



*A Municipal  
Electric Utility*



*Founded 1909*



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# Heber Light & Power

Residential

Electrical Service Requirements Manual

May 2017

## E.1.1 - GENERAL REQUIREMENTS

### PURPOSE

This section was prepared to aid developers, contractors, engineers and customers in establishing electric service for new and remodeled structures. We recognize that you may require personal assistance from our staff, and we encourage you to contact us by calling Heber Light & Power to discuss electric service requirements with us. It is the desire of Heber Light & Power, and the local electrical code enforcing authority to provide you, the Customer (developers, contractors, owners, etc.) with high quality, safe electric service.

In order to avoid unnecessary repetition, the "Power Company" as used in the following pages shall mean Heber Light & Power.

The requirements are intended to apply to new developments.

As a general rule, if the matter in question is not presented herein, then it is not allowed unless approved by the Power Company.

Any power required for private use (i.e. light, sprinkler, etc.) shall be metered.

### CODES AND ORDINANCES

It is necessary that the construction of new or remodeled installations conform to applicable provisions of the National Electrical Code (NEC), National Electrical Safety Code (NESC), and State of Utah Electrical Service Regulations, as well as City and County ordinances and codes. This includes OSHA rules both during construction and maintenance.

### CHANGES OR CONFLICTS IN REQUIREMENTS AND GUIDELINES

Some of the information in this section is based on the aforementioned governmental codes and ordinances as well as Heber Light & Power specific requirements as stated herein. These requirements and guidelines are issued with the intent of complying with all applicable codes, ordinances, regulations, and tariffs; however, in the case of conflict, the appropriate regulation, tariff, code, or ordinance will supersede the interpretation offered in this manual. In addition, these requirements are subject to change in the event that the governing codes, ordinances, regulations, or tariffs are changed. The Power Company should be consulted in case of doubt on the applicability of any item.

The phrase "consult Power Company" as used in this manual shall mean a consultation with Heber Light & Power Superintendent is to be made for each and every installation or project.

### APPLICATION FOR SERVICE

It is important that the Power Company office be provided as early as possible with accurate load information and the date when the Customer will require service, so all necessary arrangements for the service may be completed. Request for service to large residential developments normally require 60 days advance planning by the Power Company in order to serve the load. Installations requiring transformers or other equipment not in stock may require six months lead time or more.

The Power Company is available to provide advice on service requirements and related problems relative to electric energy utilization for new, existing, and reconstructed installations. The Developer will be held liable for any damage to Power Company equipment.

When conditions are encountered during construction that require changes in the initial, agreed upon service arrangements, the Power Company must be consulted so mutually satisfactory alternative arrangements can be made. Adequate notice must be given to the Power Company and approval granted regarding changes or additions.

### TYPES OF SERVICE FURNISHED

The electric service available is 60 hertz (cycles), alternating current, single or three-phase. The secondary voltages and connections available are given below:

Overhead Service (Not Included)

Underground Service

- Single-phase, 120/240 volt, three-wire, grounded
- Three-phase, 208Y/120 volt, four-wire, grounded, wye
- Three-phase, 480Y/277 volt, four-wire, grounded, wye

The nominal primary voltage of Heber Light & Power's power distribution system may differ from one service area to another. Under certain conditions, primary delivery will be supplied at the distribution voltage standard for the location at which it is requested.



## HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL GENERAL REQUIREMENTS

ELECTRIC 1.1
GENERAL REQUIREMENTS
SCALE: NONE
DATE: 10/11/2011
REV: B
REV DATE: 07/01/2014

## E.2.1 - TRENCHING & CONDUITS

### TRENCHING

The developer is to provide the trench for all required conduit systems and, following installation of the conduit by the Developer (see 5.4 CONDUITS), backfill to meet Power Company requirements. The Power Company, under the terms of Heber Light & Power's Line Extension policy, will install both primary (medium voltage 12.47 kV or 4.16 kV) and secondary cables (below 480 volts).

To assure the final grade has been established, the trenching will be started after the curbs and gutters have been installed unless approved by Heber Light & Power.

### Call Before You Dig

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

### Depth

SEE CHART ON E.2.2 FOR TRENCHING DEPTHS. The property owner is responsible at their own cost to insure that proper burial depth clearance listed below is maintained even after excavation of the property. Any questions on impaired burial depths should be immediately brought to the attention of the Power Company. Under certain conditions, with prior Power Company approval, cable/conduit systems may be buried with less cover provided that mechanical protection is installed by the Developer to the Power Company's specifications.

### Width

All trenches shall meet OSHA requirements. Primary/secondary combined trenches shall be a minimum of 18 inches wide at the bottom. Trenches 12 inches wide will be approved for a single service only.

### Backfill

The developer will be responsible for backfilling trenches he provides. The Developer must provide 12" of sand to be placed on top of conduits and shall have red warning tape on top of sand. Where trenches cross structural fill, typical of road crossings, the trench backfill shall consist of like kind structural fill. All primary trenches and all road crossings trenches (including secondary) shall be compacted to 95% compaction of the maximum dry density as determined by ASHTO T-99 (standard). All primary and secondary conduit systems shall have placement of red warning tape 6" below final grade. The tape shall be of the type specific for the application.

### Joint Use

Typically, joint use between other utilities of Power Company trenches is not allowed unless approved by the Power Company. Any joint use between telephone, TV, and other electrical communication cables must be pre-approved by the Power Company and installed in accordance with the Power Company specifications. The Power Company normally will not install electrical cables in a common trench with non-electric utilities such as water, gas, and sewer, unless unusual conditions such as adverse soil or route restrictions exist. All such installations require the prior approval of the Power Company.

### Transformers and Secondary Boxes

To schedule a Heber Light & Power employee to open a transformer or secondary box please call 435-654-2913 Do Not open transformers or secondary boxes under any circumstance. Anyone opening an HL&P transformer, switch, junction box, secondary box or any other Heber Light & Power equipment will be subject to a trespassing fine.

### Pulling Wire

When conduits are terminated inside a transformer or secondary box Do Not attempt to pull or push wire into the conduit. Call 435-654-2913 to schedule an Heber Light & Power employee to pull the wire into the conduit.



## HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL TRENCHING & CONDUITS

ELECTRIC 2.1

TRENCHING & CONDUITS

SCALE: NONE

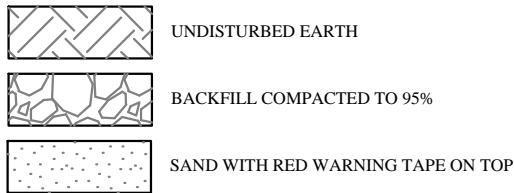
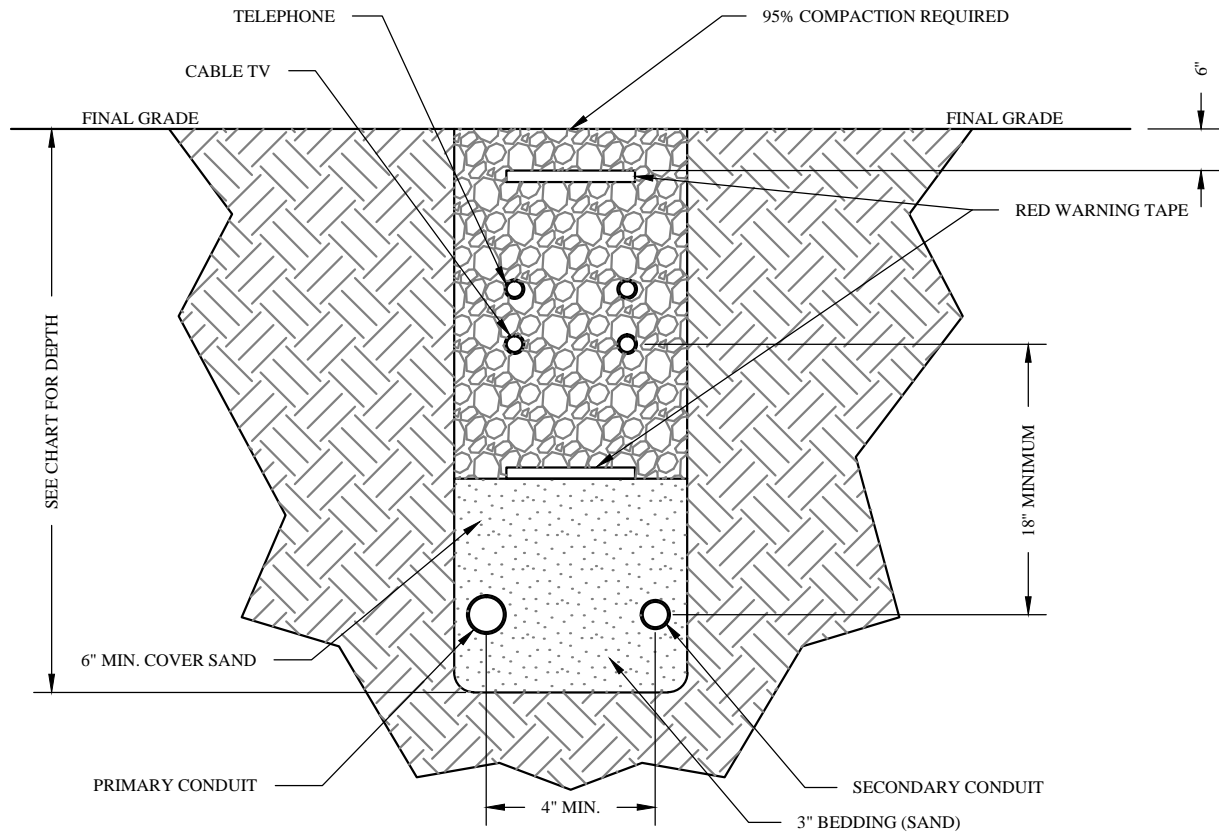
DATE: 10/11/2011

REV: C

REV DATE: 05/01/2017

## E.2.2 - TRENCHING & CONDUITS

**POWER WILL NOT BE CONNECTED UNLESS A TRENCH INSPECTION WAS PERFORMED BY AN HL&P EMPLOYEE.  
CALL 435-654-2913 TO SCHEDULE A TRENCH INSPECTION**



VOLTAGE AND DEPTHS:		
VOLTAGE	TRENCH DEPTH	COVER
SECONDARY	42"	36"
PRIMARY	54"	48"
6" CONDUIT	78"	72"

**NOTES:**

1. SECONDARY CONDUITS SHALL BE BURIED AT THE SAME DEPTH AS PRIMARY, IF NO PRIMARY IS TO BE INSTALLED USE THE ABOVE CHART FOR SECONDARY DEPTHS.
2. THERE SHALL BE A 4" MINIMUM SEPARATION BETWEEN CONDUITS.
3. A MINIMUM OF 12" SEPARATION BETWEEN ELECTRICAL AND OTHER UTILITIES IS REQUIRED.
4. ALL CONDUITS SHALL BE BURIED A MINIMUM OF 48" UNDER PAVED SURFACES AND RAILROADS.



# HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL TRENCHING & CONDUITS

ELECTRIC 2.2
TRENCHING & CONDUITS
SCALE: NONE
DATE: 10/11/2011
REV: D
REV DATE: 09/29/2015

## E.2.3 - TRENCHING & CONDUITS

### CONDUITS

The Power Company requires the use of conduit for all underground primary and secondary cable installations, including lighting circuits. Rigid galvanized steel or gray electrical grade PVC schedule 40 (underground only) conduit are acceptable materials for conduits installed by the Customer.

All 90-degree bends are to be a minimum of 36" radius for 3" pipe, 36" radius for 4" pipe, and 36" radius for 6" pipe. All primary elbows are to be PVC for 3", 4" and 6" conduits

Rigid elbows to be used when going up a pole.

All conduits shall be terminated at the open end with plastic bushings.

All underground metallic conduit must be tape wrapped with suitable tape for the application.

Residential primary conduit sizes must be three (3) inch. Secondary conduit size shall be three (3) inches from transformers to junction domes and (3) inches from transformer or dome to resident.

All conduits end points shall be sealed or taped to prevent debris from plugging the conduit and future use (1" PVC painted red). The Developer shall be responsible for cleaning conduits if the Power Company is unable to install or pull the service cable.

Along with conduits extending to secondary junction boxes, each transformer pad and secondary box shall have ten (10) foot conduit stub-outs for interconnection to adjacent homes.

Prior to backfilling, the Developer must notify the Power Company (435-654-2913) for trench inspection, following the inspection the Power Company shall issue a notice to proceed slip, allowing backfilling.

Power will NOT be connected unless a trench inspection has been performed and approved.



# HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL TRENCHING & CONDUITS

ELECTRIC 2.3

TRENCHING & CONDUITS

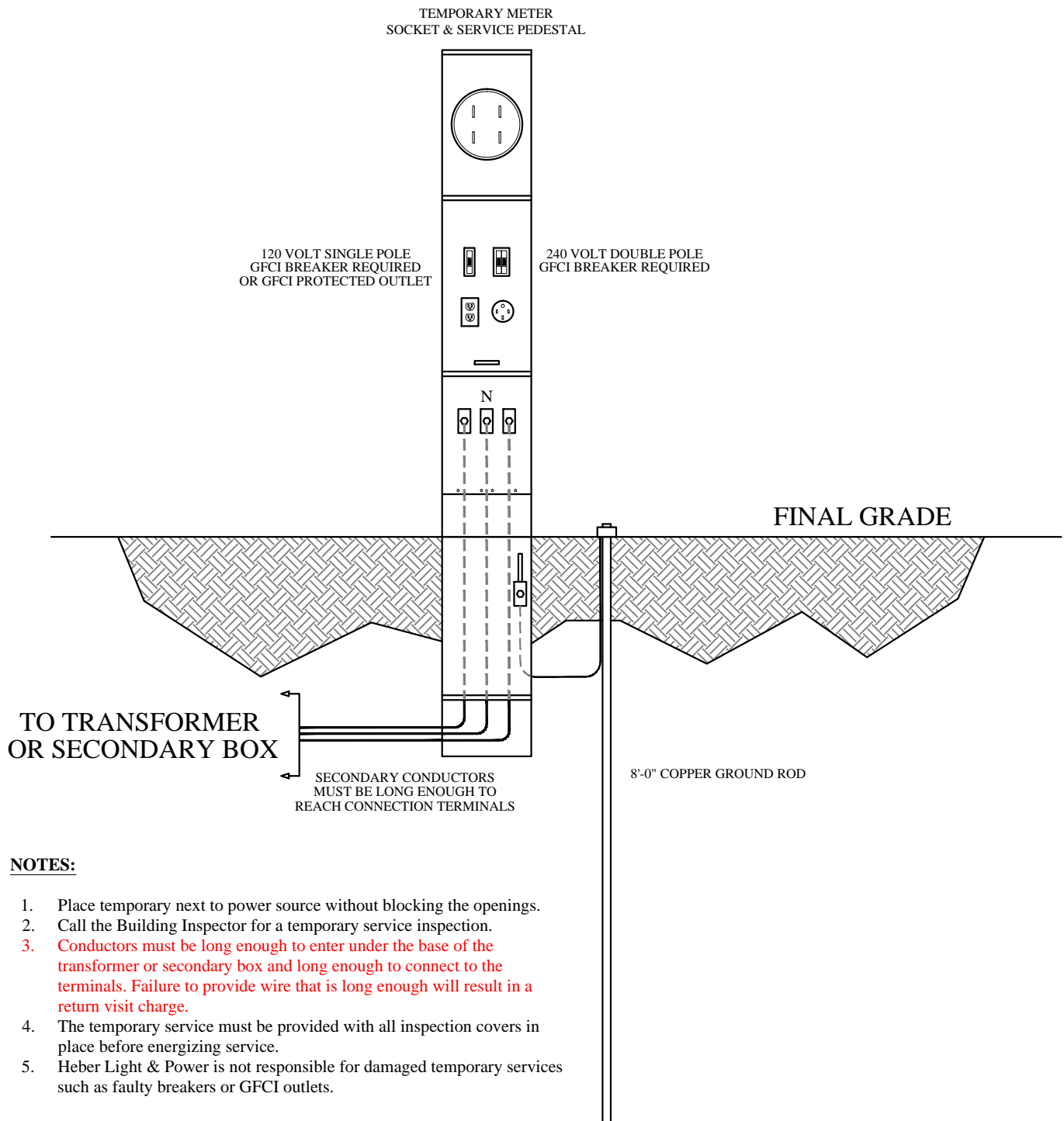
SCALE: NONE

10/12/2011

REV: C

REV DATE: 09/29/2015

## E.3.0 - TEMPORARY POWER PEDESTAL



### NOTES:

1. Place temporary next to power source without blocking the openings.
2. Call the Building Inspector for a temporary service inspection.
3. Conductors must be long enough to enter under the base of the transformer or secondary box and long enough to connect to the terminals. Failure to provide wire that is long enough will result in a return visit charge.
4. The temporary service must be provided with all inspection covers in place before energizing service.
5. Heber Light & Power is not responsible for damaged temporary services such as faulty breakers or GFCI outlets.

## UNDERGROUND TEMPORARY POWER PEDESTAL

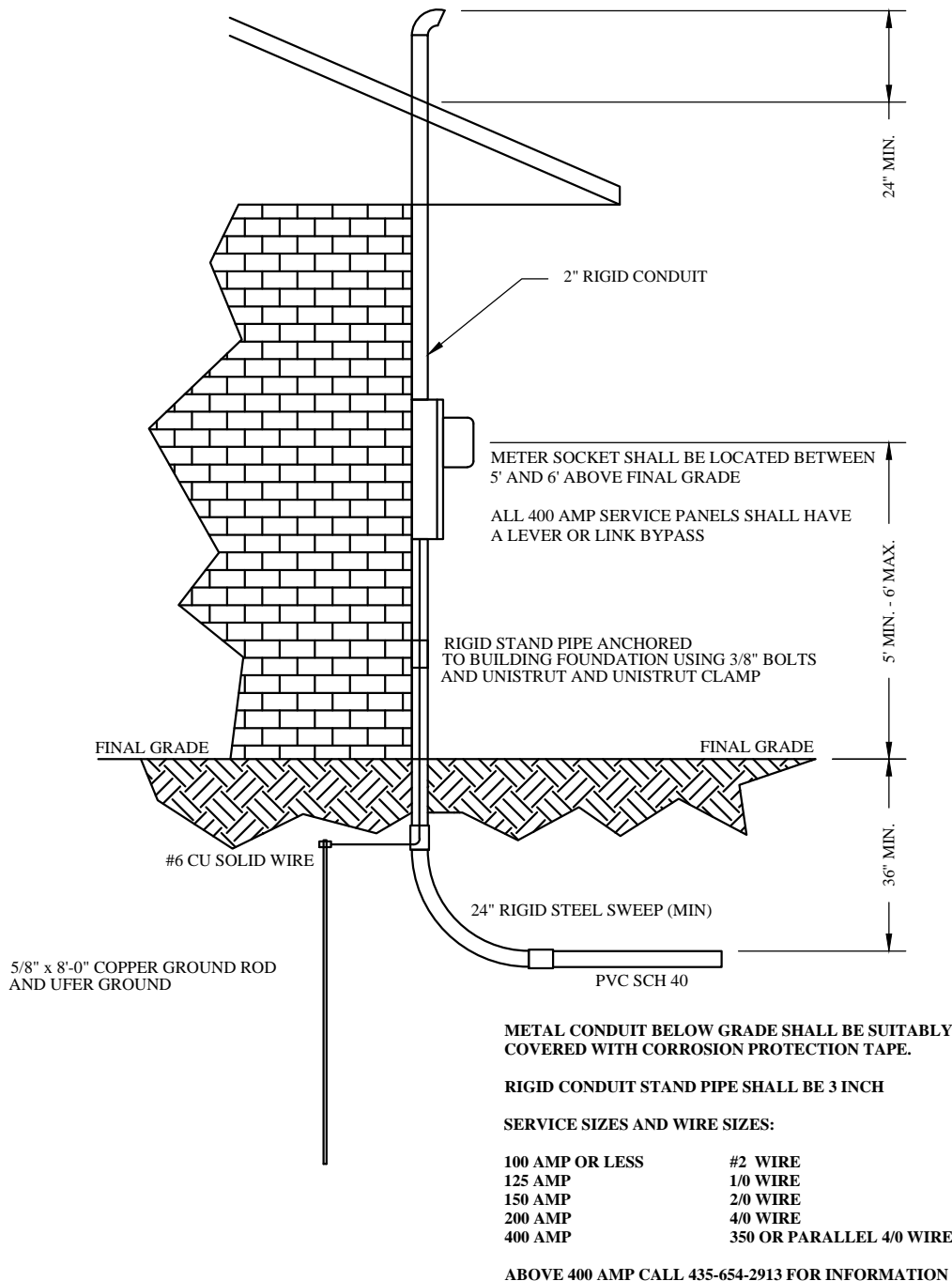


### HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL TEMPORARY PEDESTAL

ELECTRIC 3.0
TEMPORARY PEDESTAL
SCALE: NONE
05/01/2017
REV: A
REV DATE:

## E.3.1 - RESIDENTIAL SERVICES

APPROVED WEATHER HEAD MINIMUM OF 24"  
ABOVE ROOF AND TO BE 2" RIGID CONDUIT.



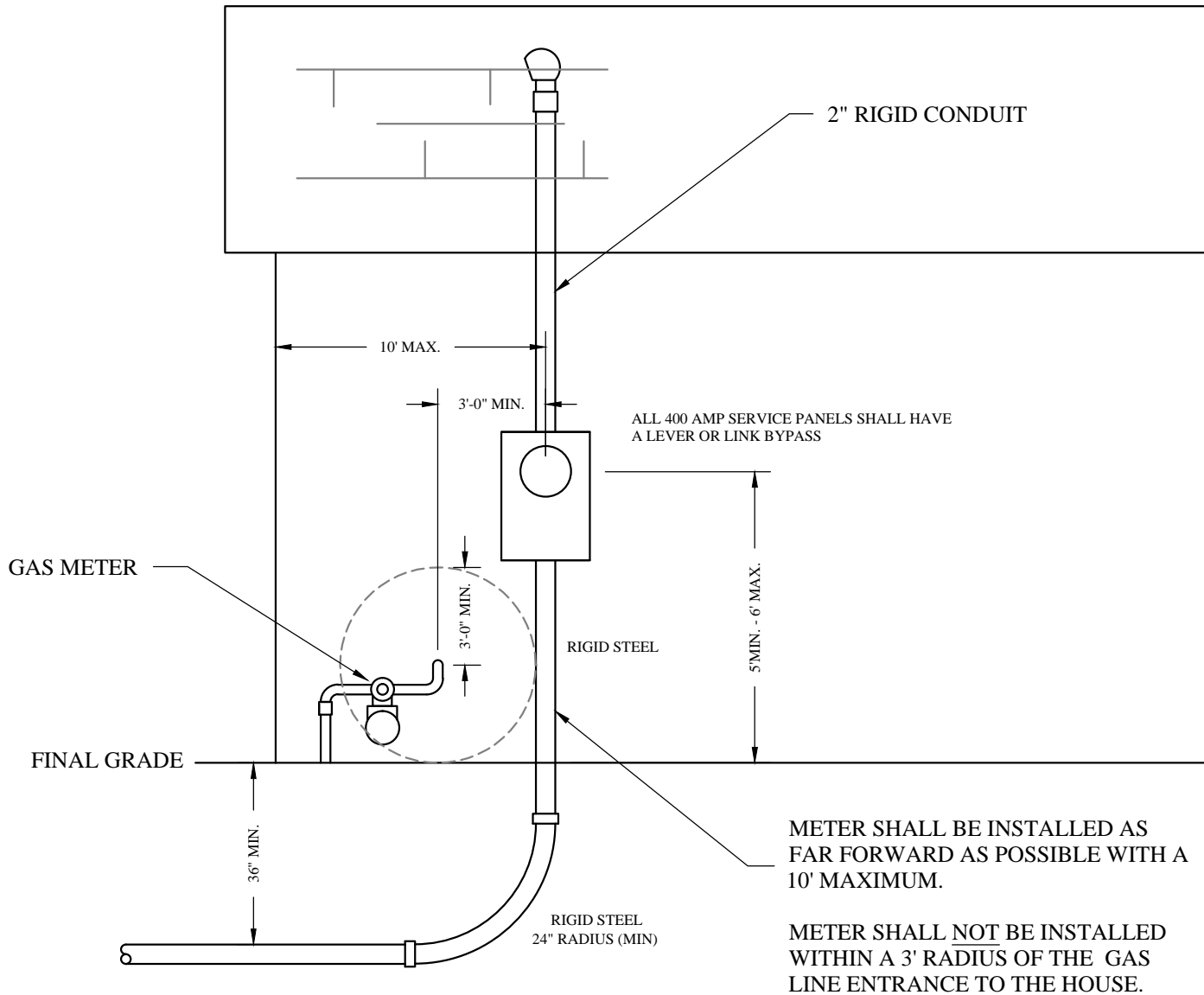
SEE SHEET E.3.2 FOR SIDE VIEW



### HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL RESIDENTIAL SERVICES

ELECTRIC 3.1
RESIDENTIAL SERVICE
SCALE: NONE
10/12/2011
REV: B
REV DATE: 07/01/2014

## E.3.2 - RESIDENTIAL SERVICES



SEE SHEET E.3.1 FOR FRONT VIEW

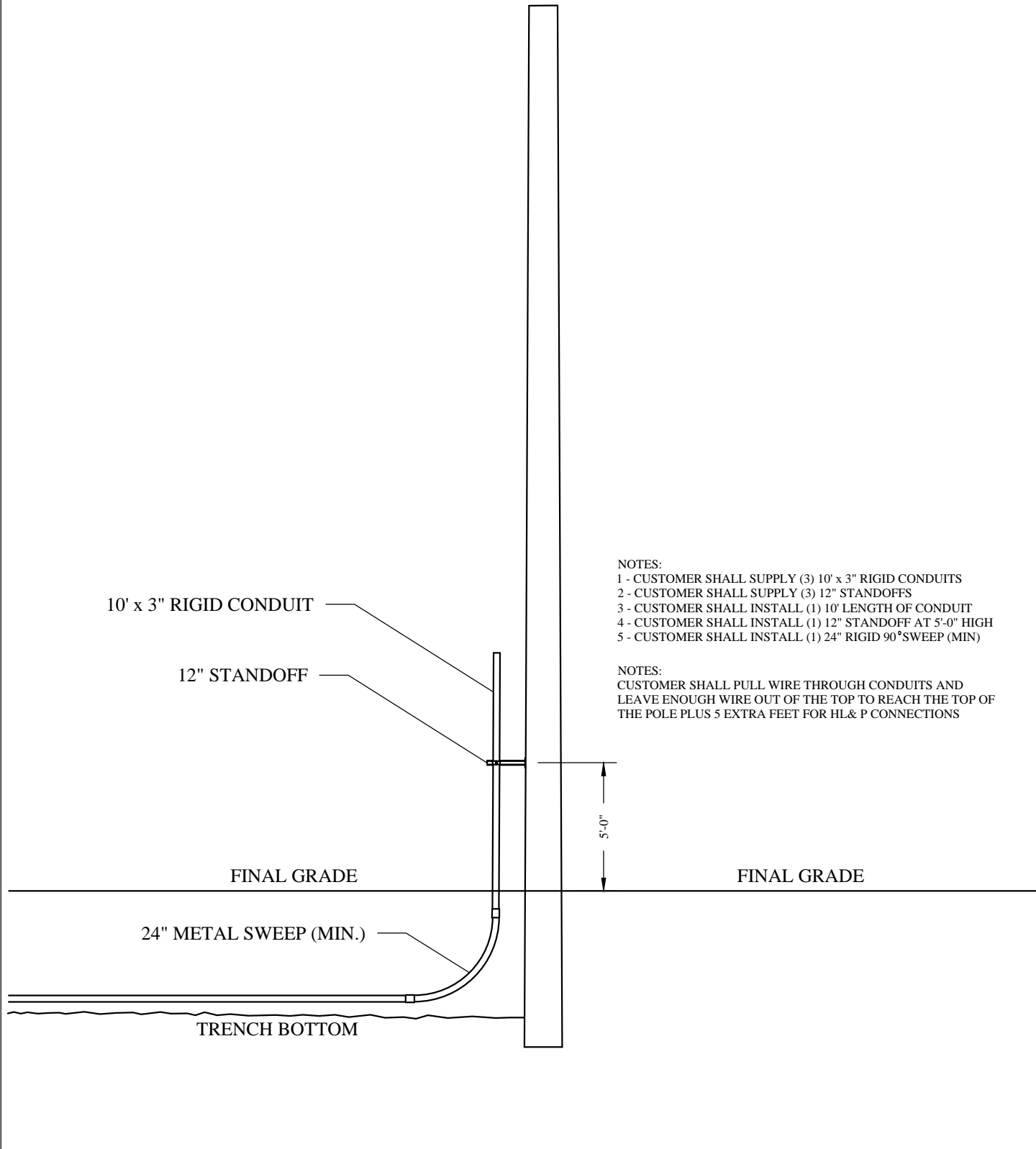


### HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL RESIDENTIAL SERVICES

ELECTRIC 3.2
RESIDENTIAL SERVICE
SCALE: NONE
DATE: 10/12/2011
REV: B
REV DATE: 07/01/2014



### E.3.3 - RESIDENTIAL SECONDARY RISER



**NOTES:**

- 1 - CUSTOMER SHALL SUPPLY (3) 10' x 3" RIGID CONDUITS
- 2 - CUSTOMER SHALL SUPPLY (3) 12" STANDOFFS
- 3 - CUSTOMER SHALL INSTALL (1) 10' LENGTH OF CONDUIT
- 4 - CUSTOMER SHALL INSTALL (1) 12" STANDOFF AT 5'-0" HIGH
- 5 - CUSTOMER SHALL INSTALL (1) 24" RIGID 90° SWEEP (MIN)

**NOTES:**

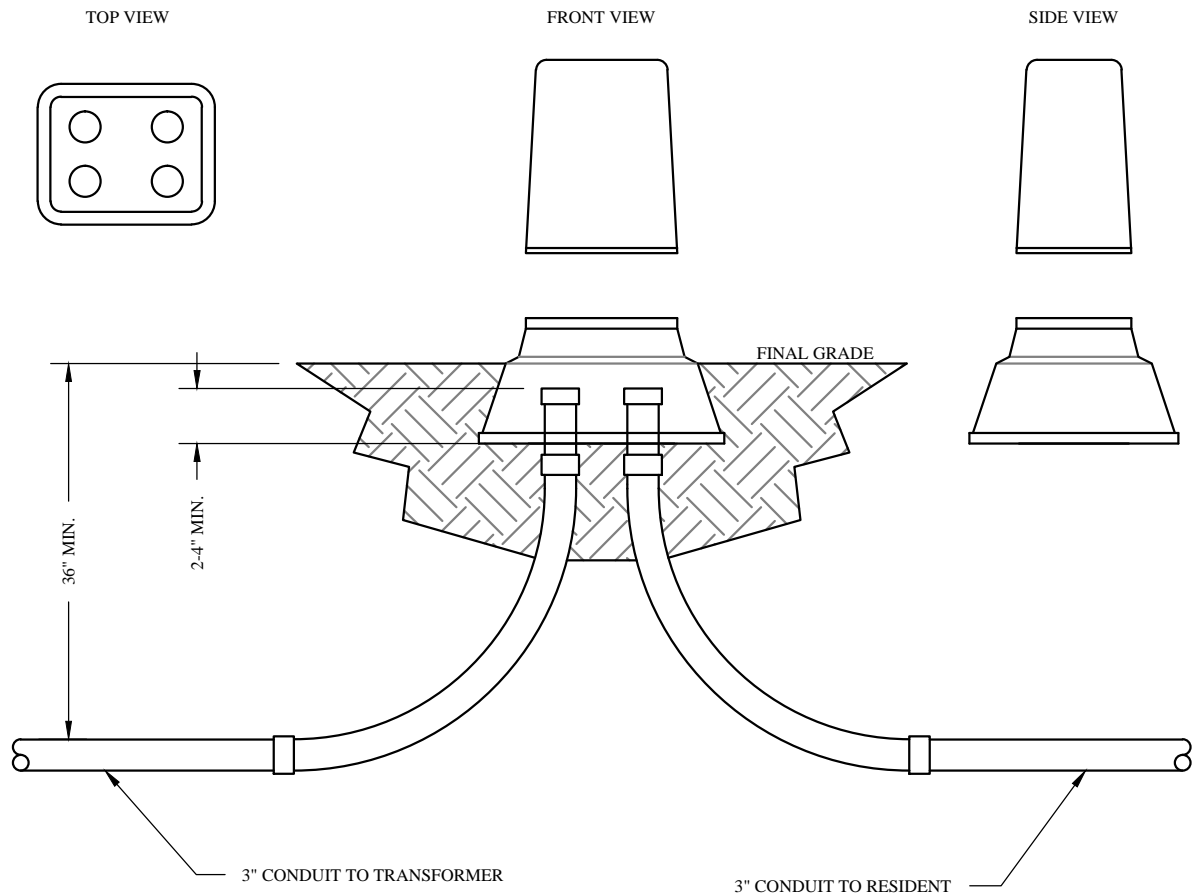
CUSTOMER SHALL PULL WIRE THROUGH CONDUITS AND LEAVE ENOUGH WIRE OUT OF THE TOP TO REACH THE TOP OF THE POLE PLUS 5 EXTRA FEET FOR HL & P CONNECTIONS



**HEBER LIGHT & POWER  
ELECTRICAL REQUIREMENTS  
& STANDARDS MANUAL  
RESIDENTIAL SECONDARY RISER**

ELECTRIC 3.3
RESIDENTIAL SECONDARY RISER
SCALE: NONE
DATE: 04/18/2014
REV: A
REV DATE: 04/18/2014

## E.4.1 - SECONDARY JUNCTION BOXES



**NOTES:**

1. DEVELOPER SHALL PROVIDE MINIMUM SPACING BETWEEN CONDUITS.
2. DEVELOPER TO SEAL ALL CONDUIT ENDS WITH TAPE TO PREVENT PLUGGING
3. DEVELOPER IS RESPONSIBLE FOR TRENCHING AND BACK FILLING.
5. DEVELOPER SHALL USE ONE OF THE TWO ACCEPTABLE JUNCTION BOXES LISTED ABOVE.



### HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL SECONDARY JUNCTION BOXES

ELECTRIC 4.1
SECONDARY JUNCTION BOXES
SCALE: NONE
DATE: 10/12/2011
REV: A
REV DATE: 10/12/2011

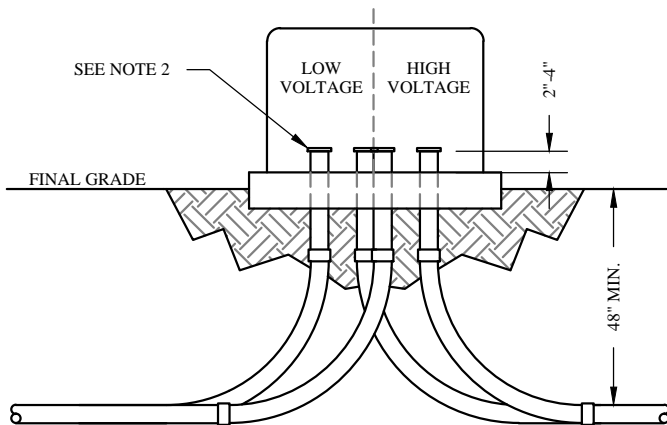
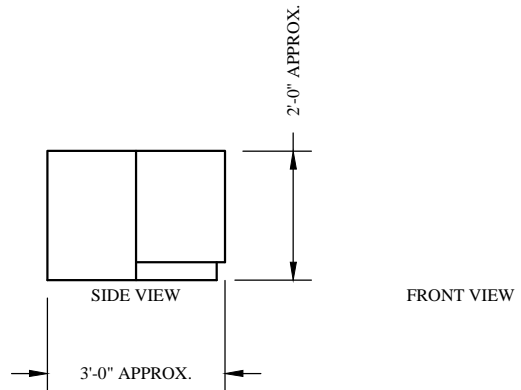
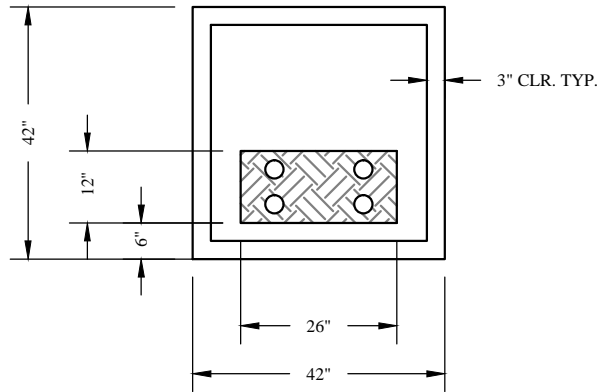
# E.5.1 - SINGLE PHASE PAD MOUNTED TRANSFORMER

**NOTE:**

1. DEVELOPER TO SUPPLY TRENCHING, CONDUITS AND BACKFILL.

**NOTE:**

1. POWER COMPANY TO SUPPLY BASES AND TRANSFORMERS..



**NOTES:**

1. FILL MATERIAL UNDER THE CONCRETE PAD OR BASE SHALL BE ROADBASE MEETING STATE SPEC. AND SHALL BE COMPACTED TO 95%. ROADBASEFILL SHALL EXTEND FROM THE BOTTOM OF THE TRENCH TO THE TRANSFORMER PAD AND SHALL EXTEND 3' ON THE BACK AND SIDES AND 1' ON THE FRONT.



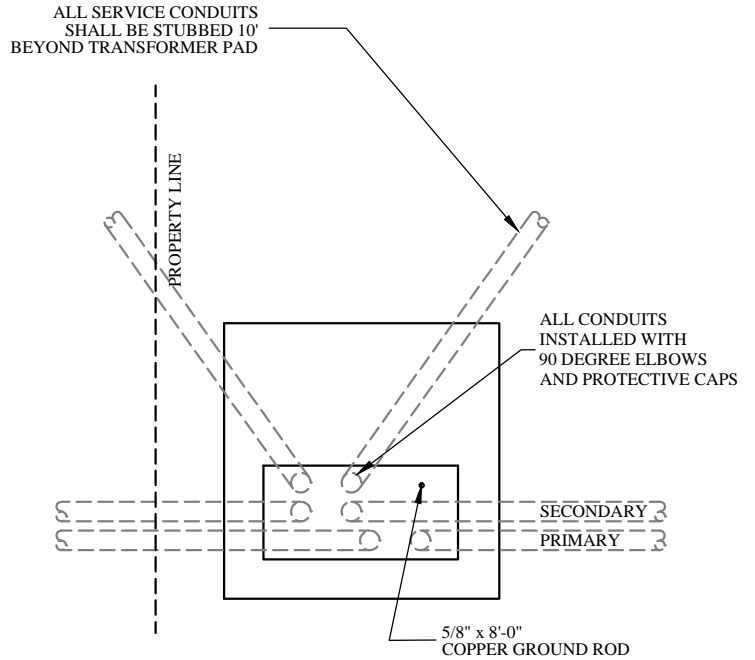
## HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL 1 PHASE PAD TRANSFORMER

ELECTRIC 5.1
1 PHASE PAD TRANSFORMER
SCALE: NONE
DATE: 10/12/2011
REV: A
REV DATE: 10/12/2011

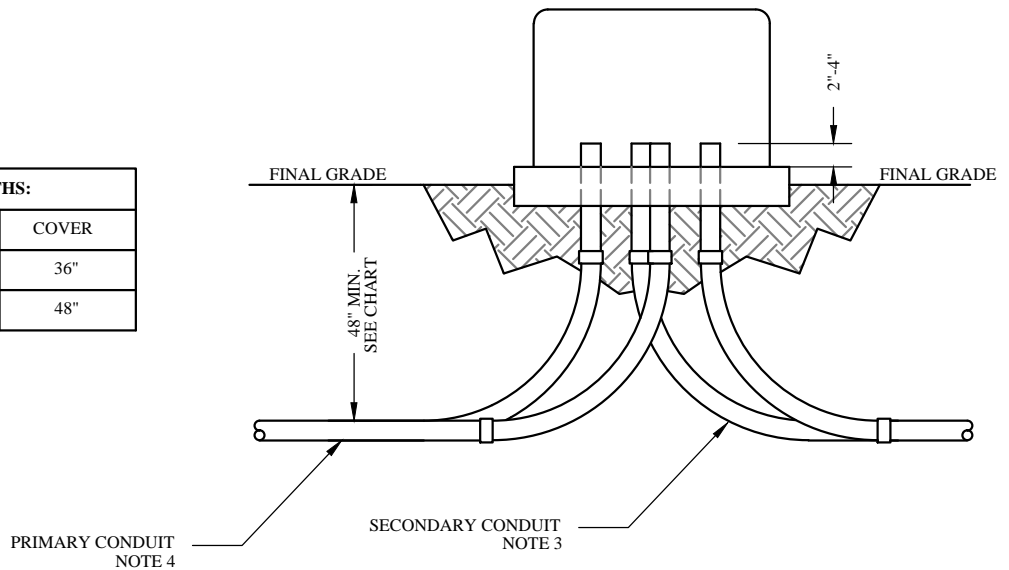
## E.5.2 - SINGLE PHASE TYPICAL CONDUIT INSTALLATION FOR RESIDENTIAL SUBDIVISION

**NOTES:**

1. THE DEVELOPER IS RESPONSIBLE FOR THE INSTALLATION OF RIGID GALVANIZED STEEL, OR GRAY ELECTRICAL GRADE PVC SCHEDULE 40 (UNDERGROUND ONLY) CONDUIT.
2. ALL STUB OUTS MUST POINT IN THE GENERAL DIRECTION OF THE FRONT CORNER OF BUILDING AND MUST EXTEND BEYOND PROPERTY LINE OF THE LOT BEING SERVED.
3. FOR RESIDENTIAL SERVICES USE 3" CONDUIT TO RESIDENT AND 3" CONDUIT TO SECONDARY JUNCTION DOME.
4. PRIMARY CABLE CONDUIT SHALL BE A MINIMUM OF 3". THE DEVELOPER IS REQUIRED TO COORDINATE WITH THE POWER COMPANY FOR SPECIFIC CONDUIT SIZES REQUIRED.
5. CONDUITS MUST BE BURIED A MINIMUM OF 36" DEEP. (SEE CHART BELOW).
6. ALL CONDUITS SMALLER THAN 6" SHALL USE PVC 90'S AND FITTINGS. RIGID SHALL BE USED ON RISER POLES OR WHERE OTHERWISE SPECIFIED BY THE POWER COMPANY.
7. ALL SERVICE CONDUITS SHALL BE STUBBED 10' BEYOND TRANSFORMER PAD



VOLTAGE AND DEPTHS:		
VOLTAGE	TRENCH DEPTH	COVER
SECONDARY	42"	36"
PRIMARY	54"	48"



### HEBER LIGHT & POWER ELECTRICAL REQUIREMENTS & STANDARDS MANUAL 1 PHASE CONDUIT INSTALLATION

ELECTRIC 5.2
1 PHASE CONDUIT INSTALLATION
SCALE: NONE
DATE: 10/12/2011
REV: A
REV DATE: 10/12/2011