



CITY OF WEATHERFORD



SPECIFICATION
18WEA3002 - GALVANIZED STEEL POLE

PREPARED BY



FIRM # F-1594

JANUARY 3, 2019

**CITY OF WEATHERFORD
MATERIAL SPECIFICATION FOR
GALVANIZED STEEL POLES**

December 2018

1. ITEM: GALVANIZED STEEL POLE

2. SCOPE

This specification covers the minimum acceptable requirements for round, tapered, or multi-sided, galvanized steel poles to be purchased and used by the City of Weatherford. Procurement is to be in accordance with standard policies and procedures.

3. USE

The galvanized steel poles are to be used as construction material to support a variety of conductors or equipment pertaining to Whelen Engineering Company Vortex Series storm sirens in the vicinity of Weatherford, TX.

4. APPLICABLE STANDARDS

- 4.1 ASCE 48-11 Design of Steel Transmission Pole Structures
- 4.2 AWS D1.1 Structural Welding Code
- 4.3 ANSI C2 National Electrical Safety Code
- 4.4 SSPC-SP 6 / NACE No. 3 Joint Surface Preparation Standard Commercial Blast Cleaning
- 4.5 ANSI A595 Standard Specification for Steel Tubes, Low-Carbon or High-Strength Low-Alloy, Tapered for Structural Use
- 4.6 ANSI A36 Standard Specification for Carbon Structural Steel
- 4.7 ANSI A572 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

5. SPECIFICATIONS

5.1 Service Conditions

Poles shall be suitable for installation as a support for a variety of conductors or equipment pertaining to storm sirens in the vicinity of the City of Weatherford.

5.2 General Performance

Poles shall meet or exceed applicable referenced standards. Pole strength shall meet or exceed NESC Grade B requirements for a dense southern pine wood pole according to ANSI O5.1. Poles shall be tapered and designed such that axial loading and buckling of guyed poles will not be an issue.

5.3 Pole Size

All poles provided shall meet or exceed the strength requirements of standard 60' minimum class H1 steel poles. Top plate diameter shall be between a minimum 9" diameter at the cap and a maximum of 10" diameter at the cap. Nominal dimension is 9.5" diameter +/- 0.5" for the top 30" of pole. Tip diameter shall control pole selection.

5.4 Material

The steel used to manufacture the tapered steel pole sections shall be tested according to ASTM A572. Steel shall have a minimum ultimate tensile strength of 65,000 psi, a minimum yield strength of 50,000 psi. The steel used to manufacture the base plates or cap section shall be tested according to ASTM A36. The cap section may be a sunlight and weather resistant polymer.

5.5 Steel Chemical Properties

The A572 steel used to manufacture the tapered steel pole sections shall consist of approximately:

Iron	Approximately 93%
Carbon	≤0.26%
Copper	≤0.20
Silicon	≤0.4%
Magnesium	≤1.35%
Nickel	0.015%
Phosphorus	≤0.04%
Sulfur	≤0.05%
Vanadium	0.01% -- 0.05%

5.6 Fabrication

All poles may be either round or multi-sided.

Base plates shall have a diameter of not more than 2" greater than the maximum pole diameter. The drain hole shall be less than 20% of the bottom plate surface area.

Top plate shall be dimensioned and drilled as per pole detail provided. Other appurtenances, holes, and lugs shall be as described in the pole detail.

Provisions for grounding lugs shall be installed as per the Pole Framing Guide COW.1.

All poles shall be hot dipped galvanized after the fabrication of all holes and prior to the application of below grade coatings.

5.7 Welding

All structural welds are required to adhere to AWS D1.1 standards. All welds shall be inspected.

5.8 Marking

All poles shall be tagged with the following minimum information:

City of Weatherford
 Manufacturer
 Manufacture Date
 Length, Catalog #
 Weight, Grade B Ground Line Moment

Manufacturer tag shall be located approximately 14' from the butt of the pole plus or minus 3". Poles will have a 10% + 4' embed depth of 10'.

5.9 Coatings

The entire surface area (inside and outside) below grade shall be coated with 20 mil thick ceramic epoxy coating. Coating shall be applied to a point 12" above ground line. Below grade coating shall have the following performance characteristics.

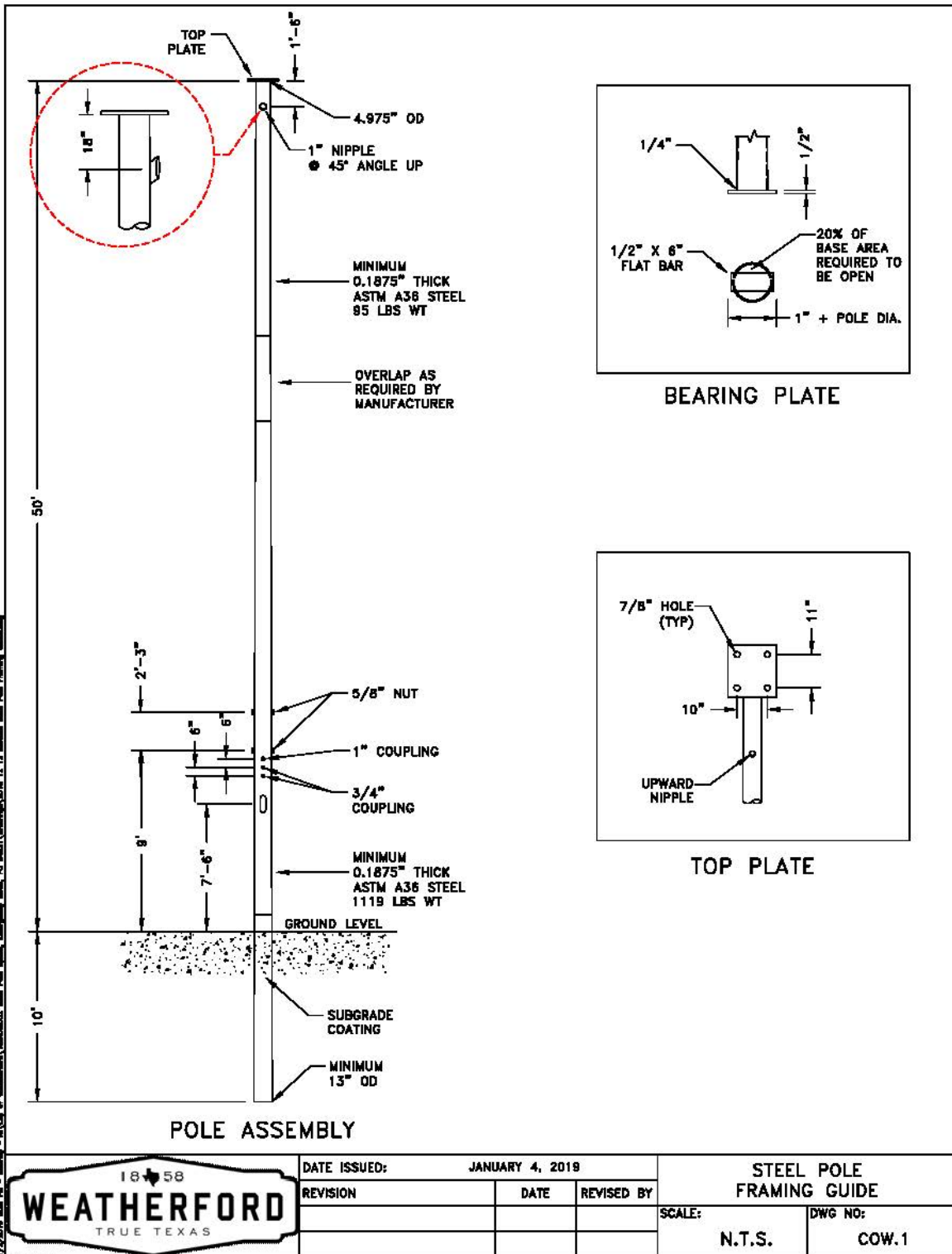
Below Grade Coating Performance		
TEST	DURATION	RESULTS
ASTM D-714 20% Sulfuric Acid Immersion	7,000 hours	No effect
25% Sodium Hydroxide Immersion	7,000 hours	No effect
5% Sodium Chloride Solution With un-scribed panel	7,000 hours	No effect
5% Sodium Chloride Solution Panel scribed to metal	7,000 hours	None to very slight underfilm corrosion at the scribe
Distilled Water Immersion	7,000 hours	No effect
Salt Fog (5% Sodium Chloride Solution Mist at 95°F with scribed panel)	7,000 hours	None to very slight underfilm corrosion at the scribe
Impact Resistance for Pipe Line Coatings ASTM G-14		Passed 140 inch/lb
ASTM D-1653		0.00 Metric Perms

6. DELIVERY

Poles shall be delivered on suitable trailers, with a maximum 65,000 lb. load. The carrier shall furnish a delivery ticket with each delivery that details the number, length, and class of poles delivered. Delivery truck shall be capable of offloading all poles within the City of Weatherford's pole yard without assistance. Rolling off poles shall not be allowed under any circumstances.

7. MANUFACTURER WARRANTY

Successful Bidder shall submit with Bid the Terms and Conditions of Manufacturer Warranty for Owner evaluation. The warranty shall be issued by an insurance agency.



DATE ISSUED: JANUARY 4, 2019		STEEL POLE FRAMING GUIDE	
REVISION	DATE	REVISED BY	SCALE:
			N.T.S.
			DWG NO: COW.1