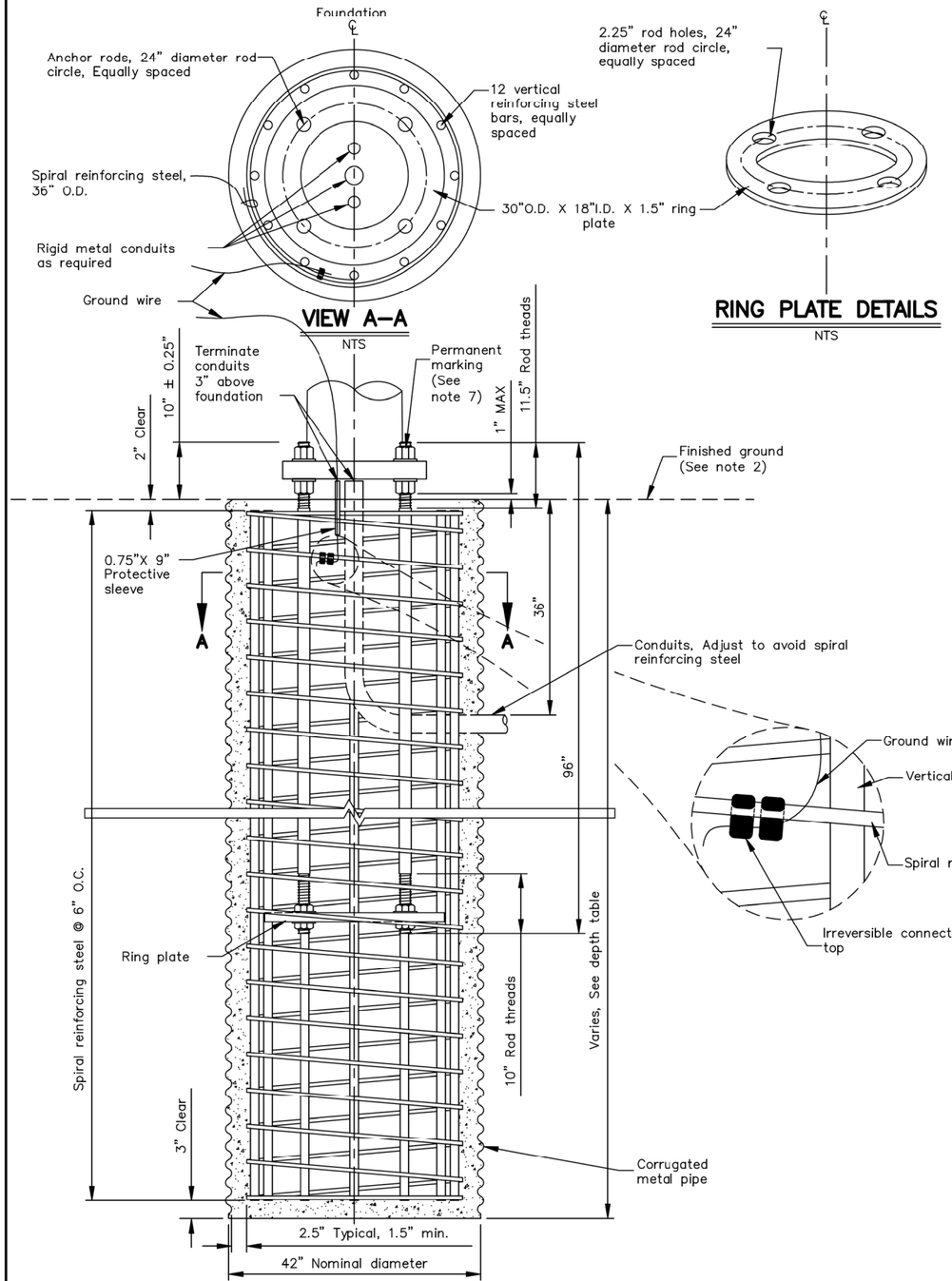

FOUNDATION DETAILS

Skirt omitted for clarity

MATERIAL REQUIREMENTS

Concrete	Class A	f'c = 4000 psi
CMP	AASHTO M218	14 ga.
Vertical reinforcing steel	AASHTO M31 #9	GR 60
Spiral reinforcing steel	AASHTO M31 #5	GR 60
Ground wire		#4 awg
Anchor rods 2" X 96"	ASTM F1554 S2, S3, & S5	GR 105
Fasteners, washers	ASTM F436	
Fasteners, nuts	AASHTO M292M	
Finish, anchor rods & fasteners	AASHTO M232	
Ring plate	AASHTO M270	GR 36
Conduit	Sch 40	RMC
Protective sleeve	Sch 40	PVC

DEPTH TABLE (See design notes for loads)

Mastarm length (ft.)	Foundation depth (ft.)
	Single mastarm
L <= 40	10
40 < L <= 50	11
50 < L <= 65	12

CONTROLLED LOW DENSITY MATERIAL MIX DESIGN

Item	Batching quantities per cy batch (lbs.)	Applicable specs.
Portland Cement	188	701-2.01
Water (52.1 gal.)	435	712-2.01
Fine Aggregate SSD	3041	703-2.01
Admixture Air Entrainment	2.0 oz.	711-2.02
Total	3664	

DESIGN NOTES:

Design Standard: 2013 Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals with 2013 Errata 2019 and 2020 Interim Revisions (SSSS).

Maximum Unfactored Service Loads (SSSS):

Axial	Shear	Moment	Torsion	Length
6,500 LBS	5,200 LBS	117,200 FT-LBS	68,800 FT-LBS	L<=40
7,000 LBS	5,300 LBS	131,200 FT-LBS	98,700 FT-LBS	40<L<=50
9,000 LBS	6,400 LBS	215,100 FT-LBS	162,500 FT-LBS	50<L<=65

Wind: Foundations shall not be used for locations over 100 mph basic wind speed as shown in the 2013 SSSS figure 3.8.3-1.

Soil: This foundation is approved for traffic signal applications in cohesionless soils with an N1-60 value of 20 or greater per AASHTO T-206, "Standard Penetration Test" (SPT) and soil density = 120 pcf and friction angle of 32.5 degrees.

NOTES:

1. This foundation shall not be used if any of the following are encountered: water table above the bottom of foundation, very loose soils, organic soils, cohesive soils (clay), slopes steeper than 6:1, or soils susceptible to frost jacking. If any of these conditions are encountered, stop foundation work and contact the engineer.
2. Place foundation in drilled or excavated hole with centerline of foundation located at the station, offset, and elevation specified in plans. Set foundation flush with surrounding surface. Grade to drain away from foundation without exposing more than 4" of the foundation from the surrounding ground surface.
3. Form the foundation in corrugated metal pipe conforming to Subsection 707-2.01 of the Specifications.
4. Provide 1.5 extra turns at each end of the spiral reinforcing steel. Reinforcing steel shall not be spliced. Tie vertical reinforcing steel to each intersection of the spiral reinforcing steel.
5. Connect ground wire near the top spiral reinforcing steel with two irreversible connectors as shown. Fasten connectors according to the manufacturers' recommendations including the use of manufacturer specified tools. The ground wire may be bare solid, stranded, or braided copper. Protect ground wire with protective sleeve as shown and fill with silicon sealant.
6. The ring plate may be "built up" of multiple steel plates. The minimum thickness for any one plate is 0.5 inches. Fasten the ring plate to anchor rods with nuts and washers on both sides of ring plate as shown. Torque ring plate nuts to 600 ft-lbs.
7. Anchor rods are subject to Charpy V-Notch Impact Testing. Submit mill certifications for anchor rods, nuts and washers. Galvanize anchor rods full length. Provide permanent manufacturer's identification and permanent grade identification on each end of anchor rod by steel die stamp. Secure exposed anchor rods with a "ring plate" when not in service. Install anchor rods plumb. Anchor rods greater than 1:40 out-of-plumb will result in foundation rejection.
8. Dual mast arms are not included in this standard and shall have custom designs.
9. Backfill and compact according to Section 204, and Subsections 203-3.04 and 660-3.01 of the Specifications. Use select material, Type A or controlled low density material as backfill material. Ensure area below foundation meets compaction requirements and is free of loose material and debris prior to concrete work.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CONCRETE 42" DIAMETER SIGNAL POLE FOUNDATION

Adopted as an Alaska Standard Plan by:

Lauren Little, P.E.
Interim Chief Engineer

Adoption Date: 01/29/2024

Last Code and Stds. Review
By: AH Date: 12/13/2023

Next Code and Standards Review Date: 12/13/2033

T-52.23