

Provide 2 Hardened Steel washers, 2 Hex nuts and one Leveling nut for each of post, all top and bottom nuts of anchor bolts shall be snug tightened against base plate

Top of Base Plate Elev

See Grout Note

Ground surface

3"

3" Min

1'-0 Max

2'-6 Min

** 2-1 1/2" ϕ Non-Metallic conduit with capped ends (See Project Plans and Conduit Note)

12" Min

2 1/4" ϕ x 5'-4 Anchor Bolts See Notes

Anchor plate with double hex nuts

3" Pitch Spiral For Length L

6" Pitch Spiral

3"

48" Dia

** See Grounding Notes

(*) Drilled shaft depth, soils condition, friction angle ϕ , subgrade reaction k of the drilled shaft, Engineer of Record, embedment, and all on the project plan.

GUSSET plate and bolt hole

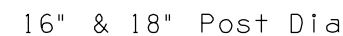
(*) Drilled shaft depth is based on uniform soils condition with unit weight = 110 pcf, friction angle $\phi = 29$ degrees, modulus of subgrade reaction $K = 50$ psf/ft. Depth or design of the drilled shaft shall be revised by the Engineer of Record for weaker soils or rock embedment, and all revision shall be shown on the project plans.

Gusset plates shall be placed perpendicular to base plate and post face, and centered between anchor bolt holes.

If the project plans do not callout for the installation of a conduit, 2-1/2" diameter non-metallic conduits shall be stubbed out 30" below grade. The stubbed conduits shall be perpendicular to traffic direction to the non-traffic side, be a minimum of 12" from edge of foundation cap, and the conduit ends shall be capped.

A 25 feet long coil of No. 4 AWG bare copper grounding wire shall be installed before concrete is poured and shall be connected to the post grounding screw in the hand hole.

Space to be filled with non-shrink grout after tubular structure is permanently erected.



20" & 22" Post Dia

16" & 18" Post Dia

20" & 22" Post Dia

All anchor bolts shall conform to ASTM F1554 Grade 55 Specifications. The upper 1'-2" and lower 6" shall be threaded. The upper 1'-8" shall be galvanized in accordance with the requirements of ASTM A153.

Provide bolt template during installation of anchor bolts. The bolt template shall be fabricated of 1/4" thick (Min) steel plate, similar to anchor plate details, and both the bolt template and the anchor plate shall be drilled to match the base plate.

Drilled shaft concrete shall be class 'S' and shall be placed within undisturbed material or compacted embankment. Top of drilled shaft shall be formed to 1'-0" below ground surface.

Compacted finished grade backfill or embankment shall be in place prior to erecting the post.

1/2" ϕ or 5/8" ϕ Spiral shall be cold drawn steel wire conforming to AASHTO M336, except Min Tensile Strength is 60,000 psi. Lap 1 1/2 turns at top and bottom of spiral.

STANDARDS ENGINEER A. ALZUBI	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	
RECOMMENDED FOR APPROVAL GROUP MANAGER D. EBERHART	TUBULAR SIGN STRUCTURES TUBULAR CANTILEVER FOUNDATION DETAILS	DRAWING NO. SD 9.10 (2 of 5)
APPROVED STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION 03/22 DATE		



Max Slope	'X'
8:1	0'
6:1	1'
4:1	2'
2:1	4'
1 1/2:1	5'
1:1	8'

Drilled Shaft Depth shall be adjusted for ground slope. Add value of 'X' in TABLE A to the minimum Drilled Shaft Depth to obtain the total length of shaft

Note to Designer:
The information presented in this Standard Drawing has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without proper professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

04/19

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