



## **Welcome to Bluebonnet Electric Cooperative**

Bluebonnet Electric Cooperative Inc. was incorporated in 1939 as the Lower Colorado River Electric Cooperative. The name of the Cooperative was changed to Bluebonnet Electric Cooperative, Inc. in 1964, to enhance a separate identity from the Lower Colorado River Authority (LCRA).

Bluebonnet serves all or part of 14 counties, covers over 3,800 square miles and serves more than 100,000 meters. Bluebonnet operates five retail centers: Bastrop, Brenham, Lockhart, Giddings and Manor. Bluebonnet is one of the largest electric cooperatives in Texas. A distribution cooperative, Bluebonnet purchases most of its power wholesale from the LCRA. Bluebonnet operates and maintains approximately 12,000 miles of distribution lines. Bluebonnet owns 20 substations and purchases power at 21 additional substations owned by the LCRA.

Bluebonnet provides this packet to all developers and their agents and it should be used as a guide in planning the installation of electrical equipment for receiving electrical power from the distribution system of Bluebonnet.

The information presented is subject to change and will be revised periodically to reflect any changes which may develop. Please refer to our website at [bluebonnet.coop](http://bluebonnet.coop) for any additional information as well as an online source of this packet.

Thank you. We look forward to working with you as your electrical provider.

Bluebonnet Project Coordination Staff

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## Meter Specifications

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### **Meter Specifications**

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Material Standards Page 55



# Bluebonnet Electric Cooperative, Inc. Detailed Commercial Load Data

(Anything other than Residential)

Bluebonnet Electric Cooperative, Inc.  
3198 E. Austin Street  
Giddings, TX 78942  
Phone: (800)-842-7708 Fax: (979)-542-4150

BP # \_\_\_\_\_ W.O. # \_\_\_\_\_

Email Address: \_\_\_\_\_

Applicant Name: \_\_\_\_\_ Phone No: \_\_\_\_\_

Service Address: \_\_\_\_\_ Date: \_\_\_\_\_

Electrician/Engineer: \_\_\_\_\_ Phone No: \_\_\_\_\_

**REQUESTED ELECTRICAL SERVICE**    **BUSINESS TYPE:** \_\_\_\_\_

**PRIMARY**

- Overhead
- Underground

**SECONDARY SERVICE**

- Overhead
- Underground

**SECONDARY VOLTAGE**

- |  |  |
|--|--|
| <input type="checkbox"/> 120/240 - 1Ø 3 Wire   | <input type="checkbox"/> 240/480 - 1Ø 3 Wire   |
| <input type="checkbox"/> 120/208 - 3Ø 4 Wire Wye (Service is limited to (3) 100 kVA transformers on the pole). | <input type="checkbox"/> 277/480 - 3Ø 4 Wire Wye (Service is limited to (3) 100 kVA transformers on the pole). |
| <input type="checkbox"/> 120/240 - 3Ø 4 WIRE DELTA (O/H banks only)  | <input type="checkbox"/> 480 - 3Ø 3 WIRE DELTA (O/H banks only, Corner Grounded)                               |

**Single phase transformers are limited to (1) 100 kVA transformer for an overhead service & (1) 167 kVA pad mount transformer for underground service.**

**MAIN DISCONNECT** (AMPERES) New \_\_\_\_\_ Existing (If Any) \_\_\_\_\_

Total connected load in Amps. \_\_\_\_\_

**SECONDARY SERVICE ENTRANCE CONDUIT**

Size \_\_\_\_\_ In.                      Quantity \_\_\_\_\_

**Member's service wire MUST be sized to accommodate the **TOTAL DISCONNECT SIZE or FUSE/BREAKER installed.****

**Residential service may down size their neutral 2 sizes.**

**Commercial service MUST pull in a full size neutral whether it will be used or not.**



**SECONDARY SERVICE ENTRANCE CONDUCTORS**

Copper Wire       Aluminum Wire

Wire Size \_\_\_\_\_ Quantity \_\_\_\_\_ per phase including the neutral.

**BUILDING SIZE** \_\_\_\_\_ SQ.FT.

**HOURS OF OPERATION** \_\_\_\_\_ **DAYS OF THE WEEK** \_\_\_\_\_

**HEAT and AIR CONDITIONING**

Electric Heat (total) \_\_\_\_\_ (kW) \_\_\_\_\_ (Amps)

A/C (total) \_\_\_\_\_ (kW) \_\_\_\_\_ (Amps)

Geothermal (motor size) \_\_\_\_\_ (kW) \_\_\_\_\_ (Amps)

\_\_\_\_\_ (FLA - Full Load Amps)

\_\_\_\_\_ (LRA - Locked Rotor Amps)

**TOTAL LIGHTING LOAD** \_\_\_\_\_ (kW) \_\_\_\_\_ (Amps)

**MOTORS** (Other Than Air Conditioning)

Motors or motor loads totaling more than 25 HP, may require soft starters or VFD's and/or 3 Phase Service. VFD's will require appropriate filtering. Please Contact Bluebonnet Electric's Engineering Department for further information.

**1Ø Motor(s)**

\_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)

\_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)

\_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)

\_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)

\_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)

**Total 1Ø Motor** \_\_\_\_\_ **HP** \_\_\_\_\_ **(Amps)**



**3Ø Motor(s)**

\_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)  
 \_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)  
 \_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)  
 \_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)  
 \_\_\_\_\_ HP \_\_\_\_\_ Quantity \_\_\_\_\_ (Amps)

**Total 3Ø Motor** \_\_\_\_\_ **HP** \_\_\_\_\_ **(Amps)**

**Itemized Amp Load**

|    | <u>Load</u> | <u>Quantity</u> | <u>Amps</u> | <u>kW</u> |
|----|-------------|-----------------|-------------|-----------|
| 1. | _____       | _____           | _____       | _____     |
| 2. | _____       | _____           | _____       | _____     |
| 3. | _____       | _____           | _____       | _____     |
| 4. | _____       | _____           | _____       | _____     |
| 5. | _____       | _____           | _____       | _____     |

**Total Itemized Load** \_\_\_\_\_ **(Amps)** \_\_\_\_\_ **(kW)**

**Total Load on System**

Heating Load \_\_\_\_\_ (Amps) \_\_\_\_\_ (kW)

A/C Load \_\_\_\_\_ (Amps) \_\_\_\_\_ (kW)

Lighting Load \_\_\_\_\_ (Amps) \_\_\_\_\_ (kW)

Motor Load \_\_\_\_\_ (Amps) \_\_\_\_\_ (kW)

Itemized Load \_\_\_\_\_ (Amps) \_\_\_\_\_ (kW)

**Total Load** \_\_\_\_\_ **(Amps)** \_\_\_\_\_ **(kW)**

AUTHORIZED ELECTRICIAN'S SIGNATURE \_\_\_\_\_

PRINT NAME: \_\_\_\_\_ LICENSE # \_\_\_\_\_

DATE: \_\_\_\_\_ PHONE # \_\_\_\_\_

## Developer's Checklist

### **Responsibility of Developer:**

- Developer must fill out a Development Information Request Form and submit to Bluebonnet along with design fee if required.
- Developer is responsible for confirming all Bluebonnet easement requirements with Bluebonnet prior to platting.
- Developer must have an engineering firm submit preliminary plan of development in digital (AutoCAD) format to Bluebonnet Engineering Department. These plans must include streets, wet utilities, and grading plans as well as any other utilities planned for said development.
- A design/re-design fee of \$50/hr. could be required either prior to or following the design process. This decision will be made at the discretion of Bluebonnet on a case by case basis. These fees are non-refundable and are subject to revision at Bluebonnet's discretion.
- Prior to Bluebonnet construction, two (2) hard copies of the approved plat must be submitted.
- Developer must provide and install all underground conduits at road crossings in the designated locations per Bluebonnet Crossing Plans, and if applicable, all electrical conduits in designated locations per Bluebonnet Construction Plans. See Bluebonnet Specifications. \*\*If project design includes overhead primary lines and transformers in conjunction with underground meter pedestals, Developer may install road crossings ONLY. Bluebonnet contractors shall complete installation from road crossings to point of termination and this labor and material will be figured into the respective Contribution In Aid of Construction (CIAC).\*\*
- Developer is responsible for following Bluebonnet inspection policies and procedures prior to and during conduit installation if using his own contractor (see Page 8).
- Property pins must be set and clearly visible at all property corners, at developer's expense, prior to Bluebonnet commencing construction.
- Developer is responsible for submitting contribution-in-aid of construction (CIAC) to cover Bluebonnet's construction costs prior to Bluebonnet commencing construction. Bluebonnet department will contact developer to communicate planned construction start date and duration following project being released for scheduling.
- Developer is responsible for all right-of-way clearing and grubbing to Bluebonnet specifications. Bluebonnet will clear the right-of-way for proposed overhead facilities for an additional charge (\$10.00 per linear foot). See Bluebonnet Specifications.
- Developer is responsible for ensuring conduit contractor and/or subcontractor adherence to all Bluebonnet Construction Specifications at all times.
- Developer is to provide ALL materials necessary for the conduit system he installs for his Bluebonnet Underground System. Bluebonnet will own these materials after proper installation is certified by a Bluebonnet Inspector.



## **Developer's Fees and Information**

### **Development Fees**

1. A design/re-design fee of \$50/hr. could be required either prior to or following the design process. This decision will be made at the discretion of Bluebonnet on a case by case basis. These fees are non-refundable and are subject to revision at Bluebonnet's discretion.
2. Every request for design and every alteration to all initial requests for design services may be considered as an individual request and, therefore are subject to additional fees to be determined by Bluebonnet.
3. When the developer or prospective developer enters into a line extension agreement with Bluebonnet for service, monies received for engineering design estimates of service will be applied to the cost of construction. Bluebonnet's Line Extension Policy can be found in the enclosed Member Handbook or on the "Residential Development" link on our website at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)
4. If the developer or prospective developer does not notify Bluebonnet within a 180 day period of initial design with the intent to proceed, then any design fees paid to date will be forfeited and the prospective project will be treated as new.
5. A maintenance fee of \$1 per linear foot of trench will be required at the time of contribution by the developer to cover the cost of any necessary repairs in the first year following the completion of Bluebonnet facilities installation.

### **Additional Notes**

Underground electrical lines in residential developments (including apartment complexes and any commercial service) shall be looped to accommodate the ability to feed from two or more directions so that in the event of an outage the most number of customers can be provided power until the failed line or equipment is restored. Avoid looping back in the same ditch. Never loop back to the same riser pole, sectionalizing cabinet, or switchgear.

## **Easements / Right-of-Way**

1. Bluebonnet shall be granted, at no cost and in writing suitable for recording, all rights-of-way and easements necessary to serve member, overhead or underground for the erection, maintenance, repair, replacement, removal or use of all wires, poles, machinery, fixtures, or equipment needed to supply and deliver electric service to the member.
2. A signed easement granted to Bluebonnet will be required before construction will commence. Once Bluebonnet facilities are installed, the easement will adhere to the facilities, from the installation point with a 15 foot easement on each side of the centerline (30 feet of easement) of overhead facilities and 20 foot easement (10 feet on each side of the centerline), for underground facilities.
3. Only Bluebonnet equipment or material is allowed to be attached to Bluebonnet property, except where said equipment and/or materials is required to provide electrical service and said equipment and/or material has been authorized by Bluebonnet.
4. Please note that Bluebonnet facilities must be installed in easements that are exclusive to Bluebonnet with no other utilities being allowed in these easements except for buried crossings.

### **Location of Facilities**

All overhead or underground distribution lines and equipment will be located in an area that is easily accessible by Bluebonnet vehicles and personnel.

## Developer Installed Conduit Guidelines and Procedures

1. Developer will review Bluebonnet's construction specifications prior to trenching and conduit installation (specifications included in this document). Developer is encouraged to contact Bluebonnet inspector listed in #3 below with any questions.
2. Developer must provide and install all underground material in the designated locations per Bluebonnet's design. Bluebonnet will provide and install the associated hardware such as sectionalizers and transformers that will be located above ground.
3. Developer will contact the Bluebonnet Project Coordinator when conduit and stub-ups are installed prior to filling the ditch (open ditch inspection). Bluebonnet will respond within 48 hours of notification. Please choose from the list of Bluebonnet Project Coordinators to schedule an inspection.
  - **Project Coordinator Rodney Gerik, may be reached at (979) 540-8814 (cell), or at [rodney.gerik@bluebonnet.coop](mailto:rodney.gerik@bluebonnet.coop).**
  - **Project Coordinator Shawn Ely, may be reached at (979) 540-7361 (cell), or at [shawn.ely@bluebonnet.coop](mailto:shawn.ely@bluebonnet.coop).**
  - **Project Coordinator Bill Scoggins, may be reached at (979) 716-7038 (cell), or at [bill.scoggins@bluebonnet.coop](mailto:bill.scoggins@bluebonnet.coop).**
  - **Project Coordinator Shane Mathison, may be reached at (979) 542-8540, or at [shane.mathison@bluebonnet.coop](mailto:shane.mathison@bluebonnet.coop).**
  - **Project Coordinator Jorge Varillas, may be reached at (512) 764-2838, or at [Jorge.Varillas@bluebonnet.coop](mailto:Jorge.Varillas@bluebonnet.coop).**
  - **Project Coordinator Scott Iselt, may be reached at (979) 542-8522, or at [Scott.Iselt@bluebonnet.coop](mailto:Scott.Iselt@bluebonnet.coop).**
  - **Project Coordinator Wyatt Rosenauer, may be reached at (512) 332-8665, or at [Wyatt.Rosenauer@bluebonnet.coop](mailto:Wyatt.Rosenauer@bluebonnet.coop).**
4. Trenches will remain open until inspected and approved by the Bluebonnet inspector. Upon inspection, developer will be advised as to what may or may not be backfilled.
5. Bluebonnet retains the right to terminate any conduit installation if inspection reveals non-compliance with Bluebonnet inspection policies, procedures, or specifications until said issues are resolved and approved through re-inspection.
5. Equipment location and conduit stubs must meet clearance requirements on all sides as outlined in Bluebonnet Specifications.
6. Developer or his/her contractor is responsible for acquiring any and all permits and remitting any necessary fees for trench and conduit installation (excavation plans, traffic control plans, digging permits, etc.)

## Developer's Checklist

### Responsibility of Developer:

- Developer is responsible for confirming all easement requirements with Bluebonnet prior to installation.
- Developer is responsible for following Bluebonnet's inspection policies and procedures prior to and during conduit installation.
- Developer is responsible for all right-of-way clearing or grubbing to Bluebonnet's specifications.
- Developer is responsible for adherence to all Bluebonnet's Construction Specifications.

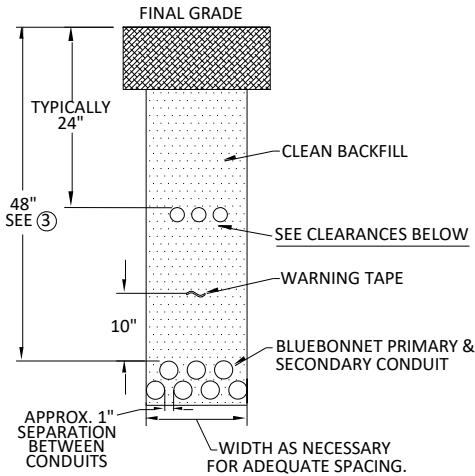
## Developer's Fees and Information

1. Every request for alteration to initial requests for design services are subject to additional fees to be determined by Bluebonnet.
2. Bluebonnet's Line Extension Policy can be found in the Member Handbook.
3. A maintenance fee of \$1 per linear foot of trench will be required at the time of contribution by the member to cover the cost of any necessary repairs in the first year following the completion of Bluebonnet's underground facilities installation.
4. Cost estimate given to developer will be good for **60** days.

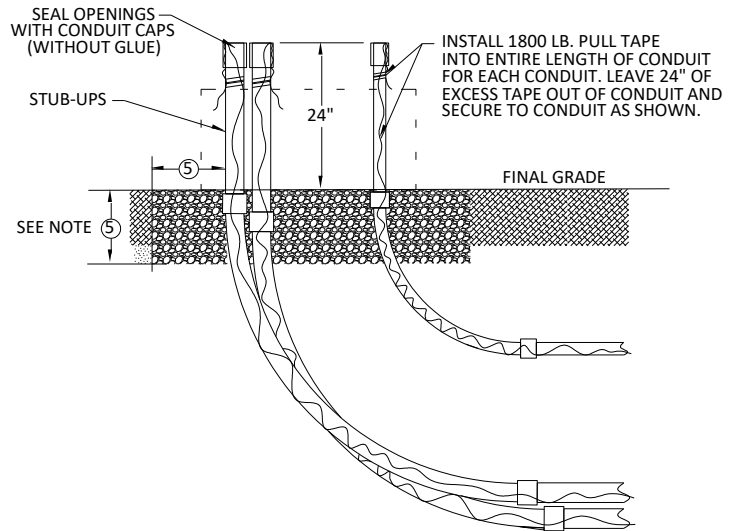
# DITCH AND CONDUIT PLACEMENT

## NON-ROAD CROSSING

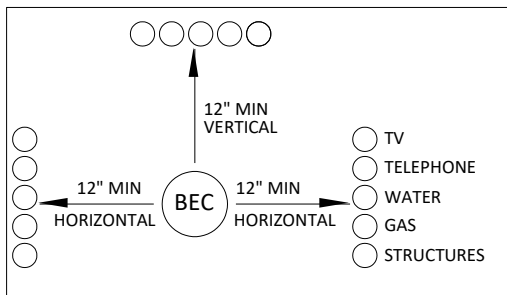
**DITCH ASSIGNMENT**  
**FRONT VIEW**



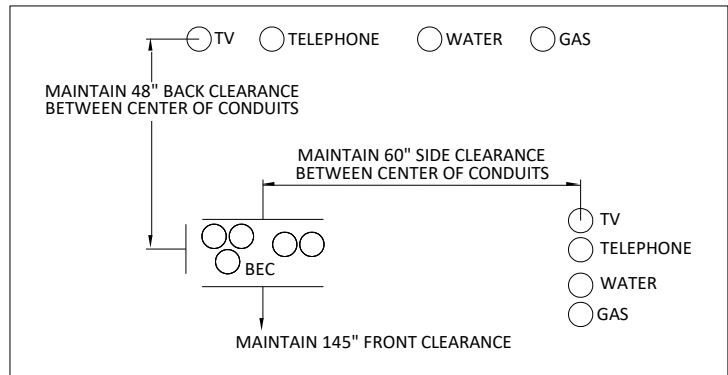
**CONDUIT STUB-UP**  
**SIDE VIEW**



**CONDUIT CLEARANCES**  
**FRONT VIEW**



**CONDUIT STUB-UP CLEARANCES**  
**TOP VIEW**



ANY CONDUITS STUBBED OUT FOR FUTURE USE SHALL EXTEND A MINIMUM OF 5' FROM EQUIPMENT. ENDS SHALL BE MARKED WITH 3" DIAMETER GREY PVC CONDUIT, EXTENDING 4' ABOVE GRADE AND PAINTED RED.

**NOTES:**

1. CONDUIT SHALL BE GREY SCHEDULE 40 PVC. | PRIMARY & SECONDARY= 3" | LIGHTING= 2"
2. CONDUIT ELBOW: PRIMARY & SECONDARY= 90°, 48" SWEEP | STREETLIGHT = 90°, 24" SWEEP
3. NORMAL DITCH COVER DEPTH IS 48". ADJUSTMENTS MAY BE MADE TO 48" DEPTH IF NECESSARY UPON BLUEBONNET APPROVAL.
4. SEPARATION FROM OTHER UTILITIES SHALL BE 12" MINIMUM OR SUFFICIENT TO PREVENT ANY FORESEEN DAMAGE OF EITHER FACILITY TO THE OTHER.
5. GRAVEL FOR PADS SHALL BE 3/8" WASHED PEA GRAVEL. DEPTH AND WIDTH SHALL BE TO EQUIPMENT SPECIFICATION.



**Bluebonnet**

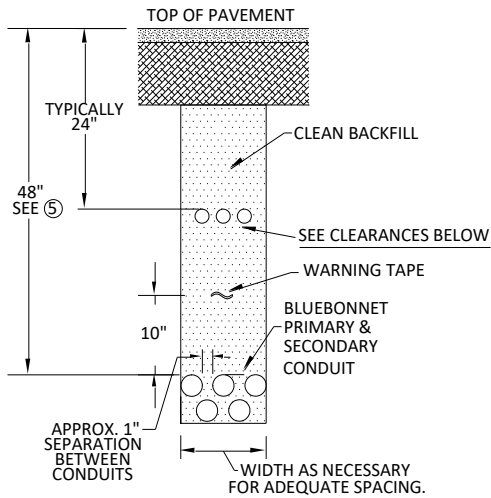
|        |                      |               |
|--------|----------------------|---------------|
| Drawn: | Approved:            | Date:         |
| CV     | Project Coordinators | Oct. 31, 2019 |

**UNDERGROUND DISTRIBUTION**

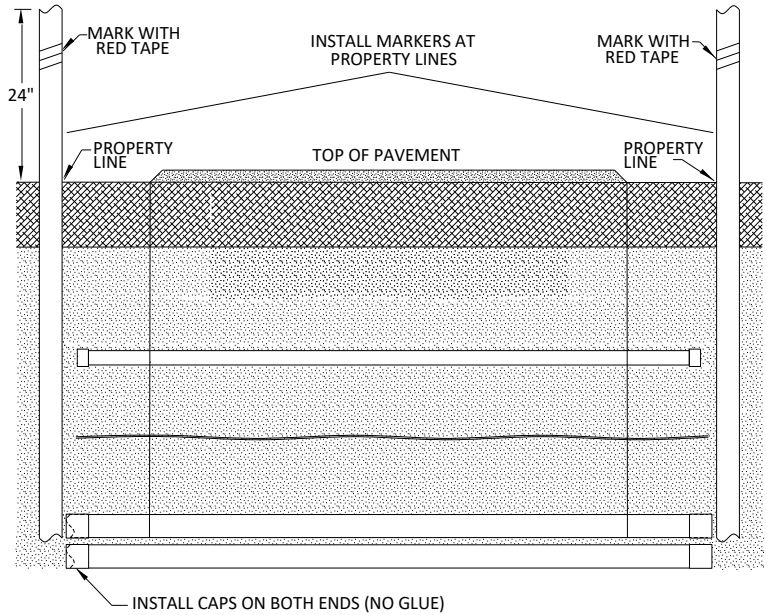
**J-3**

# DITCH AND CONDUIT PLACEMENT ROAD CROSSING

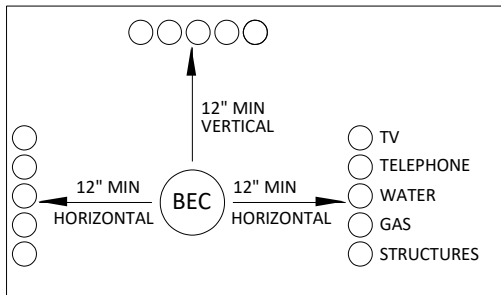
**CONDUIT  
FRONT VIEW**



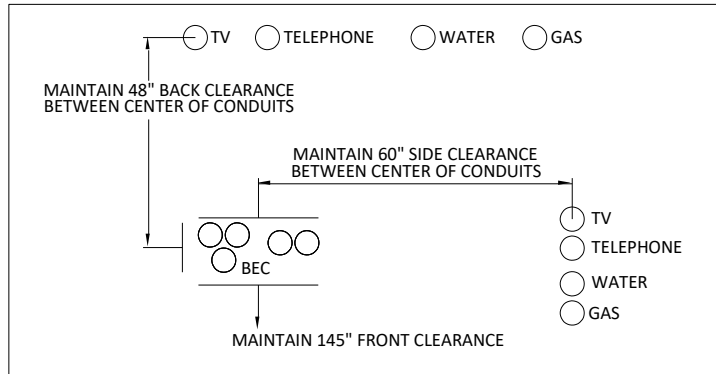
**CONDUIT  
SIDE VIEW**



**CONDUIT CLEARANCES  
FRONT VIEW**



**CONDUIT STUB-UP CLEARANCES  
TOP VIEW**



**ANY CONDUITS STUBBED OUT FOR FUTURE USE SHALL EXTEND A MINIMUM OF 5' FROM EQUIPMENT. ENDS SHALL BE MARKED WITH 3" DIAMETER GREY PVC CONDUIT, EXTENDING 4' ABOVE GRADE AND PAINTED RED.**

**NOTES:**

1. STATE AND LOCAL CODES MAY REQUIRE DIFFERENT STANDARDS, IN WHICH CASE THE MOST STRINGENT CODE SHALL TAKE PRECEDENCE.
2. CONDUIT SHALL BE MINIMUM GRAY SCHEDULE 40 PVC. | PRIMARY & SECONDARY = 3" | LIGHTING = 2"
3. CONDUIT ELBOW: PRIMARY & SECONDARY = 90°, 48" SWEEP | LIGHTING = 90°, 24" SWEEP
4. LENGTH OF CONDUITS SHALL BE FROM PROPERTY LINE TO PROPERTY LINE.
5. NORMAL COVER DEPTH IS 48". ADJUSTMENTS MAY BE MADE TO 48" DEPTH IF NECESSARY UPON BLUEBONNET APPROVAL.

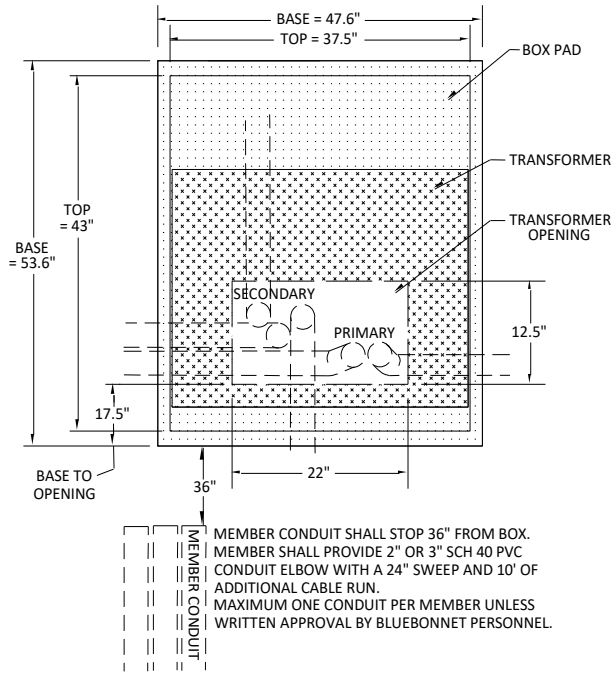


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| Drawn: | Approved:            | Date:         |
| CV     | Project Coordinators | Oct. 31, 2019 |

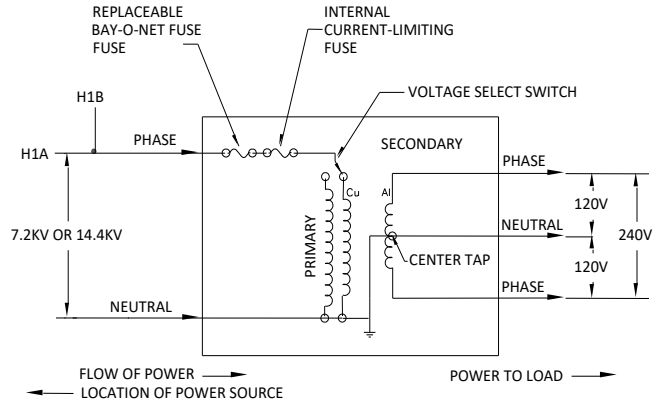
|                                 |            |
|---------------------------------|------------|
| <b>UNDERGROUND DISTRIBUTION</b> | <b>J-4</b> |
|---------------------------------|------------|

# 1PH PADMOUNT TRANSFORMER DIMENSIONS AND WIRING

**TOP VIEW**

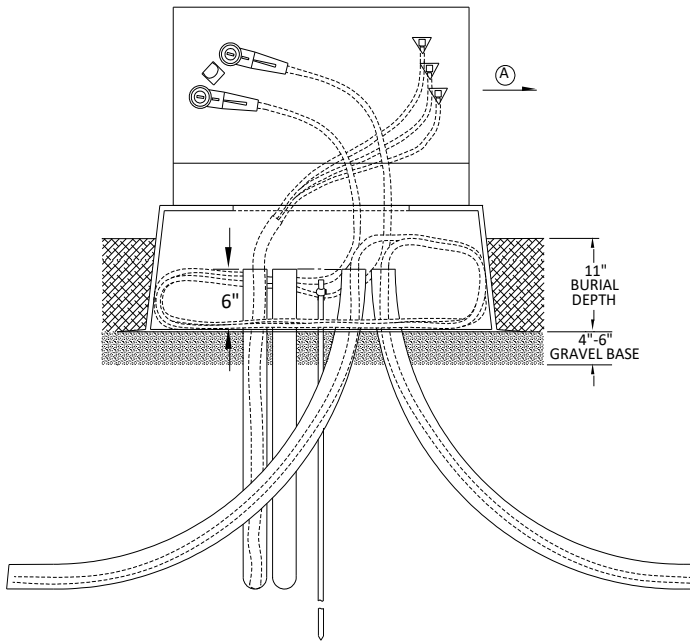


**WIRING DIAGRAM**

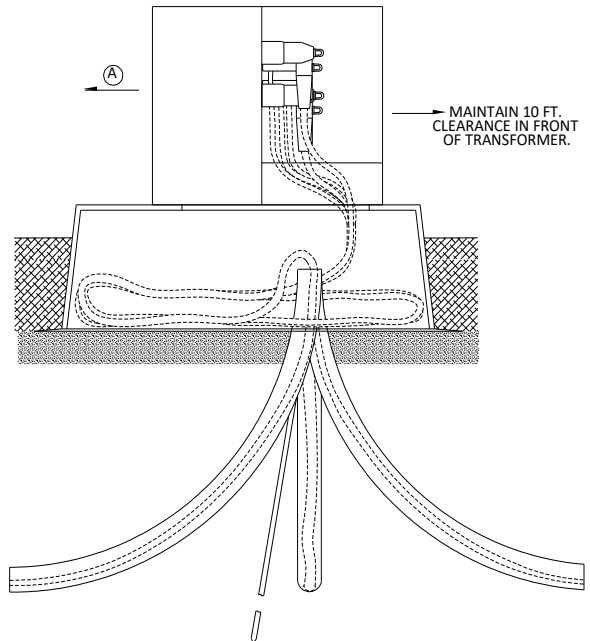


Ⓐ CLEARANCE BETWEEN WALLS AND TRANSFORMER:  
 NON-COMBUSTIBLE - 3 FT.  
 COMBUSTIBLE: UP TO 75 kVA - 10 FT.  
 GREATER THAN 75 kVA - 20 FT.

**FRONT VIEW**



**SIDE VIEW**



DATE APPROVED:  
 SEPTEMBER 8, 2016

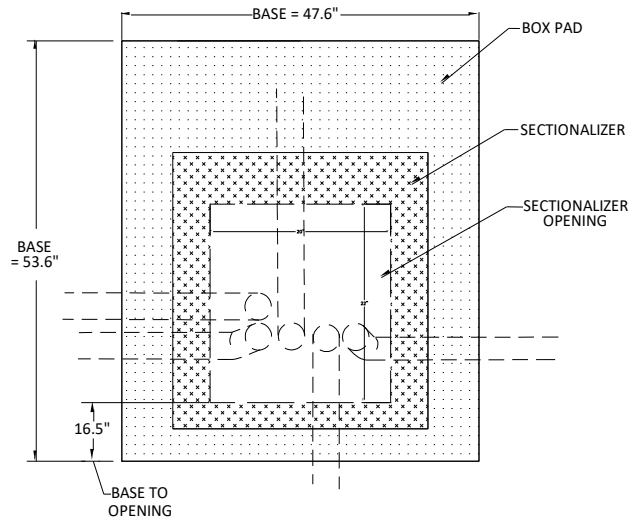
UNDERGROUND DISTRIBUTION

A-2

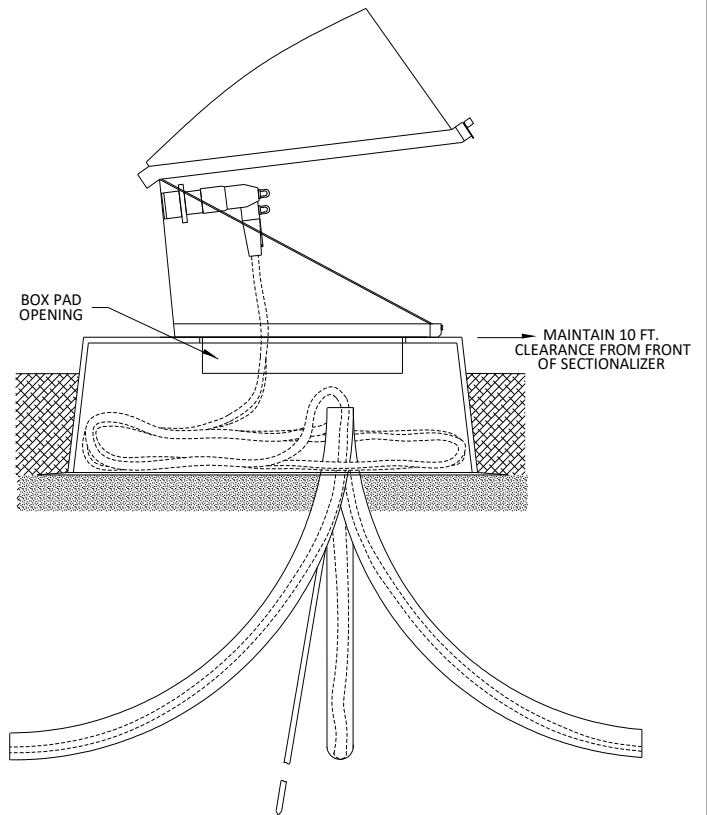
# 1PH PADMOUNT SECTIONALIZER

## DIMENSIONS AND WIRING

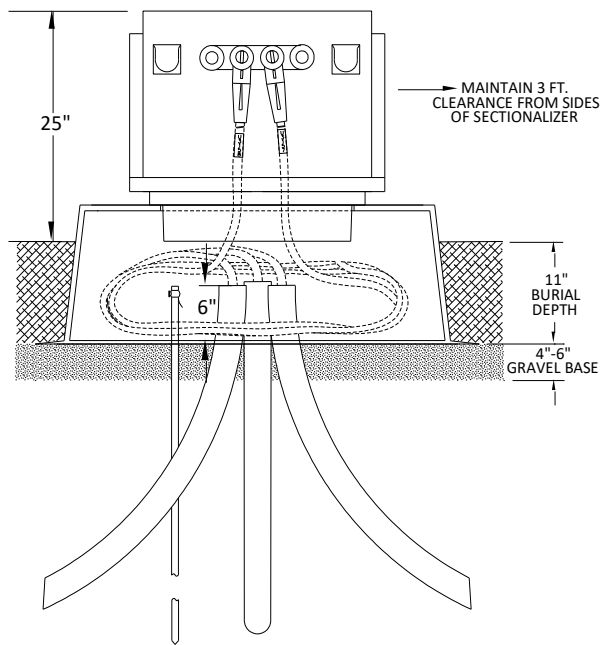
TOP VIEW



SIDE VIEW



FRONT VIEW



DATE APPROVED:  
SEPTEMBER 8, 2016

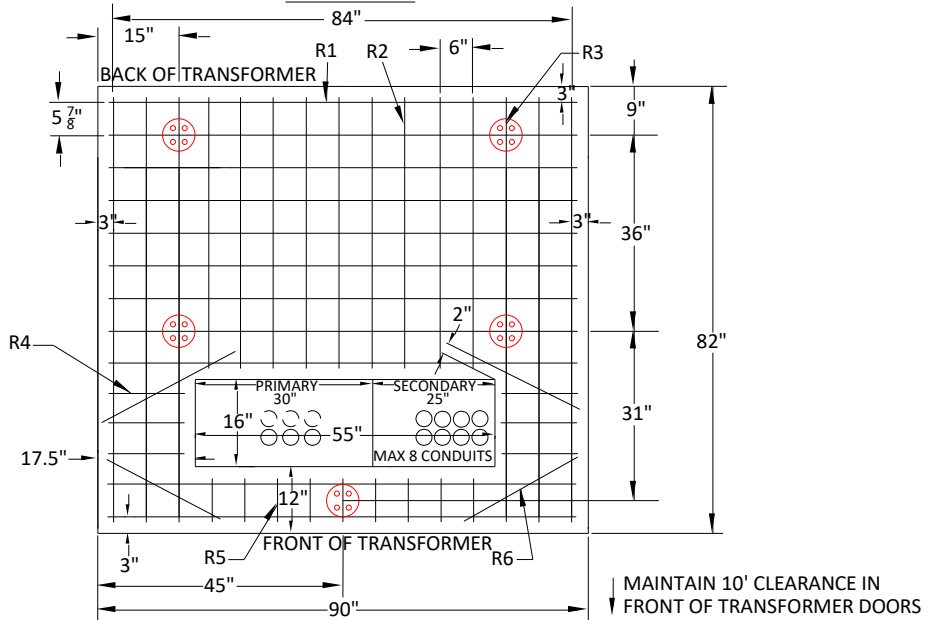
UNDERGROUND DISTRIBUTION

C-2



# 3PH TRANSFORMER PAD 45 - 750 KVA (UM3-A)

TOP VIEW

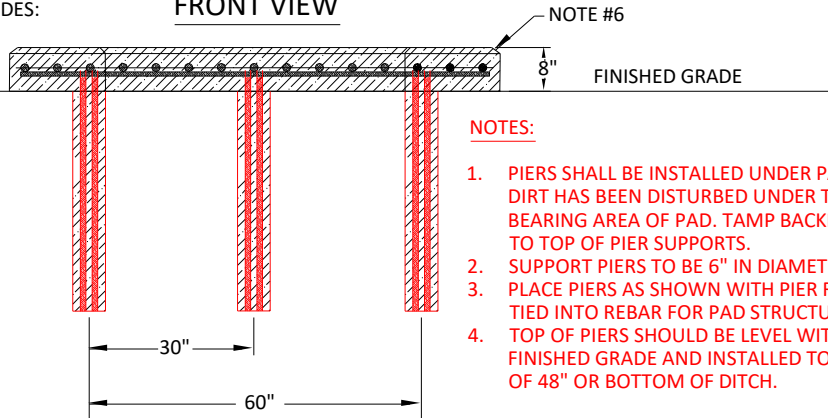


FRONT VIEW

MAINTAIN CLEARANCE FROM TRANSFORMER SIDES:  
 OTHER TRANSFORMERS - 5 FT.  
 NON-COMBUSTIBLE WALLS - 5 FT.  
 COMBUSTIBLE WALLS:  
 0 TO 75 KVA - 10 FT.  
 >75 KVA - 20 FT.

| REINFORCING BARS; 1/2" |         |         |         |        |         |
|------------------------|---------|---------|---------|--------|---------|
| R1                     | R2      | R3      | R4      | R5     | R6      |
| 11 X 86"               | 9 X 50" | 6 X 78" | 6 X 14" | 9 X 8" | 4 X 25" |

SEE NOTE #3



**NOTES:**

1. PIERS SHALL BE INSTALLED UNDER PAD WHEN DIRT HAS BEEN DISTURBED UNDER THE LOAD BEARING AREA OF PAD. TAMP BACKFILL (95%) TO TOP OF PIER SUPPORTS.
2. SUPPORT PIERS TO BE 6" IN DIAMETER.
3. PLACE PIERS AS SHOWN WITH PIER REBAR TIED INTO REBAR FOR PAD STRUCTURE.
4. TOP OF PIERS SHOULD BE LEVEL WITH FINISHED GRADE AND INSTALLED TO A DEPTH OF 48" OR BOTTOM OF DITCH.

ANY CONDUITS STUBBED OUT FOR FUTURE USE SHALL EXTEND A MINIMUM OF 5' FROM EQUIPMENT. ENDS SHALL BE MARKED WITH 3" DIAMETER GREY PVC CONDUIT, EXTENDING 4' ABOVE GRADE AND PAINTED RED.

**NOTES:**

1. TAMP GROUND UNDER PAD BEFORE SETTING TO PREVENT UNEVEN SETTLING.
2. CONCRETE: 3000 POUNDS MIN. PER SQUARE INCH; 4% TO 6% ENTRAINED AIR, 3/4" MAX. SIZE AGGREGATE.
3. REINFORCING STEEL: ATSM-A615 GRADE 60; EVENLY SPACE APPROXIMATELY 6" O.C. EACH WAY AND SECURELY TIED TOGETHER.
4. MINIMUM 2 INCH CONCRETE COVER OVER REINFORCING STEEL.
5. WOOD FLOAT LEVEL FINISH LEAVING NO DEPRESSIONS.
6. 3/4" CHAMFER ALL EDGES.
7. PRIMARY AND SECONDARY CONDUIT SHALL BE INSTALLED AND SEALED BEFORE POURING PAD.
8. IF FUTURE EXPANSION TO A TRANSFORMER LARGER THAN 750 KVA IS POSSIBLE, BLUEBONNET MAY REQUEST THE CONSTRUCTION OF THE PAD ON PAGE B-6.
9. **MAXIMUM OF 8 CONDUITS, 4" SCHEDULE 40 PVC PIPES ARE ALLOWED IN THE SECONDARY COMPARTMENT.**
10. STUB THE SECONDARY PIPES AS CLOSE TO THE EDGE SECONDARY CUTOUT AS POSSIBLE. (SEE DRAWING)
11. MAXIMUM OF 6 CONDUITS, 3" SCHEDULE 40 PVC PIPES ARE ALLOWED IN THE PRIMARY COMPARTMENT.

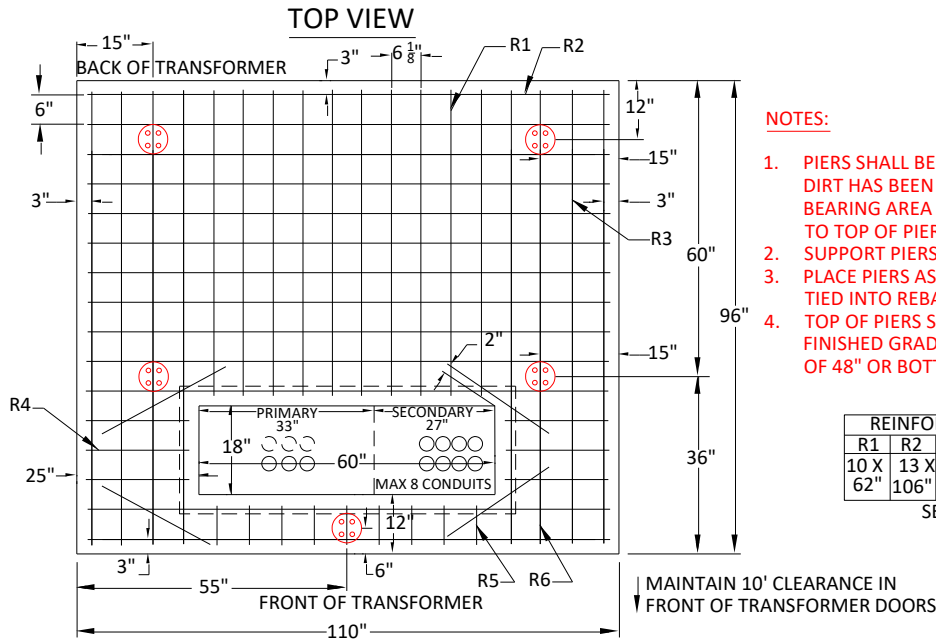


|        |              |               |
|--------|--------------|---------------|
| Drawn: | Approved:    | Date:         |
| SF     | Coordinators | Nov. 12, 2019 |

UNDERGROUND DISTRIBUTION

B-5

# 3PH TRANSFORMER PAD 1000 - 2500 KVA (UM3-B)

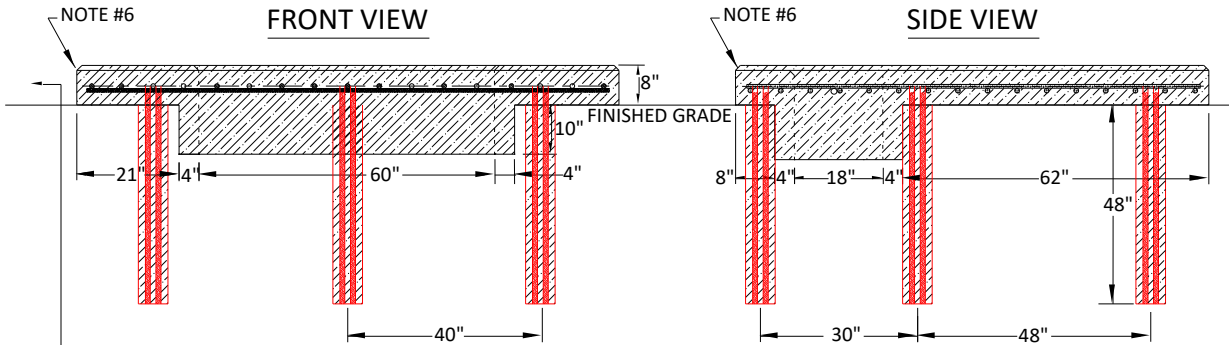


**NOTES:**

1. PIERS SHALL BE INSTALLED UNDER PAD WHEN DIRT HAS BEEN DISTURBED UNDER THE LOAD BEARING AREA OF PAD. TAMP BACKFILL (95%) TO TOP OF PIER SUPPORTS.
2. SUPPORT PIERS TO BE 6" IN DIAMETER.
3. PLACE PIERS AS SHOWN WITH PIER REBAR TIED INTO REBAR FOR PAD STRUCTURE.
4. TOP OF PIERS SHOULD BE LEVEL WITH FINISHED GRADE AND INSTALLED TO A DEPTH OF 48" OR BOTTOM OF DITCH.

| REINFORCING BARS; 1/2" |      |     |     |     |     |
|------------------------|------|-----|-----|-----|-----|
| R1                     | R2   | R3  | R4  | R5  | R6  |
| 10 X                   | 13 X | 8 X | 6 X | 9 X | 4 X |
| 62"                    | 106" | 92" | 21" | 8"  | 25" |

SEE NOTE #3



NOTE #6  
 MAINTAIN CLEARANCE FROM TRANSFORMER SIDES:  
 OTHER TRANSFORMERS - 5 FT.  
 NON-COMBUSTIBLE WALLS - 5 FT.  
 COMBUSTIBLE WALLS:  
 0 TO 75 KVA - 10 FT.  
 >75 KVA - 20 FT.

**NOTES:**

1. TAMP GROUND UNDER PAD BEFORE SETTING TO PREVENT UNEVEN SETTLING.
2. CONCRETE: 3000 POUNDS MIN. PER SQUARE INCH; 4% TO 6% ENTRAINED AIR, 3/4" MAX. SIZE AGGREGATE.
3. REINFORCING STEEL: ATSM-A615 GRADE 60; EVENLY SPACE APPROXIMATELY 6" O.C. EACH WAY AND SECURELY TIED TOGETHER.
4. MINIMUM 2 INCH CONCRETE COVER OVER REINFORCING STEEL.
5. WOOD FLOAT LEVEL FINISH LEAVING NO DEPRESSIONS.
6. 3/4" CHAMFER ALL EDGES.
7. PRIMARY AND SECONDARY CONDUIT SHALL BE INSTALLED AND SEALED BEFORE POURING PAD.
8. MAXIMUM OF 8 CONDUITS, 4" SCHEDULE 40 PVC PIPES ARE ALLOWED IN THE SECONDARY COMPARTMENT.
9. STUB THE SECONDARY PIPES AS CLOSE TO THE EDGE SECONDARY CUTOUT AS POSSIBLE. (SEE DRAWING)
10. MAXIMUM OF 6 CONDUITS, 3" SCHEDULE 40 PVC PIPES ARE ALLOWED IN THE PRIMARY COMPARTMENT.



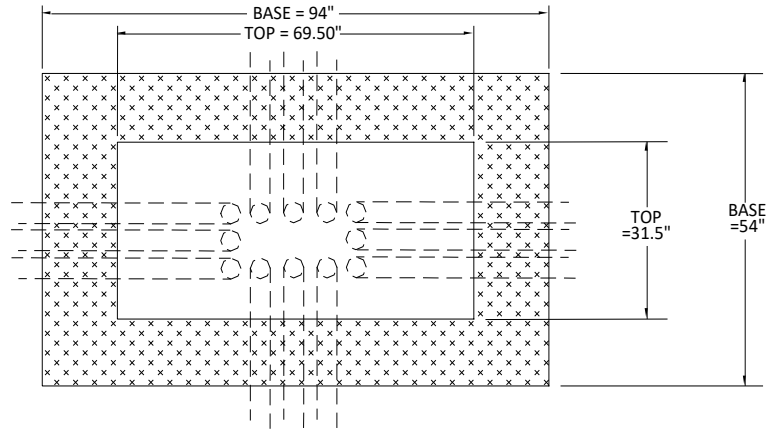
Drawn: SF  
 Approved: Coordinators  
 Date: Nov. 12, 2019

UNDERGROUND DISTRIBUTION

B-6

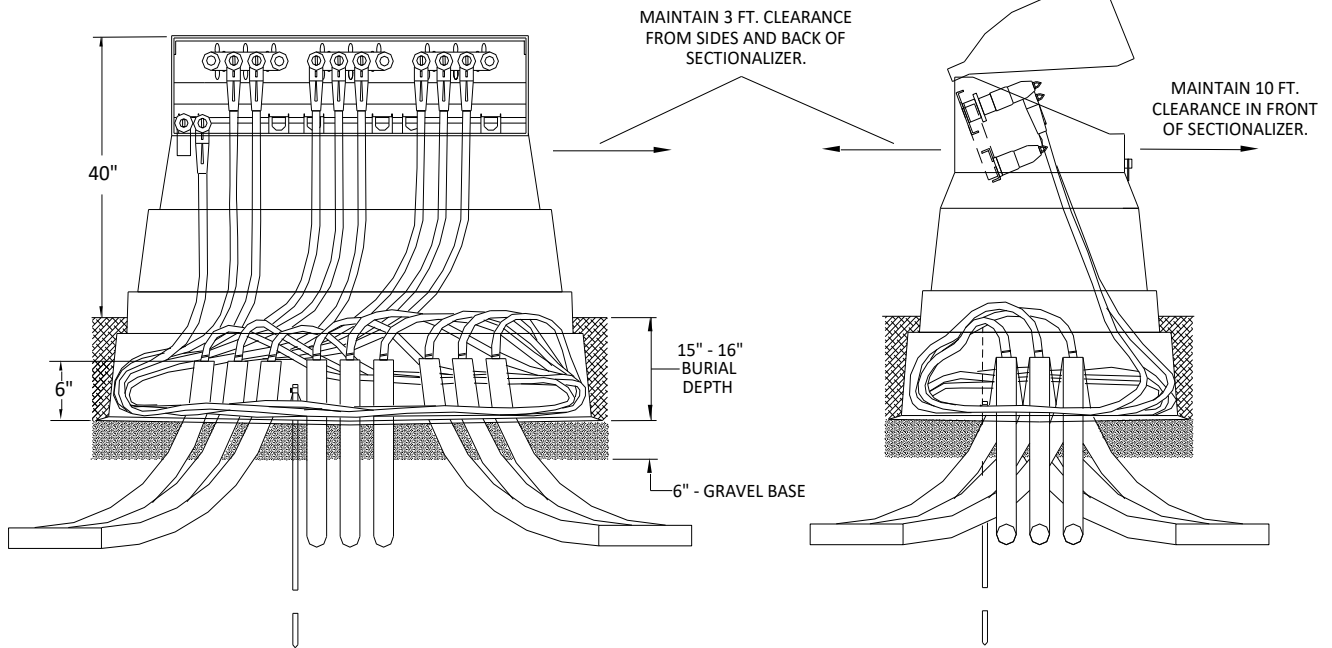
# 3PH 600A SECTIONALIZER - DIMENSIONS

TOP VIEW



FRONT VIEW

SIDE VIEW



ANY CONDUITS STUBBED OUT FOR FUTURE USE SHALL EXTEND A MINIMUM OF 5' FROM EQUIPMENT. ENDS SHALL BE MARKED WITH 3" DIAMETER GREY PVC CONDUIT, EXTENDING 4' ABOVE GRADE AND PAINTED RED.

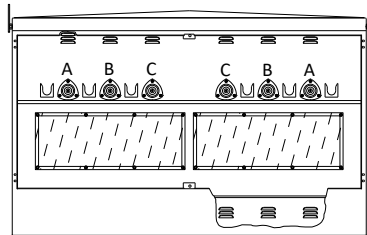


DATE APPROVED:  
SEPTEMBER 8, 2016

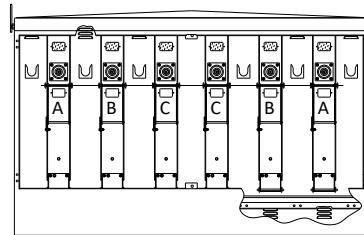
UNDERGROUND DISTRIBUTION D-2B

# USGE-9 SWITCHGEAR CONSTRUCTION STANDARD

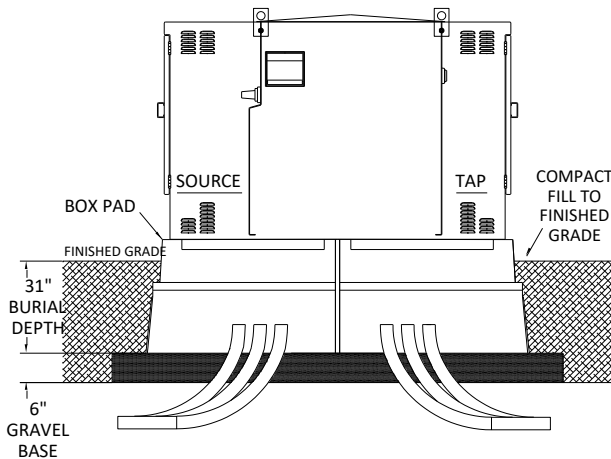
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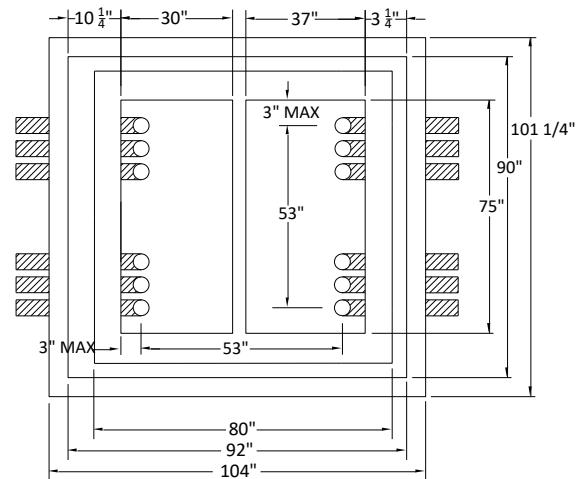
TAP



FRONT VIEW



TOP VIEW



| BEC STK#: | QTY:  | MATERIAL USGE-9:                            |
|-----------|-------|---|
| 13119     | 1     | SWITCHGEAR, AIR, 2-200 FUSE, 2-600 SWITCHES |
| 10988     | 2     | ROD, GROUND 5/8" X 8', 13 MIL CU CLAD       |
| 10262     | 2     | CLAMP, GRD ROD GALV 3/4 L                   |
| 10333     | 13    | CONN, SPLIT BOLT CC #2 L                    |
| 11196     | 6.148 | WIRE, COPPER BARE S.D. #2 7 STR L           |
| 10732     | 4     | INSECTICIDE ANT CONTROL L                   |
| 10779     | 6     | LOCK, PADLOCK, STANDARD WITH BEC LOGO       |
| 10386     | 6     | CONN,INSUL.L.B.PARKING STAND L              |
| 10237     | 6     | CAPS, ASSY GRD TERMINATION L                |
| 11202     | 26.12 | WIRE, COPPER BARE 4/0 19 STR L              |
| 10172     | 6     | BUSHING, LB INSERT 25KV L                   |
| 14300     | 6     | FITTING, FUSE END, SM-20, 15/25 KV L        |

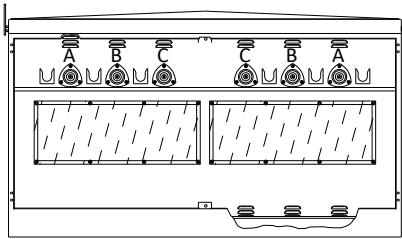


DATE APPROVED:  
MARCH 8, 2017

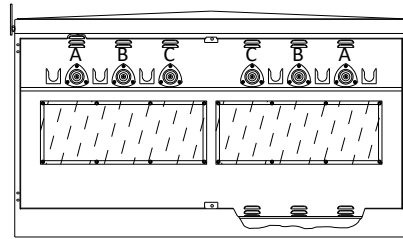
UNDERGROUND DISTRIBUTION

# USGE-10 SWITCHGEAR CONSTRUCTION STANDARD

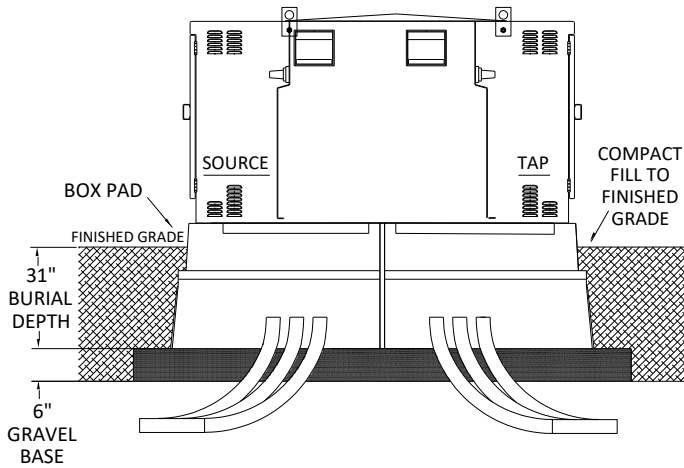
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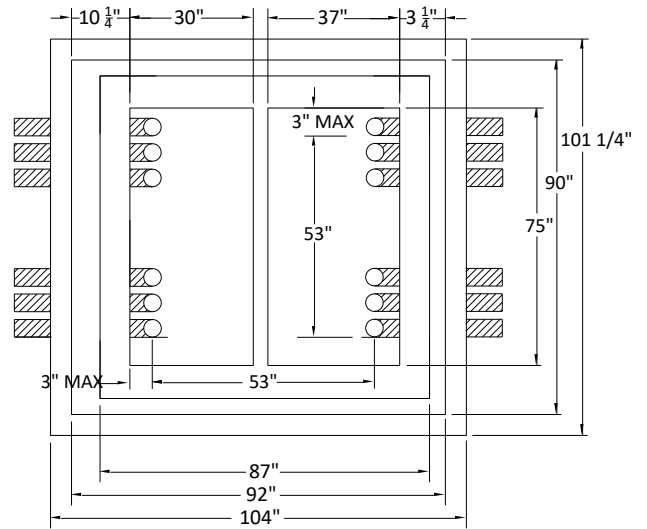
TAP



FRONT



TOP VIEW



| BEC STK#: | QTY:  | MATERIAL USGE-10:                           |
|-----------|-------|---|
| 13130     | 1     | SWITCHGEAR, AIR, PADMOUNTED, 4-600 SWITCHES |
| 10988     | 2     | ROD, GROUND 5/8" X 8', 13 MIL CU CLAD       |
| 10262     | 2     | CLAMP, GRD ROD GALV 3/4 L                   |
| 10333     | 13    | CONN, SPLIT BOLT CC #2 L                    |
| 11196     | 6.148 | WIRE, COPPER BARE S.D. #2 7 STR L           |
| 10732     | 4     | INSECTICIDE ANT CONTROL L                   |
| 10779     | 10    | LOCK, PADLOCK, STANDARD WITH BEC LOGO       |
| 11202     | 26.12 | WIRE, COPPER BARE 1/8 19 STR L              |



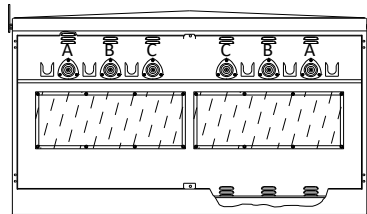
**Bluebonnet**

DATE APPROVED:  
MARCH 8, 2017

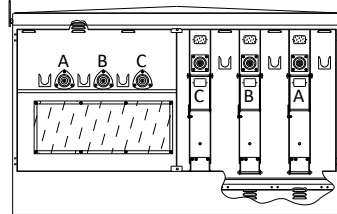
UNDERGROUND DISTRIBUTION

# PME-11 SWITCHGEAR CONSTRUCTION STANDARD

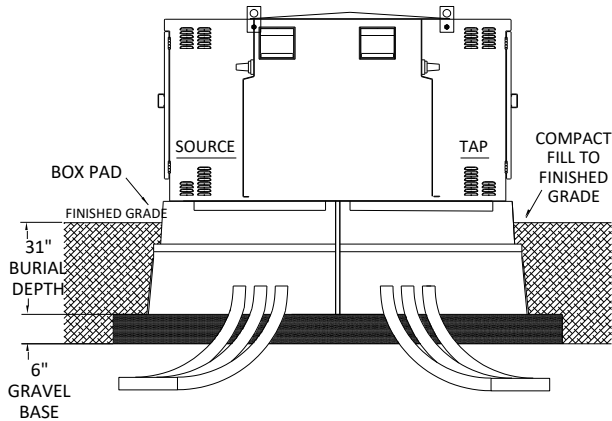
SOURCE



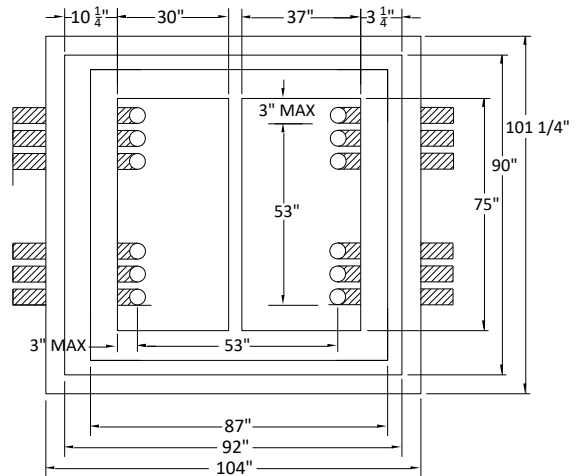
TAP



FRONT



TOP VIEW



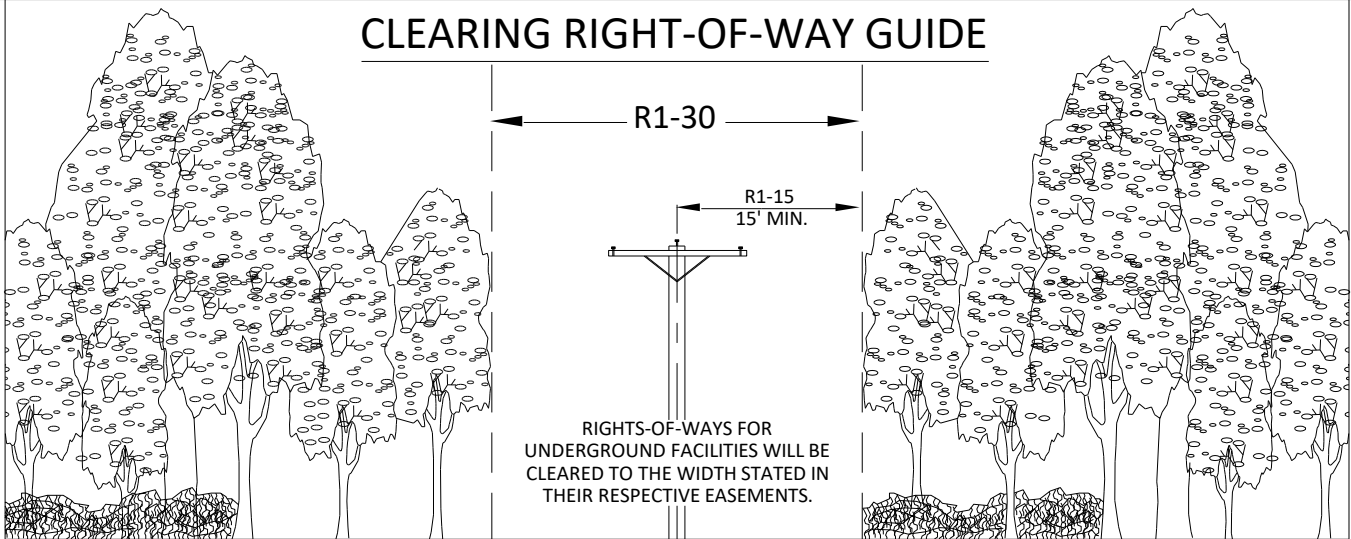
| BEC STK#: | QTY:  | MATERIAL USGE-9:                            |
|-----------|-------|---|
| 12971     | 1     | SWITCHGEAR, AIR, 1-200 FUSE, 3-600 SWITCHES |
| 10988     | 2     | ROD, GROUND 5/8" X 8', 13 MIL CU CLAD       |
| 10262     | 2     | CLAMP, GRD ROD GALV 3/4 L                   |
| 10333     | 13    | CONN, SPLIT BOLT CC #2 L                    |
| 11196     | 6.148 | WIRE, COPPER BARE S.D. #2 7 STR L           |
| 10732     | 4     | INSECTICIDE ANT CONTROL L                   |
| 10779     | 8     | LOCK, PADLOCK, STANDARD WITH BEC LOGO       |
| 10386     | 3     | CONN,INSUL.L.B.PARKING STAND L              |
| 10237     | 3     | CAPS, ASSY GRD TERMINATION L                |
| 11202     | 26.12 | WIRE, COPPER BARE 4/0 19 STR L              |
| 10172     | 3     | BUSHING, LB INSERT 25KV L                   |
| 14300     | 3     | FITTING, FUSE END, SM-20, 15/25 KV L        |



DATE APPROVED:  
MARCH 8, 2017

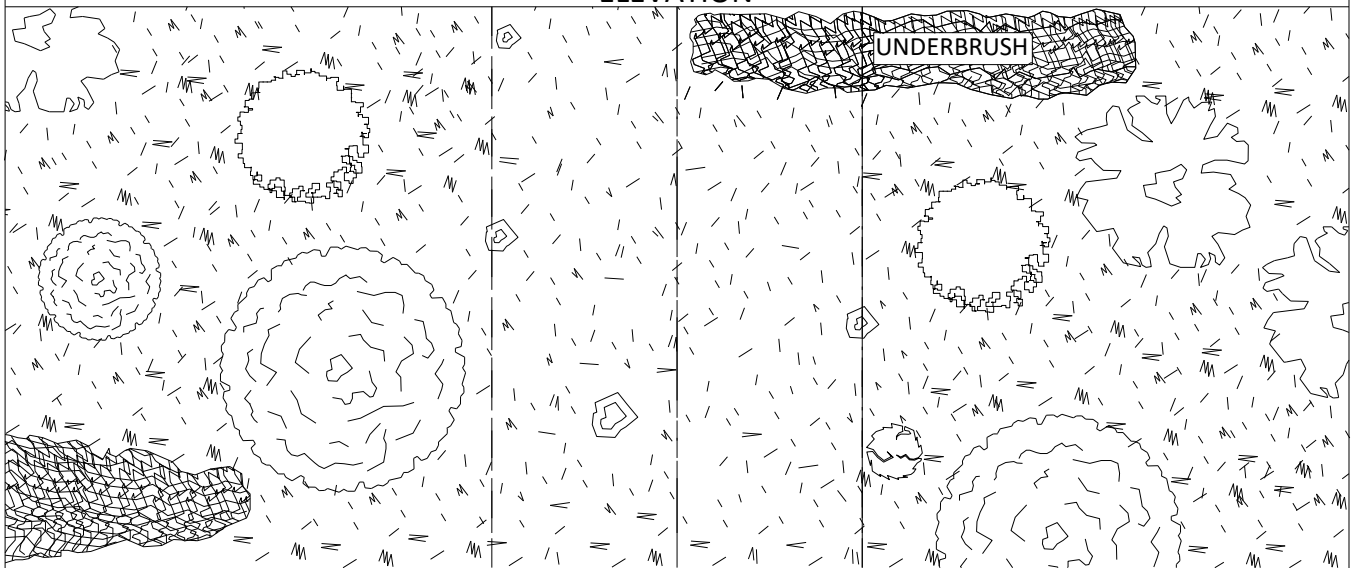
UNDERGROUND DISTRIBUTION

# CLEARING RIGHT-OF-WAY GUIDE

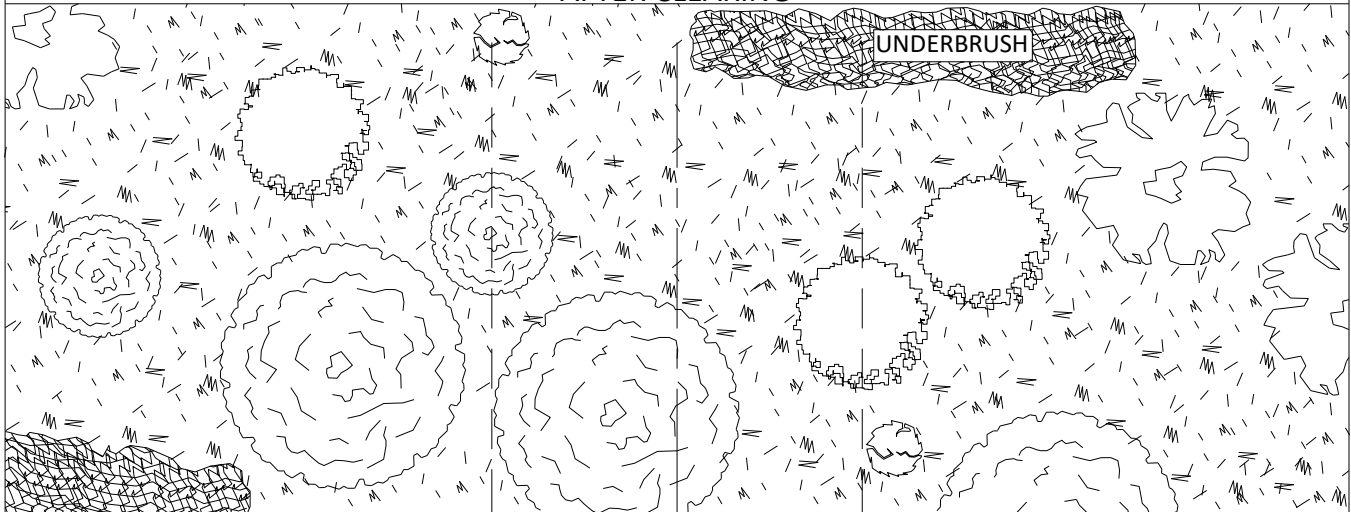


RIGHTS-OF-WAYS FOR UNDERGROUND FACILITIES WILL BE CLEARED TO THE WIDTH STATED IN THEIR RESPECTIVE EASEMENTS.

## ELEVATION



## AFTER CLEARING



## BEFORE CLEARING



## UNDERGROUND DISTRIBUTION



Notes:

1. Neutral (must be insulated) may be reduced no more than two sizes on residential application. No reduction of the neutral is allowed on commercial applications.
2. Weatherproof fittings required.
3. This meter loop specification is good for the following voltages: 120/240, 120/208, 240/480 & 277/480. Please use MS-301 for straight 480 Delta applications only.
4. Meter pole must remain free of structures and private attachments other than meter loop.
5. Bluebonnet Electric will supply ground rod.
6. On steel poles use a 3/8" X 1 1/2" self tapping screw.
7. For your safety, only Bluebonnet personnel are authorized to install meter loops or other BEC equipment on a Bluebonnet pole. Members shall have loop assembled and available for installation by Bluebonnet.

**FOR SINGLE PHASE TRAFFIC CONTROL DEVICES:**  
 200amp, 4 terminal, 1-phase, will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R rating. Lever by-pass is only required for meter installations serving traffic control devices, including railroad, that need to remain functional at all times.

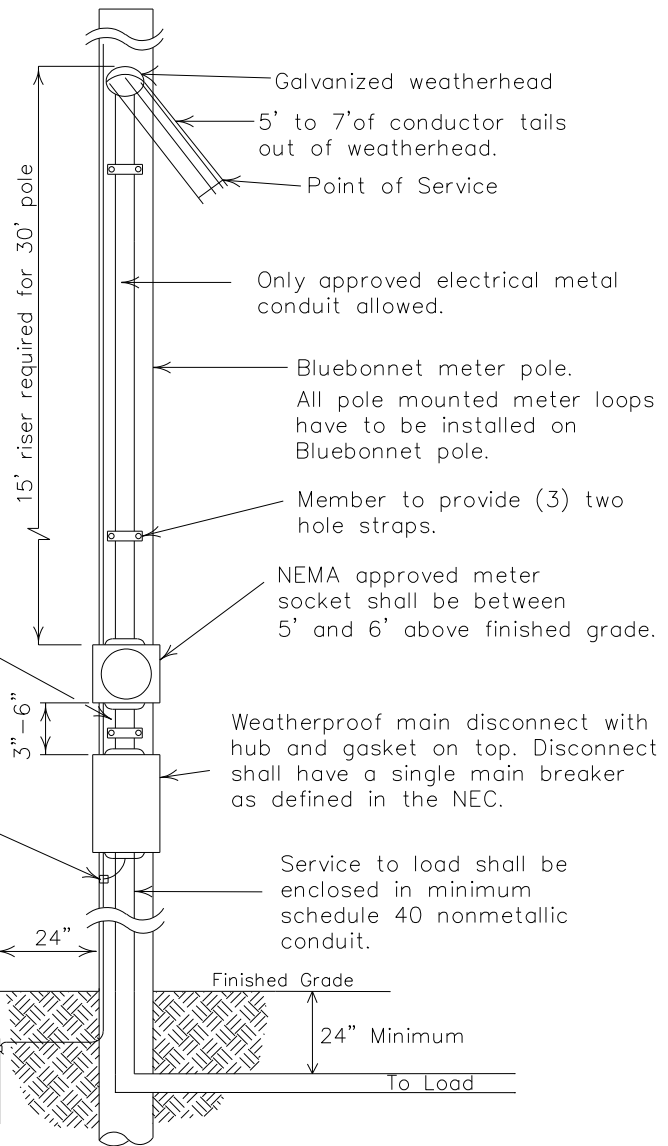
**FOR THREE PHASE APPLICATIONS DESCRIPTION:**  
 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications.  
 Techline (512-332-2978)

Galvanized metal conduit with (1) locknut and fiber bushing inside meter can on nipple and (1) locknut under meter can. Maintain 3-6" distance between the meter can and the disconnect. Member shall use a metal nipple. A Straight or offset nipple is acceptable.

#6 solid, bare ground wire and clamp attached to Bluebonnet's pole ground. Ground rod provided by Bluebonnet.

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.



Latest update can be found at <http://www.bluebonnetelectric.coop>

**CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENTS OF STANDARD WIRE SIZES**  
 (RHH, RHW, THW, THWN, THHN, AND XHHW)  
 REFER TO NEC FOR OTHER CALCULATIONS.

| <u>COPPER CONDUCTOR</u> |              |                     | <u>ALUMINUM CONDUCTOR</u> |              |                     |
|-------------------------|--------------|---------------------|---------------------------|--------------|---------------------|
| Wire Size               | Breaker Size | Conduit/Nipple Size | Wire Size                 | Breaker Size | Conduit/Nipple Size |
| #6                      | 60 Amp       | 1 1/4" Conduit      | #4                        | 60 Amp       | 1 1/4" Conduit      |
| #4                      | 100 Amp      | 1 1/4" Conduit      | #2                        | 100 Amp      | 1 1/4" Conduit      |
| #2                      | 125 Amp      | 1 1/2" Conduit      | #1/0                      | 125 Amp      | 1 1/2" Conduit      |
| #1                      | 150 Amp      | 2" Conduit          | #2/0                      | 150 Amp      | 2" Conduit          |
| #2/0                    | 200 Amp      | 2" Conduit          | #4/0                      | 200 Amp      | 2" Conduit          |

**15' METER LOOP**  
 1Ø OR 3Ø 60-200 AMP  
 METER LOOP ON METER POLE  
 (GOOD FOR VOLTAGES: 120/240, 120/208, 240/480, 277/480)



|          |                                 |            |              |               |
|----------|---------------------------------|------------|--------------|---------------|
| DATE     | REVISIONS                       | Drawn By : | Checked By : | Approved By : |
| 11-27-17 | ADDED NIPPLE AFTER CONDUIT SIZE | RG         | MS COMMITTEE | MS COMMITTEE  |
| 03-31-20 | ADDED NOTE 7                    | Scale :    | Date:        | MS-10115      |
| 11-04-21 | ADDED MAIN BREAKER NOTE         | NONE       | 11-04-2021   |               |



Notes:

1. Neutral (must be insulated) may be reduced no more than two sizes on residential application. No reduction of the neutral is allowed on commercial applications.
2. Weatherproof fittings required.
3. This meter loop specification is good for the following voltages: 120/240, 120/208, 240/480 & 277/480. Please use MS-301 for straight 480 Delta applications only.
4. Meter pole must remain free of structures and private attachments other than meter loop.
5. Bluebonnet Electric will supply ground rod.
6. On steel poles use a 3/8" X 1 1/2" self tapping screw.
7. For your safety, only Bluebonnet personnel are authorized to install meter loops or other BEC equipment on a Bluebonnet pole. Members shall have loop assembled and available for installation by Bluebonnet.

**FOR SINGLE PHASE TRAFFIC CONTROL DEVICES:**  
 200amp, 4 terminal, 1-phase, will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R rating. Lever by-pass is only required for meter installations serving traffic control devices, including railroad, that need to remain functional at all times.

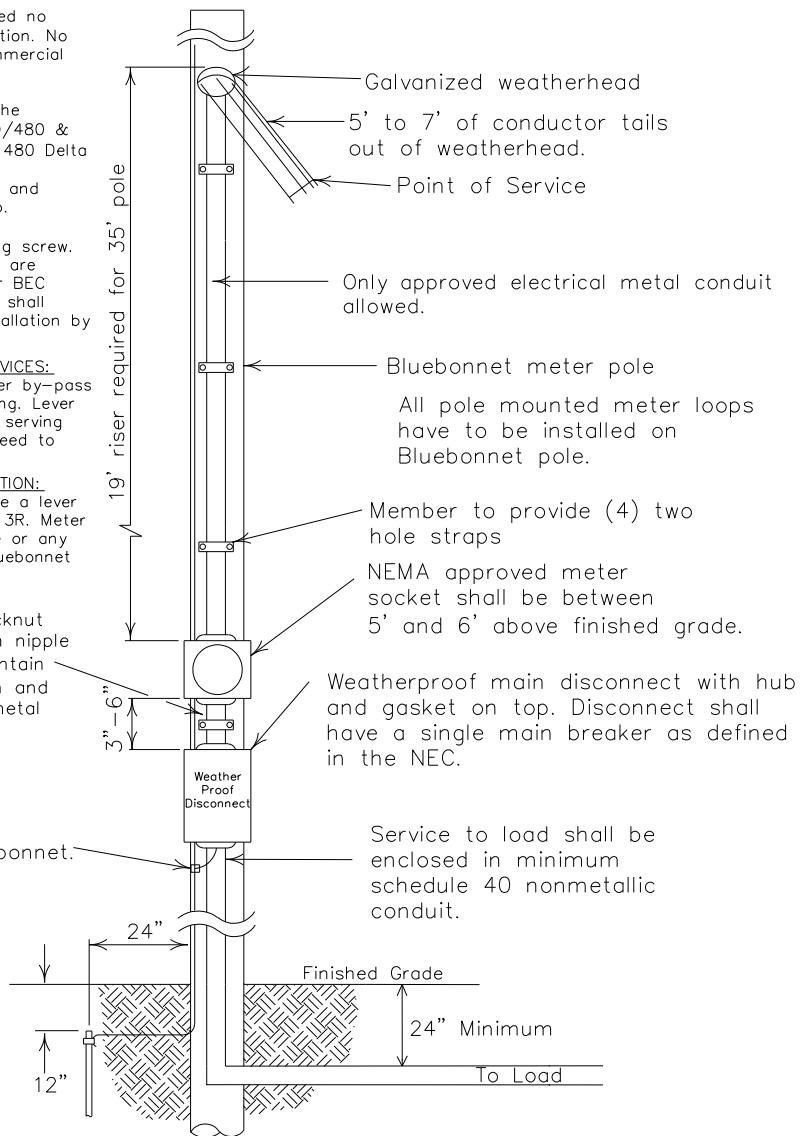
**FOR THREE PHASE APPLICATIONS DESCRIPTION:**  
 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, on NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications.  
 Techline (512-332-2978)

Galvanized metal conduit with (1) locknut and fiber bushing inside meter can on nipple and (1) locknut under meter can. Maintain 3-6" distance between the meter can and the disconnect. Member shall use a metal nipple. A Straight or offset nipple is acceptable.

#6 solid, bare ground wire and clamp attached to Bluebonnet's pole ground.  
 Ground rod provided by Bluebonnet.

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.



All pole mounted meter loops have to be installed on Bluebonnet pole.

Member to provide (4) two hole straps

NEMA approved meter socket shall be between 5' and 6' above finished grade.

Weatherproof main disconnect with hub and gasket on top. Disconnect shall have a single main breaker as defined in the NEC.

Service to load shall be enclosed in minimum schedule 40 nonmetallic conduit.

Latest update can be found at <http://www.bluebonnetelectric.coop>

CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENTS OF STANDARD WIRE SIZES (RHH, RHW, THW, THWN, THHN, AND XHHW) REFER TO NEC FOR OTHER CALCULATIONS.

| COPPER CONDUCTOR |              |                     | ALUMINUM CONDUCTOR |              |                     |
|------------------|--------------|---------------------|--------------------|--------------|---------------------|
| Wire Size        | Breaker Size | Conduit/Nipple Size | Wire Size          | Breaker Size | Conduit/Nipple Size |
| #6               | 60 Amp       | 1 1/4" Conduit      | #4                 | 60 Amp       | 1 1/4" Conduit      |
| #4               | 100 Amp      | 1 1/4" Conduit      | #2                 | 100 Amp      | 1 1/4" Conduit      |
| #2               | 125 Amp      | 1 1/2" Conduit      | #1/0               | 125 Amp      | 1 1/2" Conduit      |
| #1               | 150 Amp      | 2" Conduit          | #2/0               | 150 Amp      | 2" Conduit          |
| #2/0             | 200 Amp      | 2" Conduit          | #4/0               | 200 Amp      | 2" Conduit          |

**19' METER LOOP**  
 1Ø OR 3Ø 60-200 AMP  
 METER LOOP ON METER POLE  
 (GOOD FOR VOLTAGES: 120/240, 120/208, 240/480, 277/480)

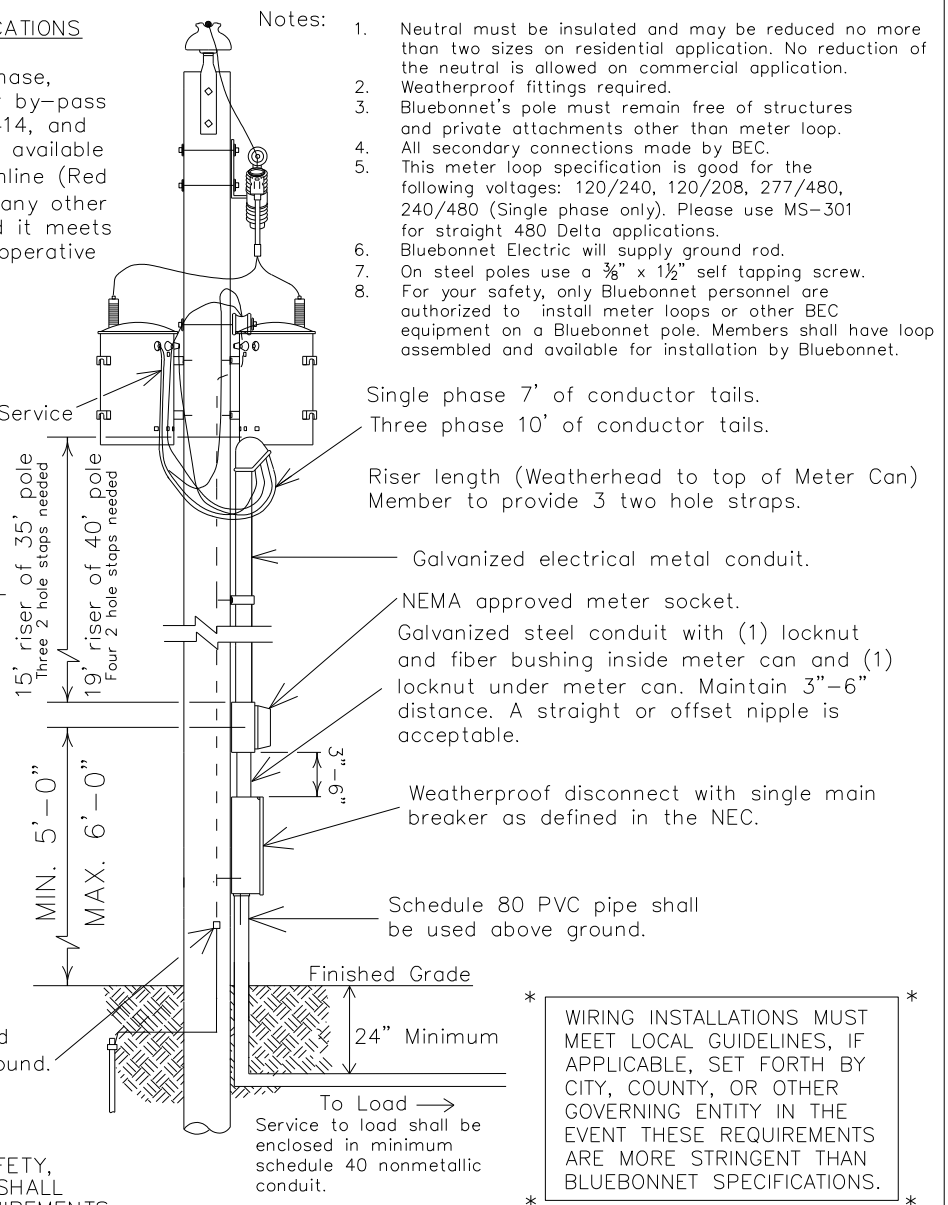


|          |                                 |  |            |              |               |
|----------|---------------------------------|--|------------|--------------|---------------|
| DATE     | REVISIONS                       |  | Drawn By : | Checked By : | Approved By : |
| 11-27-17 | ADDED NIPPLE AFTER CONDUIT SIZE |  | RG         | MS COMMITTEE | MS COMMITTEE  |
| 03-31-20 | ADDED NOTE 7                    |  | Scale :    | Date:        |               |
| 11-04-21 | ADDED MAIN BREAKER NOTE         |  | NONE       | 11-04-2021   | MS-10119      |

FOR THREE PHASE APPLICATIONS DESCRIPTION:  
 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline (Red Rock 512-332-2978) or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications.

FOR SINGLE PHASE TRAFFIC CONTROL DEVICES:  
 200amp, 4 terminal, 1-phase, will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R rating. Lever by-pass is only required for meter installations serving traffic control devices, including railroad, that need to remain functional at all times.

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.



CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENTS OF STANDARD WIRE SIZES (RHH, RHW, THW, THWN, AND XHHW) REFER TO NEC FOR OTHER CALCULATIONS.

| COPPER CONDUCTOR |              |                     | ALUMINUM CONDUCTOR |              |                     |
|------------------|--------------|---------------------|--------------------|--------------|---------------------|
| Wire Size        | Breaker Size | Conduit/Nipple Size | Wire Size          | Breaker Size | Conduit/Nipple Size |
| #6               | 60 Amp       | 1 1/4" Conduit      | #4                 | 60 Amp       | 1 1/4" Conduit      |
| #4               | 100 Amp      | 1 1/2" Conduit      | #2                 | 100 Amp      | 1 1/2" Conduit      |
| #2               | 125 Amp      | 1 1/2" Conduit      | #1/0               | 125 Amp      | 1 1/2" Conduit      |
| #1               | 150 Amp      | 2" Conduit          | #2/0               | 150 Amp      | 2" Conduit          |
| #2/0             | 200 Amp      | 2" Conduit          | #4/0               | 200 Amp      | 2" Conduit          |

1Ø OR 3Ø 60-200 AMP METER LOOP ON TRANSFORMER POLE



|          |                                 |            |              |               |
|----------|---------------------------------|------------|--------------|---------------|
| DATE     | REVISIONS                       | Drawn By : | Checked By : | Approved By : |
| 11-27-17 | ADDED NIPPLE AFTER CONDUIT SIZE | RG         | MS COMMITTEE | MS COMMITTEE  |
| 03-18-20 | ADDED NOTE 8                    | Scale :    | Date:        |               |
| 11-04-21 | ADDED MAIN BREAKER NOTE         | NONE       | 11-04-2021   | MS-102        |

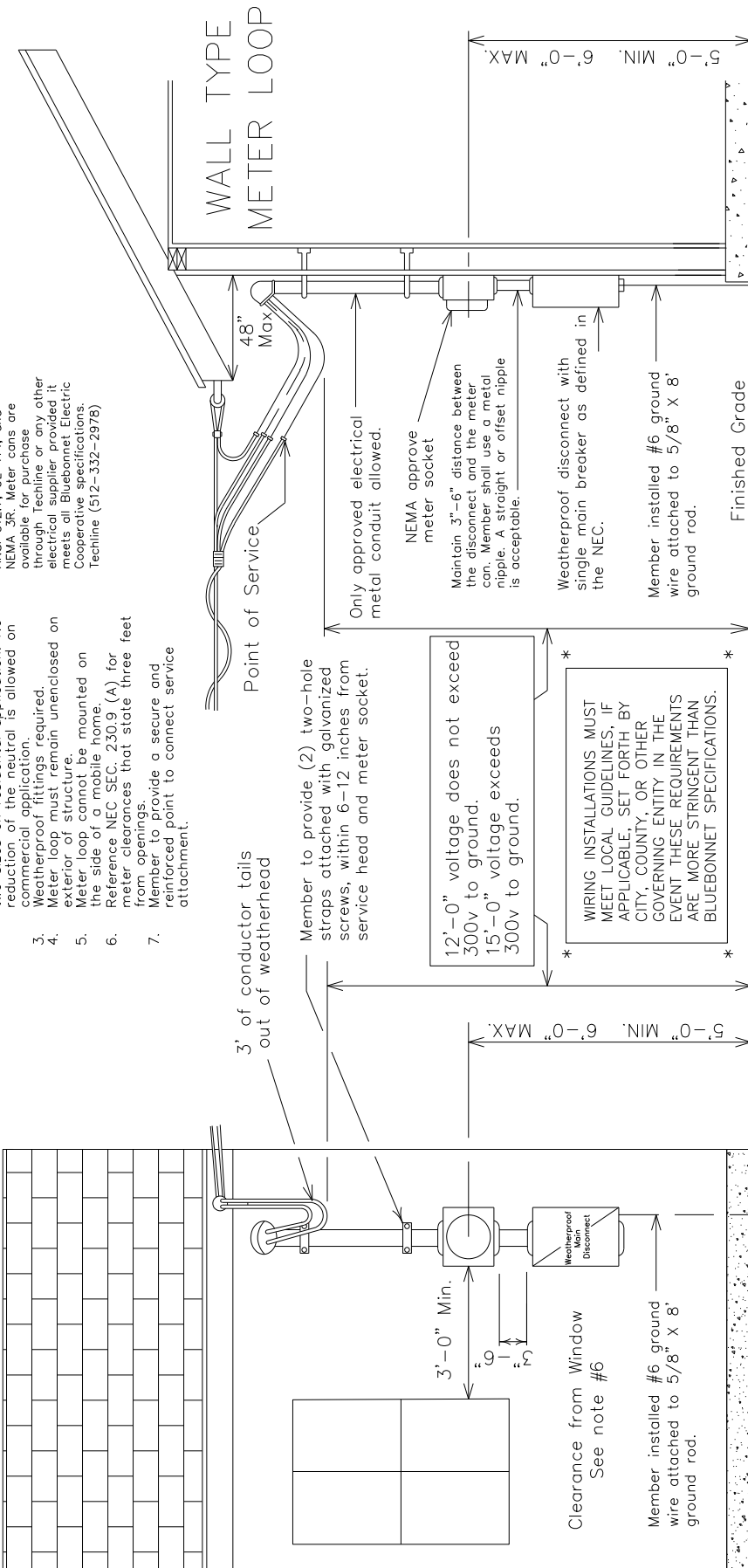


**Notes:**

1. Wire sized to total disconnect size.
2. Neutral may be reduced no more than two sizes on residential application. No reduction of the neutral is allowed on commercial application.
3. Weatherproof fittings required.
4. Meter loop must remain unenclosed on exterior of structure.
5. Meter loop cannot be mounted on the side of a mobile home.
6. Reference NEC SEC. 230.9 (A) for meter clearances that state three feet from openings.
7. Member to provide a secure and reinforced point to connect service attachment.

**FOR THREE PHASE APPLICATIONS**

**DESCRIPTION:**  
 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline (512-332-2978)



**CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENTS OF STANDARD WIRE SIZES**  
 (RHH, RHW, THW, AND XHHW)  
 REFER TO NEC FOR OTHER CALCULATIONS.

| COPPER CONDUCTOR |              | ALUMINUM CONDUCTOR |              |
|------------------|--------------|--------------------|--------------|
| Wire Size        | Breaker Size | Wire Size          | Breaker Size |
| #6               | 60 Amp       | #4                 | 60 Amp       |
| #4               | 100 Amp      | #2                 | 100 Amp      |
| #2               | 125 Amp      | #1/0               | 125 Amp      |
| #1               | 150 Amp      | #2/0               | 150 Amp      |
| #2/0             | 200 Amp      | #4/0               | 200 Amp      |

FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.



10 OR 30 60-200 AMP METER LOOP ON BUILDING, WALL TYPE

| Date     | REVISIONS                    |
|----------|------------------------------|
| 11-27-17 | ADDED NIPPLE TO CONDUIT SIZE |
| 11-04-21 | ADDED MAIN BRAKER NOTE       |

Drawn By : RG

Checked By : MS COMMITTEE

Approved By : MS COMMITTEE

Scale : NONE

Date: 11-04-20

MS-103WT

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

Notes:

- Line taps shall be made in the galvanized trough by the electrical contractor.  
No more than (2) conductors per phase shall be allowed.
- No more than (2) risers will be connected per installation.
- Weatherproof fittings required.
- Wire sized to total disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral is allowed on commercial application.
- Bluebonnet pole must remain free of structures and private attachments other than meter loop riser assembly.
- Meter assembly must remain unenclosed on exterior of structure.
- Meter assembly cannot be mounted on a mobile home.
- If secondary service exceeds (2) 2", 3", or 4" approved electrical metal conduit; BEC will install a primary underground transformer at member's expense.
- Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
- #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground.

Transformer Pole Riser Length:  
35' Pole = 20' Riser  
40' Pole = 24' Riser

Service Pole Riser Length:  
30' Pole = 20' Riser  
35' Pole = 24' Riser

Member's Conduit  
Member's conduit shall be installed 8"-12" from pole.

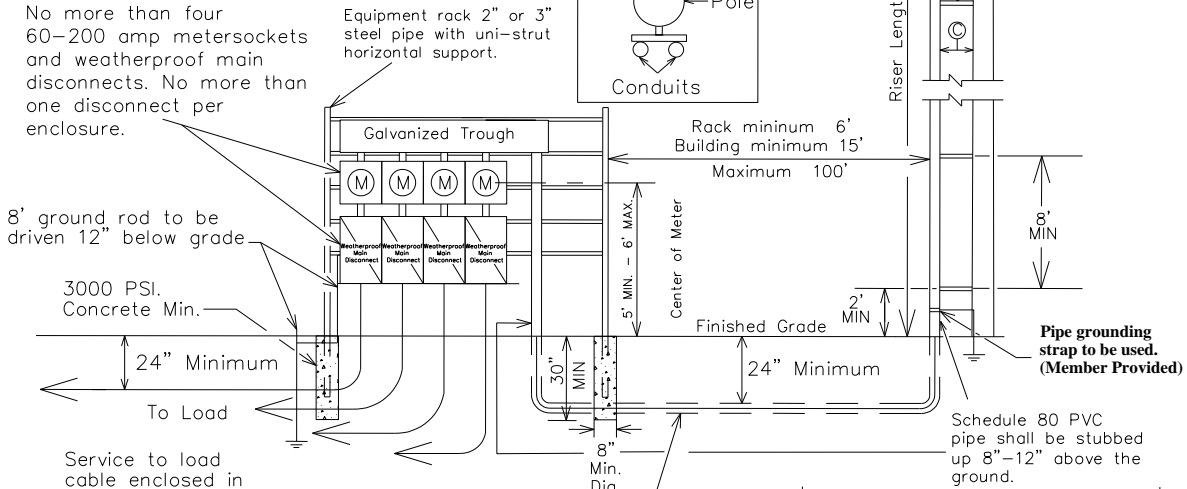
FOR THREE PHASE APPLICATIONS DESCRIPTION:

200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline (512-332-2978)

No more than four 60-200 amp metersockets and weatherproof main disconnects. No more than one disconnect per enclosure.

RISER ONLY

Only 2", 3", or 4" approved electrical metal conduit allowed above finished grade. Risers will not exceed 2 risers per pole. Member will provide 10' of conductor tails from top of weatherhead. BEC to supply Stand-Offs. (Bluebonnet to mount risers to pole)



FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENT OF STANDARD WIRE SIZE. (RHH, RHW, THW, THWN, THHN, AND XHHW) REFER TO NEC FOR OTHER CALCULATIONS.

| WIRE SIZE | COPPER CONDUCTOR/ |                     | WIRE SIZE | ALUMINUM CONDUCTOR |                     |
|-----------|-------------------|---------------------|-----------|--------------------|---------------------|
|           | BREAKER SIZE      | CONDUIT/NIPPLE SIZE |           | BREAKER SIZE       | CONDUIT/NIPPLE SIZE |
| #6        | 60 AMP            | 1 1/4" CONDUIT      | #4        | 60 AMP             | 1 1/4" CONDUIT      |
| #4        | 100 AMP           | 1 1/2" CONDUIT      | #2        | 100 AMP            | 1 1/2" CONDUIT      |
| #2        | 125 AMP           | 1 3/4" CONDUIT      | #1/0      | 125 AMP            | 1 3/4" CONDUIT      |
| #1        | 150 AMP           | 2" CONDUIT          | #2/0      | 150 AMP            | 2" CONDUIT          |
| #2/0      | 200 AMP           | 2" CONDUIT          | #4/0      | 200 AMP            | 2" CONDUIT          |

1Ø OR 3Ø 60-200 AMP MULTIPLE METERS ON RACK OR BUILDING NOT TO EXCEED A TOTAL OF 800 AMPS



|            |                          |            |              |               |
|------------|--------------------------|------------|--------------|---------------|
| DATE       | REVISIONS                | Drawn By : | Checked By : | Approved By : |
| 12-07-2017 | ADDED WIRE SIZING CHART. | RG         | MS COMMITTEE | MS COMMITTEE  |
| 11-19-2019 | ADDED SOLID COPPER NOTE. | Scale :    | Date :       |               |
| 11-04-2021 | ADDED MAIN BREAKER NOTE. | NONE       | 11-04-2021   | MS-105        |

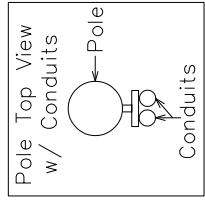
| CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENT BY STANDARD WIRE SIZE.<br>(RHH, RHW, THW, THWN, THHN, AND XHHW)<br>REFER TO NEC FOR OTHER CALCULATIONS. |                     |
|---|---------------------|
| WIRE SIZE   | CONDUIT/NIPPLE SIZE |
| #6  | 1/4" CONDUIT        |
| #4  | 1/2" CONDUIT        |
| #2  | 3/4" CONDUIT        |
| #1  | 1" CONDUIT          |
| #2/0  | 2" CONDUIT          |
| COPPER CONDUCTOR  |                     |
| BREAKER SIZE  | CONDUIT/NIPPLE SIZE |
| 60 AMP  | 1/4" CONDUIT        |
| 100 AMP   | 1/2" CONDUIT        |
| 125 AMP   | 3/4" CONDUIT        |
| 150 AMP   | 1" CONDUIT          |
| 200 AMP   | 2" CONDUIT          |
| ALUMINUM CONDUCTOR  |                     |
| BREAKER SIZE  | CONDUIT/NIPPLE SIZE |
| 60 AMP  | 1/4" CONDUIT        |
| 100 AMP   | 1/2" CONDUIT        |
| 125 AMP   | 3/4" CONDUIT        |
| 150 AMP   | 1" CONDUIT          |
| 200 AMP   | 2" CONDUIT          |

FOR THREE PHASE APPLICATIONS  
DESCRIPTION:  
200amp, 7 terminal, 3-phase, 4-wire  
will require a lever by-pass meeting  
ANSI C12.7, UL 414, and NEMA 3R.  
Meter cans are available for purchase  
through Techline or any other electrical  
supplier provided it meets all  
Bluebonnet Electric Cooperative  
specifications. Techline (512-532-2978)

**Notes:**

1. Weatherproof fittings required.
2. Wire sized to total disconnect size.
3. Neutral may only be reduced two sizes on residential application. No reduction of the neutral is allowed on commercial application. Bluebonnet pole must remain free of structures and private attachments other than meter loop riser assembly. Meter assembly must remain unenclosed on exterior of structure.
4. Meter assembly cannot be mounted on a mobile home.
5. All secondary connections made by BEC.
6. #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground.

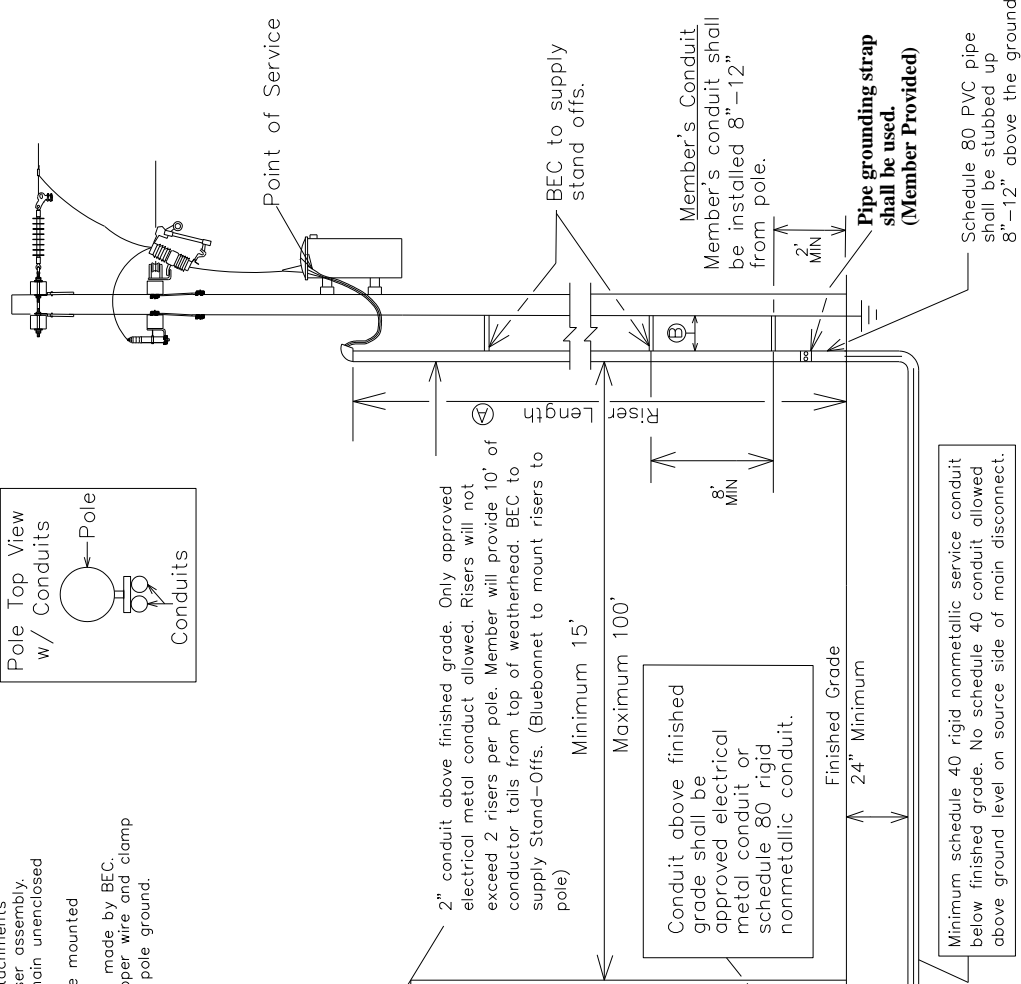
**Riser Length:**  
35' Pole = 20' Riser  
40' Pole = 24' Riser



**BUILDING OR RESIDENCE**

8' ground rod to be driven 12" below grade. (Member Provided)

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*



Member's conduit shall be installed 8"-12" from pole.  
2" MIN  
8' MIN  
2" MIN  
Schedule 80 PVC pipe shall be stubbed up 8"-12" above the ground.

Conduit above finished grade shall be approved electrical metal conduit or schedule 80 rigid nonmetallic conduit.  
Minimum schedule 40 rigid nonmetallic service conduit below finished grade. No schedule 40 conduit allowed above ground level on source side of main disconnect.

Latest update can be found at  
www.bluebonnetelectric.coop

|  |  |            |                         |                           |                            |
|--|--|------------|-------------------------|---------------------------|----------------------------|
|  | <b>1Ø OR 3Ø 60-200 AMP METER ON BUILDING OR RACK</b>   |            | Drawn By : MS COMMITTEE | Checked By : MS COMMITTEE | Approved By : MS COMMITTEE |
|  | DATE: 03-29-2018 MOVED DISCONNECT TO THE SIDE OF METER<br>11-19-2019 ADDED SOLID COPPER WIRE<br>11-04-2021 ADDED MAIN BREAKER NOTE | REVISIONS: | CV                      | Scale : NONE              | Date : 11-04-2021          |



- Main disconnect panel may not be used as an electrical race way. Any combination of six disconnects totaling no more than 400 amp.
- Weatherproof fittings required. Meter loop must remain unenclosed on exterior of structure.
- Wire sized to total disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential applications.
- No reduction of the neutral(s) is allowed on commercial applications. A galvanized trough will have to be used if more than two disconnects are installed. Line taps shall be made by the electrical contractor.

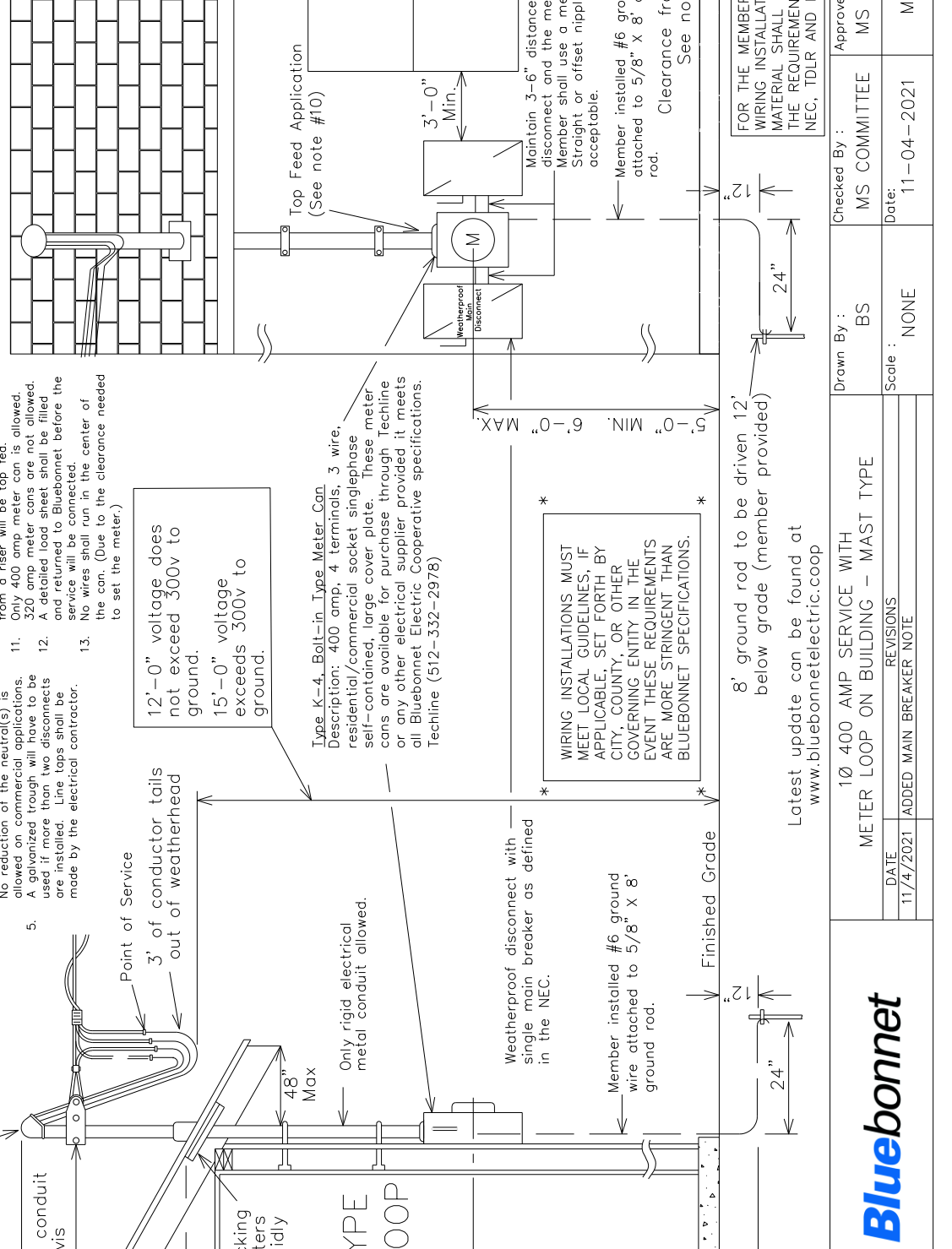
- Reference NEC SEC. 230.9 (A) for meter clearances that state three feet from openings.
- Weatherproof fittings required. Meter loop must remain unenclosed on exterior of structure.
- Meter loop cannot be mounted on the side of a mobile home.
- All services entering the meter can from a riser will be top fed.
- Only 400 amp meter can is allowed. 320 amp meter cans are not allowed.
- A detailed load sheet shall be filled and returned to Bluebonnet before the service will be connected.
- No wires shall run in the center of the can. (Due to the clearance needed to set the meter.)

- Largest wire to be pulled in to the meter can is 500 MCM Copper. (Top or Bottom Feed) will be terminated at the closest lugs. No phase conductors shall be run through the center of the meter can.

- 12'-0" voltage does not exceed 300v to ground.
- 15'-0" voltage exceeds 300v to ground.

WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.

FOR THE MEMBER'S SAFETY WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.



|           |                         |               |              |
|-----------|-------------------------|---------------|--------------|
| DATE      | ADDED MAIN BREAKER NOTE | Scale :       | NONE         |
| 11/4/2021 |                         | Drawn By :    | BS           |
|           |                         | Checked By :  | MS COMMITTEE |
|           |                         | Approved By : | MS COMMITTEE |
|           |                         | Date:         | 11-04-2021   |
|           |                         |               | MS-107MT     |

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

10 400 AMP SERVICE WITH METER LOOP ON BUILDING - MAST TYPE

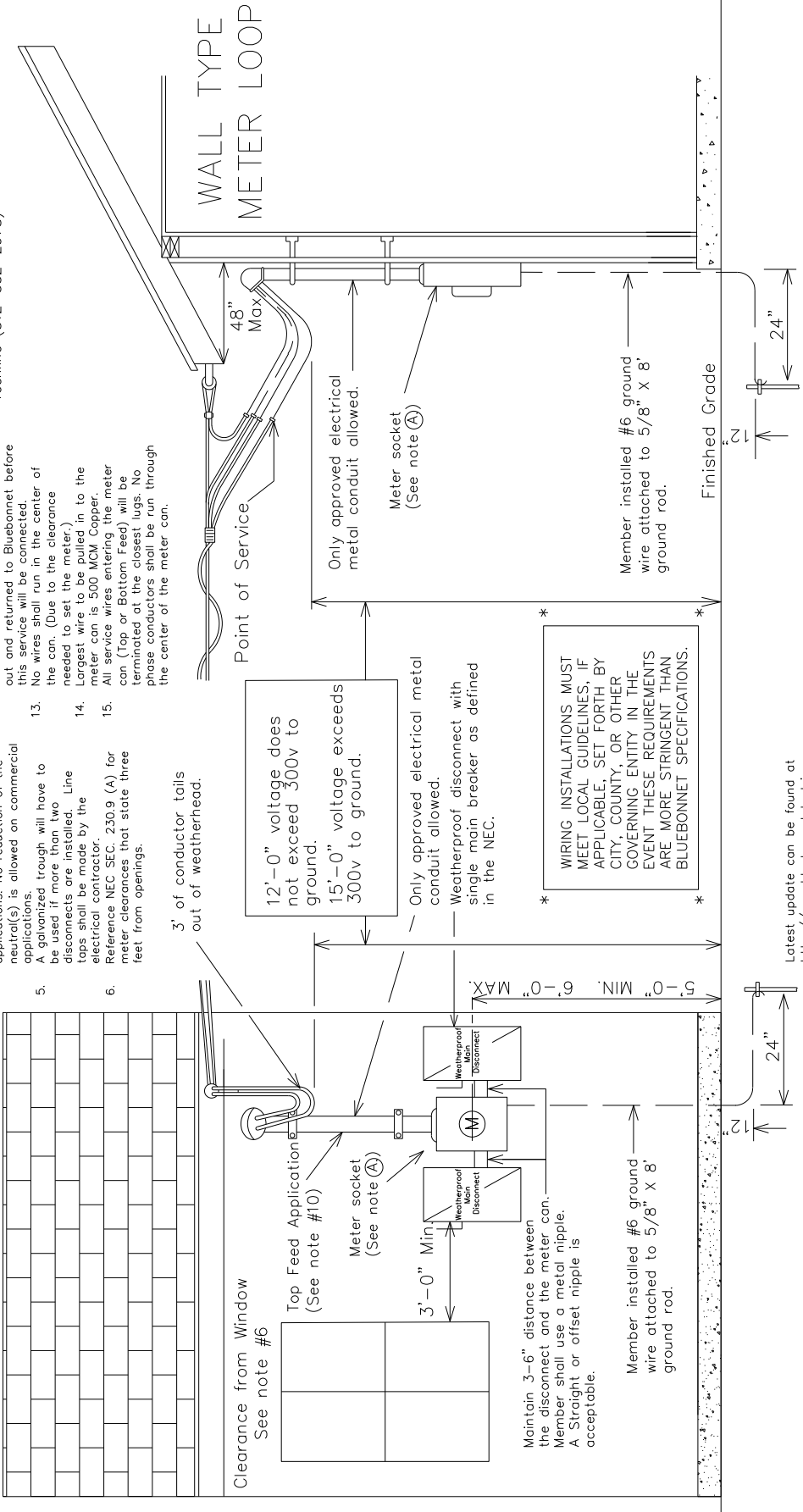
**Notes:**

FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

1. Main disconnect panel may not be used on an electrical race way. Any combination of six disconnects totaling no more than 400 amp. REF. NEC, SEC. 230.71.
2. Wire sized to total disconnect sizes.
3. Neutral(s) may be reduced no more than two sizes on residential applications. No reduction of the neutral(s) is allowed on commercial applications.
4. A galvanized trough will have to be used if more than two disconnects are installed. Line taps shall be made by the electrical contractor.
5. Reference NEC SEC. 230.9 (A) for meter clearances that state three feet from openings.

7. Weatherproof fittings required. Meter loop must remain unenclosed on exterior of structure.
8. Meter loop cannot be mounted on the side of a mobile home.
9. All services entering the meter can from a riser will be top fed.
10. Only 400 amp meter can is allowed.
11. 320 amp meter cans are not allowed.
12. A detailed load sheet shall be filled out and returned to Bluebonnet before this service will be connected.
13. No wires shall run in the center of the can. (Due to the clearance needed to set the meter.)
14. Largest wire to be pulled in to the meter can is 500 MCM Copper.
15. All service wires entering the meter can (Top or Bottom Feed) will be terminated at the closest lugs. No phase conductors shall be run through the center of the meter can.

(A) Type K-4, Bolt-in, Type Meter Can.  
Description: 400 amp, 4 terminals, 3 wire, residential/commercial socket singlephase self-contained, large coverplate. These meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline (512-332-2978)



Latest update can be found at <http://www.bluebonnetelectric.coop>

|   |   |                                      |                  |                              |                               |
|---|---|--------------------------------------|------------------|------------------------------|-------------------------------|
|  | <b>1Ø 400 AMP SERVICE WITH METER LOOP ON BUILDING – WALL TYPE</b> |                                      | Drawn By :<br>RG | Checked By :<br>MS COMMITTEE | Approved By :<br>MS COMMITTEE |
|   | DATE<br>11-04-2021  | REVISIONS<br>Added Main Breaker Note | Scale :<br>NONE  | Date:<br>11-04-2021          | MS-107WT                      |





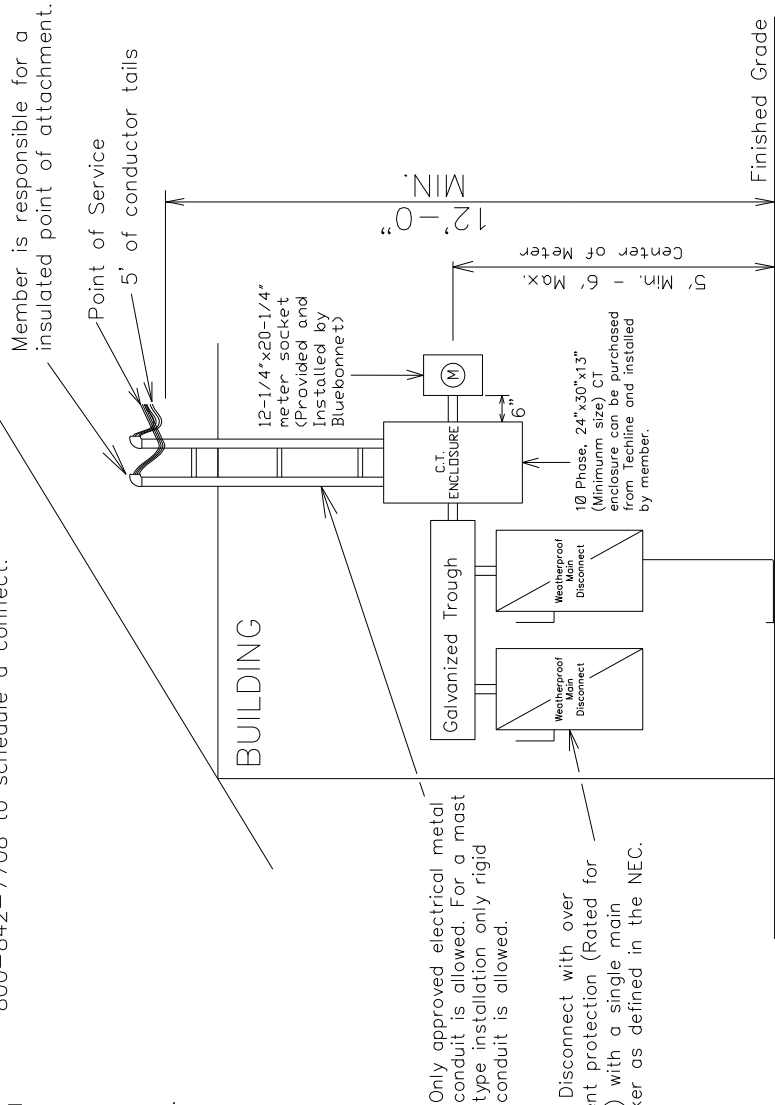
Notes:

1. When more than (1) disconnect is used, a galvanized trough system shall be installed.
2. Line taps shall be made in the galvanized wire trough by the electrical contractor. (See Article 310.10 (H) Per NEC).
3. (2) disconnects can be substituted with (1) disconnect.
4. All disconnects shall have over current protection installed.
5. No more than (2) risers or (2) conductors per phase shall be allowed.
6. Wire shall be sized to total disconnect sizes.
7. Neutral(s) may be reduced no more than two sizes on residential applications. No reduction of the neutral(s) is allowed on commercial application.
8. CT Cans can be purchased from Techline (512-332-2978).
9. Bluebonnet to install meter can, meter and current transformers unless there will be multiple metering points from the trough. Contact the support service department on this type of installation.
10. Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
11. #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

\* FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC. \*

11. Total disconnect's will not exceed a total of 800 amps.
12. The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's before the service wire is pulled. The electrician shall install them on the rack with the correct polarity before the conductor is brought thru the 30"x42"x16" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.




Only approved electrical metal conduit is allowed. For a mast type installation only rigid conduit is allowed.

Main Disconnect with over current protection (Rated for Load) with a single main breaker as defined in the NEC.

Must have adequate clearance over commercial driveway, etc. See NESC for details.

8' ground rod to be driven 12" below grade. (Member installed)

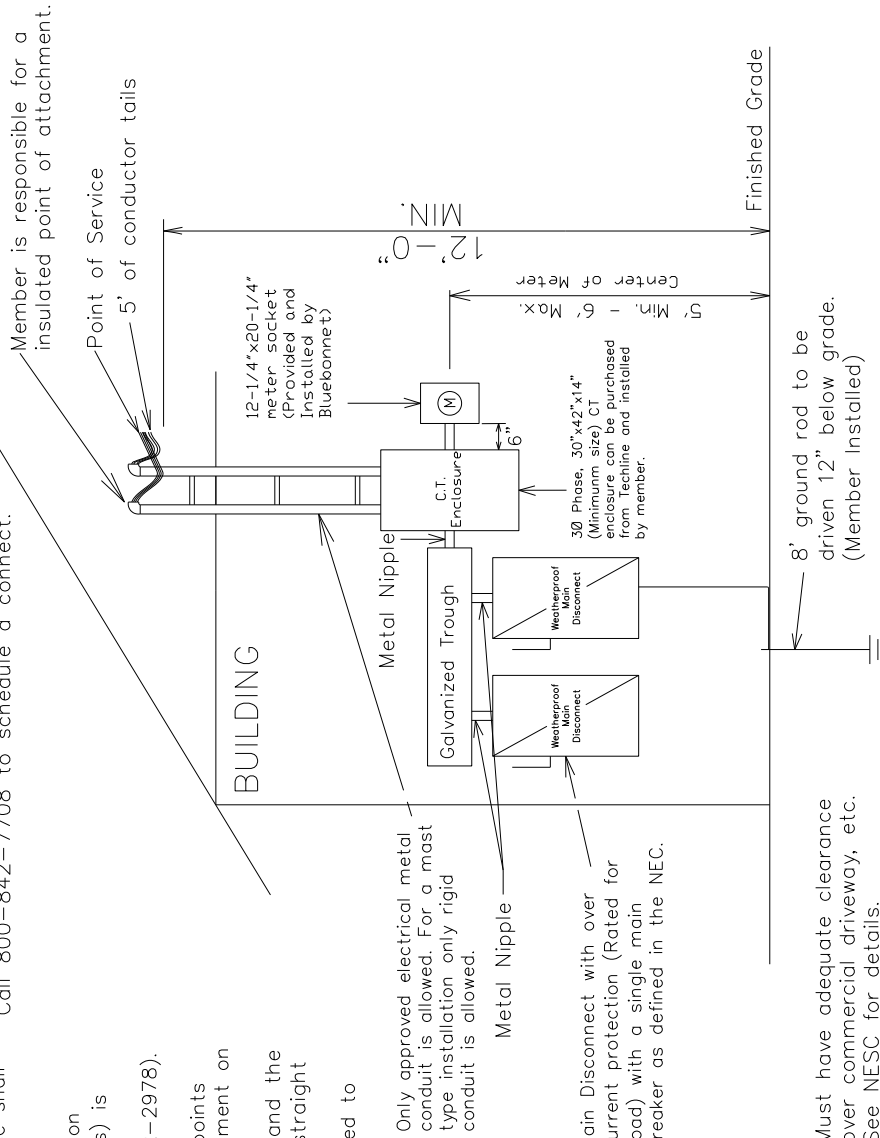
Latest update can be found at <http://www.bluebonnetelectric.coop>

|   |   |                         |                  |                              |                               |
|---|---|-------------------------|------------------|------------------------------|-------------------------------|
|  | 1 PHASE >400-600 AMP SERVICE ON BUILDING WITH CT METERING ON BUILDING OR RACK |                         | Drawn By :<br>RG | Checked By :<br>MS COMMITTEE | Approved By :<br>MS COMMITTEE |
|   | DATE<br>11-19-2019  | Added #6 copper note.   | Scale :<br>NONE  | Date :<br>11-04-2021         | MS-112B1                      |
| REVISIONS   |   |                         |                  |                              |                               |
| 11-04-2021  |   | Added Main Breaker Note |                  |                              |                               |

**Notes:**

1. When more than (1) disconnect is used, a galvanized trough system shall be installed.
2. Line taps shall be made in the galvanized wire trough by the electrical contractor. (See Article 310.10 (H) Per NEC).
3. (2) disconnects can be substituted with (1) disconnect. All disconnects shall have over current protection installed.
4. No more than (2) risers or (2) conductors per phase shall be allowed.
5. Wire shall be sized to total disconnect sizes.
6. Neutral(s) may be reduced no more than two sizes on residential applications. No reduction of the neutral(s) is allowed on commercial application.
7. CT Cans can be purchased from Techline (512-332-2978). Bluebonnet to install meter can, meter and current transformers unless there will be multiple metering points from the trough. Contact the support service department on this type of installation.
9. Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
10. #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground.

11. Total disconnect's will not exceed a total of 800 amps.
12. The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's before the service wire is pulled. The electrician shall install them on the rack with the correct polarity before the conductor is brought thru the 30"x42"x16" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.



Only approved electrical metal conduit is allowed. For a mast type installation only rigid conduit is allowed.

Main Disconnect with over current protection (Rated for Load) with a single main breaker as defined in the NEC.

Must have adequate clearance over commercial driveway, etc. See NESCC for details.

Latest update can be found at <http://www.bluebonnetelectric.coop>

**\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \***

FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESCC.



|  |  |            |              |              |              |               |              |
|--|--|------------|--------------|--------------|--------------|---------------|--------------|
| 3 PHASE >200--600 AMP SERVICE ON BUILDING WITH CT METERING ON BUILDING OR RACK REVISIONS |  | Drawn By : | MS COMMITTEE | Checked By : | MS COMMITTEE | Approved By : | MS COMMITTEE |
| DATE   | REVISIONS                                    | RG         |              | Date :       | 11-4-2021    |               | MS-112B3     |
| 11-19-2019   | Added solid copper note.                     | NONE       |              | Scale :      |              |               |              |
| 04-16-2021   | Removed Single phase from CT enclosure note. |            |              |              |              |               |              |
| 11-04-2021   | Added Main Breaker Note                      |            |              |              |              |               |              |



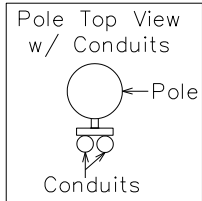
**Notes:**

- Line taps shall be made in the galvanized wire trough by the electrical contractor.
- When more than (1) disconnect is used, a galvanized rough system hall be installed.
- Weatherproof fittings are required.
- Two (2) disconnects could be substituted with (1) disconnect. All disconnects shall have over current protection installed.
- No more than two (2) risers or two (2) conductors per phase shall be allowed.
- Wire shall be sized to total disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential applications. No reduction of the neutral(s) is allowed on commercial application.
- Bluebonnet pole must remain free of structures and private attachments other than service riser assembly.
- All secondary connections on pole will be made by Bluebonnet.
- The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's before the service wire is pulled. The electrician shall install them on the rack with the correct polarity before the conductor is brought thru the 30"x42" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.
- CT enclosures can be purchased from Techline (512-332-2978).
- Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
- #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground.

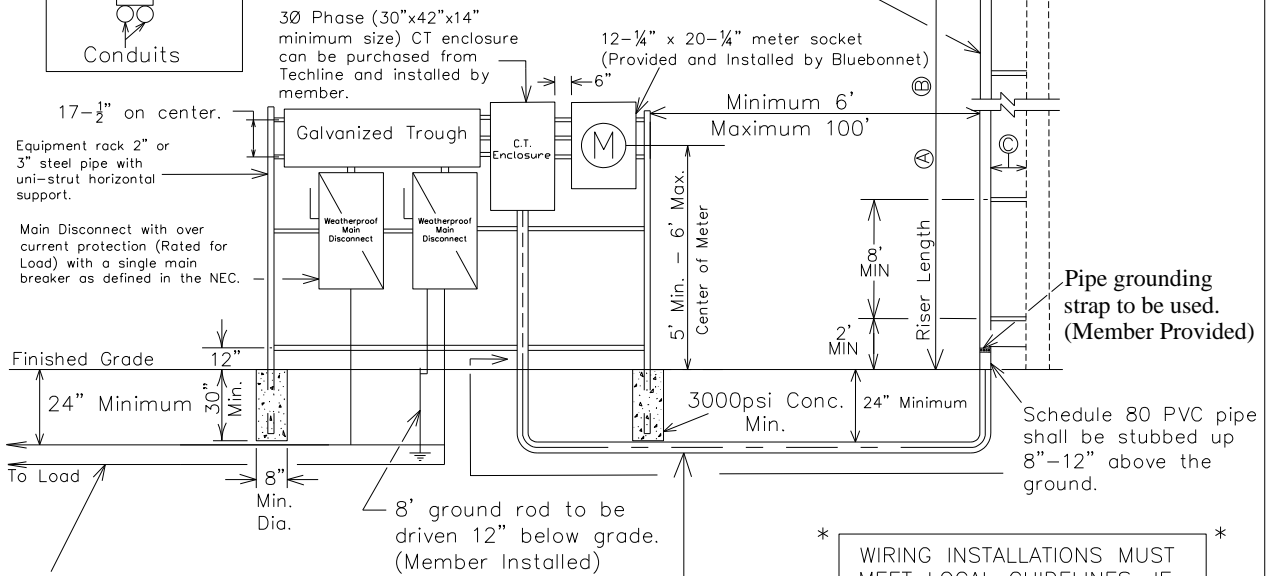
Ⓐ Transformer Pole Riser Length:  
 35' Pole = 20' Riser  
 40' Pole = 24' Riser

Ⓑ Service Pole Riser Length:  
 30' Pole = 20' Riser  
 35' Pole = 24' Riser

Ⓒ Member's Conduit  
 Member's conduit shall be installed 8"-12" from pole



Only 2", 3", or 4" approved electrical metal conduit is allowed. Risers will not exceed 2 risers per pole. Member will provide 12' of conductor tails from top of weatherhead. Bluebonnet to supply stand-offs. (Bluebonnet to mount risers to pole).



Service to load cable enclosed in minimum schedule 40 nonmetallic conduit.

Minimum schedule 40 rigid nonmetallic service conduit below finished grade. No schedule 40 conduit allowed above ground level on source side of main disconnect.

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

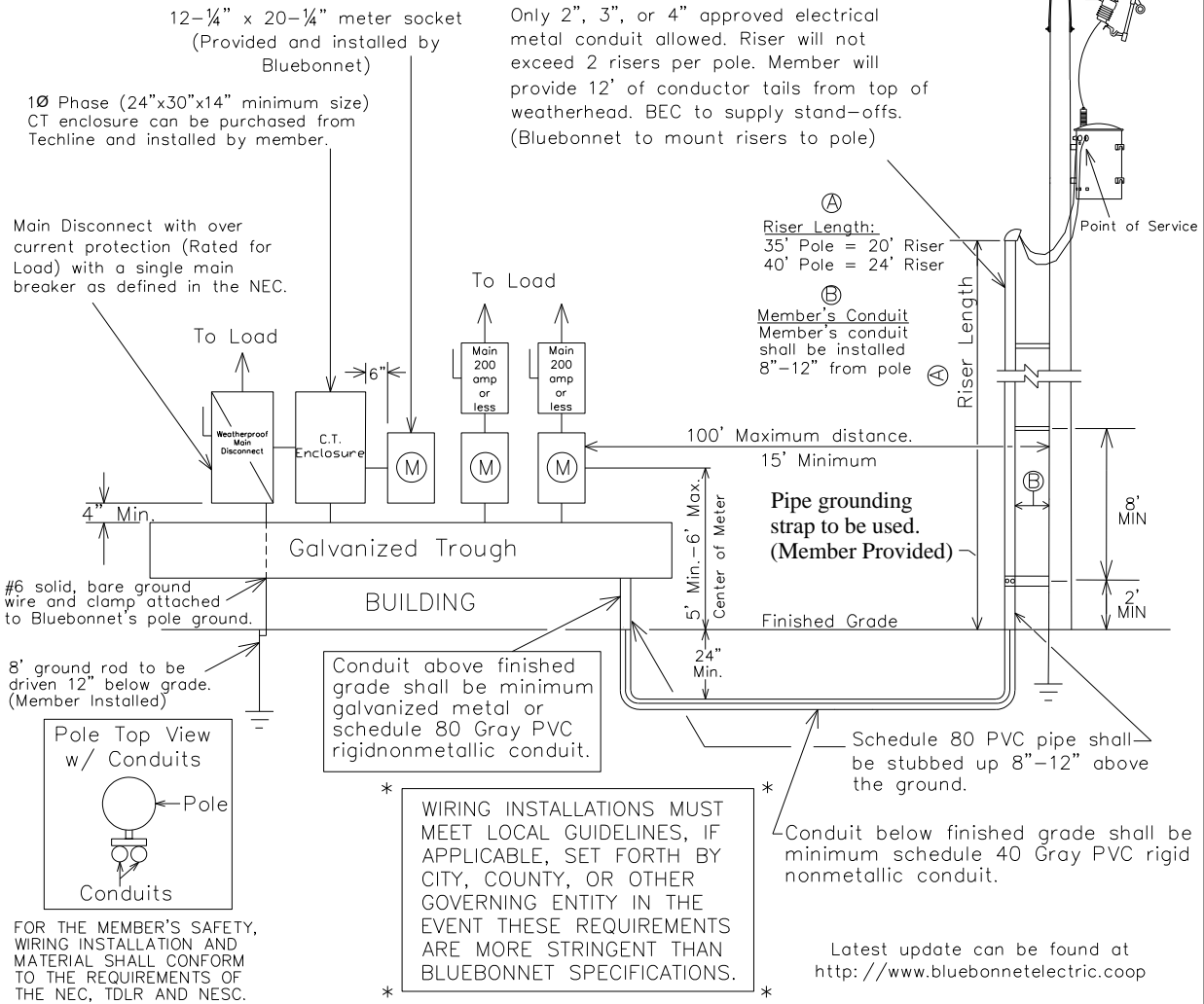
FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

Latest update can be found at <http://www.bluebonnetelectric.coop/myHome/electricServices/meterLoop.aspx>

|   |  |            |              |               |
|---|--|------------|--------------|---------------|
| 3 PHASE >200-800 AMP SERVICE WITH CT METERING ON RACK |  |            |              |               |
| DATE  | REVISIONS  | Drawn By : | Checked By : | Approved By : |
| 11-28-2017  | Bold lettering of schedule 80 PVC                | RG         | MS COMMITTEE | MS COMMITTEE  |
| 11-19-2019  | Added Solid Copper Note.                         |            |              |               |
| 04-16-2021  | Removed Single Phase from the CT Enclosure Note. | Scale :    | DATE:        |               |
| 11-04-2021  | Added Main Breaker Note                          | NONE       | 11-04-2021   | MS-113B3      |

**Notes:**

1. Line taps shall be made in the galvanized wiring trough by the electrical contractor.
2. Weatherproof fittings Required.
3. (2) disconnects could be substituted with (1) disconnect. All disconnects shall have over current protection installed.
4. No more than (2) risers or (2) conductors per phase shall be allowed.
5. Wire shall be sized to total name plate disconnect sizes.
6. Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
7. The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's before the service wire is pulled. The electrician shall install them on the rack with the correct polarity before the conductor is brought thru the 30"x42" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.
8. More than (6) main disconnects require a properly sized main disconnect ahead of the galvanized trough.
9. Bluebonnet pole must remain free of structures and private attachments other than meter loop riser assembly.
10. Meter assembly must remain unenclosed on exterior of structure.
11. Type K-4, Bolt-in type meter can: Description: 400 amp, 4 terminals, 3-wire, residential/commercial socket single phase self-contained, large cover plate. These meter cans are available for purchase through Techline (512-332-2978) or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Maintain 3"-6" distance from the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.



1Ø 400-800 TOTAL AMPS WITH MULTIPLE METERING POINTS ON BUILDING. (RISER TYPE)



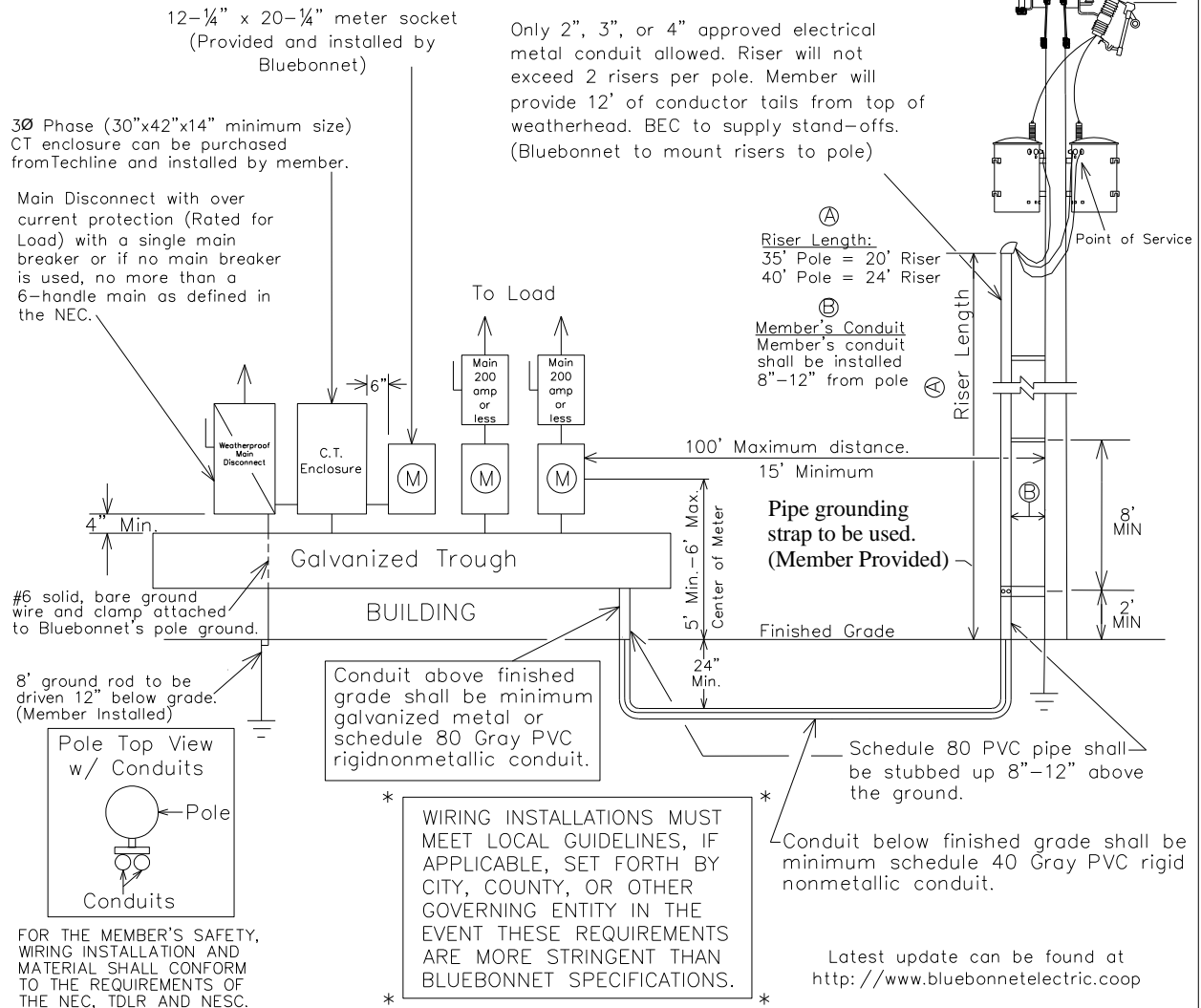
| DATE       | REVISIONS  | Drawn By : | Checked By : | Approved By : |
|------------|--|------------|--------------|---------------|
| 11-28-2017 | Bold lettering of Pipe grounding Strap             | RG         | MS COMMITTEE | MS COMMITTEE  |
| 11-19-2019 | Added Solid Copper Note.                           |            |              |               |
| 04-19-2021 | Changed the size of the CT Meter Can requirements. |            |              |               |
| 11-04-2021 | Added Main Breaker Note                            |            |              |               |
|            |  | Scale :    | Date :       |               |
|            |  | NONE       | 11-04-2021   | MS-114A1      |



**Notes:**

1. Line taps shall be made in the galvanized wiring trough by the electrical contractor.
2. Weatherproof fittings Required.
3. (2) disconnects could be substituted with (1) disconnect. All disconnects shall have over current protection installed.
4. No more than (2) risers or (2) conductors per phase shall be allowed.
5. Wire shall be sized to total name plate disconnect sizes.
6. Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
7. The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's before the service wire is pulled. The electrician shall install them on the rack with the correct polarity before the conductor is brought thru the 30"x42" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.

8. More than (6) main disconnects require a properly sized main disconnect ahead of the galvanized trough.
9. Bluebonnet pole must remain free of structures and private attachments other than meter loop riser assembly.
10. Meter assembly must remain unenclosed on exterior of structure.
11. Type K-4, Bolt-in type meter can: Description: 400 amp, 4 terminals, 3-wire, residential/commercial socket single phase self-contained, large cover plate. These meter cans are available for purchase through Techline (512-332-2978) or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications.
12. Maintain 3"-6" distance from the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
13. No more than one disconnect per enclosure.



|  |  |               |              |
|--|--|---------------|--------------|
| 3 PHASE 200-800 TOTAL AMPS WITH MULTIPLE METERING POINTS ON BUILDING. (RISER TYPE) |  |               |              |
| DATE   | REVISIONS  | Drawn By :    | Checked By : |
| 11-28-2017   | Bold lettering of pipe grounding strap           | RG            | MS COMMITTEE |
| 11-19-2019   | Added Solid Copper Note.                         |               | MS COMMITTEE |
| 04-19-2021   | Removed Single Phase from the CT Enclosure Note. | Scale :       | Date :       |
| 11-04-2021   | Added Main Breaker Note                          | NONE          | 11-04-2021   |
|  |  | Approved By : |              |
|  |  | MS-114B3      |              |

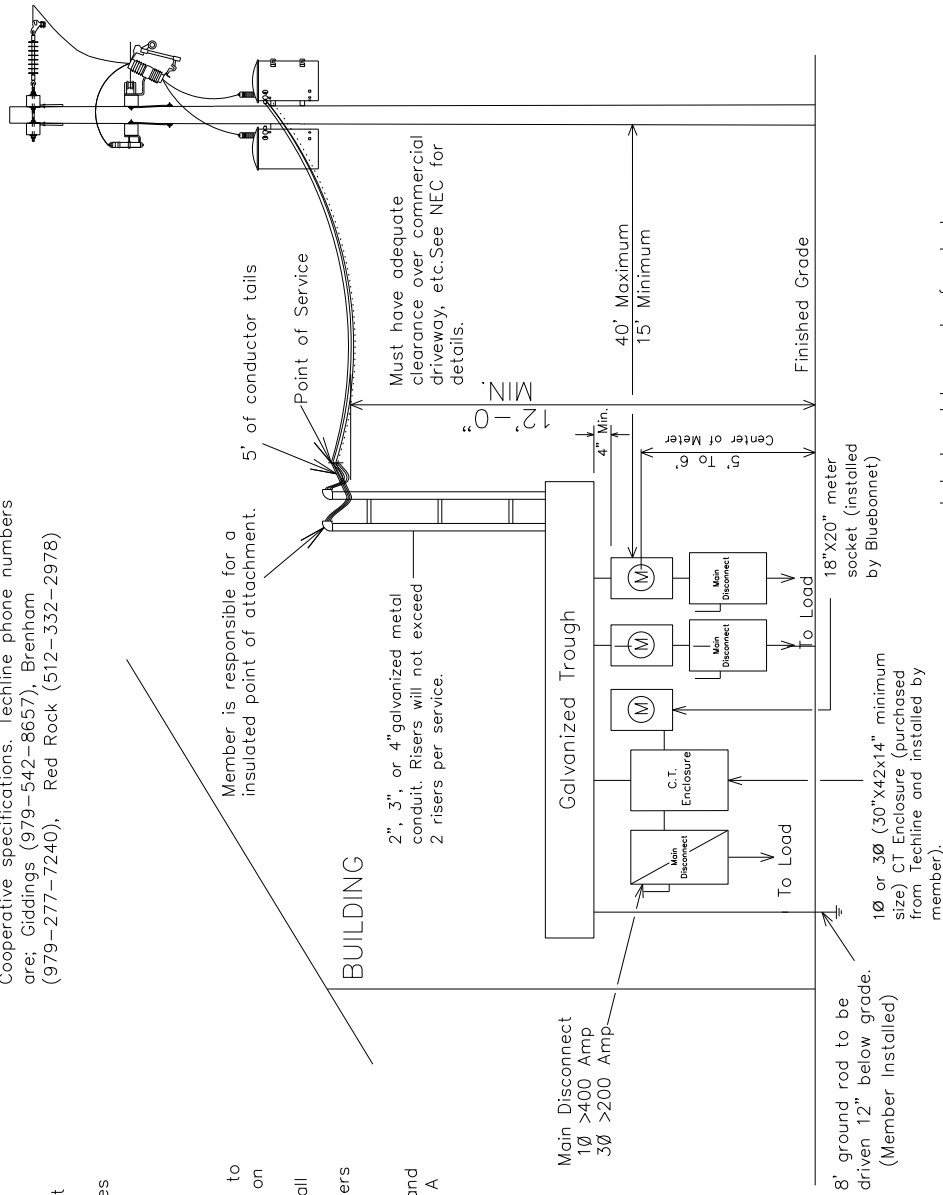
Notes:

- When more than (1) disconnect is used, a galvanized trough system shall be installed.
- Line taps shall be made in the galvanized wire trough by the electrical contractor.
- (2) disconnects can be substituted with (1) fused disconnect.
- No more than (2) risers or (2) conductors per phase shall be allowed.
- Wire shall be sized to total name plate disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential applications. No reduction of the neutral(s) is allowed on commercial application.
- Total disconnect's will not exceed a total of 800 amps.
- The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personal to deliver the CT's. The electrician shall install them on the rack with the correct polarity before the conductor is brought thru the 30"x42" CT can. Call 800-842-7708 to schedule a connect.
- Gutter can be mounted on top or bottom of meters as long as the center of the meter distance in 5'-6".
- Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.


\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

- Type K-4, Bolt-in type meter can:  
Description: 400 amp, 4 terminals, 3-wire, residential/commercial socket singlephase self-contained, large coverplate. These meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline phone numbers are; Giddings (979-542-8657), Brenham (979-277-7240), Red Rock (512-332-2978)



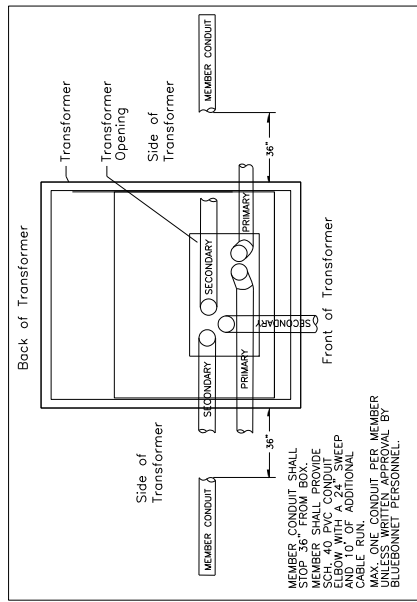
Latest update can be found at <http://www.bluebonnetelectric.coop/myHome/electricServices/meterLoop.aspx>

|   |  |  |                  |                              |                     |
|---|--|--|------------------|------------------------------|---------------------|
|  |  | 10 400-800 TOTAL AMP OR 30 200-800 TOTAL AMP<br>WITH MULTIPLE METERING POINTS ON BUILDING. SERVICE TYPE    | Drawn By :<br>RG | Checked By :<br>MS COMMITTEE | Approved By :<br>TE |
|   |  | REVISIONS<br>01-29-2017 Changed the dimension on the CT Enclosure.<br>11/29/2017 Changed Wording 5' To 6'. | Scale :<br>NONE  | Date :<br>11/29/2017         | MS-115              |



| CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENT OF STANDARD WIRE SIZE.<br>(RHH, RHW, THW, THHN, THHN, AND XHHW)<br>REFER TO NEC FOR OTHER CALCULATIONS. |              |
|---|--------------|
| COPPER CONDUCTOR  |              |
| WIRE SIZE   | BREAKER SIZE |
| #6  | 60 AMP       |
| #4  | 100 AMP      |
| #2  | 125 AMP      |
| #1  | 150 AMP      |
| #2/0  | 200 AMP      |
| ALUMINUM CONDUCTOR  |              |
| WIRE SIZE   | BREAKER SIZE |
| #4  | 60 AMP       |
| #2  | 100 AMP      |
| #1/0  | 125 AMP      |
| #2/0  | 150 AMP      |
| #4/0  | 200 AMP      |

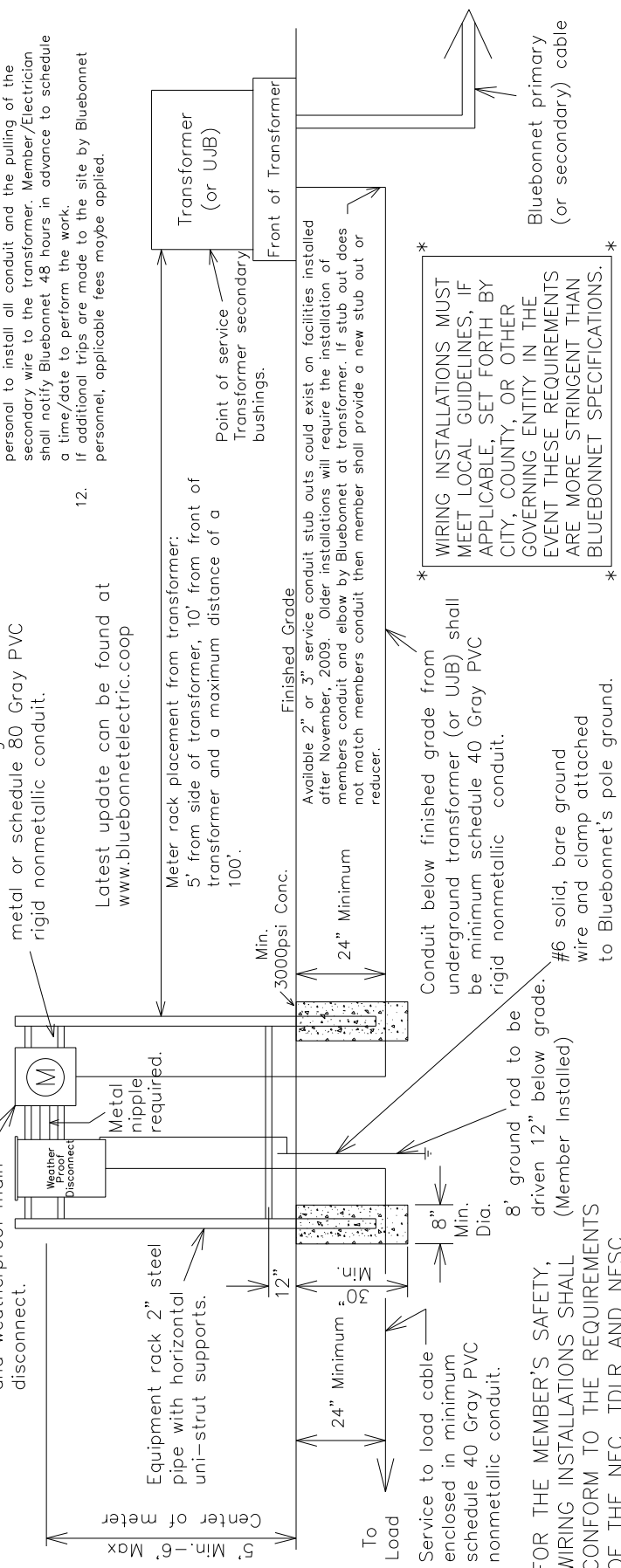
Single Phase Transformer Layout



Conduit above finished grade shall be minimum galvanized metal or schedule 80 Gray PVC rigid nonmetallic conduit.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

200 amp meter socket and weatherproof main disconnect.



WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

10. Member/Electrician shall coordinate with Bluebonnet personal to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.

11. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.

Notes:

- Weatherproof fittings required.
- For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located.
- Shall install an additional 10' of wire for termination.
- Main disconnect shall have a single main breaker as defined in the NEC.
- Neutral may be reduced no more than two sizes on residential application. No reduction of the neutral is allowed on commercial application.
- Metering point must remain unenclosed on exterior of structure. Metering point can not be mounted on the side of a mobile home.
- All connections inside pad mounted transformer and UJB's will be made by Bluebonnet.
- THREE PHASE APPLICATIONS ONLY DESCRIPTION: 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Giddings(979-542-8657), Brenham (979-277-7240), Red Rock (512-332-2978) Member must contact Bluebonnet to determine where the secondary conduit is to be run to the transformer. Conduit to be installed 36" to the side of transformer. Call 800-842-7708 to schedule an appointment.

Drawn By : CV

Scale : NONE

Checked By : MS COMMITTEE

Date : 11-04-2021

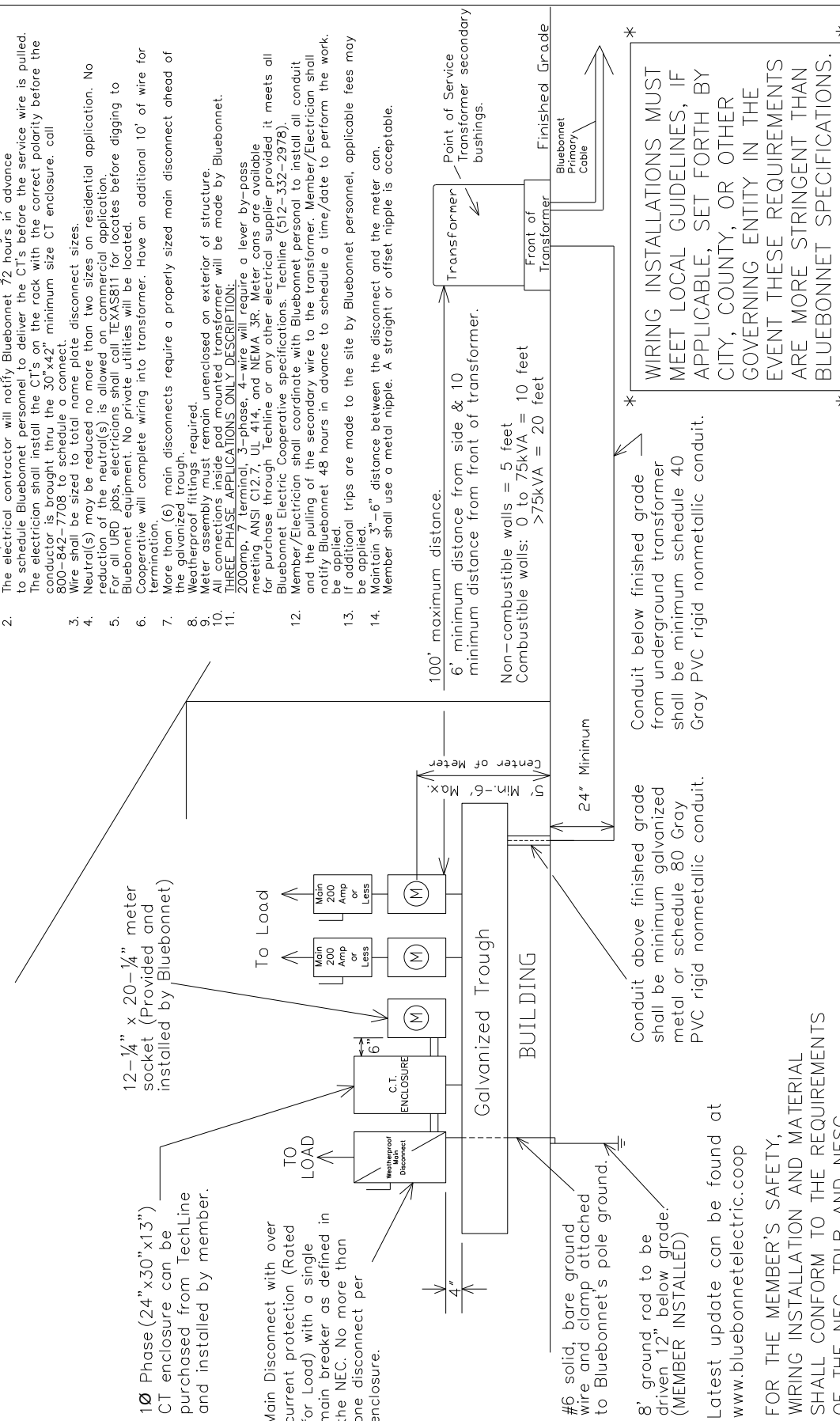
Approved By : MS COMMITTEE

MS-201

1Ø OR 3Ø, 60-200 AMP UNDERGROUND SERVICE ON RACK OR BUILDING

**Notes:**

- Line taps shall be made in the galvanized wiring trough by the electrical contractor. The electrical contractor will notify Bluebonnet 72 hours in advance to schedule. Bluebonnet personnel will deliver the CT's before the service wire is pulled. The electrician shall install the CT's on the rock with the correct polarity before the conductor is brought thru the 30"x42" minimum size CT enclosure. call 800-842-7708 to schedule a connect.
- Wire shall be sized to total name plate disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
- For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located.
- Cooperative will complete wiring into transformer. Have an additional 10' of wire for termination.
- More than (6) main disconnects require a properly sized main disconnect ahead of the galvanized trough.
- Weatherproof fittings required.
- Meter assembly must remain unenclosed on exterior of structure.
- All connections inside pad mounted transformer will be made by Bluebonnet.
- THREE PHASE APPLICATIONS ONLY DESCRIPTION: 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline (512-332-2978).
- Member/Electrician shall coordinate with Bluebonnet personal to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
- Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.



WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.

Conduit below finished grade from underground transformer shall be minimum schedule 40 Gray PVC rigid nonmetallic conduit.

Conduit above finished grade shall be minimum galvanized metal or schedule 80 Gray PVC rigid nonmetallic conduit.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

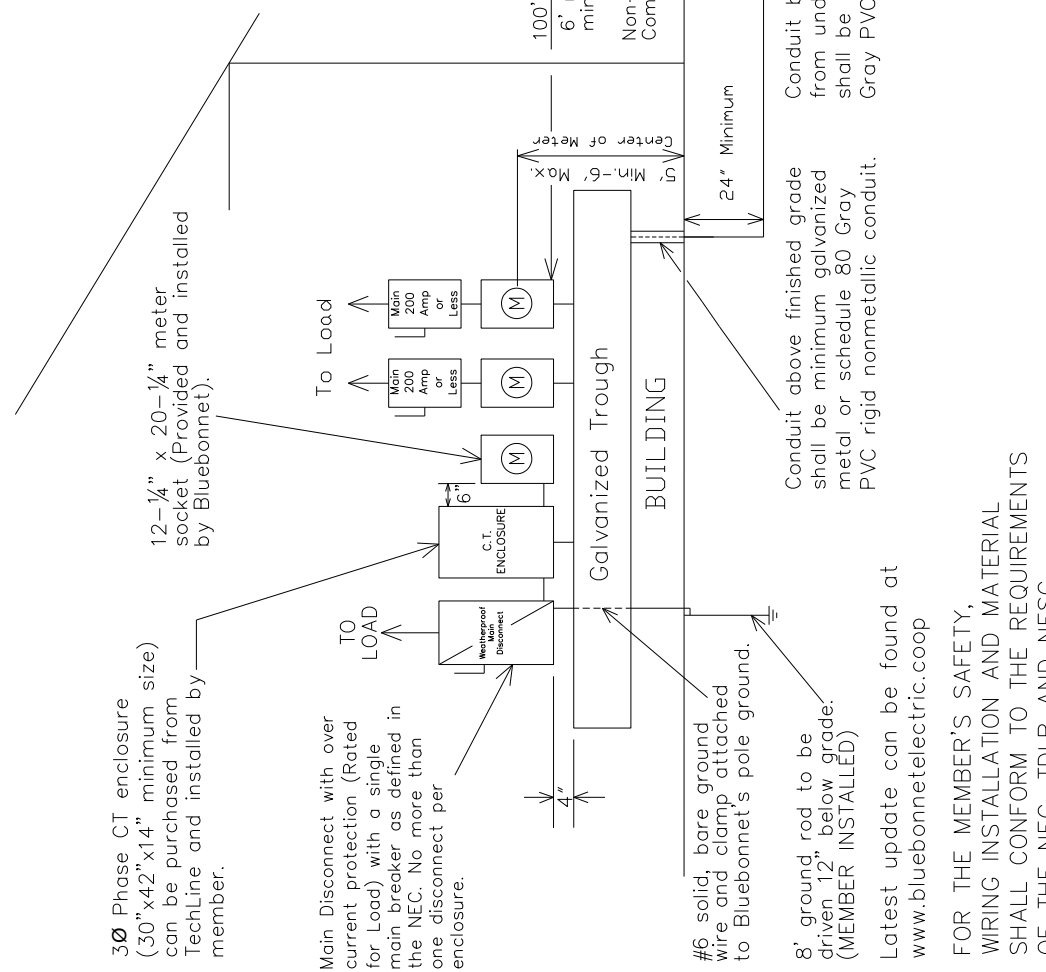
|  |   |                          |                                  |
|--|---|--------------------------|----------------------------------|
|  | <p>1 PHASE &gt;400 AMP UNDERGROUND WITH MULTIPLE METERING POINTS AND CT METERING ON BUILDING.</p> | <p>Drawn By : RG</p>     | <p>Checked By : MS COMMITTEE</p> |
|  | <p>REVISIONS</p>  | <p>Scale : NONE</p>      | <p>MS COMMITTEE</p>              |
|  | <p>DATE</p>   | <p>Date : 11-04-2021</p> | <p>MS-202A1</p>                  |
|  | <p>04-19-2021</p>   |                          |                                  |
|  | <p>11-04-2021</p>   |                          |                                  |
|  | <p>Changed the size of the CT Meter Con requirements.</p>   |                          |                                  |
|  | <p>Added Main Breaker Note</p>  |                          |                                  |



FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

**Notes:**

1. Line taps shall be made in the galvanized wiring trough by the electrical contractor.
2. The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's before the service wire is pulled. The electrician shall install the CT's on the rack with the correct polarity before the conductor is brought thru the 30"x42" minimum size CT enclosure. call 800-842-7708 to schedule a connect.
3. Wire shall be sized to total name plate disconnect sizes.
4. Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application. For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located.
5. Cooperative will complete wiring into transformer. Have an additional 10' of wire for termination.
6. More than (6) main disconnects require a properly sized main disconnect ahead of the galvanized trough.
7. Weatherproof fittings required.
8. Meter assembly must remain unenclosed on exterior of structure.
9. All connections inside pad mounted transformer will be made by Bluebonnet.
10. THREE-PHASE APPLICATIONS ONLY DESCRIPTION: 200amp, 7 Terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline (512-332-2978).
11. Member/Electrician shall coordinate with Bluebonnet personnel to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.
12. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
13. Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.



100' maximum distance.  
 6" minimum distance from side & 10' minimum distance from front of transformer.  
 Non-combustible walls = 5 feet  
 Combustible walls: 0 to 75kVA = 10 feet  
 >75kVA = 20 feet


WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.

Conduit below finished grade from underground transformer shall be minimum schedule 40 Gray PVC rigid nonmetallic conduit.

Conduit above finished grade shall be minimum galvanized metal or schedule 80 Gray PVC rigid nonmetallic conduit.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

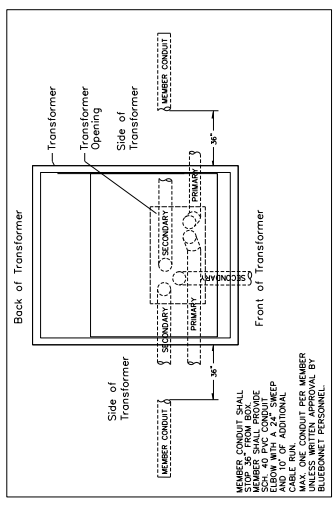
|   |   |           |                           |                            |
|---|---|-----------|---------------------------|----------------------------|
|  | 3 PHASE >200 AMP UNDERGROUND WITH MULTIPLE METERING POINTS AND CT METERING ON BUILDING. |           | Checked By : MS COMMITTEE | Approved By : MS COMMITTEE |
|   | DATE  | REVISIONS | Drawn By : RG             | Date : 11-04-2021          |
|   | 04-19-2021   Removed Single Phase from the CT Enclosure Note.                           |           | Scale : NONE              | MS-202B3                   |
|   | 11-04-2021   Added Main Breaker Note  |           |                           |                            |

**Notes:**

1. Main disconnect panel may not be used as an electrical race way.
2. Line taps shall be made by the electrical contractor if a galvanized wiring trough is used.
3. Weatherproof fittings required.
4. Any combination of six disconnects totaling no more than 400 amps can be used. REF. NEC, SEC 230.71
5. Recommended wire size is either parallel 2/0 THHN copper or parallel 4/0 THHN aluminum.
6. Neutrals may be reduced no more than two sizes on residential applications. No reduction of the neutrals is allowed on commercial applications.
7. Member shall install an additional of 10' wire for termination.
8. Weatherproof main disconnect panels shall have a single main breaker or 6-handle main as defined in the NEC.
9. Metering point must remain unenclosed on exterior of structure.
10. Metering cannot be mounted on the side of a mobile home.

\*  
**WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.**  
 \*

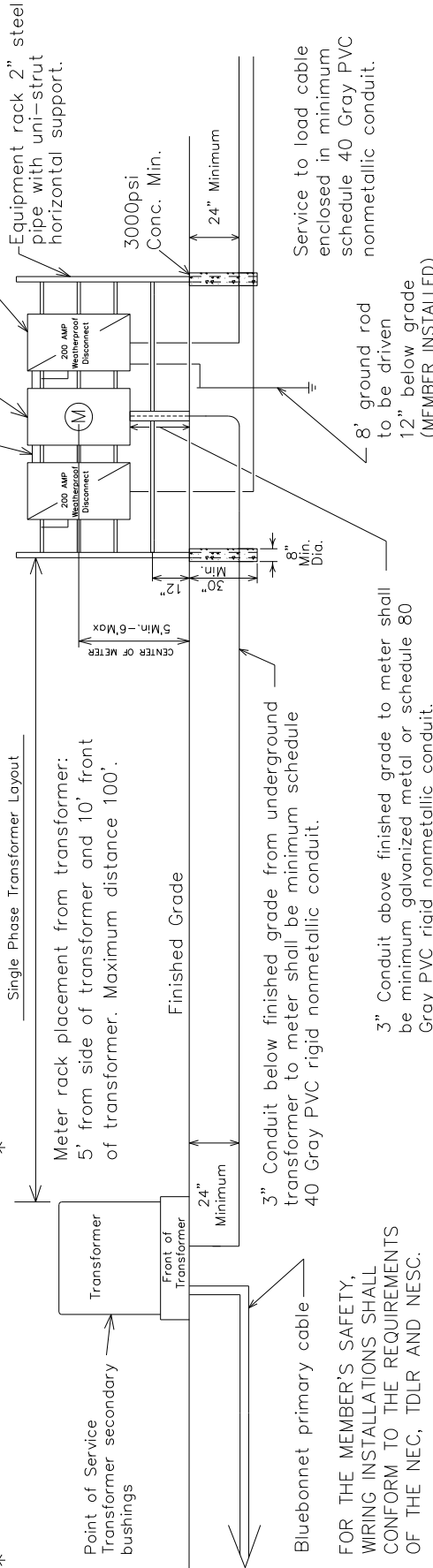
11. All secondary connections in transformer are made by Bluebonnet.
12. Only 400 Amps meter cans are allowed. No 320 Amp Meter Cans are allowed.
13. All service wires entering the meter can (Top or Bottom Feed) will be terminated at the closest lugs. No phase conductors shall be run through the center of the meter can.
14. Member must contact Bluebonnet to determine where the secondary conduit is to be run to the transformer. Conduit to be installed 36" to the side of transformer. Call 800-842-7708 to schedule an appointment.
15. Member/Electrician shall coordinate with Bluebonnet personal to install all conduit and the pulling of the secondary wire to the transformer.
16. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.
17. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
18. Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
19. Largest wire to be pulled in to the meter can is 500 MCM Cooper.
20. A detailed load sheet shall be filled out and returned to Bluebonnet before the service will be connected.



Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

Landis & Gyr, Type K-4, Description: 400 amp, 4 terminals, 3 wire, residential/commercial socket single phase self-contained, large coverplate. The meter lugs can accommodate up to 500 MCM. These meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline phone numbers; Red Rock (512-332-2978).

Metal nipple required.  
 Weatherproof Disconnect(s). No more than one disconnect per enclosure



FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

|  |   |  |            |      |              |              |              |
|--|---|--|------------|------|--------------|--------------|--------------|
|  | 1Ø 400 AMP URD SERVICE ON RACK OR BUILDING WITH K BASE BOLTED IN METER SOCKET |  | Drawn By : | RG   | Checked By : | MS COMMITTEE | MS COMMITTEE |
|  | REVISIONS   |  | Scale :    | NONE | Date :       | 11-04-2021   | MS-203       |
|  | 11-20-19 Added Solid Copper Note.<br>11-04-21 Added Main Breaker Note         |  |            |      |              |              |              |

Notes:

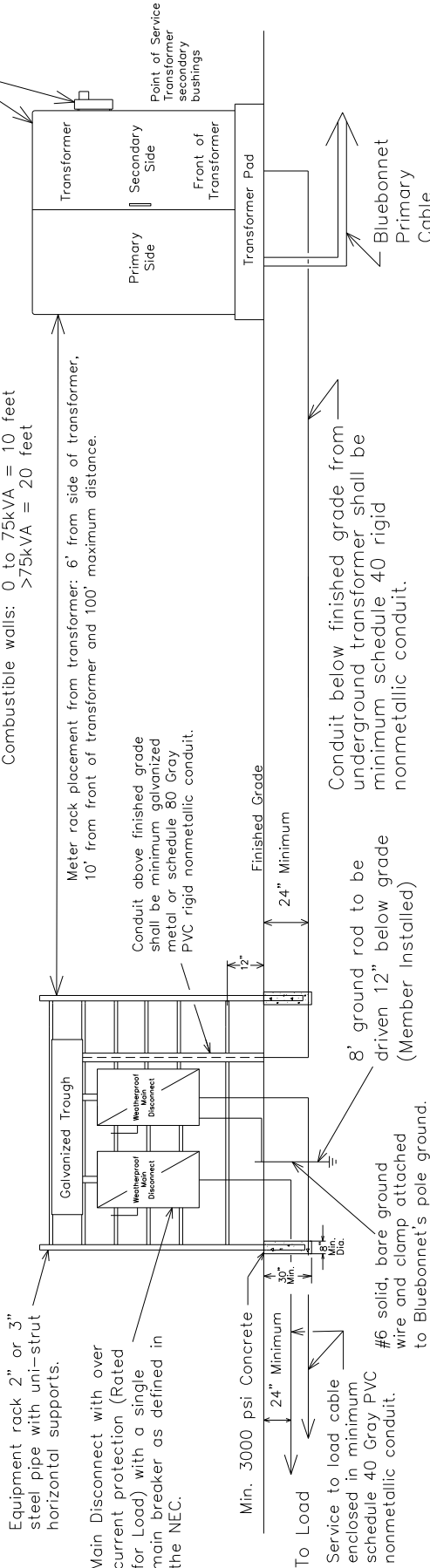
1. Line taps shall be made in the galvanized trough by the electrical contractor.
2. Weatherproof fittings required.
3. Two disconnects could be substituted with (1) disconnect. All disconnects shall have over current protection.
4. Wire shall be sized to total disconnect sizes.
5. Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
6. Member shall contact Bluebonnet Electric to determine the secondary conduit location. Conduit to be installed 36" to the side of transformer. Call 800-842-7708 to schedule an appointment.
7. Bluebonnet will complete wiring into transformer. Have sufficient amount of wire for termination. Member shall install an additional 10' of wire for termination.
8. All secondary connections to be made inside transformer by Bluebonnet.
9. Bluebonnet to provide the CT's.
10. Meter assembly must remain unenclosed on exterior of structure.
11. Member/Electrician shall coordinate with Bluebonnet personal to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.
12. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
13. Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

Three phase application, the CT's & meter can are located on/in the transformer.

Non-combustible walls = 5 feet  
Combustible walls: 0 to 75kVA = 10 feet  
>75kVA = 20 feet



Conduit below finished grade from underground transformer shall be minimum schedule 40 rigid nonmetallic conduit.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)



3 PHASE >200 AMP UNDERGROUND SERVICE WITH DISCONNECT ON RACK OR BUILDING

| DATE     | REVISIONS                |
|----------|--------------------------|
| 11-20-19 | Added Solid Copper Note. |
| 11-04-21 | Added Main Breaker Note  |

Drawn By : RG

Checked By : MS COMMITTEE

Approved By : MS COMMITTEE

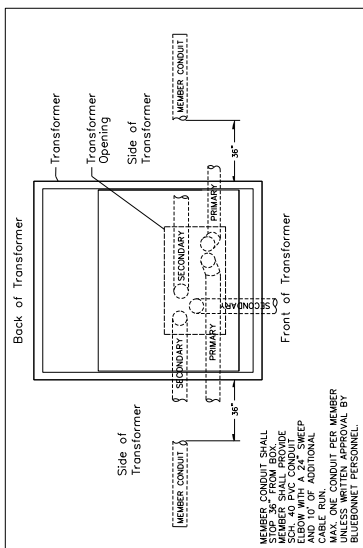
Scale : NONE

Date : 11-04-2021

MS-204A3

**Notes:**

- Line taps shall be made in the galvanized wiring trough by the electrical contractor.
- The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's. The electrician shall install the CT's (provided by BEC) on the rack with the correct polarity before the conductor is brought thru the 30"x42" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.
- Wire shall be sized to total name plate disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application. For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located.
- Cooperative will complete wiring into transformer or UJB. Have an additional 10' of wire for termination.
- Weatherproof fittings required.
- Meter assembly must remain unenclosed on exterior of structure.
- All connections inside pad mounted transformer will be made by Bluebonnet.
- Member/Electrician shall coordinate with Bluebonnet personnel to install all conduit and the pulling of the secondary wire to the transformer.
- Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.
- If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
- CT enclosure can be purchased from Techline (512-332-2978).
- Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.
- #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground.



Single Phase Transformer Layout

10 Phase (24"x30"x13" minimum size) CT enclosure (purchased from Techline and installed by member).

12-1/4" x 20-1/4" meter socket (Provided and installed by Bluebonnet).

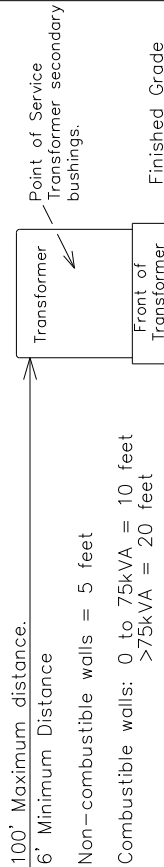
Main Disconnect with over current protection (Rated for Load) with a single main breaker as defined in the NEC.

BUILDING

8' ground rod to be driven 12" below grade. (MEMBER INSTALLED)

FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NECC.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)



Conduit below finished grade from underground transformer shall be minimum schedule 40 Gray PVC rigid nonmetallic conduit.

Conduit above finished grade shall be minimum galvanized metal or schedule 80 Gray PVC rigid nonmetallic conduit.

WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.

|  |   |  |                           |                            |
|--|---|--|---------------------------|----------------------------|
|  | 1 PHASE >400 AMP SERVICE WITH CT METERING ON BUILDING OR RACK |  | Checked By : MS COMMITTEE | Approved By : MS COMMITTEE |
|  | 11-20-2017 Added Solid Copper Note.                           |  | Drawn By : RG             | Date : 11-04-2021          |
|  | 04-16-2021 Changed the size of the CT Meter Can requirements. |  | Scale : NONE              | MS-204B1                   |



**Notes:**

- Line taps shall be made in the galvanized wiring trough by the electrical contractor.
- The electrical contractor will notify Bluebonnet 72 hours in advance to schedule Bluebonnet personnel to deliver the CT's. The electrician shall install the CT's (provided by BEC) on the rack with the correct polarity before the conductor is brought thru the 30"x42" (minimum size) CT enclosure. Call 800-842-7708 to schedule a connect.
- Wire shall be sized to total name plate disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application. For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located.
- Cooperative will complete wiring into transformer or UJB. Have an additional 10' of wire for termination.
- Weatherproof fittings required.
- Meter assembly must remain unenclosed on exterior of structure.
- All connections inside pod mounted transformer will be made by Bluebonnet Member/Electrician shall coordinate with Bluebonnet personnel to install all conduit and the pulling of the secondary wire to the transformer.
- Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.
- If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
- CT enclosure can be purchased from Techline (512-332-2978).
- Maintain 3"-6" distance between the disconnect and the meter can. Member shall use a metal nipple. A straight or offset nipple is acceptable.

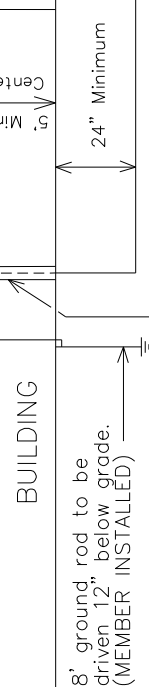
FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

3Ø Phase (30"x42"x14" minimum size) CT enclosure (purchased from Techline and installed by member).

12-1/4" x 20-1/4" meter socket (Provided and installed by Bluebonnet)

Main Disconnect with over current protection (Rated for Load) with a single main breaker as defined in the NEC.

#6 solid, bare ground wire and clamp attached to Bluebonnet's pole ground.



100' Maximum distance.  
6' Minimum Distance  
Non-combustible walls = 5 feet  
Combustible walls: 0 to 75kVA = 10 feet  
>75kVA = 20 feet

Conduit below finished grade from underground transformer shall be minimum schedule 40 Gray PVC rigid nonmetallic conduit.

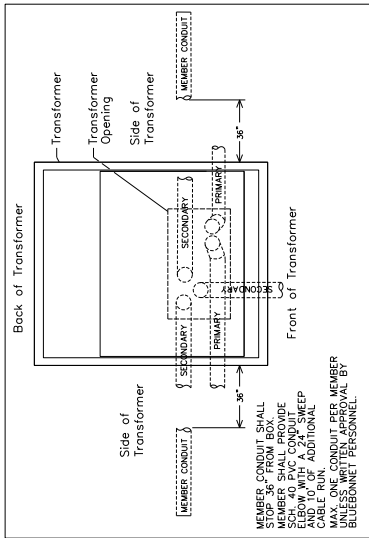
Conduit above finished grade shall be minimum galvanized metal or schedule 80 Gray PVC rigid nonmetallic conduit.

WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

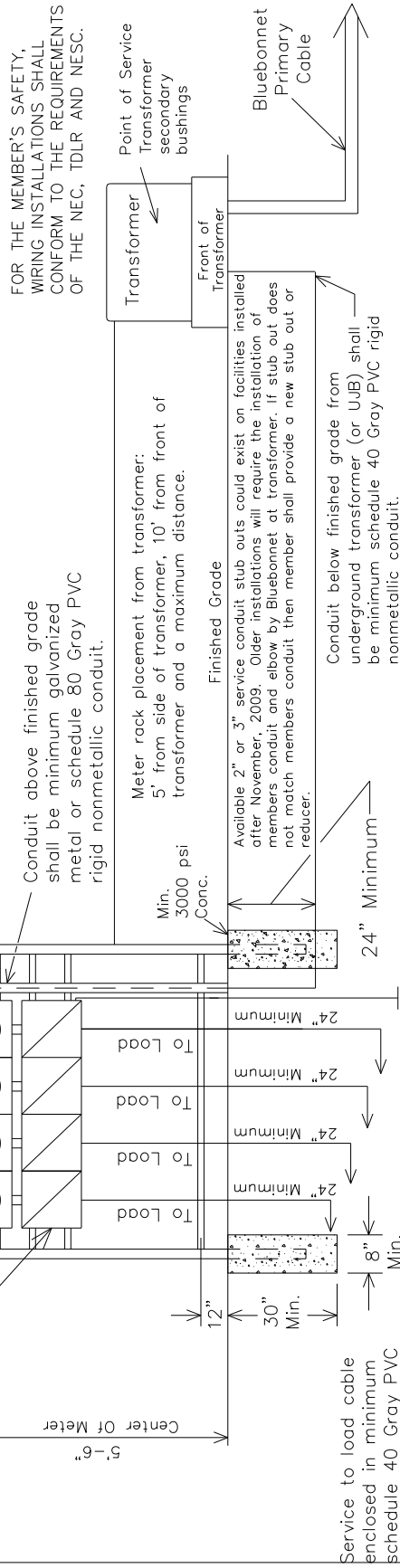
|  |  |                               |  |  |
|--|--|-------------------------------|--|--|
|  | 3 Phase >200 AMP SERVICE WITH CT METERING ON BUILDING OR RACK<br>11-20-2019   Added Solid Copper Note.<br>04-19-2021   Removed Single Phase from the CT Enclosure Note.<br>11-04-2021   Added Main Breaker Note. | Drawn By : RG<br>Scale : NONE | Checked By : MS COMMITTEE<br>Date : 11-04-2021 | Approved By : MS COMMITTEE<br>MS-204B3 |
|  |  |                               | Date : 11-04-2021                              | MS-204B3                               |
|  |  |                               | Scale : NONE                                   | Date : 11-04-2021                      |

Single Phase Transformer Layout



Notes:

- Line tops shall be made in the galvanized trough by the electrical contractor.
- More than (6) main disconnects require a properly sized main disconnect ahead of the galvanized trough.
- Weatherproof fittings required.
- Wire shall be sized to total disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
- For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located. Bluebonnet will complete wiring into transformer. Have 10' additional amount of wire for termination.
- Meter loop must remain unenclosed on exterior of structure.
- Meter loop can not be mounted on the side of a mobile home.
- All secondary connections made by Bluebonnet.
- THREE PHASE APPLICATIONS ONLY DESCRIPTION: 200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, and NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Giddings 979-542-8657, Red Rock 512-332-2978, Brenham 979-277-7240.
- Member/Electrician shall coordinate with Bluebonnet personal to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.



FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

| CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENT OF STANDARD WIRE SIZE. REFER TO NEC FOR OTHER CALCULATIONS. |                     |           |                     |
|---|---------------------|-----------|---------------------|
| COPPER CONDUCTOR  | CONDUIT/NIPPLE SIZE | WIRE SIZE | ALUMINUM CONDUCTOR  |
| 60 AMP  | 1 1/4" CONDUIT      | #4        | 60 AMP              |
| 100 AMP   | 1 1/2" CONDUIT      | #6        | 100 AMP             |
| 125 AMP   | 1 3/4" CONDUIT      | #8        | 125 AMP             |
| 150 AMP   | 2" CONDUIT          | #10       | 150 AMP             |
| 200 AMP   | 2 1/2" CONDUIT      | #12       | 200 AMP             |
|   |                     |           | CONDUIT/NIPPLE SIZE |
|   |                     |           | 1 1/4" CONDUIT      |
|   |                     |           | 1 1/2" CONDUIT      |
|   |                     |           | 1 3/4" CONDUIT      |
|   |                     |           | 2" CONDUIT          |
|   |                     |           | 2 1/2" CONDUIT      |

10 OR 30 AMP UNDERGROUND GANG MOUNTED METERS ON RACK OR BUILDING NOT TO EXCEED A TOTAL OF 800 AMPS.

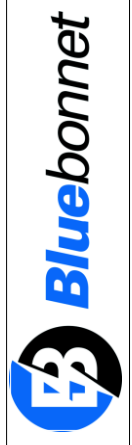
|            |                          |
|------------|--------------------------|
| DATE       | REVISIONS                |
| 12-07-2017 | ADDED WIRE SIZING CHART. |
| 12-07-2017 | ADDED MAIN BREAKER NOTE  |

Drawn By : RG  
Scale : NONE

Checked By : MS COMMITTEE  
Date : 11-04-2021

Approved By : MS COMMITTEE

MS-205

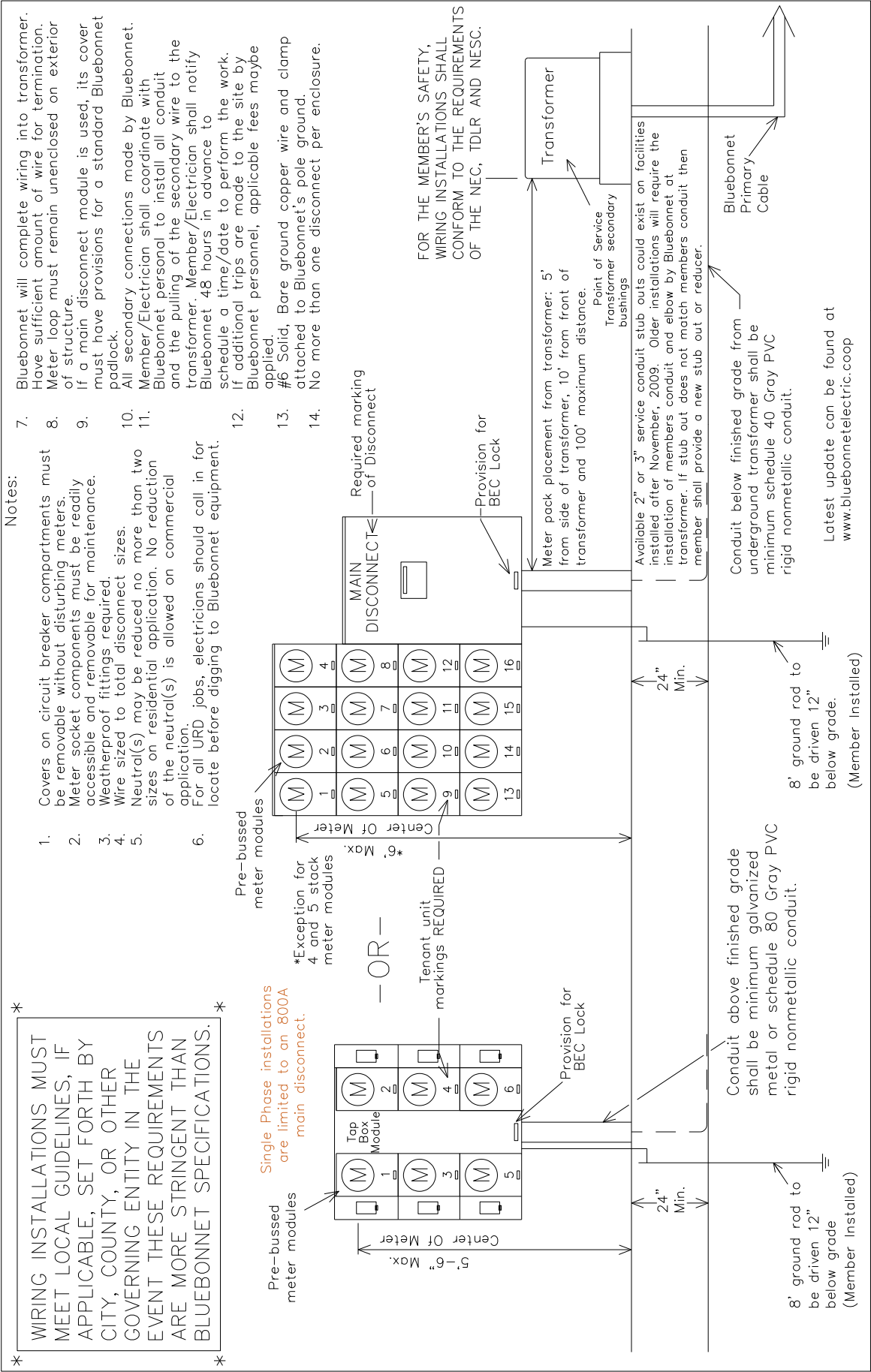


Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

No more than four 60-200 Amp meter sockets and weatherproof main disconnects. No more than one disconnect per enclosure.





**Notes:**

1. Covers on circuit breaker compartments must be removable without disturbing meters.
2. Meter socket components must be readily accessible and removable for maintenance.
3. Weatherproof fittings required.
4. Wire sized to total disconnect sizes.
5. Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
6. For all URD jobs, electricians should call in to locate before digging to Bluebonnet equipment.
7. Bluebonnet will complete wiring into transformer. Have sufficient amount of wire for termination. Meter loop must remain unenclosed on exterior of structure.
8. If a main disconnect module is used, its cover must have provisions for a standard Bluebonnet padlock.
9. All secondary connections made by Bluebonnet. Member/Electrician shall coordinate with Bluebonnet personnel to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work. If additional trips are made to the site by Bluebonnet personnel, applicable fees may be applied.
10. #6 Solid, Bare ground copper wire and clamp attached to Bluebonnet's pole ground.
11. No more than one disconnect per enclosure.

**WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS.**

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

Available 2" or 3" service conduit stub outs could exist on facilities installed after November, 2009. Older installations will require the installation of members conduit and elbow by Bluebonnet at member shall provide a new stub out or reducer.

Conduit below finished grade from underground transformer shall be minimum schedule 40 Gray PVC rigid nonmetallic conduit.

Conduit above finished grade shall be minimum galvanized metal or schedule 80 Gray PVC rigid nonmetallic conduit.

8' ground rod to be driven 12" below grade. (Member Installed)

8' ground rod to be driven 12" below grade. (Member Installed)

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

Pre-bussed meter modules

Single Phase installations are limited to an 800A main disconnect.

Pre-bussed meter modules

Exception for 4 and 5 stack meter modules

Tenant unit markings REQUIRED

Provision for BEC Lock

Provision for BEC Lock

Point of Service Transformer secondary bushings

Meter pack placement from transformer: 5' from side of transformer, 10' from front of transformer and 100' maximum distance.

Transformer

Bluebonnet Primary Cable

|   |                          |                           |                            |
|---|--------------------------|---------------------------|----------------------------|
| 10 60-200 AMP UNDERGROUND MULTI-PACK METERS ON BUILDING |                          | Checked By : MS COMMITTEE | Approved By : MS COMMITTEE |
| DATE  | REVISIONS                | Drawn By : BS             |                            |
| 11-20-19  | Added Solid Copper Note. | Scale : NONE              | Date : 11-04-2021          |
| 11-04-21  | Added Main Breaker Note. |                           | MS-207                     |

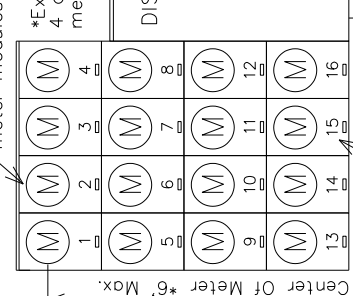
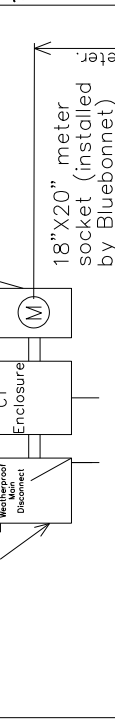
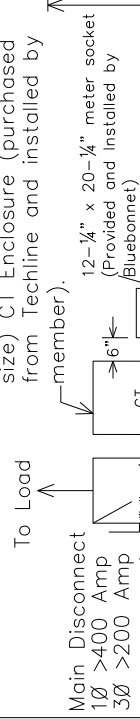
**\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \***

**Notes:**

- Covers on circuit breaker compartments must be removable without disturbing meters.
- Meter socket components must be readily accessible and removable for maintenance.
- Weatherproof fittings required.
- Wire sized to total disconnect sizes.
- Neutral(s) may be reduced no more than two sizes on residential application. No reduction of the neutral(s) is allowed on commercial application.
- For all URD jobs, electricians should call in for locate before digging to Bluebonnet equipment.

- Bluebonnet will complete wiring into transformer. Have sufficient amount of wire for termination.
- Meter loop must remain unenclosed on exterior of structure.
- If a main disconnect module is used, its cover must have provisions for a standard Bluebonnet padlock.
- All secondary connections made by Bluebonnet.
- Member/Electrician shall coordinate with Bluebonnet personal to install all conduit and the pulling of the secondary wire to the transformer. Member/Electrician shall notify Bluebonnet 48 hours in advance to schedule a time/date to perform the work.
- If additional trips are made to the site by Bluebonnet personnel, applicable fees maybe applied.
- #6 solid, bare ground copper wire and clamp attached to Bluebonnet's pole ground.
- No more than one disconnect per enclosure.

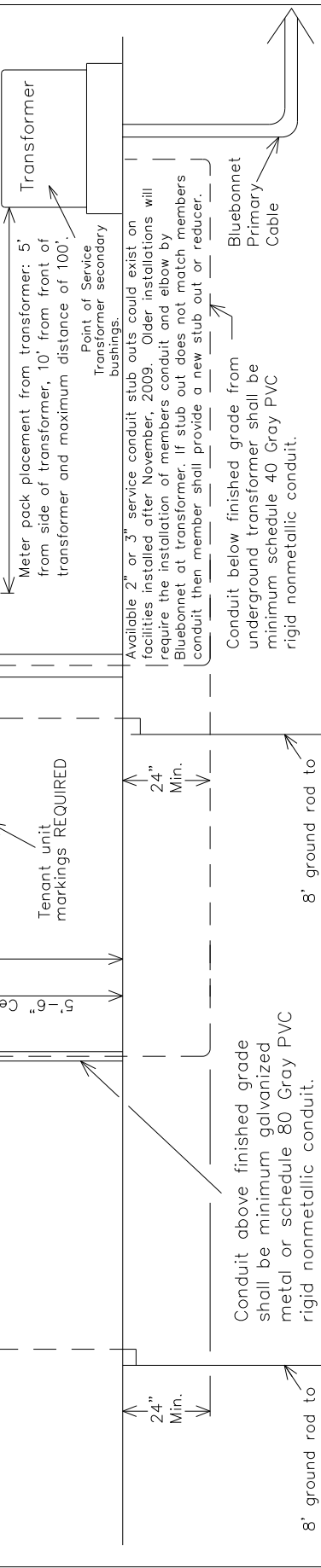
1Ø or 3Ø (30"X42"X14" minimum size) CT Enclosure (purchased from Techline and installed by member).



Required marking of Disconnect

Provision for BEC Lock

FOR THE MEMBER'S SAFETY, WIRING INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

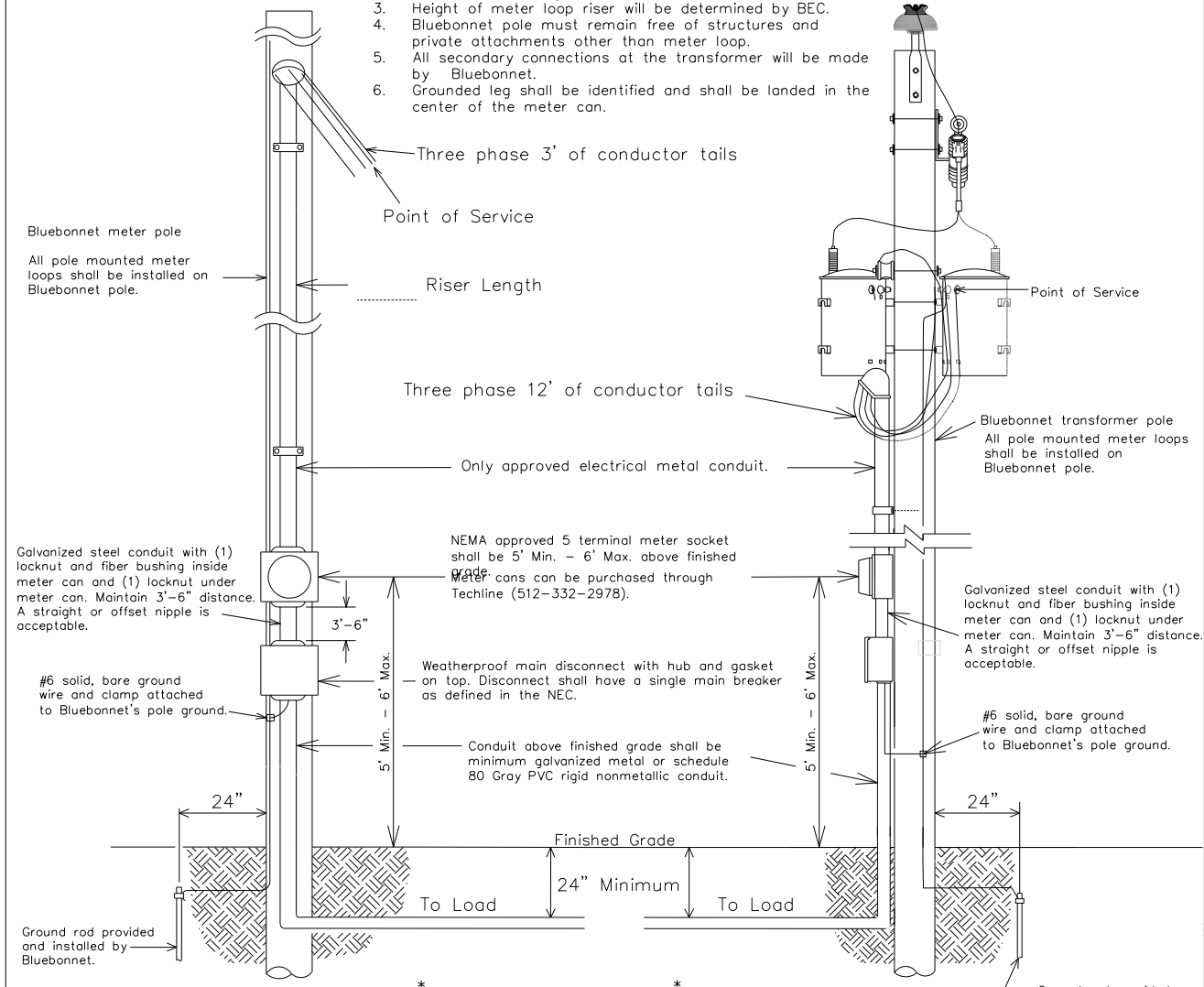


Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

|  |   |  |            |              |              |              |               |              |
|--|---|--|------------|--------------|--------------|--------------|---------------|--------------|
|  | <b>3Ø 60-200 AMP UNDERGROUND MULTI-PACK METERS &amp; 3Ø &lt; or &gt;200 AMP ON BUILDING</b> |  | Drawn By : | MS COMMITTEE | Checked By : | MS COMMITTEE | Approved By : | MS COMMITTEE |
|  | DATE REVISIONS  |  | Scale :    | NONE         | Date :       | 11-04-2021   |               |              |
|  | 11-20-2019 Added Solid Copper Note.<br>11-04-2021 Added Main Breaker Note.                  |  |            |              |              |              |               | MS-207B      |

Notes:

1. A Bond wire shall be used, see NEC Table 250.66 for Bond Wire sizing.
2. Weatherproof fittings required.
3. Height of meter loop riser will be determined by BEC.
4. Bluebonnet pole must remain free of structures and private attachments other than meter loop.
5. All secondary connections at the transformer will be made by Bluebonnet.
6. Grounded leg shall be identified and shall be landed in the center of the meter can.



FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.


\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

CURRENT CARRYING CAPACITIES AND CONDUIT SIZE REQUIREMENT OF STANDARD WIRE SIZE—(RHH, RHW, THW, THWN, THHN, AND XHHW REFER TO NEC FOR OTHER CALCULATIONS.

| COPPER CONDUCTOR |              |              | ALUMINUM CONDUCTOR |              |              |
|------------------|--------------|--------------|--------------------|--------------|--------------|
| WIRE SIZE        | BREAKER SIZE | CONDUIT SIZE | WIRE SIZE          | BREAKER SIZE | CONDUIT SIZE |
| #6               | 60 AMP       | 1¼" CONDUIT  | #4                 | 60 AMP       | 1¼" CONDUIT  |
| #4               | 100 AMP      | 1¼" CONDUIT  | #2                 | 100 AMP      | 1¼" CONDUIT  |
| #2               | 125 AMP      | 1½" CONDUIT  | #1/0               | 125 AMP      | 1½" CONDUIT  |
| #1               | 150 AMP      | 2" CONDUIT   | #2/0               | 150 AMP      | 2" CONDUIT   |
| #2/0             | 200 AMP      | 2" CONDUIT   | #4/0               | 200 AMP      | 2" CONDUIT   |

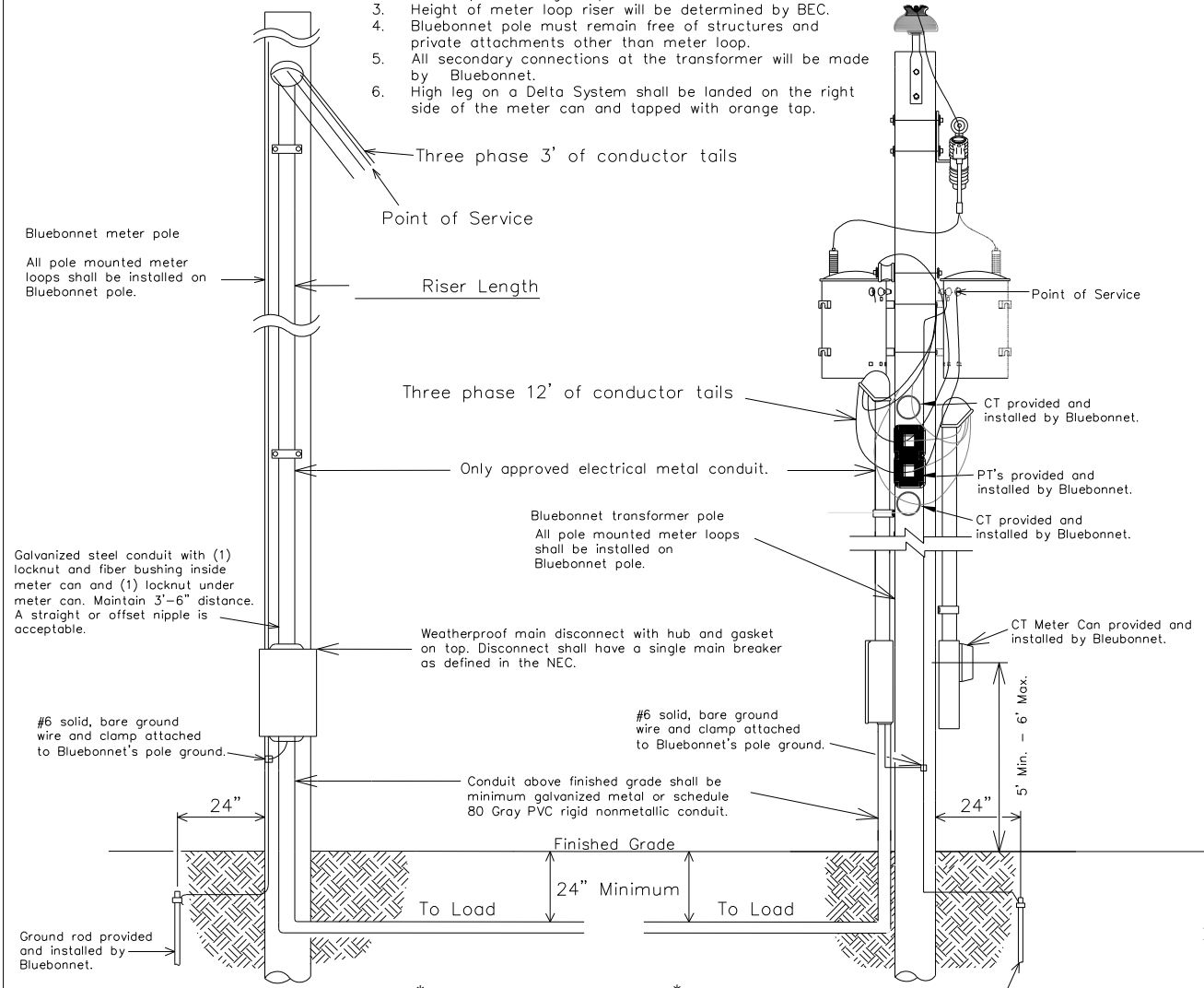
| <p>3Ø, STRAIGHT 480 VOLT<br/>3W CORNER GROUND DELTA<br/>60-200 AMP</p> |                                  |
|--|----------------------------------|
| DATE   | REVISIONS                        |
| 12-07-2017   | Changed the wording on Note # 6. |
| 11-04-2021   | Added Main Breaker Note          |



|                  |                              |                               |
|------------------|------------------------------|-------------------------------|
| Drawn By :<br>RG | Checked By :<br>MS COMMITTEE | Approved By :<br>MS COMMITTEE |
| Scale :<br>NONE  | Date:<br>11-04-2021          | MS-301A                       |

Notes:

1. A Bond wire shall be used, see NEC Table 250.66 for Bond Wire sizing.
2. Weatherproof fittings required.
3. Height of meter loop riser will be determined by BEC.
4. Bluebonnet pole must remain free of structures and private attachments other than meter loop.
5. All secondary connections at the transformer will be made by Bluebonnet.
6. High leg on a Delta System shall be landed on the right side of the meter can and tapped with orange tap.



FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

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Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

CURRENT CARRYING CAPACITIES AND CONDUIT SIZE REQUIREMENT OF STANDARD WIRE SIZE—(RHH, RHW, THW, THWN, THHN, AND XHHW REFER TO NEC FOR OTHER CALCULATIONS.

| COPPER CONDUCTOR |              |              | ALUMINUM CONDUCTOR |              |              |
|------------------|--------------|--------------|--------------------|--------------|--------------|
| WIRE SIZE        | BREAKER SIZE | CONDUIT SIZE | WIRE SIZE          | BREAKER SIZE | CONDUIT SIZE |
| #6               | 60 AMP       | 1¼" CONDUIT  | #4                 | 60 AMP       | 1¼" CONDUIT  |
| #4               | 100 AMP      | 1¼" CONDUIT  | #2                 | 100 AMP      | 1¼" CONDUIT  |
| #2               | 125 AMP      | 1½" CONDUIT  | #1/0               | 125 AMP      | 1½" CONDUIT  |
| #1               | 150 AMP      | 2" CONDUIT   | #2/0               | 150 AMP      | 2" CONDUIT   |
| #2/0             | 200 AMP      | 2" CONDUIT   | #4/0               | 200 AMP      | 2" CONDUIT   |

3 PHASE, STRAIGHT 480 VOLT 3W CORNER GROUND DELTA >200 AMP

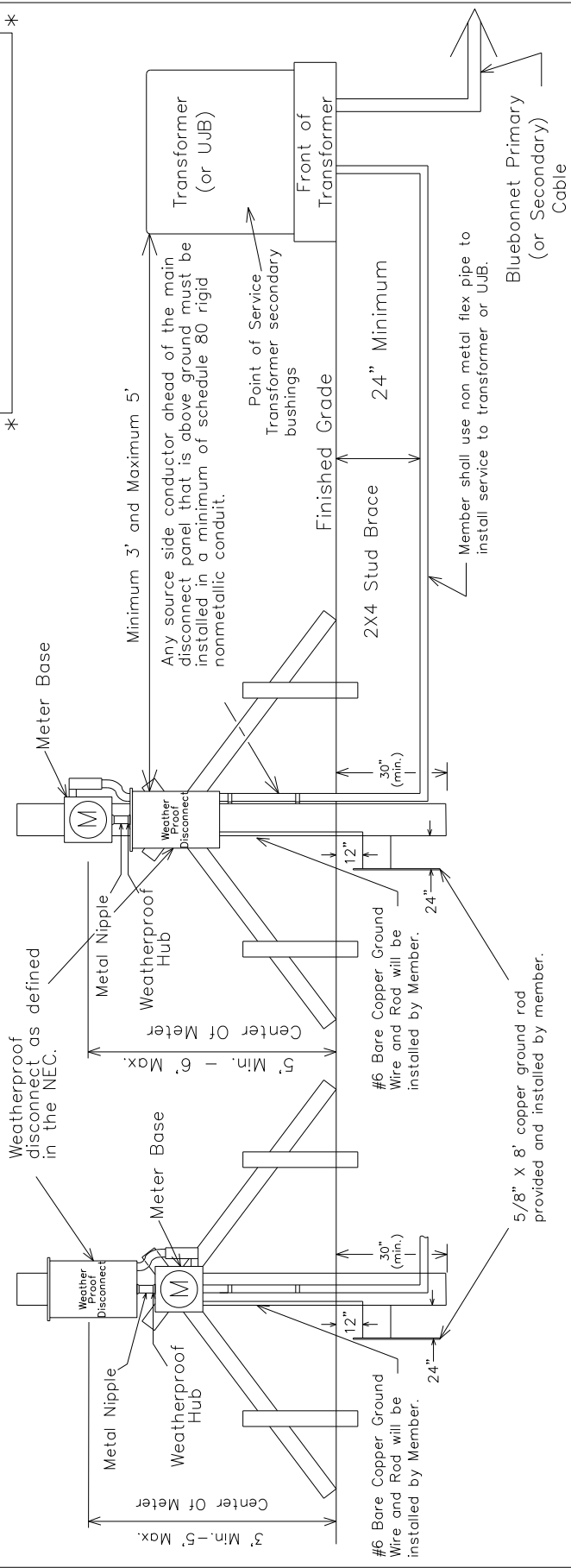


|          |                         |            |              |               |
|----------|-------------------------|------------|--------------|---------------|
| DATE     | REVISIONS               | Drawn By : | Checked By : | Approved By : |
| 11-04-21 | Added Main Breaker Note | RG         | MS COMMITTEE | MS COMMITTEE  |
| -        | -                       | Scale :    | Date:        | MS-301B       |
|          |                         | NONE       | 11-04-2021   |               |

Notes:

1. All temporary wiring shall meet national electrical code standards.
2. All outlets attached to meter loop shall have ground-fault circuit interrupter protection.
3. For all URD jobs, electricians shall call TEXAS811 for locates before digging to Bluebonnet equipment. No private utilities will be located.
4. Service wires shall be brought to the top side of the meter base.
5. Bluebonnet does inspect temporary meter loops and a fee shall be charged per trip for wiring inspection. Bluebonnet will refuse service if hazardous conditions exist and/or if connections do not meet specifications.
6. Bluebonnet will complete wiring into transformer or UJB. Member shall have sufficient amount of wire for termination.
7. All connections inside pad mounted transformer and UJB's will be made by Bluebonnet.
8. Temporary Meter Loop. Services are good for up to 24 months of service or less.

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*




FOR MEMBER SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

CURRENT CARRYING CAPACITIES AND CONDUIT/NIPPLE SIZE REQUIREMENT OF STANDARD WIRE SIZE (RHH, RHW, THW, THWN, THHN, AND XHHW) REFER TO NEC FOR OTHER CALCULATIONS.

| WIRE SIZE | COPPER CONDUCTOR |                | ALUMINUM CONDUCTOR |                |
|-----------|------------------|----------------|--------------------|----------------|
|           | BREAKER SIZE     | CONDUIT SIZE   | WIRE SIZE          | BREAKER SIZE   |
| #6        | 60 AMP           | 1 1/4" CONDUIT | #4                 | 60 AMP         |
| #4        | 100 AMP          | 1 1/4" CONDUIT | #2                 | 100 AMP        |
| #2        | 125 AMP          | 1 1/2" CONDUIT | #1/0               | 125 AMP        |
| #1        | 150 AMP          | 2" CONDUIT     | #2/0               | 150 AMP        |
| #2/0      | 200 AMP          | 2" CONDUIT     | #4/0               | 200 AMP        |
|           |                  |                |                    | CONDUIT SIZE   |
|           |                  |                |                    | 1 1/4" CONDUIT |
|           |                  |                |                    | 1 1/2" CONDUIT |
|           |                  |                |                    | 2" CONDUIT     |



TEMPORARY METER LOOP FOR UNDERGROUND SERVICE

|            |                               |
|------------|-------------------------------|
| DATE       | REVISIONS                     |
| 03-29-2018 | ADDED ADDITIONAL METER SETUP. |
| 11-04-2021 | ADDED MAIN BREAKER NOTE       |

Drawn By : RC

Scale : NONE

Checked By : MS COMMITTEE

DATE: 11-04-2021

Approved By : MS COMMITTEE

MS-302

Notes:

1. All pole mounted meter loops shall be mounted to Bluebonnet poles.
2. All secondary connections made by Bluebonnet.
3. All outlets attached to meter loop shall have ground-fault circuit interrupter protection.
4. Temporary Meter Loop Services are good for 24 months of service or less.
5. For your safety, only Bluebonnet personnel are authorized to install meter loops or other BEC equipment on a Bluebonnet pole. Members shall have loop assembled and available for installation by Bluebonnet.

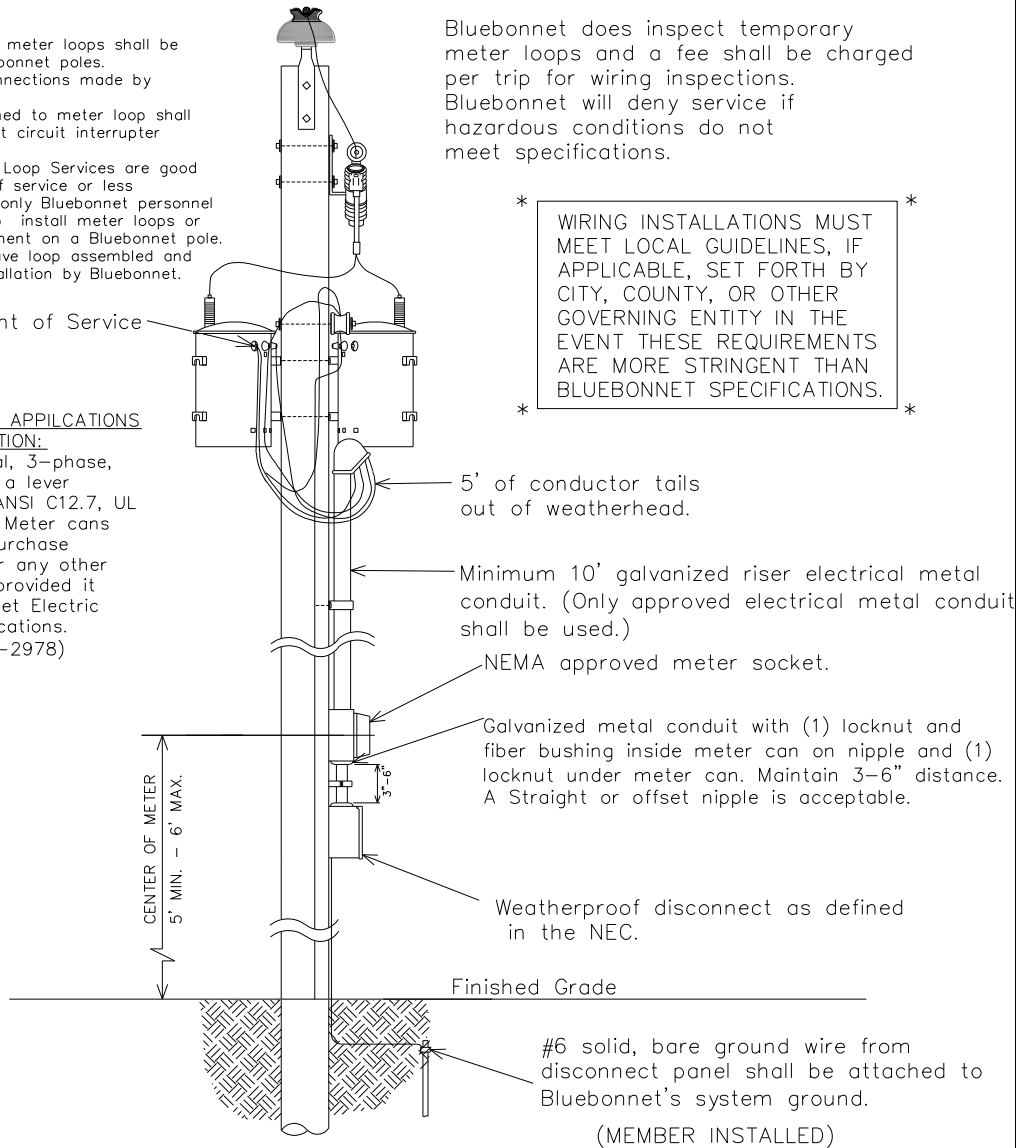
Bluebonnet does inspect temporary meter loops and a fee shall be charged per trip for wiring inspections. Bluebonnet will deny service if hazardous conditions do not meet specifications.

\* WIRING INSTALLATIONS MUST MEET LOCAL GUIDELINES, IF APPLICABLE, SET FORTH BY CITY, COUNTY, OR OTHER GOVERNING ENTITY IN THE EVENT THESE REQUIREMENTS ARE MORE STRINGENT THAN BLUEBONNET SPECIFICATIONS. \*

Point of Service

FOR THREE PHASE APPLICATIONS  
DESCRIPTION:

200amp, 7 terminal, 3-phase, 4-wire will require a lever by-pass meeting ANSI C12.7, UL 414, an NEMA 3R. Meter cans are available for purchase through Techline or any other electrical supplier provided it meets all Bluebonnet Electric Cooperative specifications. Techline (512-332-2978)



FOR THE MEMBER'S SAFETY, WIRING INSTALLATION AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE NEC, TDLR AND NESC.

Latest update can be found at [www.bluebonnetelectric.coop](http://www.bluebonnetelectric.coop)

CURRENT CARRYING CAPACITIES AND CONDUIT SIZE REQUIREMENT OF STANDARD WIRE SIZE - (RHH, RHW, THW, THWN, THHN, AND XHHW REFER TO NEC FOR OTHER CALCULATIONS.

| <u>COPPER CONDUCTOR</u> |              |                | <u>ALUMINUM CONDUCTOR</u> |              |                |
|-------------------------|--------------|----------------|---------------------------|--------------|----------------|
| Wire Size               | Breaker Size | Conduit Size   | Wire Size                 | Breaker Size | Conduit Size   |
| #6                      | 60 Amp       | 1 1/4" Conduit | #4                        | 60 Amp       | 1 1/4" Conduit |
| #4                      | 100 Amp      | 1 1/4" Conduit | #2                        | 100 Amp      | 1 1/4" Conduit |
| #2                      | 125 Amp      | 1 1/2" Conduit | #1/0                      | 125 Amp      | 1 1/2" Conduit |
| #1                      | 150 Amp      | 2" Conduit     | #2/0                      | 150 Amp      | 2" Conduit     |
| #2/0                    | 200 Amp      | 2" Conduit     | #4/0                      | 200 Amp      | 2" Conduit     |

1Ø OR 3Ø 60-200 AMP TEMPORARY METER LOOP FOR TRANSFORMER AND SERVICE POLES



|          |  |                         |  |            |              |               |
|----------|--|-------------------------|--|------------|--------------|---------------|
| DATE     |  | REVISIONS               |  | Drawn By : | Checked By : | Approved By : |
| 03-31-20 |  | Added note 5.           |  | RG         | MS COMMITTEE | MS COMMITTEE  |
| 11-04-21 |  | Added main breaker note |  | Scale :    | DATE:        | MS-303        |
|          |  |                         |  | NONE       | 11-04-2021   |               |

**Material Standards:**



**Underground warning tape must be 6” width, RED in color with BLACK lettering, and read “Caution Buried Electric Underground”. \*Normally, this material is only sold in 1000’ rolls.\***