PUBLIC WORKS COMMISSION
City of Fayetteville

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ELECTRIC SERVICE STANDARDS

ORIGINAL ISSUE
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May 8th, 2009
Dwg No.  DESCRIPTION

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Electric Service Standards

INDEX
GLOSSARY OF TERMS

Clearances- The minimum distances required by NEC, NESC and NFPA.

Commercial Service- Any electric service used for non-residential purposes.

City / County / State Permit- Permission requested by PWC from governmental authorities to allow work to be performed in their right of ways.

Customer- Any present or prospective user of PWC’s electric service, or any person or entity representing him, such as the architect, engineer, electrical contractor, land developer, builder, etc.

Conduit Riser- The portion of the exposed pipe that originates from the meter can and ties to the underground conduit. This pipe is owned by the customer and can be made of rigid galvanized pipe, intermediate pipe, or Schedule 40 PVC.

Drip Loop- A U-shaped bend in the wires that allows water to drip off, so it shall not enter the service entrance. The drip loop is typically part of the service entrance and is the responsibility of the customer. The presence of a drip loop reflects that the wires are properly secured to the building and are relaxed. It is located at the top of the weatherhead.

Easement- A legal, recorded document granting PWC permission to install facilities on private property. Once granted, it is the customer’s responsibility to maintain this area and shall be readily accessible at all times.

Estimated Completion Date- This is the proposed date when the installation of electric utilities is to be completed.

Electrical Conduit- A PVC pipe that is used for protecting and routing of electrical wiring typically in an underground system.

Fault Current- Abnormal flow in an electrical circuit due to a short circuit or abnormally low impedance path.

Feeder- Conductors and equipment originating from PWC power stations carrying high voltage energy to a service area.

Handhole- A PWC splice point that sits flush to the ground with only the concrete/fiberglass cover exposed.

Inspection- Confirmation from municipalities/counties indicating approval that the electrical wiring has passed inspection. After receiving this approval, PWC may install the meter.

Local Jurisdictional Responsibilities- Issue the appropriate permit for the installation of customer wiring and equipment, if applicable. Inspect and approve customer’s wiring and equipment. Provide PWC with inspection approval notification for customer’s wiring and equipment.

Meter- Device that is used by PWC to measure the quantity of electricity used.
GLOSSARY OF TERMS

Meter Socket- Device which provides support and means of electrical connection to a watthour meter. It has a wiring chamber, with provisions for conduit entrances and exits, and a means of sealing the meter in place.

Mobile Home- A mobile home is a factory assembled structure designed to be used as a living unit, and readily movable on its own running gear. It has no permanent foundation.

Multiple Occupancy Building- A unified structure containing five or more individual dwelling units.

NEC- National Electrical Code

NESC- National Electrical Safety Code

NFPA- National Fire Protection Association

Pedestal- An above ground PWC splice point. This equipment is made of fiberglass and extends approximately 24" above ground.

Point Of Connection- The location where PWC owned conductors are connected to customer owned conductors. Typical points of connection include weatherheads, meter sockets, service junction boxes, PWC handholes, padmounted transformers, and vaults. The point of connection shall be determined by PWC. The point of connection for a PWC owned and maintained underground residential service drop is the line side of the meter socket. The point of connection for a PWC owned and maintained overhead service drop is the attachment to the customer's weatherhead.

Primary- The conductors and equipment that deliver high voltage energy to a PWC transformer.

PVC (Polyvinyl Chloride)- a widely used thermoplastic polymer that is most commonly used in construction applications.

PWC- Public Works Commission or an employee properly qualified to represent the Public Works Commission.

Readily Accessible- Capable of being reached quickly for operation, maintenance, or inspections.

Residential Service- Electric service supplied exclusively for domestic purposes in individually metered dwelling units. Includes the separately metered non-commercial-use facilities of a residential customer (e.g. garages, water pumps, etc.).

Secondary- The conductors and equipment that deliver electricity, from PWC's main system to a PWC handhole or pedestal.

Service- The conductors and equipment that deliver electricity from PWC's system to the point of connection. It also means maintenance of voltage and frequency (within acceptable tolerances) by PWC to the point of connection.

Service Drop (Overhead)- The overhead conductors from PWC's last pole or other aerial support, connecting the Customer's service entrance conductors at point of connection.
GLOSSARY OF TERMS

Service Drop (Underground)- The underground service conductors connecting PWC's distribution system to the Customer's point of connection.

Service Entrance- The Customer's installation from the point of connection.

Service Entrance Conductors- The Customer's conductors from point of connection.

Service Equipment- The Customer's equipment which contains the switching and overcurrent protective devices, usually located near the point of connection.

Site Address- Physical street address as assigned by governmental authority where construction shall be performed.

Site Ready- The customer's site shall be prepared to enable construction crews and equipment to be deployed to the site and construction activities to commence. The site ready criteria addresses final grade, installation of facilities (water, well, septic, sewer, storm drain), location of private underground facilities and property lines, removal of obstructions in the cable path, and installation of transformer pads and duct, if required.

Standard Service- The minimum level of service, as determined by PWC, for the load to which electric service is being requested by the Customer.

Temporary Electric Service- A service intended to be used for a limited period, for construction, exhibit, or carnival purposes. The temporary facilities will be removed at the completion of its use. This may also be referred to as Temporary/Construction Service.

Transformer- Equipment that converts primary voltage to a lower secondary voltage.

Underground Distribution- A distribution system where the conductors are installed in conduit or directly buried. Transformers, switches and other equipment are normally above ground.

Service Pedestal- A free standing customer owned structure that accommodates a meter enclosure in cases where either the meter cannot be mounted directly on the facility wall (ex. Mobile Home) or when the meter needs to be positioned as close as possible to the PWC power source per the company's standards.

URD (Underground Residential Distribution)- An underground distribution system, primarily supplying single phase, three wire service to residential dwelling units. Transformers and primary switches are contained in above ground padmounted enclosures.

Weatherhead- A weatherproof entry point for overhead electrical wiring into a home or business.

Work Request Number- An identification number assigned to each job in the PWC Work Management System.
## 1 Phase Services

<table>
<thead>
<tr>
<th>Service Size</th>
<th>Voltage</th>
<th>Amp Rating</th>
<th>Type</th>
<th>Manufacturer/Item Number</th>
</tr>
</thead>
</table>
| ≤ 100 Amp    | 1φ 120/240 V OH | 100 Amp    | 4 Terminal | MILBANK / 57490-2LTG  
DURHAM / 1RT-RS101M  
SUPERIOR / RLTU312UD60558605 |
| ≤ 100 Amp    | 1φ 120/240 V UG | 200 Amp    | 4 Terminal | MILBANK / S1980-XTL-BL  
DURHAM / 1005694  
DUNCAN / HQ-4-2W |
| 200 Amp      | 1φ 120/240 V    | 200 Amp    | 4 Terminal | MILBANK / S1980-XTL-BL  
DURHAM / 1005694  
DUNCAN / HQ-4-2W |
| 225 Amp      | 1φ 120/240 V    | 200 Amp    | 4 Terminal | MILBANK / S1980-XTL-BL  
DURHAM / 1005694  
DUNCAN / HQ-4-2W |
| 400 Amp      | 1φ 120/240 V    | 320 Amp    | 4 Terminal | MILBANK / U2214-2/K2  
CUTLER HAMMER / UTH5330UCH  
W/LUG KIT  
LANDIS-GYR / 48704-82 |
| >400 Amp     | 1φ 120/240 V    | See Note 1 | 6 Terminal | MILBANK / AP2300-03W W/TERM 5&6  
ANCHOR / U1000-636 |
| ≤ 100 Amp    | 1φ 120/208 V    | 200 Amp    | 5 Terminal | MILBANK / 57490-2LTG  
DURHAM / 1RT-RS101M  
SUPERIOR / RLTU312UD60558605 |
| 200 Amp      | 1φ 120/208 V    | 200 Amp    | 5 Terminal | MILBANK / S1980-XTL-BL  
DURHAM / 1005694  
DUNCAN / HQ-4-2W |
| 225 Amp      | 1φ 120/208 V    | 200 Amp    | 5 Terminal | MILBANK / AP2300-03W W/TERM 5&6  
ANCHOR / U1000-636 |
| >400 Amp     | 1φ 120/208 V    | See Note 1 | 6 Terminal | MILBANK / AP2300-03W W/TERM 5&6  
ANCHOR / U1000-636 |

**NOTE:**
1. Enclosures for services greater than 400 amps shall be provided by PWC as needed
2. All meter sockets are furnished and owned by Customer.

---

**Electric Service Standards**

**APPROVED METER SOCKETS**

(SINGLE PHASE)
## 3 Phase Services

<table>
<thead>
<tr>
<th>Service Size</th>
<th>Voltage</th>
<th>Amp Rating</th>
<th>Type</th>
<th>Manufacturer/Item Number</th>
</tr>
</thead>
</table>
| ≤ 100 Amp    | 3φ 120/240 V  
 3φ 120/208 V  
 3φ 277/480 V | 200 Amp | 7 Terminal | DURHAM / IT-H72334 OR 1005908  
 SUPERIOR / RLO-559-RLP  
 DUNCAN/LANDIS&GYR / HQ-7-2W |
| 200 Amp      | 3φ 120/240 V  
 3φ 120/208 V  
 3φ 277/480 V | 200 Amp | 7 Terminal | DURHAM / IT-H72334 OR 1005908  
 SUPERIOR / RLO-559-RLP  
 DUNCAN/LANDIS&GYR / HQ-7-2W |
| 225 Amp      | 3φ 120/240 V  
 3φ 120/208 V  
 3φ 277/480 V | 200 Amp | 7 Terminal | DURHAM / IT-H72334 OR 1005908  
 SUPERIOR / RLO-559-RLP  
 DUNCAN/LANDIS&GYR / HQ-7-2W |
| 400 Amp      | 3φ 120/240 V  
 3φ 120/208 V  
 3φ 277/480 V | 320 Amp | 7 Terminal | ANCHOR / 1-RS44572-H10W2-L2250-4  
 SUPERIOR / RPTU559HDSW WLUG KIT  
 DURHAM / H733OU WLUG KITS  
 LANDIS-GYR / 49707-82  
 CUTLER HAMMER / UTH733OUCH WLUG KIT |
| >400 Amp     | 3φ 120/240 V  
 3φ 120/208 V  
 3φ 277/480 V | See Note 1 | 8 Terminal | DURHAM / 1005849  
 DUNCAN / HQ-8T  
 LANDIS&GYR / 9804-8456 |

### NOTE

1. Enclosures for services greater than 400 amps shall be provided by PWC as needed
2. All meter sockets are furnished and owned by Customer.
NOTES:

1. ALL DIMENSIONS SHOWN ARE MINIMUM.

2. ADDITIONAL HEIGHT MAY BE NECESSARY TO PROVIDE PROPER SERVICE DROP CLEARANCE.

3. ONE BRACE TO BE IN DIRECTION OF SERVICE. AT LEAST ONE ADDITIONAL BRACE TO BE LOCATED AT 90° TO DIRECTION OF SERVICE.

4. SOIL TO BE FIRMLY TAMPED AROUND POLE AND STAKES DRIVEN INTO FIRM EARTH.

5. CUSTOMER FURNISHES ALL ITEMS EXCEPT METER, THE METER BASE, WIRING, EQUIPMENT SERVICE AND EQUIPMENT GROUND ON THE POLE ARE TO BE INSTALLED BY THE CUSTOMER IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND LOCAL ORDINANCES.

6. SOLID, ONE PIECE, 4' x 4' (MIN). WOOD POST MAY BE SUBSTITUTED WITH ENGINEER'S APPROVAL.

7. SERVICES SHALL NOT BE INSTALLED TO TEMPORARY POLES NOT MEETING SPECIFIC REQUIREMENTS WITHOUT PWC'S ENGINEER APPROVAL.

8. SCREW-IN TYPE HOUSE BRACKETS ARE NOT ACCEPTABLE FOR THIS APPLICATION.

9. NOTIFY NC ONE-CALL PRIOR TO DIGGING.
1. CUSTOMER FURNISHES ALL ITEMS EXCEPT METER. INSTALLATION IS TO BE MADE BY ELECTRICIAN TO MEET N.E.C. AND LOCAL ORDINANCES.

2. LOCATION AND DISTANCE OF CONSTRUCTION SERVICE POLE TO TRANSFORMER OR SECONDARY JUNCTION ENCLOSURE SHALL BE 2 FEET OR MORE PREFERRED WITH A MAXIMUM OF 5 FEET.

3. CUSTOMER SHALL TERMINATE CONDUCTORS IN METER SOCKET. CUSTOMER SHALL COIL SUFFICIENT SERVICE CONDUCTOR TO ADEQUATELY REACH SECONDARY TERMINALS OF TRANSFORMER OR SECONDARY JUNCTION ENCLOSURE.

4. NOTIFY NC ONE CALL PRIOR TO DIGGING

REF: Construction and Operation Procedures Dwg. 20.2-08

Electric Service Standards

UNDERGROUND/TEMPORARY SERVICE POLE
Electric Service Standards

PERMANENT
OVERHEAD RESIDENTIAL
SINGLE-PHASE SERVICE RISER

NOTES:

1. POINT OF DELIVERY IS WHERE PWC's CONDUCTORS ARE CONNECTED TO CUSTOMER'S CONDUCTORS.
2. CUSTOMER TO OWN AND INSTALL SERVICE GROUND(S) TO COMPLY WITH THE NATIONAL ELECTRIC CODE.
3. SERVICE MAST SHALL BE OF ADEQUATE STRENGTH OR BE SUPPORTED BY A GUY OR BRACE TO WITHSTAND THE STRAIN IMPOSED BY SERVICE DROP. SEE NEC 230. (ESS-9)
NOTES:

1. DRIP LOOPS SHALL BE FORMED ON SERVICE DROP SERVICE ENTRANCE CONDUCTORS.

2. THE CONNECTIONS OF THE SERVICE DROP CONDUCTORS TO THE SERVICE ENTRANCE CONDUCTORS SHALL BE MADE BELOW THE LEVEL OF THE SERVICE WEATHERHEAD.

3. SEE DWG. ESS-6 FOR SERVICE GROUND CLEARANCES AND DWG. ESS-8 FOR SERVICE CLEARANCES AT BUILDINGS.

4. SERVICE ENTRANCE CONNECTORS SHALL BE INSULATED PER NEC RULE 230.

5. MINIMUM CLEARANCES SPECIFIED BY NEC.

NOTE:
5/8" EYEBOLT SHALL BE INSTALLED, BY CUSTOMER, IN 2 STUDS (2" x 4") OR EQUIVALENT SUPPORT.

SERVICE MAST

1. SERVICE MAST SHALL BE OF ADEQUATE STRENGTH OR BE SUPPORTED BY A GUY OR BRACE TO WITHSTAND THE STRAIN IMPOSED BY SERVICE DROP. SEE NEC 230.

2. 2" RIGID STEEL CONDUIT IS REQUIRED FOR MASTS UP TO 4'. LONGER MAST HEIGHTS REQUIRE GUYING, BRACING, LARGER MAST SIZE, OR SPECIAL SAG.

FASCIA

CUSTOMER'S GUY WIRE OR BRACE

STEEL CONDUIT ONLY

NOTE 5

SEE NOTE 5

SEE NOTE 5

SEE NOTE 5

DRAWING NO.

ESS-9

PUBLIC WORKS COMMISSION
Fayetteville, North Carolina

Electric Service Standards
PERMANENT OVERHEAD RESIDENTIAL SERVICE ATTACHMENT METHODS

DRAWN BY: WJJ
CHECKED BY: WRW
APPROVED BY: JCC
SCALE: NONE
DATE: 2/24/09

REV.
DATE
BY
METER BASE PROVIDED BY CUSTOMER

ELECTRICIAN/CUSTOMER SHALL FURNISH AND INSTALL 2" OR 4" RIGID PVC SCHEDULE 40 SERVICE RISER. INSTALLATION SHALL BE STRAIGHT, PLUMB AND SECURED TO DWELLING WALL.

3" TO 5'-6"

24" MIN.

FINAL GRADE

SEE NOTE 2

SERVICE BY PWC

CABLE PROTECTOR

BY PWC

PERMANENT OBSTRUCTION

SEE NOTE 3

FINAL GRADE

SEE NOTE 2

FOUNDATION DETAIL

24" MIN. (P" NESC)

24"

NOTES:

1. ELECTRICIAN/CUSTOMER SHALL BE RESPONSIBLE FOR INSTALLATION OF METER BASE, CONDUIT RISER PIPE AND GROUNDING.

2. ELECTRICIAN/CUSTOMER SHALL INSTALL CONDUIT RISER PIPE AS SHOWN ABOVE. CONDUIT RISER SHALL BE INSTALLED WITH A 24" RADIUS MINIMUM 45° ELBOW. BOTTOM OF ELBOW MUST BE CLEAR OF FOUNDATION AND 24" BELOW GRADE. OPEN-END OF RISER PIPE SHALL BE FITTED WITH A COUPLING AND TAPE CLOSED TO PROHIBIT DIRT ENTRY DURING INSTALLATION. FOR CONDUIT SIZING SEE TABLE A.

3. SERVICE CONDUIT MUST BE EXTENDED 24" PAST A PERMANENT OBSTRUCTION.

4. FOR EXAMPLES OF UNACCEPTABLE RISERS, SEE SHEET ESS-11

<table>
<thead>
<tr>
<th>RISER</th>
<th>WIRE SIZE</th>
<th>SERVICE AMPERAGE</th>
<th>45° BENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>#2 or #4/0</td>
<td>200</td>
<td>2&quot; - 45&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>#2 4/0</td>
<td>320</td>
<td>4&quot; - 45&quot;</td>
</tr>
</tbody>
</table>

REF: Construction and Operation Procedures Dwg. 20.2-04

Electric Service Standards
PERMANENT
UNDERGROUND RESIDENTIAL
SINGLE-PHASE SERVICE RISER

PUBLIC WORKS COMMISSION
Fayetteville, North Carolina

DRAWING NO. ESS-10

REV. DATE BY DSN. BY: WJI CKD BY: WRC3 APPR. BY: JCC SCALE: NONE DATE: 2/24/09
CT METERING CONFIGURATION

MAXIMUM CONDUIT SIZE AND QUANTITY

<table>
<thead>
<tr>
<th>Amp</th>
<th>1 Phase</th>
<th>3 Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 Amp</td>
<td>1.5&quot; PVC</td>
<td>2.4&quot; PVC</td>
</tr>
<tr>
<td>800 Amp</td>
<td>2.4&quot; PVC</td>
<td>2.4&quot; PVC</td>
</tr>
<tr>
<td>1000 Amp</td>
<td>2.4&quot; PVC</td>
<td>2.5&quot; PVC</td>
</tr>
<tr>
<td>1200 Amp</td>
<td>2.5&quot; PVC</td>
<td>3.4&quot; PVC</td>
</tr>
</tbody>
</table>

CT CABINET
Supplied by PWC and installed by Customer

See chart above for quantity and diameter of conduit requirements.
(Supplied and installed by Customer)

1-1/4" minimum rigid galvanized conduit and pull string (with bushings), or
1-1/4" minimum Schedule 80 PVC Conduit and pull string. "Condulets" are NOT allowed.

METER SOCKET Provided by PWC and Installed by Customer
NOTE:
Customer shall label meter sockets and switch covers with paint or other permanent durable marker to identify premises served. Markings shall also be placed inside meter socket (to prevent confusion if covers are interchanged before service is connected). If living units have different house numbers, these should be shown in place of apartment numbers.
Wiring Gutter

Line Gutter

APT. 5
APT. 6

APT. 4
APT. 7

APT. 3
APT. 8

APT. 2
APT. 9

APT. 1
HOUSE

72" Max. to Centerline of top Meters

Customer's Service Entrance Conduit

FINISHED GRADE

REF: Construction and Operation Procedures Dwg. 20,2-09a

Electric Service Standards
RESIDENTIAL MULTIPLE OCCUPANCY BUILDINGS
MULTIPLE METER CENTER
ELEVATION VIEW

- VENT INTAKE OR EXHAUST
- 10' MIN.
- SEE NOTE 4
- 10' MIN.
- SEE NOTE 5
- SEE NOTES BELOW
- 10' MIN.
- 20' MIN.

PLAN VIEW

SEE NOTES BELOW & DRAWING ESS-17

10' MIN.

NOTES:
1. TRANSFORMER FRONT SHALL NOT FACE BUILDING.
2. ACCESS FOR TRUCKS AND NECESSARY OPERATION AND MAINTENANCE EQUIPMENT SHALL BE MAINTAINED AT ALL TIMES.
3. NO PORTION OF THE BUILDING SHALL EXTENDED OVER THE TRANSFORMER.
4. THERE IS A 20' MINIMUM CLEARANCE FROM TRANSFORMER TO ALL FIRE HYDRANTS.
   THIS 20' CLEARANCE SHALL ALSO BE MAINTAINED FOR ALL FIRE ESCAPES.
5. THERE IS A 20' MINIMUM CLEARANCE FROM TRANSFORMER TO ALL DOORWAYS. THIS 10' CLEARANCE SHALL ALSO BE MAINTAINED FOR ALL OPEN STAIRWAYS.
6. SURROUNDING AREA MUST DRAIN AWAY FROM BUILDING AND TRANSFORMER.
7. AN AREA 6' IN FRONT, 3' TO EACH SIDE AND 3' TO THE REAR TRANSFORMER SHALL REMAIN CLEAR ON ALL STRUCTURES, SIGNS OR PERMANENT PLANTINGS THAT EXTEND MORE THAN 4' ABOVE GRADE FOR OPERATION AND MAINTENANCE ACCESS. ADDITIONAL SPACE MAY BE REQUIRED FOR COOLING OF LARGE 3 PHASE TRANSFORMERS.
8. CUSTOMER IS RESPONSIBLE FOR COMPLIANCE WITH ALL INSURANCE REQUIREMENTS, BUILDING CODES, AND LOCAL ORDINANCES AFFECTING THE INSTALLATION.
9. CLEARANCES SHOWN ARE IN ACCORDANCE WITH NESC RULES.
NOTES:
1. TRANSFORMER FRONT SHALL NOT FACE BUILDING.
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   AND LOCAL ORDINANCES AFFECTING THE INSTALLATION.
9. CLEARANCES SHOWN ARE IN ACCORDANCE WITH NESC RULES.
NOTES:
1. CLEARANCE ENVELOPE SHOWN MARKS THE CLOSEST PERMITTED PLACEMENT OF STRUCTURES, SIGNS, OR PERMANENT PLANTINGS THAT EXTEND MORE THAN 4 INCHES ABOVE GRADE.
2. FRONT OF TRANSFORMER IS MARKED BY WARNING LABELS AND LOCKING HANDLE, AND USUALLY FACES THE ROADWAY.
3. TRANSFORMER WILL NORMALLY BE LOCATED 6 OR MORE FEET FROM BACK OF CURB OR 15 OR MORE FEET FROM PAVEMENT EDGE, ONE FOOT BEHIND THE FRONT PROPERTY LINE.
NOTES:

1. ON THREE-PHASE PAD-MOUNTED TRANSFORMERS, THIS POLE SHALL BE CENTRALLY LOCATED 2'-0" IN FRONT OF THE TRANSFORMER BETWEEN THE DOORS TO ACCOMMODATE THE DOOR SWING AND SHALL BE REMOVABLE. ON SINGLE-PHASE TRANSFORMERS, THIS POLE SHALL BE LOCATED APPROXIMATELY 3'-6" IN FRONT OF THE TRANSFORMER (NO LESS THAN 3).

2. TRANSFORMER PROTECTION POLES SHALL BE INSTALLED ON ALL SIDES OF THE TRANSFORMER WHICH ARE SUBJECT TO VEHICULAR TRAFFIC.

3. POLES SHOULD BE PAINTED YELLOW.

4. CUSTOMER MAY PROVIDE AN ALTERNATE DESIGN FOR A REMOVABLE BARRIER, BUT MUST BE APPROVED BY PWC ENGINEER.

5. ANY SINGLE AND THREE-PHASE PAD-MOUNTED TRANSFORMERS THAT ARE EXPOSED TO PAVED AREAS AND/OR VEHICULAR TRAFFIC SHALL HAVE PROTECTIVE BARRIERS PROVIDED AND INSTALLED BY THE CUSTOMER.

FILL 1 2" DIA. MIN. HOLE AND 4" DIA. CONDUIT WITH 3000 PSI CONCRETE ROUND FORM TOP AND SLOPE CONCRETE AT BASE OF POLE

3" MIN CONCRETE ALL AROUND

4" GALV. STEEL CONDUIT CUT TO 7'-0" LENGTH

6" COMPACTED STONE OR GRAVEL

Electric Service Standards

GUARD POST FOR PADMOUNTED TRANSFORMER

PUBLIC WORKS COMMISSION
Fayetteville, North Carolina

DRAWING NO. ESS-19

REF: Construction and Operation Procedures Dwg. 17006
1 - PRIMARY DUCT, SWEEPS, AND BELLENDS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR/CUSTOMER. MATERIAL SHALL BE 4" NOMINAL SCHEDULE 40 PVC (36" MINIMUM SWEEP RADIUS).

2 - SECONDARY CONDUCTORS, DUCT, BELLENDS, AND SWEEPS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR/CUSTOMER.

3 - METERING CONDUIT, WHEN REQUIRED, SHALL BE 1" SCHEDULE 40 PVC EXTENDING TO METER CABINET ON OUTSIDE WALL OF PREMISE.

4 - P.W.C. WILL TERMINATE SECONDARY CABLES AT TRANSFORMER. A MINIMUM OF 6" OF CABLE SHALL BE LEFT ABOVE PAD SURFACE.

5 - CONCRETE SHALL BE 3000 PSI MINIMUM, PLACED AND COMPACTED ON UNDISTURBED EARTH OR 95% COMPACTED FILL. ALL EXPOSED SURFACES OF THE PAD SHALL BE FREE OF VOIDS AND "TROWELLED SMOOTH WITH A 1/8" CHAMFER APPLIED TO ALL EXPOSED EDGES. 5/8" ASTM AG1 5 REBAR SHALL BE INSTALLED AND BOUND AS SHOWN.

6 - MINIMUM CLEARANCE OF 10 FEET SHALL BE MAINTAINED IN FRONT OF PAD AND A MINIMUM CLEARANCE OF 3 FEET SHALL BE MAINTAINED IN BACK AND EACH SIDE OF PAD.

7 - GUARD POSTS AS SHOWN ON DRAWING ESS-19 SHALL BE INSTALLED BY THE CUSTOMER/CONTRACTOR 3' DIAGONALLY FROM EACH CORNER OF THE PAD THAT IS 6' OR LESS FROM A PAVED AREA.

8 - PAD LOCATION AND SIZING SHALL BE COORDINATED WITH THE P.W.C. ELECTRICAL ENGINEERING DEPARTMENT.

---

Electric Service Standards

FOUNDATION PAD
150 thru 750 KVA
PADMOUNTED TRANSFORMER

PUBLIC WORKS COMMISSION
Fayetteville, North Carolina

DRAWING NO.
ESS-20
1. Primary duct, sweeps, and bellends shall be furnished and installed by Contractor/Customer. Material shall be 4" nominal schedule 40 PVC (36" minimum sweep radius).

2. Secondary conductors, duct, bellends, and sweeps shall be furnished and installed by Contractor/Customer.

3. Metering conduit, when required, shall be 1" Schedule 40 PVC extending to meter cabinet on outside wall of premise.

4. F.W.C. will terminate secondary cables at transformer; a minimum of 6' of cable shall be left above pad surface.

5. Concrete shall be 3000 psi minimum, placed and compacted on undisturbed earth or 95% compacted fill. All exposed surfaces of the pad shall be free of voids and trowelled smooth with a 1" chamfer applied to all exposed edges. 5/8" ASTM A615 rebar shall be installed and bonded as shown.

6. Minimum clearance of 10 feet shall be maintained in front of pad and a minimum clearance of 3 feet shall be maintained in back and each side of pad.

7. Guard posts as shown on drawing ESS-19 shall be installed by the Customer/Contractor 3' diagonally from each corner of the pad that is 6' or less from a paved area.

8. Pad location and sizing shall be coordinated with the P.W.C. Electrical Engineering Department.

REF: Construction and Operation Procedures Dwg. 12.2.02

Electric Service Standards

FOUNDATION PAD

1000 thru 2500 KVA

PADMOUNTED TRANSFORMER
<table>
<thead>
<tr>
<th>Transformer KVA</th>
<th>Secondary Voltage</th>
<th>Max. Number of Conductors &amp; Size</th>
<th>Max. Number of Conduit &amp; Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-167</td>
<td>120/240V</td>
<td>8 Sets</td>
<td>500 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 - 2&quot; Max.</td>
</tr>
<tr>
<td>150-500</td>
<td>120/208V 277/480V</td>
<td>8 Sets</td>
<td>750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 - 4&quot; Max.</td>
</tr>
<tr>
<td>750</td>
<td>277/480V</td>
<td>8 Sets</td>
<td>750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 - 4&quot; Max.</td>
</tr>
<tr>
<td>750</td>
<td>120/208V</td>
<td>10 Sets</td>
<td>750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
<tr>
<td>1000</td>
<td>277/480V</td>
<td>10 Sets</td>
<td>750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
<tr>
<td>1000</td>
<td>120/208V</td>
<td>10 Sets</td>
<td>750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
<tr>
<td>1500-2000</td>
<td>277/480V</td>
<td>10 Sets</td>
<td>600-750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
<tr>
<td>1500-2000</td>
<td>277/480V</td>
<td>10 Sets</td>
<td>500 KCMIL or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
<tr>
<td>2500</td>
<td>277/480V</td>
<td>10 Sets</td>
<td>600-750 KCMIL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
<tr>
<td>2500</td>
<td>277/480V</td>
<td>10 Sets</td>
<td>500 KCMIL or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 - 4&quot; Max.</td>
</tr>
</tbody>
</table>
NOTES:

1. NEUTRAL AND GROUND WIRING NOT SHOWN.

2. CONSUMPTION METER AND RENEWABLE ENERGY METER SHALL HAVE A NAMEPLATE ATTACHED AS SHOWN ON ESS-25.

3. SEE DWG. ESS-24 FOR WIRING DIAGRAM.
NOTES:

1. SYSTEM SHALL NOT ENERGIZE A DEAD BUS SYSTEM.
2. M1 IS THE METER FOR THE RESIDENTIAL SERVICE.
3. M2 IS THE METER FOR THE RENEWABLE ENERGY INPUT TO THE SYSTEM.
4. INVERTER/ISOLATION SYSTEM TO BE UL 1741 LISTED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NFPA 70).
5. THE ISOLATION BY THE CUSTOMER TO BE SIZED PER NATIONAL ELECTRIC CODE MINIMUM SIZE = 100 AMPS. SWITCH SHALL BE LOCKABLE IN THE OPEN POSITION.
6. SEE DWG. ESS-23 FOR PHYSICAL CONNECTION ILLUSTRATION.
NOTES:

1. MINIMUM TEXT HEIGHT OF 3/8"

2. SIGNAGE SHALL BE MADE OF PLASTIC AND UTILIZE EMBOSSED LETTERING.

3. SIGNAGE SHALL BE PERMANENTLY AFFIXED TO METER BASE COVER.

Electric Service Standards
RENEWABLE ENERGY INTERCONNECTION
INSTALLATION-METER BASE LABELING
DIAGRAM