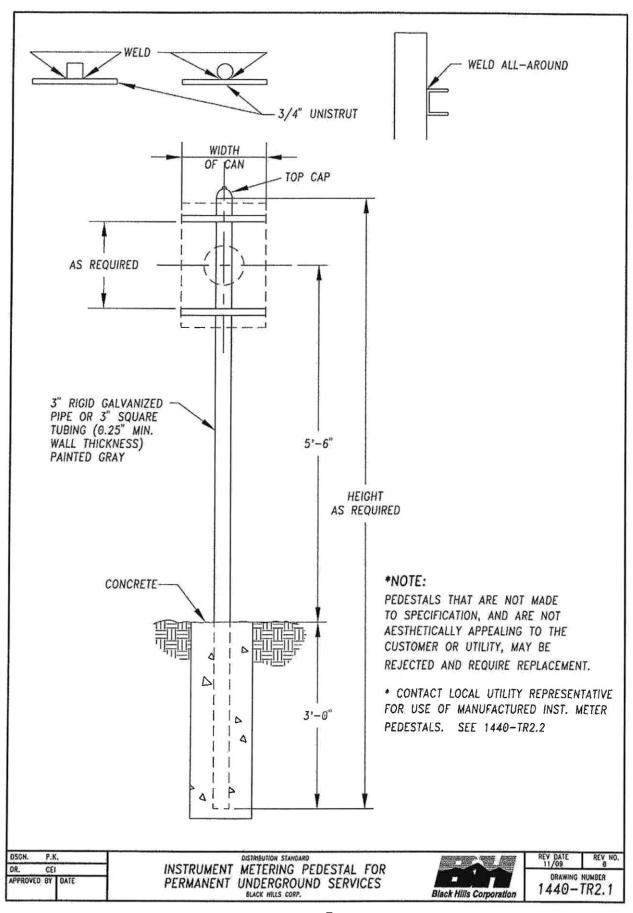
DSGN. M.C. DH APPROVED BY DATE

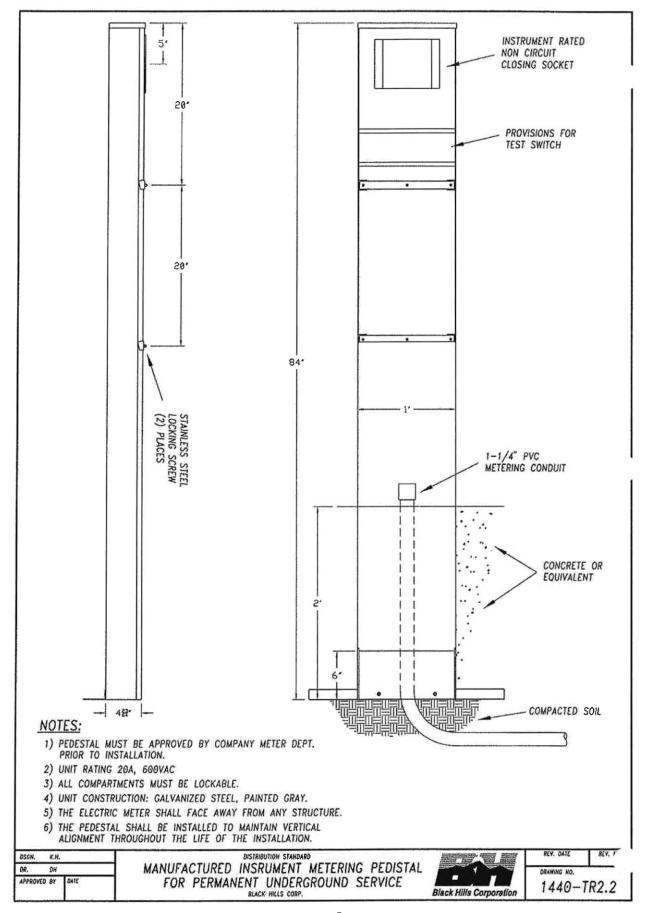
METERING STANDARD INSTRUMENT METERING OVERHEAD SERVICES

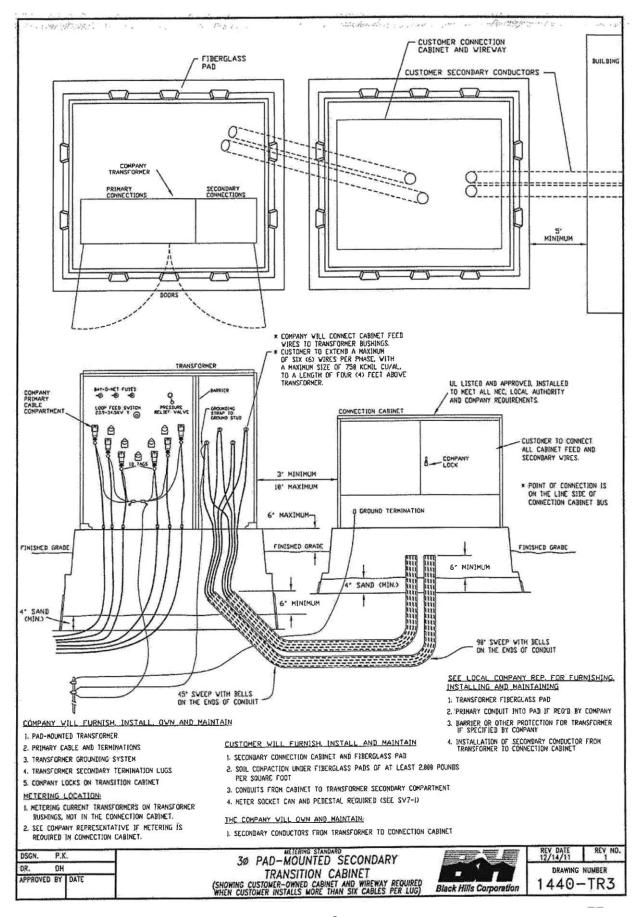


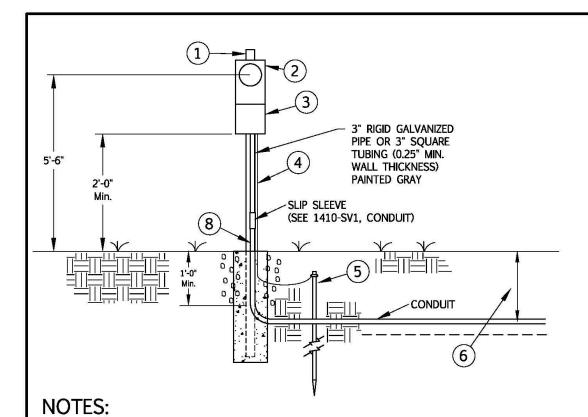
1440-TR1









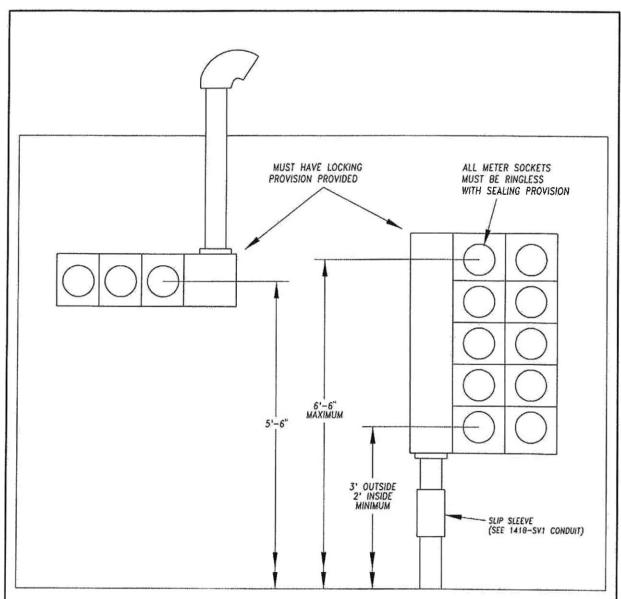


- FOR PEDESTAL DETAIL SEE: 1410-SV5.1, FOR U.L. APPROVED, FACTORY MADE METER/PEDESTAL CABINET WITH SERVICE DISCONNECT SEE 1410-SV6. OTHER DESIGNS MUST BE PRE-APPROVED BY A COMPANY REPRESENTATIVE.
- METER CAN MUST BE COMPANY APPROVED RINGLESS TYPE AND INSTALLED LEVEL IN ALL DIRECTIONS.
 ALL COMMERCIAL METER CAN INSTALLATIONS MUST HAVE A MECHANICAL BYPASS RESIDENTIAL, A HORNED BYPASS.
- 3. CUSTOMER DISCONNECT EQUIPMENT WEATHER TIGHT SELF CONTAINED SWITCH BOX MUST BE COVERED WHEN INSPECTED.
 - A) SINGLE PHASE MINIMUM CAPACITY 30 AMPERES. TO MAXIMUM CAPACITY OF 400 AMPERES.
 - B) THREE PHASE SERVICES OVER 200 AMPERES, MUST BE INSTRUMENT METERED.
 - C) ALL 480 VOLT SERVICES, MUST BE INSTRUMENT RATED.
- 4. GROUND WIRE NO. 6 COPPER MINIMUM.
- 5. GROUND ROD -- 8' LONG -- 5/8" GROUND ROD. A BUTT WRAPPED COPPER GROUND WIRE IS ALSO ACCEPTABLE.
- 6. CONTACT LOCAL UTILITY FOR TRENCHING SPECIFICATIONS AND RESPONSIBILITIES.
- 7. A PERMIT FOR PERMANENT SERVICE OR A WIRING AFFIDAVIT APPROVING THE SERVICE FOR CONNECTION MUST BE OBTAINED BEFORE SERVICE CAN BE PROVIDED.
- 8. SERVICE ENTRANCE CUSTOMER WILL PROVIDE:
 - A) COMMERCIAL FROM A PAD MOUNT TRANSFORMER TO CUSTOMERS SERVICE ENTRANCE;
 - * ALL SECONDARY CONDUCTORS
 - * ALL PVC CONDUIT (3" SCHEDULE 40 MINIMUM SIZE) REQUIRED.
 - B) COMMERCIAL FROM OVERHEAD TRANSFORMERS:
 - * CONTACT LOCAL COMPANY REPRESENTATIVE ABOUT OWNERSHIP AND INSTALLATION.
 - C) RESIDENTIAL FROM OVERHEAD OR PADMOUNT TRANSFORMER TO CUSTOMERS SERVICE ENTRANCE:
 - * COMPANY WILL PROVIDE ALL LINE SIDE CONDUCTORS, AND POLE CONDUIT ALL OTHER CONDUIT SHALL BE PROVIDED BY CUSTOMER.
- 9. UNDERGROUND SERVICE LINE MUST BE COVERED OR BACK FILLED BEFORE SERVICE MAY BE ENERGIZED.
- 10. SEE 1410-SV1 FOR ANY OTHER REQUIREMENTS.

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SELF CONTAINED UNDERGROUND PERMANENT SERVICE - STEEL POST METERING STANDARDS DRAWING # 1410-SV5





* METER MODULES OF ALL TYPES ARE TO BE MOUNTED NO LOWER THAN 24 INCHES CENTERLINE TO THE FIRST METER FROM THE GROUND AND NO HIGHER THAN 78 INCHES CENTERLINE TO THE TOP METER FROM THE GROUND. STANDARD SINGLE METER HEIGHT IS 66 INCHES FROM THE GROUND.

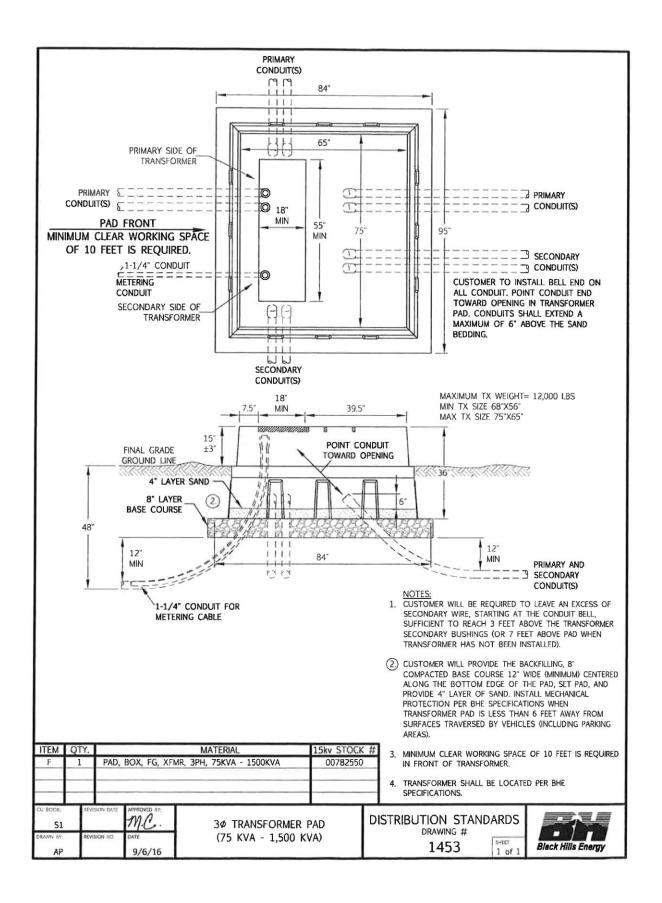
NOTE:

- LEVER OPERATED BYPASS REQUIRED ON ALL COMMERCIAL SOCKETS.
- * HORNED BYPASS REQUIRED ON ALL RESIDENTIAL SOCKETS.
- * PERMANENTLY AFFIXED IDENTIFICATION TAGS ARE REQUIRED (SEE 1410-SV1)
- UL APPROVED MANUFACTURED METER MODULES INSTALLED BY CUSTOMER PER NEC, LOCAL AUTHORITY AND COMPANY RULES.
- * ATTACHED CT COMPARTMENTS OR ANY SWITCHGEAR / CT COMPARTMENTS MUST OBTAIN PRE-APPROVAL FROM THE COMPANY METER DEPARTMENT.

SGN, D.	C.	DISTRIBUTION STANDARD
i: J.i	H./D.C.L.	GANG METER MODULES AND
PROVED BY	DATE	METER PEDESTALS
		BLACK HILLS CORP.



REV. DATE	REV. NO.
BRAWING NO.	
1/10-	CVR



GENERAL:

- PAD MOUNT TRANSFORMERS SHALL BE LOCATED IN AN AREA ACCESSIBLE TO LINE TRUCKS FOR EASY INSTALLATION AND REMOVAL.
- 2) PAD MOUNT TRANSFORMERS SHALL BE LOCATED IN AN AREA NOT SUBJECTED TO FLOODING.
- 3) PADS FOR TRANSFORMERS SHALL BE PROTECTED AGAINST LANDSLIDES, DRAINAGE WASH OR DRIFTING SAND, ETC. THE INSTALLATION OF RETAINING WALLS OF SUFFICIENT STRENGTH AND SUITABLE CONSTRUCTION TO PROVIDE ADEQUATE PROTECTION SHALL BE THE RESPONSIBILITY OF THE CUSTOMER.
- 4) PADS FOR TRANSFORMERS SHALL BE INSTALLED AND MAINTAINED LEVEL.
- 5) ANY PROTECTIVE OR DECORATIVE FENCING OR ENCLOSURE TO BE BUILT AROUND A PAD MOUNTED TRANSFORMER MUST BE APPROVED BY CUSTOMER SERVICES AND ENGINEERING PRIOR TO INSTALLATION.

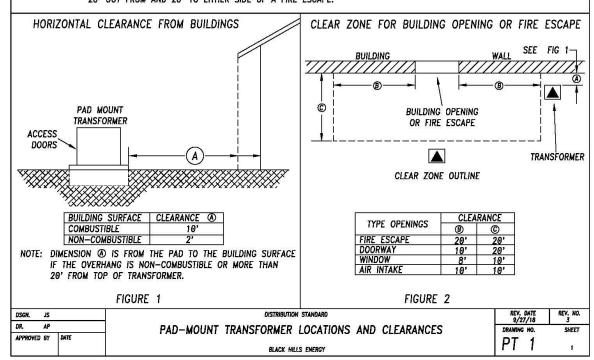
BASIC HORIZONTAL CLEARANCES: (FIGURE 1)

THE FOLLOWING HORIZONTAL CLEARANCES BETWEEN PAD MOUNTED TRANSFORMERS AND ADJACENT STRUCTURES ARE REQUIRED:

- TEN FEET MINIMUM FROM COMBUSTIBLE SURFACES. CUSTOMER SHALL PROVIDE NON-COMBUSTIBLE SURFACES OR FIRE-RESISTANT BARRIERS IF CLEARANCE IS LESS THAN 10'.
- TWO FEET MINIMUM FROM A NON-COMBUSTIBLE SURFACE ON ANY SIDE AND AT LEAST 10' CLEAR WORKING SPACE ON THE FRONT SIDE OF THE TRANSFORMER.
- 3) OVERHANGS (COMBUSTIBLE)
 - a) IF AN OVERHANG OF COMBUSTIBLE MATERIAL CLEARS THE TOP OF OIL-FILLED PAD MOUNTED TRANSFORMERS BY A MINIMUM OF 20' VERTICALLY, THE REQUIRED DISTANCE SHALL BE MEASURED FROM THE BUILDING WALL.
 - b) IF AN OVERHANG OF COMBUSTIBLE MATERIAL CLEARS THE TOP OF OIL—FILLED PAD MOUNTED TRANSFORMERS LESS THAN 20' VERTICALLY THE REQUIRED CLEARANCE SHALL BE MEASURED FROM THE FARTHEST PROJECTION OF THE OVERHANG.

CLEARANCE FROM AIR INTAKE, WINDOWS, DOOR AND FIRE ESCAPES: (FIGURE 2)

- 1) DOORS: A PAD MOUNT TRANSFORMER SHALL NOT BE PLACED WITHIN A ZONE EXTENDING 20' OUT FROM AND 10' TO EITHER SIDE OF A DOOR.
- 2) WINDOWS: A PAD MOUNT TRANSFORMER SHALL NOT BE PLACED WITHIN A ZONE EXTENDING 10' OUT OR 8'
 EITHER SIDE OF A WINDOW ON THE 1st FLOOR. THE TRANSFORMER SHALL NOT BE ANY CLOSER THAN 5' FROM ANY
 PART OF A SECOND STORY WINDOW, NOR DIRECTLY BELOW AN OPERATING WINDOW.
- 3) AIR INTAKES: A PAD MOUNT TRANSFORMER SHALL NOT BE PLACED WITHIN A ZONE EXTENDING 10' OUT FROM AND 10' TO EITHER SIDE OF AN AIR INTAKE. IF THE AIR INTAKE ABOVE TRANSFORMER, THE TRANSFORMER SHOULD BE 25' FROM THE OPENING.
- FIRE ESCAPES: A PAD MOUNT TRANSFORMER SHALL NOT BE PLACED WITHIN A ZONE EXTENDING 20' OUT FROM AND 20' TO EITHER SIDE OF A FIRE ESCAPE.



APPLICATION:

IF PAD MOUNTED EQUIPMENT MUST BE LOCATED IN PAVED OR TRAVELED AREAS, OR ADJACENT TO SUCH AREAS WITH THE POSSIBILITY OF DAMAGE FROM VEHICLES, PHYSICAL PROTECTION ACCEPTABLE TO BLACK HILLS POWER AND LIGHT COMPANY MUST BE PROVIDED AND MAINTAINED BY THE CUSTOMER. BLACK HILLS POWER AND LIGHT COMPANY WILL DETERMINE WHEN SUCH PROTECTION IS NECESSARY.

MATERIAL:

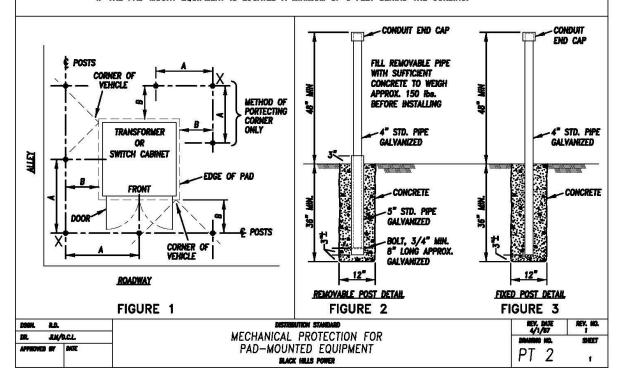
GALVANIZED 4" STANDARD PIPE AND END CAP IS THE <u>PREFERRED</u> METHOD OF POST FABRICATION. A SMOOTH CONCRETE DOME IS PERMITTED IN PLACE OF THE END CAP, WHEN A <u>CONCRETE DOME</u> IS USED, THE PIPE END MUST BE FREE OF SHARP EDGES. THE 5" DIAMETER SECTION FOR INSTALLING REMOVABLE POSTS MUST ALSO BE GALVANIZED.

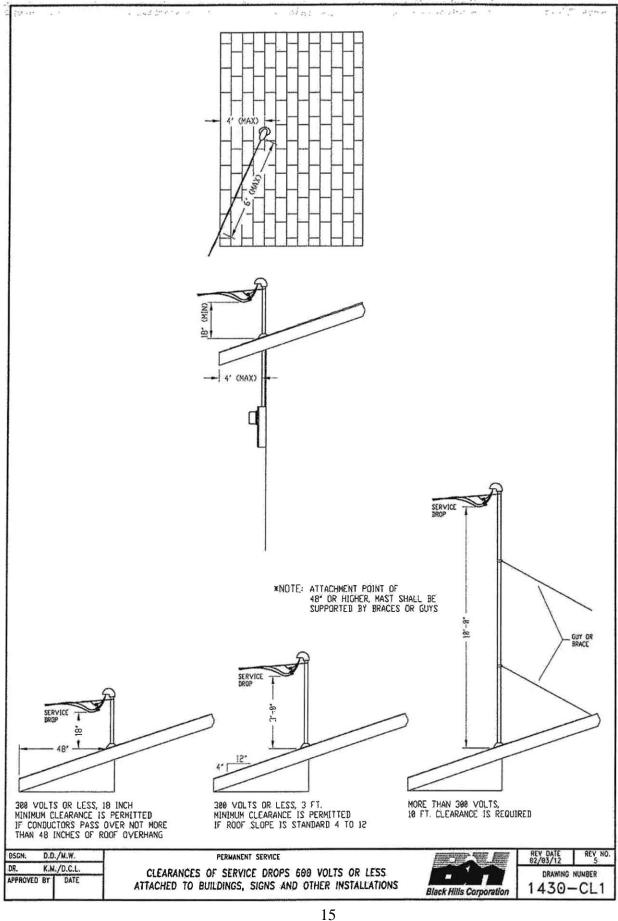
LOCATION:

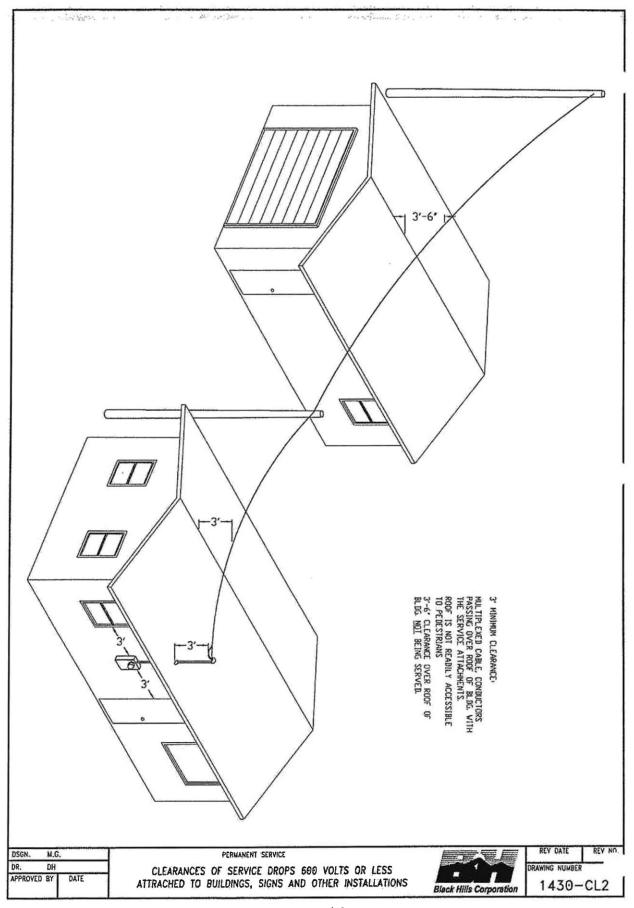
- 1) LOCATE BARRIER POST SO THEY DO NOT INTERFERE WITH THE OPENING OF EQUIPMENT DOORS. USE REMOVABLE BARRIER POSTS AS FOLLOWS:
 - a) ON DOOR SIDE(S) OF EQUIPMENT WHERE POSTS COULD INTERFERE WITH OPERATION OF LIVE LINE TOOLS.
 - WHERE THE USE OF FIXED POSTS WOULD OBSTRUCT ACCESS FOR INSTALLATION OR REPLACEMENT OF EQUIPMENT.
- 2) DIMENSIONS FOR LOCATION OF POSTS WITH RESPECT TO EQUIPMENT PAD ARE DETERMINED AS FOLLOWS: (SEE FIGURE 1)
 - DETERMINE THE MOST PRACTICABLE DISTANCE "B" (FOR EACH SIDE) THAT POSTS CAN BE LOCATED FROM THE EDGE OF THE PAD.
 - b) DIMENSION "A" (FOR EACH SIDE) MUST BE LESS THAN OR EQUAL TO 2 TIMES "B" MINUS 6 INCHES BUT SHOULD NOT EXCEED 42 INCHES.
 - c) PLACE THE FIRST POST AT THE INTERSECTION OF PROJECTED CENTERLINES, (POINT X).
 - d) PLACE ONE POST DISTANCE "A" FROM POINT "X" ALONG EACH SIDE TO PROTECT CORNER.
 - e) CONTINUE TO PLACE POSTS DISTANCE "A" APART ALONG SIDES TO BE PROTECTED.
 - f) <u>TO PROTECT ONE SIDE ONLY</u>, PROCEED AS IN "a" AND "b" ABOVE, PLACE FIRST POST DISTANCE "B" FROM EDGE OF PAD AT EACH POINT WHERE PROTECTION IS REQUIRED THEN PROCEED AS IN "a" ABOVE.
 - g) TO PROTECT CORNER ONLY, PROCEED AS IN "a" THROUGH "d" ABOVE.

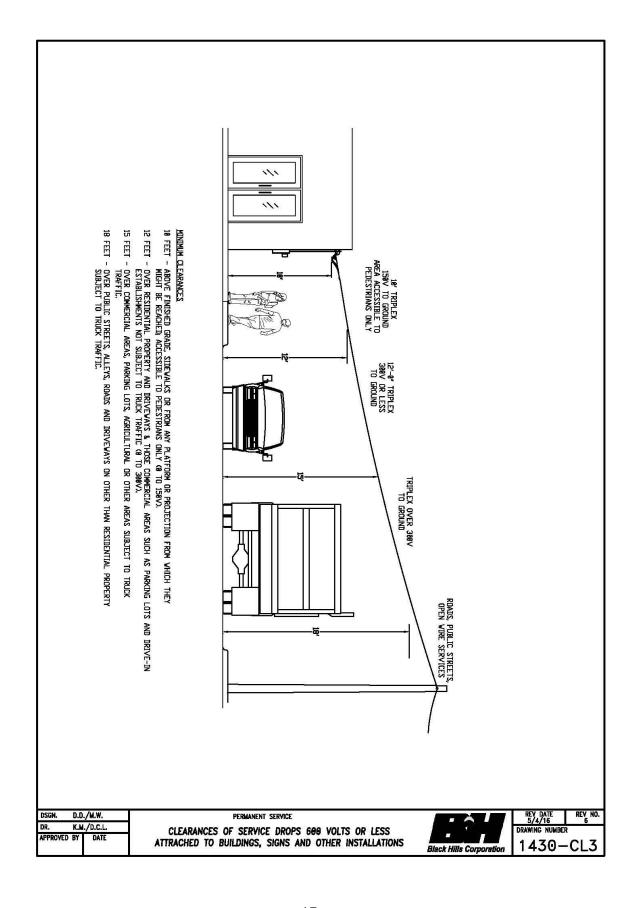
NOTES:

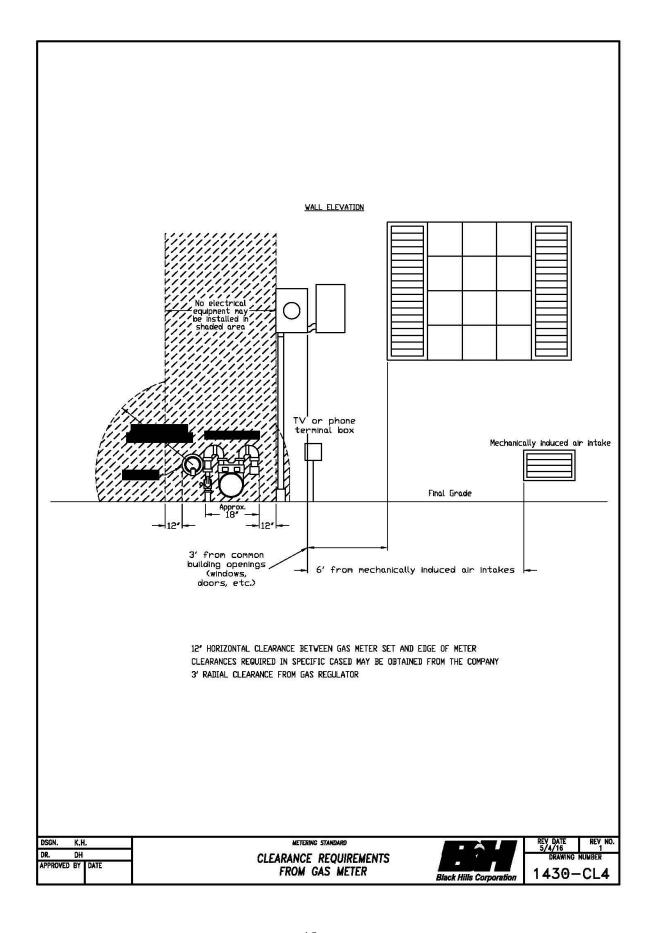
- 1) A BUILDING WILL FURNISH PROTECTION PROVIDED IT IS LOCATED AT A POINT WHERE A POST WOULD NORMALLY BE REQUIRED.
- SQUARE FACED STREET CURBING PARALLEL TO NORMAL TRAFFIC FLOW CAN BE CONSIDERED SUITABLE PROTECTION
 IF THE PAD—MOUNT EQUIPMENT IS LOCATED A MINIMUM OF 6 FEET BEHIND THE CURBING.











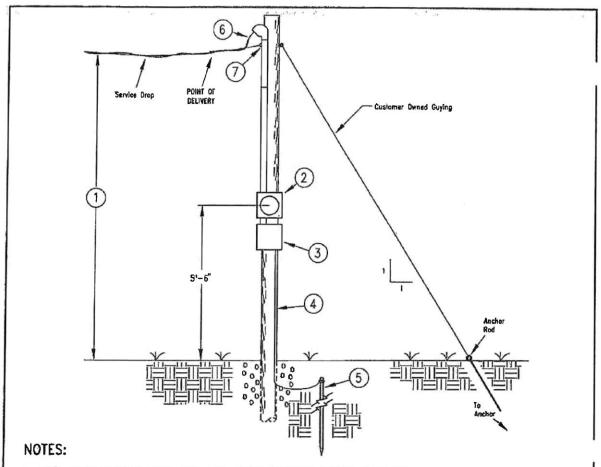
- The customer is urged to make early contact with the local Company for temporary service.
- 2. The customer is required to pay a standard fee for temporary service. When special construction is required there will be additional charges.
- Required affidavits or city inspections must be obtained before service can be provided.
- 4. In addition to installation and removal charges, the customer will be required to pay a service charge for each metered connection.
- 5. Temporary services for construction work must be located where the meter will be protected from mechanical injury and, when practical, a location should be selected that would be usable throughout the construction period. Should relocation of a temporary service became necessary the relocation cost will be the responsibility of the Customer.
- 6. Overhead temporary service drops shall be supported on a Company approved pole or timber and shall be furnished and installed by the Customer. The maximum service drop length from a Company pole to the service depends upon conductor size. Consult with your Company Representative to determine the maximum distance. Temporary service must meet Company standards.
- Customer—owned metering equipment, switching devices, conduits, conductors, luminaires, etc., are not to be mounted on Company poles.
- 8. Customer owned guying, when required, to be adequate for wire size and span lengths. See your Company representative for recommendations.
- All underground temporary meter loops will be located at the transformer or at the secondary service wire at the lot line. Any variation to this standard; <u>SEE YOUR COMPANY REPRESENTATIVE FOR RECOMMENDATIONS.</u>

DSGN.	D.G	./D.D.	
DR.	K.M	./D.C.L.	
APPROVED	BY	DATE	

REQUIREMENTS FOR TEMPORARY ELECTRIC SERVICE CONSTRUCTION POWER



REV DATE 12/02/09 REV NO DRAWING NUMBER 1420-TM1



- 1. a.10' above finished grade where all of the following conditions or met:
 - 1) Access is limited strictly to pedestrians.
 - 2) Multi-plex conductors are used. 3) Conductors are 150v or less to ground.

Pole to be minimum of 14' long, buried 3'-6", guyed as needed.

- b. 12' above grade where all of the following conditions are met:
 - Residential and commercial areas not subject to truck traffic.
 Conductors are 300V or less to ground.

Pale to be minimum of 16' long, buried 4', guyed as needed.

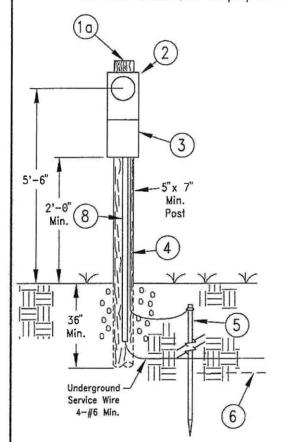
- c. 15' above grade where all of the following conditions are met:
 - 1) Residential and commercial areas not subject to truck traffic.
 - 2) Conductors are over 300V to ground.

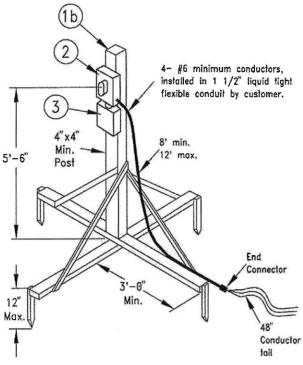
Pole to be minimum of 20' long, buried 4', guyed as needed.

- d. 18' above public streets and all other areas subject to truck traffic. Pole to be a minimum of 25', buried 4'-6", guyed as needed.
- e. A 6" x 6" pressure treated post or a class 6 treated pole may be used.
- Meter can must be Company approved and installed level in all directions, Ringless Type.
- Customer disconnect equipment must be weatherproof and have a minimum capacity 30 amperes. Switch box must be covered when inspected.
- Ground wire #6 copper minimum, #4 where required by NEC
- Ground rod 8' long by 5/8" ground rod. A butt wrapped copper ground wire is also acceptable. 5.
- Minimum conductor #8 copper or #6 aluminum. Must be 18" in length outside weatherhead. 6.
- 7. Point of attachment for service must be provided.
- 8. Temporary service charges must be paid and a permit for temporary service or a wiring affidavit approving the service for connection must be obtained before service can be provided.
- 9. See 1410-SV1 for any other requirements.

OSGN. D.G./D.D.	TEMPORARY SERVICE		REV DATE 12/14/11	REY
DR. KM/DCL APPROVED BY DATE	OVERHEAD TEMPORARY SERVICE	Black Hills Corporation	1420-	— ТМ2

The installation shall be outside the utility easement and shall not be less than 6 feet from the service pedestal or pad-mount transformer and not less than 10 feet from Company owned pole.



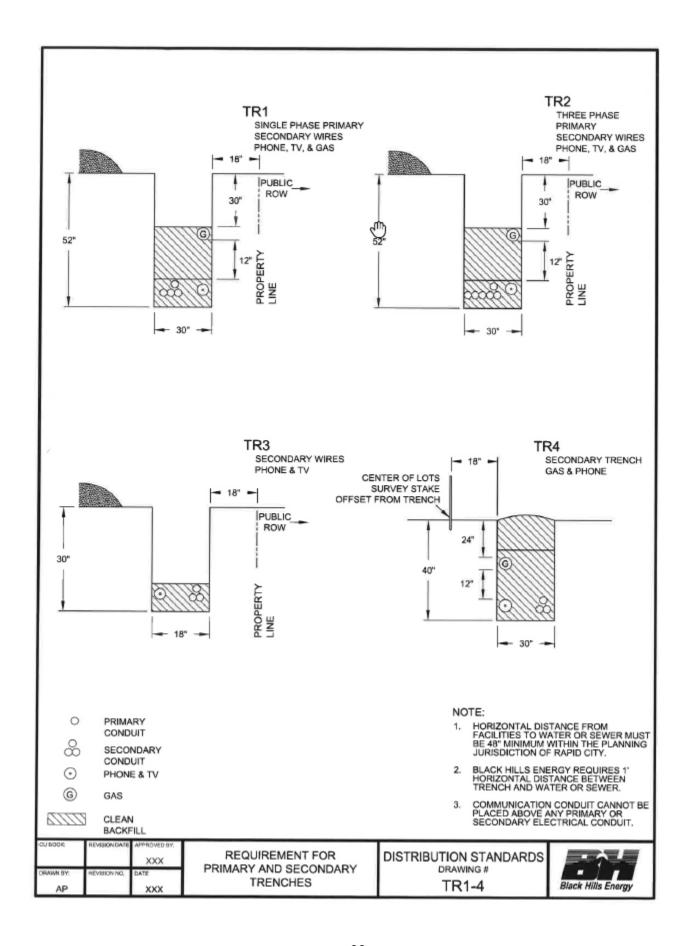


* For use with pad-mount transformer provisioned with access (knock out) to secondary compartment.

NOTES:

- 1a. Pressure treated 5" x 7" wood post, owned by customer, to be buried 36" in ground.
- 1b. Free standing pedestal, adequately braced and anchored. (for use with pad mount transformer)
- 2. Meter can must be Company approved and installed level in all directions, Ringless Type.
- Customer disconnect equipment must be weatherproof and have a minimum capacity 30 amperes.
 Switch box must be covered when inspected. Installed per NEC & local utility specifications.
- 4. Ground wire No. 6 copper Minimum, NO. 4 where required by NEC.
- 5. Ground rod -- 8' long -- 5/8" ground rod. NOTE: ground rod is not required if temp. service is adjacent to pad mount transformer where ground lead is provided from company transformer.
- 6. Trench according to company specifications.
- Temporary service charges must be pold and a permit for temporary service or a wiring affidavit approving the service for connection must be obtained before service can be provided.
- 8. Post Conduit: 2" PVC electrical conduit to a depth 12" in ground.
- 9. Underground service line must be covered or back filled before service may be energized.
- 10. See 1410-SV1 for any other requirements.

DSGN. D.G./D.D.	TEMPORARY SERVICE		REV DATE 12/14/11	REV NO.
DR. KM/DCL APPROVED BY DATE	UNDERGROUND TEMPORARY SERVICE	Black Hills Corporation	1420-	тмз



Definitions:

- 1. Electric utilities include power, lighting, telephone, cable t.v., signal circuits, etc.
- Non-electric utilities include water, gas, sewer, storm drains, etc.
- Clean dirt, fines, sand, or rock less than 2" are approved bedding material for the conduit system.
 Deviation from approved bedding can only be authorized by a BLACK HILLS ENERGY representative.

Trench:

- 1. All cable to be installed in conduit system unless approved by a BLACK HILLS ENERGY representative.
- Clearances must be obtained from all other buried utilities before digging.
- 3. The conduit system should be located a minimum of two feet of the property line.
- The conduit trench must meet the specifications of Standard Drawings TR1 thru TR8.
- Where the surface grade of the trench location is not final, steps must be taken to ensure minimum standard depth subsequent to installation.
 - a. If the grade is to be lowered, the depth of cut must be added to our standard trench depths.
 - b. if the grade is to be raised, the trench must be standard depth at the time it is dug.
 - c. Curb and gutter must be installed in subdivisions prior to trenching to insure proper grade.
- Back fill or bedding within 4 inches of conduit systems shall be free of all rocks or other materials that
 may damage the conduit. Refer to "definitions" above for standard approved material for the "cushion"
 around the conduit.
- Back fill must be adequately tamped or packed to prevent sinking and meet the specifications of governmental agencies when necessary. Machine compaction must not be used within 6 inches of the conduit to prevent damage.

Conduit:

- All conduit shall be approved HDPE black endless w/3 red stripes or PVC schedule 40 electrical conduit.
 - a. 2" conduit may be used for #6 DPLX for street lighting and PAL lighting.
 - b. 3" conduit may be used of or #2, 1/0, & 4/0 single phase primary cable.
 - c. 3" conduit shall be used for 1/0 and 4/0, residential service cable serving a 200A meter can.
 - d. 4" conduit shall be used for #2, 1/0, and 4/0 3 phase primary cables.
 - e. Two single phase services may be placed in one 4 inch conduit.
 - f. 6" conduit shall be used for 350KCM, 750KCM and 1000KCM primary circuits.
- Minimum residential service cable conduit size will be 3" and standard 24" RADIUS PVC sweeps up to 150 feet, with no more than 270 degree of bends.
- Any residential service cable conduit systems 150 feet in length or longer with 270 of bends or more need to have 24" RADIUS fiberglass sweeps installed, 200A secondary conduit systems should not exceed 280' (total wire length) or 270 degree of bends without prior approval.
- A 1/2*, 1200 lb pull tape shall be installed in all conduits.
- 5. Conduit ends must be sealed with Plug with PULL TABS and extend out to the ground 4 to 8 inches.
- Primary conduit sweeps shall be FIBERGLASS with a minimum RADIUS of 36" for 4" or less. 6" sweeps will require a 48" RADIUS.
- 7. Conduit risers shall be installed in accordance with PVC molded riser drawings.
- 8. Schedule 80 pipe under all city, county, and state roads.

Safety:

- Before working on primary wire, be sure there is a visible open at both ends and it is grounded, unless insulated sticks are used.
- All enclosures, transformers and switching modules must be kept locked at all times except when actually working at their location.

Cable Installations:

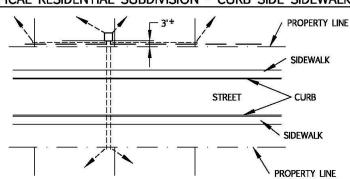
- Cable will not be placed in a conduit system unless it meets the the standard trench specification including the
 appropriate bedding.
- 2. Cable will be inspected as it is installed to insure no kinks, cuts, abrasions or damage of any kind.
- 3. Be sure sufficient lengths of cable are left at the ends for risers and or terminations.
- Cable paralleling non-electric utilities or other subsurface structures shall not be installed directly above or below such utilities. See Trench Specifications for minimum spacings.
- Trench will be inspected prior to cable installation and prior to back filling, by BLACK HILLS ENERGY personnel.
- Cable ends must be sealed when exposed if termination or splice is to be done at a later time. This will prevent moisture migration into the cable.

cuacox C1	10/20/20	APPROVED BY: JB	URD CABLE AND	DISTRIBUTION STANDARDS	· > '
DRAWN BY:	REVISION NO.	10/12/20	TRENCH GUIDELINES	2210 SHEET 1 of 2	Black Hills Energy

General:

- All termination points of cable in transformers, switching modules and enclosures shall be clearly marked as to color coded phase and point of beginning or termination.
- 2. All connections, splices and terminating devices must be kept clean and dry at all times when assembling, using and storing.
- 3. Primary cable should not be handled when subjected to temperatures lower than 10°F in the 24 hour period preceding installation. If cold weather installation is anticipated, the cable reel should be held in a warm storage area at a temperature of at least 60°F for 24 hours prior to installation to insure total warmup.
- 4. The minimum bending radius of primary cables is generally 12 times the outside diameter of the cable. In the case of Kerite #2, #1/0 and #4/0 cables, 16" can be used as a minimum.
- All primary 12.47Kv risers shall have "riser-type" lightning arresters installed. Additionally, 18Kv elbow-type arresters shall be installed at all open points in transformers or switching modules for 24.9Kv installations.
- 6. Underground design must meet:
 - a. ANSI-C2, National Electrical Safety Code.
 - b. National Electrical Code article 300-5 and article 710-3.

TYPICAL RESIDENTIAL SUBDIVISION - WITH PLANTER STRIP PROPERTY LINE SIDEWALK STREET CURB PLANTER AREA SIDEWALK PROPERTY LINE TRANSFORMER SERVICE PRIMARY TYPICAL RESIDENTIAL SUBDIVISION - CURB SIDE SIDEWALK PROPERTY LINE



TRANSFORMER
---- SERVICE
---- PRIMARY

UNDERGROUND MAXIMUM SERVICE LENGTHS

SERVICE WIRE SIZE	100 AMP	200 AMP	400 AMP	
1/0 TRIPLEX	300'	150'		
4/0 TRIPLEX	560'	280'	140'	

NOTE:

- BHE-SD standard is a 200 or 400 amp meter socket for underground service, however the 100 amp main switch column
 can be used for sizing service wire, if the ultimate load will not exceed the capacity of a 100 amp main.
- 2. Maximum of six (6) services from a pad mounted transformer.
- 3. All cable in conduit. See page 1.

CU BOOK:	3/20/19	** LES - 0.1 (C. S. 1.1 (MICCOLL) - 40 (* 10.0	URD CABLE AND	DISTRIBUTION STANDARDS DRAWING #	± À ↓
DRAWN BY:	REVISION NO.	DATE	TRENCH GUIDELINES	2210 SHEET: 2 of 2	Black Hills Energy



GRADE AGREEMENT

This Agreement made the	day of	, 20
between Black Hills Power, hereinafter c	alled the Utility, and	
, hereinafter called the De	veloper, witnesseth:	
	equipment, and facilities in being developed by Developed by Developed of this Agreement. The which final elevations are interpreted to mean, all we the Developer shall advise fiter Utility facilities have being, lowering, relocating, on in the opinion of the Utility and protection of structures or construction codes, and plent contractor of the Developer, and if damage to any expess and loss suffered by the	which Map which Map e Developer shall furnish to d grades shall be accurate to work necessary prior to the Utility prior to been constructed, Developer or otherwise rearranging, lity such work is necessary or underground facilities in colicies of the Utility. In the loper has not complied with kisting Utility facilities e Utility in repairing,
The Developer will establ by Utility in order that the Utility facilitie easement, street, or alley lines, and other	es may be placed in its prop	ot corners when requested per location with respect to
In witness whereof the aforepresentatives set their hands and seals of	oresaid parties have hereun on the day and year first ab	•
Witness or Attest:	Black Hills Pov	ver
	By:	
	Developer	
	By:	

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District	
W.O.#	

BLACK HILLS POWER Application and Agreement for Electric Service Extension State of South Dakota

	Effective Date
	The "Company" Black Hills Power and the "Applicant"
	Applicants: City Zip
Agre	e as follows:
(1)	The Company will install and furnish electric serve for the Customer at <u>for a new</u> <u>located in</u> in accordance with rates and extension rules on file with the South Dakota Public Utilities Commission.
(2)	The Applicant agrees to accept service under the following rate schedule or if eliminated, the most economical and applicable remaining rate schedule for a period of not less than forty-eight (48) months from the date of initial service. That Annual Revenue from service to the Applicant as determined under Section 800 Line Extensions of the Company's Tariffs is \$0.00 resulting in a Line Extension Allowance of \$_0.00 of Company financed facilities (cost estimate attached).
	If it is determined at any time subsequent to execution of this Application that the Applicant has changed the nature of his/her electrical service, the Line Extension Allowance shall be adjusted accordingly, which may result in a charge to the Applicant, if the construction costs exceed the correct Line Extension Allowance.
(3)	If applicable, the Applicant agrees to pay to the Company, prior to construction facilities:
	(a) A refundable Advance Deposit subject to the rules filed by the Company for the cost of extending electric facilities beyond the Line Extension Allowance determined at (2) above. \$
(4)	The Applicant shall, without cost to the Company, make or procure satisfactory conveyance to Company of right-of-way for Company's lines necessary and incidental to the furnishing of service to Customer and for continuing, upgrading or extending said lines over and across the property owned or controlled by Applicant.

trim, or remove from said right-of-way any brush, trees, stumps, or roots.

The Applicant shall, without cost to the Company, furnish a cleared right-of-way, and also grants to the Company for maintenance purposes, the right, as the Company may see fit, to cut,

SAMPLE

- (6) For underground line extensions and service laterals the Applicant will provide all trenching to the Company specifications, washed sand, or approved bedding, conduit when required, backfill, or any other restoration work required.
- (7) The Applicant will be entitled to refunds of the Advance Deposit under two (2) separate and distinct calculations:
 - (a) The Applicant may be entitled to a refund of all or part of any Advance Deposit required under paragraph (3) if additional extensions are constructed from the electric facilities requested herein. Only those line extensions which connect directly with the facilities partially financed by the Applicant, without any intervening line extensions and be considered when determining the Applicant's entitlement of a refund. The refund will be equal to the difference between the applicable Line Extension Allowance for the new applicant and the estimated construction cost of the additional electric facilities. The Applicant will receive any applicable refund within thirty (30) days of the Applicant contacting the Company regarding the construction of additional electric facilities. The refunded Advance Deposit shall not bear interest.
 - (b) The Applicant may be entitled to a refund of all or part of any Advance Deposit required under paragraph (3) if the actual revenue from the Applicant's account(s) served during the first four (4) years as a result of this application exceeds the Line Extension Allowance. The refunded Advance Deposit shall bear simple interest at the rate of seven (7) percent annually.

Refunds will be made only to the Applicant if still receiving service at the same location. Eligibility for refunds under (a) above is limited to four (4) years from the effective date of this agreement. Eligibility for refunds under (b) above is determined four (4) years from the effective date of this agreement. In no case shall the total refund to the Applicant exceed the amount of the Advance Deposit. Any Advance Deposit not refunded to the Applicant as set forth above shall be retained and become the property of the Company.

(8) The refundable Advance Deposit or any portion thereof shall not be assignable by the Applicant. Payments of such refundable Advance Deposit shall continue to be made when due to the Applicant notwithstanding a transfer of the place to which electric service was extended.

Applicant	Black Hills Power Inc. Accepted by:
	_
Date	Date
Copies: Applicant	
Property	
G.O. Contract file	
District Office	



NEW CUSTOMER QUESTION LIST

Improving life with energy DATE OF REQU		_ NAME OF REQUESTER	
PROJECT NAME			
NAME OF PROPERTY OWNER(S)			
PHYSICAL LOCATION OF SERVICE_			
MAILING ADDRESS OF SERVICE			
RANGETOWNSHIPSECT	TION1/4 SEC	ΓΙΟΝDESCRIBED PRO	OPERTY
SUBDIVISION NAME		_ LOT/BLOCK NUMBER(S)
MAILING ADDRESS OF OWNER			
PHONE NUMBERS OF OWNER	CELL,	HOME/BUSINESS	WORK
ADJACENT LAND OWNERS POWER deeds)			vide copies of all Plats and
NAME	ADDRESS		PHONE
NAME	ADDRESS		PHONE
NAME	ADDRESS		PHONE
NAME OF ELECTRICIAN	PHON	E NUMBER OF ELECTRIC	CIAN
NAME OF CONTRACTOR_			
NAME OF TRENCHER_			
DATE ESTIMATE IS NEEDED BY			
		NENT OR TEMPORARY HOM	
MAIN PANEL SIZE	MAIN	I PANEL VOLTAGE	
DATE AND TIME TO MEET AT SITE:			
COMMENTS/CONTACTS/HISTORY _			
Note: Please call the BHE Business Office The Business office will ask you to two months revenue. All Temporary	eprovide a letter of cred	to set up billing information of lit from your previous power pro	on new service.

28

Black Hills Energy

Customer Responsibilities

*Service can not be supplied until these items are completed.

	Supply BHE with courthouse copy of your plat & deed
r	Supply BHE with courthouse copy of your neighbor's plat & deed (if crossing their property to serve you)
	Provide 911 address of new service to BHE
	Obtain signatures on <u>all</u> right-of-ways
	Sign "Electric Service Extension Agreement"
	Sign "Grade Agreement"
	Make any applicable payments
	Cut trees
	Contact other utilities; i.e. gas, telecom, cable
	Contact SD One Call, 811
	Supply proper trench, sand bedding, and backfill at appropriate time

I have received BHE's 'New Construction Handbo	ok' and understand that any BHE related
construction is to be done according to the specification	ations contained in the Handbook or otherwise
specified by BHE personnel.	
Signed:	Date:
E	