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Fillmore City Service Standards - Effective April 4th, 2022

- IMC Pipe is required six inches below ground level and up to the meter base on exposed service entrance conduits. Pipe wrap with mechanical coupling required on joints.
- Stand-alone meter pedestals shall be mounted on minimum 2” IMC conduit cemented 24” min, with a top cap on the 2” IMC to keep water out.
- 2” Schedule 40 PVC required below ground for all 200 Amp and smaller services. 3” or larger Schedule 40 PVC required below ground above 200 Amp. Must be in PVC or IMC into the meter panel.
- Secondary and Service trench minimum of 30” depth, and buried in clean fill 6” deep.
- 6” concrete cap required over all conductor in conduit if 30” depth cannot be met.
- PVC conduit entering junction boxes and transformer pads must be extended approximately 5” above the base of the pad. Enter at a 45 degree angle into a transformer or 90 degree into a J-box, and beveled at the conduit/elbow edge.
- A maximum of 3 - 90 degree elbows will be used on underground service wire in conduit. Service conductors must be able to be hand pulled through glued conduit.
- No service wire will be connected to the meter panel that does not meet the minimum conductor size required for service size and conductor length according to the tables.
- 4/0 URDT – 150’ max on 200 Amp Service
- 350 URDT – greater than 150’ but less than 200’ on 200 Amp Service
- 350 URDT – 150’ max on 400 Amp Service
- Natural Gas pipes must maintain 12” vertical separation or greater on all crossings over a power trench. The horizontal spacing between Natural Gas pipe and power conductor must be 5’ or greater in a common trench, 6 inches of vertical separation on water, sewer, irrigation, or drainage lines etc.
- All subdivision lots are designed for up to a 200 amp service. If in the case there is a request for a service larger than 200 amps, the contractor/homeowner must contact Fillmore City Engineering for an evaluation of the existing system.
- The grounding electrode system shall include at least one 5/8" x 8-foot ground rod electrode, and pounded 5’ in undisturbed soil, or 2 continuous 25’ trenches with #4 copper wire in trenches. This ground rod shall be bonded to any other ground to form a grounding electrode system.
- Fillmore City will supply a Pass/Fail tag on all trench inspections. It is the responsibility of the contractor to have a “Pass” tag before backfilling any portion of the trench. If the trench is backfilled prior to receiving a trench inspection, owners shall pothole 3 places or dig up the entire trench and verify all conduit depths at their expense.
- Electrical contractors must call Fillmore City office with the proper address and/or lot number requesting trench inspections and service connections in order to schedule service technicians to respond to requests.
- Any damage to Fillmore City equipment shall be billable to the contractor/homeowner/electrician or sub contractor requesting, or digging service.
- Three phase and Multi Meter installation guidelines are covered in the Fillmore City Electric Service Requirements.
- Conductor shall not be installed in conduit until after the trench has passed a trench inspection.

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All services shall have a single main disconnect

METERING

All metering equipment and installations shall meet or exceed all applicable local, state and national codes and ordinances.

SERVICE & METERING EQUIPMENT ITEMS

The main breaker or service disconnect shall be installed (residential or commercial) in a location that is readily accessible by utility and fire personnel.

Meter bases shall be located on the exterior of buildings.

Meter height must be no more than 6' high and not lower than 3'6 from final grade unless otherwise specified.

Per NEC 230.2, “A building or other structure served shall be supplied by only one service unless permitted in 230.2 (A) through (D).” In such cases where the building, connected buildings, or other structures have more than one service location being fed by different transformers, identification for each service in the form of a permanent plaque shall be provided in accordance to NEC 230.2 (E).

Plans shall be submitted to Fillmore City, Fire Department and Building Department for **review and approval prior to construction.**

Service Disconnect

All single phase, three phase, and CT services shall be protected with a main disconnect means accessible to Fillmore City employees and emergency crews.

Disconnect shall be sized to match service requirements.

Meters must be installed at the closest point possible to the designated power service line as indicated on approved plans. Any changes to this requirement shall be approved by Fillmore City. A level standing and working surface 36” x 36” shall be provided in front of all meters, permitting access to the meter.

Meters shall not be located in carports, breezeways, covered or screened porches or other areas that may hinder access to the meter or cause possible damage to the meter in the future, i.e., swinging doors, etc.

Meter Standard

Point of Service

Self-contained meter single phase up to 400 amps and three phase up to 200 amps point of service is the line side termination point at the meter.

Instrument rated metered point of service is the transformer secondary lug.

Overhead point of service is the connection at the mast.

Mobile Homes / Trailer Parks

Typical requirements for mobile homes and trailers with individual meters are shown on standard detail drawings. When meter mounting provisions differ from these requirements, Fillmore City will detail specific requirements.

When mobile home parks or trailer parks are metered at a single point, Fillmore City shall detail the metering provisions at that point.

General Requirements

Metering provisions must be installed in a true plane.

Metering provisions with extruded or cast aluminum meter jaws shall not be used.

Mobile home or trailer meter pedestals shall be constructed and installed so that the vertical distance from ground level to the centerline of the meter is 30” minimum to 84” maximum. No conductor will be installed from pedestal to pedestal, secondary boxes shall be used.

Apartments/Condominiums or Multiple Meter Packs

Mounting Heights

Single Horizontal Row of Meters

When a meter for a complex can be mounted in a single horizontal row, the vertical clearance from ground to center line of meter shall be 4’6”’ minimum to 6’ maximum.

Multiple Rows of Meters

When meters in a complex must be mounted in two or more horizontal rows, the vertical distance from the ground level to the centerline of the top row of meters shall be 7' maximum and the distance from the ground level to the centerline of the bottom row of meters shall be 3' 6" minimum.

Labeling of Meters

Meter bases shall be numbered accordingly to apartment, condo, or unit numbers as recorded on the official plat. The number must be stamped on the base for permanent identification using ½" high letters. Permanent engraving on a plastic or metal placard riveted to the meter base will be accepted. **This will be verified prior to the installation of the meter.**

Acceptable Meter Sockets

Acceptable meter sockets are those manufactured in accordance with current EUSERC, ANSI-C12, and UL/ANSI-414 requirements.

The customer must provide and install the meter socket, complete with terminal lugs, meter jaws, manual link bypasses and sealing means for all sections.

The meter socket and service equipment shall be NEMA type 3R (rainproof), in good condition with no holes, dents or damage, and plumb in all directions. The installation shall be made with sufficient materials and installed such that it remains plumb for the duration of the service.

Single Phase Metering

Under 200 Amps
120/240 volt service: Any service 200 amps or less requires a self-contained 200 amp 4 terminal meter base.

120/208 volt service: Any service 200 amps or less with 120/208 voltage requires a 5 terminal meter base

Between 200 and 400 amps
Any 120/240 volt single phase service with an amperage rating above 200 amps and below 400 amps requires a 4-terminal meter base with accompanying link bypass to ensure that the meter load can safely be broken and

bypassed by Authorized Fillmore City employees.

Above 400 amps

Any single phase service that exceeds 400 amperes requires a C.T (current transformer) installation with accommodations to house the current transformers. *(please reference "CT Cabinet Requirements" for further cabinet requirements and additional information)*

-Contact Fillmore City for any questions

Note: Any single-phase service over 400 Amps requires pre-approval by Fillmore City prior to installation. A detailed drawing and proposed equipment shall be submitted for review and approval.

Single Phase Current Transformer enclosures and meter bases shall be installed on the exterior of the building and shall be pre-approved by Fillmore City. Detailed drawings of the proposed service and metering equipment for services rated over 400 amps shall be submitted to Fillmore City for approval **prior to equipment manufacture and installation** . The location of the CT enclosure and meter base shall be readily accessible to Fillmore City personnel. CT enclosures shall have provisions to allow for Fillmore City seals to be installed.

For Single Phase CT services the customer shall provide and install:

1. A **6** terminal pre wired meter socket enclosure (Milbank catalog #U4429-XL-21) or approved equivalent. The meter shall be located on the non-hinged side of the current transformer cabinet. Meter sockets ***shall not*** be located above or below CT enclosures.

2. A current transformer cabinet. The cabinet must be a weather-tight, NEMA 3R-rated metallic cabinet securely mounted on a ridgid surface. The door shall be hinged and capable of being sealed. The cabinet ***shall be*** sized in accordance with Current Transformer Cabinet Requirements. The top of CT cabinet shall not be more than 6 feet above ground nor less than 3'-6" from ground level.

3. An approved current transformer mounting base. The mounting base shall accept bar-type current transformers only . No alteration of the transformer mounting base is allowed. *(See Transformer Mounting Base Requirements).*

4. The conduit between the meter socket enclosure and the CT cabinet.

5. The customer must furnish all lugs and connect conductors to the line and the load terminals of the current transformer mounting base.

6. A 7-pole test switch (reference Milbank catalog# TS07-0105) *note: If installation is a cabinet enclosure a test switch cover will also be required (reference Milbank catalog# K3388)*

Fillmore City shall provide and install:

1. The meter.
2. Instrument current transformers.
3. Instrument voltage transformers *(if needed)*.

Two types of CT mounting configurations are approved by Fillmore City. Other configurations shall be submitted to Fillmore City for approval.

A. Current Transformer Metering, Post Mounted
B. Current Transformer Metering, Wall Mounted

(Reference "CT Cabinet Requirements for further information)

Three Phase Metering

Under 200 Amps

Services up to 480 volts: Any service 200 amps or less requires a self contained 7-terminal meter base with an accompanying link bypass to ensure that the meter load can safely be broken and bypassed by Fillmore City employees. (*Reference Milbank catalog #U2049-RL)*

Over 200 Amps

Services up to 480 volts: Any service **over 200 amperes** requires a C.T (current transformer) installation with accommodations to house the current transformers. All equipment needs to be accessible to Fillmore City personnel.
(please reference "CT Cabinet Requirements" for further cabinet requirements and additional information)
-Contact Fillmore City for any questions.

Note : Any three phase service over 200 Amps requires pre-approval by Fillmore City prior to installation. A detailed drawing and proposed equipment shall be submitted for review and approval.

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3-Phase Current Transformer enclosures and meter bases shall be installed on the exterior of the building and shall be pre approved by Fillmore City.

Detailed drawings of the proposed service and metering equipment for services rated over 200 amps 3-phase shall be submitted to Fillmore City for approval **prior to equipment manufacture and installation** .

The location of the CT enclosure and meter base shall be readily accessible to Fillmore City personnel. CT enclosures shall have provisions to allow for Fillmore City seals to be installed.

For 3-Phase CT services the customer shall provide and install:

1. A **13** terminal pre wired meter socket enclosure (Milbank catalog #UC3423-XL-101) or approved equivalent. The meter shall be located on the non-hinged side of the current transformer cabinets. Meter sockets ***shall not*** be located above or below CT enclosures.

2. A current transformer cabinet. The cabinet must be a weather-tight, NEMA 3R-rated metallic cabinet securely mounted on a ridgid surface. The door shall be hinged and capable of being sealed. The cabinet ***shall be*** sized in accordance with Current Transformer Cabinet Requirements. The top of CT cabinet shall not be more than 6 feet above ground nor less than 3'-6" from ground level.

3. An approved current transformer mounting base. The mounting base shall accept **bar-type current transformers only** . No alteration of the transformer mounting base is allowed. *(See Transformer Mounting Base Requirements).*

4. The conduit between the meter socket enclosure and the CT cabinet.

5. The customer must furnish all lugs and connect conductors to the line and the load terminals of the current transformer mounting base.

6. A **10-pole** test switch (reference Milbank catalog# TS10-0109) *note: If installation is a cabinet enclosure a test switch cover will also be required (reference Milbank catalog# K3388)*

Fillmore City shall provide and install:

1. The meter.
2. Instrument current transformers.

3. Instrument voltage transformers *(if needed)*.

Two types of CT mounting configurations are approved by Fillmore City. Other configurations shall be submitted to Fillmore City for approval.

A. Current Transformer Metering, Post Mounted
B. Current Transformer Metering, Wall Mounted

(Reference "CT Cabinet Requirements for further information)

CT Cabinet Requirements

Current Transformer Cabinet: Wall and Post Mounted Installations					CT Mounting Base
Type of Service	C.T Enclosure	Minimum Cabinet Dimensions			
		Width	Height	Depth	EUSERC #
Single-phase, 3 wire 400-800 Amps	EUSERC 316	24"	48"	11"	328A, 328B
Three phase, 4 wire 201-800 Amps	EUSERC 316	36"	48"	14"	329A, 329B
A larger cabinet is required if both the line and load conductors enter and exit from the bottom of the can.		48"	48"	14"	

NOTE: CT metering installation will not be allowed on the Transformer.

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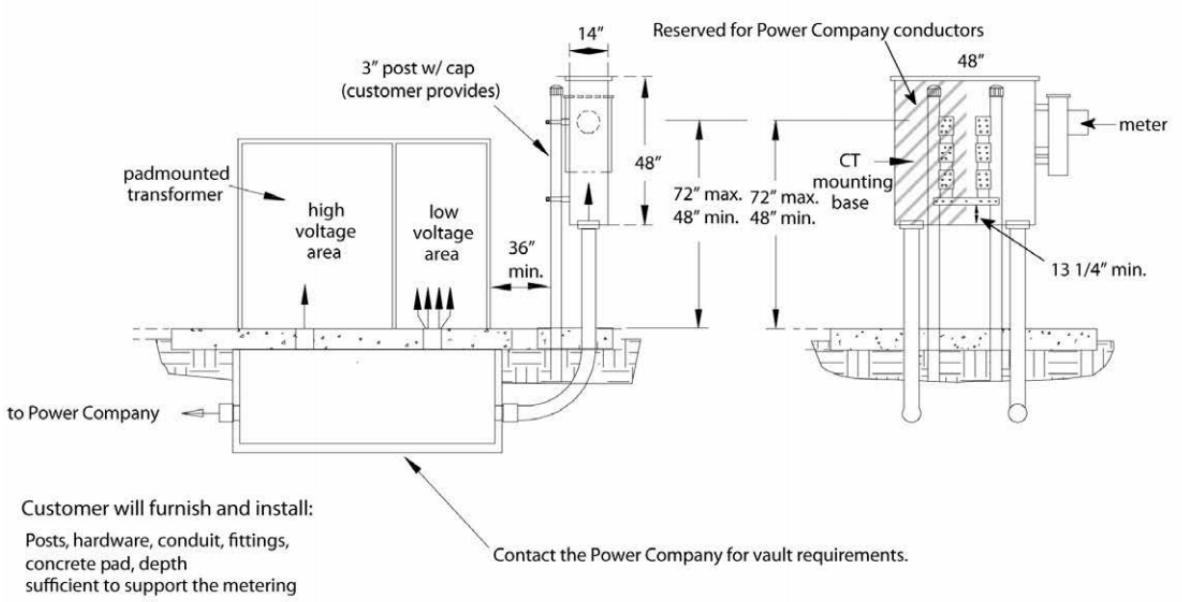
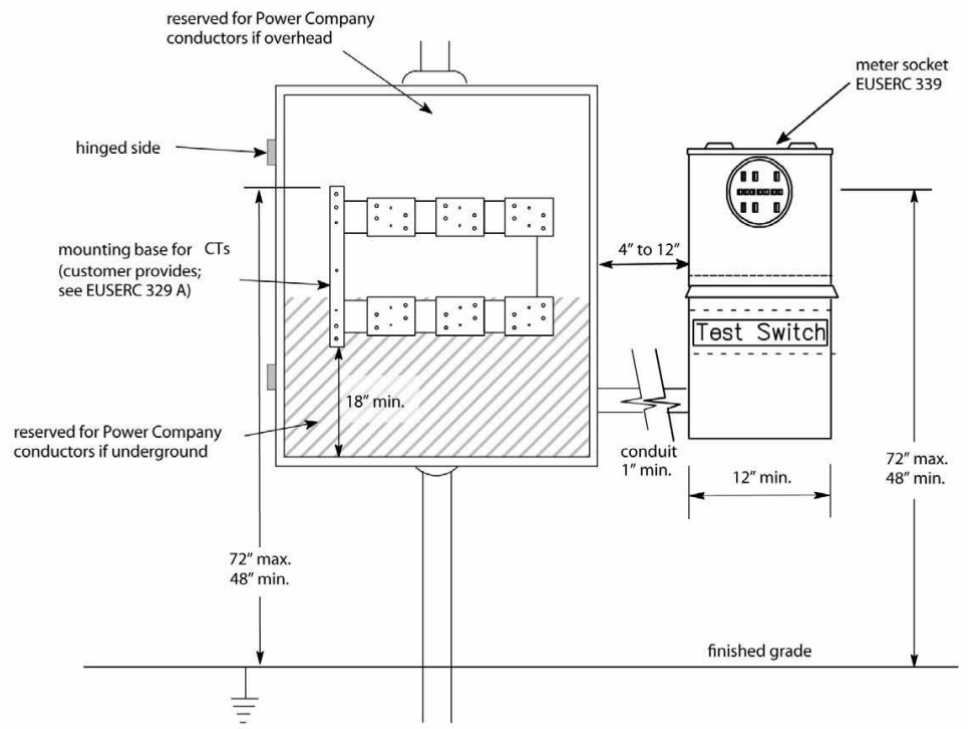
Freestanding CT Metering Detail



Wall Mount CT Metering Detail



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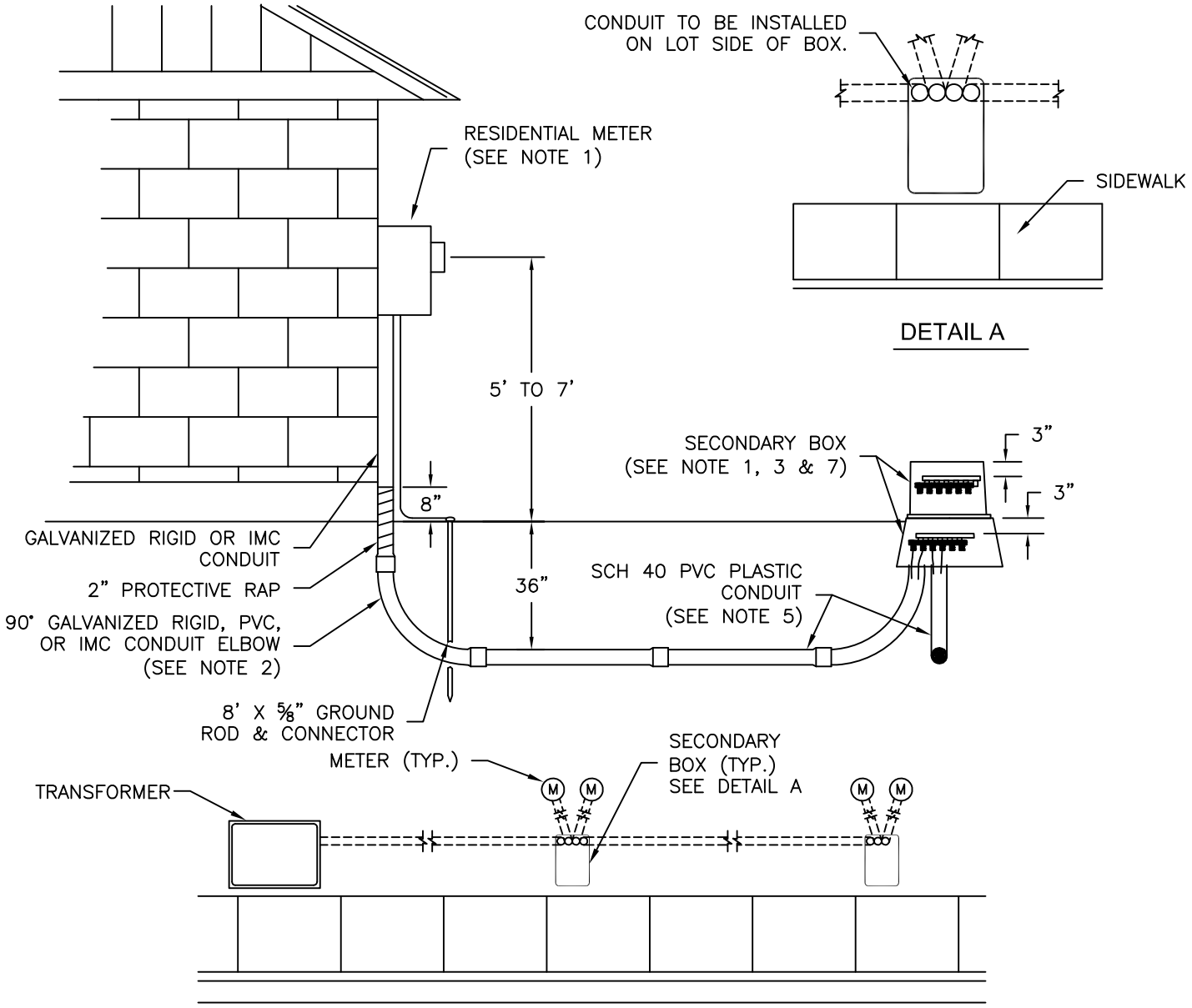
Fillmore City JUC Notes

1. The power design on this Utility Plan is considered by Fillmore City to be Preliminary until accompanied by a JUC approval stamp. Upon receipt of the JUC approved drawing, Fillmore Cities engineering department shall commence with the final construction estimate. Construction on this project will not commence until all construction payments have been made in full.
2. All primary and secondary power installation shall be performed by Fillmore Cities and its approved construction crews. If backfill and compaction is to be provided by the owner, all conduits shall be sand bedded before native backfill can be utilized.
3. It is the responsibility of the owner to provide locations and elevations for each of the facilities that are to be installed with this project. If overhead power lines are being constructed, the final grade of the easement shall be established before construction can begin. If the grade changes after the construction has been completed, the costs to change the elevation shall be billable to the owner.
4. All JUC trenches shall be backfilled and compacted in 6 to 8" lifts to a compaction of 95% in roadways/sidewalks and 90% behind sidewalks and at all prepared transformer pad and heavy hardware locations. Testing is to be done at the middle and top of the trench.
5. Field Density Reports from an accredited Geotechnical Engineering Company shall be submitted to Fillmore Cities Engineering Department upon completion of the project.
6. All changes to existing grades near existing power utilities must be approved by Fillmore Cities Engineering Department prior to construction. Blue Stakes Protocol shall be followed at all times.
7. Any in field changes to the JUC approved power design will be at the owner's expense and must be pre-approved and documented by Fillmore City prior to installation.
8. Overhead Power Line Easements shall not be landscaped with trees that grow more than 15 ft at maximum maturity. All underground facilities shall be left open from landscaping (15ft in front and 5ft on sides and back for transformers and switches and 15 ft in front and back for PMH hardware) for ease of access.



NOTES:

1. METER MOUNTING PROVISION.

2. MINIMUM RADIUS OF BEND – 18".

3. SERVICE CONDUCTORS TO EXTEND FROM THE METER MOUNTING PROVISION TO THE END OF THE CONDUIT, IN ADDITION, A 5' LENGTH OF CABLE SHALL BE LEFT BEYOND THE END OF CONDUIT FOR DIXIE POWER TO MAKE IT'S CONNECTIONS. CABLE END TO BE SEALED INSIDE SECONDARY BOX.

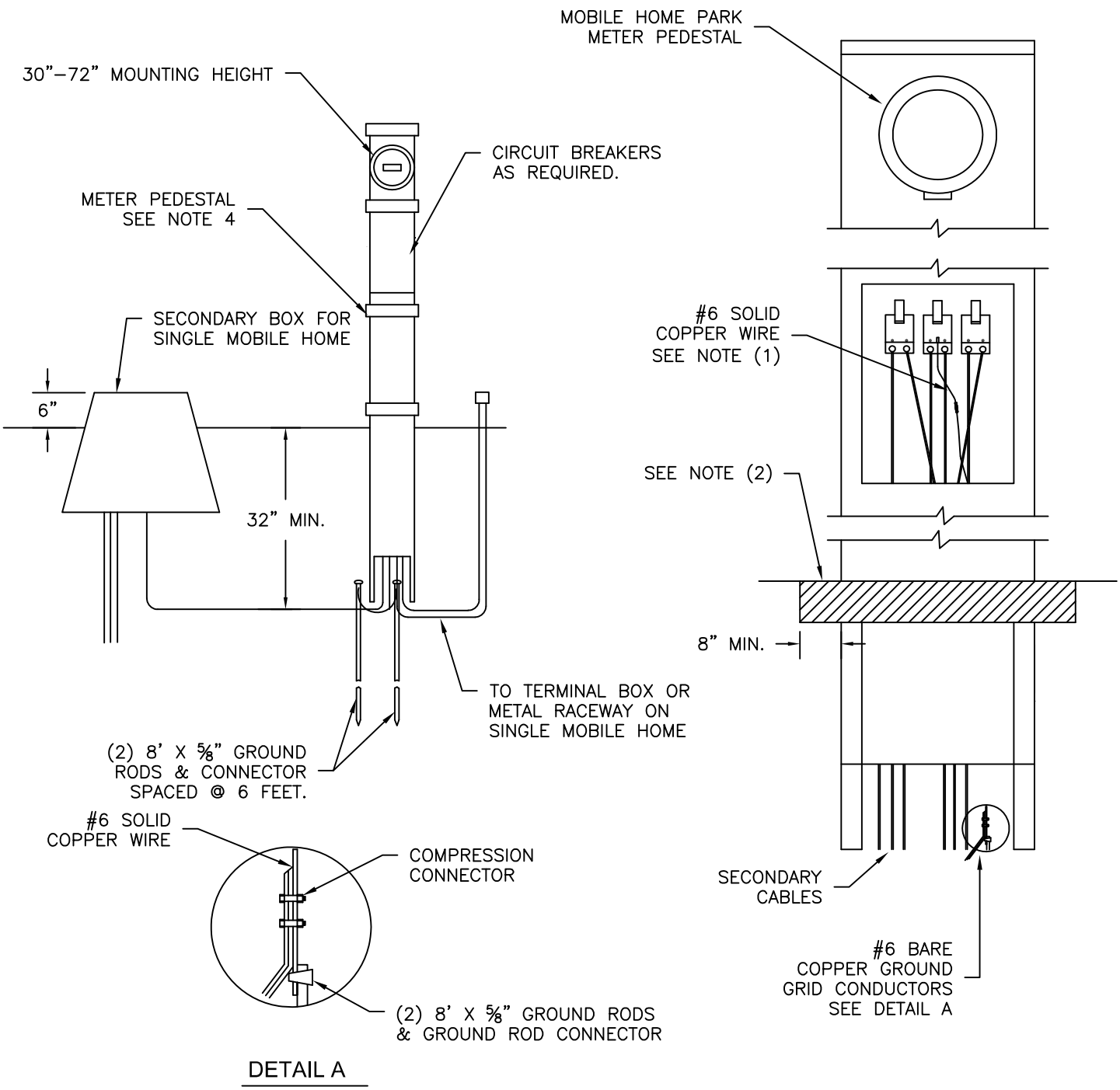
4. MIN. CLEARENCE FROM BUS TO LID MUST MAINTAIN 3 INCHES.

5. PLASTIC SCHEDULE 40 CONDUIT TO BE CONTINUOUS FROM THE END OF THE ELBOW ON THE SERVICE RISER TO THE SECONDARY JUNCTION BOX OR TRANSFORMER.

6. METER SHALL BE PLACED AT THE BUILDING'S CLOSEST LOCATION TO THE TRANSFORMER OR SECONDARY BOX APPROVED BY ENERGY SERVICES.

7. SECONDARY JUNCTION BOXES SHALLL BE INSTALLED 6" ABOVE TOP BACK OF CURB (TBC)/FINISHED GRADE.

SERVICE REQUIREMENTS RESIDENTIAL

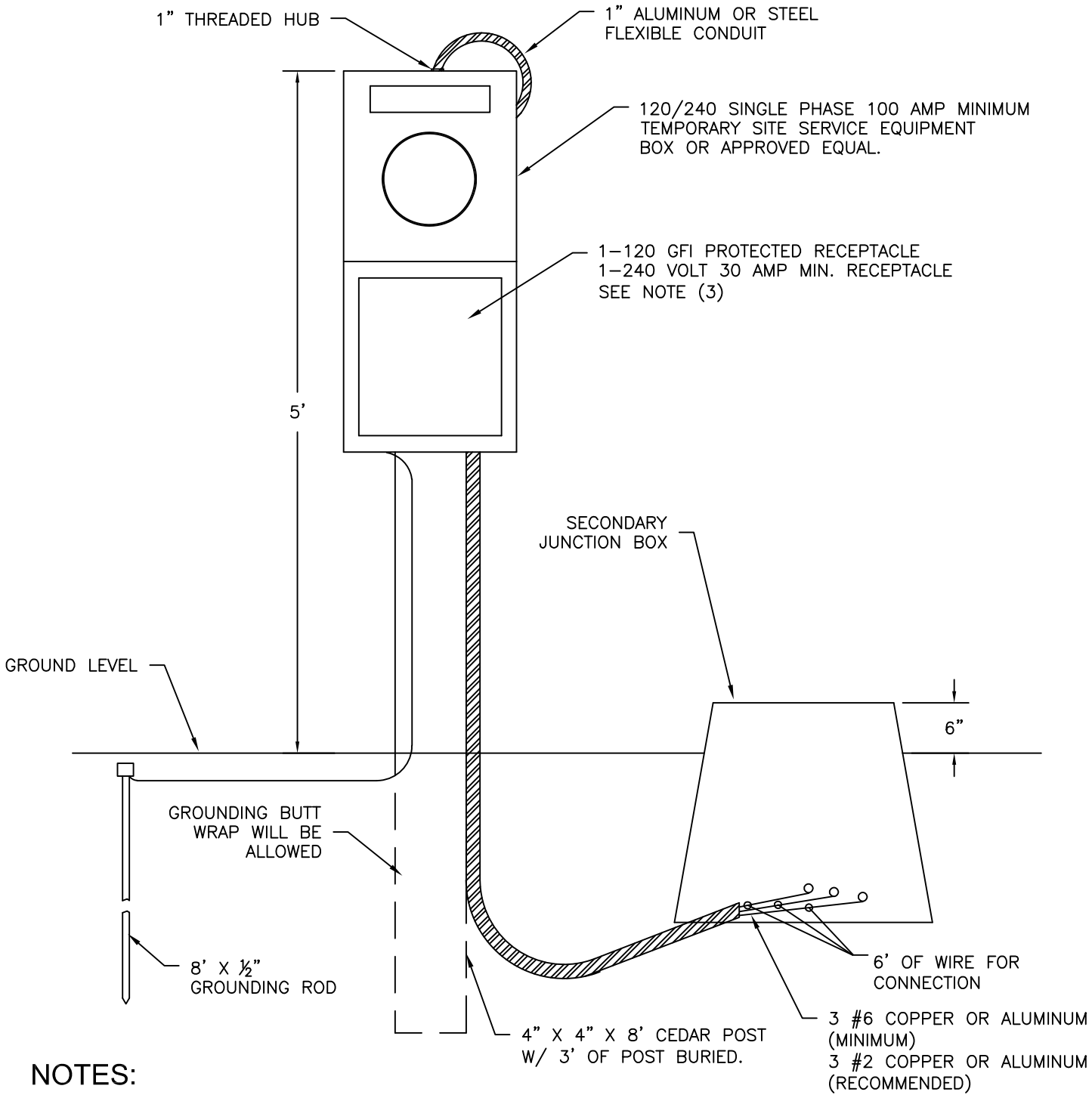


DETAIL A

NOTES:

1. THE SECONDARY NEUTRAL AND GROUND GRID SHALL BE BONDED TOGETHER.
2. OWNER SHALL PROVIDE CONCRETE PAD FOR ADDITIONAL SUPPORT WHEN NEEDED.
3. ALL METAL PARTS (BOXES, CONDUIT, ETC) SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
4. DO NOT USE PEDESTAL AS JUNCTION BOX.
5. GROUND ROD CLAMPS AND CONNECTORS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

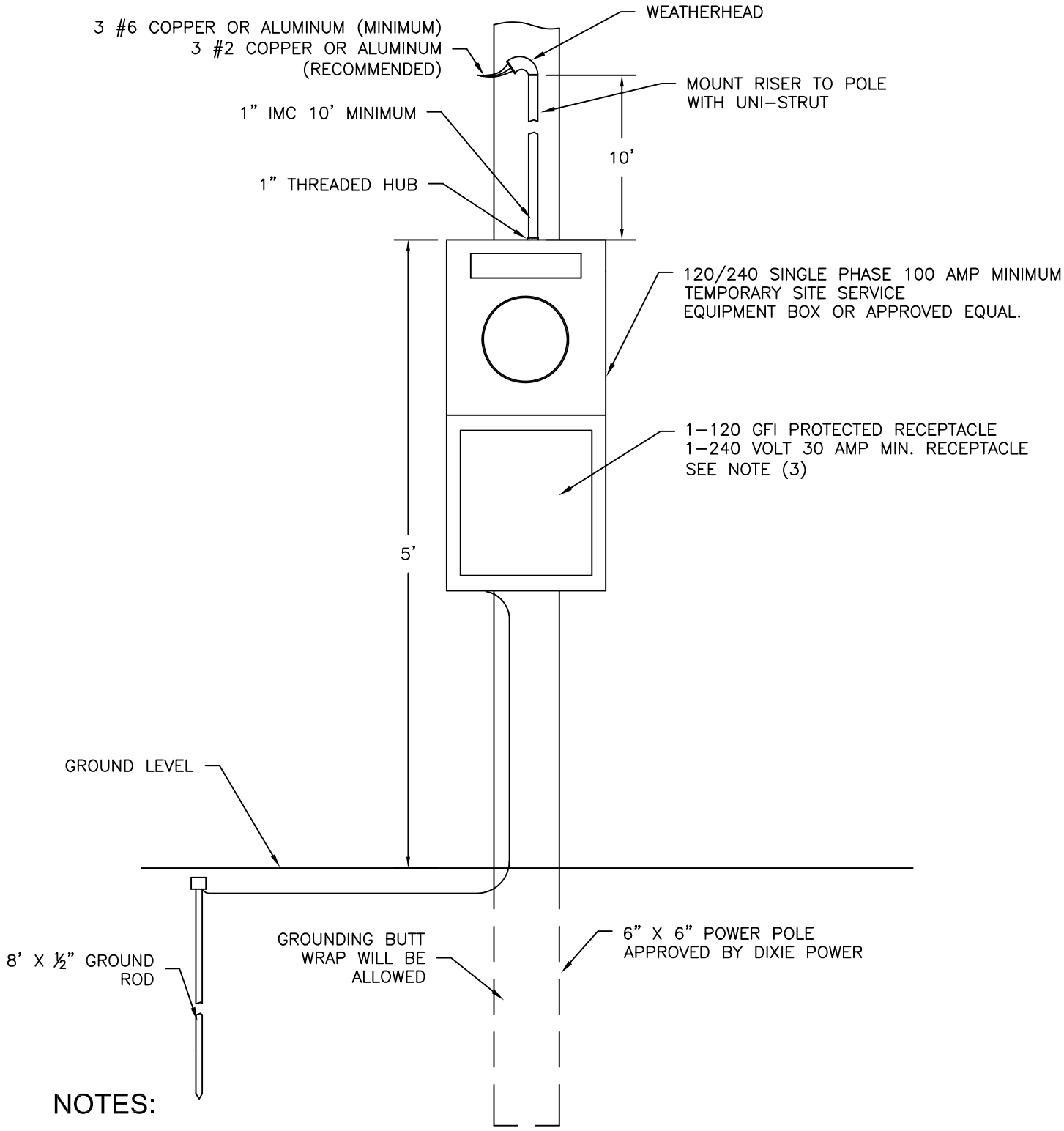
SERVICE REQUIREMENTS
MOBILE HOMES AND TRAILERS



NOTES:

1. NO OPEN WIRES WILL BE ALLOWED.
2. IF THREE PHASE POWER IS REQUIRED, DIXIE POWER ENGINEER APPROVAL IS REQUIRED FOR THE METER BASE.
3. IF MORE RECEPTACLES ARE REQUIRED, 2 MORE GFI RECEPTACLES WILL BE ALLOWED IF HOUSED WITHIN A NEMA 3R ENCLOSURE.
4. GROUND ROD CLAMPS AND CONNECTORS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR
5. TEMP POWER PEDESTAL SHALL BE INSTALLED ON THE LOT THAT HAS BEEN ISSUED THE BUILDING PERMIT.

SERVICE REQUIREMENTS
UNDERGROUND TEMPORARY POWER



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SERVICE REQUIREMENTS
OVERHEAD TEMPORARY POWER

Stand Alone Panel Requirements