

Origination Form
Proposed Revisions to a Standard Plans Index

Originator:	Turley, Joshua	Index Number:	649-031
Date:	4/18/2025	Sheet Number(s):	Sheet 1
E-mail:	Joshua.Turley@dot.state.fl.us	Index Title:	MAST ARM ASSEMBLIES

Summary of the changes:

Sheet 1: Moved the weep hole closer to the arm from 1' to 6" from the base; Changed Weep Hole size to 3/4".

Commentary/Background:

Sheet 1: There was some concern that water may pond at the arm to pole connection potentially causing corrosion due to the angle at which the arm attaches to the pole. The poles are galvanized on the inside which helps resist corrosion but shifting the weep hole closer can aid as well by reduce the volume of water that could potentially pond.

Other Affected Documents/Offices	Person Contacted	Affected (Yes/No)
Other Standard Plans		No
FDOT Design Manual		No
Standard Specifications		No
Basis of Estimates Manual		No
Approved Product List		No
Construction Office		No
Maintenance Office		No

Implementation

["FY-Standard Plans (Next Release)"]

GENERAL NOTES:

1. Shop Drawings: This Index is considered fully detailed, only submit shop drawings for minor modifications not detailed in the Plans.
2. Prior to Fabrication: Verify the installed foundation elevation will result in the required signal elevation and adjust the Pole height as needed.
3. Details for Signal and Sign locations, Signal Head attachment, Sign attachment, Pedestrian Head attachment, and Foundation Conduit are not shown for simplicity.
4. Materials:

A. Poles, Mast Arms and Backing Rings:

a. Less than 3⁄16": ASTM A1011 Grade 50, 55, 60 or 65

b. Greater than or equal to 3⁄16": ASTM A572 Grade 50, 55, 60 or 65

c. ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield)

B. Steel Plates: ASTM A36

C. Weld Metal: E70XX

D. Bolts, Nuts and Washers:

a. High Strength Hex Head Bolts: ASTM F3125, Grade A325, Type 1

b. Nuts: ASTM A563 DH Heavy-Hex

c. Washers: ASTM F436 Type 1, one under turned element

E. Anchor Bolts, Nuts and Washers:

a. Anchor Bolts: ASTM F1554 Grade 55

b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per anchor bolt)

c. Plate Washers: ASTM A36 (2 per bolt)

F. Threaded Bars/Studs: ASTM A36 or ASTM A307

G. Handhole Frame: ASTM A709 or ASTM A36, Grade 36

H. Handhole Cover: ASTM A1011 Grade 50, 55, 60 or 65

I. Pole Caps and Nut Covers: Fabricate from cast aluminum or galvanized carbon steel.

J. Stainless Steel Screws: AISI Type 316

K. Concrete: Class IV (Drilled Shaft) for all environmental classifications.

L. Reinforcing Steel: Specification 415

5. Fabrication:

A. Welding:

a. Specification 460-6.4 and

b. AASHTO LRFD Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals Section 14.4.4

B. Poles and Mast Arms:

a. Round or 12-sided (Min.)

b. Taper pole diameter at 0.14 inches per foot

c. Upright poles must be a single section. For arms and upright poles, circumferential welds and laminated sections are not permitted.

d. Arms may be either one or two sections. See Sheet 4 for telescopic splice detail

e. Fabricate longitudinal seam welds with 60 percent minimum penetration or fusion welds except:

1. Use a complete joint penetration weld within 6 inches of the circumferential tube-to-plate connection.

2. Use complete joint penetration 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.

f. Locate longitudinal seams weld along the:

1. Lower quadrant of the arms.

2. Same side of the pole as the arm connections

g. Face handhole perpendicular from arm on single arm poles, perpendicular from the first arm of double arms poles facing away from traffic or see special instructions on the Mast Arm Tabulation Sheet.

h. Provide a 'J' or 'C' hook at the top of the pole for signal wiring support (See Sheet 6)

i. First and Second arm camber angle = 2°

j. Bolt holes diameters as follows:

1. Bolts (except Anchor bolts): Bolt diameter plus 1⁄16" prior to galvanizing.

2. Anchor Bolts: Bolt diameter plus 1⁄2" (Max.).

6. Coatings:

A. All Nuts, Bolts, Washers and Threaded Bars/Studs: ASTM F2329

B. All other steel items including plate washers ASTM A123

7. Construction:

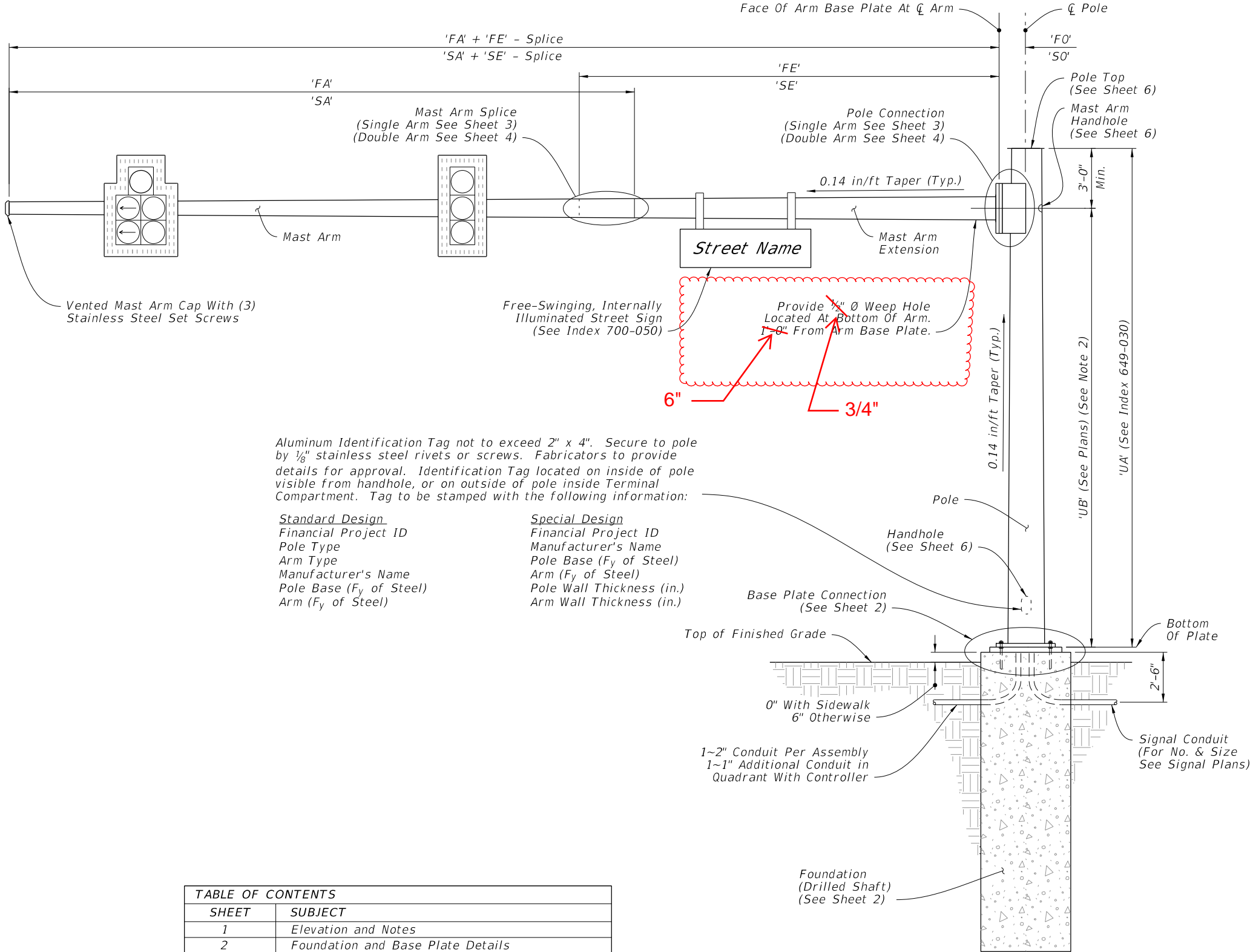
A. Foundation: Specification 455 Drilled Shaft, except that payment is included in the cost of the Mast Arm.

B. Install Pole vertically.

C. Place structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification 649-7.

D. Attach Sign Panels and Signals centered on the elevation of the Mast Arm.

E. Wire Access holes are 1½" or less in diameter.



Aluminum Identification Tag not to exceed 2" x 4". Secure to pole by 1⁄8" stainless steel rivets or screws. Fabricators to provide details for approval. Identification Tag located on inside of pole visible from handhole, or on outside of pole inside Terminal Compartment. Tag to be stamped with the following information:

Standard Design
Financial Project ID
Pole Type
Arm Type
Manufacturer's Name
Pole Base (F_y of Steel)
Arm (F_y of Steel)

Special Design
Financial Project ID
Manufacturer's Name
Pole Base (F_y of Steel)
Arm (F_y of Steel)
Pole Wall Thickness (in.)
Arm Wall Thickness (in.)

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1	Elevation and Notes
2	Foundation and Base Plate Details
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4	Double Arm Connection and Splice Details
5	Luminaire Arm and Connection Details
6	Handhole and Pole Top Details

Single Arm Shown, Double Arm Similar
(Luminaire Arm Not Shown)

MAST ARM ASSEMBLY

ELEVATION AND NOTES

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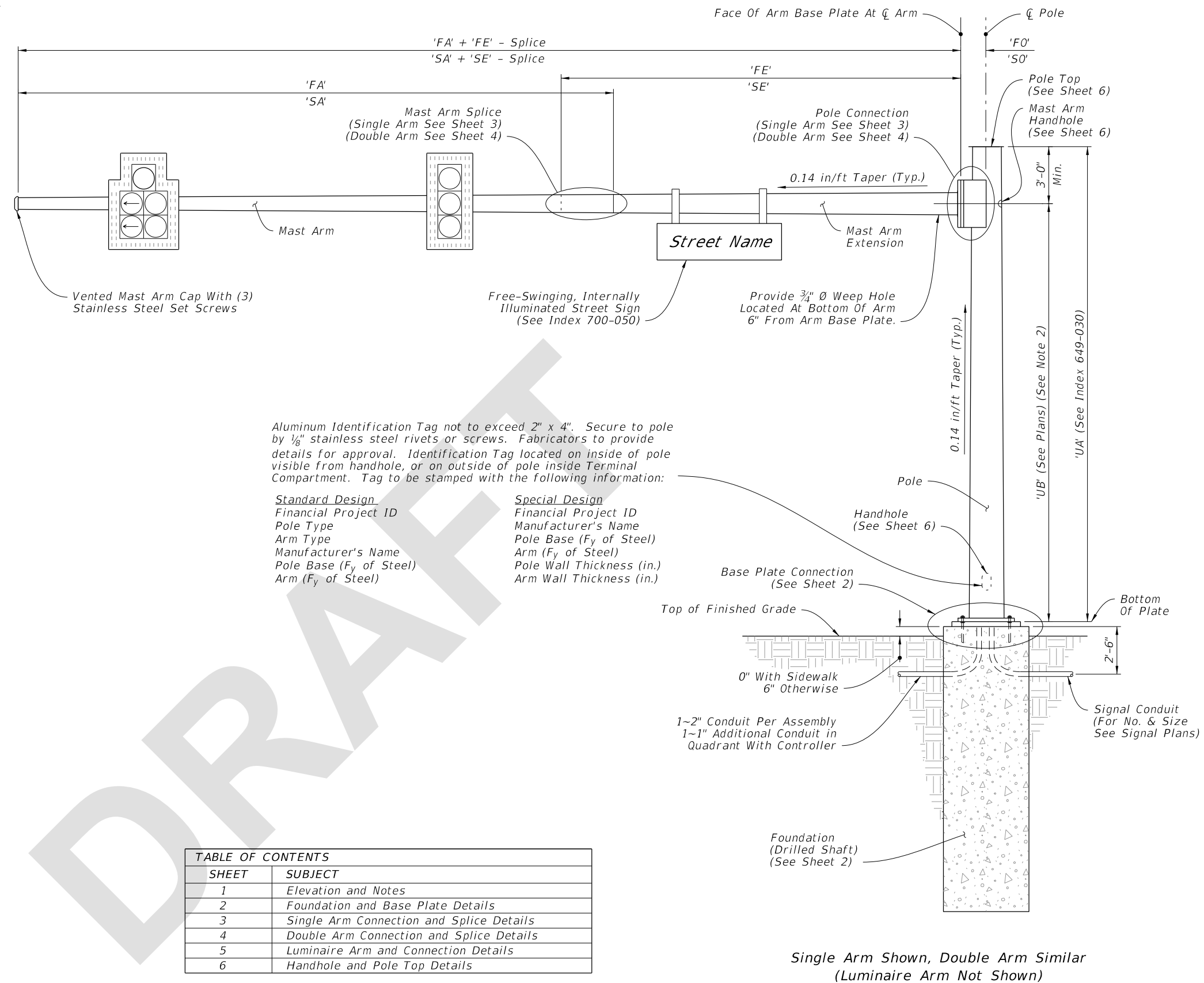
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LAST REVISION	DESCRIPTION:	FY 2026-27 STANDARD PLANS	MAST ARM ASSEMBLIES	INDEX	SHEET
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