
ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information — Incomplete forms will be returned)

Contact Information:

Date: June 28, 2022

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Email: matthew.dewitt@dot.state.fl.us

Standard Plans:

Index Number: 641-020

Sheet Number (s): 1, 2, and 5 of 5

Index Title: CONCRETE CCTV POLE

Summary of the changes:

Sheet 1: Added new General Note 5 (Reference to Index 676-010 for additional details); Renumbered General Notes; Updated the Identification Tag callout reference to "7.G". ; Updated the Ground Mounted and Pole Mounted Cabinet details to show the Maintenance Service Slab in the CCTV POLE ASSEMBLY detail.

Sheet 2: Updated the Handhole with Cover callout reference to "8" in the CAMERA LOWERING DEVICE detail; Updated the ELEVATION details to show the Maintenance Service Slab.

Sheet 5: Updated the CONCRETE CCTV POLE GROUNDING detail to show the Maintenance Service Slab in the Ground Mounted and Pole Mounted Cabinet details; Updated the "Concrete Slab" callout to "Maintenance Service Slab"; Added 6" Apron and changed title to "PULL BOX" in DETAIL "A"; Added title "PRIAMARY GROUND ROD ASSEMBLY" to DETAIL "B".

Commentary / Background:

These proposed changes were developed based on implementing a maintenance service slab for ITS cabinets recommended during the TDH integration into statewide criteria. Language has also been added to Specification 676 for the maintenance service slab.

Other Affected Offices / Documents: (Provide name of person contacted)

- | Yes | No | |
|-------------------------------------|-------------------------------------|-----------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Other Standard Plans – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | FDOT Design Manual – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Basis of Estimates Manual – |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Standard Specifications – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Approved Product List – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Construction – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Maintenance – |

Origination Package Includes: (Submit package to Rick Jenkins)

- | Yes | N/A | |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Redline Mark-ups |
| <input type="checkbox"/> | <input type="checkbox"/> | Revised or Proposed Standard Plan Instruction (SPI) |
| <input type="checkbox"/> | <input type="checkbox"/> | Other Support Documents |

Implementation:

- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> | Design Bulletin (Interim) |
| <input type="checkbox"/> | DCE Memo |
| <input type="checkbox"/> | Program Mgmt. Bulletin |
| <input checked="" type="checkbox"/> | FY-Standard Plans (Next Release) |

Contact the Roadway Design Office for assistance in completing this form

Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us

GENERAL NOTES:

1. Work this Index with Specification 641.
2. This Index is considered fully detailed and no shop drawings are necessary. Submit Shop Drawings for minor modifications not detailed in the Plans.
3. Provide either round or 12-sided Poles.
4. See Index 635-001 for additional details for Pull Boxes.

**ADDED NEW GENERAL NOTE 5:
See Index 676-010 for cabinet
installation details.**

6.5. Materials:

- A. Pole: Use Class VI concrete with 6 ksi minimum strength at transfer.
- B. Prestressing Strands: ASTM A416, Grade 270 low relaxation.
- C. Reinforcing Steel: ASTM A615, Grade 60
- D. Spiral Reinforcing: ASTM A1064 Cold-Drawn
- E. Bolts: ASTM F1554, Grade 55
Nuts: ASTM A563, Grade A Heavy Hex
Washers: ASTM F436
- F. Steel plates and Pole Cap: ASTM A36 or ASTM A709, Grade 50
- G. Galvanization: Bolts, nuts and washers: ASTM F2329
All other steel: ASTM A123

7.6. Fabrication:

- A. Cut the tip end of the prestressed strand first or simultaneously with the butt end.
- B. For spiral reinforcing, one turn is required for spiral splices and two turns are required at the top and bottom of poles.
- C. For Reinforcing Steel, lap splice to consist of a 3'-0" lap length at each splice. No more than two opposing rebar to be spliced at the same cross section. Stagger lap splices as needed.
- D. Provide a Class 3 surface finish in accordance with Specification 400.
- E. Provide a 1" minimum cover.
- F. Provide handhole and coupler cover plates made of non-corrosive materials. Attach cover plates to poles using lead anchors or threaded inserts embedded in the poles in conjunction with round headed chrome plated screws.
- G. Provide Identification Markings on the poles where indicated on the following sheets. Include the following information using inset numerals with 1" height or as approved in the Producers' Quality Control Program:

Financial Project ID
Pole Manufacturer
Pole Length

- H. Tie ground wires to the interior of reinforcing steel as necessary to prevent displacement during concreting operations.
- I. Storage, Handling and Erection locations shown may vary within ± 3".

8.7. Pole Installation:

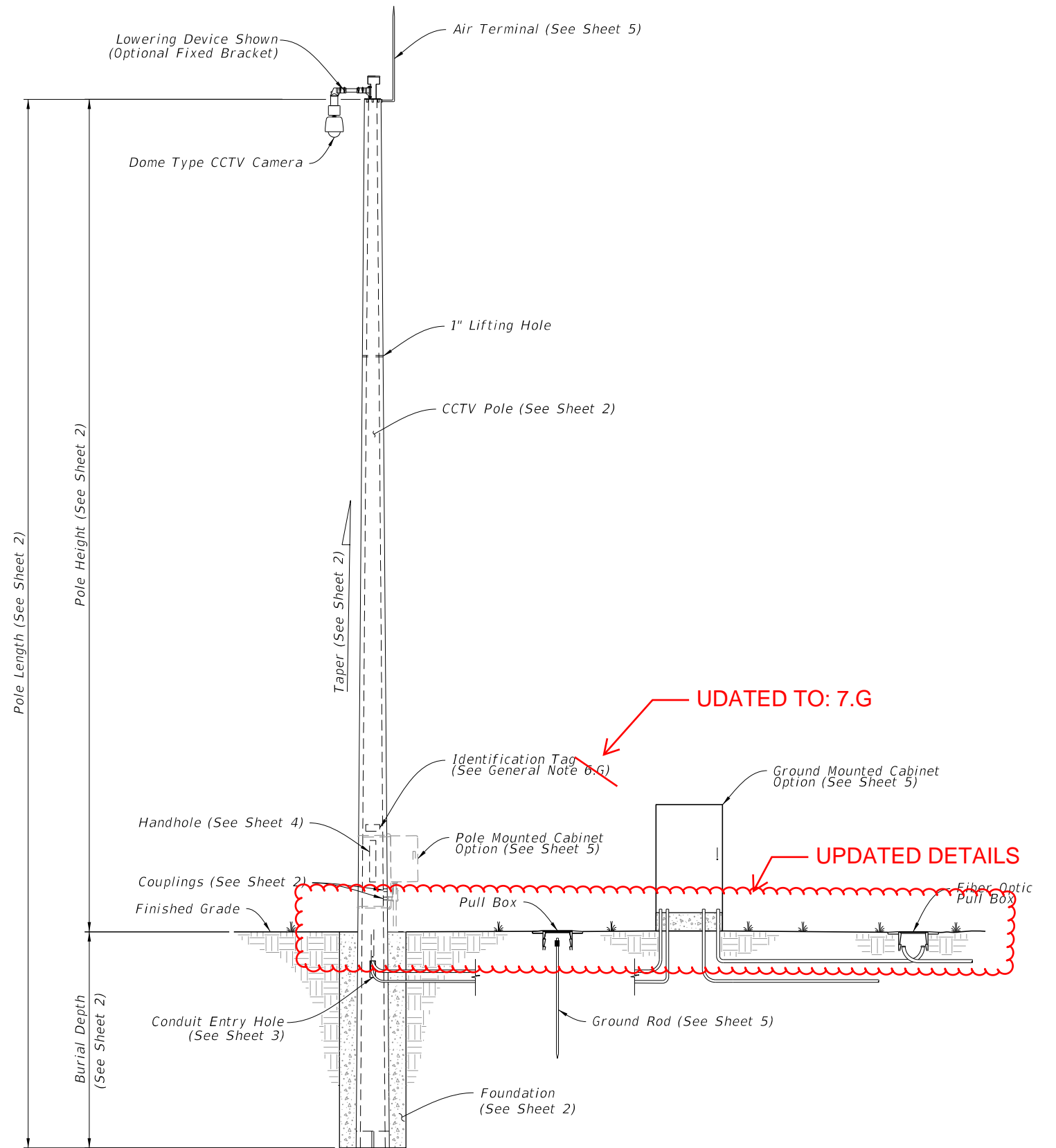
- A. Install the Pole plumb.
- B. Install Pole with the handhole located away from approaching traffic.

9.8. Cabinet Installation:

- A. Splice fiber optic cables in cabinet to preterminated patch panel.
- B. Furnish and install Surge Protection Devices (SPDs) on all cabling in cabinet.
- C. Furnish and install secondary SPDs protection on outlets for equipment in cabinet.
- D. Ensure that all electronic equipment power is protected and conditioned with SPDs.
- E. Ensure that equipment cabinet is bonded to CCTV pole grounding system.
- F. Install the pole mounted cabinet with the hinges next to the pole.
- G. Sizes and types of conduits and innerducts for network communications between the pullbox and cabinet are stated in the Contract Documents.

10.9. Lowering Device Installation:

- A. Place the lowering cable that moves within the pole in an interior conduit to prevent it from tangling or interfering with any electrical wire that is in the pole. Ensure that any electrical wire within the pole is routed securely and free from slack.
- B. Mount lowering arm perpendicular to the roadway or as shown in the plans. Position CCTV pole so that the camera can be safely lowered without requiring lane closures.
- C. Coordinate all lowering device hardware requirements (including Tenon, Tenon mounting plates, parking stand, etc.) with lowering device manufacturer.



CCTV POLE ASSEMBLY

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| LAST REVISION | DESCRIPTION: |
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| 11/01/21 | ← 11/01/22 |

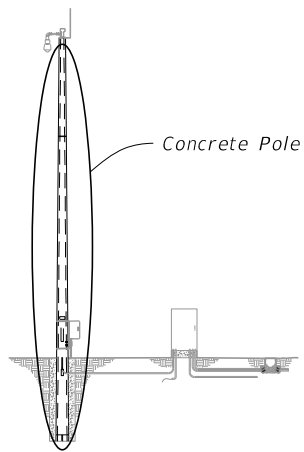


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CONCRETE CCTV POLE

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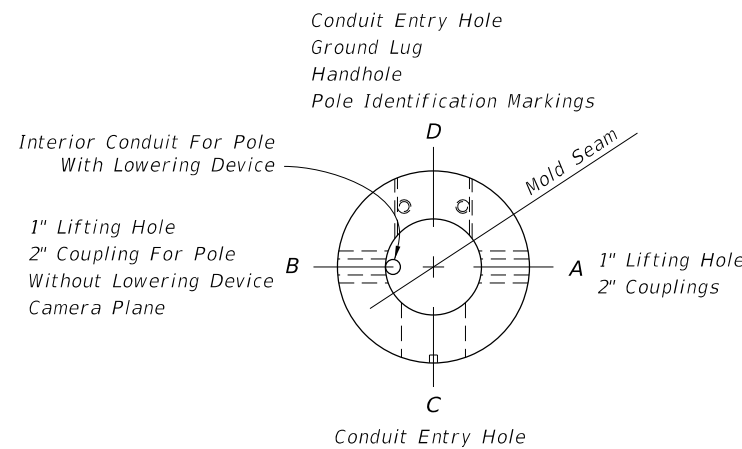
NOTES:

1. Diameter of 12-sided poles are measured flat to flat.
2. Total Taper applies to pole, strands and reinforcing.
3. For 12-Sided Pole and Round Roles Option 2, Stress prestressed strand to 70% of Ultimate before transfer. For Round Pole Option 1, stress prestressed strand to 60% of Ultimate before transfer.
4. Pole Design Tables, Burial Depth is based on level ground (flatter than 1:5). Increase the burial depth in accordance with the Additional Burial Depth Due To Ground Slope table for foundations with slopes 1:5 and steeper. Use the higher value for slope or diameter values that fall between those shown on the table.

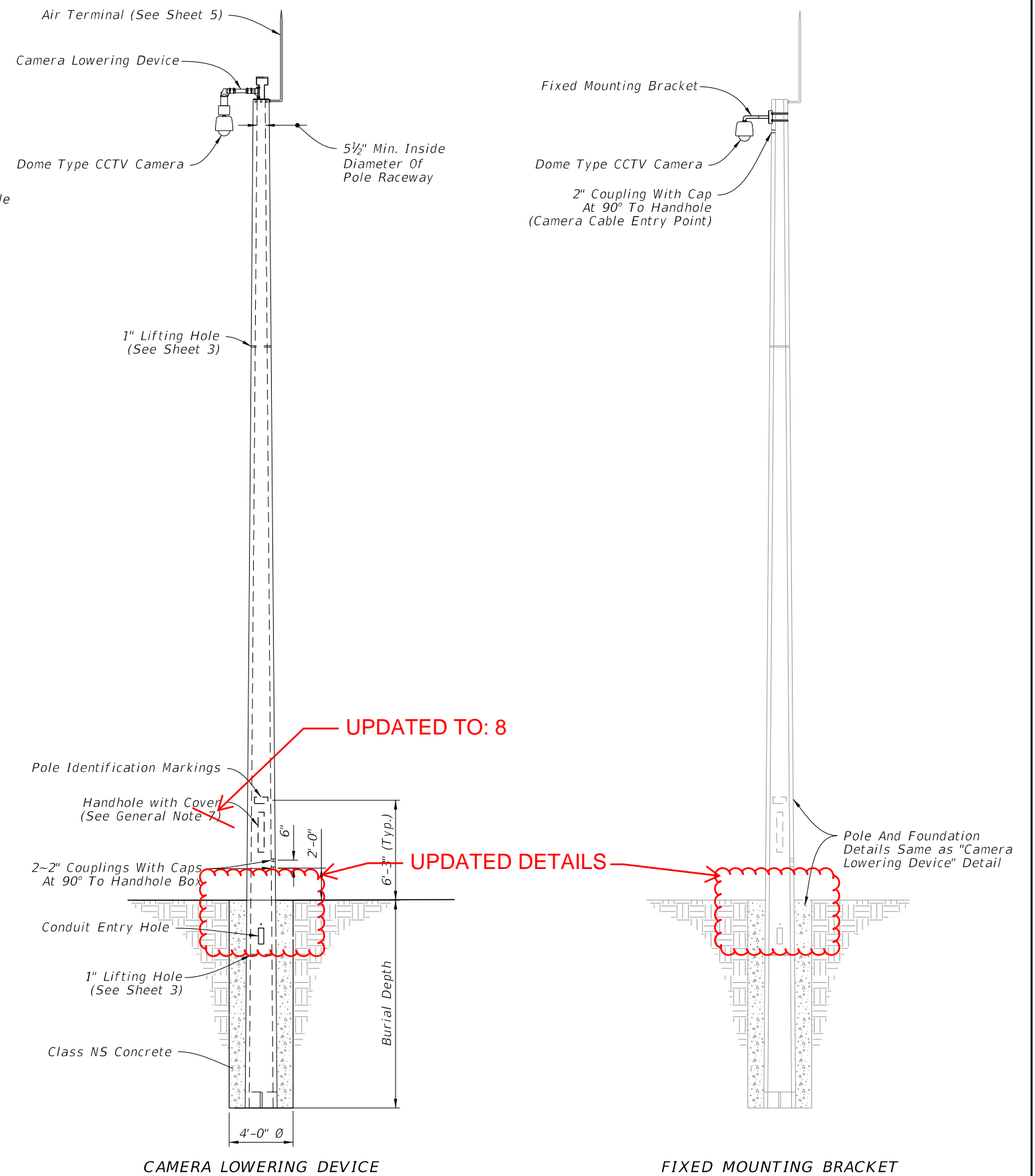
| ADDITIONAL BURIAL DEPTH DUE TO GROUND SLOPE | |
|--|--------------------------------|
| Ground Slope | Additional Burial Depth (feet) |
| 1:5 | 3 |
| 1:4 | 4 |
| 1:3 | 5 |
| 1:2 | 7 |

| 12-SIDED POLE DESIGN TABLE (See Note 1) | | | | | | | | | | |
|---|------------------|-------------------|----------------------------------|--------------------|------------------------------|-------------------------------|-------------------|--------------------|----------------|-----------------|
| Pole Length (ft) | Pole Height (ft) | Burial Depth (ft) | Total Taper (in/ft) (See Note 2) | Void Taper (in/ft) | Min. Wall Thickness Tip (in) | Min. Wall Thickness Butt (in) | Tip Diameter (in) | Butt Diameter (in) | Strand Pattern | Strand Diameter |
| 63 | 50 | 13 | 0.18 | 0.18 | 3 | 3 | 12 | 23.34 | 1 | 0.6" |
| 69 | 55 | 14 | 0.18 | 0.18 | 3 | 3 | 12 | 24.42 | 1 | 0.6" |
| 75 | 60 | 15 | 0.18 | 0.18 | 3 | 3 | 12 | 25.50 | 2 | 0.6" |
| 80 | 65 | 15 | 0.18 | 0.18 | 3 | 3 | 12 | 26.40 | 2 | 0.6" |
| 86 | 70 | 16 | 0.18 | 0.18 | 3 | 3 | 12 | 27.48 | 2 | 0.6" |

| ROUND POLE DESIGN TABLE | | | | | | | | | | | |
|-------------------------|------------------|-------------------|---------------|----------------------------------|--------------------|------------------------------|-------------------------------|-------------------|--------------------|----------------|-----------------|
| Pole Length (ft) | Pole Height (ft) | Burial Depth (ft) | Design Option | Total Taper (in/ft) (See Note 2) | Void Taper (in/ft) | Min. Wall Thickness Tip (in) | Min. Wall Thickness Butt (in) | Tip Diameter (in) | Butt Diameter (in) | Strand Pattern | Strand Diameter |
| 63 | 50 | 13 | Option 1 | 0.216 | 0.192 | 3 | 3.76 | 12.15 | 25.76 | 3 | 0.5" |
| | | | Option 2 | 0.180 | 0.172 | 3 | 3.50 | 12.00 | 23.34 | 4 | 0.5" |
| 69 | 55 | 14 | Option 1 | 0.216 | 0.192 | 3 | 3.83 | 12.15 | 27.05 | 3 | 0.5" |
| | | | Option 2 | 0.180 | 0.173 | 3 | 3.50 | 12.00 | 24.42 | 4 | 0.5" |
| 75 | 60 | 15 | Option 1 | 0.216 | 0.192 | 3 | 3.90 | 12.15 | 28.35 | 3 | 0.5" |
| | | | Option 2 | 0.180 | 0.173 | 3 | 3.50 | 12.00 | 25.50 | 4 | 0.5" |
| 80 | 65 | 15 | Option 1 | 0.216 | 0.192 | 3 | 3.96 | 12.15 | 29.43 | 3 | 0.5" |
| | | | Option 2 | 0.180 | 0.174 | 3 | 3.50 | 12.00 | 26.40 | 4 | 0.5" |
| 86 | 70 | 16 | Option 1 | 0.216 | 0.192 | 3 | 4.03 | 12.15 | 30.73 | 3 | 0.5" |
| | | | Option 2 | 0.180 | 0.174 | 3 | 3.50 | 13.00 | 28.48 | 4 | 0.5" |



PLAN VIEW



CAMERA LOWERING DEVICE

FIXED MOUNTING BRACKET

ELEVATION

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| LAST REVISION | DESCRIPTION: |
|---------------------|--------------|
| 11/01/21 | ← 11/01/22 |

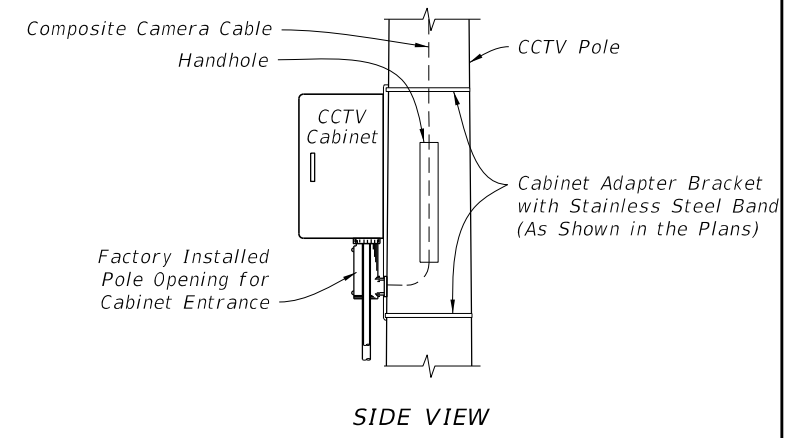
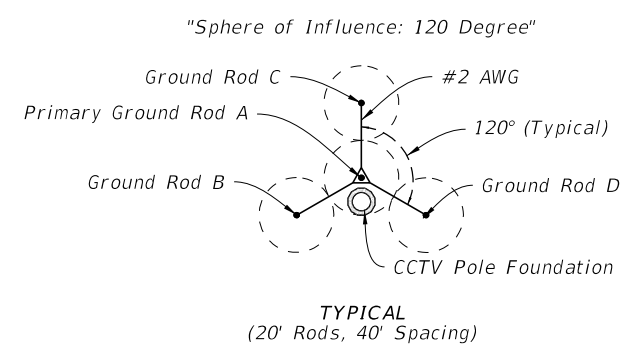
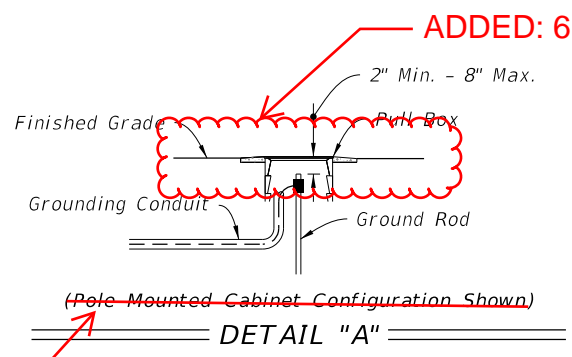
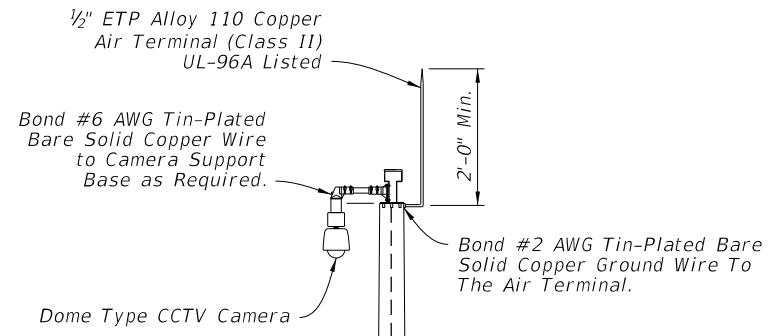


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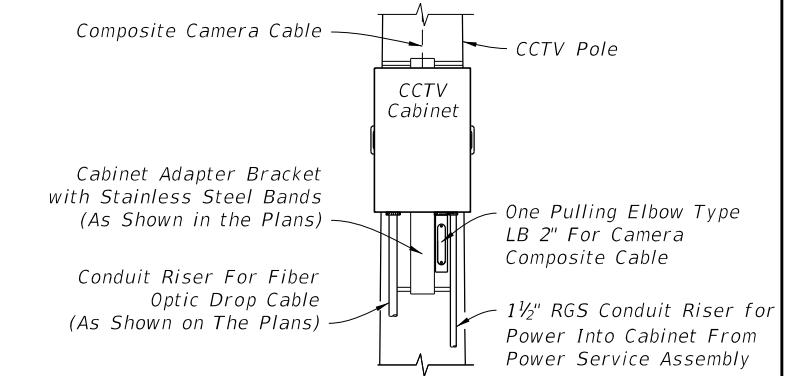
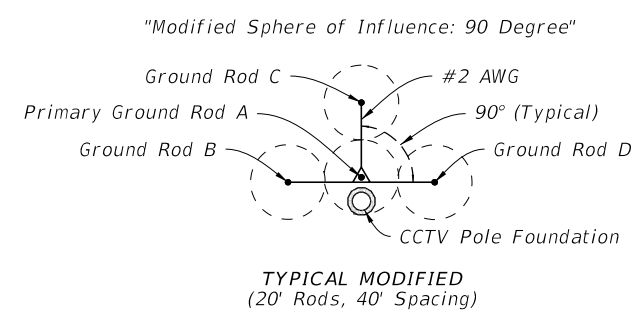
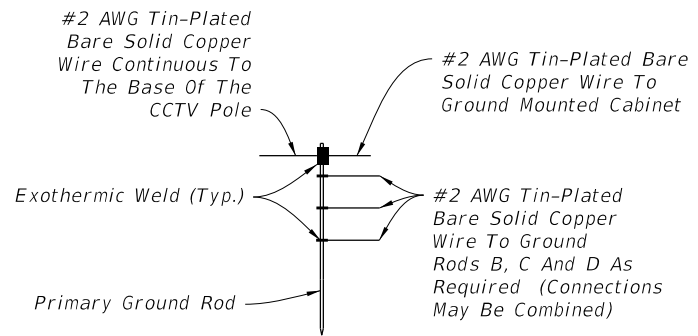
CONCRETE CCTV POLE

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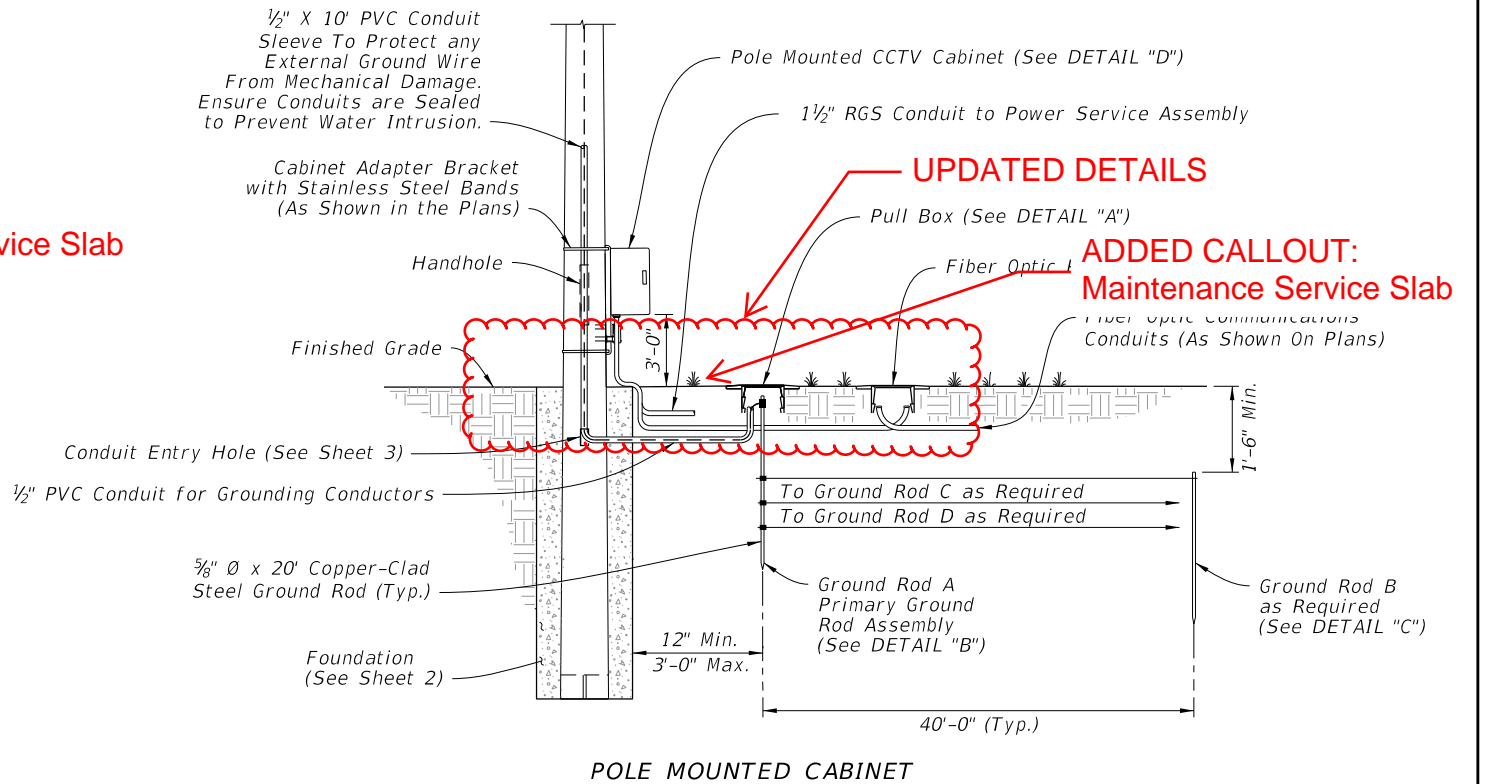
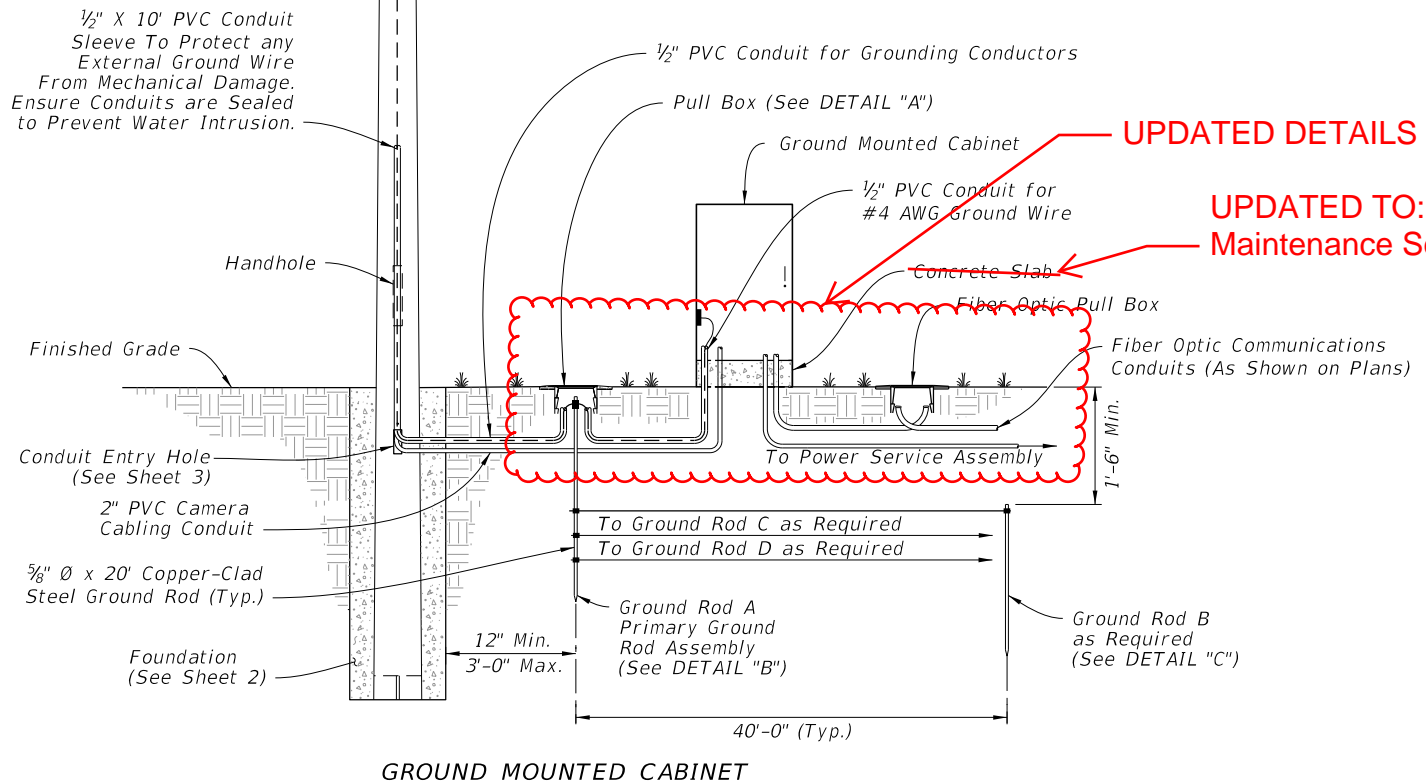
CHANGED TO: Pull Box



ADDED: PRIMARY GROUND ROD ASSEMBLY

GROUND ROD ARRAY PLACEMENT

FRONT VIEW



CONCRETE CCTV POLE GROUNDING

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| LAST REVISION | DESCRIPTION: |
|---------------|--------------|
| 11/01/21 | ← 11/01/22 |

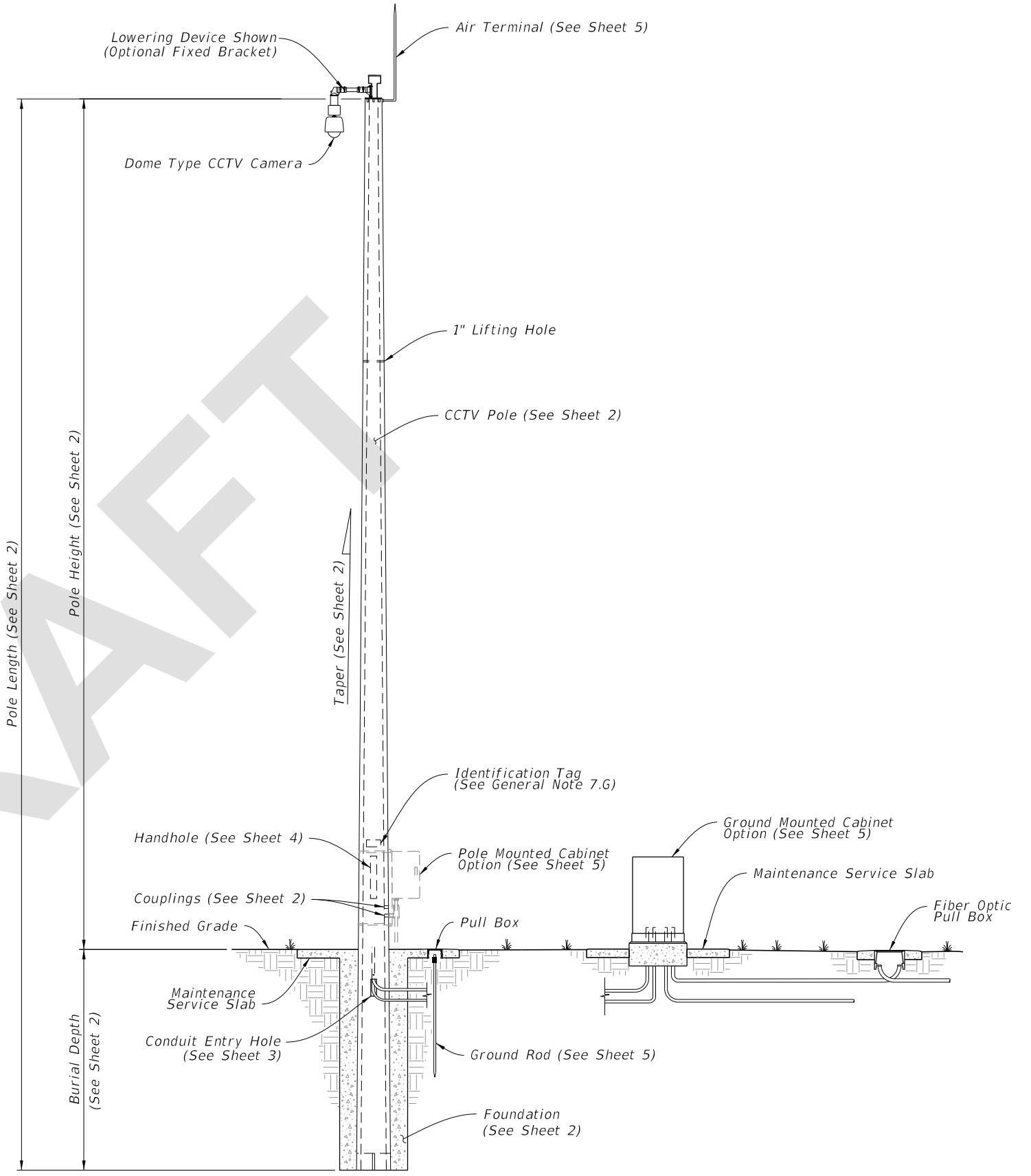
**FY 2022-23
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GENERAL NOTES:

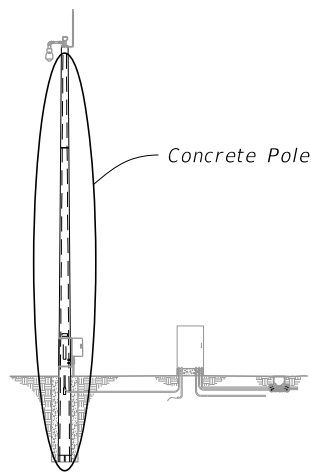
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4. See Index 635-001 for additional Pull Box details.
5. See Index 676-010 for cabinet installation details.
6. Materials:
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 - G. Provide Identification Markings on the poles where indicated on the following sheets. Include the following information using inset numerals with 1" height or as approved in the Producers' Quality Control Program:
 - Financial Project ID
 - Pole Manufacturer
 - Pole Length
 - H. Tie ground wires to the interior of reinforcing steel as necessary to prevent displacement during concreting operations.
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 - D. Ensure that all electronic equipment power is protected and conditioned with SPDs.
 - E. Ensure that equipment cabinet is bonded to CCTV pole grounding system.
 - F. Install the pole mounted cabinet with the hinges next to the pole.
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 - A. Place the lowering cable that moves within the pole in an interior conduit to prevent it from tangling or interfering with any electrical wire that is in the pole. Ensure that any electrical wire within the pole is routed securely and free from slack.
 - B. Mount lowering arm perpendicular to the roadway or as shown in the plans. Position CCTV pole so that the camera can be safely lowered without requiring lane closures.
 - C. Coordinate all lowering device hardware requirements (including Tenon, Tenon mounting plates, parking stand, etc.) with lowering device manufacturer.



CCTV POLE ASSEMBLY

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|---------------------------|----------|--------------|--|--------------------|------------------|-----------------|
| LAST REVISION 11/01/22 | REVISION | DESCRIPTION: |  FY 2023-24 STANDARD PLANS | CONCRETE CCTV POLE | INDEX 641-020 | SHEET 1 of 5 |
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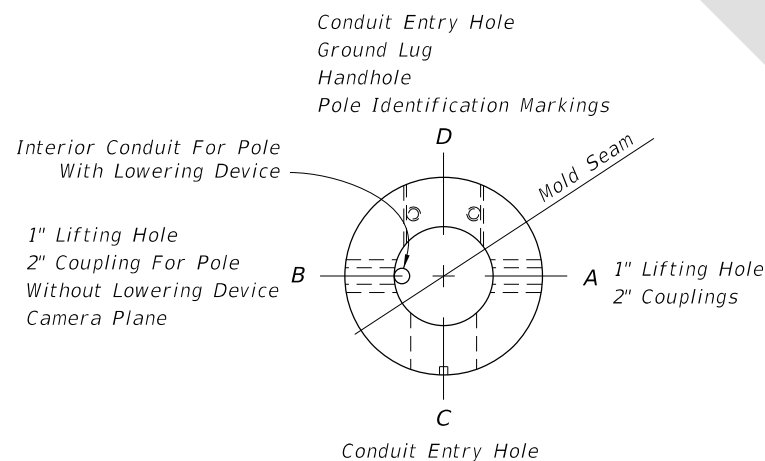
NOTES:

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4. Pole Design Tables, Burial Depth is based on level ground (flatter than 1:5). Increase the burial depth in accordance with the Additional Burial Depth Due To Ground Slope table for foundations with slopes 1:5 and steeper. Use the higher value for slope or diameter values that fall between those shown on the table.

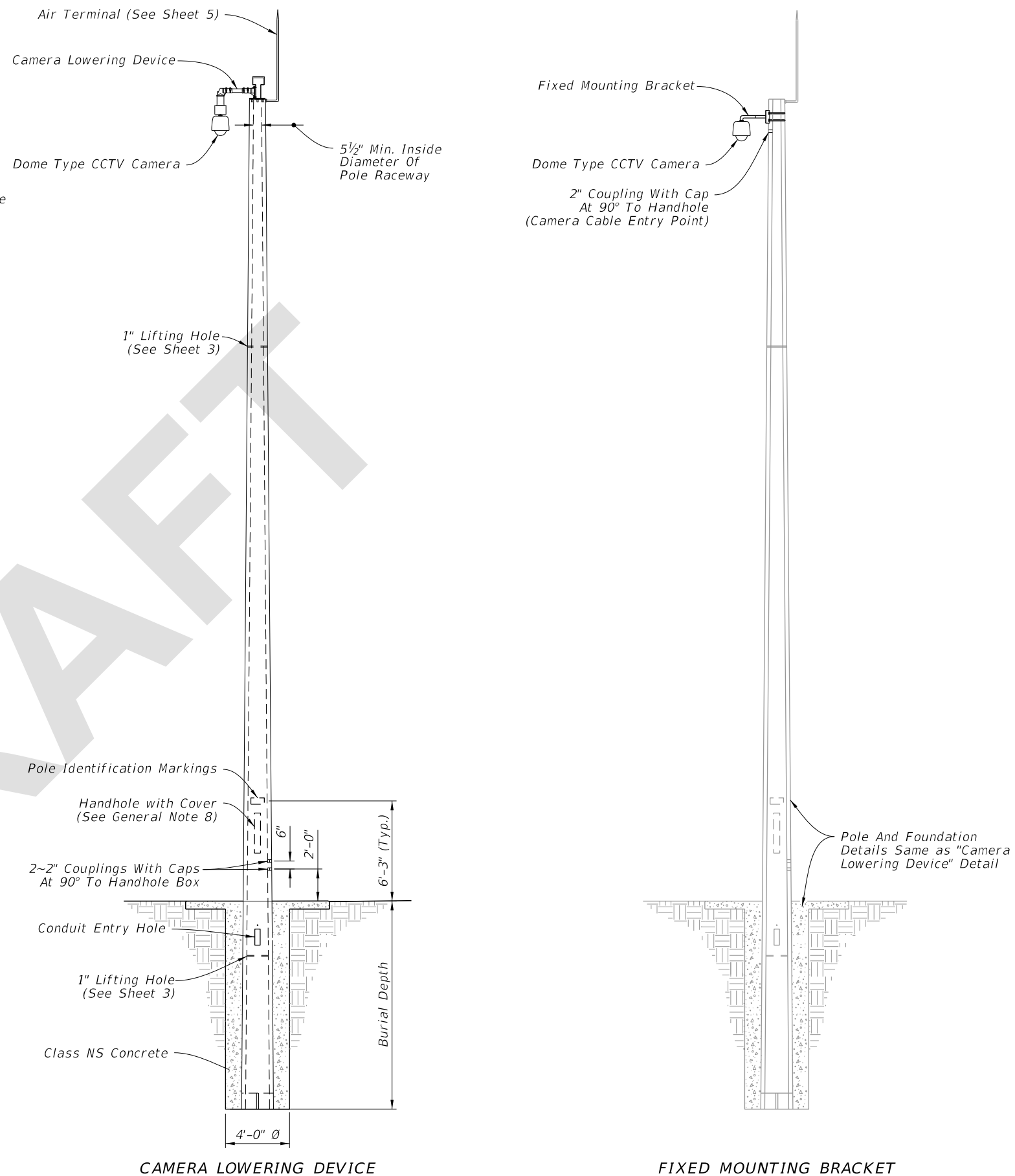
| ADDITIONAL BURIAL DEPTH DUE TO GROUND SLOPE | |
|---|--------------------------------|
| Ground Slope | Additional Burial Depth (feet) |
| 1:5 | 3 |
| 1:4 | 4 |
| 1:3 | 5 |
| 1:2 | 7 |

| 12-SIDED POLE DESIGN TABLE (See Note 1) | | | | | | | | | | |
|---|------------------|-------------------|----------------------------------|--------------------|------------------------------|-------------------------------|-------------------|--------------------|----------------|-----------------|
| Pole Length (ft) | Pole Height (ft) | Burial Depth (ft) | Total Taper (in/ft) (See Note 2) | Void Taper (in/ft) | Min. Wall Thickness Tip (in) | Min. Wall Thickness Butt (in) | Tip Diameter (in) | Butt Diameter (in) | Strand Pattern | Strand Diameter |
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| 86 | 70 | 16 | 0.18 | 0.18 | 3 | 3 | 12 | 27.48 | 2 | 0.6" |

| ROUND POLE DESIGN TABLE | | | | | | | | | | | |
|-------------------------|------------------|-------------------|---------------|----------------------------------|--------------------|------------------------------|-------------------------------|-------------------|--------------------|----------------|-----------------|
| Pole Length (ft) | Pole Height (ft) | Burial Depth (ft) | Design Option | Total Taper (in/ft) (See Note 2) | Void Taper (in/ft) | Min. Wall Thickness Tip (in) | Min. Wall Thickness Butt (in) | Tip Diameter (in) | Butt Diameter (in) | Strand Pattern | Strand Diameter |
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| | | | Option 2 | 0.180 | 0.174 | 3 | 3.50 | 13.00 | 28.48 | 4 | 0.5" |

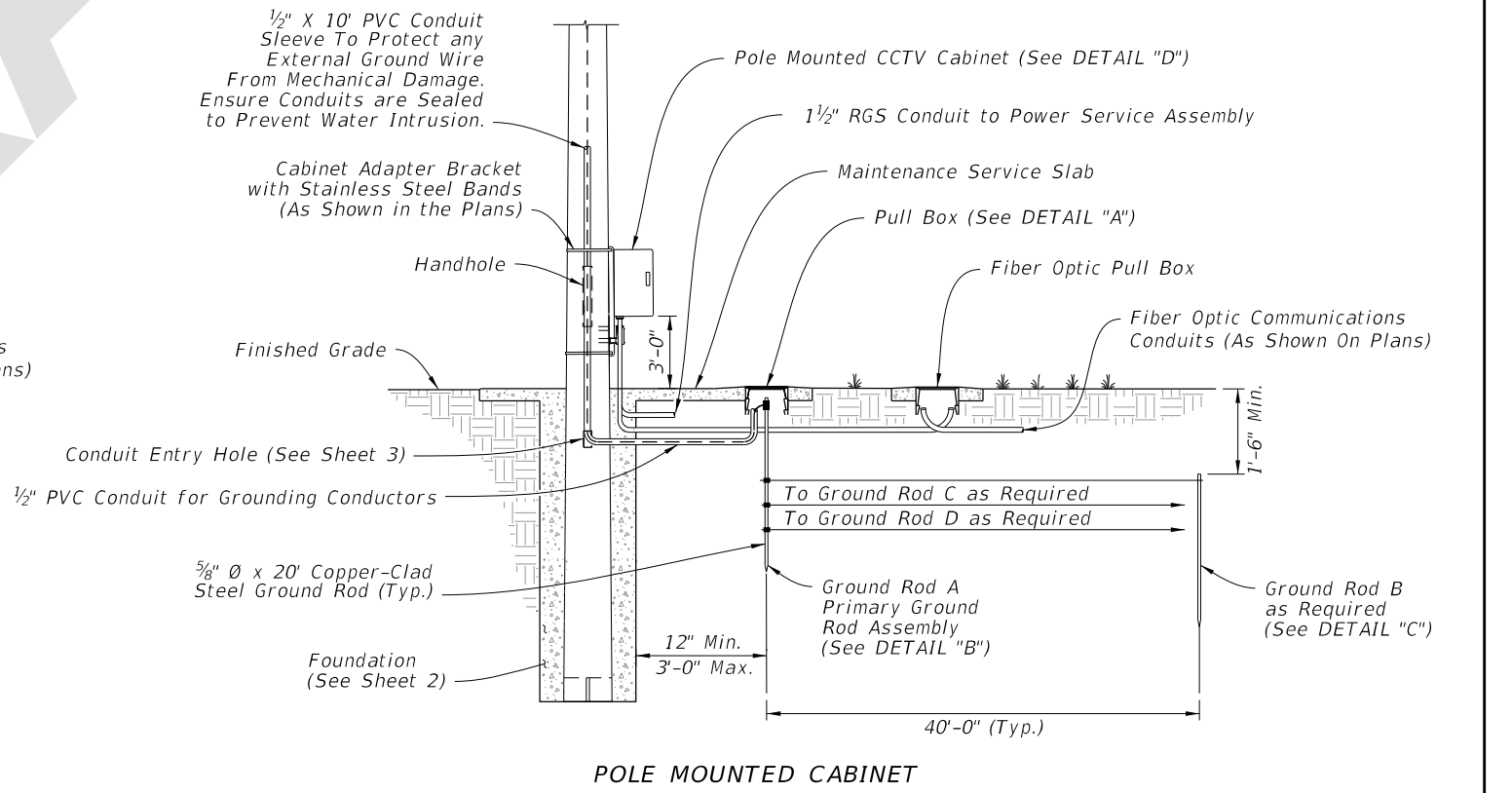
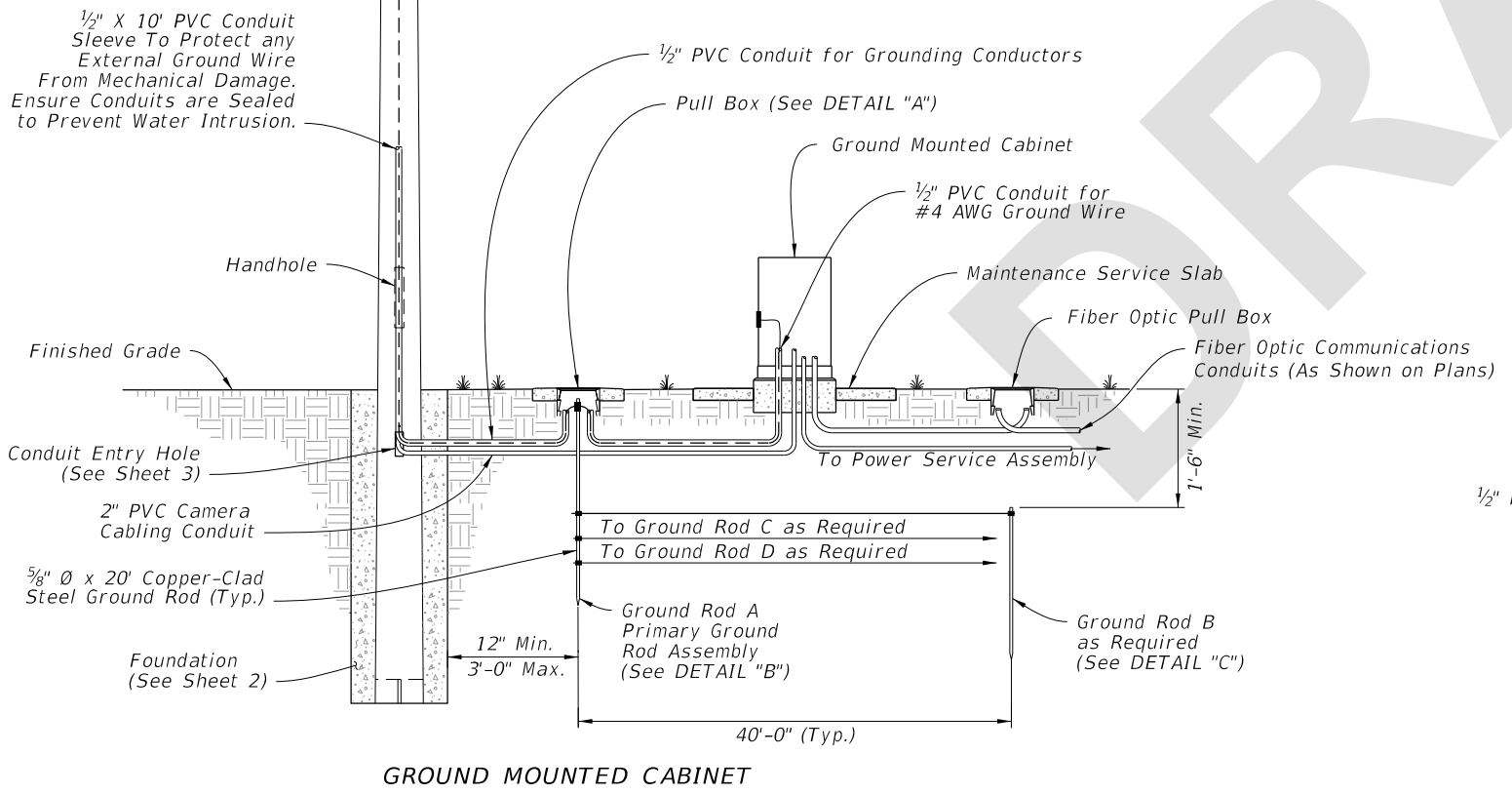
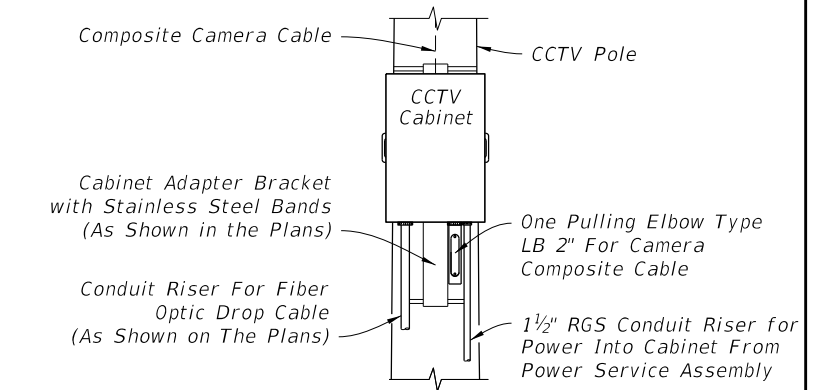
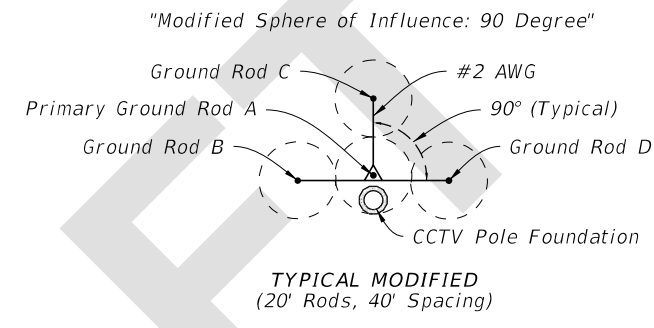
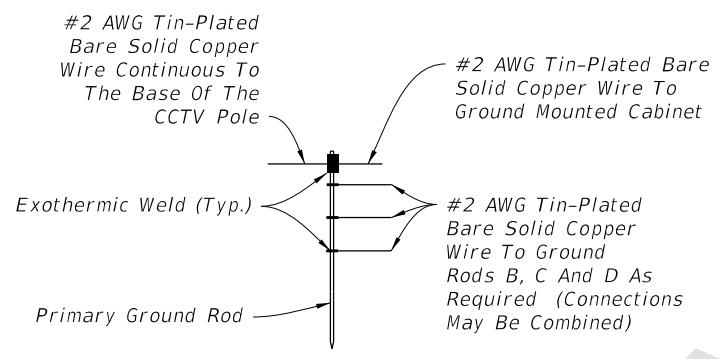
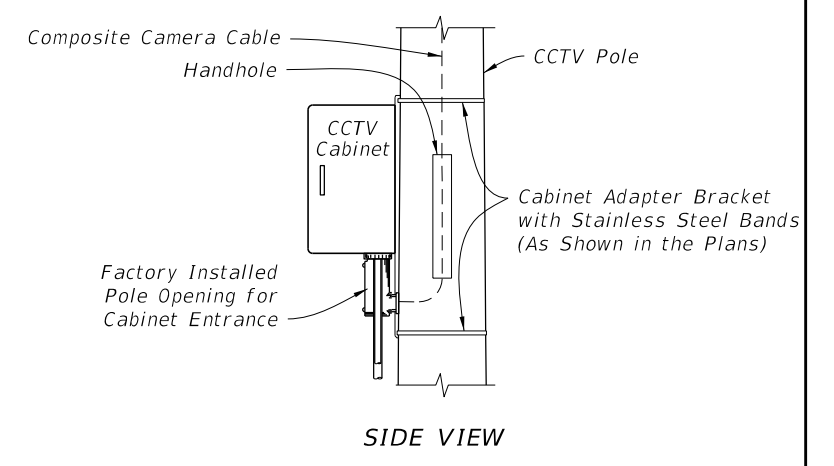
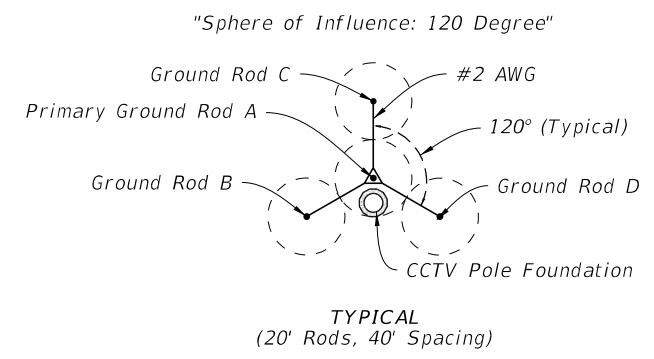
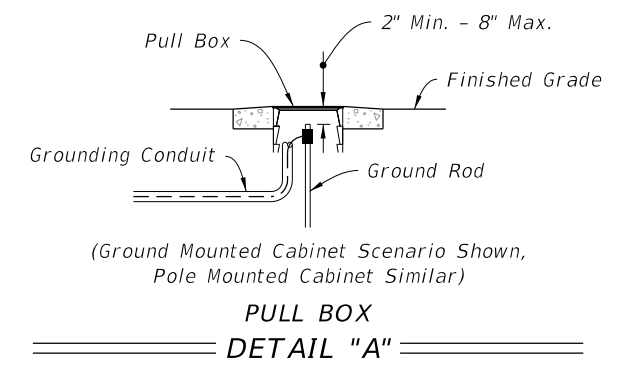
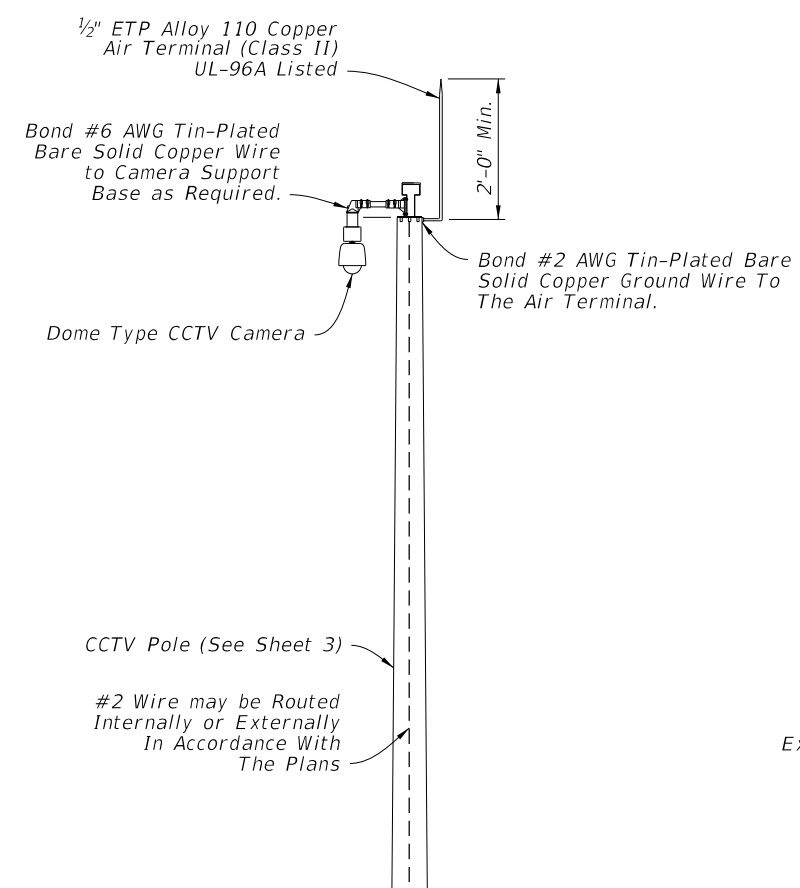


PLAN VIEW



ELEVATION

9/11/2022 10:46:35 AM



CONCRETE CCTV POLE GROUNDING

9/11/2022 10:46:35 AM

| | | | | | | |
|---------------------------|--------------|--|------------------------------|---------------------------|--------|-------|
| LAST REVISION 11/01/22 | DESCRIPTION: | | FY 2023-24 STANDARD PLANS | CONCRETE CCTV POLE | INDEX | SHEET |
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