



FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

1400 – 4th Street
P.O. Box 218
(830) 216-7000
FAX (830) 393-0362

Dated: August 23, 2018

Floresville Electric Light & Power System Electric Meter and Service Standards

On any building or structure requiring an electrical service connection, Floresville Electric Light & Power System (FELPS) reserves the right to determine the service point of contact (location where FELPS owned materials are attached to customer owned materials) and metering location. Floresville Electric Light & Power System will make every effort to work with the homeowner or contractor in an effort to work out a mutually agreed upon service point.

FELPS Guidelines

- 1.) The final acceptable location of the meter service point and meter loop will be the decision of the FELPS representative.
- 2.) The service point of contact shall not be attached to any part of a manufactured home. A meter pole or pedestal will be required in every instance where an electric connection is being made to manufactured housing.
- 3.) A meter shall not be located under a portion of the building which may eventually become enclosed, thereby making the meter inaccessible to regular monthly readings. If this should happen the customer will be responsible for moving the service entrance and 100% of the cost.
 - a.) The service contact point shall be at least 12.5 ft above ground level and open wire shall not be permitted under an overhang or along the side of the home to the metering point. Due to terrain features, the clearance may exceed the minimum 12.5 ft above ground level at the contact point.
 - b.) On home or building where the service contact point is located on the gable side of the house (front or side); the meter loop riser shall be extended (vertically beyond the minimum 12.5 ft height) to within 1 ft of gable overhang. See drawing M8-20 and M8-21 for details.
- 4.) On service contact points that would be lower than 12.5 ft, a roof jack riser shall be installed of adequate strength to support the service required and of adequate length to provide a minimum of 12.5 ft contact point clearance to ground line. When roof jack risers are required, the riser shall be a minimum of 2 in. IMC or Rigid conduit and shall extend a minimum of 4 ft above the roof. If the riser has to be higher than 4 ft, two adequate guys must be installed for proper strength. A roof clearance of 4 ft allows for service contact 3 ft, giving 3 ft of roof clearance. See drawing M8-25 for details.

- 5.) To save extra cost of relocating unsatisfactorily located service points and meter loops, the contractor shall insure that FELPS is consulted prior to the framing of the home. A FELPS representative will proceed to the site and locate the service point best suited to the situation. The contractor shall be prepared to discuss this when the FELPS representative goes out to stake the temporary service for the home construction. Upon completion of framing, the FELPS representative will proceed to the home and tag the spot of the service point and meter loop. Any positioning of the loop other than at this location will require relocation of the loop at the customer/contractor's expense. Permanent service will not be provided to the building until these requirements are met.
- 6.) The electrical meter shall be clear of any obstruction within 36 in. on either side or in front of the meter. Air conditioner units, etc., set directly in front of the meter unless 36 in. to either side will be cause for refusal of making permanent connection to a home or business meter loop riser until such time as the meter is cleared by 36 in. on either side.
- 7.) Meter loops installed on wood meter poles shall be installed on the side of the pole that "the red tag" is nailed. Steel poles from FELPS are available at cost and are the only steel poles acceptable for use on meter loops. The maximum number of meter entrances allowed per pole will be 2 as long as both meter entrances are owned by the same owner. In the case where two different owners would like to install their meter entrances on the same pole, it would not be allowed and would require a pole for each meter entrance.
- a.) As a minimum permanent 25 ft meter poles shall be 25 ft class 5 pole, 6 in. top diameter, set 7 ft into the ground, leaving 18 ft above ground. "Old, dry, second hand" poles that will rot in short time are not acceptable.
- b.) On 25 ft meter poles, the riser conduit shall be fastened to the pole with a minimum of 3-2 hole straps. On 30 ft meter poles, the riser conduit shall be fastened with a minimum of 4-2 hole straps. Straps shall be fastened with screws or lag screws. The meter can, switch or circuit breaker panel shall each be adequately fastened to the pole by a minimum of 2 adequately sized screws or lag screws. See drawing M8-26 for details. At no time shall the breaker ampere rating exceed the ampere rating of the attached wire and shall be sized according to NEC code.
- 8.) Grounding
- a.) Each service is supplied by FELPS shall be grounded and connected to earth by the customer in accordance with the provisions of the NEC and other application codes.
- b.) The customer shall furnish bare or insulated copper wire in his service disconnect as a bond between the service equipment ground and FELPS common neutral system. This conductor shall be sized per NEC Article 250.
- c.) A properly sized copper grounding electrode conductor shall be furnished and installed by the customer. The NEC and other applicable codes shall determine the size of the grounding electrode conductor, but in no case shall it be smaller than #6 copper. Grounding electrode conductors shall be protected where subjected to physical damage in accordance with the NEC.
- d.) As part of the grounding electrode conductor, a ground rod shall be furnished and installed by the customer at each service location. Ground rod shall be 5/8 in. diameter by 8 ft in length and consist of a steel core with a molten welded exterior layer of pure copper. All ground rods shall be driven 2 in. below final ground grade.

- e.) Ground rods shall be installed per NEC. Ground rod shall be installed vertically their entire length. Where encountering rock, ground rods may be driven at an angle of 45 degrees from the vertical.
 - f.) The customer shall provide an adequate and permanent ground connection attached to a driven ground rod and to the ground/neutral terminal of the breaker box.
 - g.) Installation of the above is subject to inspection and approval by FELPS.
- 9.) The contractor or builder should notify the customer before permanent service can be connected, the customer must:
- Come into the Floresville Electric Light and Power System Office and:
- a.) Sign an application for service in person at the Floresville Electric Office.
 - b.) Pay a service charge
 - c.) Put a meter deposit down, or have a customer on our system with a good credit rating co-sign and/or agree to pay for the bill should the customer receiving electrical service default in payment.
- 10.) Temporary meter loop (For Construction Purposes):
- a.) All temporary meter loops (for construction) are the responsibility of the contractor. The contractor shall provide and set the temporary meter loop unless the temporary is being requested by the customer for their use in which case the party requesting the temporary will be responsible for providing the temporary and getting the electrical connection. The contractor or customer shall have the pole set and braced before FELPS will make the electrical connection.
 - b.) All temporary loops will be 100 ampere Riser size or larger.
 - c.) Three straps are required to hold the meter riser in place. Straps shall be 2 hole electrical conduit straps. **Plumbing straps or bonding is not acceptable!**
 - d.) The weather head at the top of the riser shall be installed as to be positioned 1 ft below the top of the pole. The riser wires projecting out of the weather head shall be a minimum of 24 in. long.
 - e.) All temporary loops shall be equipped with meter cans approved or supplied by FELPS, mounted on the pole and the meter shall be 5 ft 6 in. above ground level when the pole is set. On underground temporary loops the meter can shall be mounted on the pole at 4 ft.
 - f.) The temporary meter loop for construction shall be mounted on a pole. The temporary pole shall be at least 15 ft long. The top of the pole shall have a minimum diameter of 6 in. A 15 ft pole shall be set 3 ft deep with 12 ft of the pole above ground. The pole shall be braced by at least three 2" x 4" stiff leg braces, attached to a temporary pole 7 ft above ground level, at an angle of 45 degrees to the earth.
 - g.) An alternate acceptable meter pole is one constructed of 4" x 4" (M8-24), 4" x 6" (M8-23), or (2) 2" x 6" (M8-22) in a tee configuration will meet the above requirements. See drawing M8-22, M8-23, or M8-24 for details. For an underground temporary meter loop, see drawings UM8-21 & UM8-22 for details.
 - h.) Temporary meter poles are subject to disconnection following six months of service. They are not intended as a permanent connection.
- 11.) All meter loops within the FELPS service area shall comply with the current National Electric Code or FELPS standards, whichever is the more stringent. Meter loops within the City of Floresville have to be approved by the City of Floresville's Representative before connection can be made. The meter loop, including all wiring, fused switches, breaker panels and all other building electrical equipment beyond the

service contact point are the property of the owner. It is the responsibility of the owner to insure all such items are kept in good, safe, operating condition and compliant to the before mentioned standards.

- 12.) The accumulation of breakers shall not exceed the size of the main or amperage capacity of the meter can. If a customer owned service wire exceeds the amp capacity of the meter can and it's wiring FELPS will have the right to enforce changes to bring the service into compliance with this section before or after the installation has been completed. FELPS also has the right to refuse connection if the customer owned service wire exceeds the ampere capacity of the meter can and it's wiring to include the riser wire.
- 13.) A 100 ampere meter service will be the minimum size meter entrance allowed in all cases.
- 14.) Meter loops on disconnected residences or houses moved into the local area must comply with the National Electric Code and the current FELPS Standards. Before rebuilding any meter loop the owner or contractor should contact FELPS to determine a contact point location on the building and should ask for an evaluation of the existing loop if applicable.
- 15.) Floresville requires the contractor or homebuilder to:
 - a.) Install the meter loop, and riser in conduit using rigid or IMC pipe only, leave 24 in. of wire projecting out of the weather head. (See attached sheet of approved loops). Conduit shall be strapped to the house with 2 hole electric conduit straps. **Plumbing straps are not acceptable!**
 - b.) Provide a permanent point of attachment adequate to hold the service coming to the home. The point of attachment shall not subject the service to rubbing on any part of the building. All NEC and NESC required clearances between the service and the structures have to be maintained at all times.
 - c.) In all cases the customer has to ground each meter entrance at the breaker box (even if there is more than one meter entrance on the same structure) with a ground rod and wiring that meet NEC, NESC, FELPS, and City of Floresville (if inside City of Floresville boundaries) standards. Typically, one ground rod shall not be used to ground multiple meter entrances. The number of ground rods is up to FELPS discretion on a case-by-case basis.
 - d.) Riser wires shall be looped together in a manner to allow one connection point to FELPS owned service when meter loops are located on the same pole or very near to each other.
 - e.) On the underground services, the contractor is responsible for:
 - i. Furnishing and installing the meter loop
 - ii. Installation of the above ground IMC riser and underground PVC conduit from the pad mount transformer to the meter socket at a minimum of 24 in. below ground level. The conduit shall be left exposed until a FELPS representative has inspected the installation and approved it.
 - iii. FELPS will install the service wire for residential services only after the owner/developer has completed the conduit installation.
- 16.) To ensure adequate safety to personnel and equipment, the customer is responsible for providing and maintaining code-approved protective devices that protect motors against overloading, short circuits, ground faults, low voltage, and single-phasing of three-phase motors.
 - a.) Three Phase: Motor starts may cause unacceptable voltage dips to adjacent the customers or on the customer's premises. Frequently started motors, three phase motors rated larger than 25 hp served from a three-phase system may require reduced voltage starters. Motors that meet any of these criteria require consultation with FELPS.

- b.) Single Phase: Motor starts may cause unacceptable voltage dips to adjacent the customers or on the customer's premises. Frequently started motors, single phase motors larger than 3 hp may require reduced voltage starters. Motors that meet any of these criteria require consultation with FELPS.
- 17.) The feeder or service neutral load shall be the maximum unbalance of the load determined by NEC article 220.61 (Feeder or Service Neutral Load).
- 18.) Overhead Conductors
- a.) The service-entrance conductors shall have sufficient ampacity to carry the load as determined by the NEC and other applicable codes, and in no case, be smaller than #2 copper. Conductor insulation must be a type approved by the NEC and other applicable codes for the use intended.
 - b.) Conductors for each phase, neutral, or ground circuit shall be permitted to be connected in parallel (electrically joined at both ends to form a single conductor) only in sizes 1/0 AWG and larger. All paralleled conductors shall be the same length, material type, same size in circular-mil area, same insulation type and be terminated in the same manor.
 - c.) Paralleled service-entrance conductors are subject to approval by FELPS but shall not exceed two conductors per phase at the service head. Where two service-entrance conductors per phase are used, each cable shall not exceed 600 MCM copper.
 - d.) Copper wire only meeting all NEC and FELPS standards shall be used in all overhead service entrances.
- 19.) Underground Conductors
- a.) The service-entrance conductors shall have sufficient ampacity to carry the load as determined by the NEC and other applicable codes, and in no case, be smaller than #2 copper or #1/0 aluminum. Conductor insulation must be a type approved by the NEC and other applicable codes for the use intended.
 - b.) Conductors for each phase, neutral, or ground circuit shall be permitted to be connected in parallel (electrically joined at both ends to form a single conductor) only in sizes 1/0 AWG and larger. All paralleled conductors shall be the same length, material type, same size in circular-mil area, same insulation type, and be terminated in the same manor.
 - c.) Paralleled service-entrance conductors are subject to approval by FELPS but shall not exceed two conductors per phase at the service head. Where two service-entrance conductors per phase are used, each cable shall not exceed 750 MCM copper or 750 MCM aluminum.
 - d.) Copper and Aluminum meeting all NEC and FELPS standards are acceptable in underground service entrances.
 - e.) All elbow conduits shall be either IMC or Rigid and corrosion taped. All conduits above ground level shall be either IMC or Rigid on secondary installations. IMC or Rigid conduit must descend a minimum of 6 in. below ground level and be corrosion taped a minimum of 6 in. below and above ground level.
 - f.) In any case, the maximum length of underground service shall not exceed 200'. With any service over 320 amps, the length of service shall not exceed 100'.

SINGLE PHASE

Approved FELPS Meter Loop Construction Residential & Commercial Permanent Single Phase Service

Minimum Requirements:

- a.) Rag loops are **NO** longer acceptable

- b.) The service point of contact shall **NOT** be attached to any part of a manufactured home or mobile construction office. A meter pole/pedestal will be required in every instance where an electric connection is being made to manufactured housing.
- c.) EMT conduit will **NOT** be allowed for use as a riser leaving the meter can to the service contact point. Only Rigid or IMC is acceptable.
- d.) "SE" conductor insulation NOT acceptable.
- e.) Centerline of Meter Socket shall be a maximum of 5 ft 6 in. above finished grade in all cases unless approved by FELPS to alter the requirement due to circumstances such as flood way.
- f.) The meter loop and all associated electrical equipment beyond the service contact point are the property of the owner; who is responsible for insuring that they are kept in good, safe, operating condition.

	Loop Size	Minimum Wire Size (THW, THHN, THWN-2)	Acceptable Reduced Type and Neutral Size (THW, THHN, TWWN-2)	Minimum Conduit Size	When Roof Jack is Required	Contact Clearance Point to Ground
1.	100 Amp	#2 Cu	#2 Cu	1 ¼ in. IMC or Rigid Conduit	2 in. IMC or Rigid on House as a Minimum 1 ¼ in. IMC or Rigid on Meter Pole	12.5 ft 18 ft
2.	200 Amp	3/0 Cu	2/0 Cu	2 in. IMC or Rigid Conduit	2 in. IMC or Rigid on House as a Minimum 2 in. IMC or Rigid on Meter Pole	12.5 ft 18 ft
3.	320 Amp	350 MCM Cu	300 MCM Cu	2 ½ in. IMC or Rigid Conduit	2 ½ in. IMC or Rigid on House as a Minimum 2 ½ in. IMC or Rigid on Meter Pole	12.5 ft 18 ft
4.	400 Amp	500 MCM Cu	400 MCM Cu	3 in. IMC or Rigid Conduit	3 in. IMC or Rigid on House as a Minimum 3 in. IMC or Rigid on Meter Pole	12.5 ft 18 ft
5.	All 200 Amp Underground Cu Services	3/0 Cu	2/0 Cu	2 in. IMC or Rigid Conduit above ground; 2 in. Schedule 40 PVC below ground at a minimum of 24 in. below finished grade.		
6.	All 200 Amp Underground Alum Services	4/0 Alum	3/0 Alum	2 in. IMC or Rigid Conduit above ground; 2 in. Schedule 40 PVC below ground at a minimum of 24 in. below finished grade.		
7.	All 320 Amp Underground Cu Services	350 MCM Cu	300 MCM Cu	2 ½ in. IMC or Rigid Conduit above ground; 2 ½ in. Schedule 40 PVC below ground at a minimum of 24 in. below finished grade.		
8.	All 320 Amp Underground Alum Services	500 MCM Alum	400 MCM Alum	3 in. IMC or Rigid Conduit above ground; 3 in. Schedule 40 PVC below ground at a minimum of 24 in. below finished grade.		
9.	All 400 Amp Underground Cu Services	500 MCM Cu	400 MCM Cu	3 in. IMC or Rigid Conduit above ground; 3 in. Schedule 40 PVC below ground at a minimum of 24 in. below finished grade.		

10.	All 400 Amp Underground Alum Services	Meet NEC Code/FELPS Approval	Meet NEC Code/FELPS Approval	Consult FELPS Representative		
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Residential customers may refer to the below chart for wire sizes and use when applicable.

**Conductor Types and Sizes for:
120/240-Volt, 3-Wire, Single-Phase, Single Family Dwelling
Services and Feeders. Conductor Types RHH, RHW, RHW-2,
THHN, THHW, THW, THW-2, THWN, THWN-2, XHHW,
XHHW-2, USE, USE-2. Copper is required on all overhead
meter entrances, aluminum may be used only on underground
services.**

Service or Feeder Rating (Amperes)	Conductor (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
100	2	1/0
110	2	1/0
125	2	1/0
150	1	2/0
175	1/0	3/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600

Customers must purchase the meter socket enclosure from FELPS. Meter loops with other meter socket enclosures will **NOT** be acceptable.

A roof jack shall clear the roof by 4 ft. When the roof jack requires greater clearance than 4 ft it must be guyed. See Page 1, Paragraph 4 and 5 for details.

A weather head shall stop 2 ft below the top of the respective pole or 1 ft for a temporary loop. Wire leads extending from the weather head shall be a minimum of 24 in.

For all meter loops that exceed 200 Amp or 240 Volts, shall require FELPS approval before construction. This would also apply to multi-meter loops such as apartment complexes, etc. Prior to installation, multi-meter loop design shall be submitted to FELPS for approval.

Meter loops shall be attached to the house or meter pole by 2 hole electrical conduit straps. **Plumbing straps are not acceptable.** In all cases the straps are not to exceed 18 in. from the weather head or 18 in. from the meter can and shall be spaced no further than 4 ft apart.

A Copper service; properly sized to allow for a secondary service drop (maximum of 3%) at full load operating condition shall be installed. Neutral may be one size smaller than Phase conductors.

These requirements will remain effective until superseded by a revision.

Minimum ground wire sizes are as follows:

<u>Meter Loop Size</u>	<u>Ground Wire Size</u>
100 Amp	#6 Cu
200 Amp	#4 Cu
320 Amp	#1/0 Cu
400 Amp	#1/0 Cu

THREE PHASE

Approved Floresville Electric Light & Power System Meter Loop Construction Commercial Permanent Three Phase Service

Minimum Requirements:

- a.) Rag loops are **NO** longer acceptable
- b.) The service point of contact shall **NOT** be attached to any part of a manufactured home or mobile construction office. A meter pole/pedestal will be required in every instance where an electric connection is being made to manufactured housing.
- c.) EMT conduit will **NOT** be allowed for use as a riser leaving the meter can to the service contact point. Only Rigid or IMC is acceptable.
- d.) “SE” conductor insulation **NOT** acceptable.
- e.) Centerline of Meter Socket shall be a maximum of 5 ft 6 in. above finished grade in all cases unless approved by FELPS to alter the requirement due to circumstances such as a flood way.
- f.) The meter loop and all associated electrical equipment beyond the service contact point are the property of the owner; who is responsible for insuring that they are kept in good, safe, operating condition.

	Loop Size <u>Absolute Min.</u>	Minimum Wire Size (THW, THHN, THWN-2)	Acceptable Reduced Neutral Size (THW, THHN, THWN-2)	Minimum Conduit Type and Size	When Roof Jack is Required	Contact Clearance Point to Ground
1.	100 Amp (480V-25 to 50 HP) (240V-12.5 to 25 HP)	#2 Cu	#2 Cu	1 ¼ in. IMC or Rigid Conduit	2 in. IMC/Rigid on House Minimum or 1 ¼ in. IMC/Rigid on Meter Pole	12.5 ft 18 ft
2.	200 Amp (480V-Above 75 HP) (240V-Above 37.5 HP)	3/0 Cu	2/0 Cu	2 in. IMC or Rigid Conduit	2 in. IMC/Rigid on House Minimum or 2 in. IMC/Rigid on Meter Pole	12.5 ft 18 ft
3.	Larger than 200 Amp	Meet NEC Code/FELPS Approval	Meet NEC Code/FELPS Approval	Consult FELPS Representative		

4.	All 200 Amp Underground Cu Services	3/0 Cu	2/0 Cu	2 in. IMC or Rigid Conduit above ground; 2 in. Schedule 40 PVC 24 in. below finished grade		
5.	All 200 Amp Underground Alum Services	4/0 Alum	3/0 Alum	2 in. IMC or Rigid Conduit above ground; 2 in. Schedule 40 PVC 24 in. below finished grade		
6.	All 320 Amp Underground Cu Services	350 MCM Cu	300 MCM Cu	3 in. IMC or Rigid Conduit above ground; 3 in. Schedule 40 PVC 24 in. below finished grade		
7.	All 320 Amp Underground Alum Services	500 MCM Alum	400 MCM Alum	3 in. IMC or Rigid Conduit above ground; 3 in. Schedule 40 PVC 24 in. below finished grade		
8.	All 400 Amp Underground Cu Services	500 MCM Cu	400 MCM Cu	3 in. IMC or Rigid Conduit above ground; 3 in. Schedule 40 PVC 24 in. below finished grade		
9.	All 400 Amp Underground Alum Services	Meet NEC Code/FELPS Approval	Meet NEC Code/FELPS Approval	Consult FELPS Representative		

A roof jack shall clear the roof by 4 ft. When the roof jack requires greater clearance than 4 ft, it must be guyed. See Page 1, paragraph 4 and 5 for details.

Customers must purchase meter socket enclosures from FELPS. Meter loops with other meter socket enclosures will **NOT** be accepted.

A weather head shall stop 2 ft below the top of the respective pole or 1 ft for a temporary loop. Wire leads extending from the weather head shall be a minimum of 24 in.

A service shall be properly sized per the NEC code according to the size of the customer main not to exceed the meter can ampere capacity.

All meter loops above 200 Amps will require consultation with FELPS to determine the appropriate type and size of meter entrance. In all cases the customer/developer shall supply the FELPS Line Design Department with one line drawings showing the service entrance and size of main disconnect to include meter loops 200 Amps and smaller.

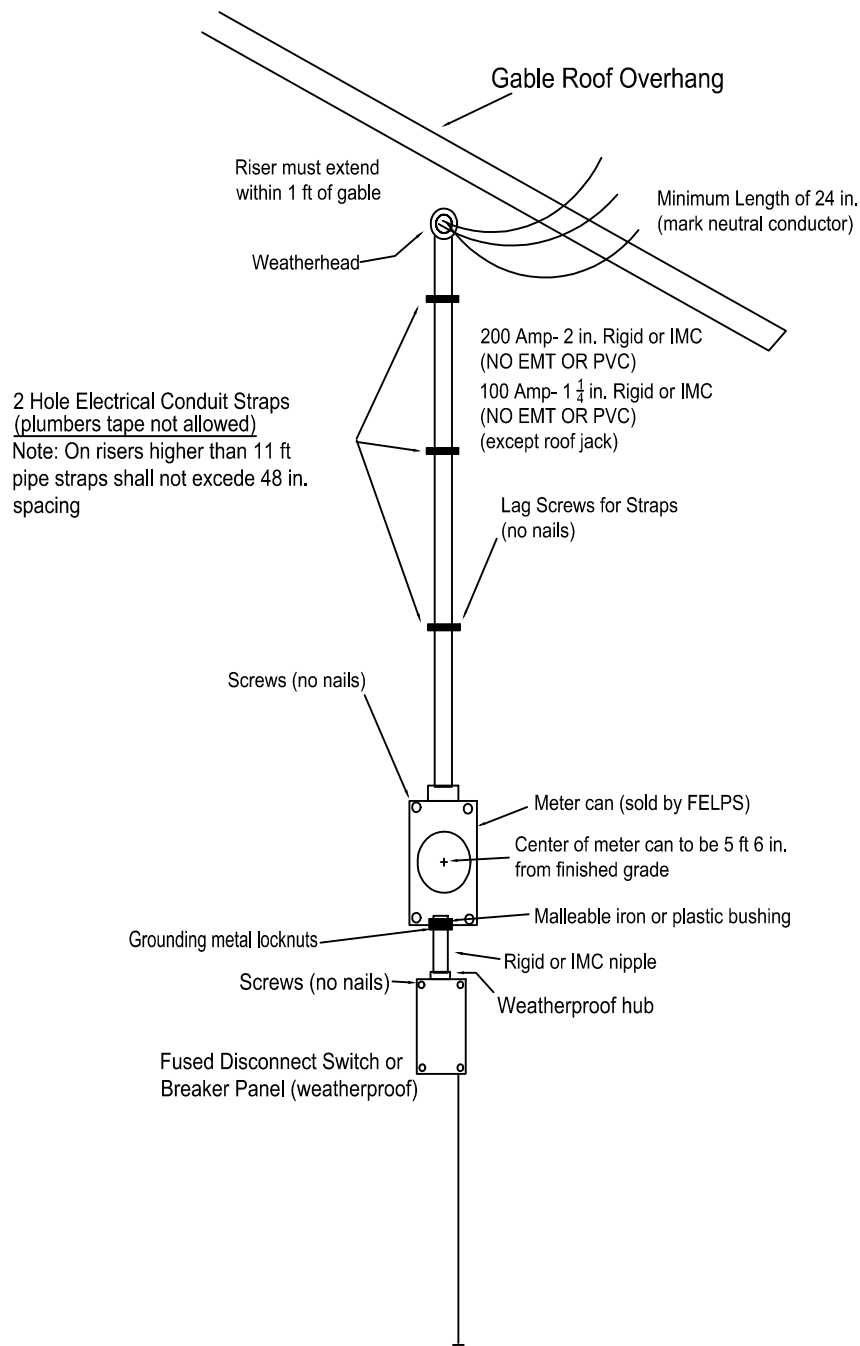
All wire leads for CT/PT metering installations furnished by the contractor/customer shall be a minimum of 48 in.

For safety reasons when a meter loop is replaced or installed the customer is required to run a bonded ground wire from the breaker or disconnect box to the equipment and the equipment chassis shall be grounded.

These requirements will remain effective until superseded by a revision.

Minimum ground wire sizes are as follows:

<u>Meter Loop Size</u>	<u>Ground Wire Size</u>
100 Amp	#6 Cu
200 Amp	#4 Cu
320 Amp	#1/0 Cu
400 Amp	#1/0 Cu



NOTE:
COPPER GROUNDING ELECTRODE
CONDUCTOR FURNISHED AND INSTALLED
BY CUSTOMER, SIZE AND INSTALLATION IN
ACCORDANCE WITH NEC.

NOTE:
GROUNDING ELECTRODE SYSTEM INSTALLED
AS PER NEC TO INCLUDE 5/8 in. x 8 ft GROUND
ROD AS REQUIRED BY FELPS AT ALL
CUSTOMER SERVICE LOCATIONS.

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170



ENGINEERING, LLC.
ENGINEERS, PLANNERS AND SURVEYORS
TEXAS REGISTERED ENGINEERING FIRM F-1394

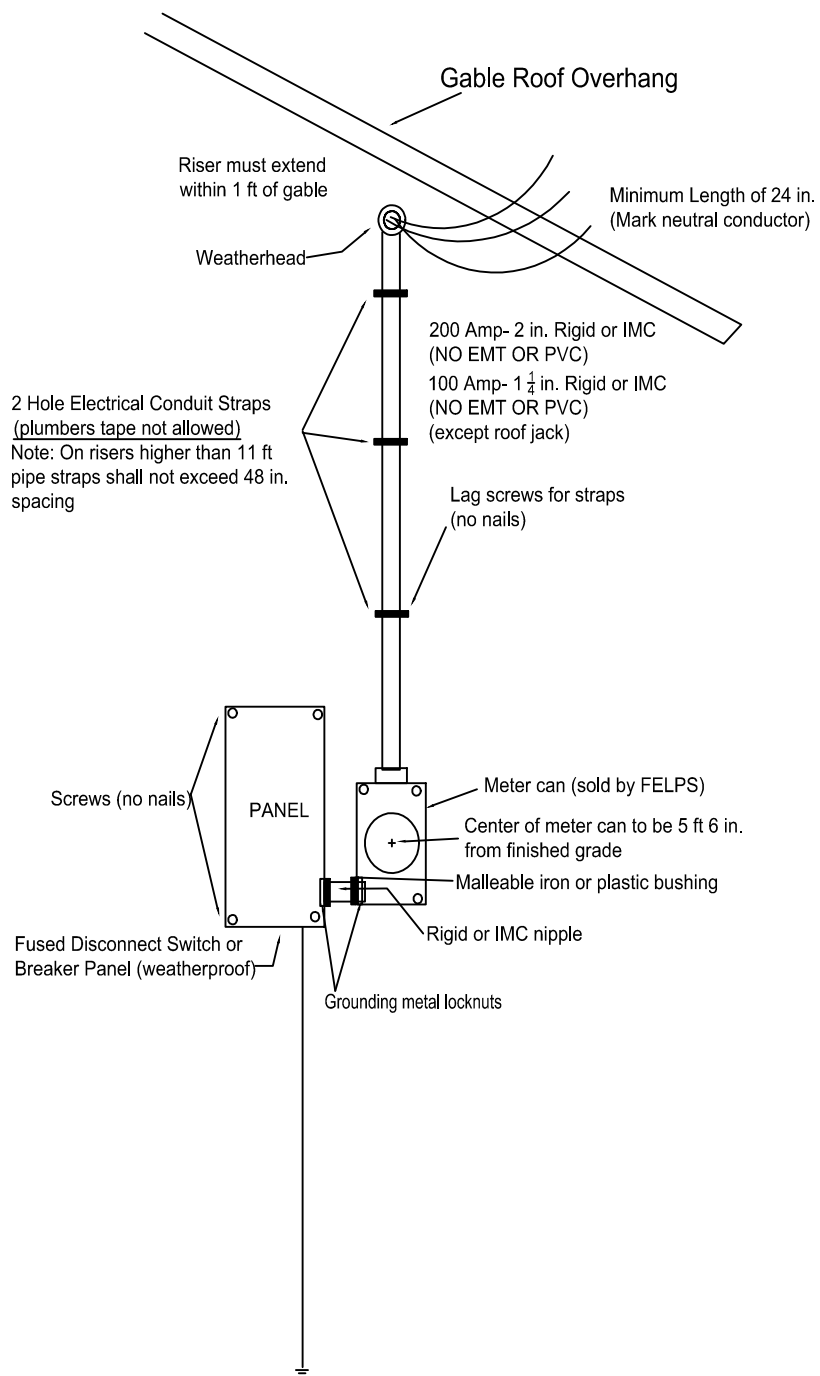
BRANCH OFFICE
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MCQUEENEY, TEXAS 78123
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FAX # (830) 560-3203



FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

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TITLE		
Meter loop detail for Gable Side Installations		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	NTS	TECH
		JDK
PAGE	1 OF 1	DRAWING NO #
		M8-20



NOTE:
COPPER GROUNDING ELECTRODE
CONDUCTOR FURNISHED AND INSTALLED
BY CUSTOMER, SIZE AND INSTALLATION IN
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NOTE:
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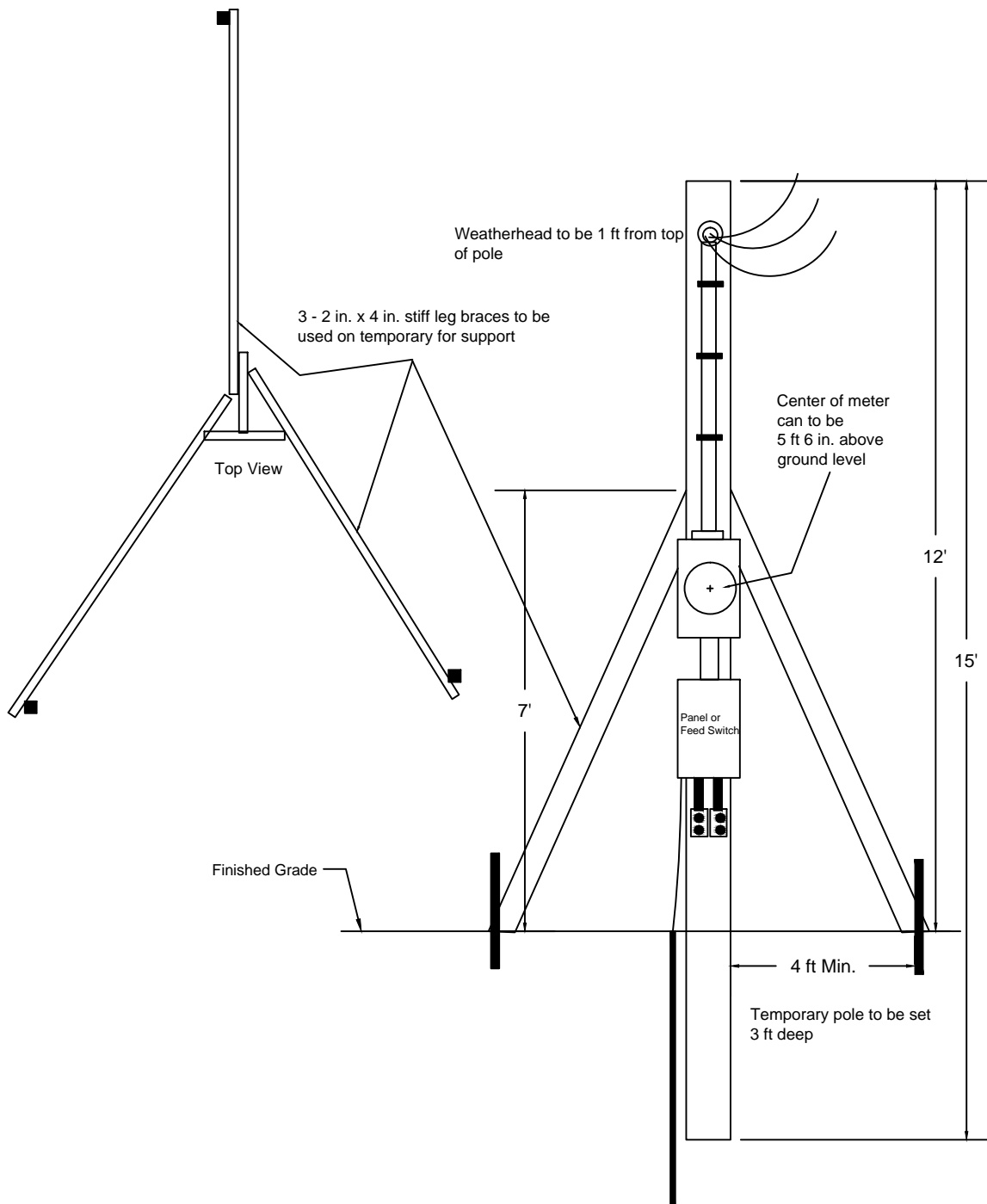
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FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

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(830) 216-7000

Meter loop detail for Gable Side Installations			
REV NO	REV BY	ISSUE DATE	
		02/16/2015	
SCALE	NTS		TECH
			JDK
PAGE	1 OF 1		DRAWING NO #
			M8-21



NOTE:
COPPER GROUNDING ELECTRODE
CONDUCTOR FURNISHED AND INSTALLED
BY CUSTOMER, SIZE AND INSTALLATION IN
ACCORDANCE WITH NEC.

NOTE:
GROUNDING ELECTRODE SYSTEM INSTALLED
AS PER NEC TO INCLUDE 5/8 in. x 8 ft GROUND
ROD AS REQUIRED BY FELPS AT ALL
CUSTOMER SERVICE LOCATIONS.

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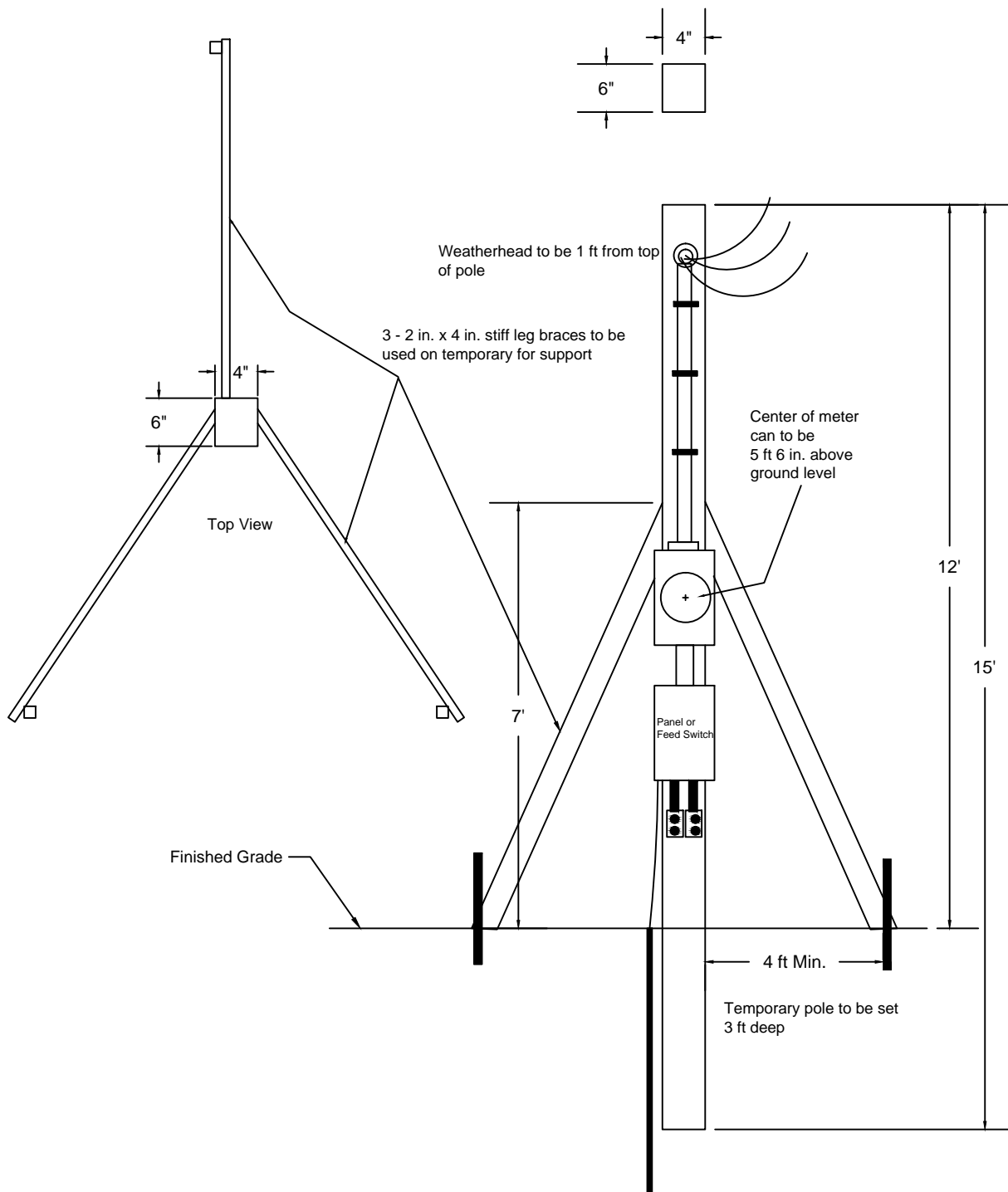
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TITLE		
Overhead Temporary Meter Loop on (2) 2 in. x 6 in.		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	NTS	TECH
		JDK
PAGE	1 OF 1	DRAWING NO #
		M8-22



NOTE:
COPPER GROUNDING ELECTRODE
CONDUCTOR FURNISHED AND INSTALLED
BY CUSTOMER, SIZE AND INSTALLATION IN
ACCORDANCE WITH NEC.

NOTE:
GROUNDING ELECTRODE SYSTEM INSTALLED
AS PER NEC TO INCLUDE 5/8 in. x 8 ft GROUND
ROD AS REQUIRED BY FELPS AT ALL
CUSTOMER SERVICE LOCATIONS.

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TEXAS REGISTERED ENGINEERING FIRM F-1394

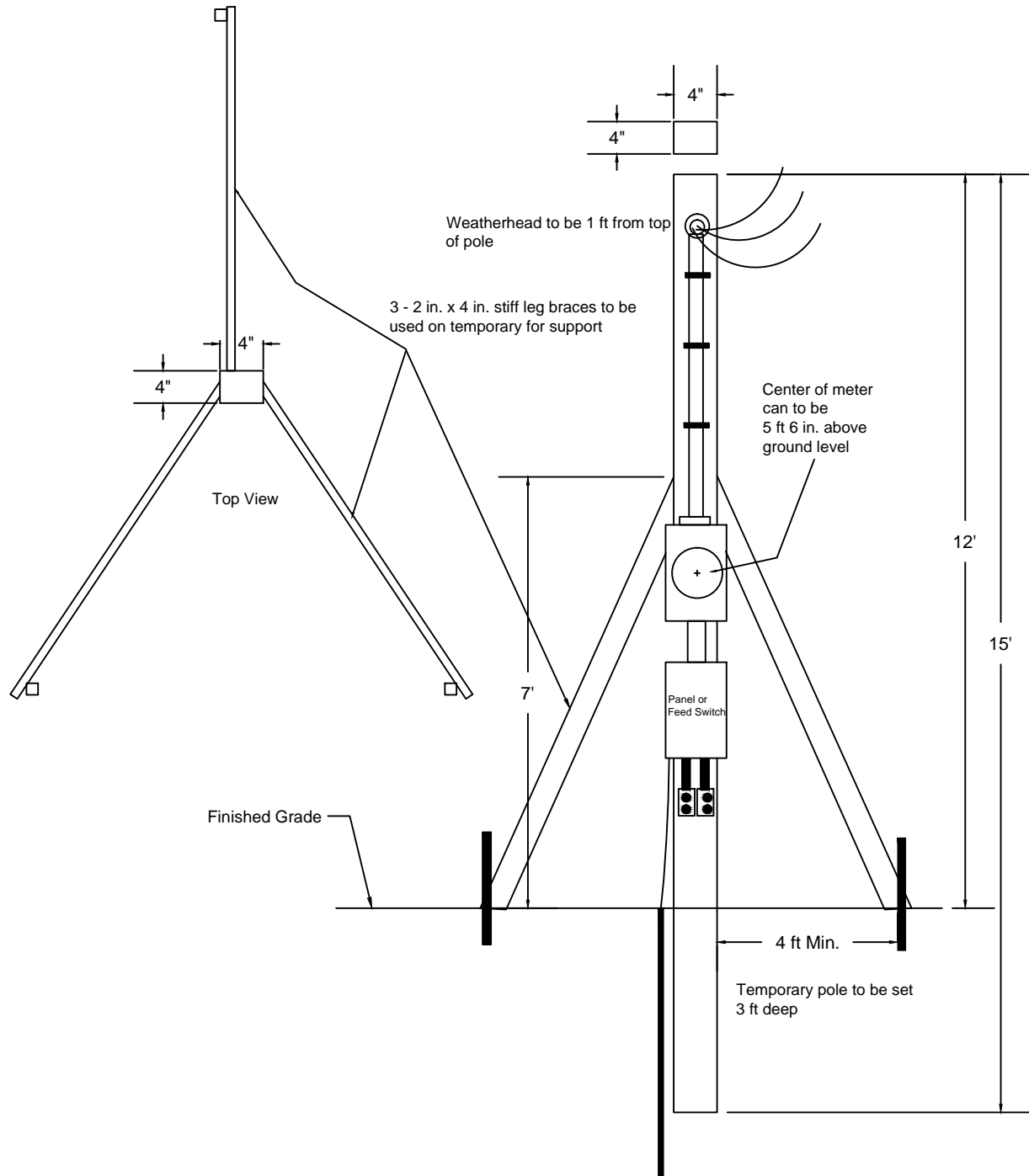
BRANCH OFFICE
P.O. BOX 391
MCQUEENEY, TEXAS 78123
PHONE # (830) 560-3200
FAX # (830) 560-3203



FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

1400 FOURTH ST.
P.O. BOX 218
FLORESVILLE, TX 78114
(830) 216-7000

TITLE		
Overhead Temporary Meter Loop on 4 in. x 6 in.		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	NTS	TECH
		JDK
PAGE	1 OF 1	DRAWING NO #
		M8-23



NOTE:
COPPER GROUNDING ELECTRODE
CONDUCTOR FURNISHED AND INSTALLED
BY CUSTOMER, SIZE AND INSTALLATION IN
ACCORDANCE WITH NEC.

NOTE:
GROUNDING ELECTRODE SYSTEM INSTALLED
AS PER NEC TO INCLUDE 5/8 in. x 8 ft GROUND
ROD AS REQUIRED BY FELPS AT ALL
CUSTOMER SERVICE LOCATIONS.

MAIN OFFICE
P.O. BOX 970
SPRING BRANCH, TEXAS 78070
PHONE # (830) 228-5446
FAX # (830) 885-2170

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ENGINEERS, PLANNERS AND SURVEYORS
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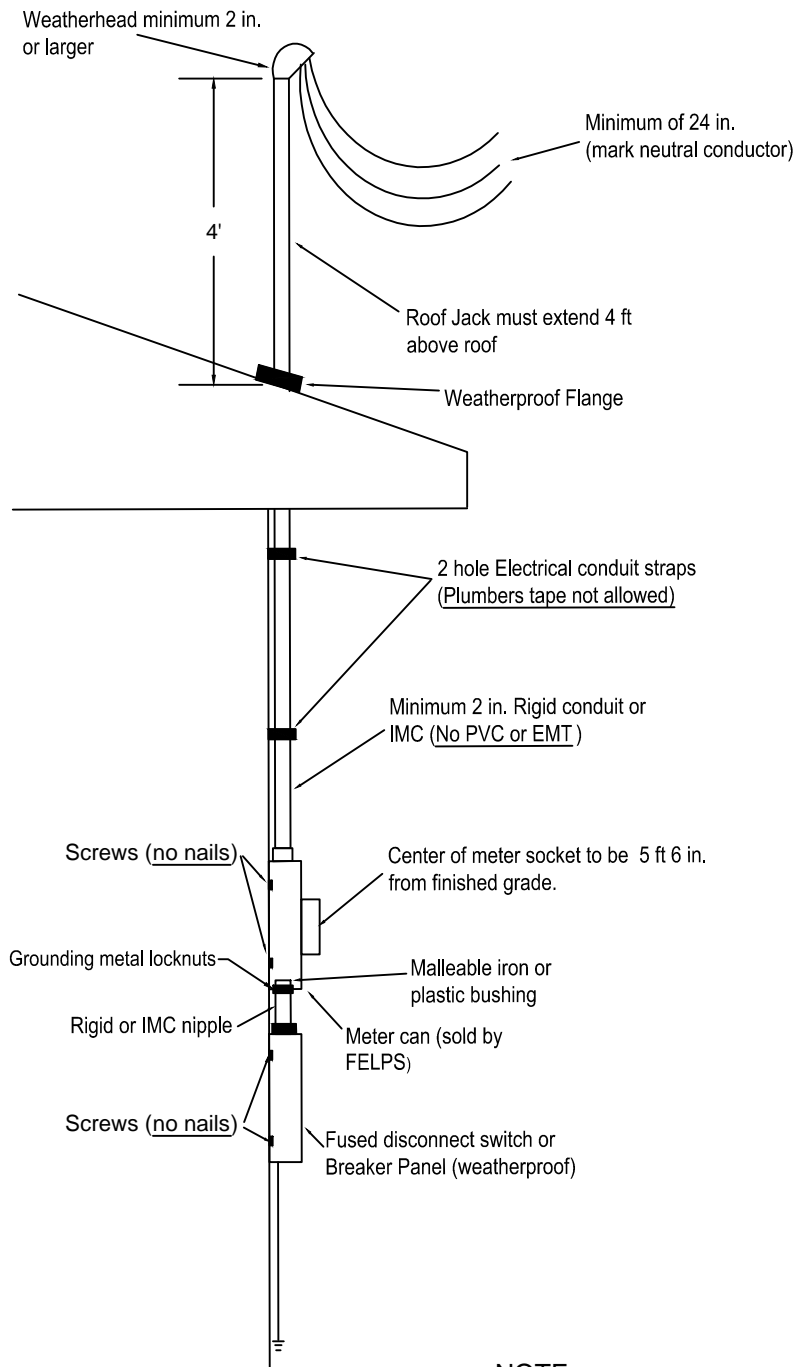
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MCQUEENEY, TEXAS 78123
PHONE # (830) 560-3200
FAX # (830) 560-3203



FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

1400 FOURTH ST.
P.O. BOX 218
FLORESVILLE, TX 78114
(830) 216-7000

TITLE			
Overhead Temporary Meter Loop on 4 in. x 4 in.			
REV NO	REV BY	ISSUE DATE	
		02/16/2015	
SCALE	NTS	TECH	
		JDK	
PAGE	1 OF 1	DRAWING NO #	
		M8-24	



NOTE:
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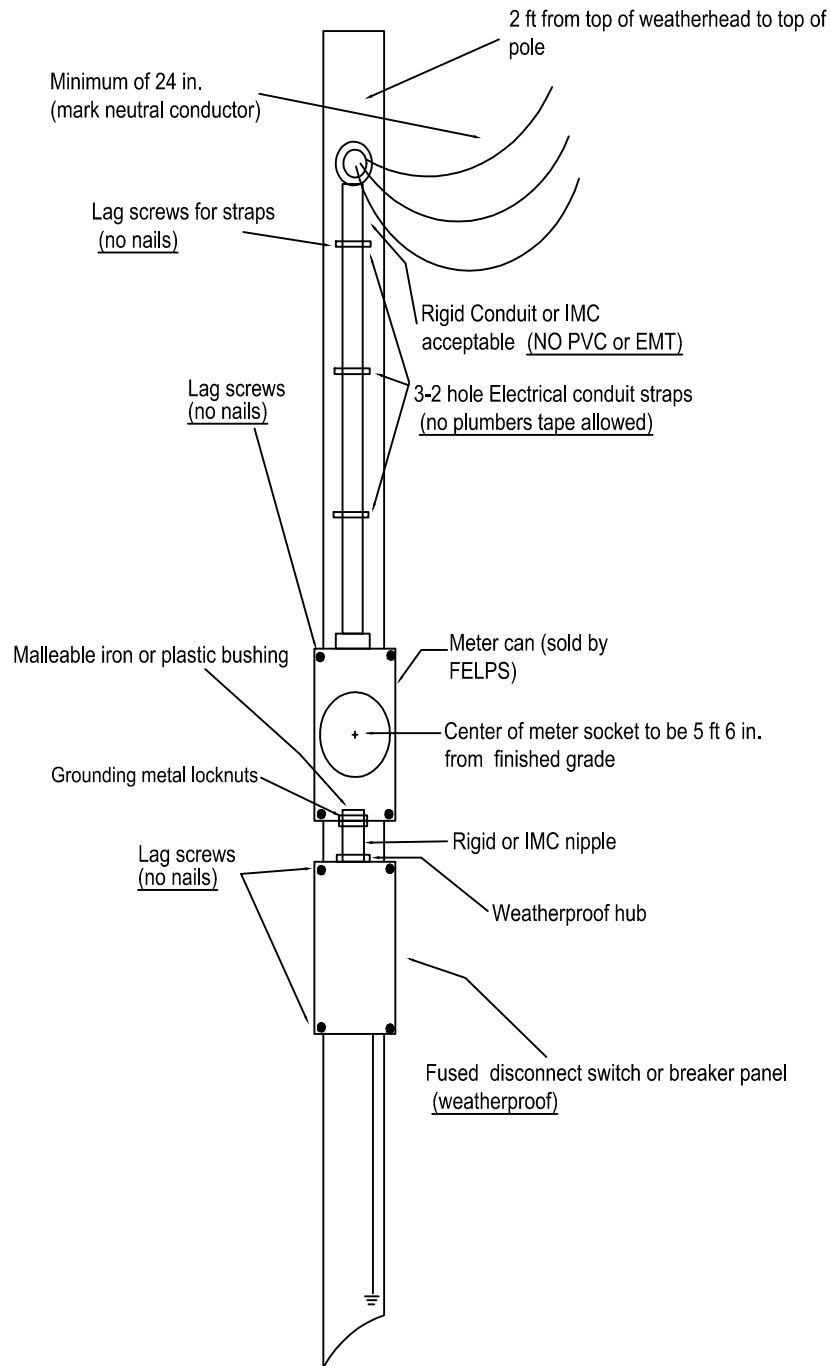
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TITLE			
Conventional Meter Loop for Roof Masts			
REV NO	REV BY	ISSUE DATE	
		02/16/2015	
SCALE	NTS	TECH	
		JDK	
PAGE	1 OF 1	DRAWING NO #	
		M8-25	



NOTE:
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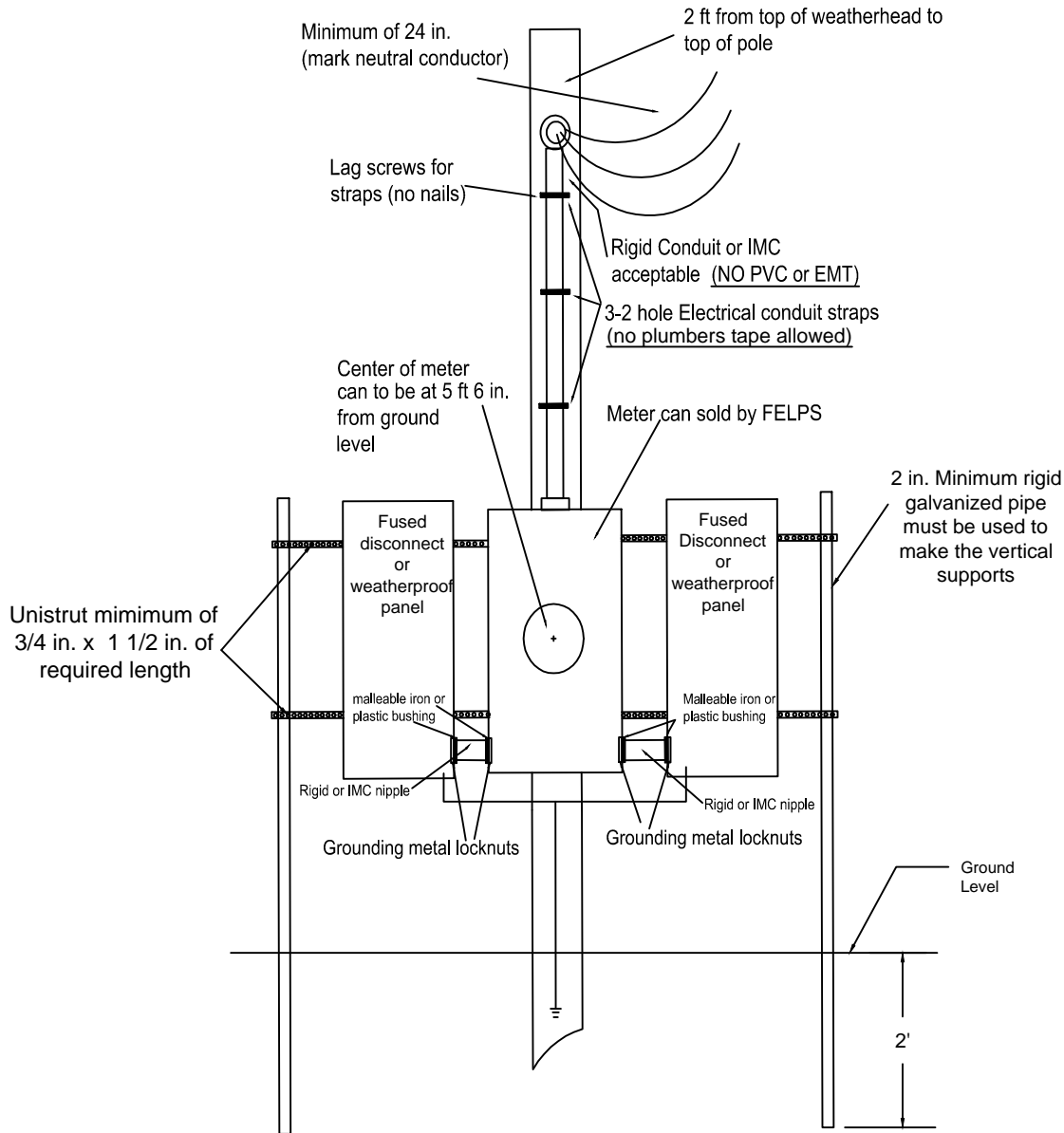
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Conventional Meter Loop for Meter Poles			
REV NO	REV BY	ISSUE DATE	02/16/2015
SCALE	NTS	TECH	JDK
PAGE	1 OF 1	DRAWING NO #	M8-26



NOTE:
COPPER GROUNDING ELECTRODE
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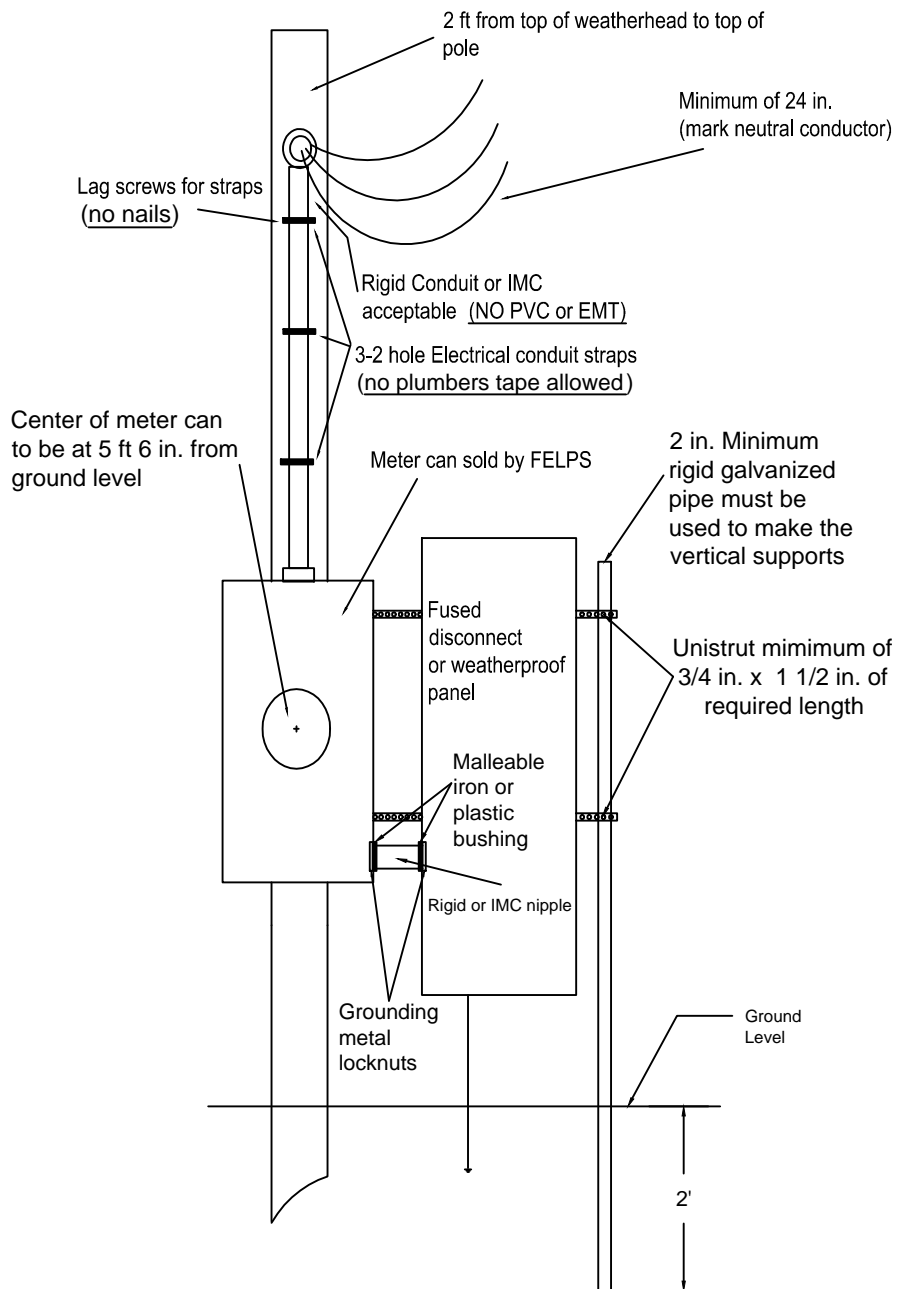
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MCQUEENEY, TEXAS 78123
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FAX # (830) 560-3203



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1400 FOURTH ST.
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FLORESVILLE, TX 78114
(830) 216-7000

TITLE		
Conventional Meter Loops for Meter Poles 1Ø 320 AMP & 3Ø 400 AMP		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	NTS	TECH
		JDK
PAGE	1 OF 1	DRAWINGS NO #
		M8-40



NOTE:
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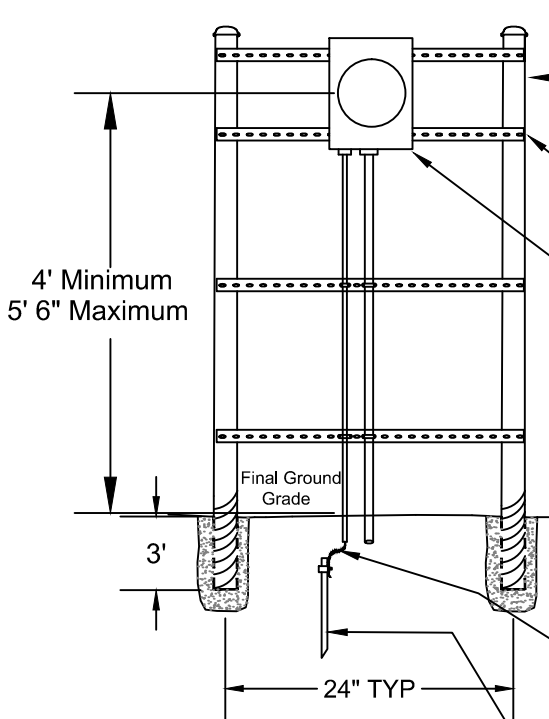
TITLE		
Conventional Meter Loops for Meter Poles 1Ø 320 AMP & 3Ø 400 AMP		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	TECH	
NTS	JDK	
PAGE	DRAWING NO #	
1 OF 1	M8-41	

This specification shall be used only in conjunction with the Floresville Electric Light and Power System (FELPS) and may not reflect all requirements of a specific installation.

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

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 as near as possible to transformer pad. Meter **CANNOT** be located in front of the transformer pad due to hot stick access requirements.



Meter stand: 2 in. Rigid Pipe, continuing a minimum of 3 ft below final ground grade with protective tar tape or polywrap extending 2 in. above and encased in concrete, 4 sack mix minimum. Top of pipe to have rain proof cap.

Galvanized mounting channel: Kendorf or equivalent, 1 5/8 in. x 1 5/8 in., welded or bolted to stand with galvanized bolts.

Meter socket: 4 ft minimum from center of socket not to exceed 5 ft 6 in. to final ground grade when measured 3 ft in front of meter. Secure at four points to two appropriately spaced mounting channels.

All exposed conduit to be 1 in. Rigid or IMC. Secure conduit to two appropriately spaced mounting channels with Kendorf straps or equivalent, or galvanized U bolts, sized to fit conduit.

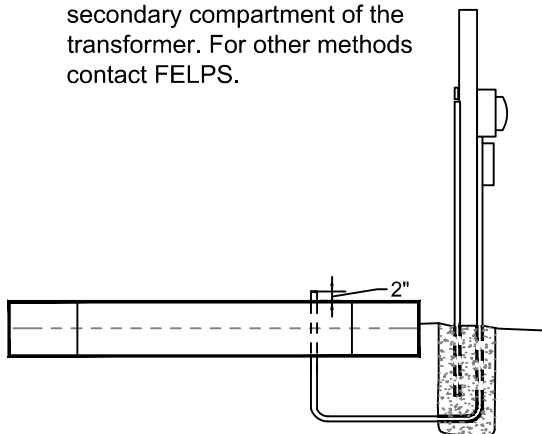
Below Grade conduit: 1 in. Schedule 40 PVC conduits shall be installed from meter can riser to transformer secondary compartment. All PVC will meet NEMA TC-2-1998 for electrical use.

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 in. sunlight resistant PVC conduit, continuing as near ground level as practical to connect ground wire to the ground rod and secured to two mounting channels with Kendorf straps or equivalent, or galvanized U bolts, sized to fit conduit.

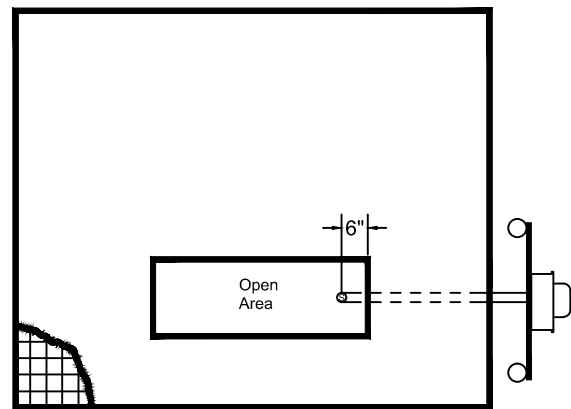
Ground rod: 5/8 in. x 8 ft copper-clad, driven flush with or below final ground grade.

NOTE:

This installation is not the only method for metering if the CT's and PT's are mounted within the secondary compartment of the transformer. For other methods contact FELPS.



SIDE VIEW



FRONT VIEW

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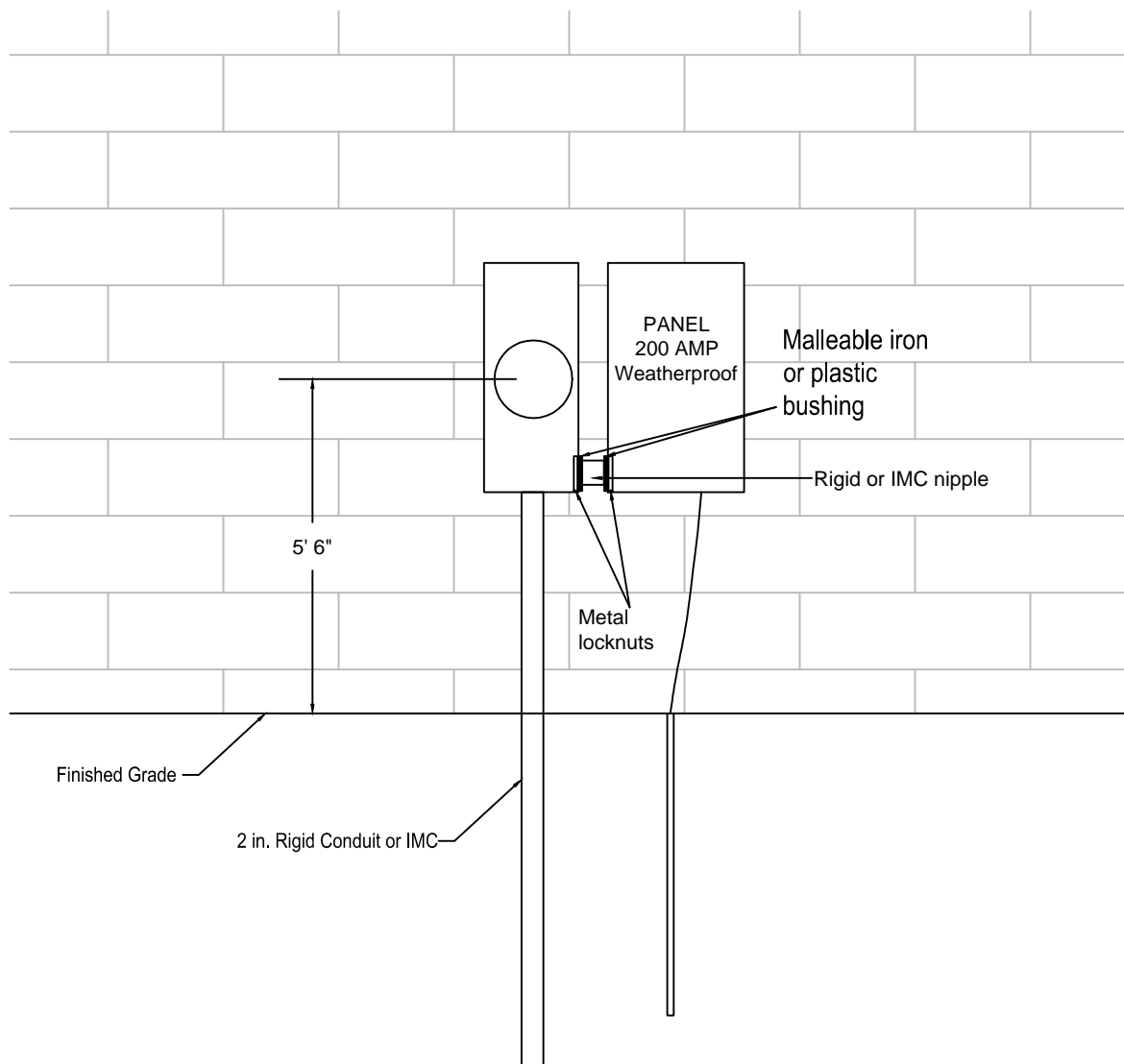


FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

1400 FOURTH ST.
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METERING ASSEMBLY CT STAND			
REV NO	REV BY	ISSUE DATE	
		02/16/2015	
SCALE	NTS	TECH	GRM
PAGE	1 OF 1	DRAWING NO. #	UM8-6

FELPS meter can must be installed on the left side of the breaker panel to allow for entrance of FELPS wire.



NOTE:
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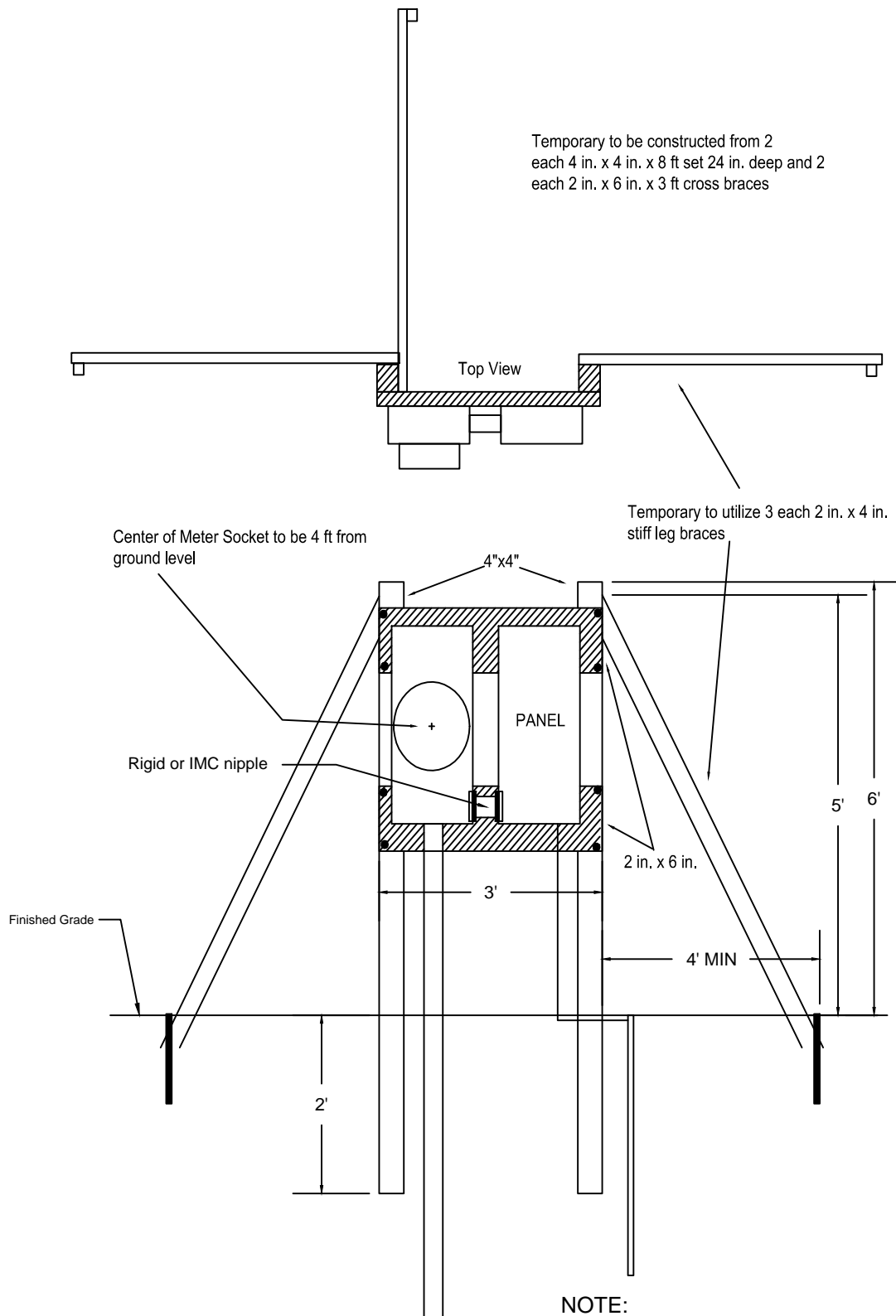
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TITLE			
Conventional URD Meter Loop 200 AMP			
REV NO	REV BY	ISSUE DATE	
		02/16/2015	
SCALE	NTS		TECH
			JDK
PAGE	1	OF	1
			DRAWING NO #
			UM8-20



NOTE:
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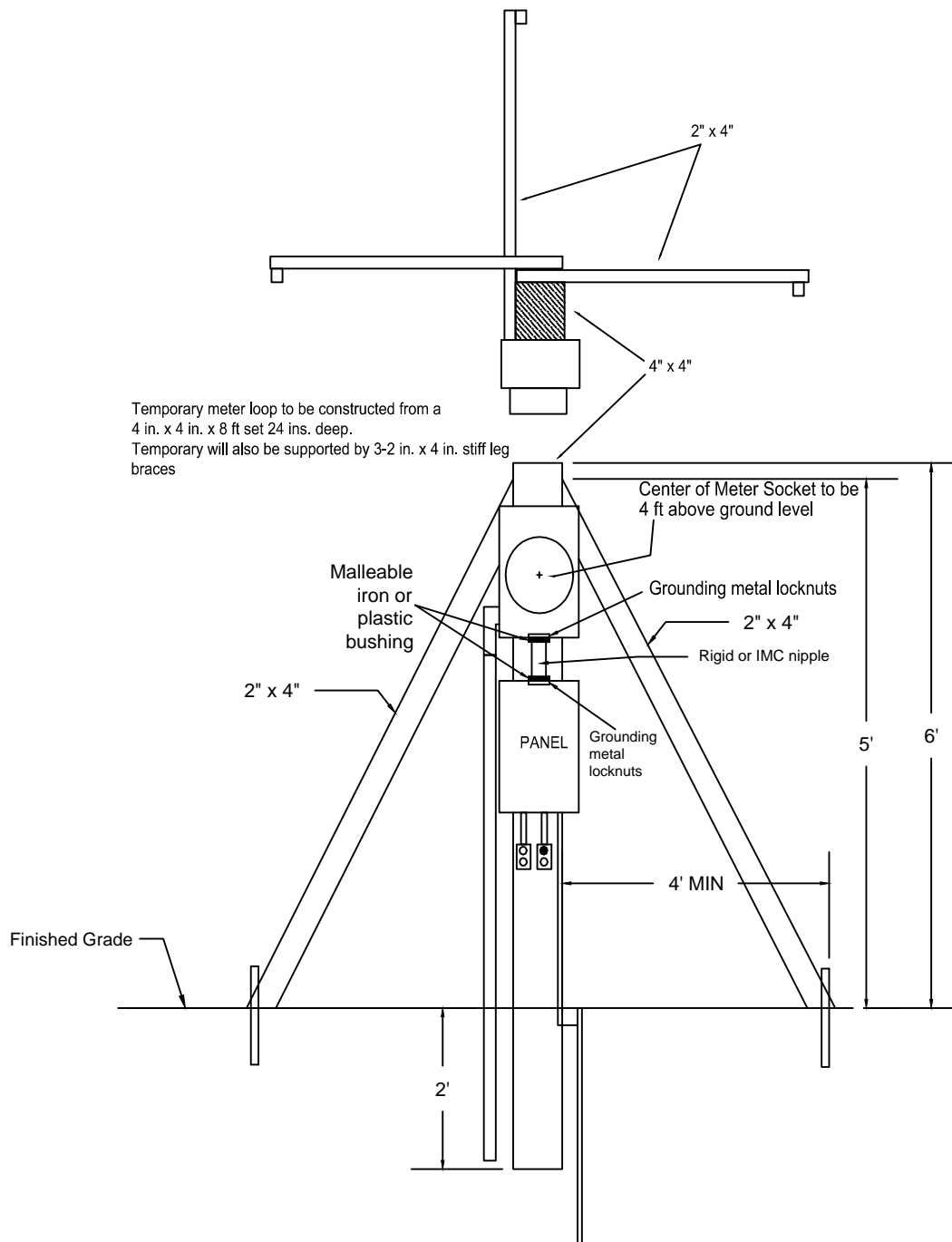


FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

1400 FOURTH ST.
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Underground Temporary Meter
Loop Option #1

REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	NTS	TECH
		JDK
PAGE	1 OF 1	DRAWING NO #
		UM8-21



NOTE:
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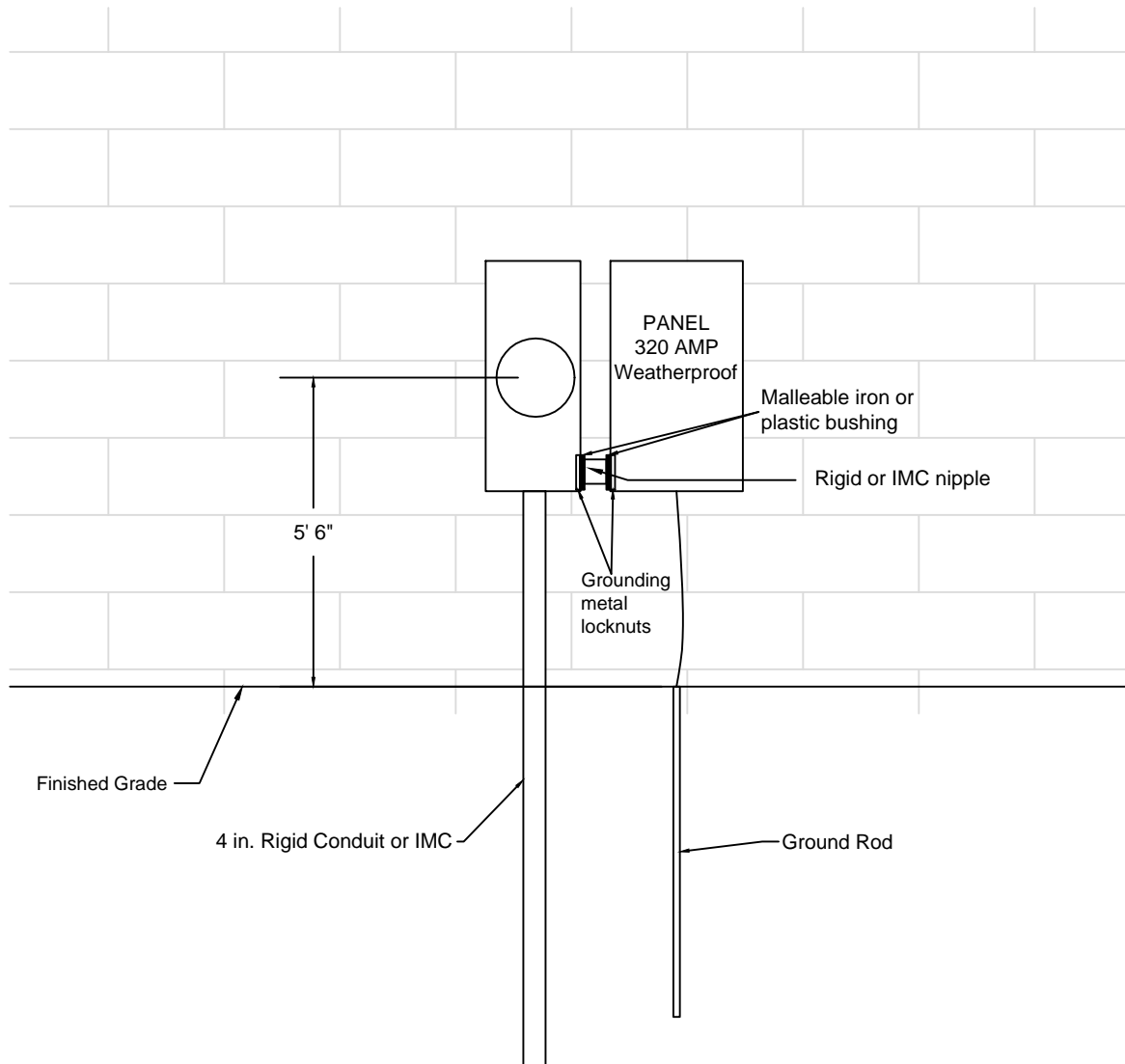
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Underground Temporary Meter Loop Option #2		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	NTS	TECH
		JDK
PAGE	1 OF 1	DRAWING NO #
		UM8-22



NOTE:
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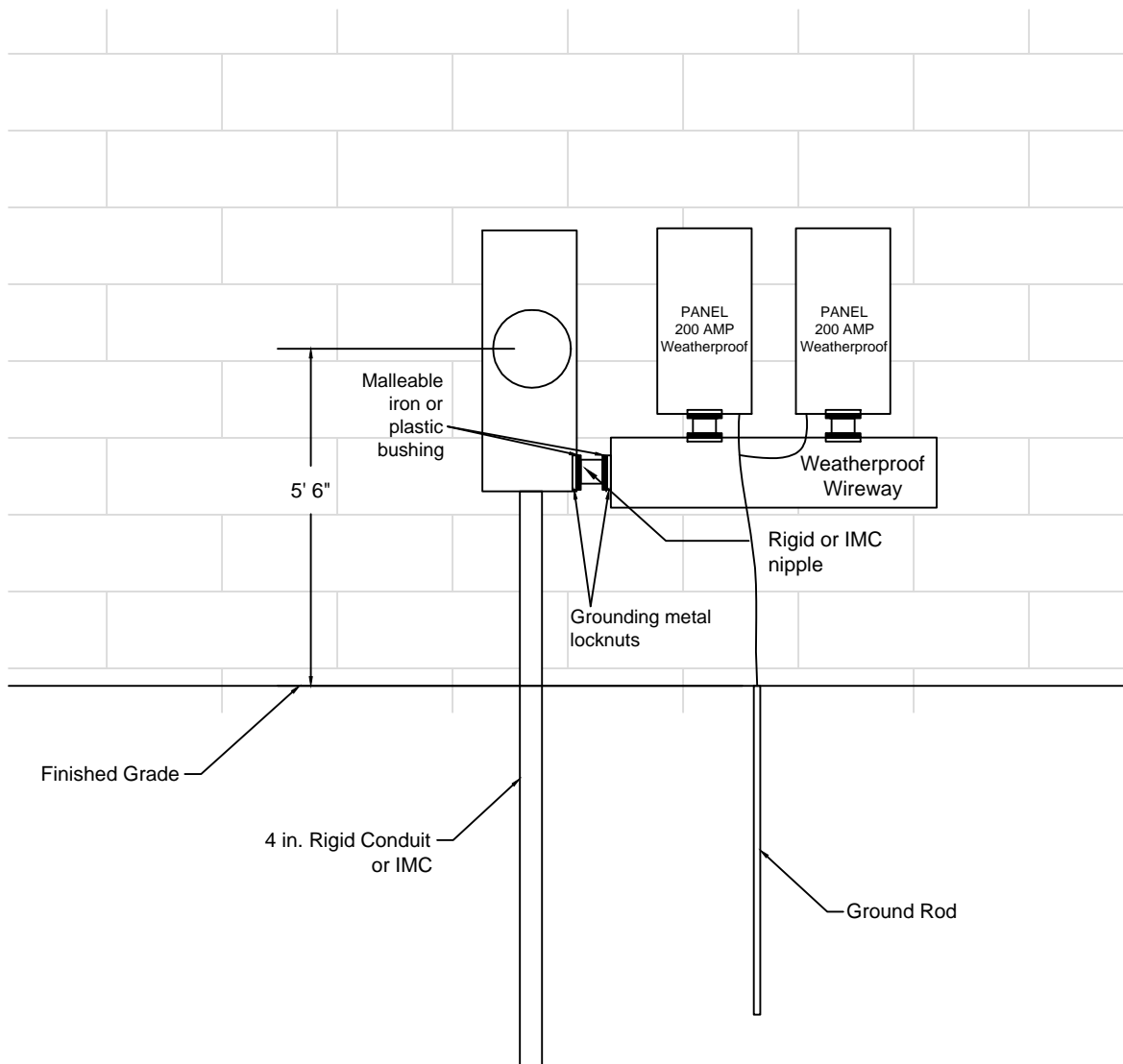
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REV NO		REV BY	ISSUE DATE
1			02/16/2015
SCALE		TECH	
NTS		JDK	
PAGE		DRAWING NO #	
1 OF 1		UM8-40	



NOTE:
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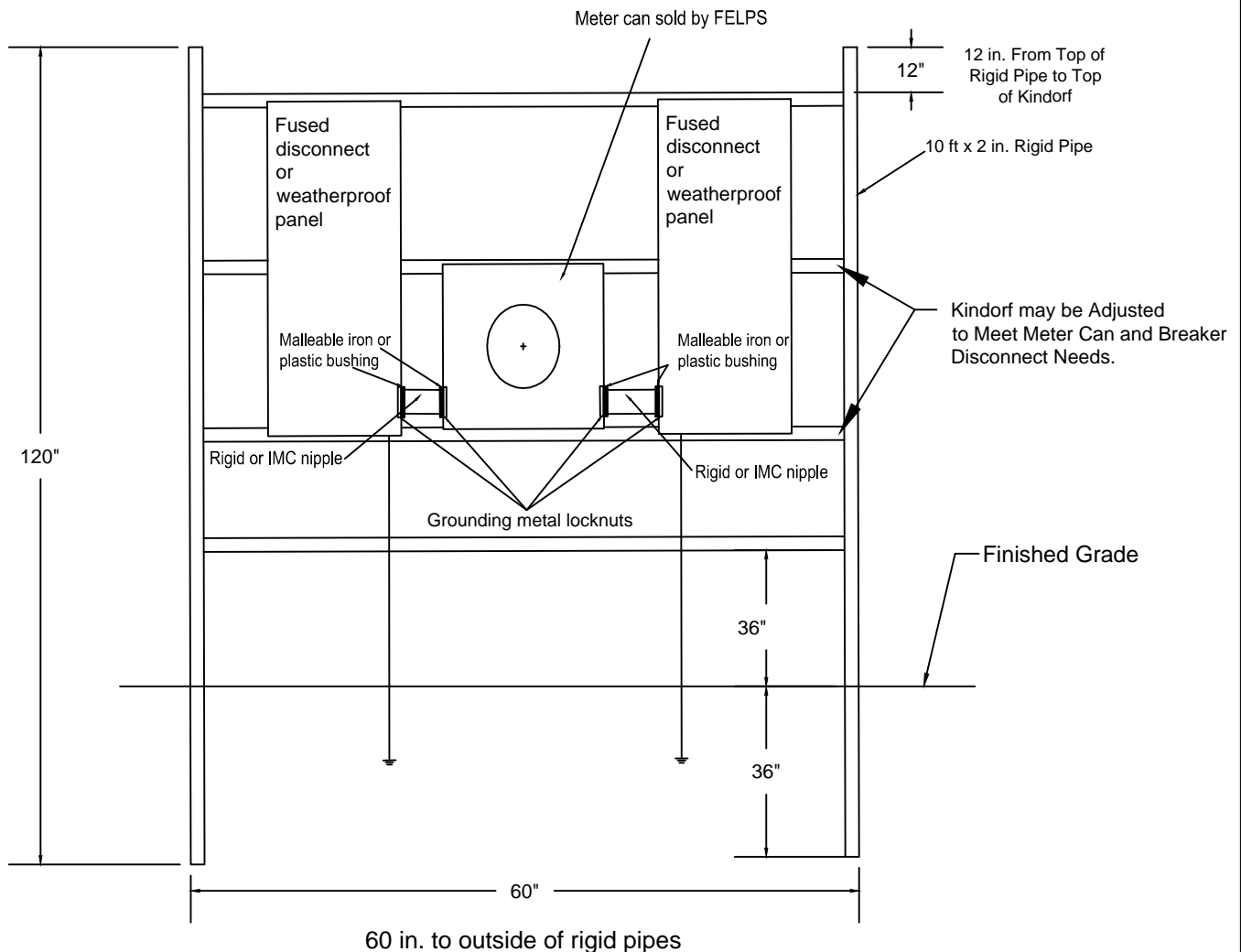


FLORESVILLE ELECTRIC LIGHT & POWER SYSTEM

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TITLE		
3Ø URD Meter Loop 400 AMP Two fuseable disconnects		
REV NO	REV BY	ISSUE DATE
		02/16/2015
SCALE	TECH	
NTS	JDK	
PAGE	DRAWING NO #	
1 OF 1	UM8-41	

Meter rack to be constructed of 2 in. galvanized rigid and supported with 1-5/8 in. B-Line Kindorf. Center of meter can to be 4 ft above ground level and centered as near as possible on rack. Kindorf is to attach to pipe with Kindorf strut clamps. Meter can to be attached with 3/8 in. spring nuts. Rigid pipe to be capped with 2 in. pipe caps. Meter can may be adjusted side to side depending on number of panels on rack. When 2 breaker/disconnect boxes are used the total amperage of the 2 boxes cannot exceed the amperage of the meter can.

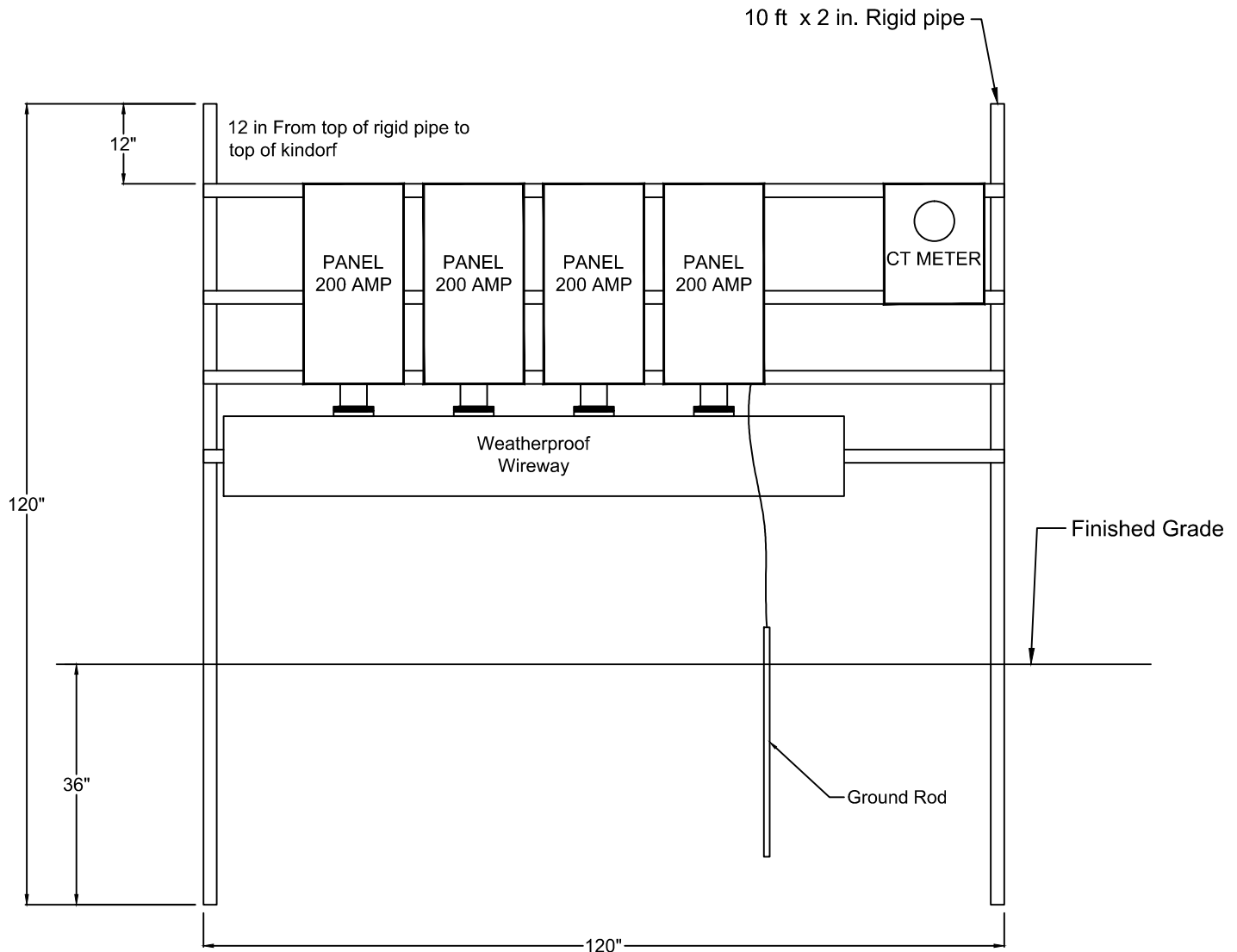


Bury 2 in. Galvanized Rigid Pipe 36 in. and Backfill with Concrete.

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Meter rack to be constructed of 2 in. galvanized rigid and supported with 1-5/8 in. B-Line Kindorf. Rigid pipe to be capped with 2 in. pipe caps. Center of Meter Can to be 5 ft 6 in. above ground level. Kindorf is to attach to pipe with Kindorf strut clamps. Kindorf may be adjusted to meet Meter Can and Breaker disconnect needs. Meter can to be attached with 3/8 in. spring nuts. Meter Can to be situated so as to allow no obstruction directly beneath Meter Can and ground, to allow for conduit attachment. Weatherproof Breaker Panels to be used. Main disconnect may be required at FELPS discretion.



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REV NO		REV BY	ISSUE DATE
1		OF	1
SCALE		TECH	
NTS		J. D. KRAUSE	
PAGE		DRAWING NO. #	
1		UM8-80	

800 AMP METER RACK
CT METERING

02/16/2015

J. D. KRAUSE

UM8-80