Invitation To Bid

Sealed bids will be received by the State Engineer on behalf of the Bureau of Information at the Office of the State Engineer, Joe Foss Building, 523 East Capitol, Pierre, South Dakota 57501-3182 until 2:00 PM CT, August 11, 2016 for labor and materials for Madison State Radio Site, Tower Replacement, Madison, SD, OSE# M2317--01X.

Bids will be received for Demolition, General, Mechanical, and Electrical work to replace 450' tower.

Bidder Please Note: There is no Pre-Bid Meeting.

Copies of the Plans and Specifications may be obtained by bidders at the Office of State Engineer, Joe Foss Building, 523 East Capitol, Pierre, South Dakota 57501-3182, telephone number 605.773.3466.or on the Office of the State Engineer web site http://boa.sd.gov/divisions/engineer/ under Advertisements for bids. Copies are on file for viewing purposes at the Office of the State Engineer, Joe Foss Building, 523 East Capitol Avenue, Pierre, South Dakota 57501-3182. Anyone requesting, reviewing, or copying Plans and Specifications for this project (such individual is hereinafter referred to as "bidder") agrees that they are doing so for the sole purpose of submitting a bid on the project. In consideration of the State of South Dakota providing such Plans and Specifications for the purpose of preparing a bid, Bidder further agrees:

A. The Plans and Specifications are the sole property of the State;
B. Any copies of the Plans and Specifications obtained directly from the State will be returned to the Office of Office of State Engineer immediately after the State provides notice that bidder will not be awarded a contract, or thirty (30) days after the bid opening for the project, which ever occurs first;
C. Any copies of the Plans and Specifications made by the bidder will be destroyed immediately after the State provides notice that bidder will not be awarded a contract, or thirty (30) days after the bid opening for the project, which ever occurs first;
D. If bidder does not submit a bid, bidder will fulfill the requirements of B and C above on or before the date of the bid opening;
E. The Plans and Specifications are to be used only with respect to this project and are not to be used for any other project or purposes other than preparing a bid for this project;
F. The Plans and Specifications will not be disseminated to any person or entity for purposes other than obtaining pricing information without the express written approval of the state;
G. All information contained in the Plans and Specifications is confidential; and
H. Should the bidder disseminate the Plans and Specifications to an individual or entity for purposes of obtaining pricing information, the bidder will require that individual or entity to adhere to the terms set forth herein. The bidder, however, assumes no liability for the misuse of the Plans and Specifications by such third party or such third party's failure to comply with the provisions contained herein.

Should bidder be awarded a contract for construction of the project, bidder does not need to return or destroy Plans and Specifications until after completion of the project.

All questions should be directed to Don Forseth, Bureau of Information, Don.Forseth@sdpb.org 605.677.5240.

Each bid in excess of $50,000.00 must be accompanied by a certified check, cashier's check or draft in the amount of 5% of the base bid and all add alternates and drawn on a State or National Bank or a 10% bid bond issued by a surety authorized to do business in the State of South Dakota and made payable to the Bureau of Information of the State of South Dakota.

The Bureau of Information reserves the right to reject any or all bids and to waive any irregularities therein.

FOR KRISTI HONEYWELL, P.E.
State Engineer
Office of the State Engineer

Published twice at the total approximate cost of_____.

June 29, 2016

Replacement microwave relay tower – Near Madison, SD.

Tower location: 5 miles south of Madison, South Dakota. Near the junction of Lake County road 454th Avenue on the east side and 238th Street on the south side. The tower base is at 43/56/09.3 N 097/07/52.9 W The base elevation is 1803.0' AMSL

Tower height: 450' AGL

Face width: Minimum 48"

Sections: Hot-dip galvanized, all welded sections, all solid sections

Guying: Short guyed at @ 67% of tower height. The outer guy anchors will lay at no more than 300' from the tower base. The inner guys will be located as specified by the tower designer. The guys from the existing tower (which will be removed) lay at approximately 090, 210, and 330 degrees. The new tower will be sited so that the new guys lay parallel to the old ones. Only one set will cross the existing cables.

Design: ANSI/TIA-222-G + 90 mph wind w/1/2" ice concurrent

Structure Class II, Exposure Category C, Topographic Category 1

Specials: Torque mounts at microwave antenna levels (TBD but approximately @ 315' AGL, 395' AGL)

Loading: 8' parabolic antenna w/radome @ 315' with ice shield, fed with EW-63 waveguide

8' parabolic antenna w/radome @ 285', with ice shield fed with EW-63 waveguide (future diversity antenna)

8' parabolic antenna w/radome @ 395' with ice shield fed with EW-63 waveguide

8' parabolic antenna w/radome @ 365' with ice shield fed with EW-63 waveguide (future diversity antenna)

12 DB-224 or equivalent two-way radio antennas, all with fed with 7/8" Heliax at various elevations but all in the top ½ of the tower

6 DB-224 or equivalent two-way radio antennas all fed with 7/8" Heliax at various elevations but all in the lower ½ of the tower

At approximately the 300' AGL level, provide structural strength for a later installation of a typical cell antenna array (three outriggers with at least six cell style panel antennas, preamplifiers and other appropriate cellular hardware). Provide for up to 12 additional coaxial cable runs from that level to the ground (cable ladder with provisions for snap-in hardware).

Lighting: Medium intensity white – FAA style "D" System to be removed from existing tower and installed on new one and terminated in the existing electronics shelter. Power cable may need to be extended.

Include the following items:

TOWER STRUCTURE

All tower steel and assembly hardware

All guying materials including guy anchor shafts. Provide extra hole(s) in the anchor head for ease in erection and for later maintenance. Provide ice crackers for all guy wires.

Climbing ladder w/safety climb system. Include one (1) sliding gripper.

Coaxial cable support ladder with punching for snap-in hardware for coaxial cable and waveguide attachment (provide for at least 24 lines). The coax ladder must be positioned so that it does not interfere with the climbing ladder. Provide mounting locations for an additional cable ladder for future use for a cellular tenant.

Lighting system ice shields as required

Grounding kits for tower base and guy anchors

Grounding termination plates at ½ tower height and near tower bottom for grounding of all transmission lines and waveguide

Provide a grounding conductor (2/0 AWG, stranded, non-insulated) to run the full height of the tower, attached with metal hardware (no zip ties), and terminated at both termination plates mentioned just above.

Lightning rod for tower top.

Cathodic protection systems for guy anchors

4.5" O.D. pipe mounts for microwave antennas @ elevations 315' AGL @ 165 degrees true & 395' AGL @ 350 degrees true. These must be face mounts (attached to both legs). At the tower end, provide for stiff arm mounts for both antennas. The stiff arms may not be attached directly to the tower legs.

Provide ice shields for an 8' microwave antenna at elevation 315' AGL and for an 8' microwave antenna at 395' AGL. Antenna azimuths are 165 degrees for the antenna at 315' and 350 degrees for the antenna at 395'. When installed, the ice shields must cover all of the antennas including their radomes.

Provide a structural analysis to demonstrate that the structure will meet 222-Revision G detailed above with the loading contemplated. Signing engineer must have a South Dakota stamp. None of the components of the new tower may exceed 90% of their maximum loading

Furnish and install a cable bridge with appropriate ice shielding between the existing building and the base of the new tower. The bridge will be approximately 70' long. (Verify the actual distance and layout after consultation with the Owner.) Attach it to either the tower or the building, but not both. Ground the structure at both ends. Make provisions to hold snap-in hardware for 24 coax lines. (Cables will come off the tower at about 10' AGL.) Coordinate the location at the building end with the owner prior to installation.

FOUNDATIONS AND GUY ANCHORS:

Design the tower base foundation and guy wire anchor blocks for existing soil conditions. Sub-surface soil mapping will be furnished. Provide necessary rebar and concrete and install tower base foundation and guy anchors. The anchor shafts are to be concrete encased to one (1) foot above finished grade. Install cathodic protection materials at guy anchors and galvanized ground rods at all locations.

ERECTION:

Transport all materials to the site and erect the tower. Install all materials itemized above and others as is necessary to complete the project. Install customer furnished microwave antennas at elevations 315' and 395', and the ice shield above both antennas. Install customer furnished waveguide from those antennas down the tower and into the electronics shelter. Customer will provide waveguide, waveguide hanger hardware, lifting grips and grounding kits. Grounding kits to be installed at the antenna locations, at 200' AGL, and near the base of the tower. Pan the antennas and assist customer to establish microwave paths.

For South Dakota State Radio Communications, install 2-way radio antennas and mounts and run new Heliax from the following elevations to the equipment shelter: 440' AGL; 395' AGL; 375' AGL; and 145' AGL. The antennas, their mounts, the Heliax and mounting hardware will be furnished by the Owner.

Upon operational acceptance of the new tower, take down the old tower, salvaging all two-way radio antennas and transmission lines, microwave antennas and waveguide for re-use as directed by customer.

As noted above, the contract for erection of the new tower calls for removal and salvage for re-use of all current antennas and transmission lines from the existing tower before its removal. There are several tenants on the existing tower for wo-way radio antennas.

The successful bidder may make a separate arrangement with any or all of the tenants to re-install their antennas, but re-installation of their antennas and transmission lines is not a part of the State of South Dakota erection contract.

The contractor may take possession of the old tower itself and all of the old guy wire materials, but they must be promptly removed from the site.

Remove the old guy wire anchor shafts to a depth of at least three (3) feet below grade.

The winning bidder is to supply construction drawings of the tower and its foundations before approval will be granted to begin actual construction. The drawings package must contain a structural analysis performed by an engineer holding a State of South Dakota certification.

If a winch is to be used to lift personnel, it must be certified to do so. The use of a capstan or "cat-head" winch will not be allowed except for a tag line.

At completion of the project and before formal acceptance, the new structure will be climbed and inspected by a competent third party to see that the finished tower conforms to the standards of good engineering practices and that all issues discovered during construction have been dealt with in a satisfactory manner.

Sufficient drawings and details must be furnished with the bid submissions so that the Owner and the Engineer may make a decision for the acceptability of the proposal. Questions about details of the specifications may be directed to: Don Forseth, SDPB Technical Services Coordinator at (605) 677-5240 (Office), (605) 677-9560 (Cell) or Don.forseth@state.sd.us.