



**Underground Sectionalizing  
Customer Reference Specification  
Ultra Service Park Precast Concrete  
Foundation for Pad Mounted VCR  
6-22-130**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
Page 110 of 150

**6-22-130 – Customer Reference Specification Ultra Service Park Precast Concrete Foundation  
for Pad Mounted VCR**

**Installation Instructions For  
Precast Concrete Foundation  
For Three-Phase Pad Mounted  
VCR**

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Underground Sectionalizing  
Customer Reference Specification  
Ultra Service Park Precast Concrete  
Foundation for Pad Mounted VCR  
6-22-130**

0000-000-ST-6022  
Custom ID: DCS 6-22  
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Effective Date: 12/03/2018  
Page 111 of 150

This specification contains basic information which defines PPL EU's material and design requirements for the installation of precast concrete foundations.

All details of this specification shall be strictly followed. Any deviation **must** be approved by a PPL EU engineer. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

**Other Associated Specifications**

A-168735..... Customer installed Duct Systems

CRS 6-18-115..... Installation Instructions for Customer installed Conduit Systems on PPL EU Terminal Poles

A-190974..... Concrete Specifications

CRS 6-17-122..... Three-Phase Pad-Mounted Transformer Installations 75 kVA to 2500 kVA Capacity.

CRS 6-14-125..... Customer installed Screening of Pad-Mounted Devices

**General Instructions for Typical Installation**

**1. Plot Plan**

The customer must provide PPL EU with a detailed plot plan showing location of building and property lines, service entrance switchgear, metering, and service entrance. This should be sufficiently ahead of actual start of building construction to allow PPL EU to engineer project, preferably during building design stage to allow input on service location.

**2. Construction Plan**

A PPL EU engineer will provide the customer with a construction plan showing the proposed location of primary supply circuits, primary supply conduits, and pad mounted VCR. The VCR foundation must always be located in an area where there is free access for PPL EU's mobile crane and maintenance vehicles.

**3. Right-of-Way**

When the customer and PPL EU reach final agreement on location of electric facilities, the customer signs associated agreements and grants necessary right-of-way. Construction by PPL EU will not proceed until these documents are completed by the customer.

#### **4. Precast Foundation**

The customer's contractor is responsible for purchasing the precast foundation for the VCR. A list of PPL EU approved suppliers is contained on page 97. Contractor must coordinate site preparations with desired delivery date. If site preparations are complete, supplier will set foundation in final position. The contractor must provide a clear and firm approach to the point of delivery.

#### **5. Excavation for VCR Foundation**

The customer's contractor is responsible for the excavation to install the foundation and for backfill afterwards. The excavation should be at least 9 feet by 15 feet by 8-½ feet deep. See Note 7 for ground ring excavation.

Note: Actual excavation depth may vary from site to site depending upon difference between existing and final grade at time of delivery.

A 10 inch layer of #1B crushed stone is spread to level the bottom of the excavation and act as a French drain. The bottom must be well tamped and level.

#### **6. Finished Grade**

Finished grade around the switchgear must be a minimum of 4 inches below top surface of the foundation and sloped away. **Never** grade the area surrounding foundation in such a way that it forms a swale where ground water will collect.

#### **7. Excavation for Ground Ring**

The customer's contractor digs trench around foundation (2 feet deep and 4 feet off sides) for installation of ground ring provided by PPL EU. The contractor notifies PPL EU when trench is opened. After PPL EU installs grounding, the contractor backfills trench.

#### **8. Conduit System**

The customer's contractor installs conduit systems in accordance with PPL EU construction plan. All conduits must enter foundation through wall knock-out areas at locations specified by PPL EU engineer. Never penetrate floor or corners. PPL EU engineer will specify number and size of conduits to be installed.

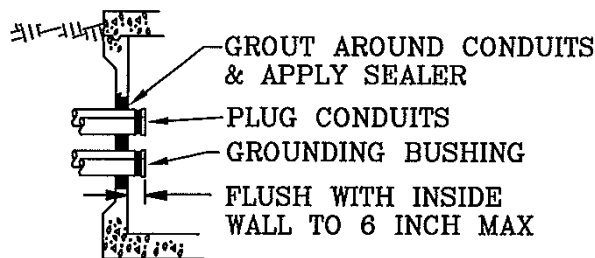
Contractor must use one of the following methods to install conduit:

- A. Hot dipped galvanized steel conduit (rigid or intermediate grade) directly buried in earth. All threaded couplings must be tightly joined using plumbers Teflon tape or similar joint comlb designed to stop water leaks. All bends must have at least 36 inch radius. All steel conduits must have grounding bushings at foundation.

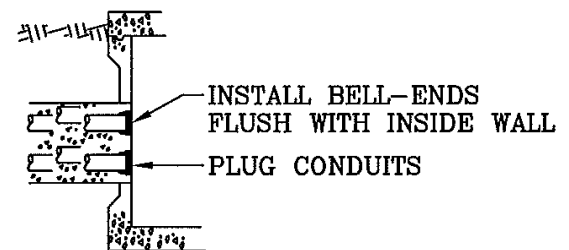
- B. Use type UL approved EB or DB PVC conduit encased in a concrete envelope as specified in A-168735. All joints must be tightly sealed using the appropriate solvent cement. All 90° bends must be hot dipped galvanized steel (rigid or intermediate grade) with at least a 36 inch radius. Concrete must also encase steel bends to prevent cable pulling tensions causing breakage at steel-to-plastic adaptors. All plastic conduit must have bell-ends at the foundation.

After installation, the contractor must clean debris from the ducts by pulling a stiff bristled brush and some clean rags through each conduit. A fish line (mule tape) must be provided in each conduit and all conduit ends must be temporarily plugged to keep them clean and dry.

Regardless of which conduit installation method is used, contractor must seal and waterproof foundation knock-out area around the conduit penetration.



**STEEL CONDUITS** 6-22-130A



**PVC-ENCASED** 6-22-130B

## 9. Notification to PPL EU of Foundation Delivery Time

It is the customer's responsibility to ensure that precaster notifies PPL EU 24 hours prior to delivery to job site. PPL EU representative may be at job site during precaster's permanent placement of foundation. All approved precasters have names and phone numbers of appropriate PPL EU personnel to be notified.

## 10. Protective Barriers

It is the customer's responsibility to install protective barriers. Barriers are required when the switchgear is located in an area exposed to vehicular traffic. Barriers must be located and installed in accordance with the PPL EU construction plan. All protective barriers must be removable bollards (constructed as or equivalent to 6-22-198E-B).

## 11. Clearances

The minimum clearances shown in this specification were set by PPL EU for operating and maintenance purposes. It is the customer's responsibility to comply with the National Electric Code (NEC), local municipal, fire insurance regulations and any other applicable code regarding the location of electrical equipment and building facilities. Any required safeguards, such as barriers, are installed and maintained by customer.

## 12. Cover and Concealment

- 12.1 The customer must keep the area above the switchgear clear of obstructions. This includes overhanging tree limbs which may block crane access to the switchgear.
- 12.2 The customer may elect to install shrubbery screening or concealment fences. All construction and maintenance work must be performed by the customer. Minimum clearances to the switchgear are shown in CRS 6-14-125. Customer must secure PPL EU approval **before** concealing the switchgear.

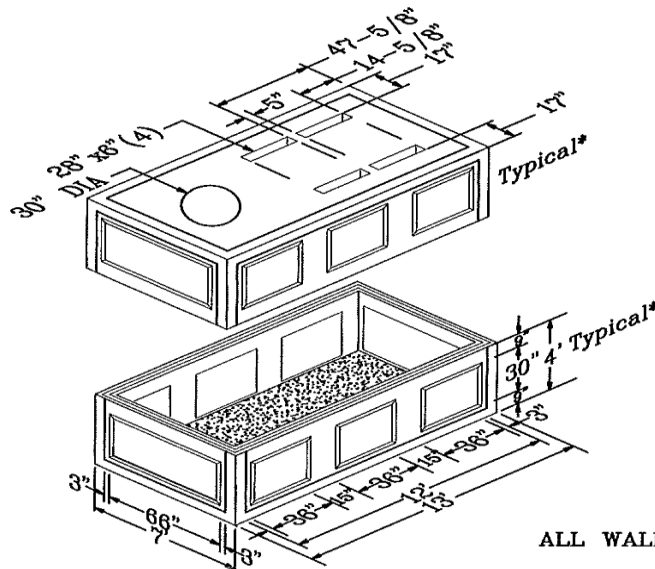
### 13. Order Information

Order from these approved suppliers only. Foundation same as PPL EU CID #161254 per PPL EU Drawing MRS-2056. Allow approximately 3 days to coordinate delivery.

- |   |   |
|---|---|
| <p>1. Oldcastle Precast<br/>P.O. Box 210<br/>514 Township Line Road<br/>Telford, PA 18969<br/>(215) 257-8081</p> <p>2. A.C. Miller Concrete Products, Inc.<br/>Bridge Street<br/>Spring City, PA 19475<br/>(610) 948-4600</p> <p>3. Monarch Products Co., Inc.<br/>385 Sipe Road<br/>York Haven, PA 17370-9705<br/>(717) 938-8303</p> | <p>4. Monarch Precast Concrete Corp.<br/>425 North Dauphin Street<br/>Allentown, PA 18109-2199<br/>(610) 435-6746</p> <p>5. Modern Precast Concrete Products<br/>&amp; Construction Supplies<br/>2863 Brodhead Road<br/>Bethlehem, PA 18020<br/>(610) 997-3119</p> <p>6. Scranton Craftsmen, Inc<br/>930 Dunmore Street<br/>Throop, PA 18512<br/>(800) 775-1479</p> |
|---|---|

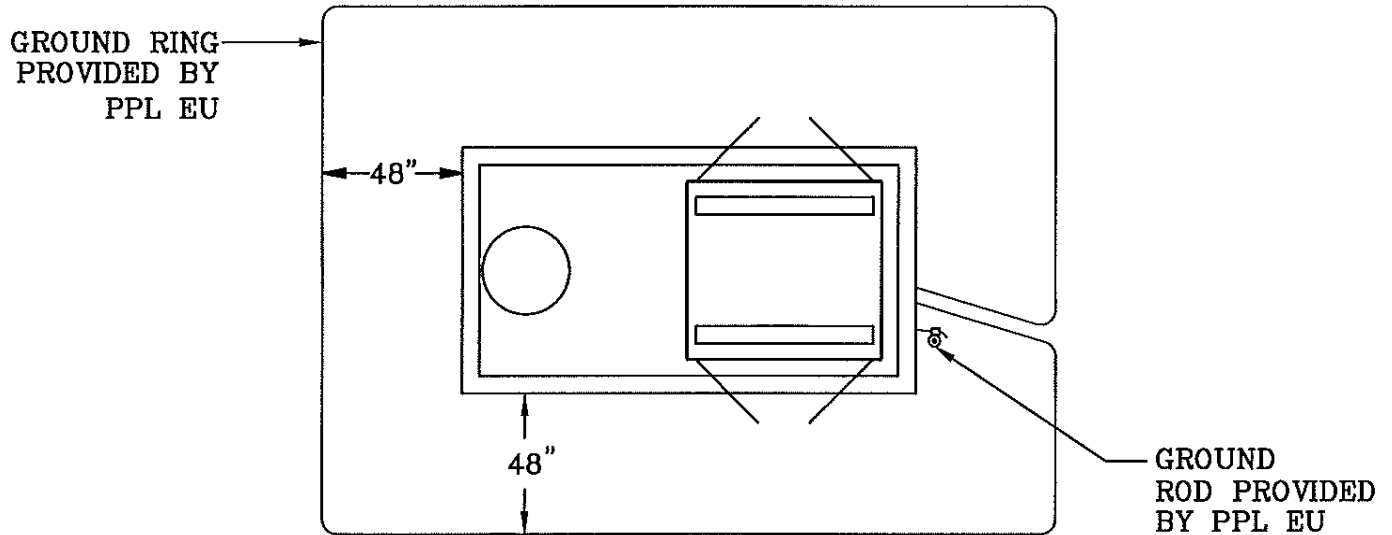
#### Customer-Installed Precast Foundation

MINIMUM EXCAVATION  
15' x 9' x 8-1/2' DEEP  
NOTE 5



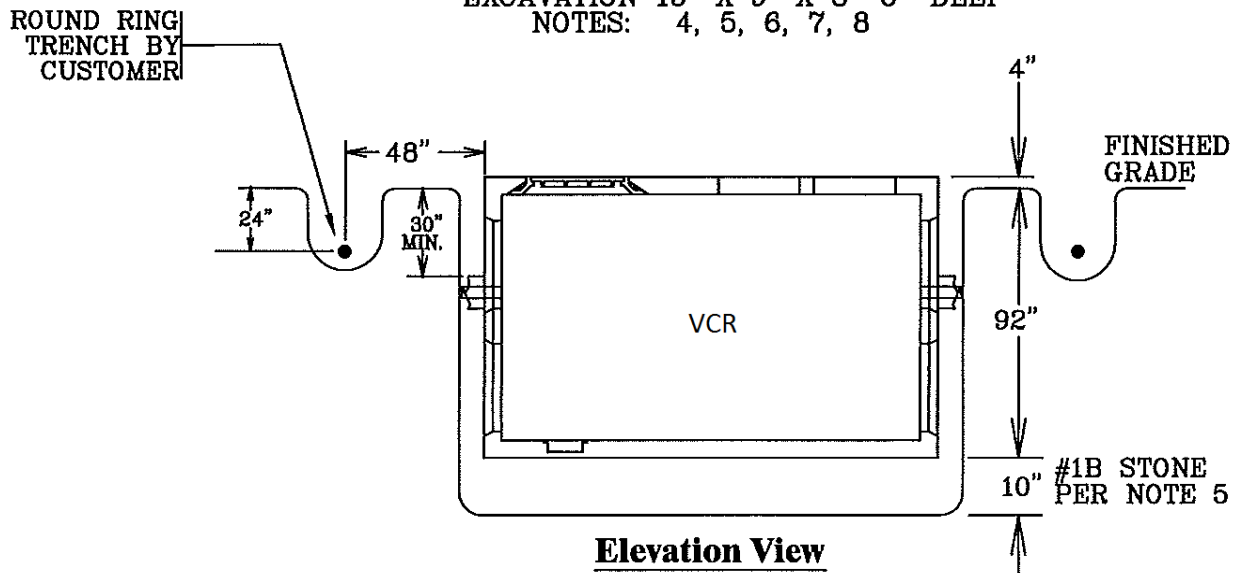
ALL WALLS ARE 6" THICK.  
6-22-130C

## Typical Installation



## Plan View

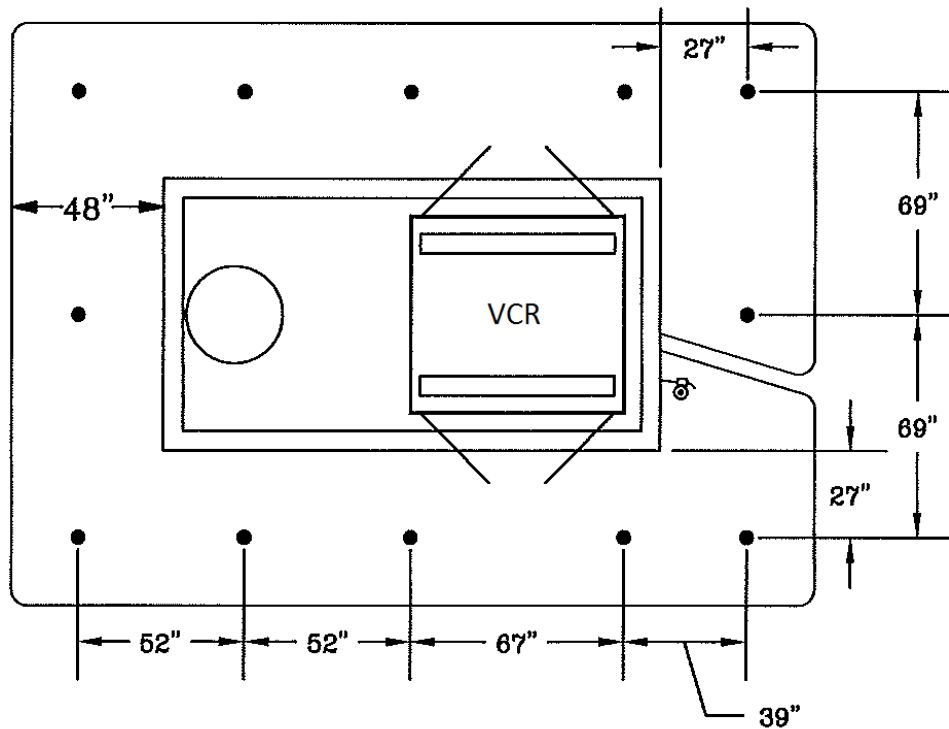
PRECAST CONCRETE FOUNDATION  
BY CUSTOMER  
EXCAVATION 15' X 9' X 8'-6" DEEP  
NOTES: 4, 5, 6, 7, 8



## Elevation View

6-22-130D

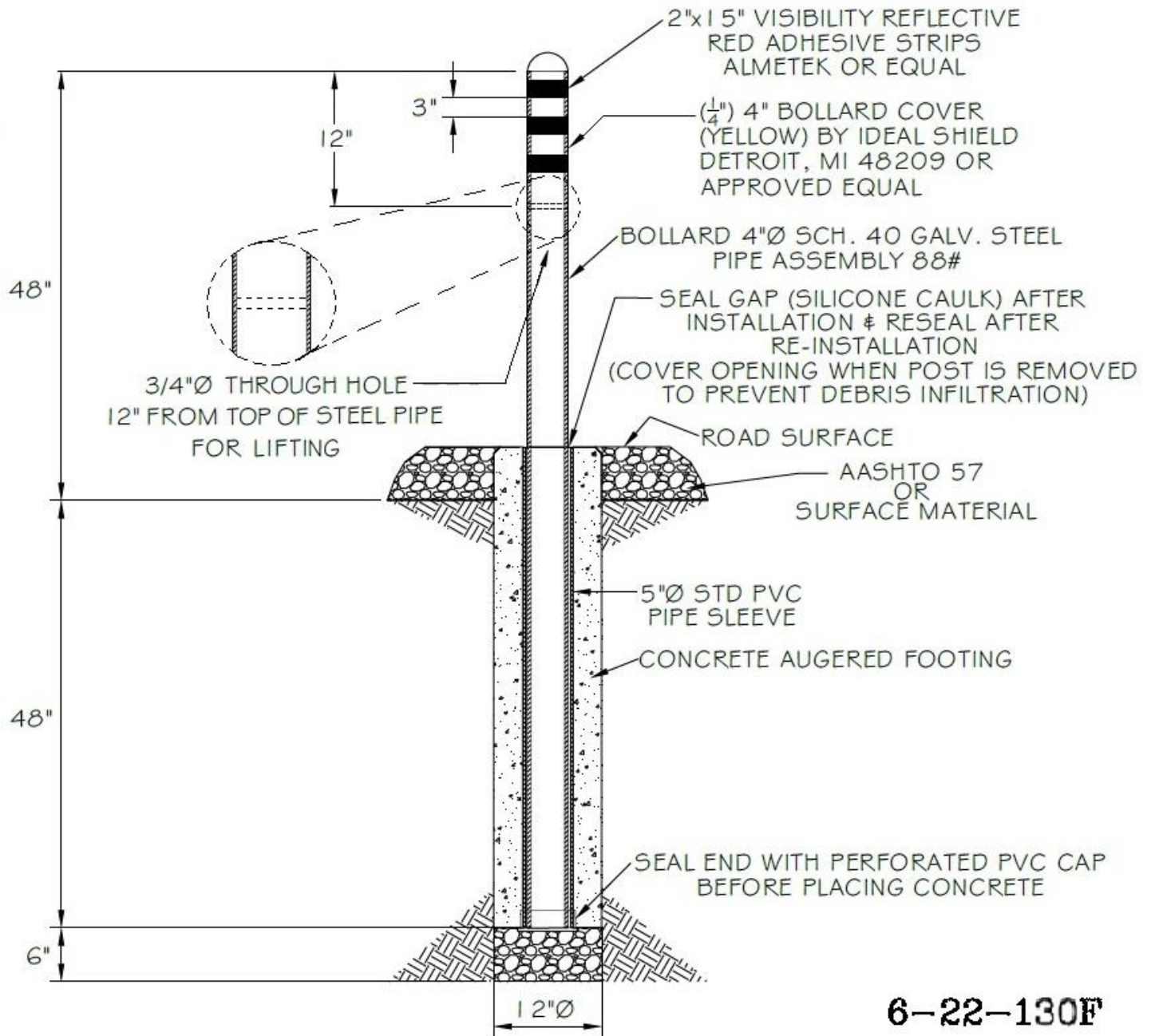
## Barrier and Grounding Details



6-22-130E



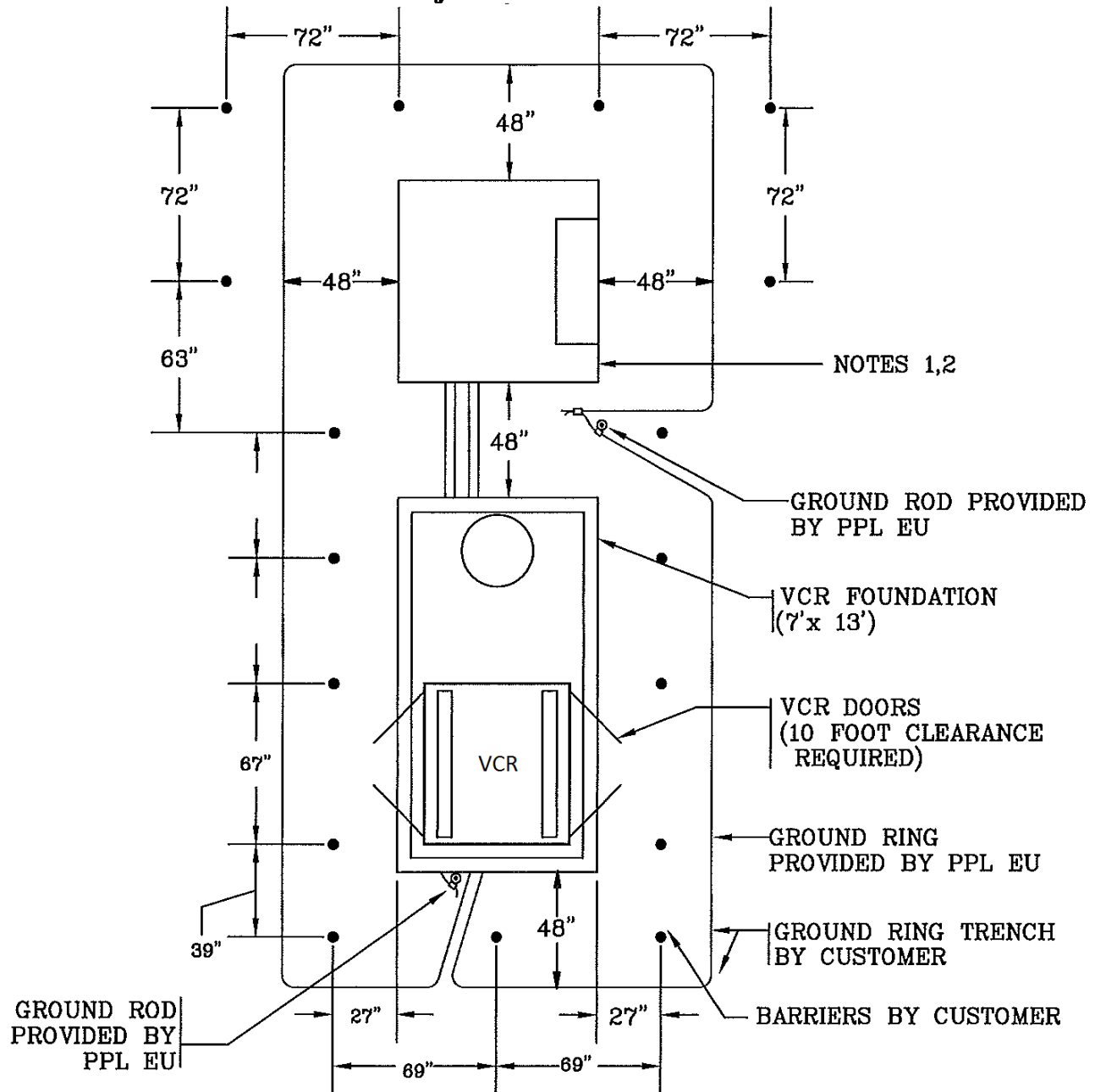
## REMOVABLE BOLLARD



**6-22-130F**



**Barrier and Grounding Details  
Foundation Adjacent Transformer Foundation**



**NOTE:** (1) SEE 6-17-122 FOR BARRIER LOCATION WHEN TRANSFORMER IS LOCATED IN A PARKING LOT ADJACENT TO A BUILDING.

(2) SEE 6-17-022 FOR TRANSFORMER FOUNDATION AND GROUNDING DETAILS. FRONT OF TRANSFORMER MAY FACE ANY DIRECTION PROVIDED 10 FOOT CLEARANCE FOR SWITCHING IS MAINTAINED.

6-22-130G



**Underground Sectionalizing  
Customer Reference Specification  
Install Three-Phase, 200 A Switchgear  
Foundation  
6-22-187**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
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**6-22-187 – Customer Reference Specification Install Three-Phase, 200 A Switchgear Foundation**

# **Installation Instructions For Three-Phase, 200 A Switchgear Foundation**

**Replaces CRS-1006  
406C-187**

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Underground Sectionalizing  
Customer Reference Specification  
Install Three-Phase, 200 A Switchgear  
Foundation  
6-22-187**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
Page 120 of 150

This specification contains basic information which defines PPL EU's material and design requirements for the installation of Three-Phase, 200 A switchgear foundations.

All details of this specification shall be strictly followed. Any deviation **must** be approved by a PPL EU's engineer. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

**Other Associated Specifications**

CRS 6-15-180 ..... Customer installed Duct System

CRS 6-18-115 ..... Installation Instructions for Customer installed Conduit Systems on PPL EU Terminal Poles

A-190974 ..... Concrete Specifications

CRS 6-17-122 ..... Three-Phase Pad-Mounted Transformer Installations 75 kVA to 2500 kVA Capacity

CRS 6-14-125 ..... Customer installed Screening of Pad-Mounted Devices

**General Instructions For Typical Installation**

**1. Plot Plan**

The customer must provide PPL EU with a detailed plot plan showing location of building and property lines, service entrance switchgear, metering, and service entrance.

**2. Construction Plan**

A PPL EU engineer will provide the customer with a construction plan showing the proposed location of primary supply circuits, primary supply conduits, and 200 A switchgear foundation. Switchgear foundation must always be located in an area where there is free access for PPL EU's mobile crane and maintenance vehicles.

**3. Right-of-Way**

When the customer and PPL EU reach final agreement on location of electric facilities, the customer signs associated agreements and grants necessary right-of-way. Construction by PPL EU will not proceed until these documents are completed by the customer.

**4. Precast Foundation**

The customer's contractor is responsible for purchasing the precast foundation for the 200 A switchgear. A list of PPL EU approved suppliers is contained in section 13. Contractor must coordinate site preparations with desired delivery date. If site preparations are complete, supplier will set foundation in final position. The contractor must provide a clear and firm approach to the point of delivery.



**Underground Sectionalizing  
Customer Reference Specification  
Install Three-Phase, 200 A Switchgear  
Foundation  
6-22-187**

0000-000-ST-6022  
Custom ID: DCS 6-22  
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Effective Date: 12/03/2018  
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## **5. Excavation for Switchgear Foundation**

The customer's contractor is responsible for the excavation to install the foundation and for backfill afterwards. The excavation should be at least 7 feet by 9 feet by 56 inches deep. See Note 7 for ground ring excavation.

Note: Actual excavation depth may vary from site to site depending upon difference between existing and final grade at time of delivery.

A 6 inch layer of #1B crushed stone is spread to level the bottom of the excavation and act as a French drain. The bottom must be well tamped and level.

## **6. Finished Grade**

Finished grade around the switchgear must be approximately 4 inches below top surface of the foundation and sloped away. Never grade the area surrounding foundation in such a way that it forms a swale where ground water will collect.

## **7. Excavation for Ground Ring**

The customer's contractor digs trench around foundation (2 feet deep and 4 feet off sides) for installation of ground ring provided by PPL EU. The contractor notifies PPL EU when trench is opened. After PPL EU installs grounding, the contractor backfills trench.

## **8. Conduit System**

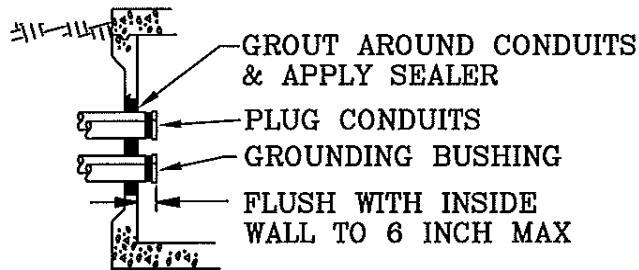
The customer's contractor installs conduit systems in accordance with PPL EU construction plan. All conduits must enter foundation through wall knock-out areas at locations specified by PPL EU engineer. Never penetrate floor or corners. PPL EU engineer will specify number and size of conduits to be installed.

Contractor must use one of the following methods to install conduit:

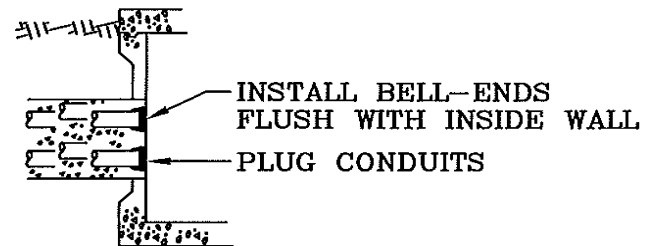
- A. Hot dipped galvanized steel conduit (rigid or intermediate grade) directly buried in earth. All threaded couplings must be tightly joined using plumbers Teflon tape or similar joint compound designed to stop water leaks. All bends must have at least 36 inch radius. All steel conduits must have grounding bushings at foundation.
- B. Use type EB or DB PVC conduit encased in a concrete envelope as specified in 6-15-180. All joints must be tightly sealed using the appropriate solvent cement. All 90° bends must be hot dipped galvanized steel (rigid or intermediate grade) with at least a 36 inch radius. Concrete must also encase steel bends to prevent cable pulling tensions causing breakage at steel-to-plastic adaptors. All plastic conduit must have bell-ends at the foundation.

After installation, the contractor must clean debris from the ducts by pulling a stiff bristled brush and some clean rags through each conduit. A fish line (mule tape) must be provided in each conduit and all conduit ends must be temporarily plugged to keep them clean and dry.

Regardless of which conduit installation method is used, contractor must seal and waterproof foundation knock-out area around the conduit penetration.



**Steel Conduits** 6-22-187A



**PVC-Encased** 6-22-187B

## 9. Notification to PPL EU of Foundation Delivery Time

It is the customer's responsibility to ensure that precaster notifies PPL EU 24 hours prior to delivery to job site. PPL EU representative will be at job site during precaster's permanent placement of foundation. All approved precasters have names and phone numbers of appropriate PPL EU personnel to be notified.

## 10. Protective Barriers

It is the customer's responsibility to install protective barriers. Barriers are required when the switchgear is located in an area exposed to vehicular traffic. Barriers must be located and installed in accordance with the PPL EU construction plan. All protective barriers must be removable bollards (constructed as or equivalent to 6-22-187E-B).

## 11. Clearances

The minimum clearances shown in this specification were set by PPL for operating and maintenance purposes. It is the customer's responsibility to comply with the National Electrical Code (NEC), local municipal, fire insurance regulations and any other applicable code regarding the location of electrical equipment and building facilities. Any required safeguards, such as barriers, are installed and maintained by customer.

## 12. Cover and Concealment

12.1 The customer must keep the area above the switchgear clear of obstructions. This includes overhanging tree limbs which may block crane access to the switchgear.

12.2 The customer may elect to install shrubbery screening or concealment fences. All construction and maintenance work must be performed by the customer. Minimum clearances to the switchgear are shown in CRS 6-14-125. Customer must secure PPL EU approval **before** concealing the switchgear.

### 13. Order Information

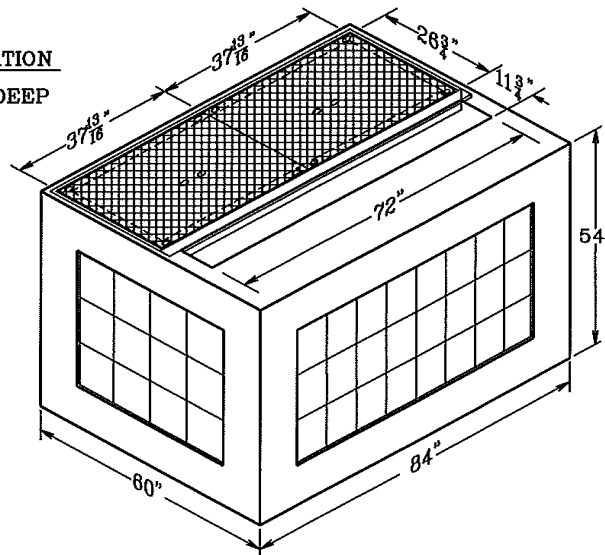
Order from these approved suppliers only. Foundation same as PPL EU CID No. 161251 per PPL EU Drawing LD17620. Allow approximately 3 days to coordinate delivery.

- |  |  |
|--|--|
| <p>1. Oldcastle Precast<br/>P.O. Box 210<br/>514 Township Line Road<br/>Telford, PA 18969<br/>(215) 257-8081</p> | <p>4. Monarch Precast Concrete Corp.<br/>425 North Dauphin Street<br/>Allentown, PA 18109-2199<br/>(610) 435-6746</p>                        |
| <p>2. A.C. Miller Concrete Products, Inc.<br/>Bridge Street<br/>Spring City, PA 19475<br/>(610) 948-4600</p>     | <p>5. Modern Precast Concrete Products<br/>&amp; Construction Supplies<br/>2863 Brodhead Road<br/>Bethlehem, PA 18020<br/>(610) 997-3119</p> |
| <p>3. Monarch Products Co., Inc.<br/>385 Sipe Road<br/>York Haven, PA 17370-9705<br/>(717) 938-8303</p>          | <p>6. Scranton Craftsmen, Inc<br/>930 Dunmore Street<br/>Throop, PA 18512<br/>(800) 775-1479</p>   |

#### Customer-Installed Precast Foundation

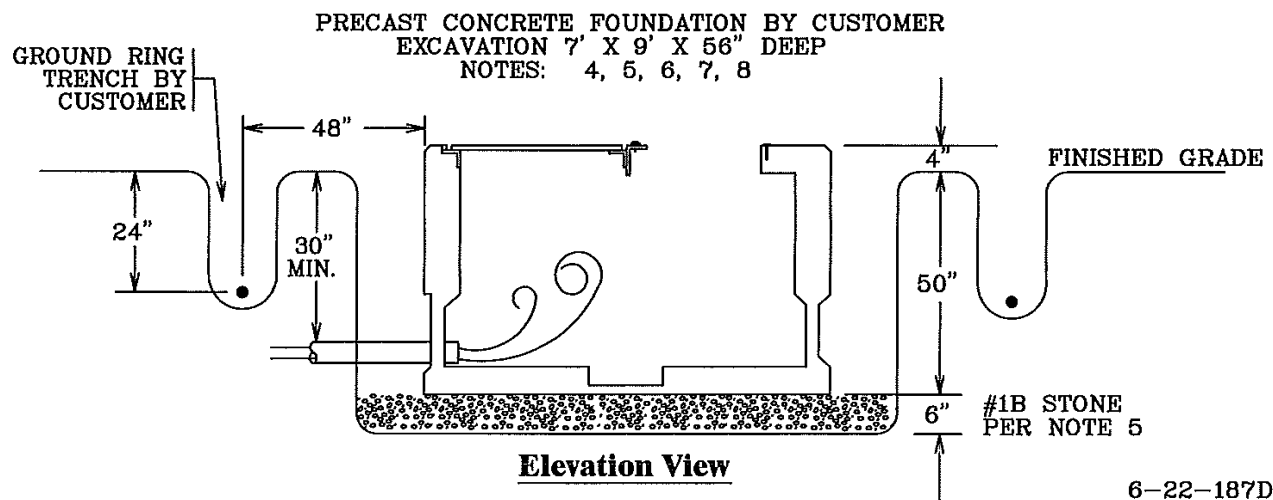
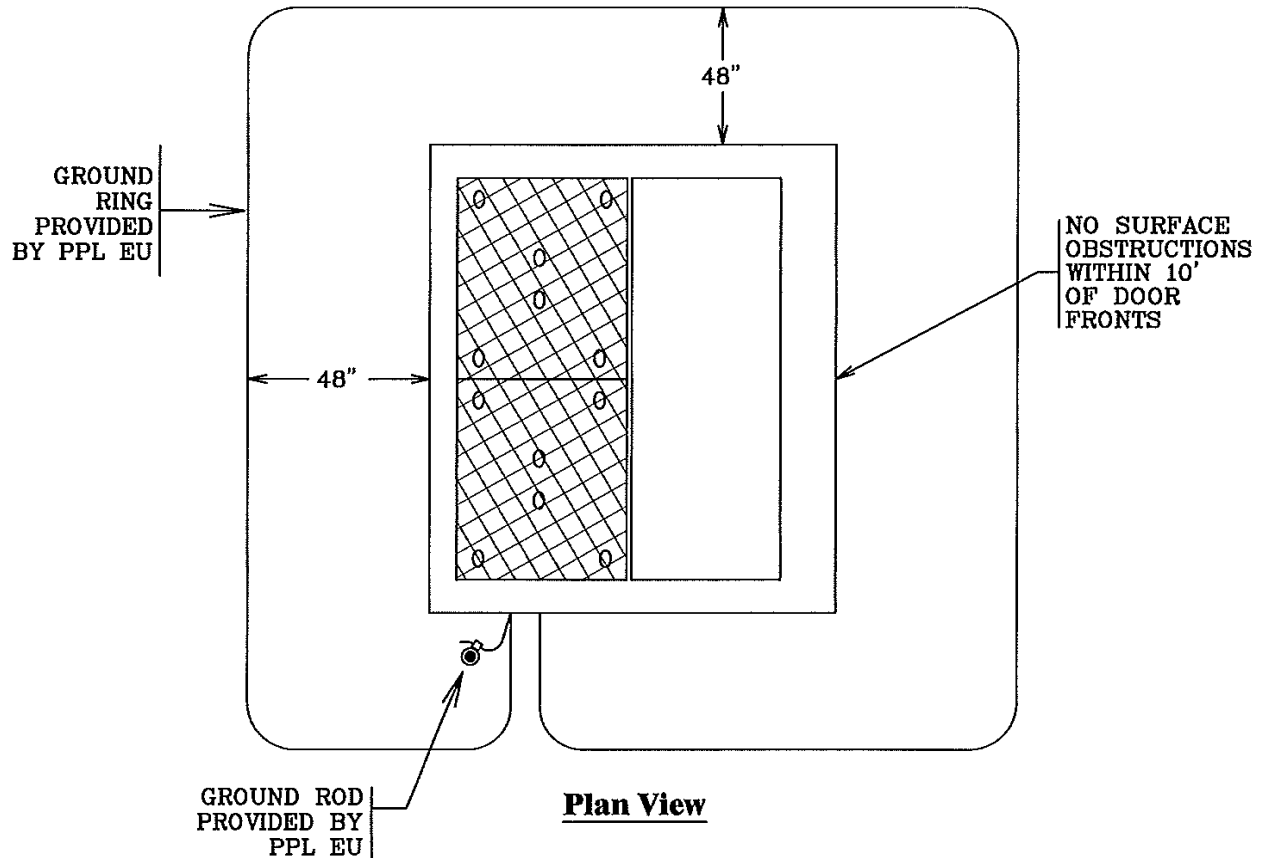
**MINIMUM EXCAVATION**

7'x 9' x 56" DEEP  
NOTE 5



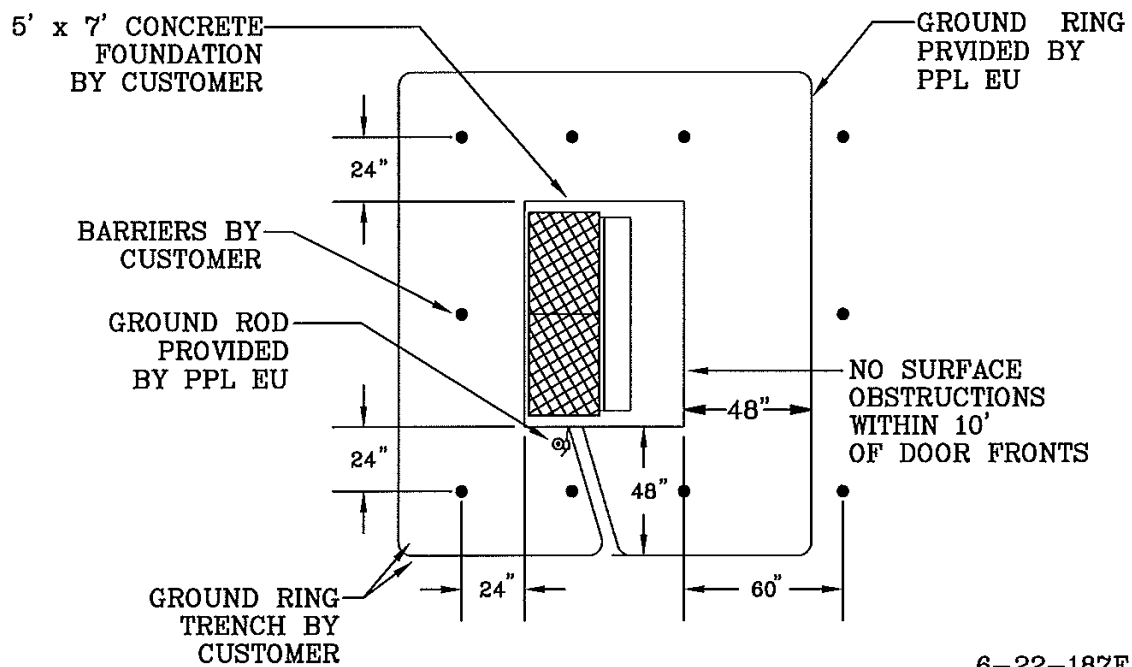
6-22-187C

**Typical Installation**



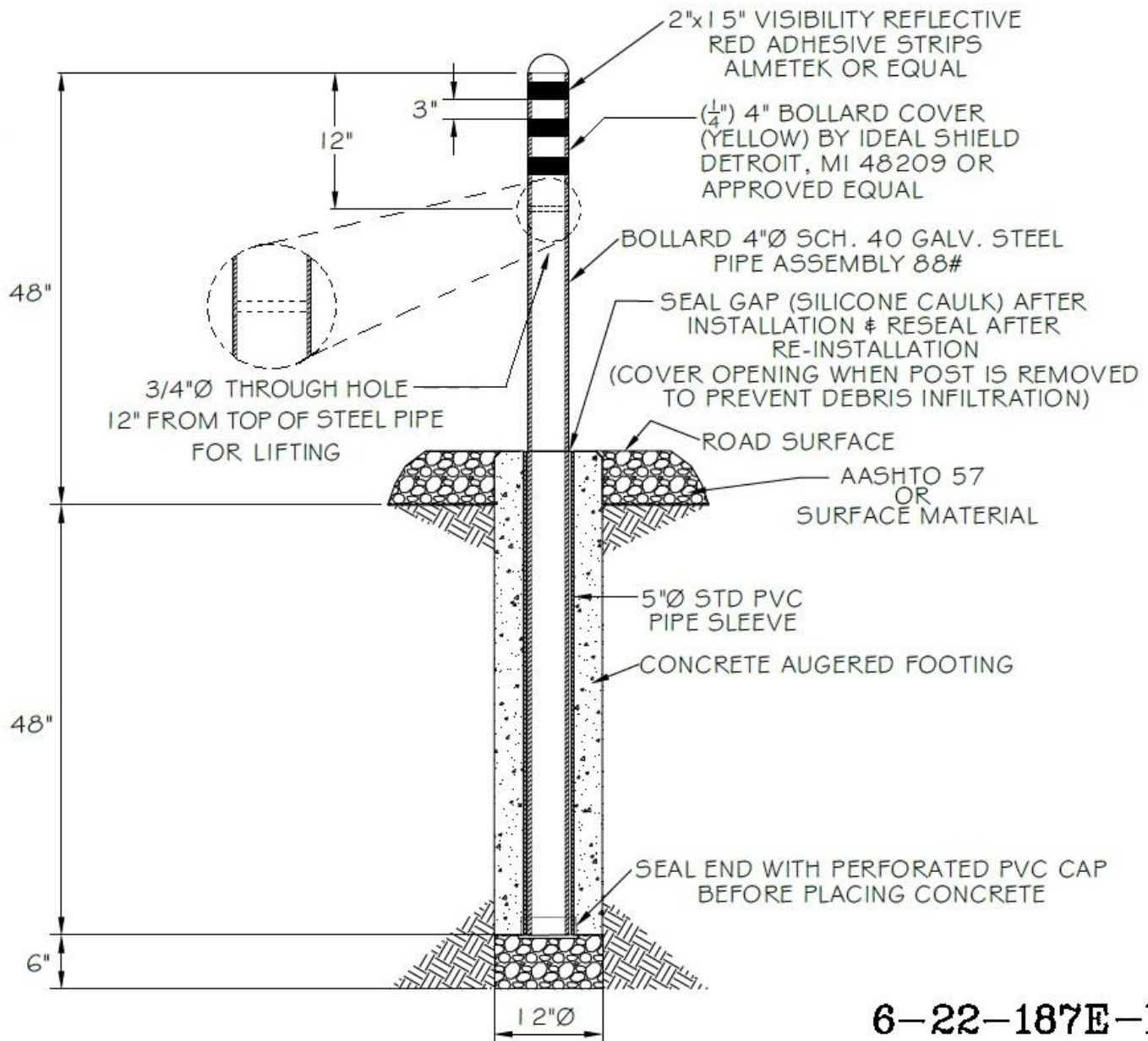


### Barrier and Grounding Details



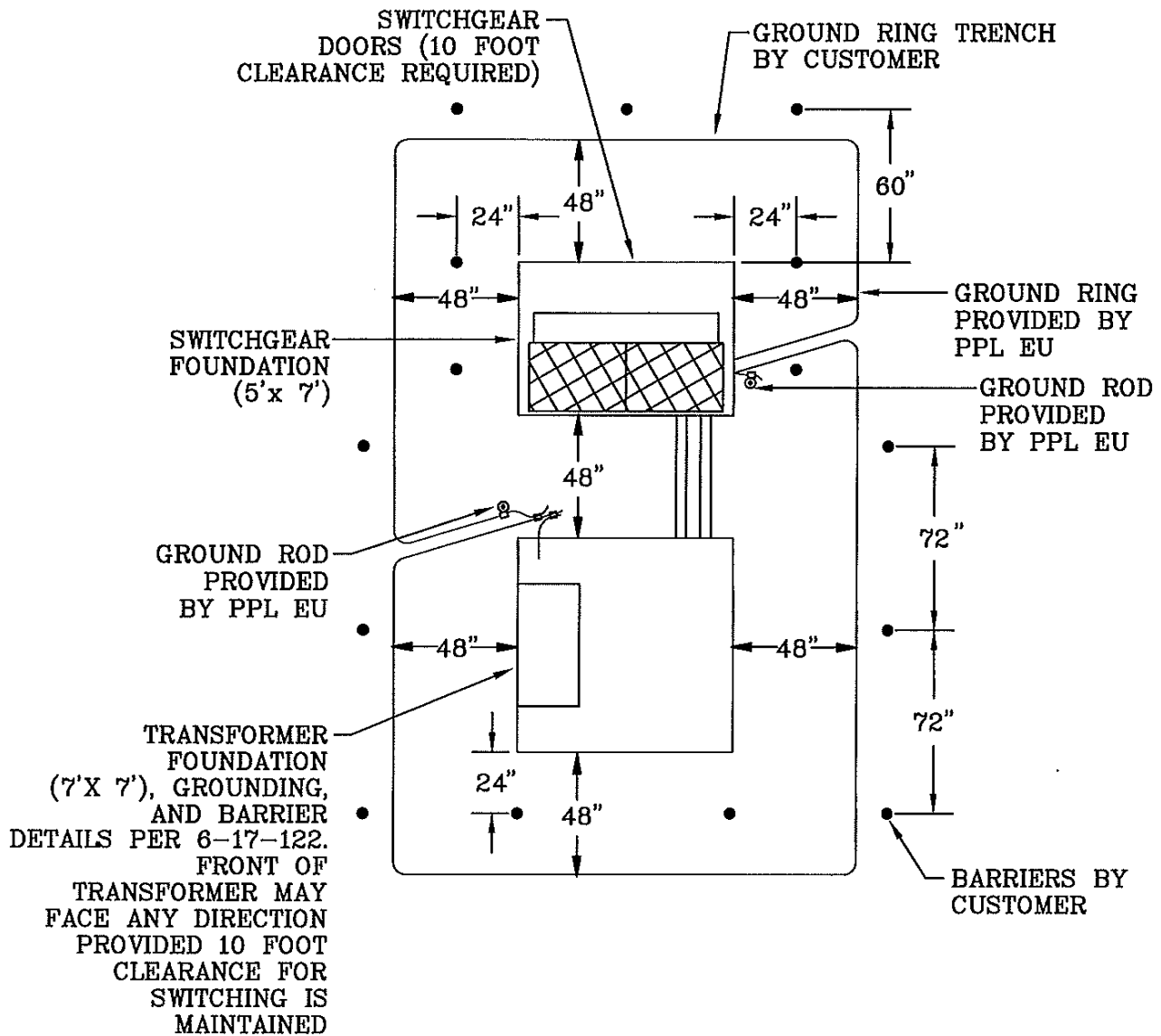
6-22-187E-A

## REMOVABLE BOLLARD



**6-22-187E-B**

**Barrier and Grounding Details  
Switchgear Foundation Adjacent Transformer Foundation**



**NOTE: TRANSFORMER FOUNDATION IS SET 4 INCHES DEEPER THAN SWITCHGEAR FOUNDATION**

6-22-187F



**Underground Sectionalizing  
Customer Reference Specification  
Install Three-Phase, 600 A Switchgear  
Foundation  
6-22-197**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
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**6-22-197 – Customer Reference Specification Install Three-Phase, 600 A Switchgear Foundation**

# **Installation Instructions For Three-Phase, 600 A Switchgear Foundation**

**Replaces CRS-1007  
406C-197**

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Underground Sectionalizing  
Customer Reference Specification  
Install Three-Phase, 600 A Switchgear  
Foundation  
6-22-197**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
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This specification contains basic information which defines PPL EU's material and design requirements for the installation of Three-Phase, 600 A switchgear foundations.

All details of this specification shall be strictly followed. Any deviation **must** be approved by a PPL EU engineer. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

### **Other Associated Specifications**

CRS 6-15-180..... Customer installed Duct Systems

CRS 6-18-115..... Installation Instructions for Customer installed Conduit Systems on PPL EU Terminal Poles

A-190974..... Concrete Specifications

CRS 6-17-122..... Three-Phase Pad-Mounted Transformer Installations 75 kVA to 2500 kVA Capacity

CRS 6-14-125..... Customer installed Screening of Pad-Mounted Devices

### **General Instructions for Typical Installation**

#### **1. Plot Plan**

The customer must provide PPL EU with a detailed plot plan showing location of building and property lines, service entrance switchgear, metering, and service entrance.

#### **2. Construction Plan**

A PPL EU engineer will provide the customer with a construction plan showing the proposed location of primary supply circuits, primary supply conduits, and 600 A switchgear foundation. Switchgear foundation must always be located in an area where there is free access for PPL EU's mobile crane and maintenance vehicles.

#### **3. Right-of-Way**

When the customer and PPL EU reach final agreement on location of electric facilities, the customer signs associated agreements and grants necessary right-of-way. Construction by PPL EU will not proceed until these documents are completed by the customer.

#### **4. Precast Foundation**

The customer's contractor is responsible for purchasing the precast foundation for the 600 A switchgear. A list of PPL EU approved suppliers is contained on page 89. Contractor must coordinate site preparations with desired delivery date. If site preparations are complete, supplier will set foundation in final position. The contractor must provide a clear and firm approach to the point of delivery

## **5. Excavation for Switchgear Foundation**

The customer's contractor is responsible for the excavation to install the foundation and for backfill afterwards. The excavation should be at least 9 feet by 15 feet by 5 feet deep. See Note 7 for ground ring excavation.

Note: Actual excavation depth may vary from site to site depending upon difference between existing and final grade at time of delivery.

An 8 inch layer of #1B crushed stone is spread to level the bottom of the excavation and act as a French drain. The bottom must be well tamped and level.

## **6. Finished Grade**

Finished grade around the switchgear must be approximately 4 inches below top surface of the foundation and sloped away. Never grade the area surrounding foundation in such a way that it forms a swale where ground water will collect.

## **7. Excavation for Ground Ring**

The customer's contractor digs trench around foundation (2 feet deep and 4 feet off sides) for installation of ground ring provided by PPL EU. The contractor notifies PPL EU when trench is opened. After PPL EU installs grounding, the contractor backfills trench.

## **8. Conduit System**

The customer's contractor installs conduit systems in accordance with PPL EU construction plan. All conduits must enter foundation through wall knock-out areas at locations specified by PPL EU engineer. Never penetrate floor or corners. PPL EU engineer will specify number and size of conduits to be installed.

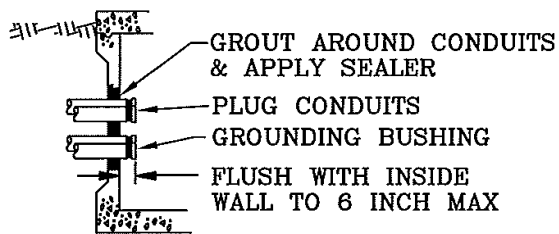
Contractor must use one of the following methods to install conduit:

- A. Hot dipped galvanized steel conduit (rigid or intermediate grade) directly buried in earth. All threaded couplings must be tightly joined using plumbers Teflon tape or similar joint compound designed to stop water leaks. All bends must have at least 36 inch radius. All steel conduits must have grounding bushings at foundation.
- B. Use type EB or DB PVC conduit encased in a concrete envelope as specified in 6-15-180. All joints must be tightly sealed using the appropriate solvent cement. All 90° bends must be hot dipped galvanized steel (rigid or intermediate grade) with at least a 36 inch radius. Concrete must also encase steel bends to prevent cable pulling tensions causing breakage at steel-to-plastic adaptors. All plastic conduit must have bell-ends at the foundation.

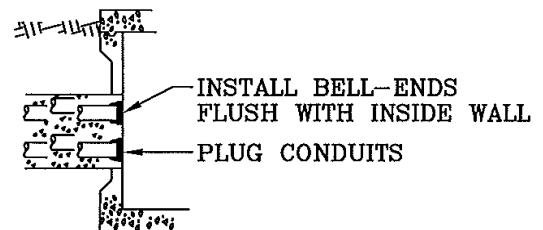
After installation, the contractor must clean debris from the ducts by pulling a stiff bristled brush and some clean rags through each conduit. A fish line must be provided in each conduit and all conduit ends must be temporarily plugged to keep them clean and dry.

Regardless of which conduit installation method is used, contractor must seal and waterproof foundation knock-out area around the conduit penetration.

## 9. Notification to PPL EU of Foundation Delivery Time



**Steel Conduits** 6-22-197A



**PVC-Encased** 6-22-197B

It is the customer's responsibility to ensure that precaster notifies PPL EU 24 hours prior to delivery to job site. PPL EU representative will be at job site during precaster's permanent placement of foundation. All approved precasters have names and phone numbers of appropriate PPL EU personnel to be notified.

## 10. Protective Barriers

It is the customer's responsibility to install protective barriers. Barriers are required when the switchgear is located in an area exposed to vehicular traffic. Barriers must be located and installed in accordance with the PPL EU construction plan. All protective barriers must be removable bollards (constructed as or equivalent to 6-22-197E-B)

## 11. Clearances

The minimum clearances shown in this specification were set by PPL EU for operating and maintenance purposes. It is the customer's responsibility to comply with the National Electric Code (NEC), local municipal, fire insurance regulations and any other applicable code regarding the location of electrical equipment and building facilities. Any required safeguards, such as barriers, are installed and maintained by customer.

## 12. Cover and Concealment

- 12.1 The customer must keep the area above the switchgear clear of obstructions. This includes overhanging tree limbs which may block crane access to the switchgear.
- 12.2 The customer may elect to install shrubbery screening or concealment fences. All construction and maintenance work must be performed by the customer. Minimum clearances to the switchgear are shown in CRS 6-14-125. Customer must secure PPL EU approval **before** concealing the switchgear.



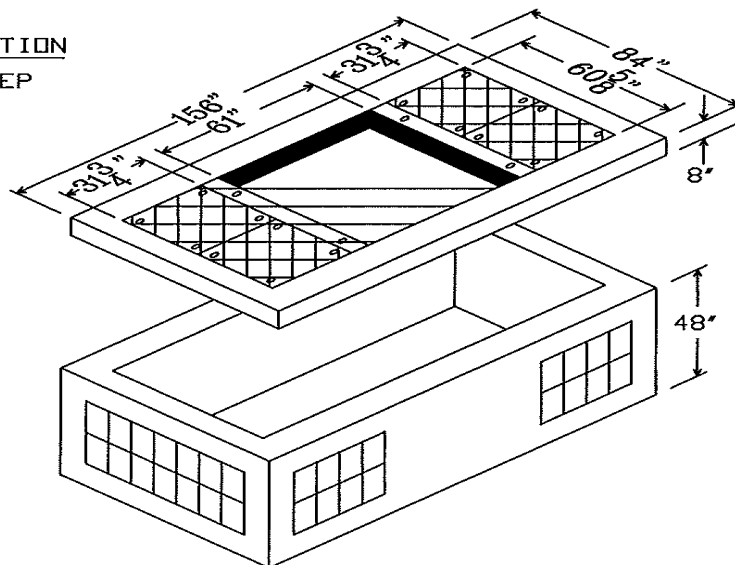
### 13. Order Information

Order from these approved suppliers only. Foundation same as PPL EU CID #161253 per PPL EU Drawing E-183127. Allow approximately 3 days to coordinate delivery.

- |  |  |
|--|--|
| <p>1. Oldcastle Precast<br/>P.O. Box 210<br/>514 Township Line Road<br/>Telford, PA 18969<br/>(215) 257-8081</p> | <p>4. Monarch Precast Concrete Corp.<br/>425 North Dauphin Street<br/>Allentown, PA 18109-2199<br/>(610) 435-6746</p>                        |
| <p>2. A.C. Miller Concrete Products, Inc.<br/>Bridge Street<br/>Spring City, PA 19475<br/>(610) 948-4600</p>     | <p>5. Modern Precast Concrete Products<br/>&amp; Construction Supplies<br/>2863 Brodhead Road<br/>Bethlehem, PA 18020<br/>(610) 997-3119</p> |
| <p>3. Monarch Products Co., Inc.<br/>385 Sipe Road<br/>York Haven, PA 17370-9705<br/>(717) 938-8303</p>          | <p>6. Scranton Craftsmen, Inc<br/>930 Dunmore Street<br/>Throop, PA 18512<br/>(800) 775-1479</p>   |

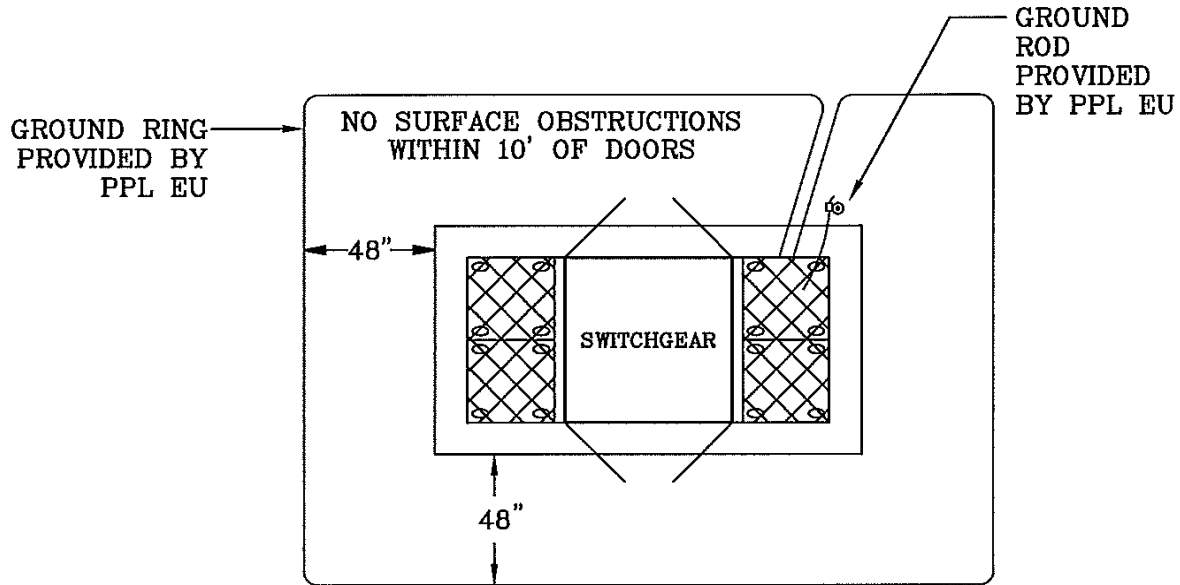
#### Customer--Installed Precast Foundation

MINIMUM EXCAVATION  
15' x 9' x 5' DEEP  
NOTE 5

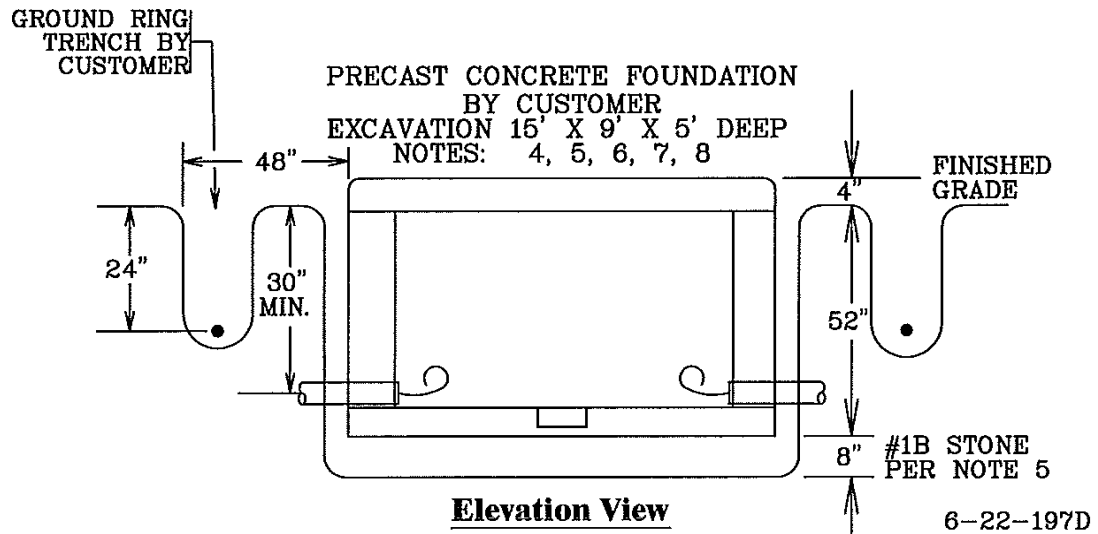


6-22-197C

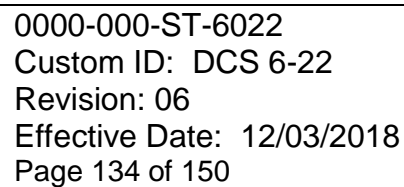
**Typical Installation**



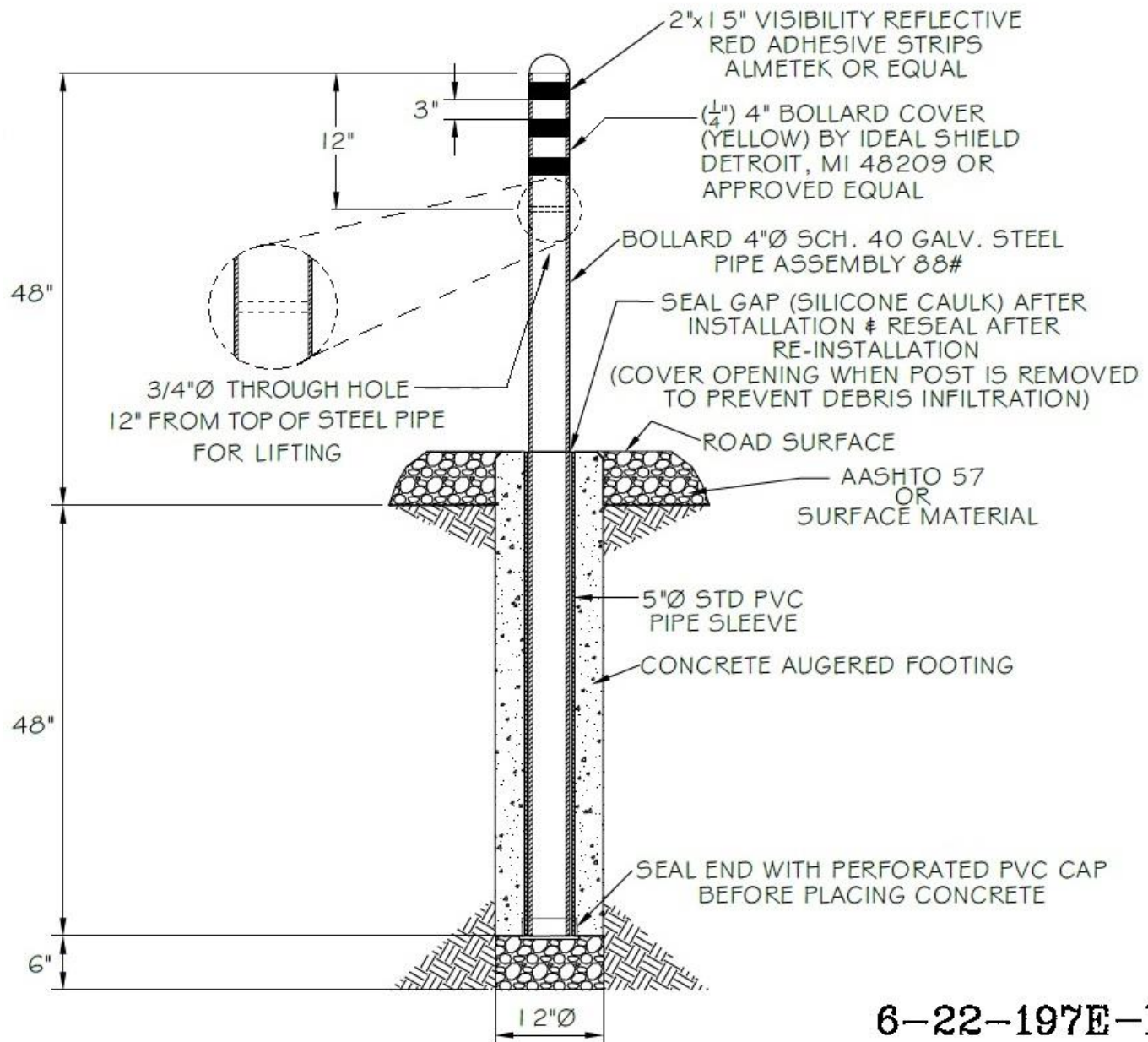
**Plan View**



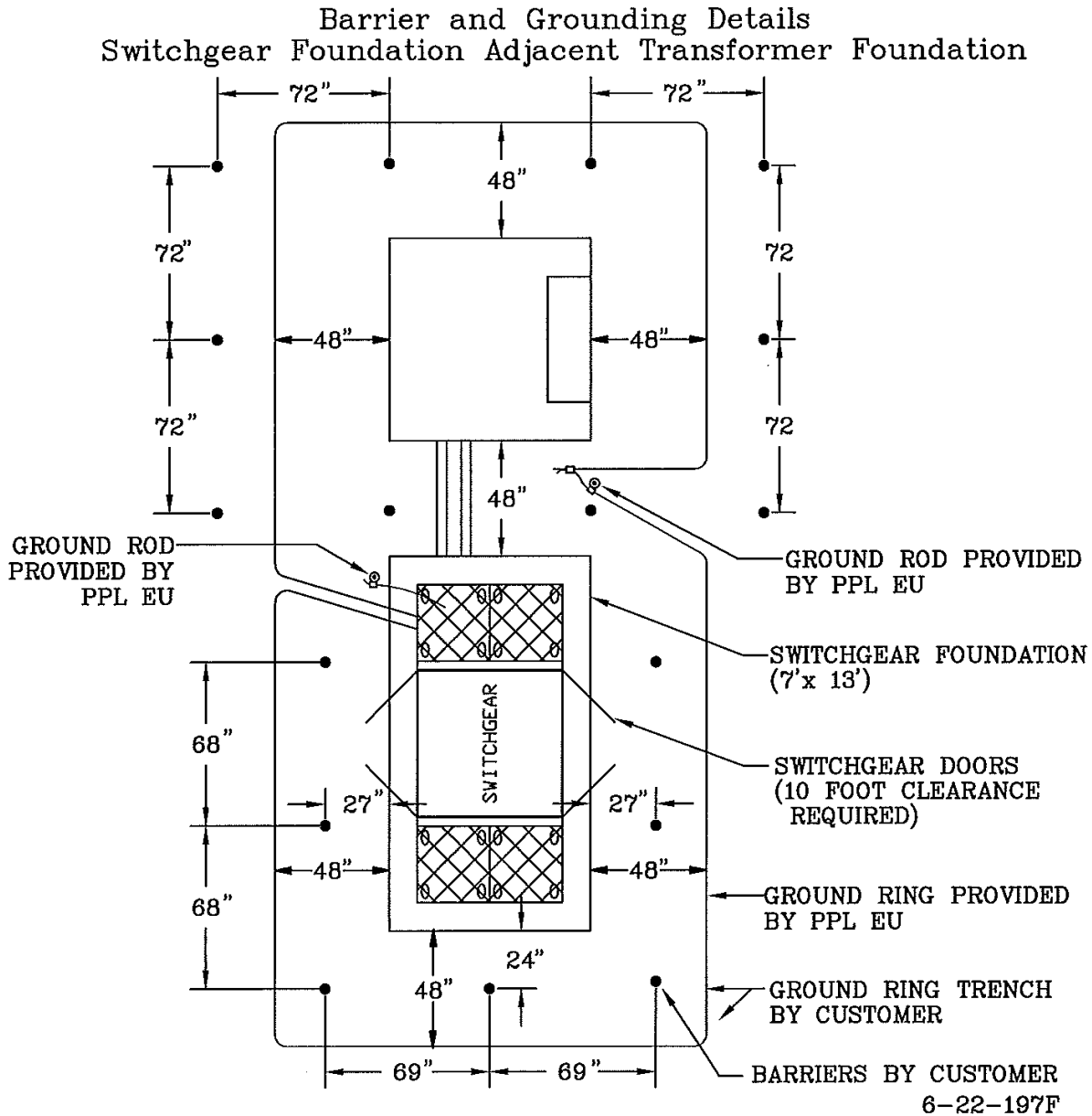
**Elevation View**



## REMOVABLE BOLLARD



**6-22-197E-B**



**Notes:**

1. See CRS 6-17-122 for barrier location when transformer is located in a parking lot adjacent to a building.
2. See CRS 6-17-22 for transformer foundation and grounding details. Front of transformer may face any direction provided 10 foot clearance for switching is maintained.



**Underground Sectionalizing  
Customer Reference Specification  
Ultra Service Park  
Precast Concrete Foundation  
6-22-198**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
Page 137 of 150

**6-22-198 – Customer Reference Specification Ultra Service Park Precast Concrete Foundation**

**Installation Instructions For  
Precast Concrete Foundation  
For Three-Phase Pad-Mounted  
Manual or Automatic  
Source Transfer Switch**

**Replaces 406C-198**

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Underground Sectionalizing  
Customer Reference Specification  
Ultra Service Park  
Precast Concrete Foundation  
6-22-198**

0000-000-ST-6022  
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Effective Date: 12/03/2018  
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This specification contains basic information which defines PPL EU's material and design requirements for the installation of precast concrete foundations.

All details of this specification shall be strictly followed. Any deviation **must** be approved by a PPL EU engineer. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

### **Other Associated Specifications**

A-168735..... Customer installed Duct Systems

CRS 6-18-115..... Installation Instructions for Customer installed Conduit Systems on PPL EU Terminal Poles

A-190974..... Concrete Specifications

CRS 6-17-122..... Three-Phase Pad-Mounted Transformer Installations 75 kVA to 2500 kVA Capacity.

CRS 6-14-125..... Customer installed Screening of Pad-Mounted Devices

### **General Instructions for Typical Installation**

#### **1. Plot Plan**

The customer must provide PPL EU with a detailed plot plan showing location of building and property lines, service entrance switchgear, metering, and service entrance. This should be sufficiently ahead of actual start of building construction to allow PPL EU to engineer project, preferably during building design stage to allow input on service location.

#### **2. Construction Plan**

A PPL EU engineer will provide the customer with a construction plan showing the proposed location of primary supply circuits, primary supply conduits, and 600 A switchgear. The switchgear foundation must always be located in an area where there is free access for PPL EU's mobile crane and maintenance vehicles.

#### **3. Right-of-Way**

When the customer and PPL EU reach final agreement on location of electric facilities, the customer signs associated agreements and grants necessary right-of-way. Construction by PPL EU will not proceed until these documents are completed by the customer.



#### **4. Precast Foundation**

The customer's contractor is responsible for purchasing the precast foundation for the 600 A switchgear. A list of PPL EU approved suppliers is contained on page 97. Contractor must coordinate site preparations with desired delivery date. If site preparations are complete, supplier will set foundation in final position. The contractor must provide a clear and firm approach to the point of delivery.

#### **5. Excavation for Switchgear Foundation**

The customer's contractor is responsible for the excavation to install the foundation and for backfill afterwards. The excavation should be at least 9 feet by 15 feet by 8-½ feet deep. See Note 7 for ground ring excavation.

Note: Actual excavation depth may vary from site to site depending upon difference between existing and final grade at time of delivery.

A 10 inch layer of #1B crushed stone is spread to level the bottom of the excavation and act as a French drain. The bottom must be well tamped and level.

#### **6. Finished Grade**

Finished grade around the switchgear must be a minimum of 4 inches below top surface of the foundation and sloped away. **Never** grade the area surrounding foundation in such a way that it forms a swale where ground water will collect.

#### **7. Excavation for Ground Ring**

The customer's contractor digs trench around foundation (2 feet deep and 4 feet off sides) for installation of ground ring provided by PPL EU. The contractor notifies PPL EU when trench is opened. After PPL EU installs grounding, the contractor backfills trench.

#### **8. Conduit System**

The customer's contractor installs conduit systems in accordance with PPL EU construction plan. All conduits must enter foundation through wall knock-out areas at locations specified by PPL EU engineer. Never penetrate floor or corners. PPL EU engineer will specify number and size of conduits to be installed.

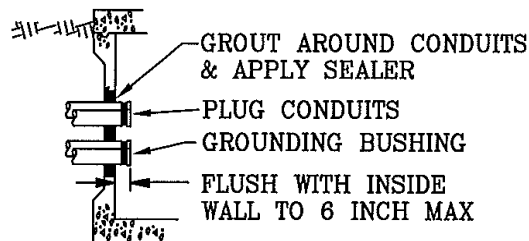
Contractor must use one of the following methods to install conduit:

- A. Hot dipped galvanized steel conduit (rigid or intermediate grade) directly buried in earth. All threaded couplings must be tightly joined using plumbers Teflon tape or similar joint comlb designed to stop water leaks. All bends must have at least 36 inch radius. All steel conduits must have grounding bushings at foundation.

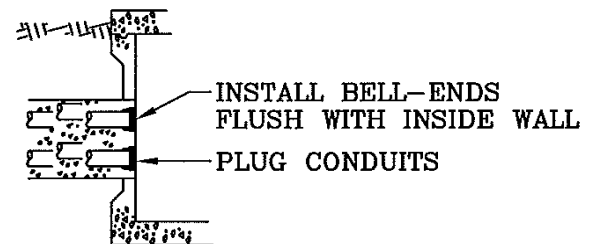
- B. Use type UL approved EB or DB PVC conduit encased in a concrete envelope as specified in A-168735. All joints must be tightly sealed using the appropriate solvent cement. All 90° bends must be hot dipped galvanized steel (rigid or intermediate grade) with at least a 36 inch radius. Concrete must also encase steel bends to prevent cable pulling tensions causing breakage at steel-to-plastic adaptors. All plastic conduit must have bell-ends at the foundation.

After installation, the contractor must clean debris from the ducts by pulling a stiff bristled brush and some clean rags through each conduit. A fish line (mule tape) must be provided in each conduit and all conduit ends must be temporarily plugged to keep them clean and dry.

Regardless of which conduit installation method is used, contractor must seal and waterproof foundation knock-out area around the conduit penetration.



**STEEL CONDUITS** 6-22-198A



**PVC-ENCASED** 6-22-198B

## 9. Notification to PPL EU of Foundation Delivery Time

It is the customer's responsibility to ensure that precaster notifies PPL EU 24 hours prior to delivery to job site. PPL EU representative may be at job site during precaster's permanent placement of foundation. All approved precasters have names and phone numbers of appropriate PPL EU personnel to be notified.

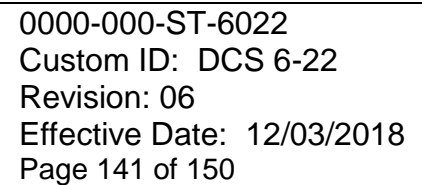
## 10. Protective Barriers

It is the customer's responsibility to install protective barriers. Barriers are required when the switchgear is located in an area exposed to vehicular traffic. Barriers must be located and installed in accordance with the PPL EU construction plan. All protective barriers must be removable bollards (constructed as or equivalent to 6-22-198E-B).

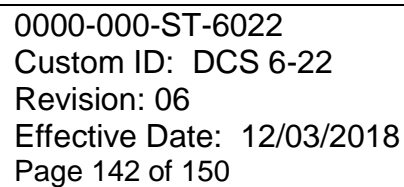
## 11. Clearances

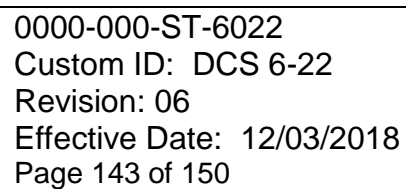
The minimum clearances shown in this specification were set by PPL EU for operating and maintenance purposes. It is the customer's responsibility to comply with the National Electric Code (NEC), local municipal, fire insurance regulations and any other applicable code regarding the location of electrical equipment and building facilities. Any required safeguards, such as barriers, are installed and maintained by customer.

## 12. Cover and Concealment

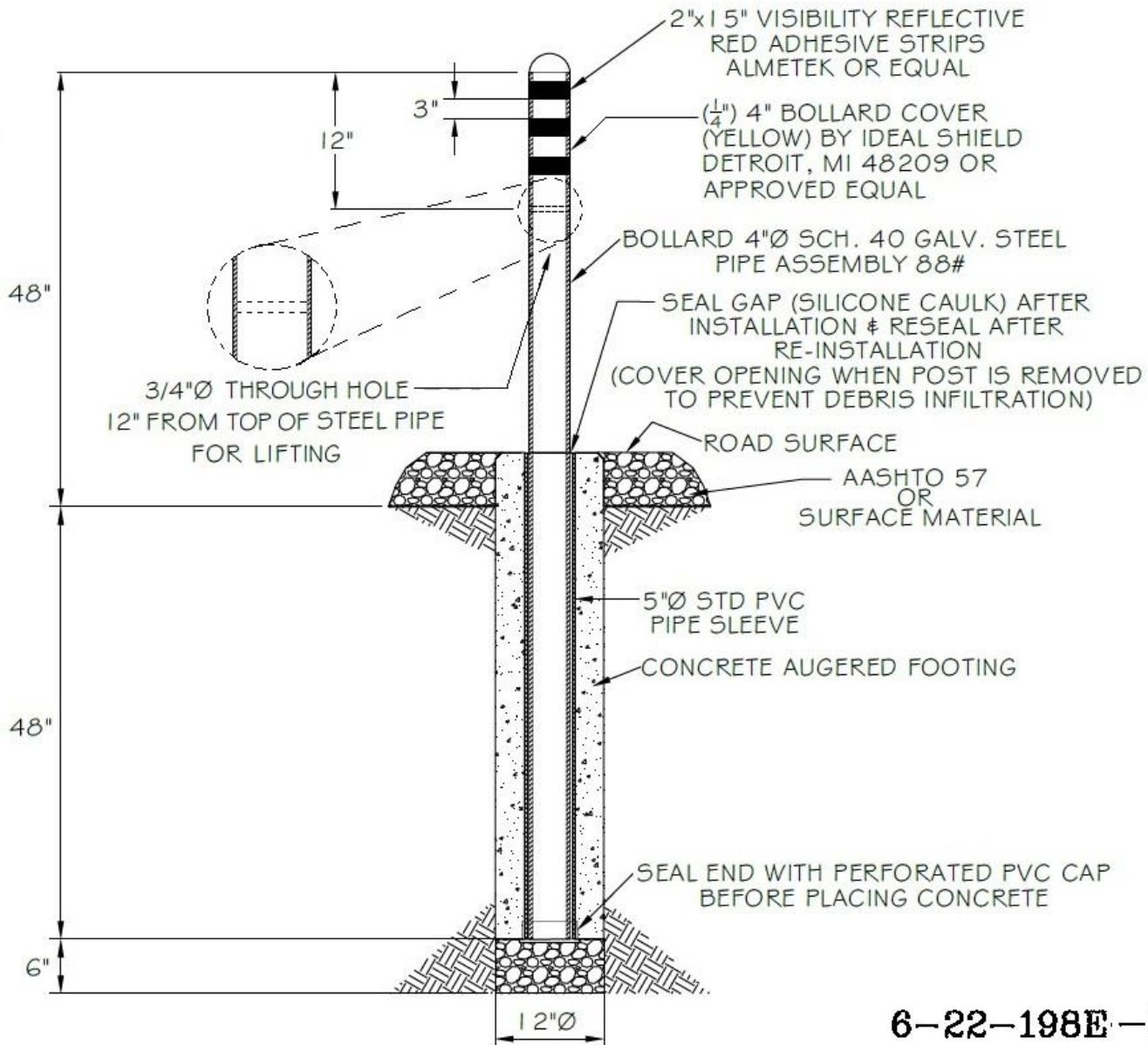


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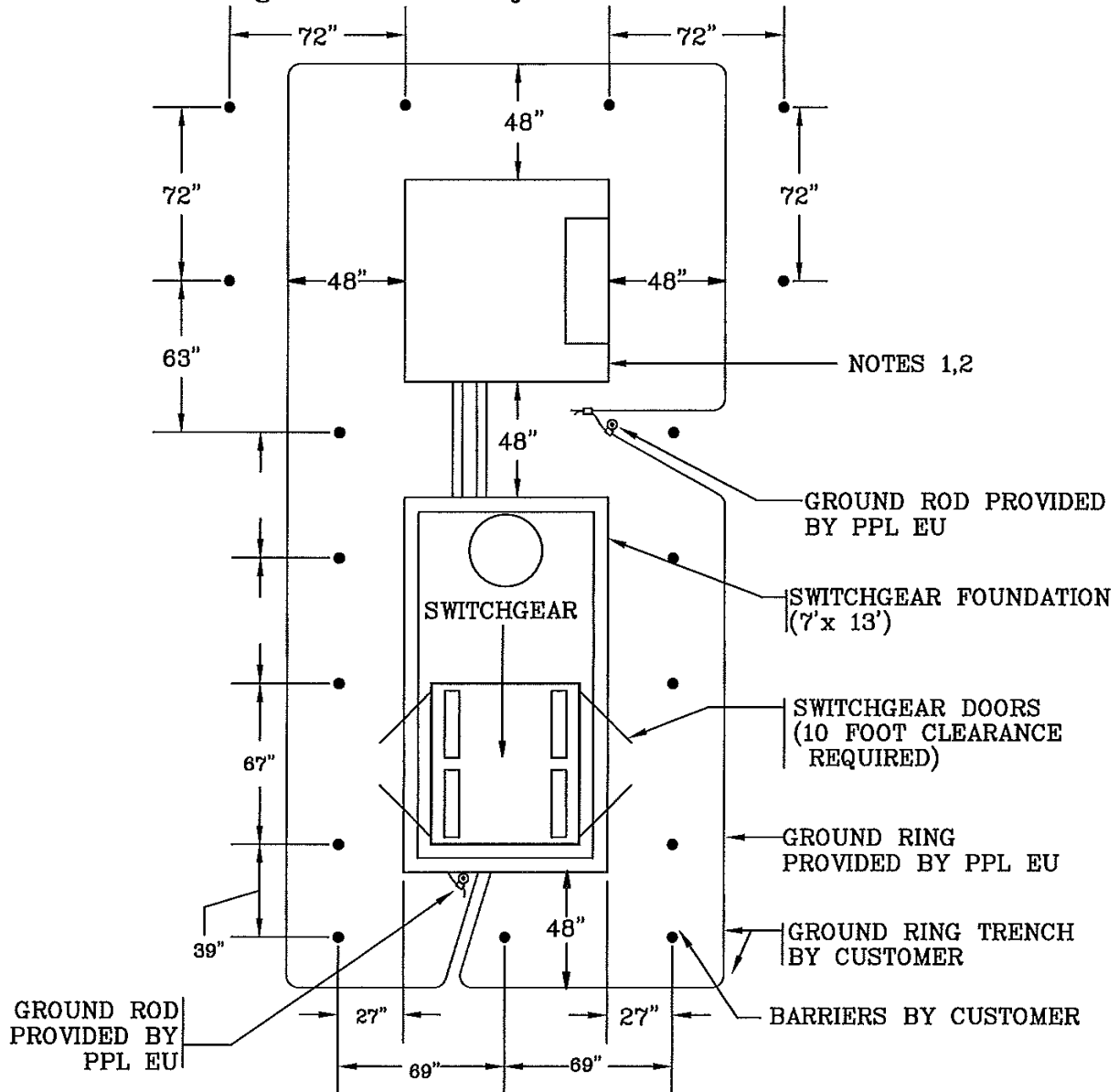




## REMOVABLE BOLLARD



**Barrier and Grounding Details  
Switchgear Foundation Adjacent Transformer Foundation**



**NOTE:** (1) SEE 6-17-122 FOR BARRIER LOCATION WHEN TRANSFORMER IS LOCATED IN A PARKING LOT ADJACENT TO A BUILDING.

(2) SEE 6-17-022 FOR TRANSFORMER FOUNDATION AND GROUNDING DETAILS. FRONT OF TRANSFORMER MAY FACE ANY DIRECTION PROVIDED 10 FOOT CLEARANCE FOR SWITCHING IS MAINTAINED.

6-22-198F





**Underground Sectionalizing  
Customer Reference Specification  
Ultra Service Park  
Typical Utility Plan  
6-22-199**

0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
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**6-22-199 – Customer Reference Specification PPL EU Ultra Service Park Typical Utility Plan**

## **PPL EU Ultra Service Park Typical Utility Plan**

**Replaces CRS-1008  
406C-199**

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Underground Sectionalizing  
Customer Reference Specification  
Ultra Service Park  
Typical Utility Plan  
6-22-199**

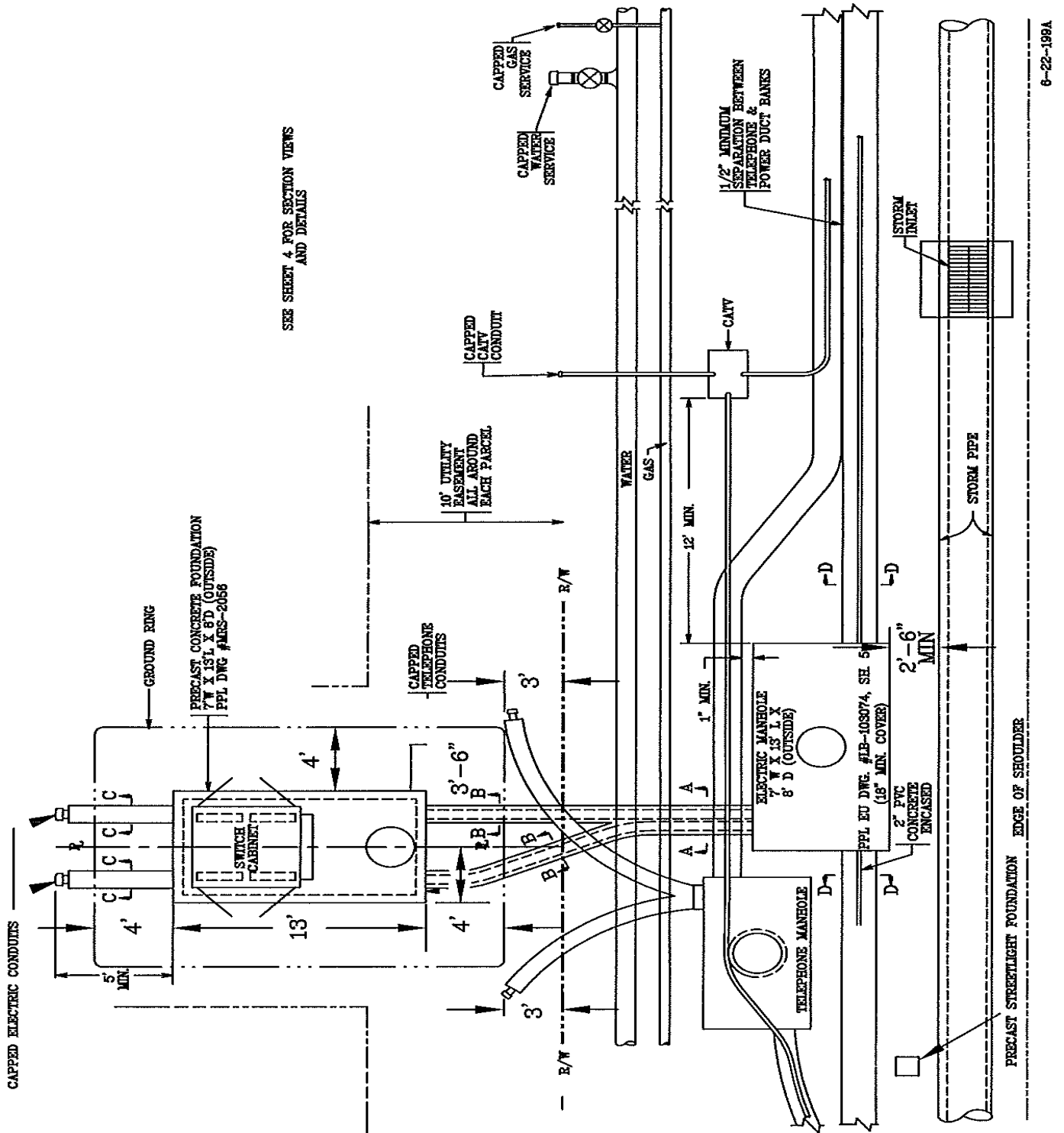
0000-000-ST-6022  
Custom ID: DCS 6-22  
Revision: 06  
Effective Date: 12/03/2018  
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This specification and the specifications listed below define customer responsibilities and requirements for underground service to ultra service parks.

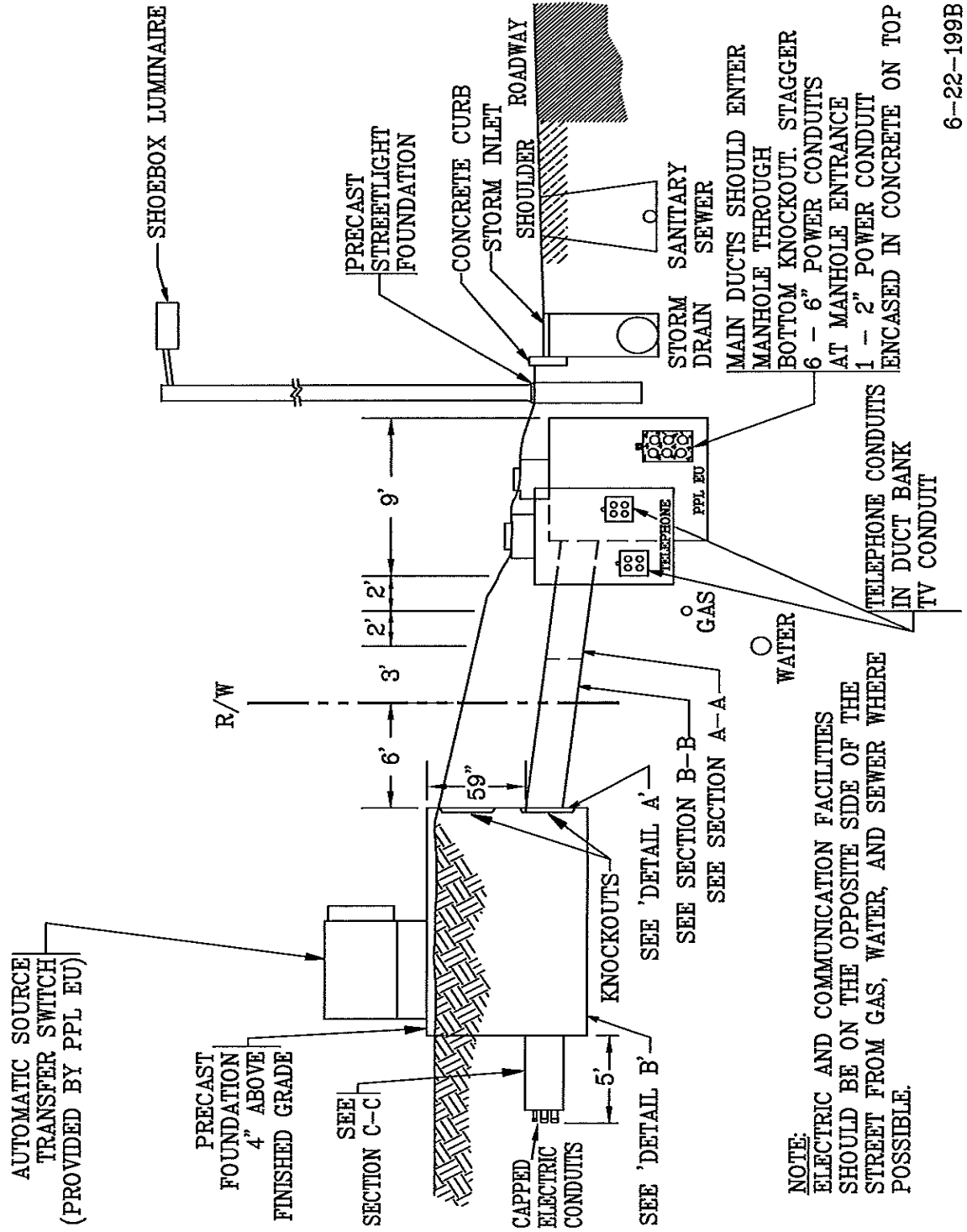
All details of these specifications and the construction plan must be strictly followed. Any deviation must be approved by a PPL EU engineer. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

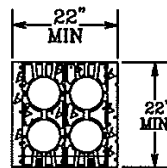
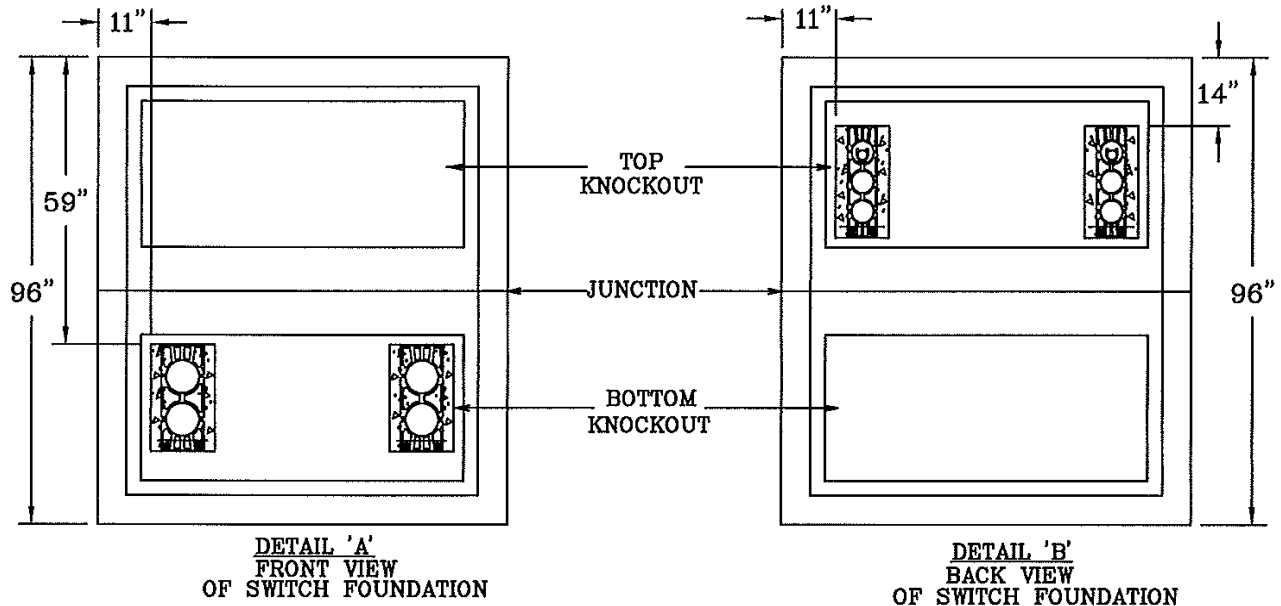
**Reference Specifications:**

A-168735	Installation of Duct System
A-168712	Installation of Precast Manhole and Switchgear Foundation
A-190974	Concrete Specification
CRS 6-18-115	Installation Instructions for Customer installed Conduit Systems on PPL EU Terminal Poles
CRS 6-22-198	Installation Instructions for Precast Concrete Foundation for Three-Phase Pad-Mounted Manual or Automatic Source Transfer Switch

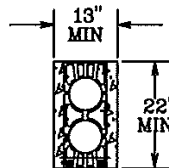


SEE PAGE 104 FOR SECTION VIEWS  
AND DETAILS

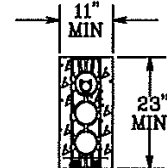




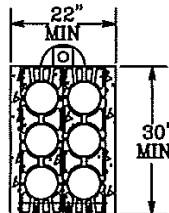
**SECTION A-A**  
4 - 6" CONCRETE ENCASED  
TYPE DB OR TYPE EB  
POWER CONDUITS  
6" PLASTIC DUCT SPACERS  
PROVIDE 2" SEPARATION  
BETWEEN CONDUITS



**SECTION B-B (SEE NOTE 3)**  
2 - 6" CONCRETE ENCASED  
TYPE DB OR TYPE EB  
POWER CONDUITS  
6" PLASTIC DUCT SPACERS  
PROVIDE 2" SEPARATION  
BETWEEN CONDUITS



**SECTION C-C**  
2 - 4" CONCRETE ENCASED  
TYPE DB POWER CONDUIT STUBS  
1 - 2" CONCRETE ENCASED  
TYPE DB POWER CONDUIT STUB  
4" PLASTIC DUCT SPACERS  
PROVIDE 1-1/2" SEPARATION  
BETWEEN CONDUITS



**SECTION D-D**  
6 - 6" CONCRETE ENCASED TYPE DB  
OR TYPE EB POWER CONDUITS  
(STAGGERED AT MANHOLE ENTRANCE)  
1 - 2" TYPE DB POWER CONDUIT  
ON TOP ENCASED IN 4" X 4" CONCRETE  
(MINIMUM)  
6" PLASTIC DUCT SPACERS PROVIDE 2"  
SEPARATION BETWEEN CONDUITS

**NOTES:**

1. PLACE #4 REINFORCING RODS ALONG AND ACROSS DUCT RUNS AS SPECIFIED BY A PPL ENGINEER.
2. A MINIMUM OF 3" OF CONCRETE IS REQUIRED AROUND THE OUTSIDE OF ALL CONDUITS.
3. USE 22-1/2° SWEEPS (WITH A 48" MIN. RADIUS BEND) TO FORM WYE SECTION OF DUCT RUN.
4. VIBRATE ALL FIELD POURED CONCRETE TO ELIMINATE AIR POCKETS.

6-22-199C