FAYETTEVILLE PUBLIC WORKS COMMISSION
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TELEPHONE (910) 483-1401
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October 21, 2021

MEMO TO: Prospective Bidders

FROM: Trent Ensley, Procurement Manager

SUBJECT: Advertisement for Invitation to Bid: **November 10, 2021; 2:00 p.m.**

PWC2122021 - STEEL POLE CONTRACT

Fayetteville Public Works Commission (PWC) will be pleased to receive your bid no later than **2:00 p.m. Wednesday November 10, 2021**, for the purchase of the following:

STEEL POLE CONTRACT

Enclosed please find our Instructions to Bidders, Detailed Specifications, and Bid Proposal forms. Proposals shall be submitted on the forms provided herein, or exact copies thereof, and the Bidder shall return one copy of the entire bid packet along withthe completed bid proposal forms and any other information specified in the bid documents.

Bids may be delivered in person or by express mail to the Fayetteville Public Works Commission (PWC) Procurement Department, Attn: Shelby Lesane, 955 Old Wilmington Road, Fayetteville, NC, or maybe mailed to Fayetteville Public Works Commission, Attn: Shelby Lesane, P.O. Box 1089, Fayetteville, NC 28302. Bids received after the stated date and time will not be considered.

Questions regarding this bid must be submitted in writing to the attention of Shelby Lesane, Procurement Advisor at shelby.lesane@faypwc.com later than **5:00 p.m., Tuesday, November 2, 2021** in order to be considered for response.

FAYETTEVILLE PUBLIC WORKS COMMISSION
INSTRUCTIONS TO BIDDERS

PWC2122021
STEEL POLE CONTRACT

1. Bids shall be received no later than **2:00p.m. Wednesday November 10, 2021** at which time they will be publicly opened and read aloud outside of the PWC Administrative Building,955 Old Wilmington Road, Fayetteville, North Carolina, by the entrance doors. Late bids will not be considered and will be returned to the Bidder unopened.

2. Bids will be examined promptly after opening and an award will be made at the earliest possible date. Award of bid is subject to approval by the Fayetteville Public Works Commission and the Fayetteville City Council.

3. Approximately six (6) weeks from date of bid opening is necessary for approval of award and issuance of purchase order or contract. Contract award shall be made to the lowest responsive, responsible bidder while taking into consideration delivery, wait time, exceptions and any additional information PWC deemed necessary to conduct an evaluation. PWC reserves the right to request additional information from bidders to aidin the evaluation process. This information may include, but is not limited to financial statements, reference list showing companies currently utilizing the proposed equipment etc.

4. Bids must be held firm for acceptance by Public Works Commission (PWC) for a period of ninety (90) days after bid opening date.

5. Submit bids only on the bid proposal form(s) provided herein, or exact copies thereof (See Attachment A).

6. PWC reserves the right to award contract in the best interest of the Commission. PWC also reserves the right to reject any or all bids and to waive all informalities concerning bid.

7. Bid shall be submitted in a sealed opaque envelope showing the bid title, date and time of opening on the front of the envelope. Bids may be sent via US Mail to Public Works Commission, Attn: Shelby Lesane, Procurement Advisor, P.O. Box 1089, Fayetteville, NC 28302 or may be delivered in person or by express mail to Public Works Commission, Attn: Shelby Lesane, Procurement Advisor, 955 Old Wilmington Road, Fayetteville, NC 28301specifically called for on the bid proposal form.

8. All bids must be signed by an authorized official of the firm. Bids may be rejected if they show any omission, alteration of form, additions not called for, conditional bid, or any irregularities of any kind.

9. **Alternate Bids:** Do not submit alternate bids unless specifically called for on the bid proposal form. To warrant consideration, Proposals must comply with these bid documents. Strict and adherence to Technical Specifications and

Drawings is requested to facilities review and consideration of the proposal.

Delivery shall be F.O.B. Public Works Commission Warehouse Facility, 1097 Public Works Drive, Fayetteville, NC 28301.

10. Payment for equipment, material, supplies, etc. purchased pursuant to this bid shall be made approximately thirty (30) days after same has been delivered, inspected, and approved. Supplier is responsible for delivery of product that meets PWC specification. And inspect for any damage. When product is received in a damaged condition, PWC willcontact the supplier for a replacement and PWC will request expeditious delivery to meet schedule needs. Supplier will bear the cost of replacement and or repair if applicable and shipping costs. Faulty or damaged pieces shall be replaced by the seller at his cost to meet schedule needs.

11. All questions regarding this Invitation to Bid shall be submitted in writing to Shelby Lesane, Procurement Advisor, by e-mail to Shelby.lesane@faypwc.com, no later than **5:00 p.m., Tuesday, November 2, 2021.**

12. Bidders are expressly prohibited from contacting any PWC official or employee associated with this Invitation to Bid, **except as noted above**. Violation of this provision is grounds for the immediate disqualification of the bidder.

13. All changes and clarifications to the specifications and bid documents will be issued in writing in the form of an addendum. No verbal changes or clarifications will be binding upon PWC.

14. The term of this contract shall be for a 3-year period from date of execution of the contract. Subject to mutual agreement, the parties may extend the contract for 3 additional periods of one year each. All prices quoted herein shall be firm against any increase for the initial first quarter after contract execution. The Supplier shall present any proposed price adjustments on a quarterly basis. Unit prices will be adjusted at the beginning of each quarter using the following methodology or similar methodology agreed upon by PWC and the supplier. Unit prices will be adjusted using the $/lb./change between the contract (base index) unit price and the average of the last three published monthly index unit prices of steel as taken from the American Metal Market published data. The $/lb./change multiplied by the total weight of steel present in each pole configuration will be added to /deducted from the original contract price to become the new unit price for that pole for the quarter.

15. **Forecast Quantities:** PWC will submit to Supplier a nonbinding, forecast for tubular steel structures for current and the subsequent years. All forecasts provided by PWC shall not be binding in any way and PWC may modify and such forecast at any time. The supplier represents and warrants that is has the capacity and expertise necessary to manufacture and deliver to PWC the initial forecasted quantity of tubular steel poles and accessories. The Supplier and PWC will work together regarding any changes in forecast quantities from the initially forecasted amount. Supplier will have the right to review each forecast and if it cannot meet the forecast Supplier will notify PWC within a reasonable commercial time and the parties willagree on a revised forecast. PWC and the supplier will work together to

develop mutuallyagreeable release dates, considering PWC's needs and the supplier's manufacturing schedule.

16. **Lowest Cost Guarantee:** Supplier warrants and represents to PWC that the prices specified in the contract, as amended from time to time, are and will be as low as the prices at which Supplier is currently selling or will sell or currently intending to sell equivalent tubular steel poles or similar products in the same or similar quantities,. If during the Term, Supplier reduces the prices of the structures, in part or in whole, Supplier will: (i) promptly notify PWC in writing of such reduction; and (ii) apply an equivalent reduction in price to all such products ordered by PWC which have not been previously shipped and invoicedat the time of such reduction. The prices thereafter be adjusted to reject such reduction forthe balance of the term or until the prices are further adjusted pursuant to the contract.

17. **Changes to Purchase Order:** All quantities ordered by PWC may be revised as requirements change. PWC may at any time make changes in delivery dates, shipping instructions, quantities ordered, or other terms of the purchase order. PWC will confirm such changes in writing, and Supplier will advise PWC in writing if the changes will result in changes to delivery schedules or other changes.

18. **Termination for Cause:**

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with these Contract Documents.

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction.

3. Contractor's disregard of the authority of PWC; or

4. Contractor's violation in any substantial way of any provisions of these Contract Documents.

Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or from such termination.

19. **Termination for Convenience:**

A. Upon seven (7) calendar days written notice to CONTRACTOR the OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, Contractor shall be paid (without duplication of any items):

1. For completed and approved Work executed in accordance with these Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work.

2. For expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by these Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit

on such expenses.

3. For all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others;

4. For reasonable expenses directly attributable to termination as approved by PWC.

20. **Indemnity**

Contractor shall indemnify, defend, and hold harmless PWC and its Commissioners, officers, employees, agents, and representatives and the City and its elected officials, managers, employees, agents, and representatives and Designer (collectively "Indemnitees") from and against all claims, actions, liabilities, damages, losses, costs, and expenses (including, without limitation, injury to or death of any persons and damage to property, economic and consequential damages and attorneys' fees) asserted by one or more third parties against one or more of the Indemnitees if the Fault of one or more Responsible Persons is a proximate cause of the loss, damage, or expense indemnified. Contractor's obligation to indemnify, defend, and hold harmless the Indemnitees shall survive the termination of this Agreement.

21. **Dispute Resolution**

These Contract Documents shall be construed, governed, and interpreted under the law of the State of North Carolina. Should any dispute arise out of or pertaining to the performance of these Contract Documents, such disputes shall be litigated and decided either solely in the District Court Division or in the Superior Court Division of the General Court of Justice of the County of Cumberland, North Carolina. This forum selection clause is mandatory and binding on all parties.

22. **Compliance:** Contractor hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of theNorth Carolina General Statutes. Contractor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with N.C.G.S.§64-26(a). Contractor hereby pledges, attests and warrants through execution of this Agreement that Contractor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that all subcontractors currently employed by or subsequently hired by Contractor shall complywith all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement. Contractor hereby further acknowledges that the execution and delivery of this Agreement constitutes Contractor's certification to PWC and to the North Carolina State Treasurer that, as of the date of the Effective Dateof this Agreement, Contractor is not listed on (a) the Final Divestment List created and maintained by the North Carolina Department of State Treasurer pursuant to the Iran Divestment Act of 2015, Chapter 147, Article 6E of theGeneral Statutes of North Carolina (the "Iran Divestment Act"); or (b) the list of companies that the North Carolina State Treasurer determines to be engaged in a boycott of Israel in accordance with Article 6G of Chapter 147 of the General Statutes of North Carolina.

Contractor represents and warrants to Commission that Contractor, and all persons and entities owning (directly or indirectly) an ownership interest in it: (i) are not, and will not become, a person or entity with whom a party is restricted from doing business with under regulations of the Office of ForeignAsset Control ("OFAC") of the Department of the Treasury (including, but not limited to, those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including, but not limited to, the September 24, 2001, Executive Order 13224 Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action; and (ii) are not knowingly engaged in, and will not knowingly engage in, any dealings or transactions or be otherwise associated with such persons or entities described in clause (i) above. Contractor also shall at all times during the term of this Agreement comply with Executive Order 11246, including but not limited to the Equal Opportunity Clause requirements set forth in 41 C.F.R. § 60-1.4. Contractor shall abide by the requirements of 41 CFR 60–300.5(a) and 60–741.5(a) prohibiting discrimination against qualified individuals on the basis of protected veteran status or disability and requiring affirmative action by covered prime contractors and subcontractors to employ and advance in employmentqualified protected veterans and individuals with disabilities

Public Works Commission
Fayetteville, NC
Electric Systems Division
Material Specification

1-220 Steel Pole Specifications **Revision Date: July 1, 2021**
Revised By: Glenn Andersen

POLE, TUBULAR GALVANIZED STEEL, S-04.2 TO S-06.5, 75 FT. TO 100 FT.

1.0 SCOPE

This specification covers the design, materials, welding, inspection, protective coatings, drawings, and delivery of steel transmission structures including ladders and anchor bolt cages used for constructing overhead transmission lines. The proposal submitted by the manufacturer shall include field bolts, locknuts, base plates, and other necessary items to make a complete structure. The proposal shall also include bolts, washers, nuts, locknuts and/or other provisions and materials for attaching the bog shoes per the following specifications:

1.1 Tables and Drawings

All poles shall conform to the Drawings, Tables, Codes and Standards references included herewith, all of which form a part of these Specifications.

Table 1	Steel Pole Strength Requirements
Table 2	PWC Stock Numbers
Attachment A	2-Hole Ground Pad Detail

2.0 DEFINITIONS

a. Cambering – the fabricating of a slight convex curve in a pole

b. D/t – the ratio of the diameter of a tubular pole to the steel plate thickness

c. Engineer – a registered or licensed person, who may be a staff employee or an outside consultant, and who provides engineering services. Engineer also includes duly authorized assistants and representatives of the licensed person.

d. Ground line – a designated location on the pole where the surface of the ground will be after installation of a direct embedded pole

e. Load factors (LF) – a multiplier which is applied to each of the vertical, transverse and longitudinal structure loads to obtain an ultimate load

f. P-delta moment – secondary moment created by the vertical loads acting on the structure when the structure deflects from its unloaded position

g. Point-of-fixity – location on the pole at ground line or below ground line where the maximum moment occurs

h. Raking – the practice of installing a straight pole out of plumb, or at an inclined angle

i. W/t – ratio of the width of the pole (flat-to-flat) to the plate thickness

j. Ultimate load – the maximum design load which includes the appropriate load factor specified

3.0 CODES AND STANDARDS

Codes, standards, or other documents referred to in this specification shall be considered as part of this specification. The following codes and standards are referenced:

a. American Institute of Steel Construction (AISC), Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, latest edition.

b. American Society of Civil Engineers (ASCE) Standard, Design of Steel Transmission Pole Structures, ASCE/SEI 48, latest edition.

c. American Society for Testing and Materials (ASTM), various standards, latest version.

d. American Concrete Institute (ACI), Building Code Requirements for Reinforced Concrete, ACI 318, latest edition.

e. American Welding Society (AWS), Structural Welding Code, AWS D1.1, latest edition.

f. American National Standards Institute (ANSI), National Electrical Safety Code, ANSI C2, latest edition.

g. Steel Structure Painting Council (SSPC), Surface Preparation Specification, SSPC SP6, latest edition.

4.0 CONFLICT BETWEEN THIS SPECIFICATION, DRAWINGS, AND REFERENCED DOCUMENTS

In the event of conflict between this specification and the above referenced documents, the requirements of this specification shall take precedence. In the case of conflict between several referenced documents, the more stringent requirement shall be followed. If a conflict exists between this specification or the referenced documents and the attached drawings, the attached drawings shall be followed. If clarification is necessary, contact the Owner or Owner's representative.

5.0 TECHNICAL REQUIREMENTS

The design, fabrication, allowable stresses, processes, tolerances, and inspection shall conform to the American Society of Civil Engineers (ASCE) Standard, Design of Steel Transmission Pole Structures, latest edition, with the following additions and/or exceptions:

5.1 Design

5.1.1 Pole designs shall be prepared from the attached configuration drawings and design loads. The structure shall be capable of withstanding all specified loading cases including secondary stresses from foundation movements when specified, but not considering the possible restraining effect of conductors or shield wires. The structure shall withstand the loads without failure, permanent distortion, or exceeding any specified deflection limitations.

5.1.2 Wind pressures shown in the loading criteria shall be multiplied by the appropriate shape factor applied to the poles. Pressures in psf shall be computed as follows:

$$p = W \times Cd$$

Where p = pressure on projected area of the pole normal to wind, W = wind pressure, and Cd = shape (or drag) factor.

Shape factors for computing the wind on poles are:

Round	1.0
Hexagon	1.4
Octagon	1.4
Dodecagon	1.0
Square	1.6

5.1.3 The maximum design unit stress under full design load shall be the minimum yield strength as stated in applicable ASTM specifications for the particular application and types of loads, including load factors.

5.1.4 Poles shall be designed with a minimum number of joints. Field welding shall not be allowed as part of the design of a new pole. The shaft joints to be made in the field shall be slip joints or bolted flange joints. Slip joint length shall be at least one and one-half (1-1/2) times the largest inside diameter of the female section. Bolted flange joints may be used for medium angle and heavy angle guyed structures and X-braced H-frame structures. If approved by the Owner or Owner's representative, a strap across the pole splice to prevent separation of the male and female sections of the pole may be used for X-braced H frame structures. Approval must be obtained prior to bid.

a. Manufacturer shall verify slip joint fit before shipment. Joints should not interfere with through holes, ladder clips, or jacking nuts.

b. Sufficient jacking lugs and permanent orientation marks shall be provided at all slip joints to ensure proper alignment and complete overlap of the joint.

5.1.5 The ultimate load in guys shall not exceed sixty-five percent (65%) of the rated breaking strength of the guy.

5.1.6 Minimum plate thickness for all pole components shall be three-sixteenths (3/16) inch. Minimum tip diameter for all poles shall be nine (9) inches point-to-point, (8.69) inches flat-to-flat.

5.1.7 Structures which are to be direct embedded shall have bearing plates. Bearing plates shall have a diameter not more than two inches (2″) greater than the maximum pole diameter.

5.1.7.1 Galvanized poles shall have a drain hole at the bottom. The drain hole shall not be greater than 20% of the bottom plate surface area.

5.1.7.2 Direct embedded steel poles shall have ground sleeves. Ground sleeves shall have a minimum length of four feet (4′ 0″).

5.1.7.3 The Ground sleeve shall have a minimum thickness of three-sixteenths (3/16″) inch and shall be centered at ground line. A seal weld shall be provided around the ground sleeve. The ground sleeve shall not be considered in strength calculations. Galvanizing vent holes are allowed.

5.1.8 Poles shall have nearly a uniform taper throughout their entire length. The maximum difference in tapers between two (2) pole sections measured by the diameters shall be 0.020 inch/ft. for poles with variable taper.

5.1.9 Standard Class Designations

5.1.9.1 Tangent and guyed angle structures have been specified using RUS Standard Steel Pole Class Designations shown in Table 1 unless noted otherwise.

5.1.9.2 Pole designs shall be prepared for the attached Standard Class design loads. The poles shall be designed to meet ASCE/SEI 48, “Design of Steel Transmission Pole Structures,” design methods. The point-of-fixity shall be considered to be located at a distance from the pole bottom that is equal to seven percent (7%) of the pole length. The pole shall be symmetrically designed such that the strength required in any one direction shall be required in all directions about the longitudinal axis.

5.1.9.3 Using the corresponding values in Table 1, the poles shall be designed for the following requirements.

a. The pole shall develop the minimum ultimate moment capacity required in Table 1 at a distance of five feet (5′-0″) from the pole top.

b. The pole shall develop the minimum ultimate moment capacity above the point-of-fixity that is calculated by multiplying the tip load in Table 1 by the distance to the tip load.

c. The geometry and taper of the pole shall be uniform throughout their entire length (top to butt).

5.1.9.4 The poles shall be designed to withstand the specified tip loading in Table 1 without exceeding a pole deflection of fifteen percent (15%) of the pole length above the point-of-fixity when tested in accordance with ASCE/SEI 48.

5.1.9.5 Overall length of poles shall be designed and manufactured in incremental lengths of five feet (5′-0″).

5.1.9.6 Poles shall be designed for the loads generated from handling and erecting without causing permanent deformation or damage to the pole when handled according to the manufacturer's instructions. Handling and erecting loads shall include but not be limited to, a one (1) point (tilting) pickup and a two (2) point (horizontal) pickup.

5.1.9.7 The maximum design unit stress shall be the minimum yield strength as stated in applicable ASTM specifications for the particular application and types of loads, including load factors.

5.1.9.8 The top of the pole shall be permanently covered with a structural steel plate that is bolted or otherwise permanently attached to the pole. Bolt on top plates shall be shipped in a sealable container with all associated hardware.

5.1.9.9 Pole design and design calculations shall be the responsibility of the manufacturer.

5.1.9.10 Grade and type of steel shall be uniform for each pole section.

5.1.10 Lifting lugs are optional. The manufacturer shall supply all instructions for handling and erection of poles.

5.1.11 In the design of connections for vangs, brackets or stiffeners attached to the pole shaft, care shall be taken to distribute the loads sufficiently to protect the wall of the pole from local buckling.

5.1.12 Each pole shall be permanently marked on the pole shaft sixty-six inches (66″) above ground line and on the bottom of base plate or bearing plate with the following identifying information:

- □ Manufacturer's Identification / Job Number
- □ Height and Class
- □ Ultimate Ground Line Moment
- □ Owner's Name (FAY PWC)
- □ Date Manufactured

The method of identification shall be approved by the Owner. The lettering shall be at least three-quarters (3/4) inches in height.

5.1.13 Grounding Attachments

5.1.13.1 One (1), two-hole NEMA grounding pad shall be provided on one side of each pole as indicated below:

a. One foot-six inches (1′-6″) below the top of pole to provide a grounding location for the overhead ground wire.

b. One foot (1′–0″) above ground line to provide a pole ground location.

c. Both grounding pads shall be the same pole face.

d. A five-eighths (5/8) inch diameter hole shall be provided through the tower wall for each hole in the grounding pad.

5.1.13.2 See Attachment A – Drawing for NEMA Grounding Pad Detail.

5.1.13.3 Grounding pads and threads shall not be painted or covered with other coatings.

5.1.13 Multi-section poles shall be permanently marked as to pole height and pole class to enable identification of appropriate pole section.

5.1.14 Plastic plugs shall be installed in all nuts welded to the structure and all tapped holes. Preformed Line Products plugs or equal are acceptable.

5.1.15 All Pole TOPS with the same pole class shall be interchangeable with all pole BASES of the same pole class. (EXAMPLE: Pole BASES for 75', 80', 85', 90', and 95' S-04.9 shall all be the same. The pole TOPS shall vary in length in five (5) foot increments.)

5.2 Materials

5.2.1 All materials shall comply with the applicable requirements of ASTM specifications. Any modifications to ASTM specifications must be approved by the Owner's representative prior to bidding.

5.2.2 Poles shall conform to ASTM A36, ASTM A572, ASTM 581, ASTM A588, ASTM A871, or ASTM A595.

5.2.3 Base plate shall conform to ASTM A572, ASTM A588, ASTM A633, or ASTM A595.

5.2.4 Other bolts and nuts shall conform, as applicable, to ASTM A307, ASTM A325, ASTM A354, ASTM A394, or ASTM A687. Locknuts shall be provided for each structure bolt, or American Nut Company (ANCO) type self-locking nuts may be used. Locknuts shall be the galvanized MF or ANCO type.

5.2.5 Structural plate and weld material shall meet ASCE requirements for Charpy tests.

5.2.6 Steel used for the pole shall have silicon content less than .06 percent.

5.3 Fabrication

5.3.1 All welding shall be in accordance with the American Welding Society Code AWS D1.1, latest edition. Welders shall be qualified in accordance with AWS .1 welding procedures.

5.3.2 One hundred percent (100%) penetration welds shall be required in, but not limited to, the following areas:

- circumferential welds (C-welds) joining structural members,
- longitudinal welds in the female portion of the joint within the slip joint area, plus 6".
- welds at the butt joints of back-up strips,
- base plate to shaft weld,
- longitudinal welds for a minimum length of three inches (3″) where there are adjacent C-welds, flange welds, base welds and ends of tubes.

5.3.3 Quality and acceptability of every inch of the full penetration welds shall be determined by visual and ultrasonic inspection.

5.3.4 All other penetration welds shall have sixty percent (60%) minimum penetration. Quality and acceptability of all welds other than full penetration welds shall be determined by visual inspection, supplemented by magnetic particle, ultrasonic or dye penetrant inspection.

5.3.5 All weld back-up strips shall be continuous the full length of the welds. Care shall be exercised in the design of welded connections to avoid areas of high stress concentration which could be subject to fatigue or brittle fractures.

5.3.6 Field welding shall not be permitted except with the Engineer's and Owner's approval and with the manufacturer's direction in repairing a pole.

5.3.7 All parts of the structure shall be neatly finished and free from kinks or twists. All holes, blocks, and clips shall be made with sharp tools and shall be clean-cut without torn or ragged edges.

5.3.8 Before being laid out or worked in any manner, structural material shall be straight and clean. If straightening is necessary, it shall be done by methods that will not injure the metal.

5.3.9 Shearing and cutting shall be performed carefully and all portions of the work shall be finished neatly. Copes and re-entrant cuts shall be filleted before cutting.

5.3.10 All forming or bending during fabrication shall be done by methods that will prevent embrittlement or loss of strength in the material being worked.

5.3.11 Holes for connection bolts shall be one-sixteenth (1/16″) inch larger than the nominal diameter of the bolts. Holes in the flange plates for bolted splices shall be one-eighth (1/8″) inch larger than the bolt diameter. The details of all connections and splices shall be subject to the approval of the Owner or his representatives.

5.3.12 Holes in steel plates which are punched must be smooth and cylindrical without excessive tear out or depressions. Any burrs that remain after punching shall be removed by grinding, reaming, etc.

5.3.13 Holes of any diameter may be drilled in plate of any thickness. Care shall be taken to maintain accuracy when drilling stacks of plates.

5.3.14 Holes may be made by use of a machine guided oxygen or plasma torch. Flame cut edges shall be reasonably smooth and suitable for the stresses transmitted to them.

5.3.15 Tolerances

Fabrication tolerances shall be as follows:

a. Length of single piece or flanged poles 3″

b. Cross section of poles: Diameter of 36″ or less +1/4″, -1/8″. Diameter greater than 36″ +1/2″, -1/4″, circumference of all poles - 0″

c. Location of hardware with respect to top of pole 2″

d. Camber 1″ per 16″of specified camber

e. Pole Butt plate perpendicular to pole 1/16″ for 12″ as measured on a perpendicular axis

f. Straightness of pole 1/2″ from center line

g. Location of a drilled hole in a piece 1/8″

h. Spacing between holes: Base plates 1/8″, same connection 1/16″ (non-accumulative)

i. Length of overlap of slip joint, +5″ - 10% of slip joint length

j. The overall length of the assembled structure should not be less than six inches (6″) and not more than twelve inches (12″) of the specified length.

5.4 Finishes

5.4.1 The following finishes are acceptable: galvanizing and below grade coating.

a. Galvanizing – All structures and structural components which are hot-dip galvanized shall meet all the requirements of ASTM A123 or ASTM A153. Measures shall be taken to prevent warping and distortion according to ASTM A384 and to prevent embrittlement according to ASTM A143. Poles made of ASTM A588 steel shall not be galvanized due to the high silicon content of the steel.

b. Coatings for the Embedded Portion of the Pole – When poles are to be directly embedded, a sixteen (16) mil (minimum dry film thickness), two (2) component hydrocarbon extended polyurethane coating that is resistant to ultraviolet light shall be applied on the exposed surface of the embedded portion of the pole. The coating shall extend from the pole butt to three feet (3′) above groundline. Other coatings shall be approved by the Owner prior to their use.

5.4.2 Compliance with coating thickness requirements shall be checked with a magnetic thickness gauge.

5.5 Inspection and Testing

5.5.1 The Owner and the Owner's designated agents shall have free entry at all times while work is being carried on, to all parts of the manufacturer's plant to inspect any part of the production of the poles covered by this specification.

5.5.2 Steel members which are bent or warped or otherwise improperly fabricated shall be properly repaired or replaced at the manufacturer's expense.

5.5.3 The cost of tests made by the manufacturer (except full scale load tests on poles), including cost of the certified test reports, shall be considered included in the price.

5.5.4 The manufacturer shall make tests in accordance with ASTM A370 and ASTM A673 to verify that the material used in the structures meets the impact properties.

5.5.5 Mill test reports showing chemical and physical properties of all material furnished under this specification shall be maintained by the manufacturer for a period of five (5) years and shall be traceable to the structure.

5.5.6 All plates over one and one-half inch (1-1/2″) thick shall be ultrasonically tested to assure against defects which could lead to lamellar tearing.

5.5.7 Welders or welding operators shall be qualified in accordance with the provisions of AWS D1.1.

5.5.8 The manufacturer shall make certified welding reports for each structure. The reports covering welding shall include all welds of a structure. Each weld shall be clearly identified; and the report shall consist of the method of testing, whether the weld is acceptable, the identification of the structure, the date, and the name and signature of the inspector. Records of welding

procedure and welding operator test results shall be kept for six (6) years by the Materialman and shall be available for review by the Engineer or Owner.

5.6 Shipping

5.6.1 Each shipment shall be accompanied by a checklist of all parts, identifiable by structure type and number, and shall contain the PWC Stock Code Number and Purchase Order Number. Bolts and miscellaneous hardware will be identified by the list for match up with the respective pole shaft and shall be boxed or bundled. All parts required for any one structure shall be in one (1) shipment, if possible.

5.6.2 The Owner and Owner's representative shall be notified prior to shipment that such shipment is to take place, and they reserve the right to inspect the components prior to shipment. The notification shall give detailed quantities; weight, name of common carrier used, and expected time of arrival with at least two (2) working days' notice of delivery. This notification must occur on a normal working day. Delivery shall be at the site designated between 9:00 a.m. and 12:00 p.m. (Noon), Monday through Thursday, holidays excluded.

5.6.3 Poles shall be properly blocked and restrained on open bodied trucks, with minimum 5" space between each pole and from bottom of load to truck bed, to allow access for forklift unloading from the sides. Deliver to PWC's Warehouse. Notify PWC Warehouse personnel (910-223-4355) 48 hours in advance of delivery.

6.0 INFORMATION TO BE SUPPLIED BY THE MANUFACTURER

6.1 Information to be Supplied with the Quotation

a. Calculated shipping weight of each pole,

b. Ultimate ground line reactions (including load factors) of each pole,

c. Type of material of major components (ASTM number),

d. Description of pole shaft, including thickness, length, diameter, cross-sectional geometry, and method of joining each shaft component,

e. Design exceptions.

f. Manufacturer's standards, physical and mechanical dimensions for all steel pole height and class combinations used in the project being bid on.

6.2 Documentation to be Supplied for the Owner's Approval Prior to Fabrication

Documentation includes final design calculations for pole shaft, base plate, and other appurtenances, including their connections for all structures. The following information shall be supplied:

a. For the loading cases with load factors, the total shear, axial forces, moments, stresses or stress ratios, moments of inertia furnished, section moduli, cross-sectional

areas, deflections w/t's for polygonal and d/t's for round cross sections at all splices, and at least every ten feet (10′-0″) along the pole and at five feet (5′-0″) from pole top.

b. For the critical loading case, shear and axial forces, moments, stresses, section moduli.

c. Anticipated deflections at the top of the pole shall be indicated for each pole for the normal, everyday loading condition of sixty degrees Fahrenheit (60ºF), no wind, without load factors.

d. For all specified loading cases, reactions and ground line moments shall be supplied.

e. Detail drawings for each structure type giving weights of structure components, dimensions, and bill of materials.

f. Assembly instructions and erection drawings. Slip joint lengths and allowable tolerances. Special handling instructions.

6.3 Final Documents shall be supplied to the Owner after erection of all structures and prior to final payment

a. Final Approved Shop Drawings with allowable base reactions.

b. Final Design Calculations Signed and Sealed by an Engineer Licensed in the State of NC. (Including Loading Data) both hard copy and electronic PDF.

c. Original PLS Pole files with the appropriate design modification disclaimers.

6.4 Test Reports (as requested by Owner)

a. Certified mill test reports for all structural material,

b. Certified welding reports for each structure,

c. Impact property test reports showing that the material used in the structures meets the impact properties,

d. Test reports on coating thickness,

e. Report of structure testing, when required, including photographs, diagrams, load trees, etc.

f. Material, workmanship, inspection travelers, and material certified mill test reports shall be maintained on file for a minimum of six (6) years by the Materialman and shall be made available to Fayetteville PWC or the Engineer upon request at no charge.

7.0 APPROVAL, ACCEPTANCE, AND OWNERSHIP

7.1 Final designs must be approved by the Engineer or Owner before material ordering and fabrication. Material ordering and fabrication prior to approval will be at supplier's risk. It is understood that award of this contract does not constitute acceptance of design calculations submitted with the bid, if corrections are required in the final structure designs due to manufacturer's errors, omissions, or misinterpretations of the specifications, the quoted price shall not change. Approval of the drawings and calculations by the Engineer does not relieve the supplier of responsibility for the adequacy of the design, correctness of dimensions, details on the drawings, and the proper fit of parts.

7.2 After delivery, the poles will be inspected and shall be free of dirt, oil blisters, flux, black spots, dross, tear-drop edges, flaking paint or zinc; and in general, shall be smooth, attractive, and unscarred. Poles not meeting this requirement shall be repaired or replaced by the fabricator at no additional cost to the Owner.

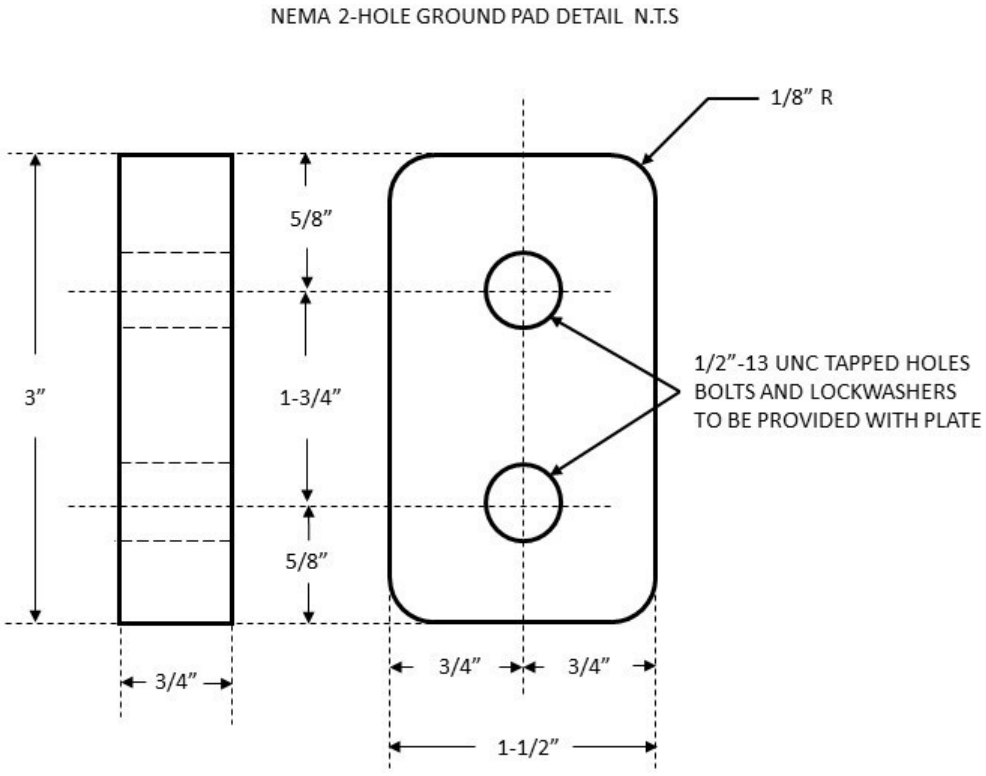
TABLE 1
STEEL POLE STRENGTH REQUIREMENTS

Standard Class Designations for Steel Poles	Minimum Ultimate Moment Capacity at 5 ft from Pole Top (Ft. Kips)	Horizontal Tip Load Applied 2 FT from Pole Top (Lbs.)
S-06.5	50	6500
S-05.7	44	5655
S-04.9	38	4875
S-04.2	32	4160

TABLE 2
POLE, TUBULAR GALVANIZED STEEL STRUCTURES

PWC STOCK NUMBER	HEIGHT (FT.)	CLASS
1-220-660	75	S-04.2
1-220-665	75	S-04.9
1-220-667	75	S-05.7
1-220-670	80	S-04.2
1-220-675	80	S-04.9
1-220-677	80	S-05.7
1-220-680	85	S-04.9
1-220-685	85	S-05.7
1-220-690	90	S-04.2
1-220-695	90	S-04.9
1-220-700	95	S-04.2
1-220-705	95	S-04.9
1-220-710	100	S-05.7
1-220-715	100	S-06.5

ATTACHMENT A – 2-HOLE GROUND PAD DETAIL



PUBLIC WORKS COMMISSION
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BID PROPOSAL – (Attachment A)
(Please read information listed below carefully.)

Listed below are the steel poles currently in PWC inventory which will be considered a part of this contract. Additionally, listed below are the projected pole quantities for the first year of the contract.

Please note that Bidder shall list a price for each pole and the PWC reserves the right to increase or decrease the quantities shown.

Bidder shall provide shipping/delivery costs if not included in the unit cost.

ANNUAL STEEL POLE PROPOSAL					
STOCK #	**DESCRIPTION**	**ANNUAL ESTIMATE**	**UNIT WEIGHT**	**UNIT COST**	**DELIVERY**
1220660	POLE, TUBULAR GALVANIZED STEEL, 75 FT, S-04.2	101			
1220670	POLE, TUBULAR GALVANIZED STEEL, 80 FT, S-04.2	77			
1220675	POLE, TUBULAR GALVANIZED STEEL, 80 FT, S-04.9	18			
1220677	POLE, TUBULAR GALVANIZED STEEL, 80 FT, S-05.7	0			
1220680	POLE, TUBULAR GALVANIZED STEEL,85', S-04.9	18			
1220685	POLE, TUBULAR GALVANIZED STEEL, 85', S-05.7	5			
1220690	POLE, TUBULAR GALVANIZED STEEL,90', S-04.2	0			
1220695	POLE, TUBULAR GALVANIZED STEEL, 90', S-04.9	4			

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BID PROPOSAL

Manufacturer: _____

Product Description: _____

Exception to Specifications: _____

Warranty: _____

Delivery: _____

BIDDER INFORMATION

Name of Company _____

Address _____

_____

Phone No. _____ **Fax No.** _____

E-Mail Address _____

Federal I.D. No. _____

SDBE, Minority or Woman Owned Business Enterprise _____ **Yes** _____ **No**

Bid Submitted By: _____
(Name Printed Out)

_____
(Signature)

Title: _____

Date: _____