

# *Commercial Development* Extension Standard

January 2021



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Carroll Electric Cooperative Corporation is an equal opportunity employer and provider.

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Appendix A: Application for Commercial Development

Appendix B: Commercial Development Installation Agreement with Preliminary Design and Cost Estimate

Appendix C: Application for Additional Street Lighting

Appendix D: CECC Business Application for Membership and/or Electric Service

Appendix E: Underground Conduit Installation Specifications and Drawings

## 1. Purpose

The *Commercial Development Extension Standard* is intended for use by property *Developers* who request the installation of an electric distribution system to serve a *Commercial Development* (see section 2 for definition). *Developers* should contact Carroll Electric Cooperative Corporation (CECC) as early as possible in their project planning process to obtain and provide this standard to any engineers, architects, electricians, or contractors utilized to plan and/or construct their development.

An *Application for Membership and/or Electrical Service* must be completed, and all applicable fees paid to start the installation process for a metered electrical service under the rates and tariffs of CECC. A sample of this form is attached and included for reference as Appendix D. Contact CECC for the form and checklist of other requirements for your location.

## 2. Definitions

***Application for Commercial Development*** - The document, when completed by the *Developer* and submitted to CECC, provides all the information needed to begin and complete the process of designing and preparing associated cost estimates for the installation of electrical facilities in the *Commercial Development*. This form is included as Appendix A.

***Application for Membership and/or Electric Service*** - The document a person or other entity desiring metered electric service from CECC must submit in order to first obtain membership and then metered electric service or, if already a member, to obtain an additional metered electric service. A sample of this form is included for reference as Appendix D.

***Application for Changes to Street Lighting*** - The document an entity must submit to CECC to obtain electric service for streetlights to ultimately be billed to a city or property owners' association. A sample of this form is included for reference as Appendix C.

***Cost Estimate*** - CECC's opinion of likely cost given the information (including current pricing) available at the time the estimate is prepared. Changes to information or plans after estimates are prepared may cause estimates to change.

***Developer*** - The person or entity responsible for the *Commercial Development*. This may be the owner of the property or someone with a contractual agreement to act on behalf of the property owner.

***Commercial Development*** - A development of commercial nature that requires plat approval by a planning authority is typically considered a *Commercial Development*.

***Commercial Development Installation Agreement*** – The document CECC prepares for the *Developer's* review and acceptance that details the conditions, requirements, and estimated

costs for CECC to construct and install electric facilities in the *Commercial Development*. A sample of this form is included for reference as Appendix B.

### 3. Standard Procedure

#### 3.1 Application for *Commercial Development*

Any *Developer* desiring to have CECC extend electrical facilities into their *Commercial Development* must first complete the *Application for Commercial Development*. This form is attached to and included as Appendix A for the *Developer's* use. For the application to be considered complete, all the following list of items shall be included:

- Application for Commercial Development* form signed and dated with all questions answered
- Attachment A - Overall Development plan showing all phases (if applicable)
- Attachment B - Timeline for construction - including all phases (if applicable)
- Attachment C - Plat of Development including easement language (See section 4.4 for CECC plat and drawing requirements and section 4.6 for easement requirements)
- Attachment D - A detailed description of the specific power requirements, including the type of the electrical load, size, voltage, and location (detailed panel schedules and one-line diagrams are required)
- Attachment E - If there are other service requirements for amenities such as motor-operated gates, signs, lighting, etc., provide a load description and location for each planned service
- Attachment F - Completed IRS form W-9 for business entities
- Attachment G - \$ 1,000.00 non-refundable deposit

CECC shall make no field investigations nor prepare preliminary designs or cost estimates prior to the submittal of the completed *Application for Commercial Development*.

The completed *Application for Commercial Development* along with all attachments shall be submitted in one of the following ways:

Delivered via US Mail or delivery service to:

Carroll Electric Cooperative Corp.  
Attention: Engineering Department  
P.O. Box 4000  
920 Highway 62 Spur  
Berryville AR 72616-4000

Electronically via e-mail to:

[dthurman@carrollecc.com](mailto:dthurman@carrollecc.com)

Delivered in person to one of the CECC office locations listed below:

920 Highway 62 Spur  
Berryville AR 72616

707 SE Walton Boulevard  
Bentonville AR 72712

5056 Highway 412B  
Huntsville AR 72740

511 East Court Street  
Jasper AR 72641

### **3.2 Electrical Distribution Facilities Design and Cost Estimates**

Upon receipt of the completed *Application for Commercial Development*, CECC will contact the *Developer* or his designee to confirm receipt and clarify any questions. Based on workload at time of submittal, CECC will provide an estimate of the time it will take to prepare and deliver the design, associated *Cost Estimate*, and the *Commercial Development Installation Agreement*.

The *Developer* may request to directly utilize an approved CECC design contractor to perform the preliminary electrical design and layout in accordance with CECC specifications. In cases where this is approved by CECC, drawings showing the preliminary design shall be submitted to CECC for review and approval and for compilation of cost estimates and preparation of the *Commercial Development Installation Agreement*.

See Section 4.22 for instructions to submit changes to the information or plats initially submitted for the *Commercial Development*.

### **3.3 Commercial Development Installation Agreement**

After the proposed design and associated *Cost Estimate* are complete, CECC shall prepare and send to the *Developer* for review, a *Commercial Development Installation Agreement*. A sample of this form is included for reference as Appendix B.

The *Developer* should review the proposed design along with the associated *Cost Estimate* and advise CECC of any issues or concerns to be addressed. If there are no issues, the proposed plans and *Cost Estimate* should be signed by the *Developer* and submitted back to CECC as detailed below. If revisions are made to the proposed design, the resulting revisions to the associated *Cost Estimate* and a reissuance of the *Commercial Development Installation Agreement* for the *Developer* to review shall be required. The reissue of the *Commercial Development Installation Agreement* shall show a revision number, date, and an explanation of the revision noted in the "Revisions" section at the end of the form. Furthermore, if revisions to the preliminary design are based on changes or revisions to the information or plans originally submitted to CECC by the *Developer*, Section 4.22 shall be followed for updating the *Application for Commercial Development*.

After any issues with the proposed design have been addressed, the *Developer* may submit the completed *Commercial Development Installation Agreement* to CECC who will consider it complete when all of the following items are included:

- ✓ Latest revision of *Commercial Development Installation Agreement* signed by *Developer*
- ✓ Latest revision of Proposed Design signed by *Developer*
- ✓ Latest revision of *Cost Estimate* signed by *Developer*
- ✓ Performance Bond for the amount specified (When required - See Section 4.20)
- ✓ Payment of estimated costs (See Section 4.21)

CECC shall perform no field staking nor schedule any installation of facilities prior to the submittal of the completed *Commercial Development Installation Agreement*.

The completed *Commercial Development Installation Agreement* form along with all attachments, bonds, and payments listed above must be mailed or delivered to one of the CECC office locations listed in Section 3.1. No electronic submittals are presently accepted for the *Commercial Development Installation Agreement*.

#### **3.4 Construction of Electrical Distribution Facilities within the Development**

Upon receipt of the completed *Commercial Development Installation Agreement*, CECC will contact the *Developer* or his designee to confirm receipt and schedule a pre-construction meeting. Based on present construction workloads and material lead times, CECC will also provide an estimate of the time CECC will begin working on the installation and an estimate of the time to complete the installation. See Section 5 for coordination, inspection, construction, and installation requirements.

See Section 4.22 for instruction to submit changes to the information or plats initially submitted for the *Commercial Development*.

## **4. Electric System Design Requirements**

#### **4.1 Application for Commercial Development**

The *Developer* must submit a completed, signed *Application for Commercial Development* as detailed in Section 3.1 for CECC to begin preparing preliminary design, *Cost Estimates*, and the *Commercial Development Installation Agreement*.

#### **4.2 Relocation and Removal of Existing Facilities**

It is the policy of CECC to relocate or remove existing facilities at the request of a member or others if such relocation or removal is deemed by CECC to not significantly impact operations, reliability, or maintenance of the facility or that of any associated facilities or members. In

instances where the *Developer* requests existing facilities be removed or relocated (including being relocated underground) and *CECC* consents to the request to relocate or remove the facilities, the *Developer* understands and agrees to pay all costs for relocation or removal of such facilities.

#### **4.3 Placing New Lines Underground**

Normally line extensions provided by *CECC* shall be overhead; however, lines may be extended underground through agreement with an individual member or *Developer* only, if in *CECC's* judgement, placing of the line underground does not significantly impact operations or maintenance of the facility or that of any associated facilities or reliability to other members. *CECC* does not offer submerged electrical distribution transformers or equipment; therefore, any transformers or equipment associated with underground lines shall be interpreted to be pad or vault mounted. In the case of underground Commercial developments, the *Developer* shall have the responsibility of opening and closing all ditches, installing conduit, pads, sleeves, and vaults. In addition, the *Developer* shall provide a performance bond totaling the cost of electrical facilities as a guarantee of future qualified loads.

#### **4.4 Plat Drawings**

The *Developer* must provide a plat drawing in digital file format to *CECC* before electrical design work can begin. File format and drawing requirements are as follows:

##### **4.4.1 Acceptable file types:**

Auto Cad drawings (.dwg) – version 2013 or older

##### **4.4.2 Use of a Projected Coordinate System is required**

The preferred Projected Coordinate System is NAD 1983 State Plane Arkansas North FIPS 0301 (feet). If another coordinate system is used, the drawing shall contain:

1. Identification of the coordinate system used within the digital map file
2. The defined datum point
3. The defined scale and unit of linear measurement

##### **4.4.3 The plat drawing shall include the final and complete property description. Any changes of the plat drawing will require a resubmittal of information, see section 4.22. The following information shall be included in the plat drawing:**

1. The *Commercial Development* name
2. Street names and in their final location including back of curb and sidewalks
3. Identified survey control points (benchmarks)
4. Property lots in the correct location with referenced coordinates corresponding with submitted datum and coordinate system
5. Correct and final lot numbers along with 911 addresses where available
6. Easements and setbacks
7. Existing buildings
8. Utility plan detailing the location, size, and type of all utilities being constructed to service the Commercial Development. The utility plan must detail both existing and proposed of the following information:



- Water lines including meters and fire hydrants
- Gas lines
- Sanitary sewer lines
- Storm sewers and inlets
- Storm water drainage and detention/retention areas
- Telephone, communication, and CATV cable routes and equipment locations
- Other utility lines

4.4.4 Drawing files containing electrical design and layout shall conform to the format of CECC's "Commercial Development Design Template.dwg" file. Contact CECC for details or a copy of the template drawing.

**4.5 Electric Load Information**

The *Developer* shall provide information concerning expected size of building or buildings and their utilization plan, use of natural gas or liquid petroleum gas for cooking, heating, or water heating, or other information or restrictions that may affect Commercial energy requirements. Also include information regarding voltage and load requirements for any Commercial *Development* facilities, such as sewer lift stations, fire pumps, area lighting, etc.

**4.6 Easement Language Requirements**

The *Developer* shall provide easements for electric service platted adjacent to lot lines and to permanently-platted, maintained, hard-surfaced roads, and must include the following easement language on the plat:

For overhead facilities, CECC's standard easement language shall be used. Contact CECC for a copy of the standard easement form.

For underground cables and pad-mounted equipment, the following easement language shall be used:

*"We, \_\_\_\_\_, owners of the real estate shown and described here, on this date, \_\_\_\_\_, \_\_\_\_\_, do hereby dedicate the public streets and easements shown upon this plat. Said easements shall be for the benefit of Carroll Electric Cooperative Corporation, a perpetual easement right, privilege, and authority to enter upon the lands of the undersigned grantor, and to place, construct, reconstruct, erect, excavate, add to, relocate, rebuild, modify, change operative voltage level, repair, replace, patrol, operate and maintain on, over, and under the described lands, and in and upon all streets, roads, highways, and other rights of way abutting said premises, underground cables of one or more circuits to serve as service, distribution, or transmission lines, or combinations of all, to transmit electrical energy and communications, including but not limited to buried or above ground cable, transformers, junction cabinets, vaults, and other*

*appurtenances necessary thereto, together with the right of ingress and egress to and from the lines of the Cooperative over the lands of the grantors for the purpose of installing, repairing, replacing, upgrading or otherwise accessing the electric system to be installed in the easement, which said lands are described under the legal description on this plat.*

*Grantors do also hereby grant and convey to Cooperative the perpetual right to clear and keep clear by cutting, trimming, spraying, or removing by any other manner all brush, trees, timber, and vegetation within the defined easement. And agree that no shrubs, trees, structures, or fences shall be planted or constructed within the said easement.*

*Grantors agree to make no use of, nor permit others to make any use of said easement that would reduce in clearance or in any other way interfere with the proper and safe operation and or maintenance of the electrical facilities.*

*Developer has requested and Carroll Electric Cooperative Corporation has agreed to provide electrical distribution facilities, with Developer having approved the system design. Any request to subsequently relocate any portion of the facilities shall be consistent with the Cooperative's design and operating practices and the requesting party shall bear all costs associated with such relocation. All poles shall have no less than seven (7) feet of unencumbered space around them and all pad-mounted equipment shall have no less than fifteen (15) feet of unencumbered space in front of the doors for operation and maintenance of the equipment. Any alteration to final grade within the defined right of way or utility easement shall be pre-approved by the Cooperative and should not reduce in clearance or in any other way interfere with the proper and safe operation and/or maintenance of Cooperative facilities. Cooperative is hereby granted access across property as necessary for maintenance and/or replacement of poles, anchors, guys, lines, and equipment. Cooperative shall only be required to fill, grade and restore ground cover back to original grade as a result of any excavation. Cooperative shall not be liable for payment or for repair of any damage to landscaping, shrubbery, fence, walk, patio, or driveway in connection with the installation, maintenance, or relocation of the electric system."*

#### **4.7 Voltage, Metering, and Protection Requirements**

CECC should be consulted regarding the type of service and the associated metering which can be furnished at a particular location before service equipment is purchased or wiring is installed. The voltage and number of phases which will be supplied will depend on the type, size, and location of the load, as well as the nature of any existing facilities.

- 4.7.1 The secondary service voltages and size limits listed below are standard. Contact *CECC* for primary service voltages which will vary by geographic location.

Single-Phase Pole-Mounted Transformer – 120/240 Volt, 3-wire up to 100 kVA

Three-Phase Pole-Mounted Transformer – 120/240 Volt, 4-wire DELTA up to 75 kVA  
120/208 Volt, 4-wire WYE up to 150 kVA  
277/480 Volt, 4-wire WYE up to 150 kVA

Single-Phase Pad-Mounted Transformer – 120/240 Volt, 3-wire up to 167 kVA

Three-Phase Pad-Mounted Transformer – 120/208 Volt, 4-wire WYE up to 1000 kVA  
277/480 Volt, 4-wire WYE up to 2500 kVA

No 120/240 Volt, 4-wire DELTA service will be provided where the service is from a pad-mounted transformer or where the surrounding area is supplied by underground primary. All WYE services require a neutral conductor.

- 4.7.2 The metering type for service voltages and anticipated peak load sizes listed below are standard. The transformer size to support the anticipated peak load shall be determined by *CECC* and may not be consistent with secondary main breaker size. Contact *CECC* prior to purchasing or installing any service equipment or wiring. *CECC* will determine the type and location for all metering.

Self-contained metering shall be used for the following regardless of transformer size:

Single-Phase, 120/240 Volt, 3-wire up to 76.8 kW  
Three-Phase, 120/240 Volt, 4-wire DELTA up to 75 kW  
Three-Phase, 120/208 Volt, 4-wire WYE up to 115.2 kW  
Three-Phase, 277/480 Volt, 4-wire WYE up to 265.9 kW

CT metering shall be used for the following regardless of transformer size:

Single-Phase, 120/240 Volt, 3-wire above 76.8 kW  
Three-Phase, 120/208 Volt, 4-wire WYE above 115.2 kW  
Three-Phase, 277/480 Volt, 4-wire WYE above 265.9 kW

All current transformer metering installations are required to have a customer furnished and installed service disconnect that is external, accessible, lockable, and visible from the meter.

- 4.7.3 The customer is responsible for providing and installing the necessary equipment and devices to protect any wiring or equipment from damage due to conditions that may occur on *CECC's* system.

#### **4.8 Street or Area Lighting**

If street lighting and/or area lighting layouts are required, they shall be designed concurrent with project layout, and installation coordinated with other trenching. Street lighting inside municipal limits may need approval by the appropriate city official and comply with any applicable local ordinance. All lights not billed to a local governing body shall be billed to the legally incorporated property owners' association.

Where street lighting is desired or required within a *Commercial Development* and the *Developer* chooses to use one of the street lighting options provided by *CECC*, an *Application for Changes to Street Lighting* must be completed by *CECC* and submitted to the municipality or entity for approval. A sample of this form is included for reference as Appendix C.

In instances where street lighting will be accomplished outside of the options provided by *CECC*, the lighting circuits will not be installed, owned, or maintained by *CECC* but will be instead supplied electricity through a meter. Meters for street lighting require a completed *Application for Membership and/or Electrical Service*. (See section 5.8)

#### **4.9 Final Plat**

The *Developer* agrees to the following:

- 4.9.1 Prior to submitting the plat to the governing planning jurisdiction for final acceptance, *CECC* must approve and sign the final plat as acknowledgment that *CECC* requirements have been met.
- 4.9.2 Furnish to *CECC* a copy of the executed, recorded final plat (in PDF or JPEG format) showing detailed layout including property and lot lines, street names, buildings, dedicated easements, water, sewage, drainage and any other underground facilities.

#### **4.10 Project Development**

If the *Commercial Development* is to be completed in phases, the *Developer* shall cause *Development* to be built in contiguous locations that allow economic expansion of the electric system between the developed areas. Phases built in a non-contiguous location may require additional costs to be paid by the *Developer*.

#### **4.11 Property Corners**

The *Developer* shall identify, install, and maintain permanent property corners with lot numbers identified on stakes in advance of any design.

#### **4.12 Layout and Design**

*CECC* shall determine the type of construction and location of line routes and locations of electrical lines, transformers, pedestals, and switchgear. *CECC* will work with the *Developer* when practicable, to locate such routes and equipment in a manner acceptable to both parties. In instances where the *Developer* utilizes an approved contractor to do the layout and

design, the *Developer* has the responsibility to make sure *CECC* has reviewed and approved layouts and designs prior to any construction.

Underground systems for *Commercial Developments* shall be of a looped design and where single-phase loads are to be served along the route of three-phase lines, a separate single-phase line shall be provided from three-phase junction cans to provide for adequate diagnosis and restoration times. All normal open points shall be located in junction cans and protected with lightning arresters. If the underground system is served from overhead lines, the *Developer* will provide space for overhead structures for the purpose of entering the subterranean system in the *Commercial Development* at points specified by *CECC*.

For extensions to a single service, the meter base or pedestal shall be located near the transformer on the lot line unless otherwise agreed to by *CECC*. In cases where *CECC* agrees it is not feasible, the meter base may be attached to the outside of a building; however, all meter locations shall have a direct line of site and unobstructed access from their source transformer.

The *Developer* shall have the responsibility to install the equipment pads and vaults according to *CECC's* specifications and as outlined on the approved electrical layout plan.

#### **4.13 Environmental Considerations**

Electric facilities shall be routed to avoid open drainage ditches, creeks and marsh areas, or other areas that are environmentally sensitive, historically significant, or may hinder construction or operation of the electric system. Costs associated with areas requiring trench stabilization (retaining walls, concrete encasement, pipe sleeves, riprap, etc.) or any required environmental studies shall be paid by the *Developer*.

#### **4.14 Location of Cables and Equipment**

The underground electrical system shall be located adjacent to lot lines fronting permanently platted and maintained, hard-surfaced roads within the utility easement. Pad-mounted transformers, secondary pedestals and switchgear shall be located on front lot lines in areas accessible for operation and repairs. Pad-mounted transformers shall be placed to allow energized switching operations. The front (lock side) of the equipment shall face the street and requires 15 feet of clearance to obstacles.

#### **4.15 Use of Overhead Facilities**

Lots adjacent to overhead lines may be served from pole-mounted transformers with underground service lines.

#### **4.16 Other Utilities**

The *Developer* must provide *CECC* with any easement or separation requirements other utilities require be maintained. *CECC* will not be responsible for spatial design conflicts if

created by unknown third-party agreements. Additionally, *Developer* shall strictly enforce *CECC's* separation requirements from other utilities as stated below:

- 4.16.1 Water, sewer, or gas lines shall not share the ditch with *CECC* primary or secondary distribution lines and shall maintain five feet of horizontal clearance. Separation from deeper sewer lines shall be increased to allow access to the sewer line without disturbance of the power conduit ditch.
- 4.16.2 Telephone, cable TV, or communication lines may share *CECC's* primary or secondary distribution ditch and shall be separated as shown in drawings included in Appendix E.
- 4.16.3 Gas meters, communication pedestals, fire hydrants, or other obstacles or structures shall not be placed within seven feet of poles or within 15 feet of the front (lock) side and five feet of the other sides of pad-mounted electrical equipment.

#### **4.17 Non-Qualified Loads**

Electrical facilities required signs, irrigation, fountains, fire pumps, or other non-qualified loads within a *Commercial Development* shall be installed at the expense of the *Developer*.

#### **4.18 Temporary Builder's Service**

Temporary service may be furnished from overhead facilities or from pad-mounted transformers and requires an *Application for Membership and/or Electrical Service* be completed (See section 5.8). Reasonable time must be allowed for construction of the needed temporary facilities. Temporary facilities shall be installed and removed at the *Developer's* expense.

#### **4.19 Service to Buildings**

Underground service routes shall be run as short and straight as possible from *CECC's* secondary facilities to the building's service meter location. For underground systems, service conduit shall be furnished and installed by the *Developer* or owner and shall extend from the meter location to *CECC's* secondary source location. See Appendix E for specific requirements.

#### **4.20 Commercial Development Performance Bonding**

The *Developer* shall issue a performance bond when installation of electrical distribution facilities is required prior to any applications for metered service, and submit it along with the completed *Commercial Development Installation Agreement* to provide *CECC* assurance that the electrical usage of qualified services constructed and connected to the electric distribution system within the *Commercial Development* will support the investment made by *CECC* in a reasonable amount of time. *CECC* shall determine the amount of the performance bond based on the amount of its investment and shall include the amount in the provided *Commercial Development Installation Agreement*. The initial performance bond shall be required for three years. The bond may be extended for an additional three years if the

performance requirement has not been met.

The *Developer* may request at the end of each year the proportional amount of the performance bond be released. The percentage to be released shall be determined by taking the electrical usage of qualified services constructed and connected to the electric distribution system within the *Commercial Development* divided by the total kilowatt hour usage requirement as stated in the *Commercial Development Installation Agreement*.

**After six years any amount remaining on the performance bond shall be collected either from the *Developer* paying the remaining amount or from collection against the bond.**

CECC shall also accept a cash deposit, or an irrevocable letter of credit in lieu of a performance bond.

#### **4.21 Cost Estimates**

CECC shall prepare cost estimates itemized as shown in the list below and shall include them with the *Commercial Development Installation Agreement*. Prior to construction, the *Developer* shall pay for the installation of streetlights, removal and relocation of existing facilities, extension of facilities to non-qualified loads, inspection and testing costs, and pad and vault costs when necessary. If CECC has agreed to perform the conduit, pad, and vault installation work, that amount shall also be included in cost to be paid prior to construction. The performance bond or payment amount referenced in Section 4.20 shall be based on the amount of CECC's investment in the *Commercial Development*.

- ✓ Estimated cost to design (to determine the amount of the performance bond)
- ✓ Estimated cost to inspect (amount to be paid prior to construction)
- ✓ Estimated cost to perform acceptance test (amount to be paid prior to construction)
- ✓ Estimated cost for removal or relocation (amount to be paid prior to construction)
- ✓ Estimated cost for line extended to non-qualified load (amount to be paid prior to construction)
- ✓ Estimated cost to install streetlighting (amount to be paid prior to construction)
- ✓ Estimated cost to trench and install conduit (to determine the amount of the maintenance bond)
- ✓ Estimated cost to install cable, terminations, grounding, and sleeves (to determine the amount of the performance bond)
- ✓ Estimated cost to purchase and install pads and vaults (amount to be paid prior to construction)

#### **4.22 Revisions to Submitted Information or Plats**

In the event information changes after submittal of the *Application for Commercial Development* but prior to the *Developer* receiving the *Commercial Development Installation Agreement*, the revised information should be submitted along with a copy of the original *Application for Commercial Development* form signed and dated with an explanation of the

modification noted in the “Modifications” section of the application. If the information change is on the application form itself, the copy of the application shall show the original information marked through (do not erase) and the new information written near that mark through and the change initialed. The form shall also be signed and dated with an explanation of the modification noted in the “Modifications” section of the application.

In the event information changes after the *Commercial Development Installation Agreement* has been received by the *Developer*, the revised information shall be submitted along with a copy of the original *Application for Commercial Development* form signed and dated with an explanation of the modification noted in the “Modifications” section of the application. If the information change is on the application form itself, the copy of the application shall show the original information marked through (do not erase) and the new information written near that mark through and the change initialed. The form shall also be signed and dated with an explanation of the modification noted in the “Modifications” section of the application. A new *Commercial Development Installation Agreement* shall be prepared and submitted to the *Developer* accounting for the revisions.

The return of the *Commercial Development Installation Agreement* signed by the *Developer* shall serve as a statement of agreement by the *Developer* as to the final design and *Cost Estimate* being based on the development plans as they were originally submitted and may have been subsequently revised and are accurate as to how the *Commercial Development* will be constructed. Any information or plan changes made after the submission of the *Commercial Development Installation Agreement* by the *Developer* that result in additional costs to *CECC* shall be at the *Developer's* expense.

## **5. Construction and Installation Requirements**

### **5.1 Commercial Development Installation Agreement**

A *Commercial Development Installation Agreement* must be executed as detailed in Section 3.3 for *CECC* to schedule a pre-construction meeting and procure materials. A sample of this form is included for reference as Appendix B.

### **5.2 Marking of Property Corners, Lots, and Other Features**

The *Developer* shall identify, install, and maintain permanent property corners with lot numbers identified on stakes. The *Developer* shall also provide for the marking of other necessary features such as back-of-curb and easement alignment as may be required in advance of any staking, construction, or installation work to be performed by *CECC*.

### **5.3 Locating Underground Facilities**

If *CECC* agrees to install the conduit, pads, and vaults, the *Developer* must provide information and arrange field spotting of gas, water, sewer, drainage, and other underground facilities when requested. *CECC* shall assume no responsibility for damage to facilities not marked.



#### **5.4 Installation, Removal, and Relocation of Overhead Electric System Facilities**

Where the electric system for a development is to be built using overhead lines or where overhead line are to be removed or relocated as part of a development approved for underground lines, *CECC* shall perform the installation, removal, or relocation of all poles, anchors, guys, conductors, and other necessary appurtenances to the pole. The *Developer* shall be responsible for all cost associated with this work.

#### **5.5 Installation of Conduits, Equipment Pads, and Vaults**

Where a development is approved for underground lines, the *Developer* shall be responsible for the opening of all trenches, leveling of equipment pads, excavating for pedestals and vaults if required, installing conduits and warning tape in the trench, and after approval by a *CECC* inspector, backfilling all trenches. All work shall be performed in accordance with *CECC* specifications (see Appendix E). All permits or notifications required for excavation are the responsibility of the *Developer* as well as the installation and maintenance of any required erosion or storm water controls. If *CECC* has agreed to install conduits, pads, and vaults, the installation shall not proceed until any site grading work is to a point within six inches of final grade.

##### **5.5.1 Coordination and Inspection**

The *Developer* or his designee shall schedule and coordinate conduit installation activity with *CECC* in order to make the most efficient use of both the excavation crew and inspector. The *CECC* inspector must see and inspect all conduits prior to backfilling. Any sections of conduit not seen and approved for backfilling shall not have cable installed until they have been uncovered for inspection and approved for backfilling. Approval for backfilling by the inspector does not constitute transfer of ownership, final approval, or relieve the *Developer* of responsibility for defects in the installation that may be discovered later. See Sections 5.5.2 and 5.5.3 for further information.

All inspection costs are the responsibility of the *Developer*. The *Commercial Development Installation Agreement* shall show the inspection costs which must be paid before installation may begin. Presently, the cost for inspection of *Commercial Developments* is \$0.50 per horizontal foot of trench/bore.

##### **5.5.2 Conduit System Acceptance**

After the installation of conduit is completed, *CECC* shall perform acceptance testing to confirm the following:

- ✓ Conduit is within the easement
- ✓ Conduit has the specified cover depth from final grade
- ✓ Conduit has the specified horizontal separation from other underground structures
- ✓ Conduit is type specified
- ✓ Conduit is size specified

- ✓ Conduit is marked and has pull string installed consisting of 7/8" electric fence poly-tape with a minimum of 7 wire strands
- ✓ Conduit joints are glued
- ✓ Conduit sweeps are of radius specified
- ✓ Conduit run total length is within limits
- ✓ Conduit run total angle is within limits
- ✓ Conduit passes mandrel test
- ✓ Conduit configuration is correct into pads and vaults
- ✓ Conduit extension above grade is as specified
- ✓ Conduit stub outs are marked
- ✓ Equipment pads and vaults are within the easement
- ✓ Equipment pads and vaults are on lot lines
- ✓ Equipment pads and vaults are level
- ✓ Equipment pads and vaults are sized and oriented as specified
- ✓ Equipment pads and vaults have specified horizontal separation from other structures or obstacles
- ✓ Equipment pads and vaults are ready to accept their equipment.

**NOTICE:** The cover depth must be from final grade for all areas including where future changes in grade may occur such as cuts for driveways. The *Developer* shall anticipate future cuts and make accommodations when installing the conduits. The maintenance bond may be used to correct conduits with less than specified cover (See Section 5.5.3). *CECC* shall not install any facilities if the minimum cover depth is less than required by section 2.1 of the attached Underground Conduit Installation Specification and Drawings (see appendix E). At no time shall a swell or mound be included in the required cover depth.

No cables shall be installed in the conduit until all acceptance testing is completed and any deficiencies corrected to *CECC's* satisfaction and a maintenance bond is provided as specified in Section 5.5.3 below. Acceptance of the installation does not relieve responsibility for defects in the installation discovered within the bonding period.

All acceptance testing costs are the responsibility of the *Developer*. The *Commercial Development Installation Agreement* shall show the acceptance testing costs which must be paid before installation may begin. Presently the cost for acceptance testing of *Commercial Developments* is \$0.50 per horizontal foot of trench/bore.

### **5.5.3 Conduit System Maintenance Bonding**

The *Developer* shall provide a maintenance bond in the amount of fifty percent (50%) of the estimated cost provided by *CECC* for the conduit installation. The life of the bond shall be one year from the date of final trench/bore inspection. The *Developer* shall issue the bond as a condition of final acceptance of the conduit,

pads, and vaults; however, the ownership and responsibility for the conduit, pads, and vaults does not transfer from the *Developer* to *CECC* until cables are installed in the conduit and equipment is set on the pad or vault. A cash deposit or irrevocable letter of credit may be submitted in lieu of the maintenance bond.

#### **5.5.4 Installation of Cable and Equipment**

*CECC* shall schedule installation of cables in conduit, setting equipment on vaults and pads, and connecting the system for energization once the acceptance testing is completed, any deficiencies are corrected, and the maintenance bond is submitted. Based on present installation workload, *CECC* shall also provide the *Developer* with an estimate of when the installation shall begin and the estimated time it will take to complete the installation.

#### **5.5.5 Alternate Installation of Conduits and Equipment Pads and Vaults**

The *Developer* may request *CECC* to make the arrangements with a contractor to install the conduit, pads, and vaults. If *CECC* elects to arrange for a contractor to perform the installation of the conduit, pads, and vaults, the *Commercial Development Installation Agreement* shall designate *CECC* as the installer for these items and associated costs shown on the *Cost Estimate* must be submitted by the *Developer* prior to any staking or construction. Any rock trenching, compaction, or boring costs incurred by *CECC* during installation of conduits shall be in addition to the estimates shown in the *Commercial Development Installation Agreement* and shall be payable before any cables are installed. All other requirements remain the responsibility of the *Developer* including costs for inspection and acceptance testing as specified in Sections 5.5.1 and 5.5.2.

##### **5.5.5.1 Road Crossings**

In the event *CECC* is to arrange for the conduit to be installed, the *Developer* shall install any required road crossing sleeves prior to the completion of the roadways. The *Developer* shall install road crossing conduit as specified by *CECC* on the design. Ends of conduit shall be sealed to prevent entry of materials and shall be marked clearly using stakes or posts to enable *CECC* to locate both ends of the conduit during subsequent conduit installation activity. See *CECC Underground Specifications for depth requirements*.

##### **5.5.5.2 Equipment Locations**

In the event *CECC* is to arrange for the pads and vaults to be installed, the *Developer* shall provide a flat 15' by 15' area at final grade for pad-mounted equipment locations. See Appendix E for typical equipment pad or vault details.

### **5.5.5.3 Work Scheduling**

In the event *CECC* is to arrange for the conduit, pads, and vaults to be installed, the *Developer* or their designee shall coordinate and schedule construction and installation with other facilities in the *Commercial Development*.

### **5.6 Right of Way**

The *Developer* is responsible for the clearing of any right of way as may be required by *CECC*; and, in developments approved for underground lines, for establishing final grade along the underground line route before the start of any excavation. Any changes in grade that require changes or relocation of *CECC*'s electrical facilities shall be at *Developer*'s expense.

### **5.7 Changes to Approved Plans**

Immediately notify *CECC* of any changes to the original approved plat of lot lines, easements, or roadway layout, or any changes involving the relocation of *CECC* or other utilities' facilities. The *Developer* shall be responsible to pay total cost of relocation of *CECC*'s facilities (including engineering costs) due to field changes after submittal of the completed *Commercial Development Installation Agreement*.

### **5.8 Service Installations**

Any temporary or permanent electrical service installations requested by the *Developer* shall require a completed *Application for Membership and/or Electrical Service*, which form is attached to and included for reference as Appendix D. Additionally, the payment of all applicable fees and any locational requirements must be completed to start the installation process. Contact *CECC* for a copy of the application, amount of fees, and other requirements for the specific location.

### **5.9 Damages to Cooperative Facilities**

The *Developer* shall reimburse *CECC* for any relocation of, or damages to *CECC*'s conduit system, transformers, pedestals, or other distribution equipment within the development. *CECC* reserves the right to redeem the Maintenance Bond to cover cost of damage.

## Carroll Electric Cooperative Corporation *Application for Commercial Development*

*Before design of the electric system can proceed, this form must be completed by the Developer and returned with the application and deposit.*

This application for design of electric facilities in a *Commercial Development* is made by the *Developer* to Carroll Electric Cooperative Corporation (CECC). Once the completed application and fee is submitted to CECC, a *Commercial Development Installation Agreement* including preliminary design and associated *Cost Estimate* for electric facilities will be prepared and provided to the *Developer* with reasonable diligence. This application, the *Commercial Development Installation Agreement*, and *Cost Estimate* expire one (1) year from the initial application date. Changes by the *Developer* to the *Development* plan may result in additional design fees.

Provide

- 1.
- 2.
- 3.



Phone: \_\_\_\_\_ Email: \_\_\_\_\_

4. Is the *Developer* a corporation, LLC, or other entity?  Yes  No

If "yes" please provide the name and title of all owners or officers of the entity, as well as a completed IRS form W-9 (a copy of which is attached to this application):

Name	Title
_____	_____
_____	_____
_____	_____

5. Provide the name and contact information for the *Development* representatives who have decision-making authority.

Name of Representative	Phone Number	Email Address

6. Is the *Development* subject to a planning jurisdiction?  Yes  No

If “yes” please provide:

Name of Jurisdiction: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone: \_\_\_\_\_

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

7. Is the *Development* going to be constructed in phases?  Yes  No

If “yes” attach a copy of the overall *Development* plan including all proposed phases.



*Development*.

12. Is the *Developer* proposing to use CECC street lights in the *Development*?  Yes  No

The *Developer* is responsible for obtaining approval from the planning jurisdiction for the street lights.

13. Is the *Developer* proposing to relocate or remove any of Carroll Electric’s existing electric distribution facilities?  Yes  No

14. Is the *Developer* proposing to use an approved engineering contractor to design the underground electrical facilities within the *Development*?  Yes  No

If “yes” contact CECC for a list of approved engineering contractors as well as design guidelines.

15. Submit the following to complete the application:

- A. Overall *Development* plan showing all proposed phases.
- B. Timeline for construction – including all phases (if applicable).
- C. Approved plat drawing of *Development* in an AutoCAD format including plans for other utilities and easement language (see Section 4.4 and 4.6 of the “*Commercial Development Extension Standard*”).
- D. If three phase power is required, detailed description of the specific power requirements, include the type of the electrical load, motor size, voltage, and location.
- E. If there are other service requirements for amenities such as motor-operated gates, public use areas, etc., please provide a load description and location for each service.

- F. A copy of a completed IRS form W-9.
- G. \$1,000.00 nonrefundable application and design deposit.

By signing below, the *Developer* agrees they have received a copy of the CECC “Commercial Development Extension Standard,” which is also available from a CECC representative, or at [www.carrollecc.com](http://www.carrollecc.com), and understands and agrees to the requirements and conditions set forth therein. The *Developer* further agrees that all electric facility extensions shall be in accordance with the CECC line extension tariff and the CECC “Commercial Development Extension Standard” that are in effect on the date hereof or as they may be modified thereafter; and agrees to provide such to its engineers and contractors in order to avoid delays or additional costs during the construction of their development.

\_\_\_\_\_  
Owner/Developer’s Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

MODIFIED

Revision 1	Date:	Signature:	Explanation:

Revision 2	Date:	Signature:	Explanation:

Revision 3	Date:	Signature:	Explanation:

Form **W-9**  
 (Rev. October 2018)  
 Department of the Treasury  
 Internal Revenue Service

**Request for Taxpayer  
 Identification Number and Certification**

**Give Form to the requester. Do not send to the IRS.**

► Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

Individual/sole proprietor or single-member LLC     C Corporation     S Corporation     Partnership     Trust/estate

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payer code (if any):

5 a

6 b

7 L

**SAMPLE**

**For Reference. CECC will provide complete agreement for signature upon completion of design and cost estimates.**

**Part I**  
 Enter your backup withholding agent's name if you are a resident alien, partnership, trust, estate, or TIN, later.

**Note:** If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

**Employer identification number**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Part II Certification**

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

**Sign Here**      Signature of U.S. person ►      Date ►

**General Instructions**

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

**Purpose of Form**

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
  - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
  - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
  - Form 1099-S (proceeds from real estate transactions)
  - Form 1099-K (merchant card and third party network transactions)
  - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
  - Form 1099-C (canceled debt)
  - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*



Carroll Electric Cooperative Corporation  
**Commercial Development Installation Agreement**  
 With Preliminary Design and Cost Estimate

This agreement is made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ between  
 Carroll Electric Cooperative Corporation (hereinafter called the *Cooperative*) and  
 \_\_\_\_\_ (hereafter called *Developer*).

A preliminary design and associated *Cost Estimate* is attached to, and incorporated into, this agreement showing Facilities the *Developer* wishes to have installed to serve the property designated on the plans and to be known as \_\_\_\_\_ in \_\_\_\_\_ County, Arkansas or Missouri.

**For Reference. CECC will provide complete agreement for signature upon completion of design and cost estimates.**

**OVERVIEW**

Having completed an *Application for Commercial Development* on \_\_\_\_\_, 20\_\_\_\_, the *Developer* agrees to pay, before installation of line, a total charge of \$ \_\_\_\_\_ and provide bonds in the amounts specified below.

**THE PARTIES AGREE** as follows:

1. The total cost to be paid to the *Cooperative* by the *Developer* is \$ \_\_\_\_\_  
 (*Schedule is set out in the attached cost estimate*)
2. The *Developer* will provide a maintenance bond in the amount of \$ \_\_\_\_\_
3. The *Developer* will provide a performance bond in the amount of \$ \_\_\_\_\_, which shall be released upon the connection of metered electric service to \_\_\_\_\_ qualified loads within the *Commercial Development*.
4. The Agreement between the *Cooperative* and the *Developer* consists of this Agreement, the *Application for Commercial Development*, the *CECC Commercial Development Extension Standard*, and *Cost Estimate*, and comes into effect upon signature.
5.  *Developer*  *Cooperative* will install conduit, transformer pads, and vaults.

If the *Cooperative* is to install conduit, transformer pads, and vaults, the *Developer* understands and agrees any cost for rock encountered during this work is not included in the estimated amounts above and any costs incurred due to soil compaction or boring requirements may not be included; but, in either case any amount not included in the estimate will be added after the installation and shall be paid prior to the *Cooperative* installing any cables.

- 6.  *Developer* to install *Developer* owned street lighting and metering point(s).
- Developer* to install conduit only for *Cooperative* owned lighting.
- Cooperative* to install conduit for *Cooperative* owned street lighting.

See section 4.8 of *Commercial Development Extension Standard*

- 7. The *Cooperative* shall not be liable as a result of the *Developer* or any of his agent's work in connection with opening or closing of the trench or performing any other work in connection with the installation of any electrical facilities or the operation of the same except by the *Cooperative's* own personnel or authorized representative.

All communication should be directed to:

Carroll Electric Cooperative Corporation  
 Attn: Engineering  
 P.O. Box 4000  
 Berryville AR 72616

Attn: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**For Reference. CECC will provide complete agreement for signature upon completion of design and cost estimates.**

This is an agreement for installation of Facilities in a *Commercial Development* and is not a contract for electric service. *Developer* acknowledges electric service will be provided to Members who enter into separate member and/or electric service agreement with the *Cooperative*. In the event the *Developer* requires a source of electrical energy for power supply, such energy will be supplied by the *Cooperative* in accordance with provisions of its standard service extension policies and approved rates and tariffs.

SIGNED by or on behalf of the *Developer* and the *Cooperative* on the date specified above.

*For Developer*

*For Carroll Electric Cooperative Corporation*

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name

\_\_\_\_\_  
 Printed Name

MODIFIED

	Date:	Signature:	Explanation:
Revision 1			

	Date:	Signature:	Explanation:
Revision 2			

	Date:	Signature:	Explanation:
Revision 3			

Cost Estimate for **XXXXXX**

Revision Number **0**

ITEM	ESTIMATED COST	INSTALLATION RESPONSIBILITY	COST RESPONSIBILITY	NOTES
<b><u>Design, Testing, &amp; Maintenance</u></b>				
Initial Design	\$ -	CECC	CECC	Subject to performance bond as guarantee of loads
Inspection, Testing, and Additional Design	\$ -	CECC	Developer	Via payment to CECC
Less \$1,000 Deposit	\$ (1,000.00)	CECC	Developer	Via payment to CECC
<b>Sub Total</b>	<b>\$ (1,000.00)</b>			
<b><u>Existing Facilities Relocation and/or Removal</u></b>				
<b>Sub Total</b>	<b>\$ -</b>	CECC	Developer	Via payment to CECC
<b><u>Cash required for Insufficient Meter Requirements</u></b>				
<b>Sub Total</b>	<b>\$ -</b>	CECC	Developer	Via payment to CECC
<b><u>New Services to non-qualified loads</u></b>				
<b>Sub Total</b>	<b>\$ -</b>	CECC	Developer	Via payment to CECC
<b><u>Street Lighting Installation</u></b>				
Lighting Trench and Conduit	\$ -	Developer	Developer	Subject to maintenance bond.
Lighting Cable	\$ -	CECC	Developer	Via payment to CECC
Lighting Poles	\$ -	CECC	Developer	Via payment to CECC
Lighting Heads Labor	\$ -	CECC	Developer	Via payment to CECC
Lighting Cost for Underground	\$ -	CECC	Developer	Via payment to CECC
Lighting Heads Material	\$ -	CECC	CECC	CECC provided
** Additional Costs Encountered	\$ -	Developer	Developer	
<b>Sub Total</b>	<b>\$ -</b>			
<b><u>Primary/Secondary System Installation</u></b>				
New Trench and Conduit	\$ -	Developer	CECC	Subject to performance bond as guarantee of loads
Cable, terminations, Switching, and grounding	\$ -	Developer	Developer	Subject to maintenance bond.
Junction Can, Sleeves	\$ -	Developer	CECC	Subject to performance bond as guarantee of loads
Equipment Pads and Vaults	\$ -	Developer	Developer	Subject to maintenance bond. Via payment to CECC
Pad mounted Equipment	\$ -	CECC	CECC	CECC Provided
** Additional Costs Encountered	\$ -	Developer	Developer	
<b>Sub Total</b>	<b>\$ -</b>			
<b>TOTAL</b>	<b>\$ (1,000.00)</b>			
	<b>\$ (1,000.00)</b>	<b>Amount payable by Developer to CECC</b>		
	<b>\$ -</b>	<b>Amount of Contribution by CECC</b>		
<b>TOTAL</b>	<b>\$ (1,000.00)</b>			

SAMPLE

For Reference. CECC will provide complete agreement for signature upon completion of design and cost estimates.

**Number of Qualified Meter Locations Required for Performance Bond release - 0**

<b>\$ -</b>	<b>Amount of Performance Bond by Developer*** (3 yr hold)</b>
<b>\$ -</b>	<b>Amount of Maintenance Bond by Developer**** (1 yr hold)</b>

\_\_\_\_\_  
Developer's Signature

\_\_\_\_\_  
Date

\*\*In instances where CECC has agreed to install conduits, pads, and vaults, the cost for rock, boring, and compaction encountered is not included in estimates. In instances where CECC has agreed to install conduits, minimum conduit stabilization cost is included; however, field conditions may require additional stabilization which is not included in this estimate.  
 \*\*\*Performance Bonding is based on CECC's Contribution toward development less the cost of transformers.  
 \*\*\*\*Maintenance Bond is 50% of ditch and conduit value plus equipment pads and vault cost

### Application for Changes to Street Lighting

Municipality/Entity \_\_\_\_\_ Requisition No. \_\_\_\_\_

Address \_\_\_\_\_ Date \_\_\_\_\_

City/State/Zip \_\_\_\_\_ WO No. \_\_\_\_\_

Installation of \_\_\_\_\_ street light(s) is hereby requested at the location(s) listed below in accordance with Carroll Electric's rate schedule number 5, which is on file with the Arkansas Public Service Commission.

Location or Description:

SAMPLE

**For Reference. CECC will provide complete agreement for signature upon completion of design and cost estimates.**

**NOTE: Carroll Electric no longer provides High Pressure Sodium lights, except for the 250 Watt type. Future light maintenance will involve a replacement with a comparable LED light and corresponding rate.**

\_\_\_\_\_  
Member/Owner

\_\_\_\_\_  
Carroll Electric Cooperative Corporation

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Perpetual Inventory of Lights**

Wattage Size	MV 175	HPS 100	MV 250	HPS 150	MV 400	MH 400	HPS 250	MH 1000	LED 70	LED 70C	LED 70D	LED 129	LED 266
Added													
Removed													

Main Account Number \_\_\_\_\_

MemberSep Number \_\_\_\_\_

Fixture Account No.(s)




**Carroll Electric  
Cooperative Corporation**

CECC USE ONLY	
Account Location No. _____	_____
Member Sep. _____	Member No. _____

## BUSINESS APPLICATION FOR SERVICE

Application Date	Requested Service Start Date	Service Location Physical Address (Street, City, State, Zip)	Apt. / Suite
<div style="font-size: 48px; color: red; font-weight: bold; opacity: 0.5;">SAMPLE</div> <p style="color: red; font-weight: bold; margin-top: 10px;">For Reference. CECC will provide complete agreement for signature upon completion of design and cost estimates.</p>			
Company Legal Name	Type of Business		
Federal Tax ID	Company Phone Number	Additional Phone Number	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> LLC <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation
Primary Contact	Title	Contact Phone Number	Are you the owner of this business? <input type="checkbox"/> Yes <input type="checkbox"/> No

Billing address	Email address

Lot	Block	Phase	Subdivision	If there is a <b>SECURITY LIGHT</b> at this location, would you like to keep it? <input type="checkbox"/> Yes <input type="checkbox"/> No

### eSERVICES

**Please enroll me in eBILLING**      eBilling email address \_\_\_\_\_

Must establish myAccount ID and password to view bills. See myaccount.carrollecc.com for details.

**Please enroll me in eDRAFT**

I authorize Carroll Electric to electronically debit my account monthly, for the amount stated on my bill(s) and if necessary, electronically credit my account to correct erroneous debits. I understand this authorization remains in full force and effect until I notify Carroll Electric in writing, at least five days before the due date. Cancellation instructions are available at carrollecc.com or by calling 1-800-432-9720.

<input type="checkbox"/> Checking	Name(s) on Bank Account	Bank Name	Bank City, State
<input type="checkbox"/> Savings			
	Bank Routing Number (max 9 numbers)	Bank Account Number (max 15 numbers)	

Use the information above to electronically debit my existing accounts (existing members only.)

CONTINUED ON NEXT PAGE



**COMPLETE THIS SECTION ONLY IF APPLYING FOR SERVICE AT A NEW CONSTRUCTION SITE**

Property Description (Lot, Block, Phase, Subdivision, etc.)

\_\_\_\_\_

Do you need single-phase or three-phase power?  
*(If three-phase, additional costs apply.)*

\_\_\_\_\_

Do you need single phase or three phase power?

\_\_\_\_\_

Will this structure have provisions for the following? *(If No, additional costs apply for an unqualified load.)*

Sanitation System

- Sanitary Sewer
- Septic
- No

Pressurized Water System

- City
- Well
- No

Permanent Foundation

- Yes
- No

The Applicant, whose signature appears below, applies to the CARROLL ELECTRIC COOPERATIVE CORPORATION of Berryville, Arkansas, (hereinafter called the "Cooperative") for membership and/or electric service to be supplied at the location herein described and, upon request, at any other location within the area served by this Cooperative. This agreement shall supersede and replace any previous agreement and shall apply to each location the Cooperative furnishes electric service to the applicant.

The Applicant agrees to be bound by and to comply with all Rules of the Arkansas Public Service Commission (APSC), other applicable laws and regulations, as well as the Cooperative's approved tariffs, Articles of Incorporation, Bylaws, consumer classifications, rates, charges, and service rules and regulations and all other applicable terms and conditions set by the Cooperative, both as the same now exists or may hereafter be adopted, repealed, amended, or supplemented; to pay all fees, deposits, and charges in accordance with the rates, rules, and regulations as now exist or as may hereafter be adopted; and authorizes the Cooperative to verify information provided, including the use of any credit reporting agency to verify identity.

The Cooperative shall operate on a not-for-profit basis as defined by law. As such, all patronage capital, if any, shall be held by the Cooperative in accordance with Ark. Code Ann. §23-18-327 until such time as determined by the Cooperative. In the event the Cooperative disburses patronage capital, it shall remain the Applicant's responsibility to keep the Cooperative informed of Applicant's mailing address.

In the event the Applicant's account becomes delinquent, the Cooperative shall follow the rules and tariffs approved by APSC and thereafter, the Applicant agrees to surrender the membership fee, deposit, and future patronage capital to extinguish such indebtedness plus any accumulated late charges and interest. Further, the Applicant agrees to pay all cost of collection including attorney's fees, collection fees, and any other related fees and costs.

The Applicant will cause and keep his premises to be wired in accordance with wiring specifications of the appropriate governing jurisdiction and the Cooperative assumes no responsibility for loss or damage due to defective wiring and/or equipment located on the Applicant's side of the meter installation or other agreed to point of delivery.

The applicant understands that the Cooperative shall use reasonable diligence to provide a constant and uninterrupted supply of electric power and energy hereunder. If the supply of electric power and energy shall fail

or be interrupted, or become defective through acts of God, governmental authority, action of the elements, public enemy, epidemic/pandemic, cyber-attack, accident, strikes, labor troubles, required maintenance work, inability to serve right-of-way, equipment failure, or any cause beyond the reasonable control of the Cooperative, the Cooperative shall not be liable therefore or for damages caused thereby.

Electric service shall be supplied within the voltage range prescribed by Arkansas Public Service Commission's Special Rules - Electric. The Cooperative's standard service voltage will be 120/240 volts, AC, unless otherwise stated in accordance with the approved schedules, rules, regulations, or by mutual agreement. However, in all cases, the voltage supplied to the Applicant may vary by ± 5 percent measured at the meter. Voltage variations in excess of those specified shall not be considered a violation if variations are caused by:

- (1) The operation of power equipment on a customer's premises;
- (2) The action of the elements; or,
- (3) Infrequent and unavoidable fluctuations of short duration in station operation.

The Applicant hereby recognizes the need for the Cooperative to maintain its facilities along all easements. All easements presently installed on the Applicants property, whether recorded, written, or prescriptive, are approved and granted in favor of the Cooperative.

The Applicant agrees SECURITY DEPOSITS are subject to the rules of the APSC and are subject to the following conditions:

- (1) Residential or personal deposits shall be waived or refunded based on the Applicant's timely payment history defined by the APSC and evidenced by a certification letter from a previous utility, a third-party personal guarantee from another qualifying individual, or other personal credit measurements determined by the Cooperative.
- (2) Commercial deposits, surety bonds, or irrevocable letters of credit shall be provided by the Applicant to the Cooperative and shall remain in effect for the duration of service. Should a commercial account not have a corporate taxpayer identification number issued by the Internal Revenue Service, the Cooperative shall also require a personal guarantee from the Applicant's principal business owner(s).

**I HEREBY APPLY TO THE CARROLL ELECTRIC COOPERATIVE CORPORATION FOR MEMBERSHIP AND/OR ELECTRIC SERVICE IN ACCORDANCE WITH THE TERMS AND CONDITIONS APPEARING ABOVE.**

Applicant Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Co-Applicant Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Carroll Electric Cooperative Corporation**  
**Underground Conduit Installation Specifications and Drawings**  
 (Sections 2 and 7 including associated drawings)

The following specifications and drawings are typical requirements for construction of CECC's primary underground distribution system. In cases where an issue arises not covered by the included specifications and drawings, the *Developer* or his representatives shall contact CECC for clarification prior to installation.

## 2. INSTALLATION OF CONDUIT

- 2.1 The minimum depth for installation of both primary and secondary conduit from final grade (including rock trench) is specified in tables below:

### Minimum Primary Conduit Installation Depths

Conduit Size <i>Schedule 40</i>	Bottom of Trench <i>from final grade</i>	Top of Conduit <i>from final grade</i>
2"	38"	36"
3"	39"	36"
4"	40"	36"
6"	42"	36"

### Minimum Secondary Conduit Installation Depths

Conduit Size <i>Schedule 40</i>	Bottom of Trench <i>from final grade</i>	Top of Conduit <i>from final grade</i>
1"	25"	24"
2"	26"	24"
3"	27"	24"
4"	28"	24"

On sloping ground, the depth of the trench shall be measured from the low side of the trench. Upon Engineering approval, where required depths cannot be obtained, a concrete encasement may be used. A typical encasement shall consist of 3500 psi concrete dyed red. The encasement shall be capped with an eight-inch (8") thick concrete layer reinforced with #3 or 3/8-inch rebar tied on one-foot squares, with a minimum three-inch (3") cover. The encasement shall extend a minimum of eight inches (8") on each side of the outer most conduits and be poured to depth.

- 2.2 All trenches shall follow straight lines between staked points to the greatest extent possible. Secondary and service trenches shall extend in a straight line between takeoff points wherever possible, while maintaining a minimum distance of five feet (5') of horizontal clearance from any building or permanent structure. The point of termination for secondary conduit shall be within direct line of sight of the source power supply.

- 2.3 Water, sewer, or gas lines shall not share the ditch with CECC primary or secondary distribution lines and shall maintain a minimum of five feet (5') of horizontal clearance. Perpendicular crossings shall maintain a minimum of 18 inches (18") of vertical clearance. Separation from deeper sewer lines shall be increased to allow access to the sewer line without disturbance of the power conduit ditch. Telephone, cable, and/or other communication lines may share CECC primary or secondary ditch and shall be separated as shown in CECC's Joint Trench Guide drawing.
- 2.4 The trenches shall be dug so that the bottom has a smooth grade. Large rocks, stones and gravel in excess of one inch (1") shall be removed from the bottom of the trench. Where this cannot be accomplished, a two-inch (2") bed of sand or clean soil shall be placed in the bottom of the trench. The minimum cover above the conduit must be maintained per section 2.1.
- 2.5 If rock or other difficult digging is encountered, the nature and extent of the difficulty shall be determined, and the designer shall determine whether rerouting, rock trenching or other changes are necessary.
- 2.6 Trench widths specified are a minimum and shall be increased as necessary to obtain the required depths in loose soils.
- 2.7 Construction shall be arranged so that trenches may be left open for the shortest practical time to avoid creating a hazard to the public and to minimize the likelihood of the trench collapsing due to other construction activity, rain, accumulation of water in the trench, etc. If this occurs, the trench shall be cleared to the specified depth before installing the conduit.
- 2.8 All conduit shall be stick gray electrical PVC schedule 40 unless otherwise approved. Continuous conduit shall only be allowed with engineering approval. When approved, continuous conduit shall be black (with red stripe) electrical HDPE schedule 40 unless otherwise specified. Continuous (HDPE) conduit shall not be allowed in any above ground installations. Steel sleeves may be required under street, highway, and railroad crossings.
- 2.9 Where more than one conduit is to be placed in a common trench, the spacing shown on the specification drawings shall be observed. Conduits shall be placed flat and parallel to one another. Rolling, crossing, or stacking of conduit within the ditch shall be pre-approved by the designer.
- 2.9.1 Three-phase shall be installed in a minimum three-inch (3") conduit. Single-phase shall be installed in two-inch (2") conduit.
- 2.9.2 600 Amp underground circuits shall be installed with appropriately sized spare conduits for each conductor along with an additional two-inch (2") conduit installed for CECC communications.
- 2.9.3 Appropriately sized spare conduits shall be installed alongside all conduit installed beneath hard surfaces such as, but not limited to roadways, parking lots, and driveways.
- 2.10 All conduit/cable runs shall not exceed the maximum length shown below.

### **Maximum Primary Conductor Run Length**



<b>Conduit Size</b> <i>Schedule 40</i>	<b>Cable Size</b> <i>25 KV</i>	<b>*Length of Run</b> <i>Feet</i>
2"	1/0	600
2"	4/0	600
3"	1/0	600
3"	4/0	900
3"	500	500
4"	4/0	900
4"	500	500
4"	1000	300

\*Note: Maximum conduit lengths are limited by sidewall pressure for three (3) sweeps.  
Contact CECC Engineering for other variations.

- 2.11 Conduit runs for secondary are generally limited to 125' for voltage considerations and constructability. Longer runs shall be approved by Engineering Manager after consideration of load and constructability.
- 2.12 All conduit runs shall contain no more than 270 degrees of total angle. Minimum requirements for primary and secondary sweeps are specified in the table below.

#### **Minimum Primary Conduit Sweep Size**

*(Long Sweeps)*

<b>Size</b> <i>Schedule 40</i>	<b>Radius</b> <i>Centerline</i>	<b>Length</b> <i>Centerline</i>
2"	36.00"	60.000"
3"	36.00"	62.125"
4"	36.00"	63.125"
6"	36.00"	65.250"

#### **Minimum Secondary Conduit Sweep Size**

*(Short Sweeps)*

<b>Size</b> <i>Schedule 40</i>	<b>Radius</b> <i>Centerline</i>	<b>Length</b> <i>Centerline</i>
1"	05.75"	11.750"
2"	09.50"	18.250"
3"	13.00"	25.125"
4"	16.00"	30.250"

- 2.13 Sweeps shall be oriented to allow appropriate orientation of underground equipment and/or enclosures. Proper example: When equipment is installed on front of lot it shall open toward the road.
- 2.14 All exposed ends of conduit shall be plugged or capped during construction to prevent the entrance of foreign matter and moisture into the conduit. At the time of installation, each end of the conduit shall be marked with marking tape to distinguish individual conduits.

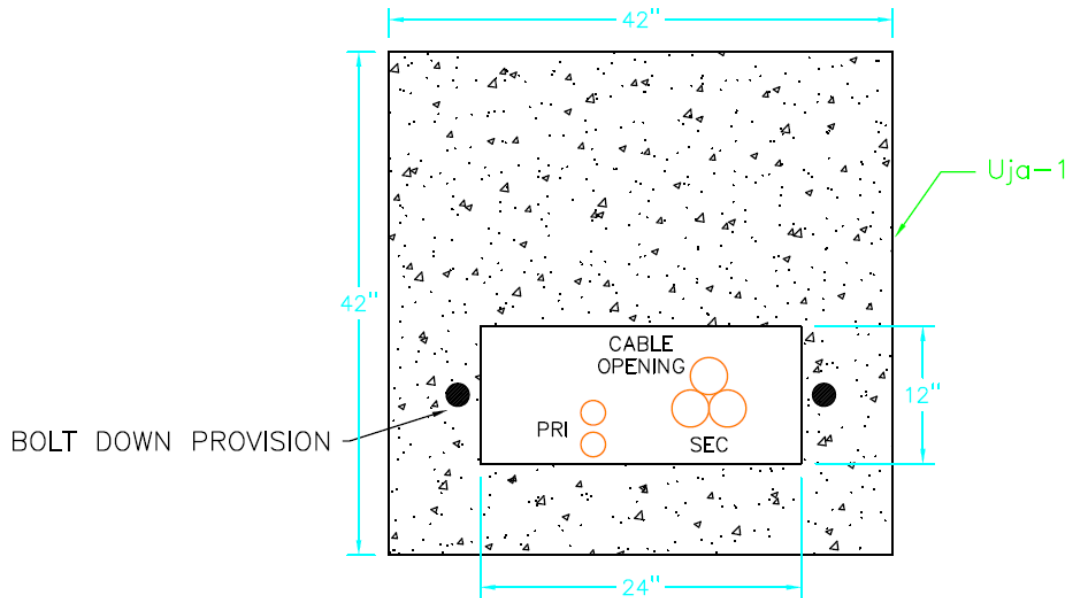
Burrs or sharp projections that might injure the cable shall be removed.

- 2.15 Proper fittings shall be used on all transitions. All joints shall be glued together with the proper adhesive. When using continuous (HDPE) conduit, appropriate rigid sweeps shall be used for risers and/or entering equipment and/or enclosures.
- 2.16 A pull string consisting of locatable mule tape (preferred) or 7/8" electric fence poly-tape with a minimum of seven (7) wire strands or equivalent shall be installed inside each conduit at time of installation with a minimum of four feet (4') excess coiled and secured on each end.
- 2.17 The first six inches (6") of trench backfill shall be free from large rock or other material which might damage the conduit. This soil layer shall be carefully compacted so that the conduit shall not be damaged. If native backfill is unacceptable, imported backfill shall be required (5/8-inch crushed rock, fines, or sand). Backfilling shall be completed in such a manner that voids shall be minimized. Excess soil shall be piled on top and should be well tamped.
- 2.18 Road crossing backfill and compaction, or boring requirements shall be as required by the governing road district.
- 2.19 Electrical Warning Tape (Red) shall be installed 12 inches (12") above primary electrical conduits.
- 2.20 All rock and debris shall be removed from the site, and any damage to the premises repaired immediately. Pieces of scrap cable or other material remaining after installation shall not be buried in the trench as a means of disposal.

## **7. EQUIPMENT AND ENCLOSURES**

- 7.1 Equipment shall be handled carefully to avoid damage. Only qualified and experienced personnel shall be allowed to make connections and cable terminations.
- 7.2 Vaults shall be required in areas where final grade is subject to change, to accommodate grade differentials, there is the possibility of undermining equipment stability, or to provide for excess secondary runs as determined by CECC.
- 7.2 Transformers shall be installed on undisturbed earth adjacent to but not over the trench and shall be positioned in accordance with the staking sheets and the plans and specifications. The site shall be cleared of all debris and excavated to final grade. Gravel shall be added to the site and thoroughly compacted. The pad or vault shall be installed level at the specified elevation.
- 7.3 Equipment location and orientation shall be positioned to allow for at least 15 feet (15') of working access and 5 feet (5') of non-working access. Equipment shall be a minimum of 15 feet (15') away from buildings.

- 7.4 Bollards shall be required when equipment is located closer than 5 feet (5') from parking lots, driveways, or other areas subject to vehicular traffic or damage.
- 7.5 Equipment shall be installed in such a manner to allow unobstructed access. Obstacles such as fire hydrants, gas meters, phone pedestals, fences, landscaping, etc., shall not impede ability to access and/or maintain equipment.
- 7.6 Lifting lugs shall be removed once equipment is in place and all "warning" and "danger" signs shall be installed.
- 7.7 Enclosures shall be installed with side walls plumb. The surrounding earth shall be disturbed as little as possible when installing vaults and other below-grade enclosures. When enclosures are of fiberglass, plastic, or other semi-flexible material, backfilling shall be done with covers in place and with careful tamping so as to avoid distortion of the enclosure. When installation is complete, the cover of the enclosure shall not be lower than, and not more than two inches (2") higher than the final grade, measured on the high side of grade. Soil in the immediate vicinity shall be tamped and sloped away from the enclosure. Excess soil shall be removed from the site or spread evenly over the surface of the ground.
- 7.8 Secondary conduits within a pad mounted transformer shall be limited to three (3) four-inch (4") conduits for single phase units and eight (8) four-inch (4") conduits inside the secondary compartment of a three-phase pad mounted transformer.
- 7.9 Conduit stub-ups into equipment shall be installed per drawing specifications to ensure proper orientation. Conduit stub-outs shall be installed for future installations where practical to avoid digging under the pad or vault later.
- 7.10 Underground sectionalizing cabinets and pad mounted transformers at dead-ends or with opening points shall have an elbow surge arrester installed (per phase) at each primary cable termination point.



UM1.5C

Notes:

1. Pad assemblies include site preparation, bedding and drainage.
2. Equipment shall be secured to pad in accordance with manufacturers instructions.
3. Conduit shall front the cable opening area. See "UM1.5G" for conduit detail.
4. No more than three secondary conduits shall be allowed in a single phase enclosure.
5. See written specifications for conduit size.
6. Where more than 3 secondary conduits (excluding street lights) are needed, install "UK5".
7. Designate "UM1.5C" for concrete and "UM1.5NC" for non-concrete.
8. Specify UM1.44CL with UM1.44C or when placing a UG7.167.

		ASSEMBLY: UM1	.5C
ITEM #	REF.	MATERIAL	QTY.
900004242	Uja-1	Pad, Transformer 42" X 46"	1

DESIGN PARAMETERS:

NOT FOR USE ON VAULT.



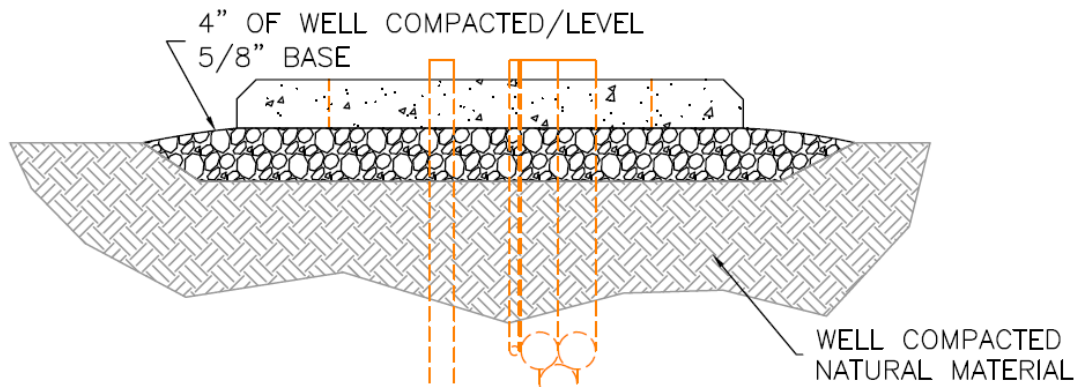
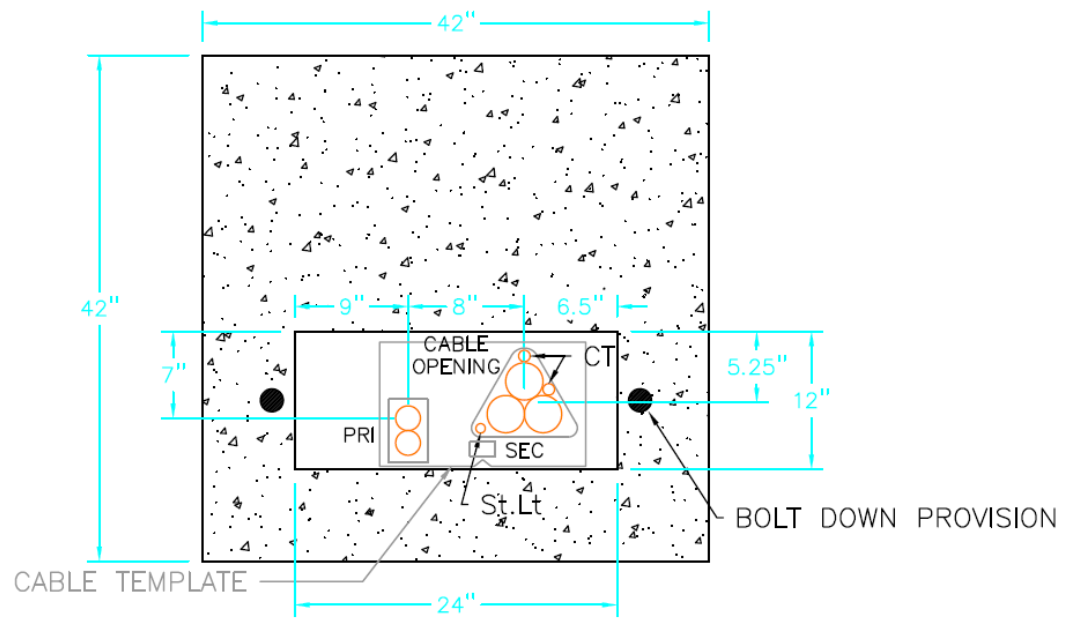
**Carroll Electric  
Cooperative Corporation**  
YOUR LOCAL ENERGY PARTNER

Issue: 2020  
Revision: A

PAD ASSEMBLIES

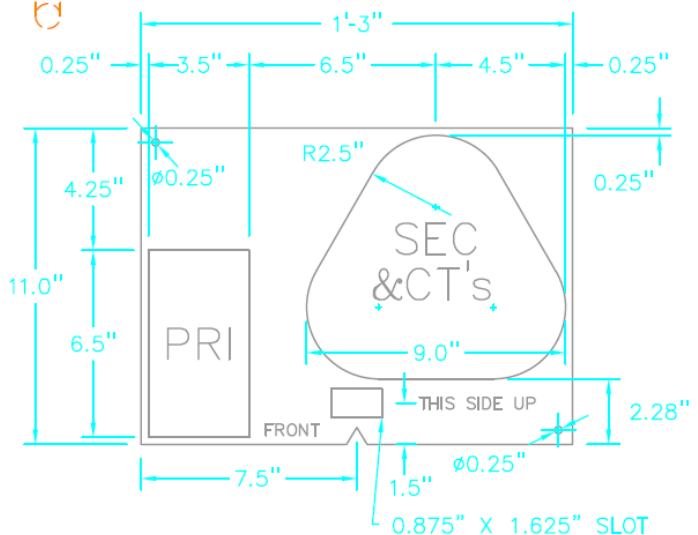
UM1.5C,  
UM1.5NC





**Notes:**

1. Pad assemblies include site preparation, bedding and drainage.
2. V-NOTCH on conduit template shall face reference stake.
3. 4" minimum compacted 5/8" base shall be placed under transformer pad.
4. Sub-grade soils shall be well compacted.
5. Secondary conduits shall have a minimum diameter of 3".
6. Primary conduits shall have a minimum diameter of 2".
7. When installing additional conduits for lighting and/or metering (1"), they shall be placed within the SEC opening.



**DESIGN PARAMETERS:**

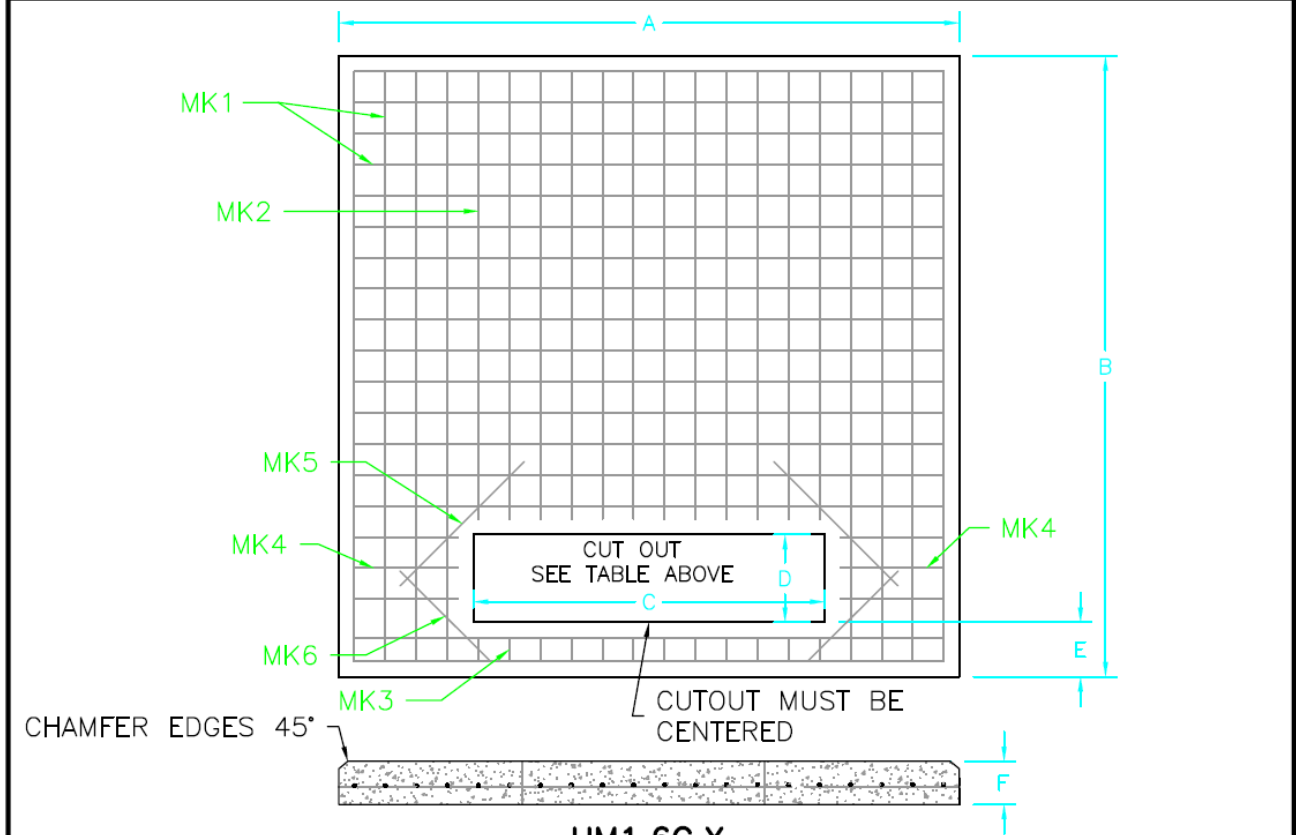


**PAD ASSEMBLY GUIDE**

Issue: 2020  
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UM1.5G

PAD	3-PHASE TRANSF. kVA	PAD DIMENSIONS IN INCHES						CONDUIT DIMENSIONS IN INCHES				REINFORCING BARS					
		"A"	"B"	"C"	"D"	"E"	"F"	PRI.	SEC.	CT.	GRD.	MK1	MK2	MK3	MK4	MK5	MK6
#1	45, 75, 112.5, 150, 225, 300	70	70	44	11	7.5	5	4 MAX	4 MAX	1 MIN	1 MIN	SEE NOTE 9					
#2	500, 750, 1000, 1500	90	80	52	18	8	8	4 MAX	4 MAX	1 MIN	1 MIN	SEE NOTE 9					
#3	2000, 2500	120	120	68	26	11	8	4 MAX	4 MAX	1 MIN	1 MIN	25 #4 114"	12 #4 77"	12 #4 4.5"	6 #4 20"	2 #4 34"	2 #4 24"



**Notes:**

1. Concrete specifications: 3500 psi. minimum, 4%–6% entrained air, maximum slump 6", 3/4" maximum size aggregate. Independent concrete testing shall be required to confirm specifications.
2. Reinforcing steel: ATSM–A615 Grade 60, place approx. 6" O.C. each way and securely tied together.
3. Minimum concrete cover over reinforcing steel 3" unless noted.
4. Wood float finish leaving no depressions.
5. Sub–grade soils shall be well compacted as to provide appropriate distribution of loads.
6. Maximum of (8) 4" conduits on the secondary side of the transformer; where more are required install "UK5.3". If (8) 4" conduits will not fit into the opening as specified above a vault will be required.
7. Secondary wire smaller than 350 MCM shall be installed in 3" conduit. Wire sizes 350 and above require 4" conduit.
8. 2000 kVA and above transformer sizes shall be placed on a cast–inplace pad.
9. Replace "X" with 1, 2 or 3 to specify required pad.

**DESIGN PARAMETERS:**



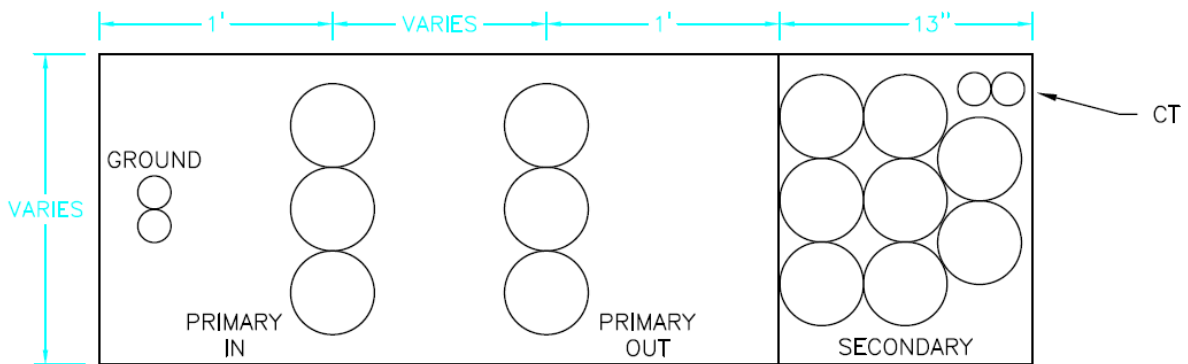
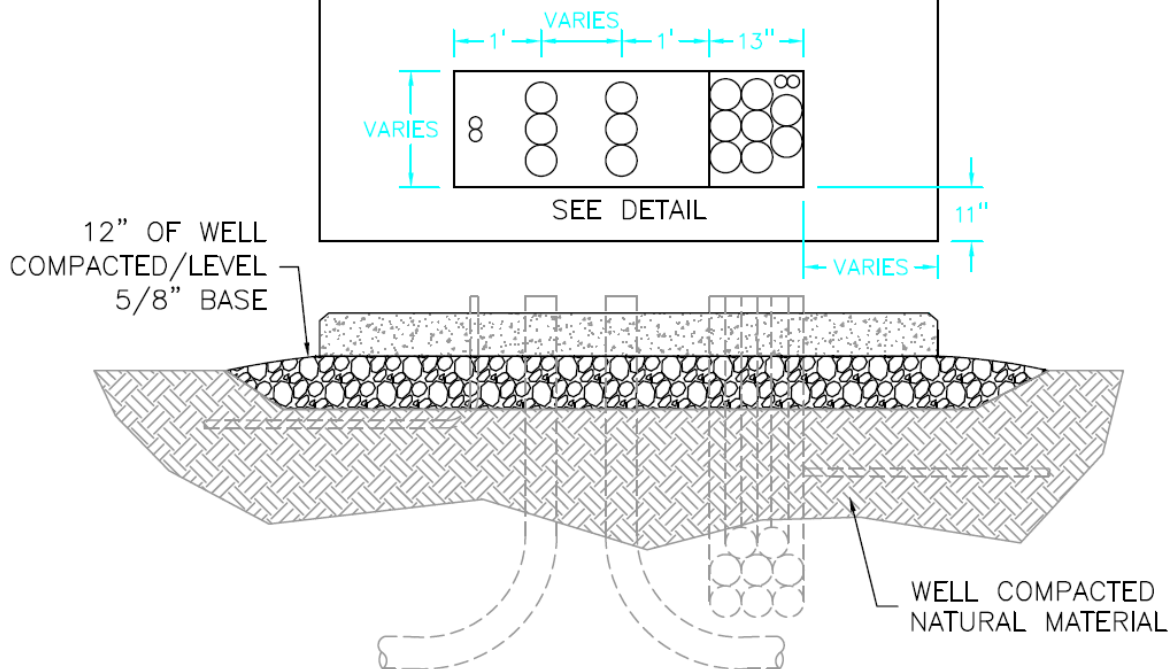
Carroll Electric  
Cooperative Corporation  
YOUR LOCAL ENERGY PARTNER

THREE PHASE TRANSFORMER PAD  
CONCRETE

Issue: 2020  
Revision: C

UM1.6C.X

PAD	3-PHASE TRANSF. KVA	CONDUIT DIMENSIONS IN INCHES			
		PRI.	SEC.	CT.	GRD.
#1	45, 75, 112.5, 150, 225, 300	4 MAX	4 MAX	1 MIN	1 MIN
#2	500, 750, 1000, 1500	4 MAX	4 MAX	1 MIN	1 MIN
#3	2000, 2500	4 MAX	4 MAX	1 MIN	1 MIN



PAD OPENING DETAIL

Notes:

1. Maximum of (8) 4" conduits on the secondary side of the transformer; where more than 8 are required install "UK5.3". If (8) 4" conduits will not fit into the opening as specified above a vault will be required.

DESIGN PARAMETERS:



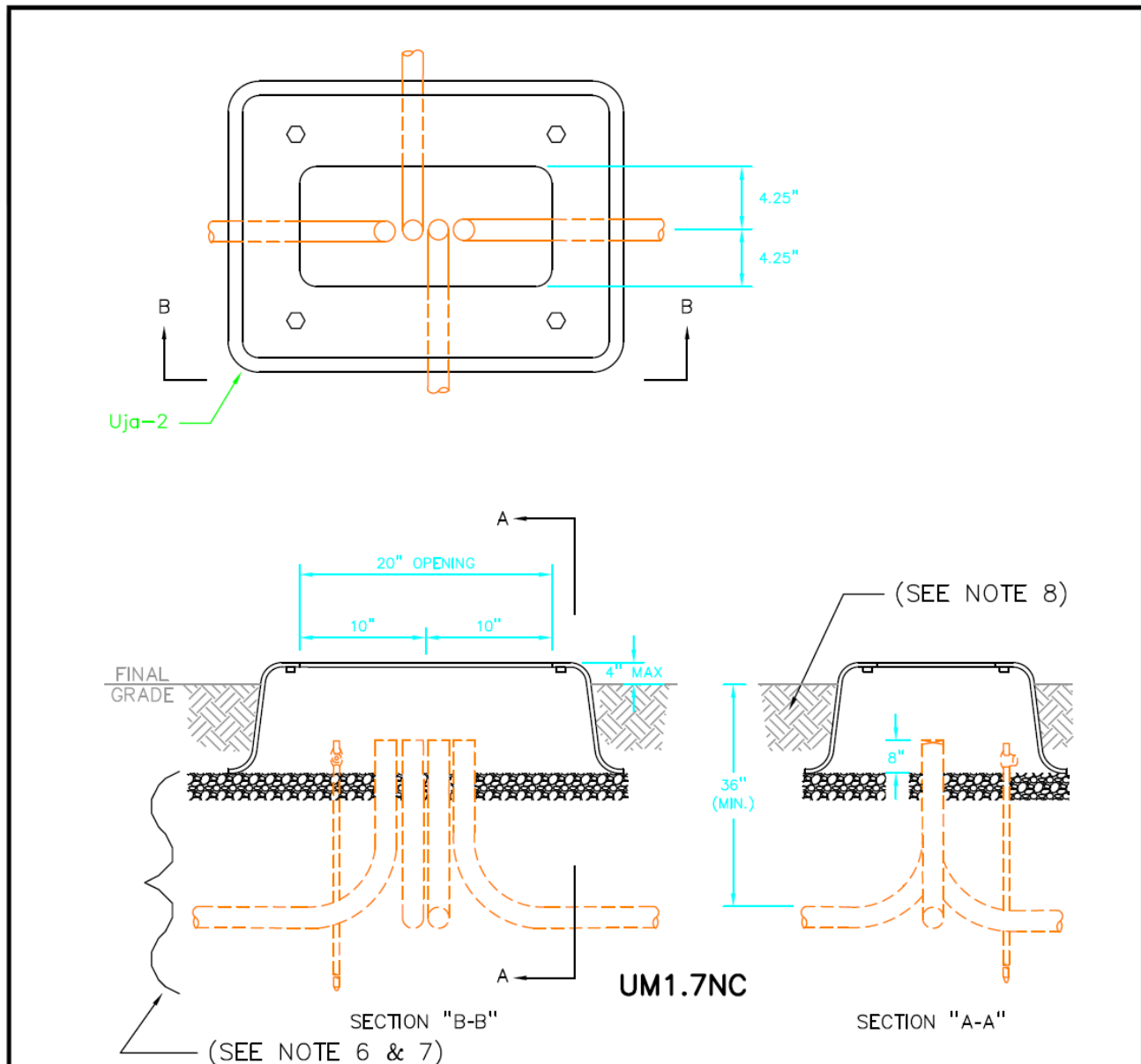
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YOUR LOCAL ENERGY PARTNER

THREE PHASE TRANSFORMER PAD  
INSTALLATION GUIDE

Issue: 2020  
Revision: C

UM1.6G



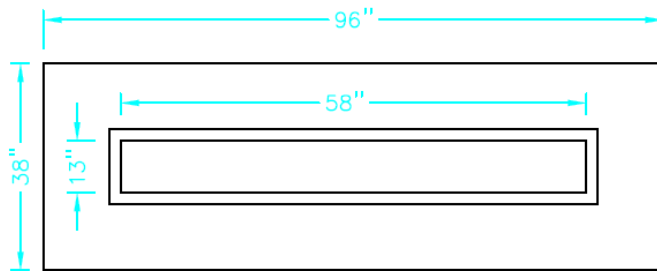


**NOTES:**

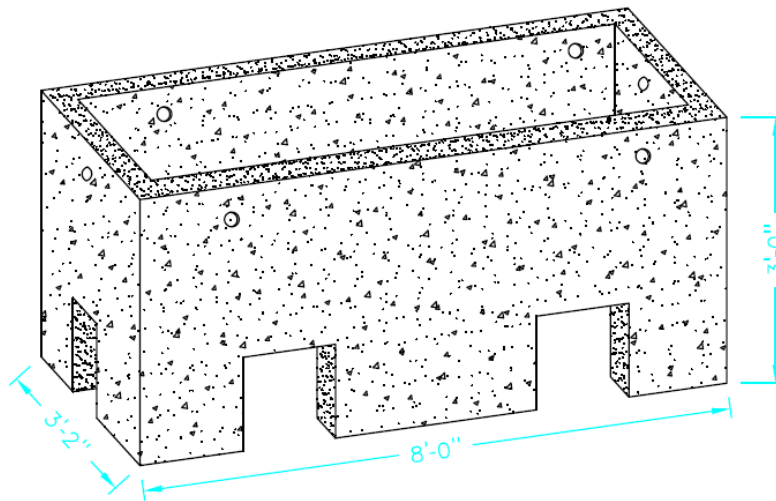
1. All conduit sweeps shall be Gray Electrical PVC SCH 40 unless otherwise specified.
2. Cap all conduits to prevent entry of moisture or other foreign material.
3. See written specifications for acceptable sweep dimensions.
4. Install conduits plumb and DO NOT BUNCH.
5. Conduit sweeps shall be stabilized by compacted fill or 5/8" base.
6. Sub-grade soil shall be well compacted.
7. 6" minimum compacted 5/8" base shall be placed under junction can sleeve.
8. DO NOT compact backfill material around ground sleeve.
9. Extensions shall be added to sweeps to attain specified conduit height.

ITEM #	REF.	MATERIAL	ASSEMBLY: UM1	.7NC
9200000	Uja-2	Sleeve, Ground Assembly 1Ph		1

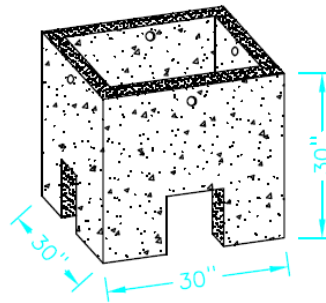
<p>DESIGN PARAMETERS:</p>	 <b>Carroll Electric Cooperative Corporation</b> YOUR LOCAL ENERGY PARTNER		<p>GROUND SLEEVE SINGLE PHASE ASSEMBLY</p>	
	Issue:	2020		
Revision:	B			UM1.7NC



**UM1.38CL**  
Approx. 1,050lbs



**UM1.38C**  
Approx. 2,525lbs



**UM1.33C**  
Approx. 650lbs

Notes:

1. Vault shall be placed on well compacted soil with at least 6" of compacted 5/8" base.
2. Backfill shall consist of clean soil, carefully compacted with no solid material larger than 3".
3. Top of vault shall be placed flush with final grade prior to adding pad.
4. Grounding installation shall be based on equipment mounted on vault.
5. Extension shall be added to sweeps to obtain specified conduit heights.

**DESIGN PARAMETERS:**

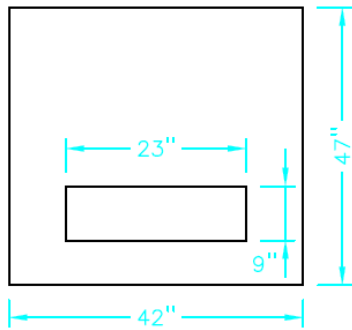


**PRECAST CONCRETE VAULT  
FOR PAD MOUNT EQUIPMENT**

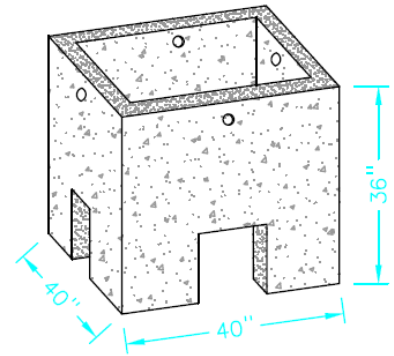
Issue: 2020  
Revision: A

UM1.33C,  
UM1.38C,  
UM1.38CL

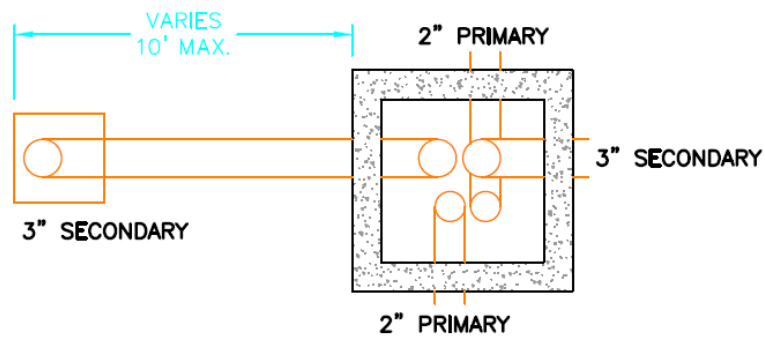
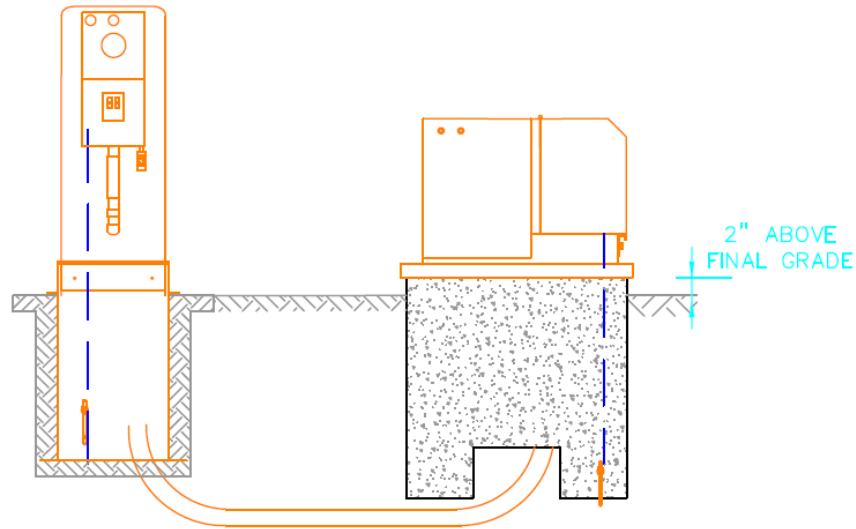




Approx. 580lbs  
UM1.44CL



Approx. 1,125lbs  
UM1.44C



**Notes:**

1. Vault shall be placed on well compacted soil with at least 6" of compacted 5/8" base.
2. Backfill shall consist of clean soil, carefully compacted with no solid material larger than 3".
3. Grounding installation shall be based on equipment mounted on vault.
4. Conduit sweeps when entering or leaving the vault may be 45's.
5. Specify UM1.44CL with UM1.44C or when placing a UG7.167.

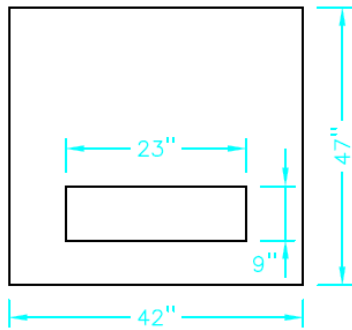
**DESIGN PARAMETERS:**



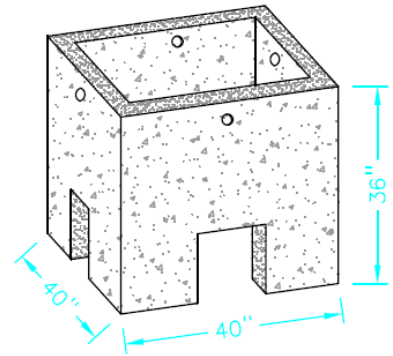
**PRECAST CONCRETE VAULT  
PRECAST CONCRETE LID  
FOR PAD MOUNT EQUIPMENT**

Issue:	2020
Revision:	B

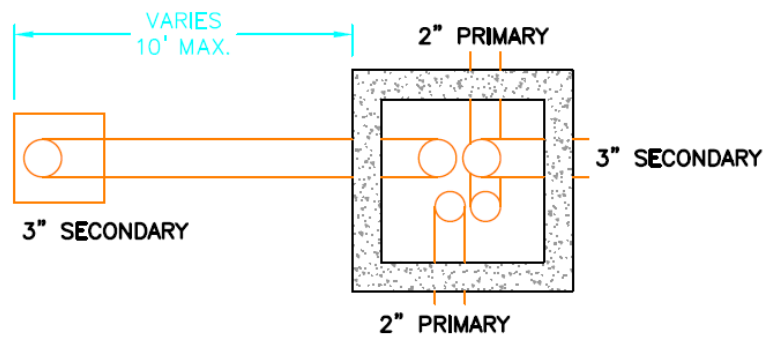
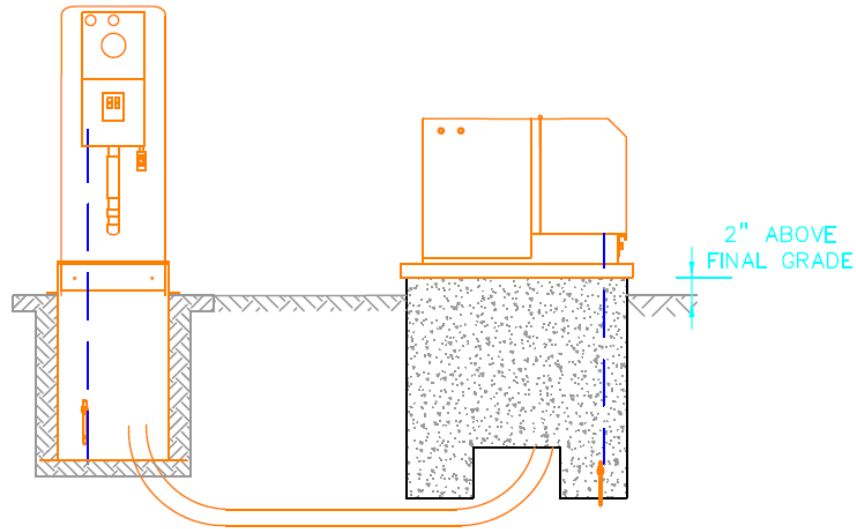
UM1.44C  
UM1.44CL



Approx. 580lbs  
UM1.44CL



Approx. 1,125lbs  
UM1.44C



**Notes:**

1. Vault shall be placed on well compacted soil with at least 6" of compacted 5/8" base.
2. Backfill shall consist of clean soil, carefully compacted with no solid material larger than 3".
3. Grounding installation shall be based on equipment mounted on vault.
4. Conduit sweeps when entering or leaving the vault may be 45's.
5. Specify UM1.44CL with UM1.44C or when placing a UG7.167.

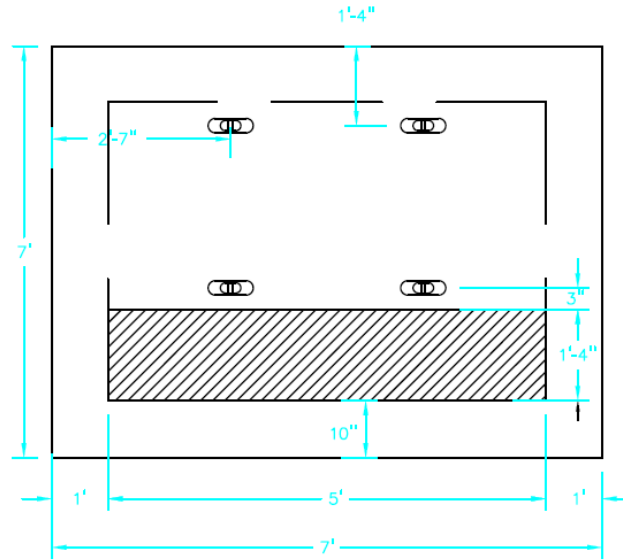
**DESIGN PARAMETERS:**



**PRECAST CONCRETE VAULT  
PRECAST CONCRETE LID  
FOR PAD MOUNT EQUIPMENT**

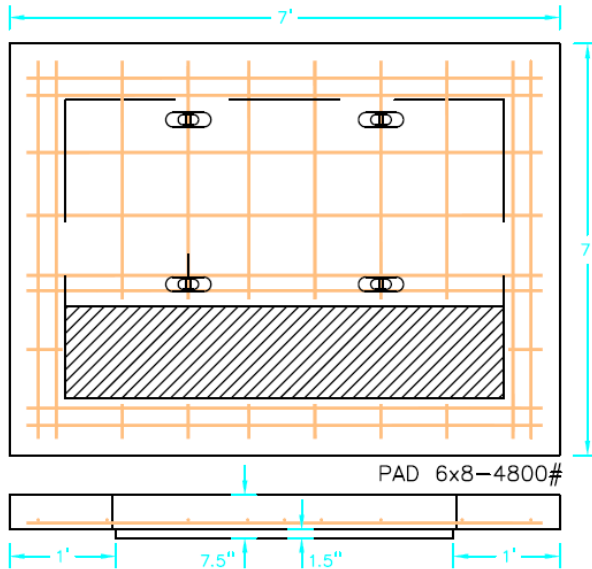
Issue:	2020
Revision:	B

UM1.44C  
UM1.44CL



PAD 6x8-4800#

### UM1.66CL.2



PAD 6x8:

- (4) 6'-6" #4 BAR } LATERAL BARS
- (6) 4'-4" #4 BAR } 12" ON CENTER APPROX.
- (6) 0'-7" #4 BAR }
- (8) 6'-6" #4 BAR } TRANSVERSE BARS
- (2) 0'-6" #4 BAR } 12" ON CENTER APPROX.

PRECAST WITH 3500# TEST CONCRETE REINFORCE WITH 60 KSI STEEL PLACE BARS 12" CENTER APPROXIMATE. ADJUST TO PROVIDE MINIMUM 3" CLEARANCE TO EXTERNAL SURFACES OF CONCRETE.

#### DESIGN PARAMETERS:

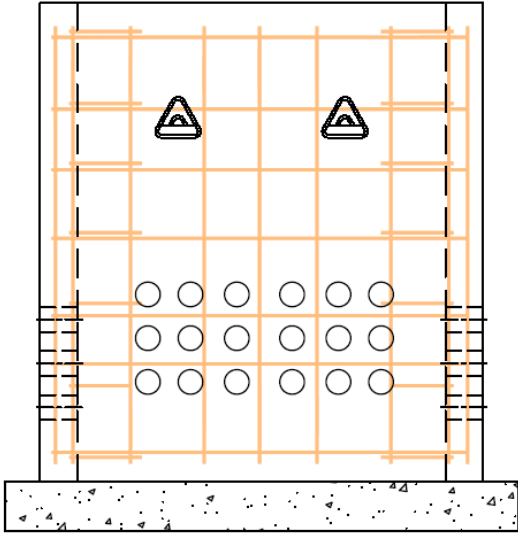


6X6 VAULT LID FOR UNDERGROUND PRIMARY METERING REINFORCEMENT GUIDE

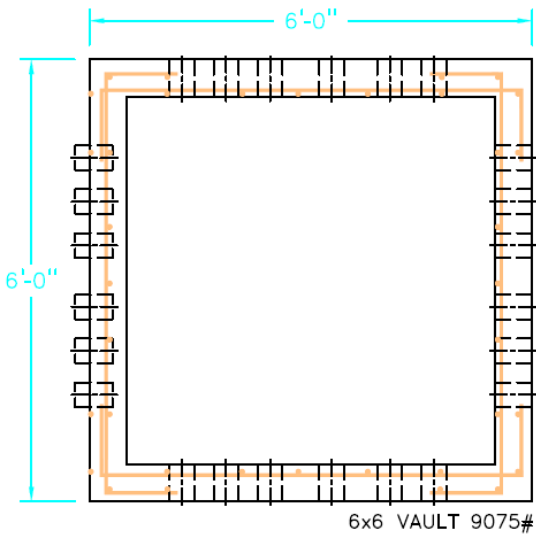
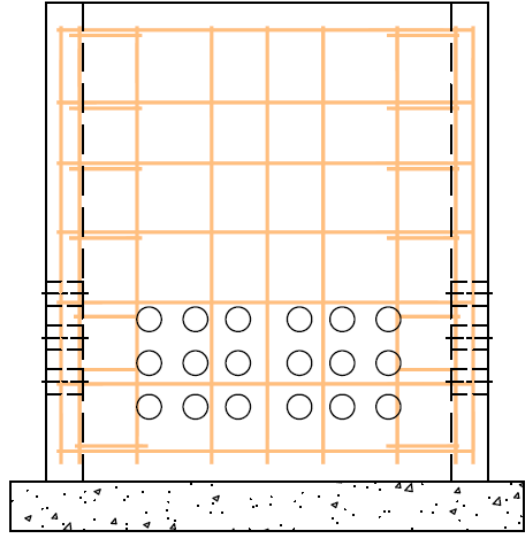
Issue: 2020  
Revision: A

3 - PHASE PRIMARY VAULT LID

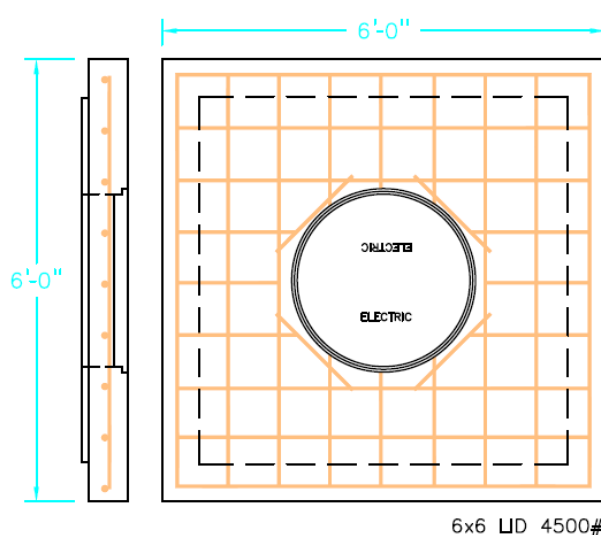
UM1.66CL.2



UM1.66CG



UM1.66CG



UM1.66CLG

VAULT 6x6:  
 (28) 7'-10" #5 BAR } HORIZONTAL BARS } 12" ON CENTER APPROX.  
 (36) 6'-6" #4 BAR } VERTICAL BARS } 10" ON CENTER APPROX.

PAD 6x6:  
 (9) 5'-6" #8 BAR } LATERAL BARS } 8.5" ON CENTER APPROX.  
 (9) 5'-6" #8 BAR } TRANSVERSE BARS } 8.5" ON CENTER APPROX.  
 (4) 3'-0" #8 BAR } ACCESS SUPPORT BARS

**NOTES:**

1. All rebar minimum 3" clearance to surface of concrete.
2. Precast with 3500# test concrete.
3. Reinforce with 60 ksi steel.

**DESIGN PARAMETERS:**

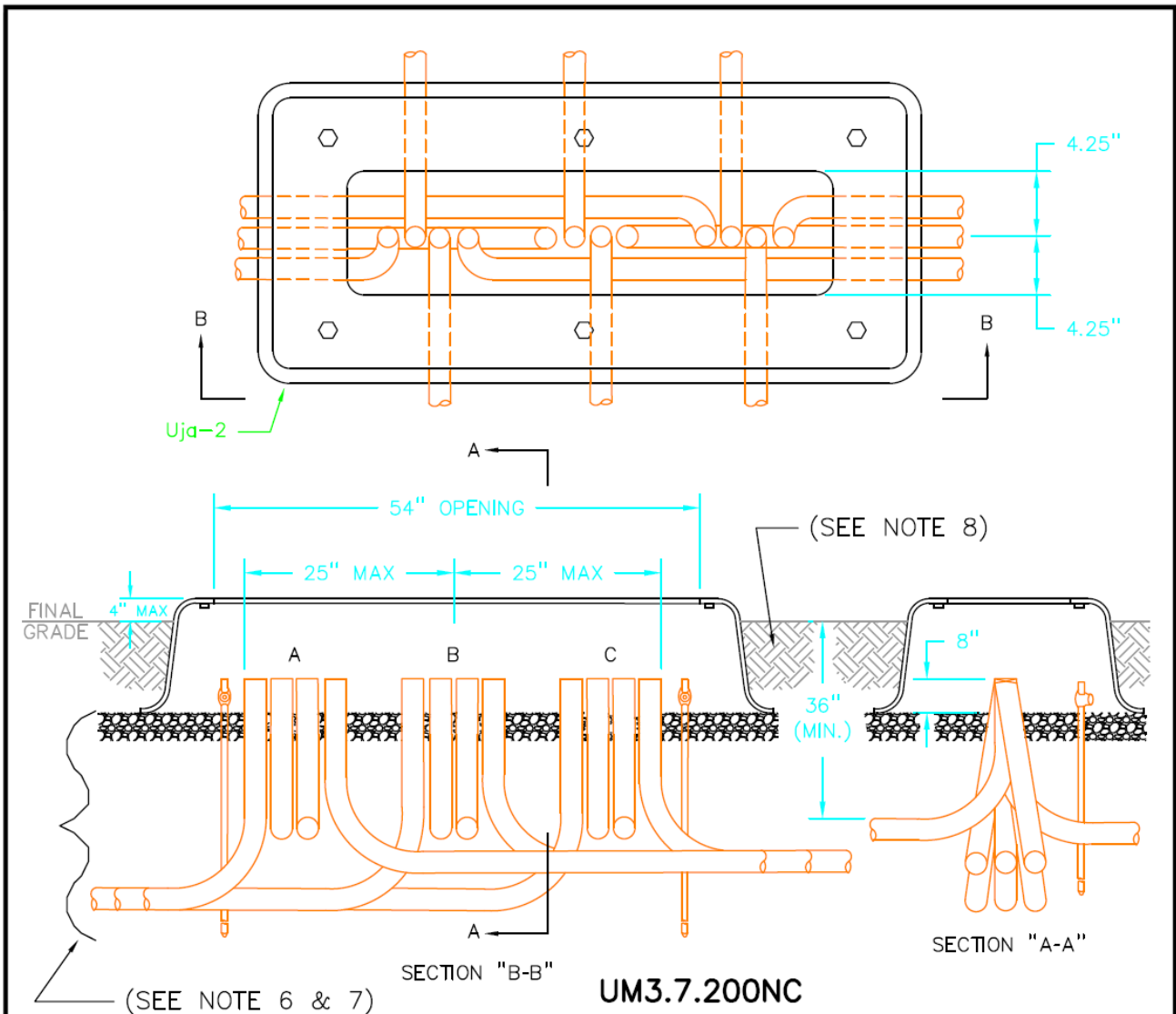


PRECAST VAULT AND LID  
 6x6 WITH MANHOLE ACCESS  
 REINFORCEMENT GUIDE

Issue: 2020  
 Revision: A

3 - PHASE PRIMARY VAULT

UM1.66CG,  
 UM1.66CLG



**NOTES:**

1. All conduit sweeps shall be gray electrical PVC SCH 40 unless otherwise specified.
2. Cap all conduits to prevent entry of moisture or other foreign material.
3. See written specifications for acceptable sweep dimensions.
4. Install conduits plumb and grouped by phase - all "A" phase together, all "B" phase together, and all "C" phase together - DO NOT BUNCH.
5. Conduit sweeps shall be stabilized by compacted fill or 5/8" base.
6. Sub-grade soil shall be well compacted.
7. 6" Minimum compacted 5/8" base to be place under junction can sleeve.
8. DO NOT compact backfill material around ground sleeve.
9. Extensions shall be added to sweeps to attain specified conduit height.
10. Opening and spacing dimensions shown are for "UM3.7.200". Dimensions for "UM3.7.600" will vary.

		ASSEMBLY: UM	3.7.200 NC	3.7.600 NC
ITEM #	REF.	MATERIAL	QTY.	QTY.
15700600	Uja-2	Sleeve, Ground Assembly 3Ph 60"	1	
15700840	Uja-2	Sleeve, Ground Assembly 3Ph 84"		1

**DESIGN PARAMETERS:**

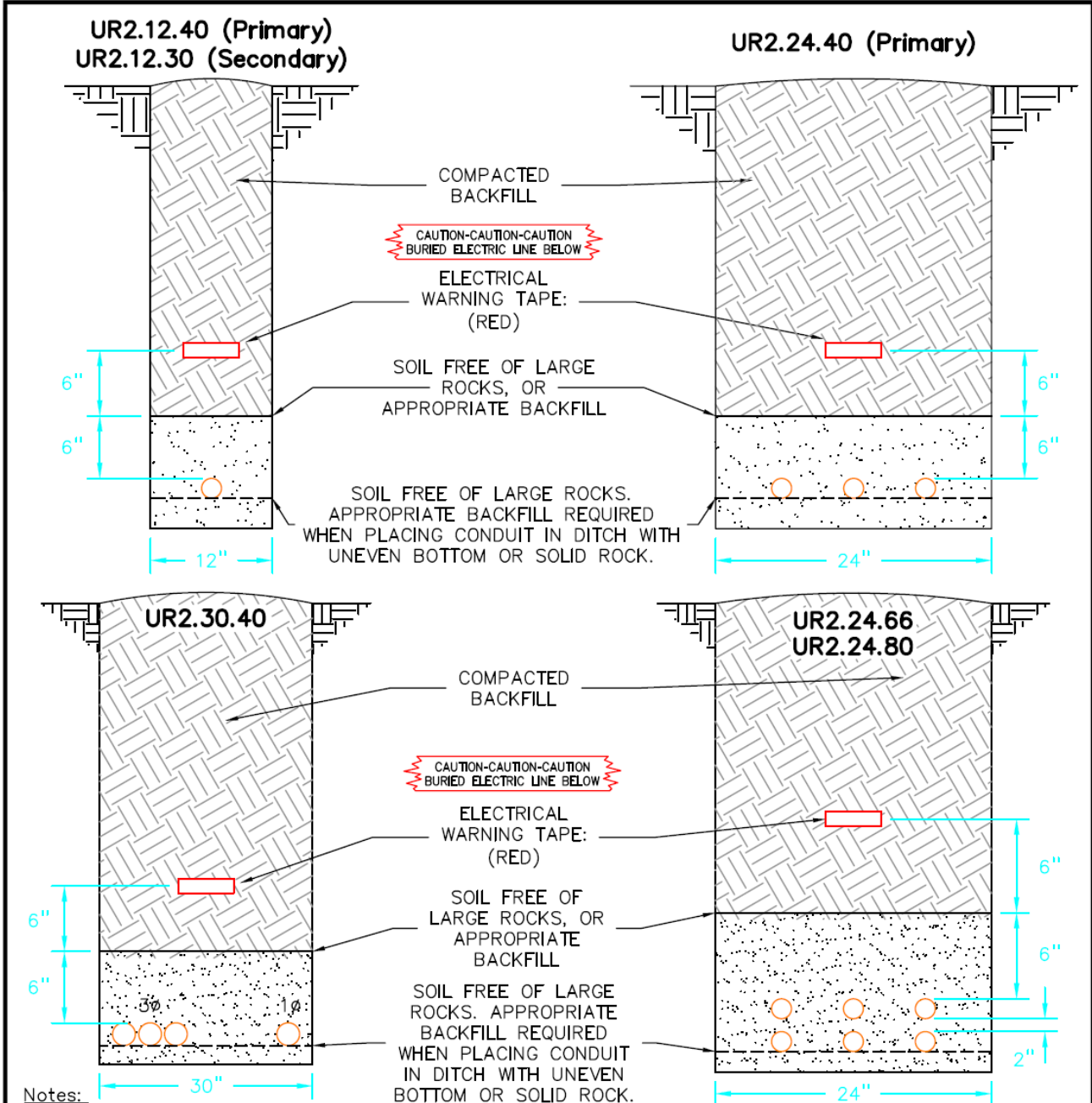


**THREE PHASE JCT BOX  
GROUND SLEEVE**

Issue: 2020  
Revision: B

UM3.7.200NC,  
UM3.7.600NC



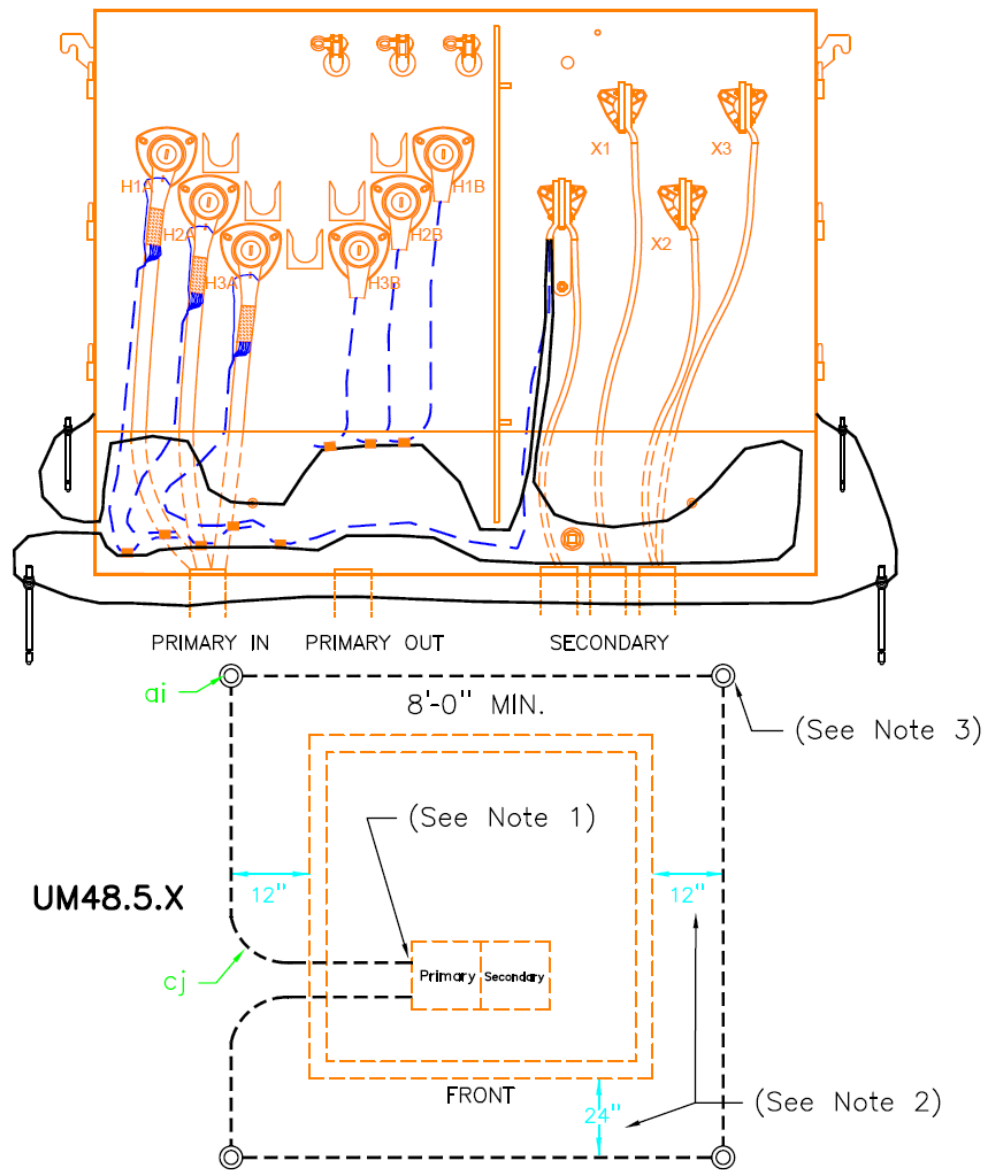


**Notes:**

1. Replace first "XX" with required WIDTH of ditch. Replace last "XX" with required DEPTH of ditch. Add "R" as a unit suffix for rock installation.
2. Ditch backfill shall be compacted full depth.
3. See Min. Primary/Secondary Conduit installation depth table. (CECC written specifications)
4. Unit is per linear foot.
5. For conduit call for unit "UM50.P".
6. Water, sewer, or gas lines shall not share a common ditch with CECC facilities and shall maintain a minimum horizontal separation of 5'. Separation from deeper utilities shall be increased to allow access to the utility line without disturbance of CECC facilities.

<p><b>DESIGN PARAMETERS:</b></p>	 Carroll Electric Cooperative Corporation YOUR LOCAL ENERGY PARTNER	<p><b>TRENCHING AND BACKFILL CONDUIT ORIENTATION</b></p>
<p>Issue: 2020</p> <p>Revision: B</p>	<p>UR2.XX.XX, UR2.XX.XXR</p>	





**Notes:**

1. Grounding grid to be stranded bare copper buried 12" below ground; run wire into primary opening & allow two 12' tails for grounding live front enclosures.
2. Place ground wire a minimum of 24" away from front edge of the pad and 12" from all other sides.
3. Ground rod connections shall be exothermic welds UM48.5.4.
4. For three phase pad mounted enclosures 300kVA or smaller use "UM48.5.1" (#1/0 stranded copper)
5. For three phase pad mounted enclosures 500kVA or larger use "UM48.5.4" (#4/0 stranded copper)

ITEM #	REF.	MATERIAL	ASSEMBLY: UM48	
			.5.1	.5.4
50905002	p	Connector, 2 Hole bolted spade	2	2
Varies	p	Connector, Ground to Neutral	6	6
13200001	ai	Rod, Ground, 5/8" X 8' Copper Clad	4	4
1700000010	cj	Wire, Ground wire, #1/0 copper	64	
1700000040	cj	Wire, Ground wire, #4/0 copper		64

**DESIGN PARAMETERS:**

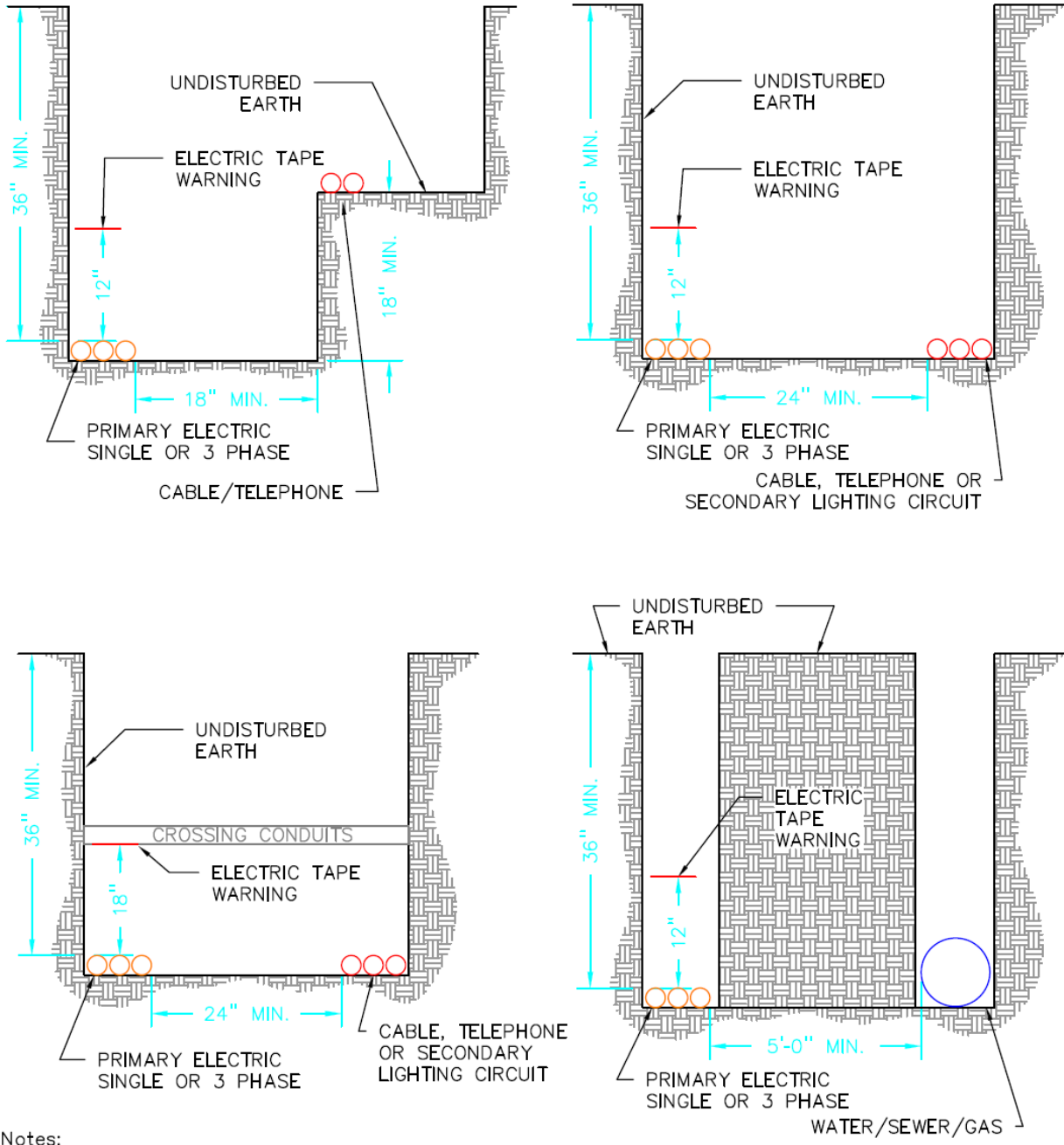


**Carroll Electric  
Cooperative Corporation**  
YOUR LOCAL ENERGY PARTNER

Issue: 2020  
Revision: A


**GROUNDING GRID  
THREE PHASE PAD MOUNTED  
EQUIPMENT**

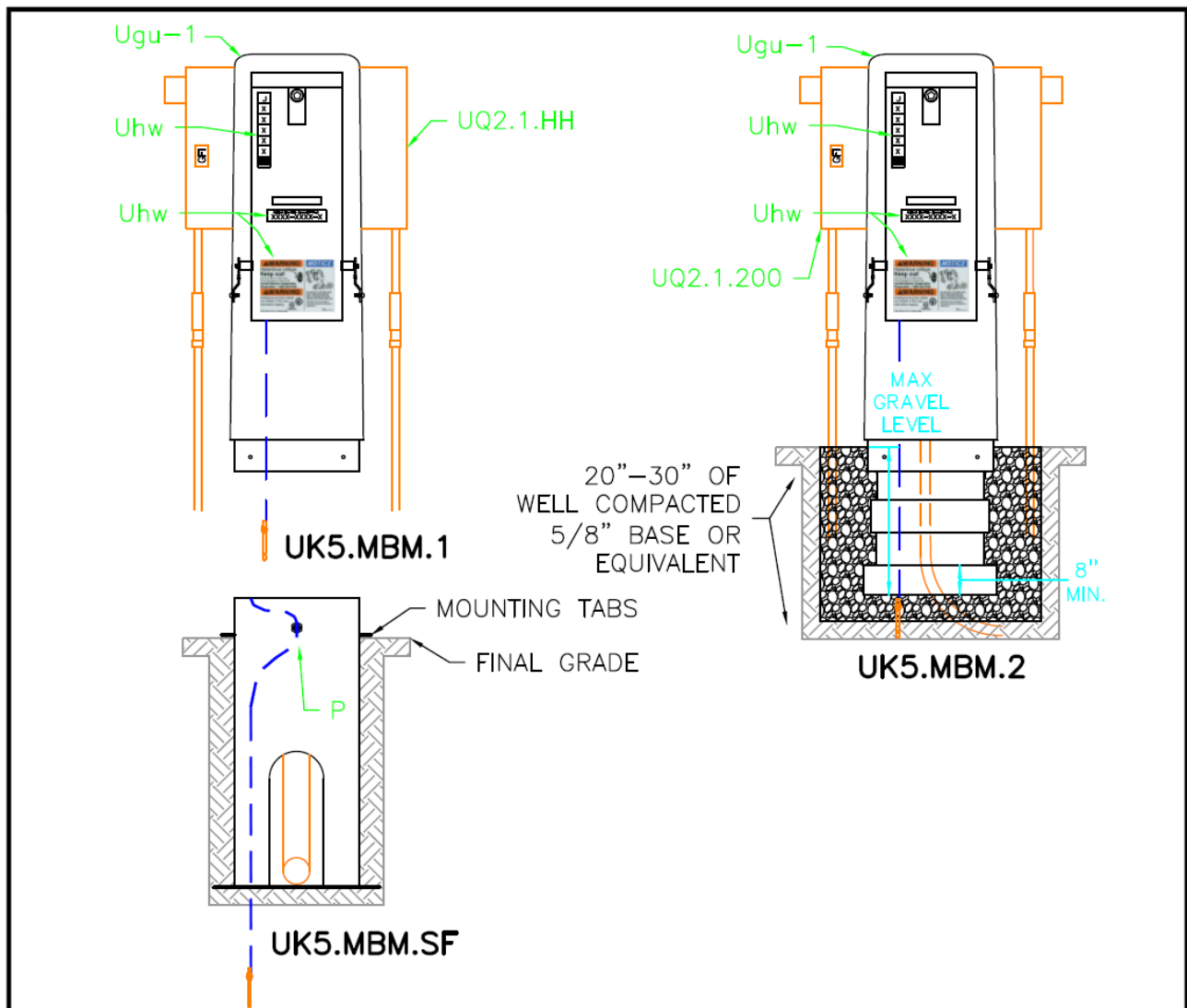
UM48.5.1,  
UM48.5.4



**Notes:**

1. These clearances do not include additional requirements from other utilities, NEC, or NESC.
2. Dimensions shown are CECC minimum requirements. Communication and/or other utility companies may have additional depth or clearance requirements.
3. See CECC's underground specifications for trenching details.
4. Clearance to water and/or sewer as shown shall be taken as minimum and should be increased on a one to one ratio for every foot in depth greater than the installed electric facilities.

DESIGN PARAMETERS:	 <b>Carroll Electric Cooperative Corporation</b> YOUR LOCAL ENERGY PARTNER	<b>UNDERGROUND SEPARATION GUIDE</b>	
	Issue: 2020		FA5G
	Revision: B		



**NOTES:**

1. All conduit sweeps shall be Gray Electrical PVC SCH 40 unless otherwise specified.
2. Cap all conduits to prevent entry of moisture or other foreign materials.
3. See written specifications for acceptable sweep dimensions.
4. Conduit sweeps shall be stabilized by compacted fill or 5/8" base.
5. Sub-grade soil shall be well compacted.
6. 6" minimum compacted 5/8" base to be placed under junction can sleeve.
7. Lightly compact backfill material around ground sleeve, heave remainder.
8. Extensions shall be added to sweeps to attain specified conduit height.
9. Install with UM48.1L.
10. For combined vault and pedestal install UM1.46NC.1 see UM1.46NC for installation.

ASSEMBLY: UK5.MBM							ASSEMBLY: UM1.46NC						
ITEM #	REF.	MATERIAL	.1 QTY.	.2 QTY.	.SF QTY.	ITEM #	REF.	MATERIAL	.1 QTY.	.2 QTY.	.SF QTY.		
9200055	c	Bolt, SS 1" X 3/8"			4	ek		Nut, Nylon SS 3/8"			4		
53000207	p	Connector, Tank Ground			1	Uhw		Sign, "DANGER" and "WARNING"	2	2			
9200140	Ugu-1	Meter Pedestal, Secondary, FG		1		d		Washer, SS 3/8"			8		
9200141	Ugu-1	Meter Ped, Secondary, For Vault	1			cj		Wire, Jumper 350 MCM UG Triplex	15				

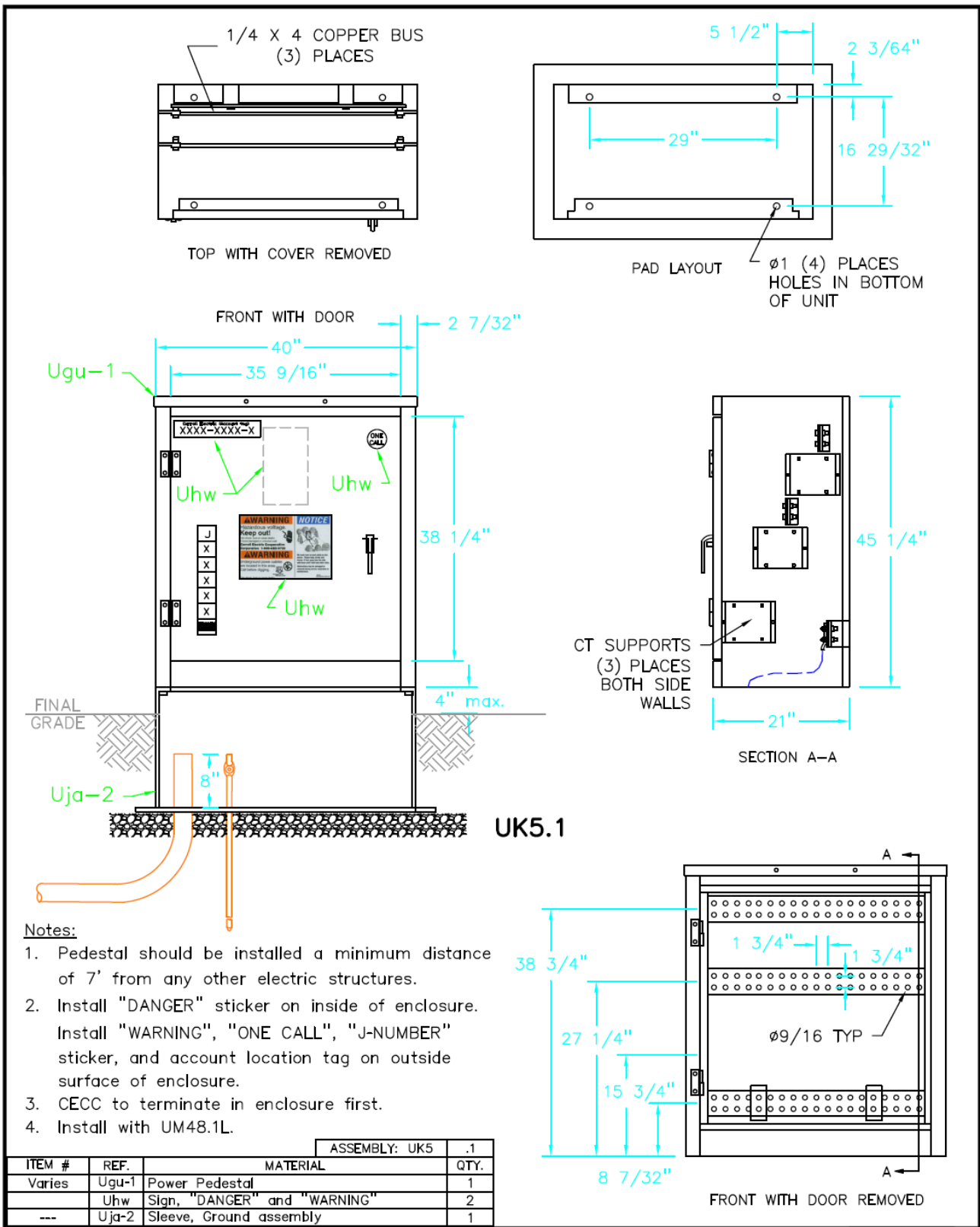
**DESIGN PARAMETERS:**



**METER BASE MOUNT/PEDESTAL**

Issue: 2020  
Revision: A

UK5.MBM.1,  
UK5.MBM.2,  
UK5.MBM.SF



**Notes:**

1. Pedestal should be installed a minimum distance of 7' from any other electric structures.
2. Install "DANGER" sticker on inside of enclosure. Install "WARNING", "ONE CALL", "J-NUMBER" sticker, and account location tag on outside surface of enclosure.
3. CECC to terminate in enclosure first.
4. Install with UM48.1L.

ASSEMBLY: UK5				.1
ITEM #	REF.	MATERIAL		QTY.
Varies	Ugu-1	Power Pedestal		1
---	Uhw	Sign, "DANGER" and "WARNING"		2
---	Uja-2	Sleeve, Ground assembly		1

**DESIGN PARAMETERS:**

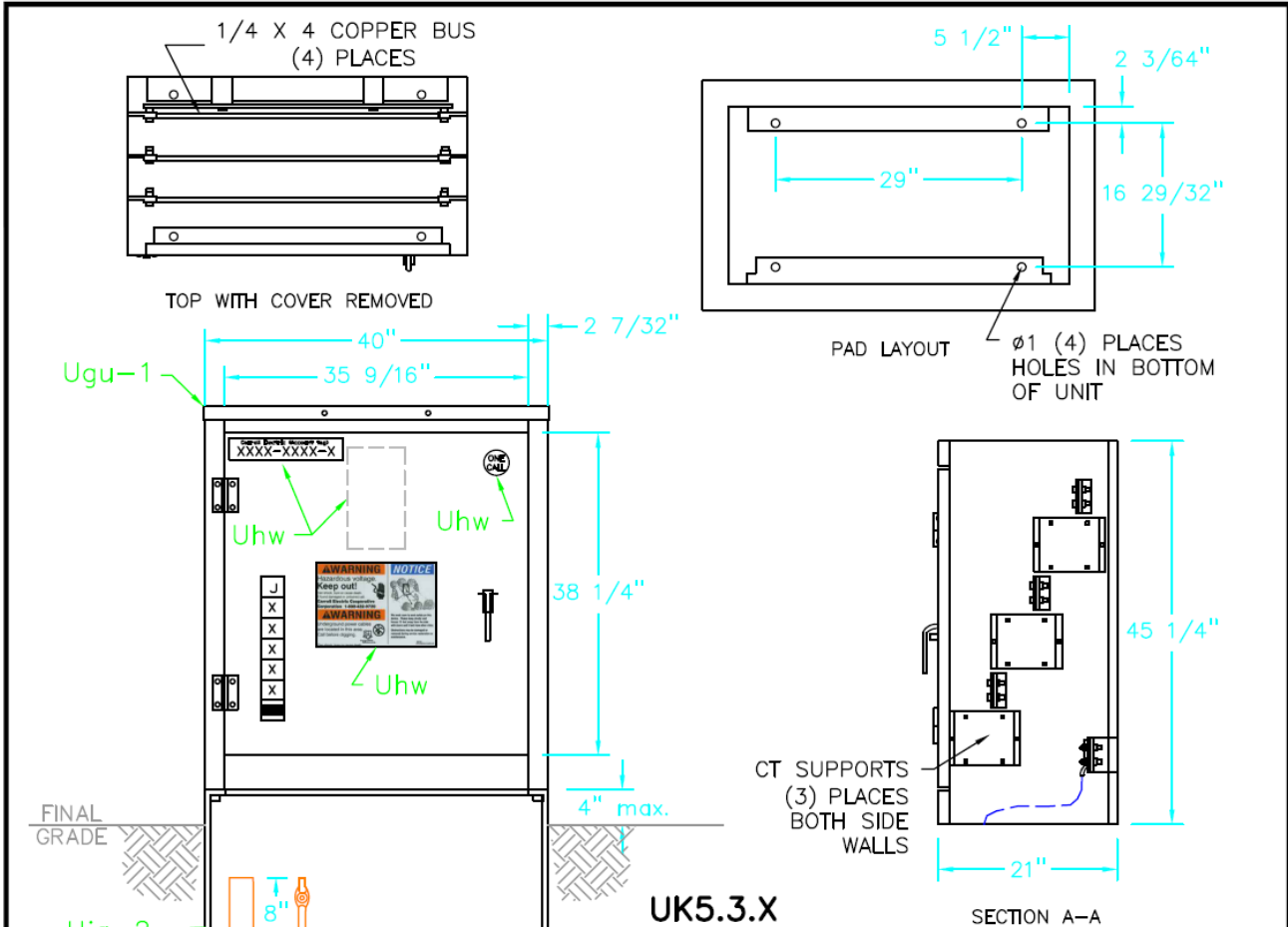


**Carroll Electric Cooperative Corporation**  
YOUR LOCAL ENERGY PARTNER

**SINGLE PHASE SECONDARY CABINET UNDERGROUND CABLE**

Issue: 2020  
Revision: B

UK5.1



UK5.3.X

**Notes:**

1. Pedestal should be installed a minimum distance of 7' from any other electric structures.
2. Install "DANGER" sticker on inside of enclosure. Install "WARNING", "ONE CALL", "J-NUMBER" sticker, and account location tag on outside surface of enclosure.
3. CECC to terminate in enclosure first.
4. When used for single phase application remove lowest phase bus bar.
5. Install with UM48.1L.
6. Ownership of cabinet will be determined by CECC.
7. For UK5.3.X replace "X" with required amperage(x1000) 3, 4, 5.

ITEM #	REF.	MATERIAL	ASSEMBLY:UK5	QTY.
Varies	Ugu-1	Power Pedestal	.3	1
---	Uhw	Sign, "DANGER" and "WARNING"		2
---	Uja-2	Sleeve, Ground assembly		1

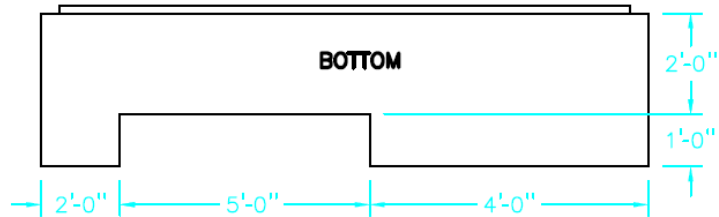
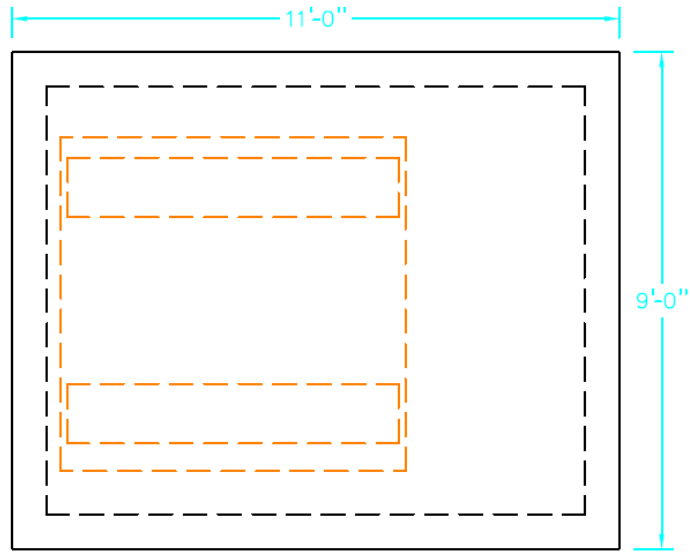
**DESIGN PARAMETERS:**



**THREE PHASE SECONDARY CABINET UNDERGROUND CABLE**

Issue: 2020  
Revision: C

UK5.3.X



**UM1.911.C**

Notes:

1. Foam fill all voids once in place.
2. Proper lifting eyes and lifting methods shall be used when lifting/moving.

**DESIGN PARAMETERS:**



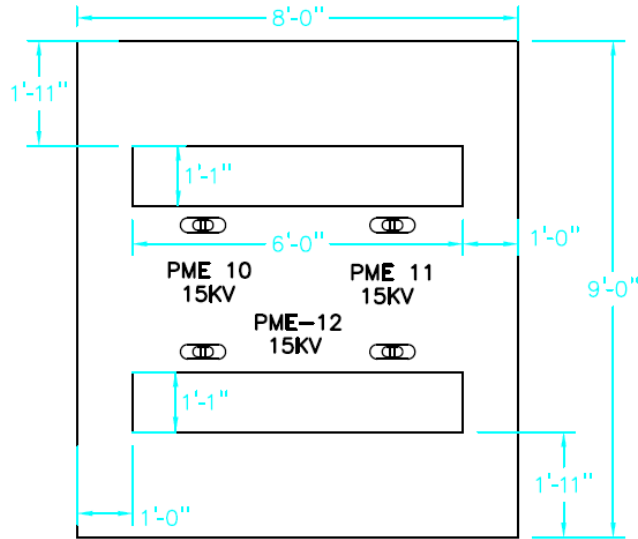
**PRECAST VAULT  
9X11 WITH 3X6 ACCESS**

Issue: 2020

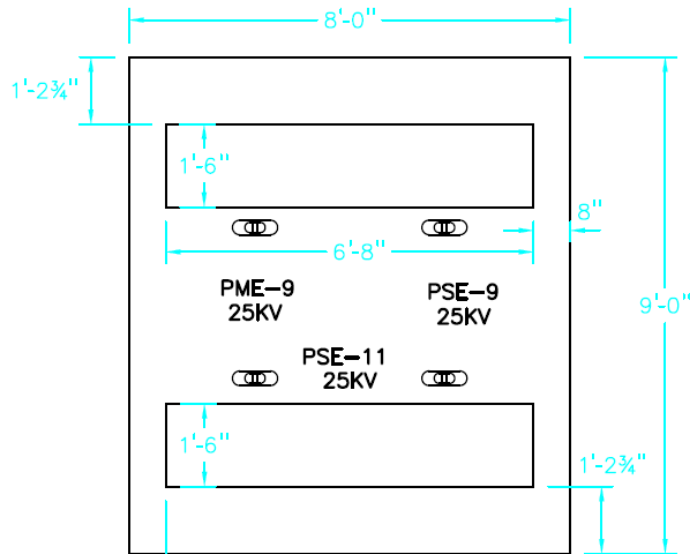
Revision: A

UM1.911C

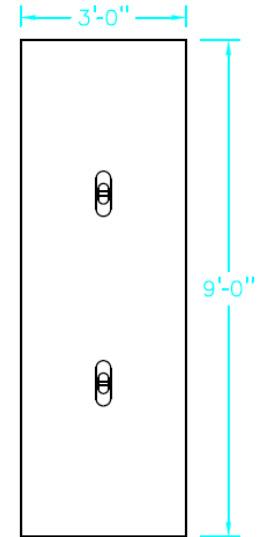




UM1.911CL.1



UM1.911CL.2



UM1.911CL.3

Notes:

1. Foam fill all voids once in place.
2. Proper lifting eyes and lifting methods shall be used when lifting/moving.

DESIGN PARAMETERS:

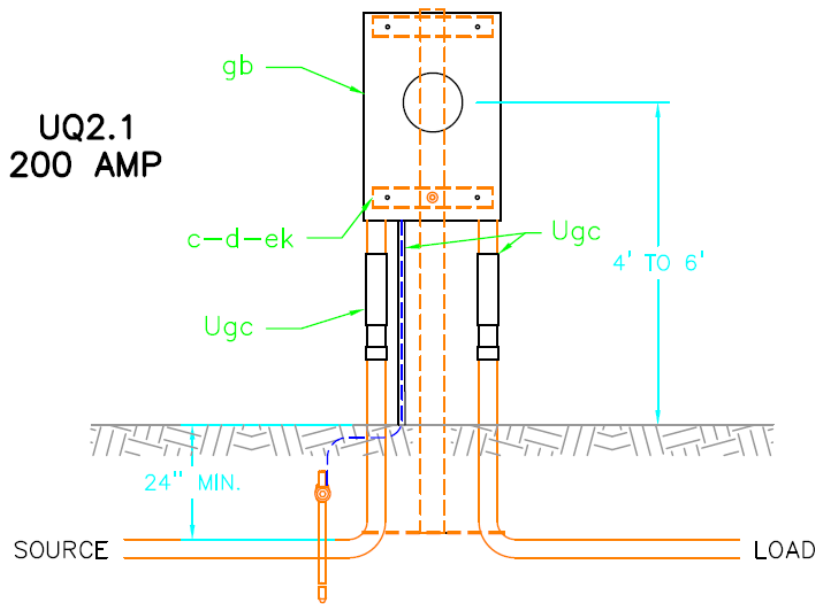


PRECAST LID  
FOR 9X11 VAULT FOR  
PME\PSE UNITS

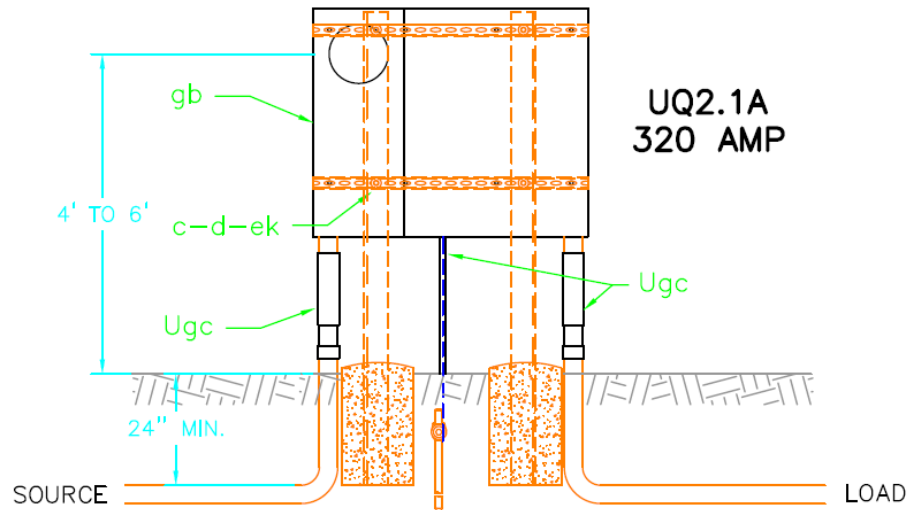
Issue: 2020  
Revision: A

UM1.911CL.1,  
UM1.911CL.2,  
UM1.911CL.3

**UQ2.1  
200 AMP**



**UQ2.1A  
320 AMP**



**Notes:**

1. See "Q2.1G", "Q2.1WG" and "UQ2.1WG" for installation details.
2. UQ2.1A is shown with (2) standard 3" X 3" X 1/4" angle iron posts embedded in concrete a min. of 2 feet with 3" unistrut cross-bracing. This can be substituted with two UQ2.MBM units.
3. Install expansion fittings on conduit when entering and leaving meter.
4. See CECC specification "Q2.1G", "UQ2.1G" page 2of2.
5. Expansion fitting shall NOT extend more than 1/2 its maximum length when installed below meter.
6. UQ2.1, UQ2.1A installation will be subject to inspection and other member expenses.

		ASSEMBLY: UQ2		.1	.1A
ITEM #	REF.	MATERIAL	QTY.	QTY.	
Varies	Ugc	Conduit, Expansion fitting	2	2	
	c	Machine bolt, 3/8" x 1" with Nut	4	4	
Varies	gb	Meter base W/O.C. device as reqd	1	1	
	ek	Washer, Locking, 3/8"	4	4	
	d	Washer, Flat, 3/8"	4	4	

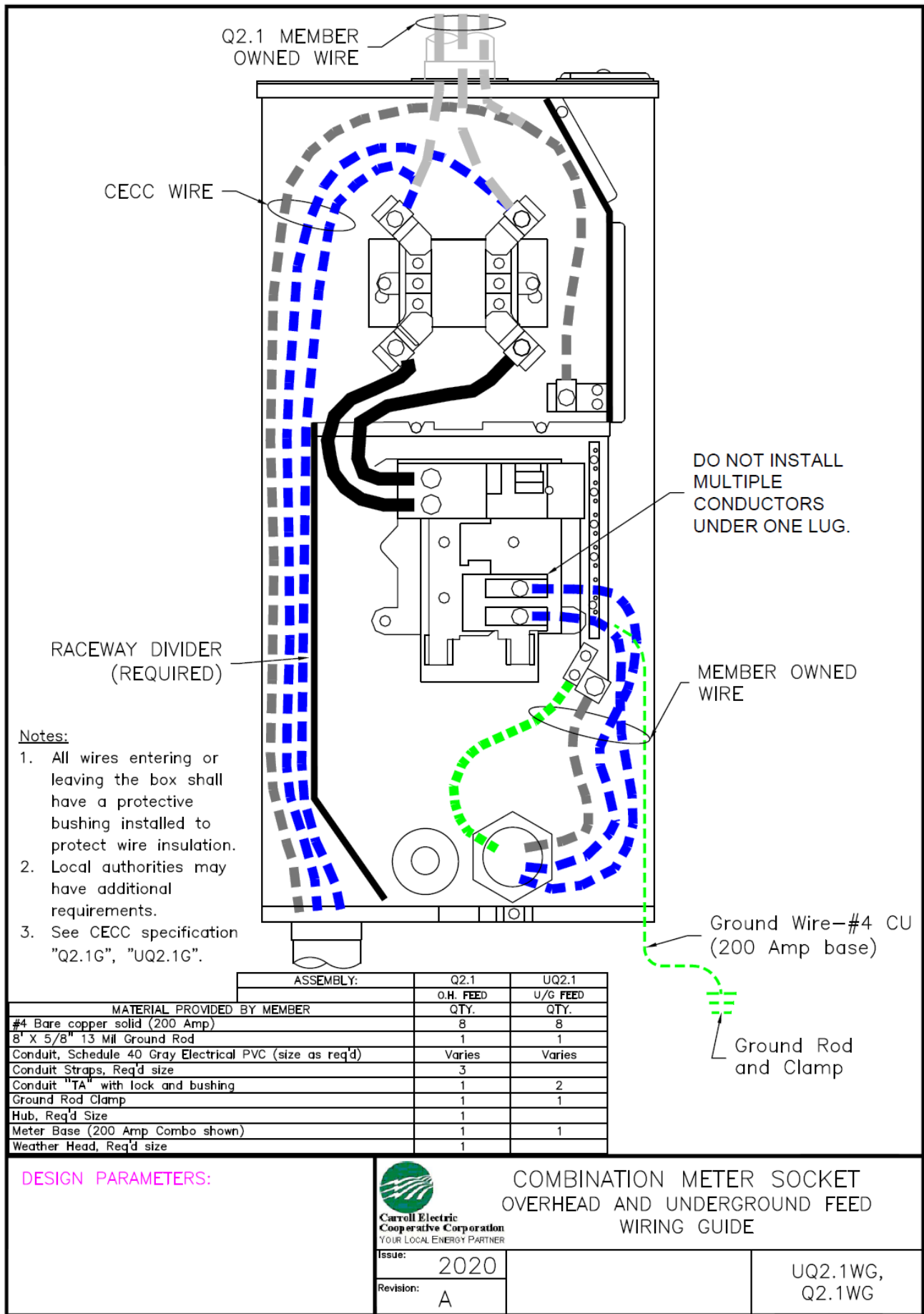
**DESIGN PARAMETERS:**



**MEMBER SUPPLIED AND INSTALLED  
METER BASE COMBO  
UNDERGROUND SOURCE**

Issue: 2020  
Revision: C

UQ2.1,  
UQ2.1A



**Notes:**

1. All wires entering or leaving the box shall have a protective bushing installed to protect wire insulation.
2. Local authorities may have additional requirements.
3. See CECC specification "Q2.1G", "UQ2.1G".

ASSEMBLY:	Q2.1	UQ2.1
MATERIAL PROVIDED BY MEMBER	O.H. FEED	U/G FEED
	QTY.	QTY.
#4 Bare copper solid (200 Amp)	8	8
B' X 5/8" 13 Mil Ground Rod	1	1
Conduit, Schedule 40 Gray Electrical PVC (size as req'd)	Varies	Varies
Conduit Straps, Req'd size	3	
Conduit "TA" with lock and bushing	1	2
Ground Rod Clamp	1	1
Hub, Req'd Size	1	
Meter Base (200 Amp Combo shown)	1	1
Weather Head, Req'd size	1	

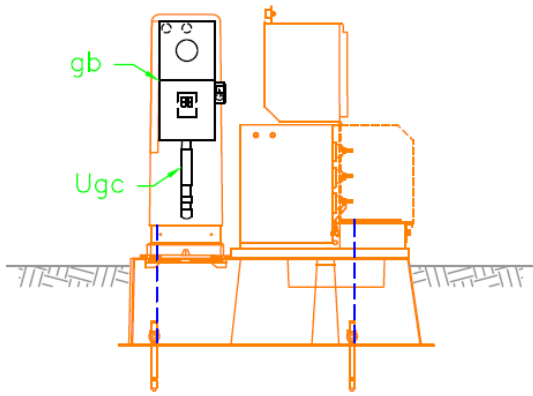
**DESIGN PARAMETERS:**

**Carroll Electric Cooperative Corporation**  
YOUR LOCAL ENERGY PARTNER

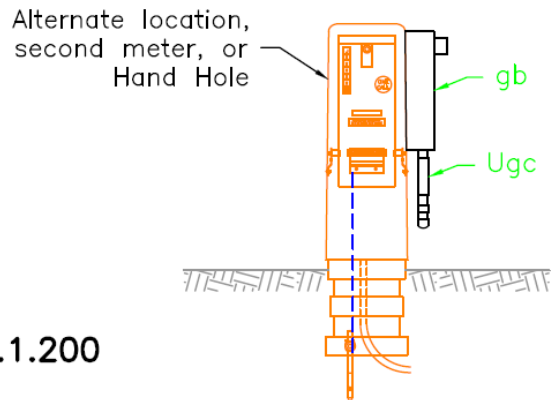
Issue: 2020  
Revision: A

**COMBINATION METER SOCKET OVERHEAD AND UNDERGROUND FEED WIRING GUIDE**

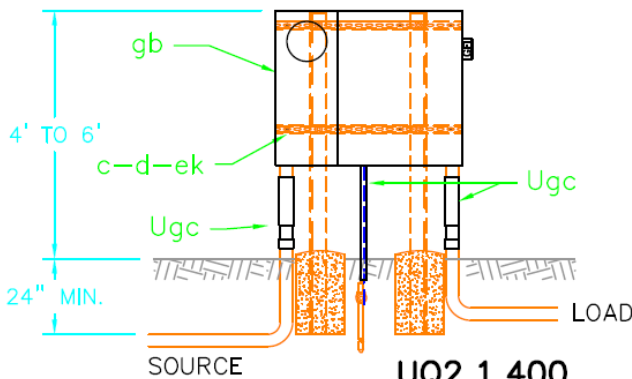
UQ2.1WG,  
Q2.1WG



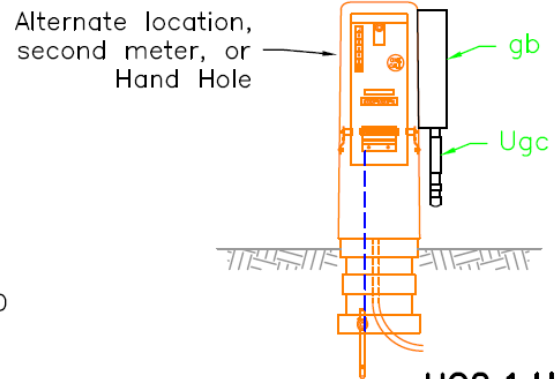
UQ2.1.200



UQ2.1.HH



UQ2.1.400



**Notes:**

1. See "Q2.1G" (1of2) and "UQ2.1WG" for installation details.
2. UQ2.1.200 is shown with a UK5.MBM.2 unit. This may be substituted with a UQ2.MBM unit.
3. UQ2.1.400 is shown with (2) standard 3" X 3" X 1/4" angle iron posts embedded in concrete a min. of 2 feet with 3" unistrut cross-bracing (installed by member). This may be substituted with two UQ2.MBM units.
4. Install expansion fittings on conduit when entering and leaving meter.
5. Expansion fitting shall NOT extend more than 1/2 its maximum length when installed below meter.
6. UQ2.1.HH (Hand Hole) shall be used when meter is to be installed on member owned facilities.
7. UQ2.1.400 has (2) 2" Conduit assemblies supplied by CECC, however, this maybe substituted for (1) 3".
8. UQ2.1.HH needs to have #6 cu ground connected to neutral bar & ground lug.

		ASSEMBLY: UQ2.1			.200, .400, .HH					ASSEMBLY: UQ2			.200, .400, .HH		
ITEM #	REF.	MATERIAL			QTY.	QTY.	QTY.	ITEM #	REF.	MATERIAL			QTY.	QTY.	QTY.
		Breaker, 20 Amp single			1	1				GFCI Receptical			1	1	
	c	Bolt, 3/8" x 1" S.S. with locking nut			4	4	4		gb	Hand Hole Box					1
		Conduit, 1/2" Chase Steel Nipple			1	1		9200200	gb	Meterbase Combo w/200 Amp Breaker			1		
	Ugc	Conduit, 1/2" Schedule 40 PVC gray			4	4		9200400	gb	Meterbase Combo w/400 Amp Breaker				1	
	Ugc	Conduit, 2" Cap Schedule 40 PVC gray			1				gb	Nut, Lock and Bushing 3/8"			4	4	4
	Ugc	Conduit, 2" Expansion fitting			1	2			uhw	Sticker, NEC req'd			1	2	1
	Ugc	Conduit, 2" Schedule 40 PVC gray			y	y			d	Washer, Flat 3/8" SS			4	4	4
	Ugc	Conduit, 2" Terminal Adapter gray			1	1			ek	Washer, Locking 3/8" SS			4	4	4
	Ugc	Conduit, 3" Cap Schedule 40 PVC gray			2	1				Weatherproof In-Use Recp. Cover			1	1	
	Ugc	Conduit, 3" Expansion fitting				2	1			Weatherproof gang Recp. Box			1	1	
	Ugc	Conduit, 3" Schedule 40 PVC gray				1	1		cj	Wire, Jumper, 12/2 w/ground			y	y	
	Ugc	Conduit, 3" Terminal Adapter gray				2	1		cj	Wire, Jumper #4/0 TPX			y	y	

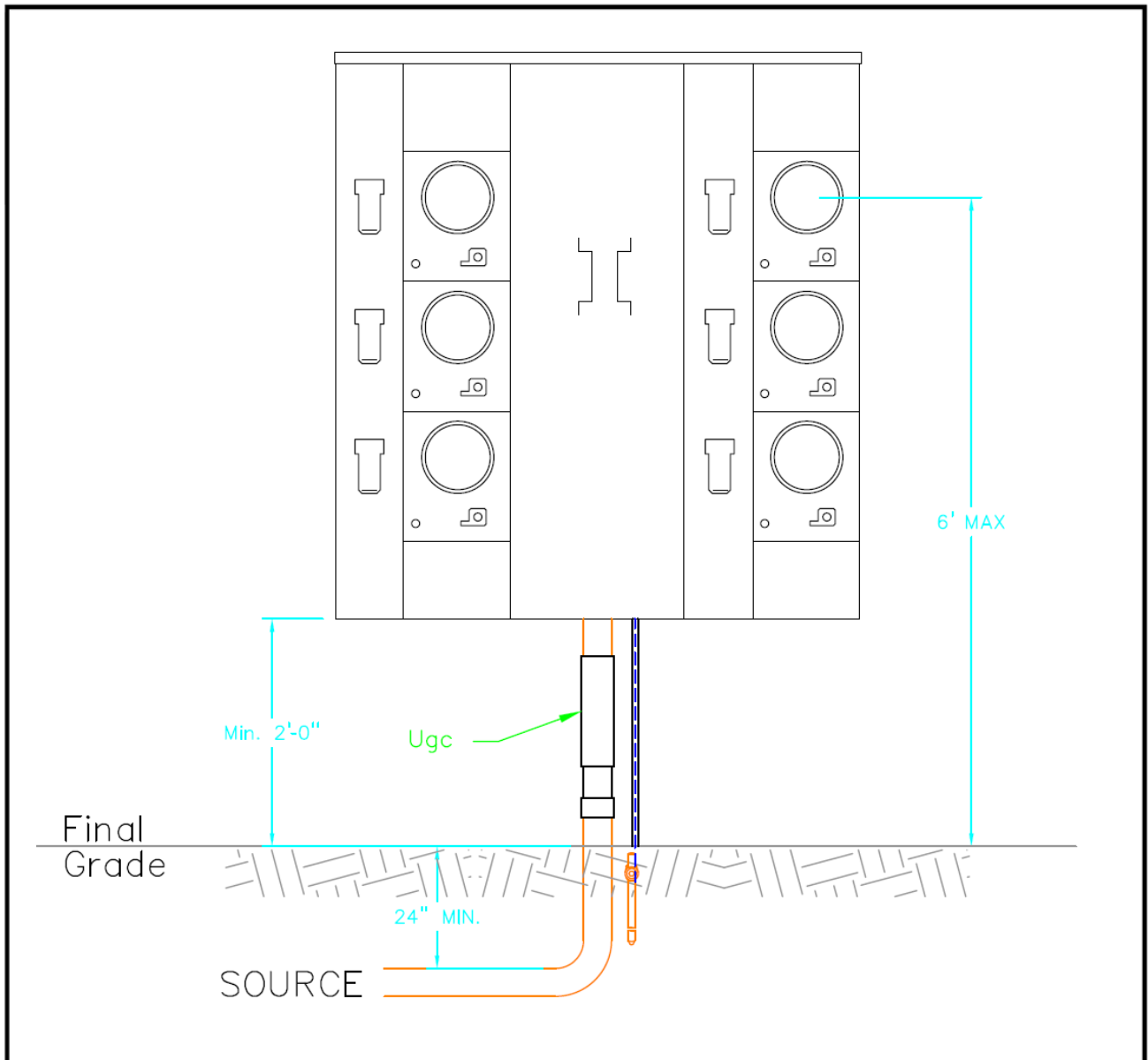
**DESIGN PARAMETERS:**



**CECC SUPPLIED AND INSTALLED  
METER BASE COMBO & HAND  
HOLE**

Issue: 2020  
Revision: B

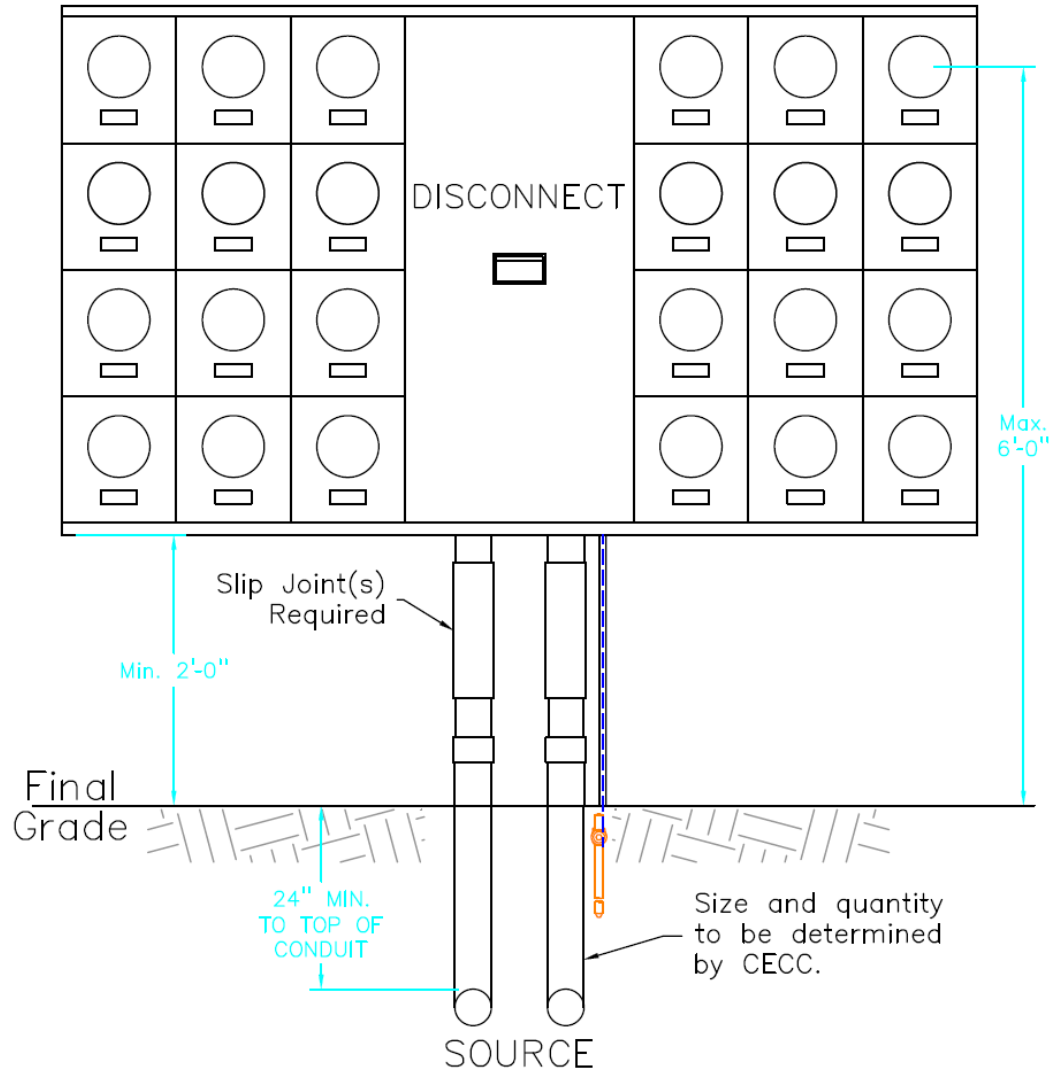
UQ2.1.200,  
UQ2.1.400,  
UQ2.1.HH



**Notes:**

1. Installation can have no more than 6 meters with individual disconnect, and must be approved by CECC prior to installation.
2. Member facilities shall comply with CECC Standards, current NEC standards, and any other authorities having jurisdiction. All material shall be suitable for outdoor use.
3. Equipment to be installed at a location designated by CECC.
4. No troughs or wireways allowed. Bus system only.
5. Refer to NEC for grounding provisions.
6. Meter bases shall be tagged with corresponding apartment/unit/suite number.
7. Meter bases shall be lockable for use of CECC meter seals.
8. Ringless meter bases are required on all new installations.
9. Meters shall be directly adjacent to disconnects and located outside of building (NO EXCEPTIONS).
10. CECC ownership stops at the connection end of source conductors.

<p><b>DESIGN PARAMETERS:</b></p>	 <b>Carroll Electric Cooperative Corporation</b> YOUR LOCAL ENERGY PARTNER		<h2>MULTIPLE METER GUIDE</h2>	
	Issue:	2020		UQ2.6G
	Revision:	A		



**Notes:**

1. Main disconnect size shall be a minimum of 600 Amps, lockable, and must be approved by CECC prior to installation.
2. Member facilities shall comply with CECC Standards, current NEC standards, and any other authorities having jurisdiction. All material shall be suitable for outdoor use.
3. Equipment to be installed at a location designated by CECC.
4. No troughs or wireways allowed. Bus system only.
5. Installation of 30 or more meters at any single point may require three phase facilities.
6. Refer to NEC for grounding provisions.
7. Meter bases shall be tagged with corresponding apartment/unit/suite number.
8. Meter bases shall be lockable for use of CECC meter seals.
9. Ringless meter bases are required on all new installations.
10. Meters shall be directly adjacent to main disconnect and located outside of building (NO EXCEPTIONS).
11. CECC ownership stops at the connection end of source conductors.

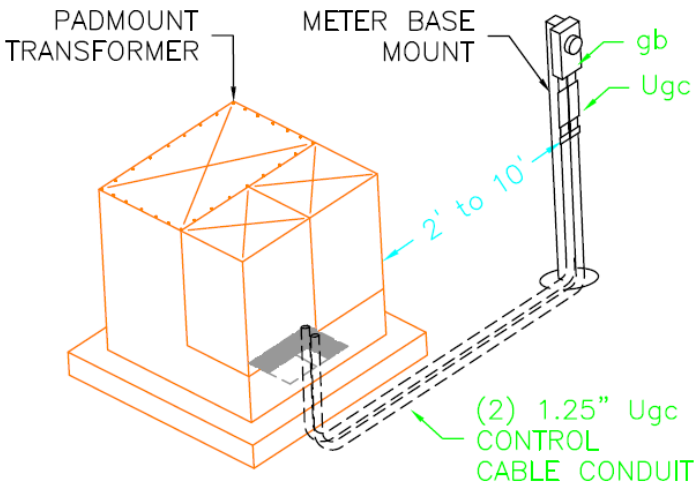
**DESIGN PARAMETERS:**



**MULTIPLE METER GUIDE  
W/SINGLE SOURCE DISCONNECT**

Issue: 2020  
Revision: A

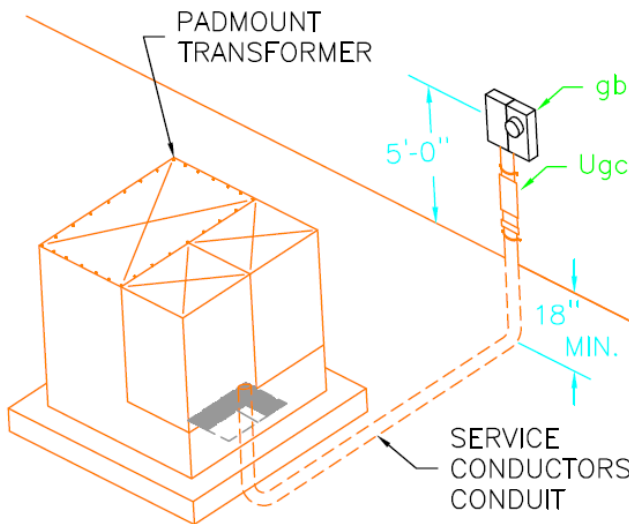
UQ2.7G



**UQ2.7, UQ2.17**  
CT'S mounted inside transformer.

Notes:

1. Meter base must be mounted free standing.
2. Meter socket must not be attached directly to pad-mounted transformer.
3. 4'-0" minimum & 6'-0" maximum height to center of meter.
4. Conduit shall be used for secondary control wires to meter socket.
5. Meter base shall be supported per nec requirements.
6. Secondary conductors supplied by member.
7. UQ2.7 designates single phase applications and UQ2.17 to designate three phase.
8. Replace "XXX" with .7, .17 accordingly.
9. Point of demarcation is the secondary lugs of transformer.



**UQ2.7A, UQ2.17A**  
CT'S mounted on structure.

Notes:

1. Meter base must be mounted beside CT cabinet.
2. 4'-0" minimum & 6'-0" maximum height to center of meter.
3. Meter base shall be supported per NEC requirements.
4. Secondary conductors supplied by member.
5. UQ2.7A designates single phase applications and UQ2.17A to designate three phase.
6. Replace "XXX" with .7A, .17A accordingly.
7. Transformer must be located a min. of 15' away from any buildings.
8. Point of demarcation is the secondary lugs of transformer.

ITEM #	REF.	MATERIAL	ASSEMBLY: UQ			
			2.7 QTY.	2.7A QTY.	2.17 QTY.	2.17A QTY.
5100000x	Ugc	Conduit, as required	As REQ	As REQ	As REQ	As REQ
Varies	Ugc	Conduit, Expansion Fitting	2	1	2	1
		Control cable, as required	As REQ	As REQ	As REQ	As REQ
	Usc	Current transformer, as required	As REQ	As REQ	As REQ	As REQ
		Meter Base Mount	1		1	
	gb	Meter socket as Specified	1	1	1	1
Varies		Pipe strap, as required	As REQ	As REQ	As REQ	As REQ
	se	Potential transformer, as required		As REQ		As REQ

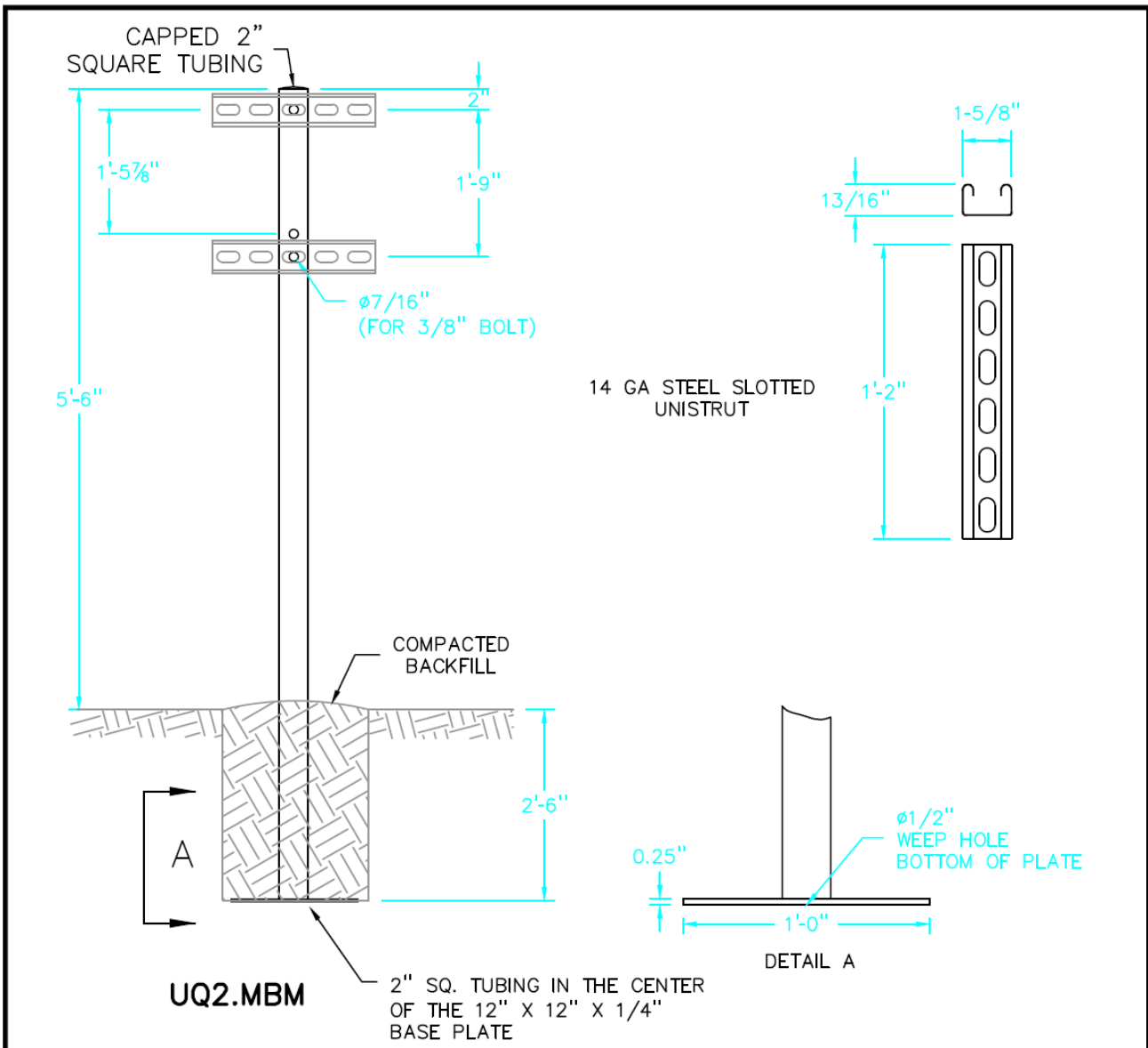
**DESIGN PARAMETERS:**



**C.T. METER BASE INSTALLATION  
SINGLE/THREE PHASE**

Issue: 2020  
Revision: C


UQ2.XXX



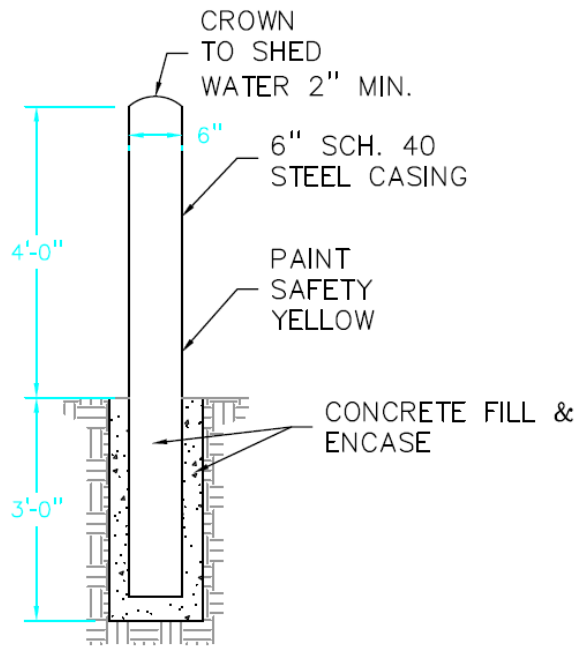
**Notes:**

1. Compact soil around base plate to full depth.
2. Cut 13/16" unistrut at 14" for a 200AMP meter installation. On 400AMP meter installation cut 13/16" unistrut as needed.

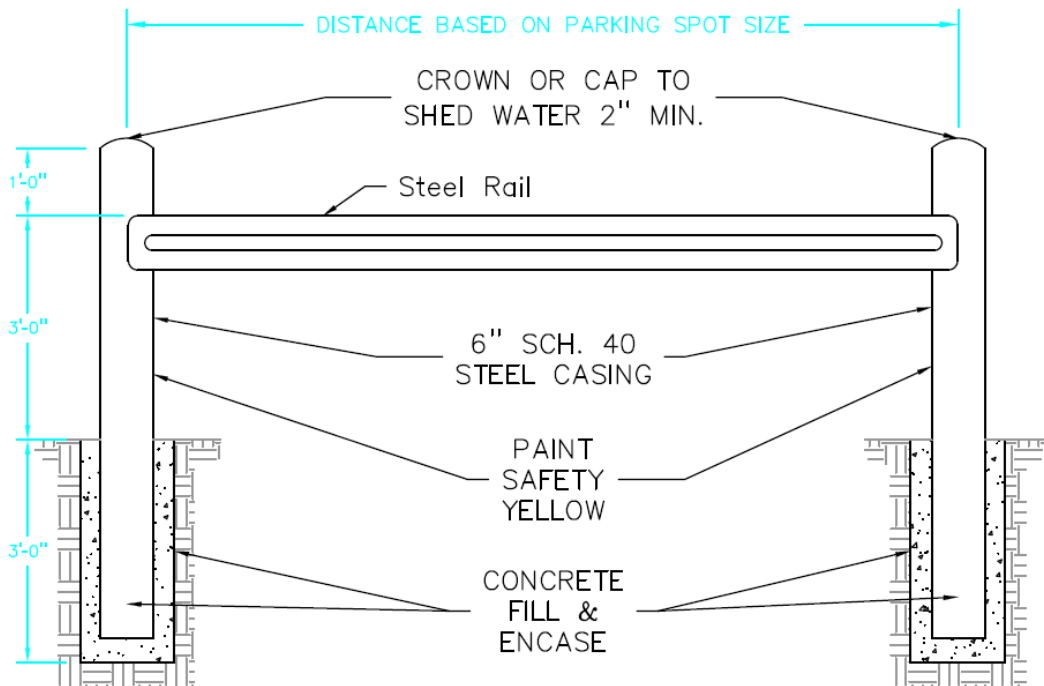
		ASSEMBLY: UQ2		.MBM			ASSEMBLY: UQ2		.MBM
ITEM #	REF.	MATERIAL		QTY.	ITEM #	REF.	MATERIAL		QTY.
		Bolt, 3/8" X 3/4"		4	9200096		Pole, Powder coated steel		1
		Bolt, 3/8" X 2-3/4"		2			Washer, Lock 3/8"		6
		Channel, Slotted 13/16" x 1/5/8" (14" Long)		2			Washer, Round 3/8"		6
		Nut, Twirl 3/8" (B-Line)		6					

<p><b>DESIGN PARAMETERS:</b></p>	 <p><b>METER BASE MOUNT ASSEMBLY</b></p>	
	<p>Issue: 2020</p> <p>Revision: B</p>	<p>UQ2.MBM</p>





**BOLLARD.1**



**BOLLARD.2**

**NOTES:**

1. Placement of bollards shall be in such a manner as to not obstruct operations of electrical equipment.
2. Paint bollards Safety yellow.

**DESIGN PARAMETERS:**



**Carroll Electric  
Cooperative Corporation**  
YOUR LOCAL ENERGY PARTNER

**BOLLARD, BOLLARD AND RAIL DESIGN**

Issue: 2020

Revision: A

BOLLARD.1  
BOLLARD.2