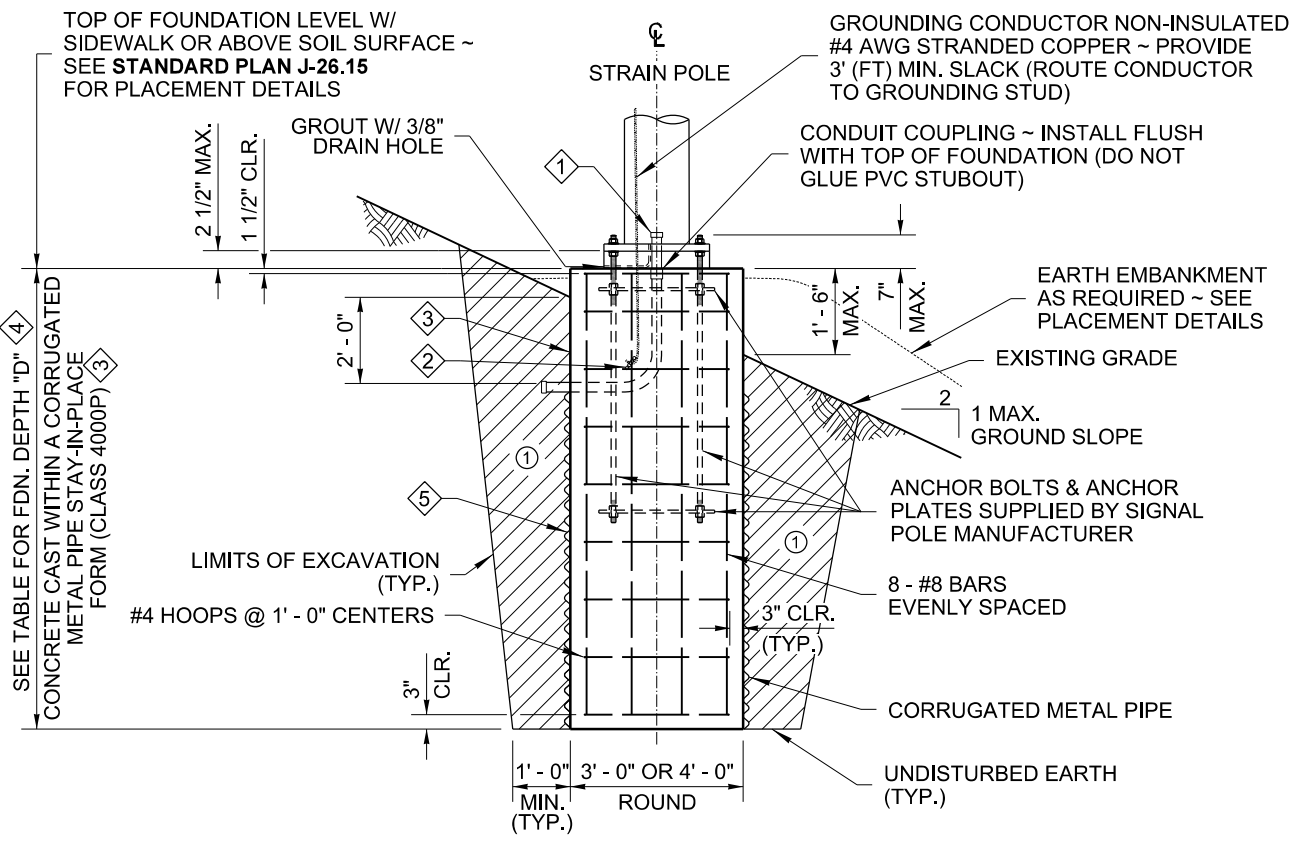


FOUNDATION REINFORCEMENT DETAIL

CONCRETE CAST DIRECTLY AGAINST UNDISTURBED EARTH, DRILLED SHAFT

ALTERNATE #1



FOUNDATION REINFORCEMENT AND BACKFILL DETAIL

CONCRETE CAST WITHIN A CORRUGATED METAL PIPE STAY-IN-PLACE FORM

ALTERNATE #2

NOTES

1. This structure has been designed according to the **Fifth Edition 2009 AASHTO Standard Specifications** for Structural Supports for Highway Signs, Luminaires, and Traffic Signals: Basic wind velocity 90 mph, Design Life/Recurrence Interval 50 years, and Fatigue Category III.
2. Foundations are designed for Type IV and V Strain Pole Standards with a maximum mast arm length of 16' - 0".
3. Foundations not within the parameters of this standard require Special Design. Contact the **WSDOT Bridge and Structures Office** through the Engineer for Special Foundation Designs.
4. Where a foundation is constructed within a Media Filter Drain, the foundation depth shown in the Contract Plans shall be increased by the depth of the Media Filter Drain.
5. The top 2 feet of the foundation shall use a smooth form (such as paper or cardboard). After the concrete has cured, this entire form shall be removed.
6. See **Standard Plan J-27.15** for Strain Pole Standards Type IV and V details.
7. Install Signal Foundation Identification Tag. See **Standard Plan J-26.15** for details.

- ① CONDUIT SIZE AND QUANTITY AS SHOWN IN THE CONTRACT; CAP BOTH ENDS.
- ② CLAMP CONDUCTOR TO STEEL REINFORCING WITH LISTED CONNECTOR SUITABLE FOR USE EMBEDDED IN CONCRETE.
- ③ PAPER OR CARDBOARD FORM SHALL NOT STAY-IN-PLACE
- ④ SEE NOTE 4

ALTERNATE #2 - CONSTRUCTION METHOD METAL (SUBSURFACE) FORM REQUIRED

When the existing soil will not retain a vertical face, over-excavate the foundation area and install a 36" or 48" (in) diameter corrugated metal (pipe) form. The top of the corrugated metal form shall terminate 1 foot below final grade. Continue forming to full height using a paper or cardboard form to achieve a smooth finish on final exposed cement concrete. Support the form as necessary to remain plumb.

Place the concrete foundation.

After concrete has cured, remove the entire paper or cardboard form portion.

- ① Shoring or Extra Excavation as required. Excavated area shall be backfilled with Controlled-Density Fill (CDF), or with soil in accordance with **Standard Specification Section 8-20.3(2)** and Compaction Method 1 of **Standard Specification Section 2-09.3(1)E**.



TYPE IV AND V STRAIN POLE TRAFFIC SIGNAL FOUNDATION
STANDARD PLAN J-27.10-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

ALTERNATE # 1 DRILLED SHAFT-TYPE CONSTRUCTION - DEPTH "D"																	
FOR LATERAL BEARING PRESSURE = 2500 PSF & Ø = 34°, 1500 PSF & Ø = 28°, 1000 PSF & Ø = 26°																	
GROUND SLOPE = 3H : 1V OR FLATTER									GROUND SLOPE = 3H : 1V TO 2H : 1V								
ALLOWABLE LATERAL BEARING PRESSURE	FOUNDATION TYPE	POLE CLASS - RESULTANT HORIZONTAL TENSION (LBS)							ALLOWABLE LATERAL BEARING PRESSURE	FOUNDATION TYPE	POLE CLASS - RESULTANT HORIZONTAL TENSION (LBS)						
		1900	2700	3700	4800	5600	6300	7200			1900	2700	3700	4800	5600	6300	7200
1000 PSF	3' - 0" ROUND	11' - 0"	13' - 0"	15' - 0"	16' - 0"	18' - 0"	19' - 0"	20' - 0"	1000 PSF	3' - 0" ROUND	SPECIAL FOUNDATION TYPE						
	3' - 0" SQUARE	11' - 0"	13' - 0"	15' - 0"	16' - 0"	18' - 0"	19' - 0"	20' - 0"		3' - 0" SQUARE	SPECIAL FOUNDATION TYPE						
	4' - 0" ROUND	10' - 0"	11' - 0"	13' - 0"	15' - 0"	15' - 0"	16' - 0"	18' - 0"		4' - 0" ROUND	SPECIAL FOUNDATION TYPE						
1500 PSF	3' - 0" ROUND	9' - 0"	11' - 0"	12' - 0"	14' - 0"	15' - 0"	15' - 0"	16' - 0"	1500 PSF	3' - 0" ROUND	10' - 0"	12' - 0"	13' - 0"	15' - 0"	16' - 0"	16' - 0"	17' - 0"
	3' - 0" SQUARE	9' - 0"	11' - 0"	12' - 0"	14' - 0"	15' - 0"	15' - 0"	16' - 0"		3' - 0" SQUARE	10' - 0"	12' - 0"	13' - 0"	15' - 0"	16' - 0"	16' - 0"	17' - 0"
	4' - 0" ROUND	8' - 0"	9' - 0"	10' - 0"	12' - 0"	13' - 0"	13' - 0"	14' - 0"		4' - 0" ROUND	9' - 0"	10' - 0"	11' - 0"	13' - 0"	14' - 0"	14' - 0"	15' - 0"
2500 PSF OR GREATER	3' - 0" ROUND	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"	13' - 0"	2500 PSF OR GREATER	3' - 0" ROUND	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"	13' - 0"	14' - 0"
	3' - 0" SQUARE	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"	13' - 0"		3' - 0" SQUARE	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"	13' - 0"	14' - 0"
	4' - 0" ROUND	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	10' - 0"	11' - 0"		4' - 0" ROUND	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	11' - 0"	12' - 0"

ALTERNATE # 2 CORRUGATED METAL PIPE TYPE CONSTRUCTION - DEPTH "D"																	
FOR LATERAL BEARING PRESSURE = 2500 PSF & Ø = 23°, 1500 PSF & Ø = 18°, 1000 PSF & Ø = 17°																	
GROUND SLOPE = 3H : 1V OR FLATTER									GROUND SLOPE = 3H : 1V TO 2H : 1V								
ALLOWABLE LATERAL BEARING PRESSURE	FOUNDATION TYPE	POLE CLASS - RESULTANT HORIZONTAL TENSION (LBS)							ALLOWABLE LATERAL BEARING PRESSURE	FOUNDATION TYPE	POLE CLASS - RESULTANT HORIZONTAL TENSION (LBS)						
		1900	2700	3700	4800	5600	6300	7200			1900	2700	3700	4800	5600	6300	7200
1000 PSF	3' - 0" ROUND	11' - 0"	13' - 0"	15' - 0"	16' - 0"	18' - 0"	19' - 0"	20' - 0"	1000 PSF	3' - 0" ROUND	SPECIAL FOUNDATION TYPE						
	4' - 0" ROUND	10' - 0"	11' - 0"	13' - 0"	15' - 0"	15' - 0"	16' - 0"	18' - 0"		4' - 0" ROUND	SPECIAL FOUNDATION TYPE						
1500 PSF	3' - 0" ROUND	9' - 0"	11' - 0"	12' - 0"	14' - 0"	15' - 0"	15' - 0"	16' - 0"	1500 PSF	3' - 0" ROUND	10' - 0"	12' - 0"	13' - 0"	15' - 0"	16' - 0"	16' - 0"	17' - 0"
	4' - 0" ROUND	8' - 0"	9' - 0"	10' - 0"	12' - 0"	13' - 0"	13' - 0"	14' - 0"		4' - 0" ROUND	9' - 0"	10' - 0"	11' - 0"	13' - 0"	14' - 0"	14' - 0"	15' - 0"
2500 PSF OR GREATER	3' - 0" ROUND	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"	13' - 0"	2500 PSF OR GREATER	3' - 0" ROUND	8' - 0"	9' - 0"	10' - 0"	11' - 0"	12' - 0"	13' - 0"	14' - 0"
	4' - 0" ROUND	6' - 0"	7' - 0"	8' - 0"	9' - 0"	10' - 0"	10' - 0"	11' - 0"		4' - 0" ROUND	7' - 0"	8' - 0"	9' - 0"	10' - 0"	11' - 0"	11' - 0"	12' - 0"