ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

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

Contact Information:

Date: July 12, 2018
Originator: **Cheryl Hudson**
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Standard Plans:

Index Number: **649-020**
Sheet Number (s): 1 & 3
Index Title: Steel CCTV Pole

Summary of the changes:

Sheet 1: Changed Note 2; Note 3 E Delete "ASTM F2329 galvanizing and add "ASTM A36" plate washers; Note 3J add "including plate washers"; Changed Note 4.
Sheet 3: ELEVATION correct longitudinal bar callout, add reference to Table; Add cross reference to tables on Sheet 2.

Commentary / Background:

As part of consistency and clarity. Washers for standard bolts with nuts and plate washers require different galvanizing. All longitudinal bars are #11, the number and length vary (table on sheet 2).

Other Affected Offices / Documents: (Provide name of responsible personnel)

Yes	No	
☐	☑	Other Standard Plans –
☐	☑	FDOT Design Manual –
☐	☑	Basis of Estimates Manual –
☐	☑	Standard Specifications –
☐	☑	Approved Product List –
☐	☑	Construction –
☐	☑	Maintenance –

Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)

Yes	N/A	
☑	☐	Redline Mark-ups
☐	☑	Proposed Standard Plan Instructions (SPI)
☐	☑	Revised SPI
☐	☑	Other Support Documents

Implementation:

☐ Design Bulletin (Interim) ☐ DCE Memo ☐ Program Mgmt. Bulletin ☑ FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form

GENERAL NOTES:

1. Work this Index with Specification 649.

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. Materials:

   A. Pole: ASTM A1011 Grade 50, 55, 60 or 65 (less than 1/4") or ASTM A572 Grade 50, 60 or 65 (greater than or equal to 1/4") or ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield).
   B. Steel Plates and Pole Cap: ASTM A36 or ASTM A709 Grade 50.
   C. Weld Metal: E70XX.
   D. Bolts: ASTM F3125, Grade A325, Type 1.
      Nuts: ASTM A563.
      Washers: ASTM F-436.
   E. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A563 Grade A heavy-hex nuts and plate washers. ASTM F2329 galvanization.
   F. Handhole Frame: ASTM A709 Grade 36 or ASTM A36.
   G. Handhole Cover: ASTM A1011 Grade 50, 55, 60 or 65.
   H. Stainless Steel Screws: AISI Type 316.
   I. Reinforcing Steel: ASTM A615 Grade 60.
   J. Galvanization: Bolts, nuts and washers: ASTM F2329 All other steel: ASTM A123
   K. Concrete: Class IV (Drilled Shaft) for all environment classifications.

Changed Note

4. Pole Fabrication:

   A. Provide either a round or 16 sided pole with a constant taper of 0.14 inches per foot
   B. Pole shaft may be either One or Two sections (with telescopic field splice)
   C. Up to two longitudinal seam welds are permitted.
   D. Use only circumferential welds at base.
   E. Use a complete penetraton weld for longitudinal seam welds within 6" of circumferential welds. Use a complete penetraton weld on female section of telescopic field splices, splice length plus six inches. All other areas, size the partial penetration welds to at least 60% of the pole tube thickness.
   F. Perform all welding in accordance with the American Welding Society Structural Welding Code (Steel) ANSI/AWS D1.1 (current edition). For additional welding requirements see AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Section 5.15, Welded Connections.
   G. Provide a 2"x4" (Max.) aluminum identification tag on the pole. Secured tag to pole with stainless steel screws. Locate the tag inside pole and visible from handhole. Include the following information:

      Financial Project ID,
      Pole Height
      Manufacturer's Name
      Yield Strength (Fy of Steel)
      Pole Base Wall Thickness

   H. Except for Anchor Bolts, all bolt hole diameters are equal to the bolt diameter plus 1/16", prior to galvanizing. Hole diameters for anchor bolts are not exceed the bolt diameter plus 1/2".

5. Pole Installation:

   A. Do not install additional wire access holes (not shown in this Index) with a diameter that exceeds 1½" in diameter.
   B. Install Anchor Bolts in accordance with Specification 649-5
   C. Cable Supports: Electrical Cable Guides and Eyebolts.

      a. Locate top and bottom cable guides within the pole aligned with each other.
      b. Position one cable guide 2" below the handhole.
      c. Position other cable guide 1" directly below the top of the tenon.
      d. Position Park Stands 2" below the top of the handhole.

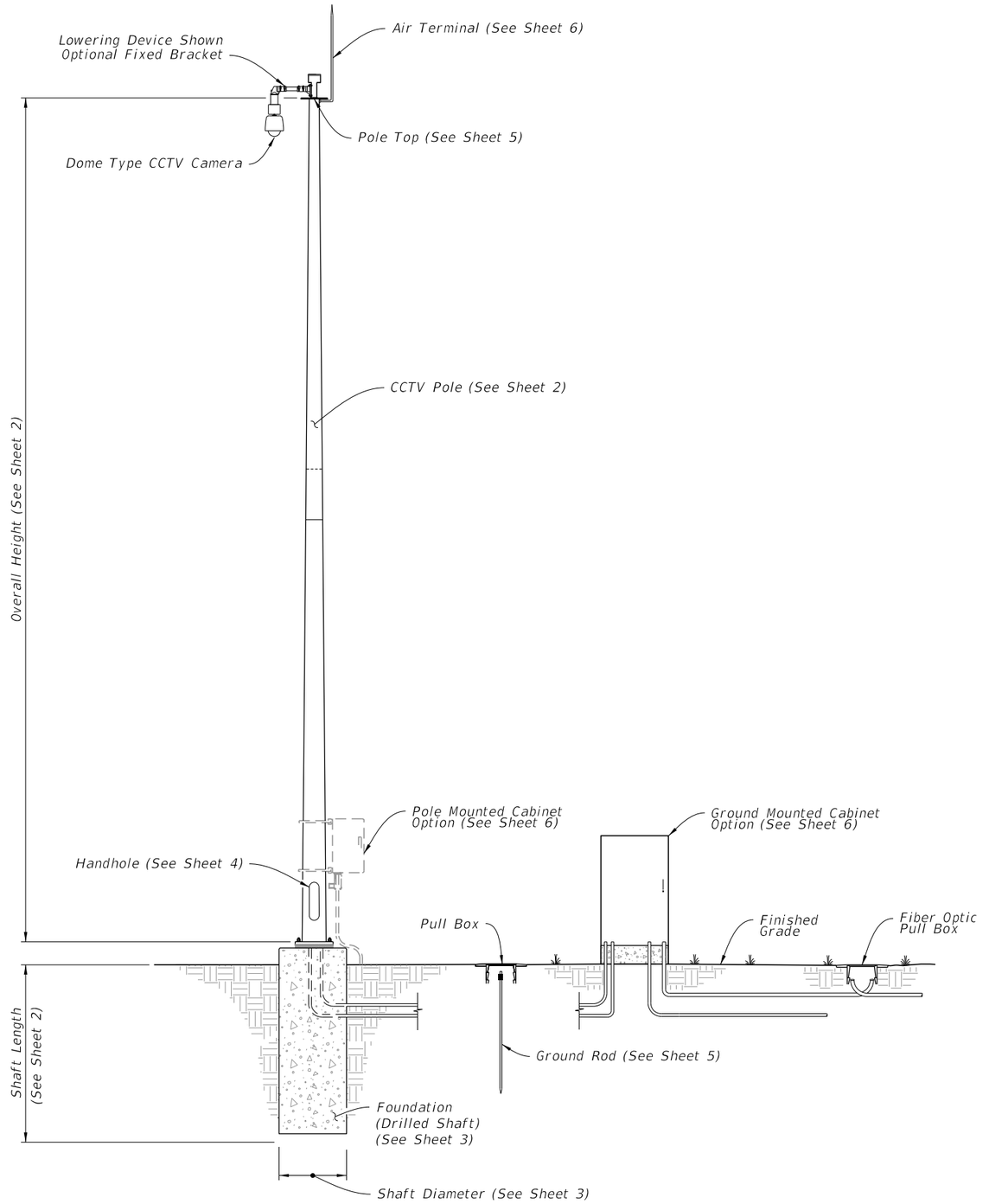
6. Cabinet Installation:

   A. Splice fiber optic cables in cabinet to preterminater patch panel.
   B. Furnish and install ~~TVSS protection on all cabling in cabinet.~~
   C. Furnish and install secondary ~~TVSS~~ protection on outlets for equipment in cabinet.
   D. Ensure that all electronic equipment power is protected and conditioned with ~~TVSS~~ devices.
   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.

SPD

7. 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 device 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 stands, etc.) with lowering device manufacturer.



STEEL CCTV POLE ASSEMBLY

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10/16/2017

11/01/18

LAST REVISION	REVISION	DESCRIPTION:
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FDOT FY 2018-19 STANDARD PLANS

STEEL CCTV POLE

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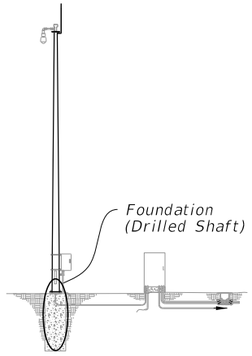

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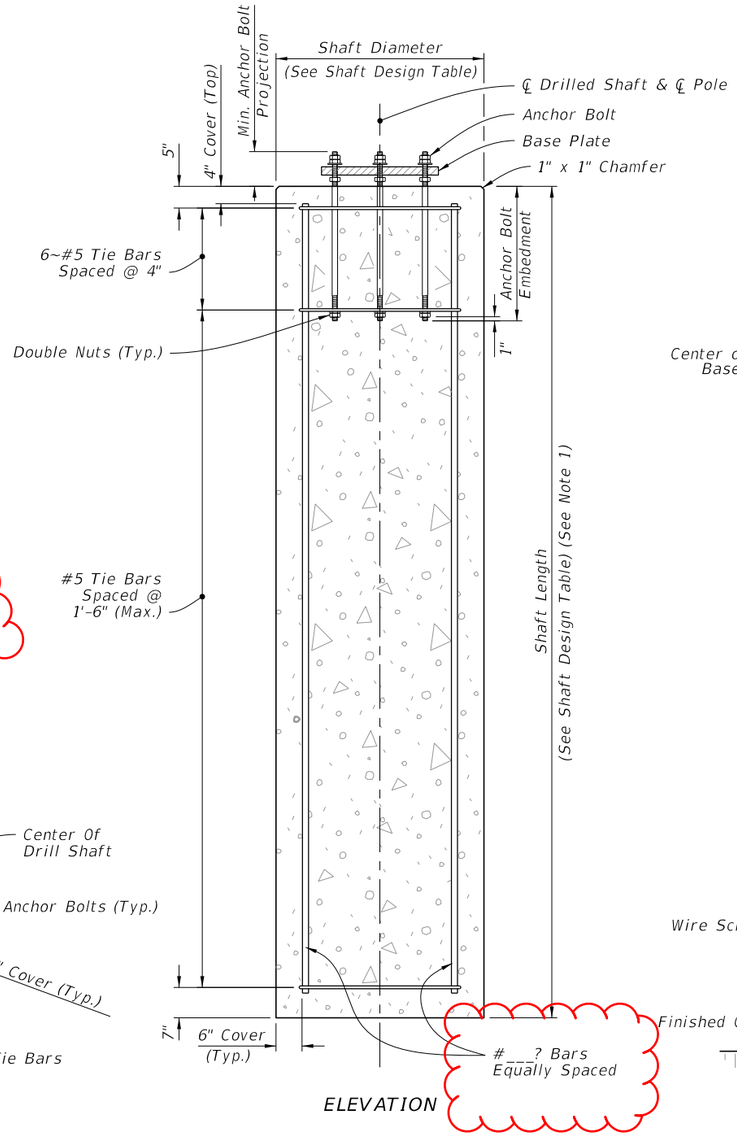
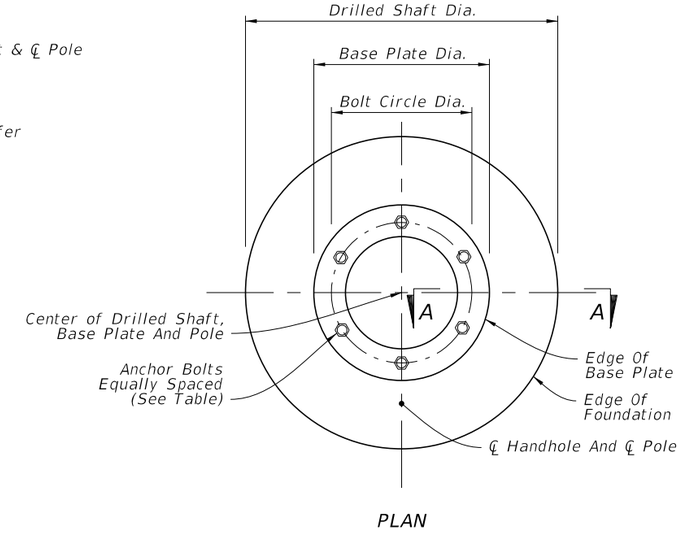
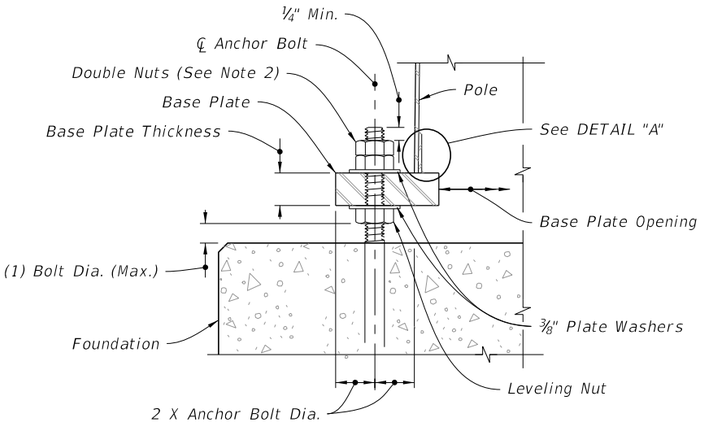


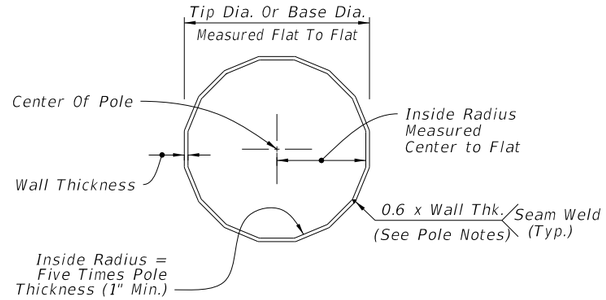
ELEVATION



PLAN



SECTION A-A



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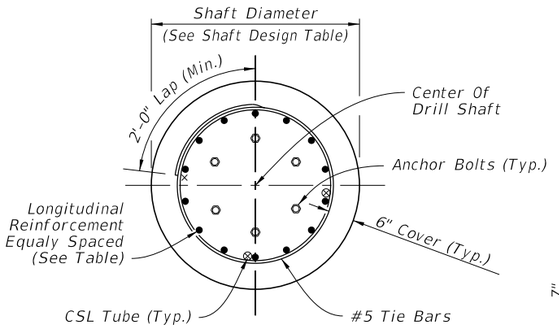

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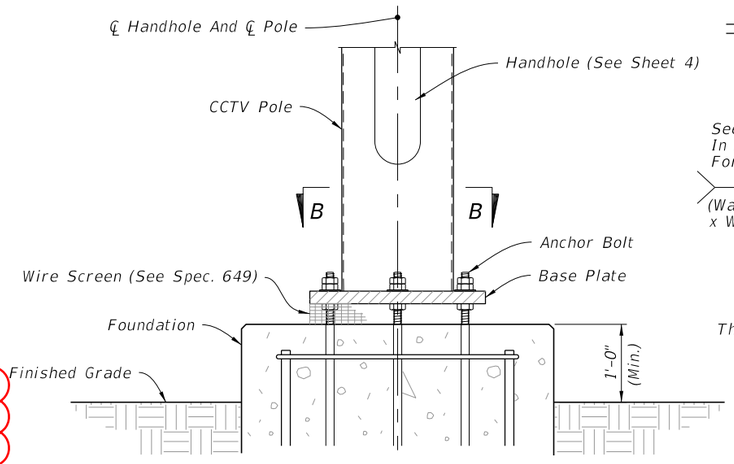

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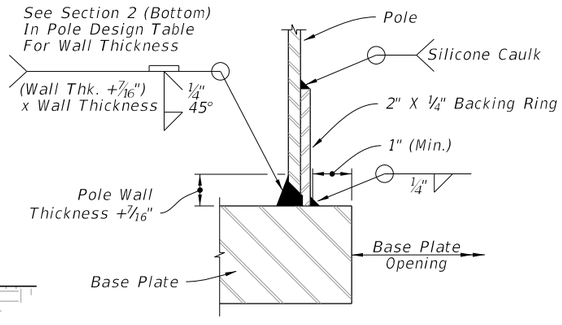

JOINT WELD DETAIL

FOUNDATION

BASE PLATE

DETAIL "A"

Cross Reference

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LAST REVISION	REVISION	DESCRIPTION:
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STEEL CCTV POLE

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GENERAL NOTES:

1. Work this Index with Specification 649.

2. This Index is considered fully detailed; only submit shop drawings for minor modifications not detailed in the Plans.

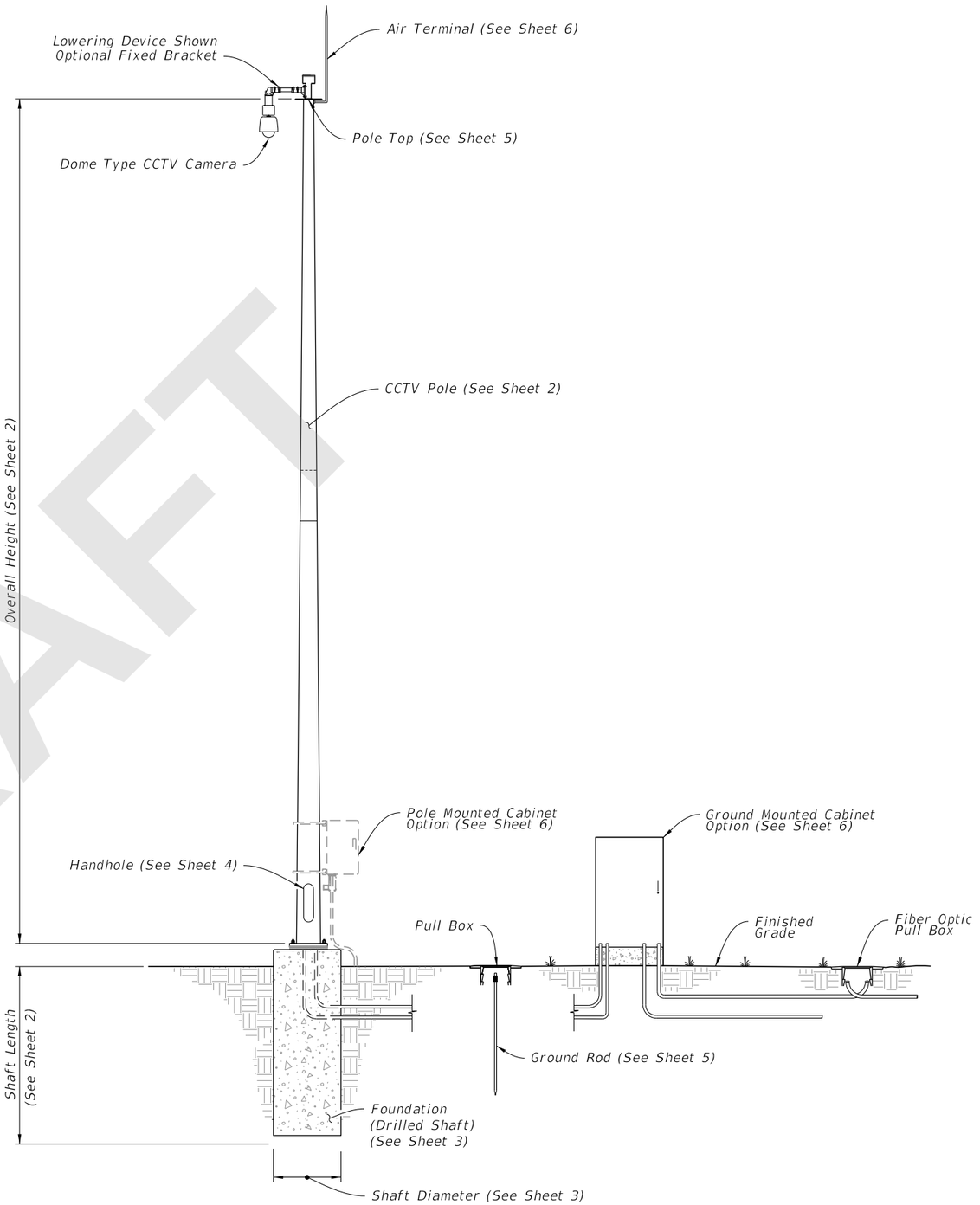
3. Materials:
   - A. Pole: ASTM A1011 Grade 50, 55, 60 or 65 (less than ¼") or ASTM A572 Grade 50, 60 or 65 (greater than or equal to ¼") or ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield).
   - B. Steel Plates and Pole Cap: ASTM A36 or ASTM A709 Grade 50.
   - C. Weld Metal: E70XX.
   - D. Bolts: ASTM F3125, Grade A325, Type 1.
     Nuts: ASTM A563.
     Washers: ASTM F-436.
   - E. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A563 Grade A heavy-hex nuts and ASTM A36 plate washers.
   - F. Handhole Frame: ASTM A709 Grade 36 or ASTM A36.
   - G. Handhole Cover: ASTM A1011 Grade 50, 55, 60 or 65.
   - H. Stainless Steel Screws: AISI Type 316.
   - I. Reinforcing Steel: ASTM A615 Grade 60.
   - J. Galvanization: Bolts, nuts and washers: ASTM F2329 All other steel including plate washer: ASTM A123
   - K. Concrete: Class IV (Drilled Shaft) for all environment classifications.

4. Fabrication:
   - A. Welding:
     - a. Specification Section 460-6.4 and
     - b. AASHTO RFD Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals Section 14.4.4.
   - B. Poles:
     - a. Round or 16-sided (Min.)
     - b. Taper pole diameter at 0.14 inches per foot
     - c. Fabricate Pole longitudinal seam welds (2 maximum) with 60 percent minimum penetration or fusion welds except as follows:
       1. Use a full-penetration groove weld within 6 inches of the circumferential tube-to-plate connection and
       2. Use full-penetration groove welds on the female end section of telescopic (i.e., slip type) field splices for a minimum length of one and one-half times the inside diameter of the female section plus 6 inches.
     - d. Pole shaft may be either one or two sections (with telescopic field splice)
     - e. Circumferentially welded pole shafts and laminated pole shafts are not permitted
   - C. Identification Tag: (Submit details for approval)
     - a. 2"x 4" (Max.) aluminum tag
     - b. Locate on the inside of the pole and visible from the handhole
     - c. Secure with ⅛" diameter stainless steel rivets or screws.
     - d. Include the following information on the ID Tag:
       1. Financial Project ID
       2. Pole Type
       3. Pole Height
       4. Manufacturers' Name
       5. Yield Strength (Fy of Steel)
       6. Base Wall Thickness
   - D. Except for Anchor Bolts, bolt hole diameters are bolt diameter plus 1/16" and anchor bolts holes are bolt diameter plus ½" (Max) prior to galvanizing.

5. Pole Installation:
   - A. Do not install additional wire access holes (not shown in this Index) with a diameter that exceeds 1½" in diameter.
   - B. Install Anchor Bolts in accordance with Specification 649-5
   - C. Cable Supports: Electrical Cable Guides and Eyebolts.
     - a. Locate top and bottom cable guides within the pole aligned with each other.
     - b. Position one cable guide 2" below the handhole.
     - c. Position other cable guide 1" directly below the top of the tenon.
     - d. Position Park Stands 2" below the top of the handhole.

6. Cabinet Installation:
   - A. Splice fiber optic cables in cabinet to preterminater 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 inner ducts for network communications between the pullbox and cabinet are stated in the Contract Documents.

7. 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 device perpendicular to the roadway or as shown in the plans. Position CC TV 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 stands, etc.) with lowering device manufacturer.



STEEL CCTV POLE ASSEMBLY

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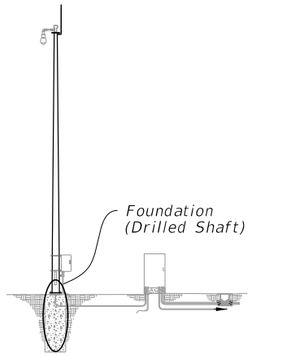
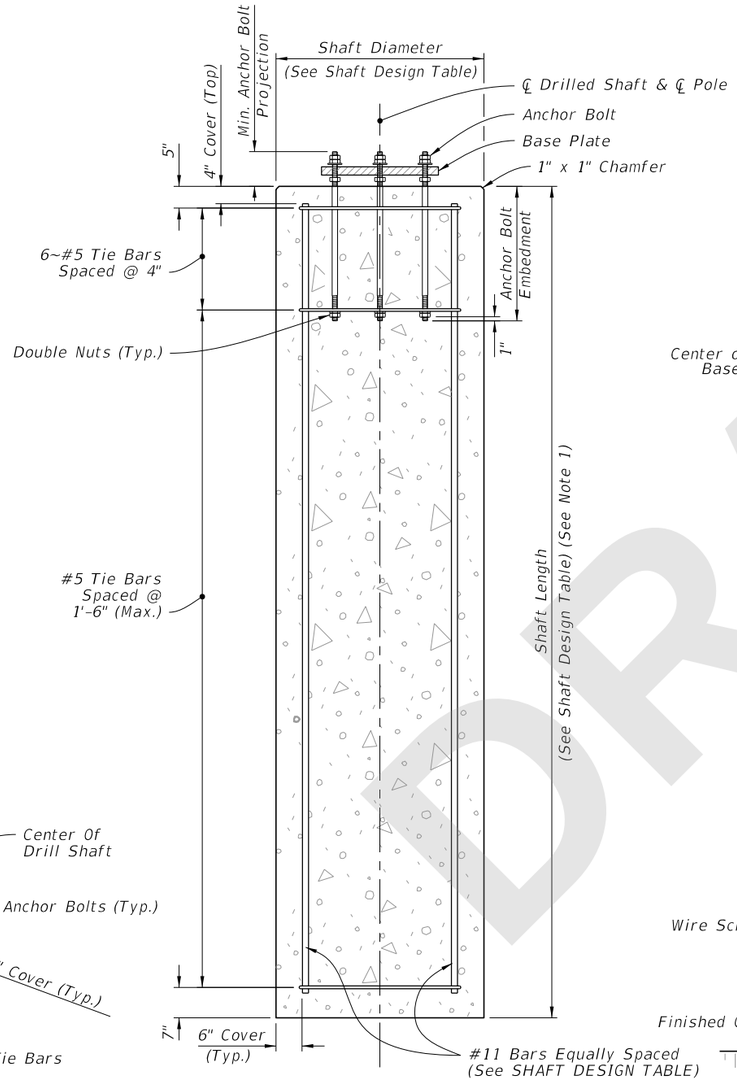


ASSEMBLY

NOTES:

1. Shaft Length is based on 1'-0" height above the finished grade.
2. Double nuts: Bottom nut may be half height 'Jam' Nut. Provide individual nut covers (Not Shown) for each bolt.
3. Conduit and CSL Tubes not shown for clarity.
4. Work these details with Data Table on Sheet 2.



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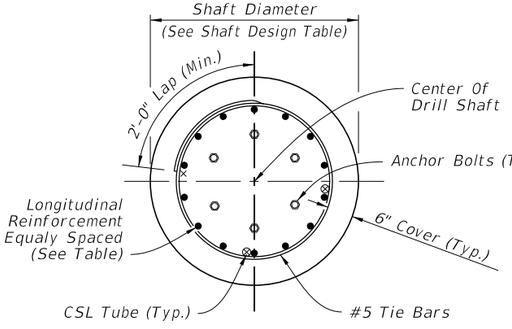
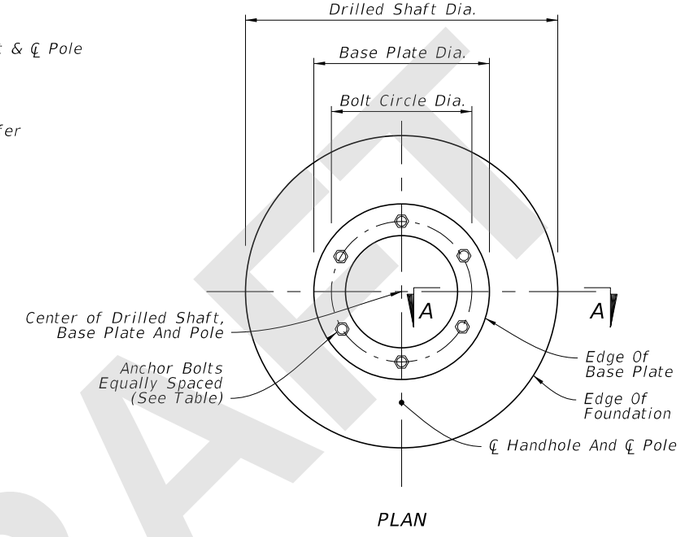


PLAN

FOUNDATION



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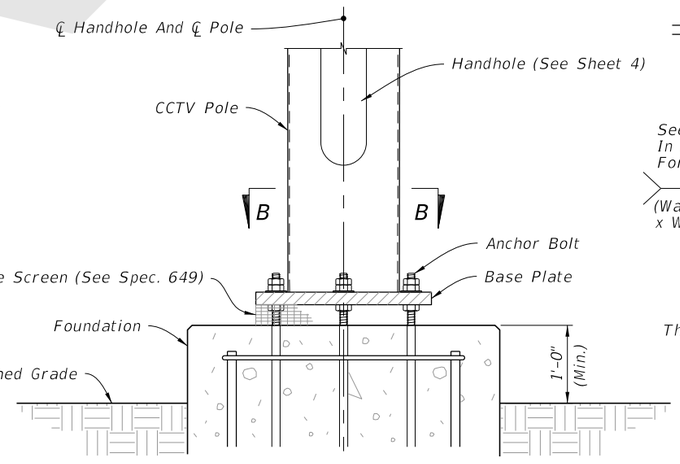
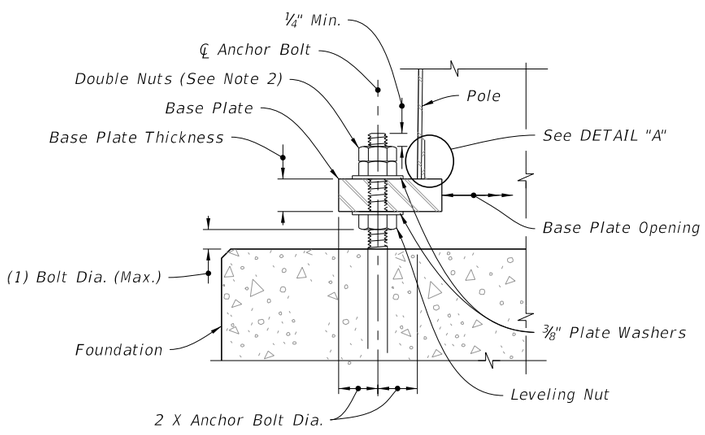
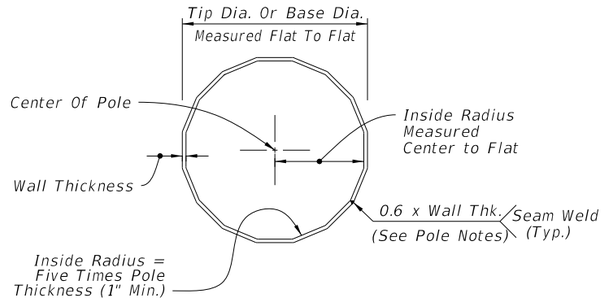


ELEVATION

BASE PLATE



SECTION A-A



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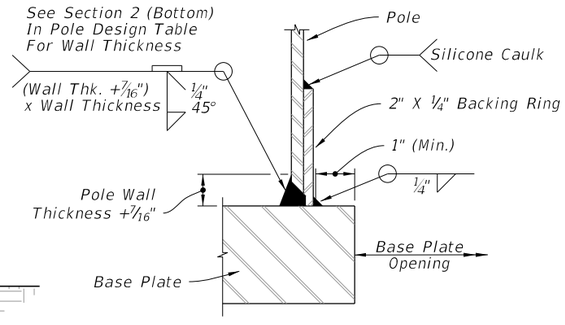

JOINT WELD DETAIL

DETAIL "A"

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