JORDAN VALLEY WATER CONSERVANCY DISTRICT

Wellhouse Eyewash Installation

November 2023

DESCRIPTION OF WORK: This project consists of installing emergency eyewash stations at four well sites in the JVWCD system. This project includes some electrical work for connecting flow switches, heaters, and booster pumps associated with this work.

PROJECT SCHEDULE: The work shall be completed within 180 days from the award of Purchase Order. If the work is not completed within the specified time frame, the bidder herein agrees to accept liquidated damages in the amount of $100 per day.

RECEIPT OF BIDS: Bids will be received by Jordan Valley Water Conservancy District, attention Conor Tyson at 8215 South 1300 West, West Jordan, Utah 84088 until December 12, 2022, at 2:30 pm. Electronic bids may also be submitted in adobe .pdf format to ellisad@jvwcd.org. JVWCD requests that electronic bids be submitted 15 minutes prior to the bid opening deadline. A public bid opening will be held at the bid due time. Attendance is not required. Bid results will be posted to the District's website within 24 hours of the bid opening.

OBTAINING CONTRACT DOCUMENTS: All Contract Documents may be obtained on the District's website (www.jvwcd.org), under the project "Wellhouse Eyewash Installation". Prospective bidders must register at the District's web site under the project to receive project notifications and addenda, if any. Contractors are required to check the District's web site for any addenda prior to submitting a responsive bid. Bids determined to be non-responsive may be rejected.

JVWCD project manager/contact person: Conor Tyson, PE, conort@jvwcd.org, telephone Number: (385) 236-2510

SITE OF WORK: Four well locations in Salt Lake County near Sandy:

Willow Creek Well, 2400 E Creek Road, Salt Lake County
Siesta Well, 1600 E Siesta Drive, Cottonwood Heights, Utah
9th and 85th Well, 8515 S 960 East, Salt Lake County
Albion Well, 9002 S Quail Hollow, Sandy, Utah

PRE-BID SITE VISIT: A non-mandatory pre-bid site visit will be held on Wednesday, December 5th, 2023, at 1:30 pm at the Siesta Well, 1600 E Siesta Dr.

AWARD OF CONTRACT: An Award of Purchase Order, if awarded, will be made within 60 calendar days of the opening of bids, based upon the lowest cost responsive bid.

BONDS: A Bid bond, Performance Bond, and payment bond are not required for any bid less than $50,000 as required by Utah state law.

ADDRESS AND MARKING OF BID: The envelope enclosing the bid shall be sealed and addressed to the Jordan Valley Water Conservancy District and delivered or mailed to 8215 South 1300 West, West Jordan, Utah 84088. The envelope shall be plainly marked in the upper left-hand corner with the name and address of the bidder and shall bear the words "Bid for," followed by the title of the Contract Documents for the work and the date and hour of opening of bids. Electronic bids shall be submitted to the engineering administrative assistant, ellisad@jvwcd.org as an email attachment with the words “Bid for,” followed by the title of the Contract Documents for the work and the date and hour of opening of bids in the subject line of the email.

PROJECT ADMINISTRATION: All questions relative to this project prior to the opening of bids shall be directed to the Project Manager for the project.

OWNER'S RIGHTS RESERVED: The Owner reserves the right to reject any or all bids, to waive any informality in a bid, and to make awards in the interest of the Owner.

Owner/ Engineer
Jordan Valley Water Conservancy District
Project Manager: Conor Tyson
8215 South 1300 West
West Jordan, Utah 84088
Telephone: (801) 565-4300
Email: conort@jvwcd.org

JORDAN VALLEY WATER CONSERVANCY DISTRICT

INSTRUCTIONS TO BIDDERS

WARRANTY: The successful bidder shall warrant the equipment and installation to be free of defects in materials and workmanship for a period of one (1) year following satisfactory start-up and testing of the equipment.

INSURANCE REQUIREMENTS: Prior to awarding a purchase order the bidder must furnish certificates of insurance to include the following policies. The limits of liability for the insurance required in this project shall provide for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation

   A. State: Utah — Statutory

2. Comprehensive General Liability

   A. Bodily Injury (including completed operations and products liability):

$500,000	Each Occurrence
$1,000,000	Annual Aggregate
or a combined single limit of	$1,000,000

   B. Property Damage liability insurance including Explosion, Collapse and Underground coverages where applicable.

   C. Personal Injury, with employment exclusion deleted.

$1,000,000	Annual Aggregate

3. Comprehensive Automobile Liability:

   A. Bodily Injury

$500,000	Each Person
$1,000,000	Each Occurrence

   B. Property Damage:

$500,000	Each Occurrence
or combined single limit of	$1,000,000

BID SCHEDULE

Item	Units	Quantity	Extended Price
Mechanical Work, Willow Creek Well	LS	1	$_____
Electrical Work, Willow Creek Well	LS	1	$_____
Mechanical Work, Siesta Well	LS	1	$_____
Electrical Work, Siesta Well	LS	1	$_____
Mechanical Work, 9th and 85th Well	LS	1	$_____
Electrical Work, 9th and 85th Well	LS	1	$_____
Mechanical Work, Albion Well	LS	1	$_____
Electrical Work, Albion Well	LS	1	$_____
		TOTAL BID	$_____

Bidder (Company name): _____

By: _____ Dated: _____
(Signature)

Name: _____ Title: _____
(Print)

The Bidder shall furnish the following information. Failure to comply with this requirement may render the Bid non-responsive and subject to rejection. Additional sheets shall be attached as required. No bid for the work will be considered from a bidder who does not hold an active license in good standing applicable to the type of work bid upon at the time of submission of the bid.

Contractor's name: _____

Contractor's address: _____

_____

_____

Contractor's Fax: _____

Contractor's Primary Contact: _____

Email address of primary contact: _____

Telephone number of primary contact: _____

BIDDER REQUIREMENTS: The bidder shall have:

(1) a valid Utah Business license

(2) a valid Utah Contractors license appropriate for the work,

(3) have successfully completed a minimum of three construction projects including culinary water with electrical work. The Owner shall be entitled to contact each reference listed by the contractor.

1. Utah Department of Commerce Information
   Business Entity Number: _____
   Delinquent Date: _____

2. Contractor's Utah License Number:_____
   Expiration Date:_____
   Primary Classification:_____
   Supplemental Classification held, if any: _____

3. Number of years as a contractor in work of this type:

   _____

4. Qualifying Projects:

Qualifying Project 1 _____ Completion Date_____

Description of Project

_____

_____

_____

Final Cost_____Owner_____

Owner Phone #_____ Owner email _____

Qualifying Project 2 _____ Completion Date_____

Description of Project

_____

_____

_____

Final Cost_____Owner_____

Owner Phone #_____ Owner email _____

Qualifying Project 3 _____ Completion Date_____

Description of Project

_____

_____

_____

Final Cost_____Owner_____

Owner Phone #_____ Owner email _____

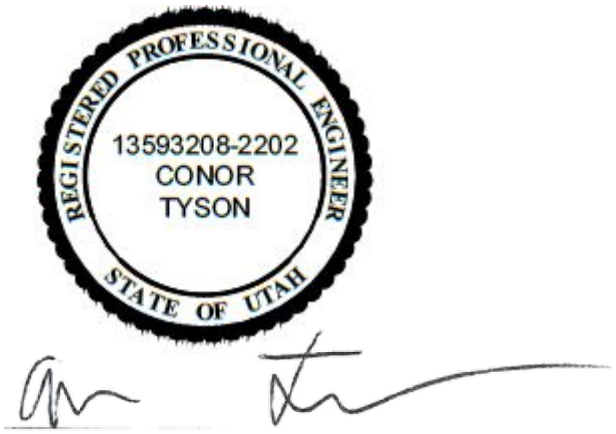
5. As necessary, attach to your bid technical information showing compliance with the defined scope of work and/or technical specifications.

Scope of Work:

This project involves installing emergency eyewashes and related equipment and four well sites in the JVWCD system. The required new equipment includes:

- Emergency Eyewash Stations
- Electric on-demand water heaters
- Electronic flow switches
- Booster pumps or Pressure Reducing Valves
- Power Breakers

TECHNICAL SPECIFICATIONS



SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

101.01 GENERAL

A. The WORK to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies, and manufactured articles and for furnishing all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, WORK, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents.

101.02 WORK COVERED BY CONTRACT DOCUMENTS

A. The WORK of this Contract includes furnishing and installing an emergency eyewash at four well house locations together with appurtenant items in accordance with the drawings and these specifications. Appurtenant items include but are not limited to:

1. On-demand electric heater.
2. Booster pump or PRV.
3. New copper and PVC lines.
4. Install conduit and wiring from power source shown on drawings.
5. Install conduit and wiring to RTU pad for telemetry communication.

101.03 CONTRACT METHOD

A. The WORK, hereunder, will be constructed based on lump sum prices.

101.01 WORK SEQUENCE

A. WORK under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption of water. The CONTRACTOR shall have all of his materials necessary to make a connection present at the site of WORK prior to interrupting water service.

B. The CONTRACTOR shall give notice to the OWNER of intent to disrupt water service at least five (5) days prior to disrupting water service. The OWNER will then assist by turning off any necessary valves. The CONTRACTOR shall not operate any of the OWNER's valves.

SECTION 01010 - SUMMARY OF WORK

101.02 **CONTRACTOR USE OF PROJECT SITE**

A. The CONTRACTOR's use of the project site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities, and field offices.

101.03 **OWNER USE OF THE PROJECT SITE**

A. When the CONTRACTOR's WORK involved rehabilitation of or extension to the existing facilities, the OWNER may utilize all or part of the existing site and existing facilities during the entire period of construction for the conduct of the OWNER's normal operations. The CONTRACTOR shall cooperate with the OWNER/ENGINEER to minimize interference with the CONTRACTOR's operations and to facilitate the OWNER's operations. In any event, the OWNER shall be allowed access to the project site during the period of construction.

101.04 **PROJECT MEETINGS**

A. PRECONSTRUCTION CONFERENCE:

Prior to the commencement of WORK at the site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by the CONTRACTOR, its superintendent, and its subcontractors as appropriate. Other attendees will include OWNER Representative, ENGINEER and designated project representative, representatives of other utilities affected by the WORK, others as requested by CONTRACTOR, OWNER, or ENGINEER.

B. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. This agenda will include the following:

1. CONTRACTOR'S tentative schedules.

2. Transmittal, review, and distribution of CONTRACTOR's submittals.

3. Processing applications for payment.

4. Maintaining record documents.

5. Field decisions and Change Orders.

6. Use of project site, office and storage areas, security, housekeeping, and OWNER's needs.

7. CONTRACTOR's assignments for safety and first aid.

C. The ENGINEER will conduct the preconstruction conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

101.01 **SCOPE**

A. Payment for various items of the Bid Sheets, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the item of WORK being described, as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of WORK.

101.02 **LUMP SUM ITEMS**

A. Bid prices for lump sum items represent the total cost to the OWNER. Such price shall constitute full compensation for furnishing and placing of materials required to complete the item, and for all labor, equipment, tools and incidentals needed to complete the WORK in conformity with the plans and specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 - GENERAL

101.01 REQUIREMENT

A. Wherever submittals are required hereunder, all such submittals by the CONTRACTOR shall be submitted to the ENGINEER.

B. Within 14 days after the award of Construction Contract, the CONTRACTOR shall submit the following items to the ENGINEER for review:

1. Copies of the manufacturer's technical submittal information for the following items:

a. Emergency eyewash station

b. Electric Heaters

c. Booster Pumps

d. Power Breakers

e. Flow Switch

f. Pressure Reducing Valve

g. Flow Control Valve

h. Conduits

101.02 CONTRACTOR'S SCHEDULES

A. TIME OF SUBMITTALS:

At the preconstruction conference, the CONTRACTOR shall submit for acceptance by the ENGINEER, a preliminary construction schedule for the WORK, showing its general plan for orderly completion of the WORK, showing its general plan for orderly completion of the WORK. The construction schedule produced and submitted shall indicate a project completion date on or before the contract completion date. The ENGINEER within 14 days after receipt of the preliminary construction schedule, shall meet with a representative of the CONTRACTOR to review the preliminary plan and construction schedule. After review by ENGINEER, revise and resubmit as required.

SECTION 01400 - QUALITY CONTROL

101.03 **PROPOSED SUBSTITUTES OR EQUAL ITEMS**

A. For convenience in designation in the Contract Documents, any material, product, or equipment to be incorporated in the WORK may be designated under a brand or trade name or the name of a manufacturer and its catalog information. The use of any substitute material, product, or equipment which is equal in quality and utility and possesses the required characteristics for the purpose intended will be permitted, subject to the following requirements:

1. The burden of proof as to the quality and utility of any such substitute material, product, or equipment shall be upon the CONTRACTOR.

2. The ENGINEER will be the sole judge as to the quality and utility of any such substitute decision shall be final.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01400 - QUALITY CONTROL

PART 1 - GENERAL

101.01 SITE INVESTIGATION AND CONTROL

A. The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall solely be responsible for any inaccuracies built into the work due to his failure to comply with this requirement.

B. The Contractor shall inspect related and appurtenant work and shall report in writing to the ENGINEER any conditions which will prevent proper completion of the work. Failure to report any such condition shall constitute acceptance of all site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the Contractor at his sole cost and expense.

101.02 DESCRIPTION OF WORK

A. The work shall be conducted under the general observation of the ENGINEER and shall be subject to inspection by representatives of the OWNER to ensure strict compliance with the requirements of the Contract Documents. Such inspection may include mill, plant, shop of field inspection, as required. The ENGINEER shall be permitted access to all parts of the WORK, including plants where materials or equipment are manufactured or fabricated.

B. The presence of the ENGINEER or any inspector(s), however, shall not relieve the Contractor of the responsibility for the proper execution of the WORK in accordance with all requirements of the Contract Documents. Compliance is a duty of the Contractor and said duty shall not be avoided by any act or omission on the part of the ENGINEER or any inspector(s).

C. All materials and articles furnished by the Contractor shall be subject to rigid inspection, and no materials or articles shall be used in the WORK until they have been inspected and accepted by the ENGINEER or his authorized representative.

101.03 RIGHT OF REJECTION

A. The ENGINEER, acting for the OWNER shall have the right, at all times and places, to reject any articles or materials to be furnished hereunder which, in any respect, fail to meet the requirements of these specifications, regardless of whether the defects in such articles of materials are detected at the point of manufacture or after completion of the WORK at the site. If the ENGINEER or inspector, through an oversight or otherwise, as accepted materials or WORK which is defective or which is contrary to the specifications, such material, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected by the ENGINEER for the OWNER.

B. The Contractor shall promptly remove rejected articles or materials from the site of the WORK after notification of rejection.

C. All costs of removal and replacement of rejected articles or materials as specified herein shall be borne by the Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01500 - CONSTRUCTION FACILITIES AND ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

101.01 GENERAL

A. The Contractor shall provide and maintain adequate construction facilities and perform the necessary work to minimize the impact and inconvenience of the construction activities.

101.02 SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures as needed in accordance with Part 1926 of the OSHA Standards for Construction.

101.03 PROTECTION OF INSTALLED WORK

A. Provide temporary protection for installed products. Repair or replace at OWNER's option any installed work damaged by traffic, the public, or Work operations.

101.04 NOISE CONTROL

A. NOISE CONTROL:

1. Execute construction between the hours as allowed unless otherwise approved by OWNER.

101.05 CONSTRUCTION CLEANING

A. Through all phases of construction, including suspension of work, and until final acceptance of the project, the Contractor shall keep the work site clean and shall remove daily all refuse, dirt, damaged materials, unusable materials, and all other trash or debris that he has created from his construction activities.

B. Materials and equipment shall be removed from the site as soon as they are no longer necessary; and upon completion of the work and before final inspection, the entire work site shall be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. All cleanup costs shall be included in the Contractor's Bid.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01600 - MATERIAL AND EQUIPMENT

PART 1 - GENERAL

101.01 GENERAL

A. It is the responsibility of the Contractor to provide products as specified in the Contract Documents free from manufacturer defects or damage from shipping.

101.02 PRODUCTS

A. Products include all material, equipment, and systems.

B. Comply with specifications and referenced standards as minimum requirements.

C. Components required to be supplied in quantity within a specification section shall be the same and shall be interchangeable.

D. Do not use products removed from an existing structure, pipeline, etc., except as specifically required, or allowed, by Contract Documents.

101.03 TRANSPORTATION AND HANDLING

A. Transport products by methods to avoid product damage; deliver in undamaged condition.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

101.04 STORAGE AND PROTECTION

A. Store products in accordance with manufacturer's instructions. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

B. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.

101.05 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only; Any product meeting those standards.

B. Products Specified by Naming One or More Manufacturers with a Provision of Substitutions: Submit a request for substitution for any manufacturer not specifically named.

C. Product Specified by Naming Several Manufacturers: Products of named manufacturers meeting specifications: no options, or substitutions allowed.

D. Products Specified by Naming Only One Manufacturer: No options, no substitutions allowed.

101.06 **PRODUCTS LISTS**

A. Within 14 days after date of Owner-Contractor Agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number (if applicable) of each product.

101.07 **SUBSTITUTIONS**

A. Only within 15 days after date established in Notice to Proceed will ENGINEER consider requests from Contractor for substitutions. Subsequently, substitutions will be considered only when a product becomes unavailable due to no fault of Contractor.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. Request constitutes a representation that Contractor:

1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.

2. Will provide the same warranty for substitution as for specified product.

3. Will coordinate installation and make other changes which may be required for WORK to complete in all respects.

4. Waives claims for additional costs which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.

E. ENGINEER will determine acceptability of proposed substitution and will notify Contractor of acceptance or rejection in writing within a reasonable time.

PART 2 - PRODUCTS

201.01 EMERGENCY EYEWASH

A. Stainless steel bowl

B. Pedestal Mounted

C. Dust cover on spray heads

D. Guardian Equipment G1825 or equivalent.

201.02 1.4 GPM FLOW CONTROL VALVE

A. NSF-61 certified

B. 1.1 to 1.5 gpm flow

C. ½" diameter

C. SWT flow controls valve, FloMatic Valves, or approved equal.

201.03 FLOW SWITCH

A. GEMS Series FS-200/400, no equal.

201.04 PRESSURE REDUCING VALVE

A. NSF-61 Certified.

B. The main body shall be low lead cast bronze (ASTM B 584) alloy.

C. Zurn Wilkins or approved equal.

201.05 BALL VALVE

A. Shall be NSF-61 certified.

B. Shall be stainless steel.

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL

101.01 CLOSEOUT PROCEDURES

A. When Contractor considers WORK has been reached final completion, submit written certification that Contract Documents have been reviewed, WORK has been inspected, and that WORK is complete in accordance with Contract Documents and ready for ENGINEER's review.

101.02 FINAL CLEANING

A. Execute prior to final inspection.

B. Clean and flush drainage systems.

C. Clean site; sweep paved areas, rake clean other surfaces.

D. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

101.03 PROJECT RECORD DOCUMENTS

A. Provide completed record drawings and other required closeout documents prior to requesting final payment.

B. Store record documents separate from those used for construction.

C. Keep documents current; do not permanently conceal any WORK until required information has been recorded.

D. At Contract closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

101.04 OPERATION AND MAINTENANCE DATA

A. Provide data for:

1. Electronic Heater

2. Booster Pump

101.05 MAINTENANCE AND GUARANTEE

A. The Contractor shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the Contractor fails to make such repairs or

replacements promptly, the OWNER reserves the right to do the WORK and the Contractor and his surety shall be liable to the OWNER for the cost thereof.

B. Make periodic inspections during guarantee period and correct defective work or correct defective work as directed by the OWNER or appropriate governing authority.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 01720 - RECORD DRAWINGS

PART 1 - GENERAL

101.01 RECORD DRAWINGS

A. The CONTRACTOR shall keep and maintain, at the job site, one record set of drawings. On these, it shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the Contract Drawings. These master record drawings of the CONTRACTOR's representation of as-built conditions, including all revisions made necessary by addenda, change orders, and the like shall be maintained up-to-date during the progress of the WORK.

B. Record drawings shall be accessible to the ENGINEER at all times during the construction period and shall be delivered to the ENGINEER upon completion of the WORK.

C. Final payment will not be approved until the CONTRACTOR-prepared record drawings have been delivered to the ENGINEER. Said up-to-date, record drawings may be in the form of a set of prints with carefully plotted information overlaid in pencil.

D. Upon substantial completion of the WORK and prior to final acceptance, the CONTRACTOR shall complete and deliver a complete set of record drawings to the ENGINEER for transmittal to the OWNER, conforming to the construction records of the CONTRACTOR. This set of drawings shall consist of corrected plans showing the reported location of the WORK. The information submitted by the CONTRACTOR and incorporated by the ENGINEER into the Record Drawings will be assumed to be reliable, and the ENGINEER will not be responsible for the accuracy of such information, nor for any error or omissions which may appear on the Record Drawings as a result.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

- END OF SECTION -

SECTION 02590 - PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

PART 1 - GENERAL

101.01 GENERAL

A. The WORK of this section includes the restoration of all existing improvements damaged or altered by the construction of the project.

101.02 **QUALITY ASSURANCE**

A. Use adequate numbers of skilled workmen who are trained and experienced in the type of construction required.

B. The quality of the finished restored improvement, as determined by the OWNER, shall be of equal or better quality than was said improvement prior to being damaged or removed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

303.02 GENERAL RESTORATION REQUIREMENTS

A. Repair or replace all existing surface improvements, which were damaged or removed as a result of operations of WORK under this contract. Restoration shall be of at least equal quality and identical in dimension to original improvement unless specifically specified otherwise.

- END OF SECTION -

SECTION 09900 - PAINTING AND FINISHES

PART 1 - GENERAL

101.01 DESCRIPTION

A. The WORK included in this section includes surface preparation, furnishing and applying paints and coatings to the exterior surfaces of piping, valves, and fittings as indicated on the drawings.

101.02 REFERENCES AND STANDARDS

A. Work covered by this specification shall meet or exceed the provisions of the latest editions of the following codes and standards in effect at the time of award of the contract:

1. OSHA Occupation Safety and Health Act: State of Utah and Federal

101.03 SUBMITTALS

A. CONTRACTOR shall supply shop drawings for approval on all paint materials prior to installation.

PART 2 - PRODUCTS

201.01 PAINT, SEALERS AND SURFACE FINISH MATERIALS

A. Paint for Exposed Piping: Exposed metal piping, exposed by the work for this project, shall be coated with a high solids two component epoxy coating system. The epoxy coating shall match existing colors.

PART 3 - EXECUTION

301.01 SURFACE PREPARATION

A. All surfaces which receive paint or other coatings shall be prepared in accordance with the recommendations of the manufacturer of the material being used. Any loose coating, or corrosion scale on existing piping shall be completely removed with wire brushing, sand blasting, water blasting or other approved methods.

301.02 APPLICATION

A. Exposed metal piping, fittings and valves shall be painted in accordance with the manufacturer's recommendation and the resulting coating dry film thickness shall be not less than 7 mils.

B. Each coat shall be free of runs, skips or "holidays". All excess paint and/or drips on floors, walls, and other surfaces which are not designated for paint shall be removed.

C. All work shall be done in accordance with the manufacturer's recommendation.

- END OF SECTION -

SECTION 16000 - ELECTRICAL PROVISIONS

PART 1 - GENERAL

101.01 WORK INCLUDED

A. Furnish all labor, materials, and equipment as required by the plans and specifications to provide a complete and workable electrical system. This specification describes the types of materials, methods, and management to be utilized. This includes the work listed in this division as well as equipment furnished under other divisions not specifically mentioned herein.

101.02 CODES AND STANDARDS

A. All equipment, materials, and methods of design and installation are to comply with the National Electrical Code, the basic Electrical Regulations of the State of Utah, the Occupational Safety and Health Act (OSHA), and the requirements of any local codes at the site. Codes and standards of the following organizations may be referred to in this section and shall be considered as the minimum acceptable. A reference herein to any portion of the standard or code is not to be considered as negating any other portion of the standard or code.

1. American National Standards Institute, Inc. (ANSI)
2. Institute of Electrical & Electronic Engineers (IEEE)
3. American Society for Testing & Materials (ASTM)
4. Underwriters Laboratories, Inc. (UL)
5. National Electrical Manufacturers Association (NEMA)
6. Insulated Cable Engineers Association (ICEA)
7. National Electrical Code (NEC)
8. Illuminating Engineering Society (IES)
9. International Society for Measurement and Control (ISA)

B. Where the plans or these specifications require a higher degree of workmanship or quality of material than the above codes and standards imply, then these plans and specifications will prevail.

101.03 EQUIPMENT, MATERIAL AND WORKMANSHIP

A. All equipment and material are to be new, free from defects, of current manufacture, and listed by Underwriters Laboratories, Inc., (UL) where UL

requirements apply. All materials are to be products of reputable and experienced manufacturers. Similar items in the project are to be of the same manufacturer. Use only equipment and materials of industrial quality and durability, and capable of long, reliable, trouble free service.

B. The Owner reserves the right to operate defective equipment or that equipment which fails to conform to detailed specifications or does not operate satisfactorily until the defects are corrected or the equipment is repaired or replaced, without cost for depreciation, use or wear. Rejected equipment will be removed from operation only at times approved by the Owner. All equipment furnished under this section will be guaranteed for a minimum period of one (1) year from date of acceptance against defective materials, design, and workmanship.

C. Provide protection for materials and equipment against loss or damage throughout the contract. Protect everything from the effect of weather prior to installation. Store items to be installed in indoor location.

D. Any item subject to corrosion under damp conditions and items containing insulation such as transformers and motors are to be kept in heated locations.

E. Following installation, protect materials and equipment from corrosion, physical damage and effects of moisture on insulation.

F. Cap all conduit runs during construction with manufactured seals. Keep openings in boxes or equipment closed.

G. Lay out work carefully in advance.

H. Do not cut or notch any structural member or building surface without specific approval of the Engineer. Carefully carry out any cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, pavings, or other surfaces required for the installation, support, or anchorage of conduit, raceways, or other electrical equipment. Following such work, restore surfaces neatly to new conditions using skilled craftsmen of the trades involved at no additional cost to the Owner.

I. All work will be performed by accomplished, qualified and experienced personnel working under continuous competent supervision.

101.04 PERMITS

A. Obtain and pay for all permits and inspections pertinent to the electrical installation and obtain such permits from the proper governing body before any progress payment will be certified for electrical work.

SECTION 16000 - ELECTRICAL PROVISIONS

101.05 SITE INSPECTION

A. Prior to submitting a bid, visit the project site and ascertain conditions affecting the proposed work and all existing electrical facilities.

101.06 TEMPORARY INSTALLATION

A. Temporary installation is to conform to the requirements of the National Electrical Code and the State and local governing bodies.

101.07 SHOP DRAWINGS

A. Make all submittals in accordance with Section 01300.

B. Submittals shall include manufacturer and brand name of each class of material.

C. Submit complete shop drawings for review prior to manufacture of power distribution and control equipment.

1. Drawings will show:

    a. Plan layout and dimensions

    b. Elementary diagrams

    c. Connection and interconnection diagrams

    d. Bill of Material

D. Motor control center diagrams, motor controller diagrams, and package drive diagrams are to be of the elementary type and show terminal identifications and associated field connections for each drive.

E. Schematics for all control circuits are to be laid out as a ladder diagram with each line numbered in a sequential manner and all relays having their contact location summary on the line with the relay coil, (per JIC standards). Clearly show and identify interconnection with other systems.

F. Provide and submit for review complete interconnection diagrams for all equipment showing:

1. Terminal blocks of all distribution and control equipment

2. All power, control and signal raceways

3. Conduit sizes, wire number, wire sizes

101.8 RECORD DRAWINGS

A. Maintain a neatly marked set of record drawings showing installation location, and/or routing of conduits, depth of buried cables, pull boxes, junction boxes, and outlets. Mark this set to show current job progress and any deviation from the contract drawings. These drawings will be available upon demand of the Engineer. After final inspection, transfer all record information to the Engineer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

103.01 INSTALLATION

A. The electrical plan drawings show general arrangements and locations for equipment, conduit, outlets, etc. Unless detailed or dimensioned, exact locations of conduit, routing of cables, and placement of equipment will be governed by structural conditions, physical interferences, and locations of electrical termination on equipment. Examine architectural, structural and mechanical plans and shop drawings for the various equipment in order to determine exact routing and placement of all raceways, cables, and equipment, to assure a workable installation.

B. Allowances have been made in the design for the number of raceways and conductors which the Engineer considers minimum for powering and controlling all electrical equipment. If the installed equipment is of larger horsepower than shown, or if characteristics require increased power and/or conductors, resize the raceway and conductors to allow for the changed conditions and remit the information for review prior to installation.

C. Provide conduits, cables, and conductors necessary to meet requirements of all electrical equipment and devices. Determine final sizing of conduits and number and size of all required conductors after review of required drawings. Conduit sizes shown on drawings are minimum sizes.

103.01 CLEAN-UP

A. Continuously remove debris, cuttings, crates, cartons, etc.

B. Before acceptance, carefully clean all cabinets, panels, boxes, wiring devices, cover plates, etc. Replace all damaged or blemished fixtures.

- END OF SECTION -

SECTION 16111 - CONDUIT

PART 1 - GENERAL

101.01 SECTION INCLUDES

A. Metal conduit.

B. Liquid tight flexible metal conduit.

E. Fittings and conduit bodies.

101.02 RELATED SECTIONS

A. Section 16190 - Supporting Devices.

101.03 REFERENCES

A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.

B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.

C. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

D. ANSI/NFPA 70 - National Electrical Code.

E. NECA "Standard of Installation."

F. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.

G. NEMA TC 2 - Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80).

H. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

101.04 DESIGN REQUIREMENTS

A. Conduit Size: ANSI/NFPA 70.

101.05 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.

B. Furnish products listed and classified by testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

101.06 DELIVERY, STORAGE, AND HANDLING

A. Accept conduit on site. Inspect for damage.

B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

C. Protect PVC conduit from sunlight.

101.07 PROJECT CONDITIONS

A. Verify that field measurements are as shown on Drawings.

B. Verify routing and termination locations of conduit prior to rough-in.

C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

PART 2 - PRODUCTS

201.01 CONDUIT REQUIREMENTS

A. Minimum Size: 1/2 inch unless otherwise specified.

B. Indoor Locations, exposed above grade:

1. Use rigid steel conduit.

201.02 METAL CONDUIT

A. Rigid Steel Conduit: ANSI C80.1.

B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; material to match conduit.

201.03 LIQUID TIGHT FLEXIBLE METAL CONDUIT

A. Description: Interlocked steel construction with PVC jacket.

B. Fittings: ANSI/NEMA FB 1.

PART 3 - EXECUTION

301.01 INSTALLATION

A. Install conduit in accordance with NECA "Standard of Installation."

B. Arrange supports to prevent misalignment during wiring installation.

C. Support conduit using stainless steel straps, lay-in adjustable hangers, clevis hangers, and split hangers.

D. Group related conduits; support using conduit rack. Construct rack using steel channel.

E. Fasten conduit supports to building structure and surfaces under provisions of Section 16190.

F. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports

G. Do not attach conduit to ceiling support wires.

H. Arrange conduit to maintain headroom and present neat appearance.

I. Route exposed conduit parallel and perpendicular to walls.

J. Maintain adequate clearance between conduit and piping.

K. Cut conduit square using saw or pipe cutter; de-burr cut ends.

L. Bring conduit to shoulder of fittings; fasten securely.

M. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one-shot bender or factory elbows for bends in metal conduit larger than 2-inch size.

N. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

O. Provide suitable fittings to accommodate expansion and deflection where conduit crosses expansion joints.

P. Provide suitable pull string in each empty conduit except sleeves and nipples.

Q. Use suitable caps to protect installed conduit against entrance of dirt and moisture.

R. All fittings and boxes for use with galvanized steel conduit shall be of malleable iron or gray-iron alloy with zinc plating.

- **END OF SECTION** -

SECTION 16123 - WIRE AND CABLE

PART 1 - GENERAL

101.01 SECTION INCLUDES

A. Wire and cable.

B. Wiring connectors and connections.

101.02 RELATED SECTIONS

A. Section 16111 - Conduit.

B. Section 16195 - Identification.

101.03 REFERENCES

A. ANSI/NFPA 70 - National Electrical Code.

PART 2 - PRODUCTS

201.01 GENERAL

A. All conductors, include grounding conductors, shall be copper. Aluminum conductor wire and cable will not be permitted. Insulation shall bear UL label, the manufacturer's trademark, and identify the type, voltage, and conductor size. All conductors except flexible cords and cables, fixture wires, and conductors that form an integral part of equipment such as motors and controllers shall conform to the requirements of Article 310 of the National Electrical Code, latest edition, for current carrying capacity. Flexible cords and cables shall conform to Article 400 and fixture wires shall conform to Article 402. All wiring shall have wire markers at each end.

201.02 LOW VOLTAGE WIRE AND CABLE

A. Power Wire

1. All wire rated for 600 Volts in duct or conduit for all power and lighting circuits shall be Class B stranded Type XHHW or THHW.

2. Wiring for 600-volt class power and lighting shall be as manufactured by BICC Cables, Okonite, or equal.

B. Control Wire

1. Control wire in duct or conduit shall be the same type as power and lighting wire indicated above, or as indicated on the drawings.

2. Control wiring shall be No. 14 AWG, or as indicated on the drawings.

3. Control wires at panels and cabinets shall be machine tool grade type MTW, UL approved, rated for 90 degrees C at dry locations, and be as manufactured by American, Carol Cable, or equal.

4. Control wires shall be type SIS when indicated on the drawings.

C. Instrumentation Cable

1. Instrumentation cable shall be rated at 300 volts.

2. Individual conductors shall be No. 18 AWG stranded, tinned copper, unless otherwise indicated. Insulation shall be color coded PVC with nylon overcoat: black-white for two-conductor cable and black-red-white for three-conductor cable.

3. Instrumentation cables shall be composed of the individual conductors, an aluminum polyester foil shield, a No. 20 AWG stranded tinned copper drawn wire, and a PVC outer jacket.

4. Two conductor shielded cable shall be Belden Type 9318.

5. Three conductor shielded cable shall be Belden Type 9366.

6. Instrumentation cable shall not be larger size than what is specified.

D. Serial Communication Cable

1. Cable shall be two twisted pair.

2. Individual conductors shall be No. 22 AWG stranded tinned copper, twisted pair with a tinned copper drain wire, foil aluminum-polyester shield. Insulation shall be color coded polyethylene. Cable shall have a chrome PVC outer jacket.

3. Cable shall be Belden Type 8723, or equal.

201.03 MEDIUM VOLTAGE CABLE

A. General

1. Individual conductors shall be copper, Class B, stranded.

B. 5 KV Cable

1. Cable used in conduit or duct shall be composed of a single conductor, ethylene-propylene rubber (EPR) insulation rated at 90 degrees C, shield, and black chlorosulfonated polyethylene (CPE). Insulation level shall be 133%, 115 mil. Shield shall be copper tape type. Cable shall be UL Type MV-90 in accordance with UL 1072-UL Standard for Safety - Medium Voltage Power Cables, as manufactured by BICC Cables, Okonite, or equal.

201.04 CABLE TERMINATIONS

A. Compression connectors shall be Burndy Hi Lug, Thomas & Betts Sta-Kon, or equal. Aluminum connectors will not be acceptable. Threaded connectors shall be split bolt type of high strength copper alloy. Pressure type, twist-on connectors will not be acceptable except for lighting circuits.

B. Pre-insulated fork tongue lugs shall be Thomas & Betts, Burndy, or equal.

C. General purpose insulating tape shall be Scott No. 33, Plymouth Slip-knot, or equal. High temperature tape shall be polyvinyl as manufactured by Plymouth, 3M, or equal.

D. Pre-printed self-sticking labels for coding all wiring shall be as manufactured by W.H. Brady, 3M, or equal.

E. Stress cone material for make-up of medium voltage shielded cable shall be as manufactured by Elastimold, Raychem, 3M, or equal.

F. Deadbreak elbows for connections at metering enclosure shall be 15 kV, 600 A, Elastimold 600 series, Joslyn type PES86 or equal, with all required bushing adaptors and hardware.

PART 3 - EXECUTION

301.01 GENERAL

A. The Contractor shall provide and terminate all power, control, and instrumentation conductors except where indicated.

301.02 INSTALLATION

A. Conductors shall not be pulled into raceway until raceway has been cleared of moisture and debris.

B. Pulling tensions on raceway cables shall be within the limits recommended by the cable manufacturer. Wire pulling lubricant, where needed, shall be UL approved.

C. Instrumentation wire shall not be run in the same raceway with power and control wiring except where specifically indicated.

D. Wire in panels, cabinets, and wireways shall be neatly grouped using nylon tie straps and shall be fanned out to terminals.

301.03 SPLICES AND TERMINATIONS

A. General

1. All wire taps and splices shall be properly taped and insulated according to their respective classes.

2. Stranded conductors shall be terminated directly on equipment box lugs making sure that all conductor strands are confined within lug. Use forked-tongue lugs where equipment box lugs have not been provided.

3. Excess control and instrumentation wire shall be properly taped and terminated as spares.

B. Control Wire and Cable

1. Control conductors shall be spliced or terminated only at the locations indicated and only on terminal strips or terminal lugs of vendor furnished equipment.

2. In junction boxes, motor control centers, and control panels, all control wire and spare wire shall be terminated to terminal strips.

C. Instrumentation Wire and Cable

1. Shielded instrumentation cables shall be grounded at one end only, preferably the receiving end on a 4-20 mA system.

D. Power Wire and Cable

1. All 120/208-volt branch circuit conductors shall not be spliced.

2. Splices to motor leads in motor terminal boxes shall be wrapped with mastic material to form a mold and then shall be taped with a minimum of two layers of varnished cambric tape overtaped with a minimum of six layers of high temperature tape.

3. All medium voltage shielded power cable shall have stress cone terminations. Terminations shall be installed per manufacturer's instructions.

SECTION 16123 - WIRE AND CABLE

301.04 CABLE IDENTIFICATION

A. General: Wires and cables shall be identified for proper control of circuits and equipment and to reduce maintenance effort.

B. Identification Numbers: The CONTRACTOR shall assign to each control and instrumentation wire and cable a unique identification number. Numbers shall be assigned to all conductors having common terminals and shall be shown on all as built drawings. Identification numbers shall appear within 3 inches of conductor terminals. Control shall be defined as any conductor used for alarm, annunciator, or signal purposes.

1. All 120/208-volt system feeder cables and branch circuit conductors shall be color coded as follows: Phase A-black, Phase B-red, Phase C-blue, and Neutral-white. The 480/277-volt system conductors shall be color coded as follows: Phase A-brown, Phase B-orange, Phase C-yellow, and Neutral-Gray. Color coding tape shall be used where colored insulation is not available. Branch circuit switch shall be yellow. Insulated ground wire shall be green, and neutral shall be gray. Color coding and phasing shall be consistent throughout the site. Bus bars at panelboards, switchboards, and motor control centers shall be connected Phase A-B-C, top to bottom, or left to right, facing connecting lugs.

2. General purpose AC control cables shall be pink. General purpose DC control cables shall be blue.

3. All spare cable shall be terminated on terminal screws and shall be identified with a unique number as well as with destination.

4. Terminal strips shall be identified by computer printable, cloth, self-sticking marker strips attached under the terminal strip.

- END OF SECTION -

SECTION 16190 - SUPPORTING DEVICES

PART 1 - GENERAL

101.01 SECTION INCLUDES

A. Conduit and equipment supports.

B. Anchors and fasteners.

101.02 REFERENCES

A. NECA - National Electrical Contractors Association.

B. ANSI/NFPA 70 - National Electrical Code.

101.03 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.

B. Furnish products listed and classified by testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

PART 2 - PRODUCTS

201.01 PRODUCT REQUIREMENTS

A. Materials and Finishes: Provide adequate corrosion resistance.

B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.

C. Anchors and Fasteners:

1. Concrete Structural Elements: Use expansion anchors.

2. Steel Structural Elements: Use beam clamps.

3. Concrete Surfaces: Use expansion anchors.

4. Hollow Masonry, Plaster, and Gypsum Board Partitions:

5. Use hollow wall fasteners.

6. Solid Masonry Walls: Use expansion anchors.

7. Sheet Metal: Use sheet metal screws.

8. Wood Elements: Use wood screws.

201.02 STEEL CHANNEL

A. Description: Galvanized steel.

PART 3 - EXECUTION

301.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".

C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.

D. Do not use spring steel clips and clamps.

E. Do not use powder-actuated anchors.

F. Obtain permission from Engineer before drilling or cutting structural members.

G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

H. Install surface-mounted cabinets and panelboards with minimum of four anchors.

- **END OF SECTION** -

AWARD OF PURCHASE ORDER

To: Contractor's Name and Address

Re: Wellhouse Eyewash Installation

The Jordan Valley Water Conservancy District (Owner) hereby accepts your Bid dated _____. In accordance with your Bid and the Owner's Documents dated _____, the Owner has created a purchase order in the amount of $_____ for the project entitled "Wellhouse Eyewash Installation". **The completion date is 180 days from the signing of this Award.**

You should sign and return this Award of Purchase Order within 10 calendar days from the date of this notice to you.

Sincerely,

_____

Shane K Swensen, PE
Chief Engineer

_____
Award Date

ACCEPTANCE OF AWARD

_____, a corporation qualified to do business in the State of Utah, hereby agrees to perform as specified in its Bid, the Owner's Contract Documents, and this Award of Purchase Order.

_____

_____
Signature

_____
Title

_____
Acceptance Date

Attachments: Bid