CITY
OF
JOPLIN, MISSOURI

BID PACKAGE

#2015-10

for

HVAC COOLING TOWER

JOPLIN PUBLIC WORKS DEPARTMENT
602 S. MAIN ST.
JOPLIN, MO 64801

NOTICE TO BIDDERS

The City of Joplin, Missouri will accept sealed bid proposals until January 22, 2015 at 10:00 at Joplin City Hall 4th floor Public Works Department located at 602 S.MAIN ST., Joplin, Missouri, 64801 to PURCHASE the following:

HVAC COOLING TOWER

Specifications are available from Jeff Tennis, facility maintenance, by calling 417-624-0820 ext. 299 or by writing to the address indicated above. Any bids received after the specified deadline will be returned to the vendor.

The City reserves the right to evaluate all bids, to reject any or all bids and re-bid at a later date. The City may waive any irregularities in the bid or negotiate variances from specifications, and make awards that are in the best interests of the City. The City will have final decision in all matters regarding acceptance of bids and issuance of awards.

All bids shall have a firm fixed F.O.B. Joplin, Missouri price and shall be honored for a minimum of ninety (90) days following the bid opening.

The City encourages minority and female owned businesses to submit bids on all City purchases.

Leslie Haase, CPA
Finance Director

Publication Date: ***Wednesday, January 7th 2015***

INSTRUCTIONS TO BIDDERS

The City of Joplin, Missouri proposes to PURCHASE the following:

HVAC COOLING TOWER

MARK BID ENVELOPES: "***BID# 2015-10 HVAC COOLING TOWER JANUARY 22 ND 2014***"

Questions concerning the specifications and bidding procedures should be directed to **JEFF TENNIS**, Joplin **PUBLIC WORKS** Department at **602 S. MAIN ST.** , Joplin, MO, 64801 or by phoning 417-624-0820 ext. 299.

GENERAL SPECIFICATIONS
HVAC COOLING TOWER

This project includes supply of and delivery to the Dr. Donald E. Clark Justice Center located at 303 E. 3rd Street Joplin, Missouri. The unit shall meet or exceed all listed minimum requirements'. Questions about this project should be directed to Rick Allen 417-499-0570 or Jeff Tennis 417-499-8181.

Not included in this bid is installation which includes main disconnect, rigging, piping, valves, tower control, pumps, wiring etc. The cooling tower's base size must be able to utilize the existing concrete pad which is sized at 11' x 14'. No height restrictions exist. The following is the minimum set of requirements for the **COOLING TOWER.**

1.0 General:

Provide a minimum 175 ton, induced draft, cross-flow type, factory assembled, fill film, industrial duty, stainless steel basins with galvanized steel structure and casing panels. At maximum design operation the total operating power of fan(s) shall not exceed 10 HP, consisting of one (1) 3 phase, 10 HP.

2.0 Thermal Performance:

The tower shall be capable of cooling 525 gpm of water from 95 deg. F to 85 deg. F at a design entering air wet-bulb temperature of 78 deg. F, and its thermal rating shall be certified by the Cooling Technology Institute. The tower shall also be capable of a minimum 64.659 gpm/HP efficiency as per ASHRAE standard 90.1.

3.0 Performance Warranty

CTI Certification notwithstanding, the cooling tower manufacturer must guarantee that the supplied tower will meet the specified performance conditions when the tower is installed as per their installation instructions. If, because of a suspected thermal performance deficiency, the City of Joplin chooses to conduct an on-site thermal performance test under the supervision of a qualified, dis-interested third-party in accordance with CTI or ASME standards during the 1st year of operation; and if the tower fails to perform within the limits of test tolerances; then the cooling tower manufacturer will pay for the cost of the test and make such corrections as are appropriate and agreeable to the City of Joplin to compensate for the performance deficiency.

4.0 Design Loading

The tower structure, anchorage and all of its components shall be designed by a licensed professional engineer as per the International Building Code to withstand a wind load of 30 psf., as well as a .3g seismic load. The fan deck, hot water basin covers and where specified, maintenance platforms, shall be capable of withstanding a 200lb concentrated live load in any direction and be designated in accordance with OSHA guidelines. The tower shall be capable of being supported at the four (4) outer corners of the tower cell; alternatively, the tower manufacturer shall provide supporting steel to adapt tower to be supported at four (4) outer corners.

5.0 Construction

5.1

Except where otherwise specified, all components of the cooling tower shall be fabricated of steel, protected against corrosion by G-235 galvanizing. The circulating water will not contain oil, grease, fatty acids or organic solvents. The tower shall be capable of withstanding corrosion from cooling water having a pH of 6.5 to 8.0, chloride content (NaCI) up to 300 ppm, sulfate content (SO4) up to 250 ppm, calcium content (CaCO3) up to 500 ppm and silica (SiO2) up to 150 ppm. The water specifications listed, are intended to indicate those materials that will be capable of withstanding the above water quality in continuing service as well as loads described in section **4.O** and will be regarded as minimum requirements. Where component materials specific to individual tower designs are not specified, the manufacture shall take the above water quality and load carrying capabilities into account in the selection of their manufacturing materials.

5.2

Hot water basin(s) components shall be constructed of 301L stainless steel (one above each bank of fill) and shall receive hot condenser water piped to each cell of tower. Basin(s) shall be assembled, sealed and installed at the factory with bolted connections-tap screws will not be allowed. The basin(s) shall be equipped with removable stainless steel cover(s) capable of withstanding loads described in section **4.O.** All components of the basin(s), with exception of the nozzles, shall be stainless steel. The water distribution system shall be accessible and maintainable during tower fan and water operation.

5.3

Each cell of the tower shall include a single hot condenser water inlet connection. An internal system of PVC piping shall deliver water equally to the distribution basins without the need for balancing valves. This internal piping system shall require no scheduled maintenance and be located so that it does not interfere with normal maintenance access. The internal piping shall extend to the exterior surface of the tower.

5.4

The cold water collection basin and components shall be constructed of 301L stainless steel. Only low-carbon stainless steel alloys will be accepted in order to minimize risk of intergranular corrosion in the weld zones. The basin shall include the number and type of suction connections required to accommodate the outflow piping system. Suction connections shall be equipped with stainless steel debris screens. Overflow and drain connections shall be provided for in each cell of the cooling tower. The basin floor shall slope towards the drain to allow for complete flushing of debris and silt that may accumulate. Towers with more than one (1) cell shall include a method for flow and equalization between cells. The basin shall be accessible and maintainable while water is circulating.

5.5

Fill shall be film type, thermoformed of PVC, with louvers and eliminators formed as part of each fill sheet. Fill shall be suspended from hot dipped galvanized structural tubing supported from the tower structure and shall be elevated above the floor of the cold water basin to facilitate cleaning. Air inlet faces of the tower shall be free of water splash-out. Drift eliminators shall be PVC, triple pass and shall limit drift losses to 0.005% or less of the design water rate.

5.6

The casing and fan deck shall be galvanized steel and shall be capable of withstanding loads described in section **4.0**. the top of the fan opening shall be equipped with a conical, non-sagging, removable fan guard fabricated of a minimum of 5/16" rod and hot galvanized dipped after construction. Fan cylinders 5.0' and greater in height and will not be required to have a fan guard installed.

5.7

A large access door measuring at least 30"x30" shall be located on both cased faces for entry into the cold water basin. Inside, a factory installed walkway extending from on cased faced access door to the other cased faced access door shall be provided. Steel framework shall support the walkway and all components shall be at or above the cold water basin overflow level. These doors and walkway will also provide for access into the fan plenum area to allow for inspection and fan drive maintenance. The top of the tower shall be equipped with a guardrail complete with knee rail and toe board, designed according to OSHA guidelines and factory welded into sub-assemblies for ease of field installation. All handrail components shall be of sufficient size to withstand a 200 LB concentrated live load in any direction and shall be hot galvanized dipped after welding. The handrail posts shall be spaced at 8'-0" or less. A ladder fabricated of aluminum with 3" I-beam side rails and 1.25" diameter rungs shall be permanently attached to the end wall casing of tower and shall extend from the base of tower to the top of the handrail.

6.0 Mechanical/Electrical Equipment

6.1

The tower shall be equipped with an inverter rated, 460 volt, 1800 RPM, 3 phase, 10 HP maximum, NEMA premium efficiency, TEFC, 1.15 service factor, variable torque and specially insulated (Class F) for cooling tower duty. The motor shall operate in the shaft-horizontal position for gear driven towers and carry a minimum one (1) year manufacturers' warranty.

6.2

The fan(s) shall be propeller type, incorporating aluminum alloy blades, individually adjustable and attached to galvanized hubs with U-bolts. The Fan(s) shall be driven through a right angle, industrial duty, oil lubricated, geared speed reducer. All gearbox bearings shall be rated at a L10A service life of 100,000 hours or greater and the gear sets shall have AGMA quality class of 9 or greater. The gearbox shall include any modifications to enable operation down to 10% of full speed. The gearbox will have provisions installed to allow for oil level inspection to be made outside the cooling tower.

6.3

The complete fan drive system shall be supported by two (2) horizontal galvanized steel beams that resist misalignment between the motor and gear reducer. All of the mechanical equipment shall be warranted against any failure caused be defects in materials and workmanship for no less than five (5) years following the date of tower shipment. This warranty will cover fan, speed reducer, drive shaft, couplings and the mechanical system support.

6.4

An electric immersion heater and control system for each cell of tower will be provided for to prevent freezing of water in the collection basin(s) during periods of shutdown. This system shall consist of one or more stainless steel electric immersion heaters installed in threaded couplings provided in the sides of the basin(s). A NEMA 4 class control panel and associated temperature probe (located in the cold water basin(s)), shall include circuitry to monitor cold water temperature and low water level, providing on/off thermostatic control. The system shall be capable of maintaining 40 deg. F water temperature at an ambient air temperature of -14.5 deg. F.

6.5

Water level control shall be provided for by water level probes and a NEMA 4X control panel. The control system shall monitor water level in the cold water basin to determine level events used for cold water makeup, high and low alarms or pump shutdown. The control panel shall provide the logic and power for the make-up solenoid and electrical contacts for the alarm and pump shutdown control circuit. The probes shall have replaceable stainless steel tips, adjustable so that water level can be changed in the field and contained in a vertical stilling chamber to stabilize the water in the cold water basin(s).

Unauthorized Aliens Workers Act

The successful bidder will have to sign an agreement that they are enrolled and participating a Federal Work Authorization Program ("FWAP") that ensures that all of its employees or agents or subcontractors have the legal right to work in the United States, as defined in 8 U.S.C. 1324a(h)(3) and RSMo § 285.525-285.555, and that it will maintain this compliance for the entire duration of its contract with the City of Joplin, and will provide an Affidavit of Compliance to the City stating the same.

AFFIDAVIT OF COMPLIANCE
(Missouri Unauthorized Alien Workers Act)

My name is _____ (name) _____ and I am the _____ (Title) _____ of _____ (Company Name) _____. I hereby represent, affirm and certify to the City of Joplin that my company does not knowingly employ any person who is an unauthorized alien in connection with contracted services with the City. I further affirm that my company is actively enrolled and participating in a federal work authorization program with respect to all employees working in connection with the contract services provided to the City.

_____

_____

Affiant