

SECTION 01060
SPECIAL CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Summary of Work
 2. Work by Others
 3. Work by Owner
 4. Owner Furnished Product
 5. Contractor's Use of Site and Premises.
 6. Coordination with Owner's Operations
 7. Order of Construction and Construction Schedule
 8. Preconstruction Conference
 9. Contractor's Superintendent's Field Office
 10. Drawings and Contract Documents for Contractor's Use
 11. Submittals
 12. Start-up and Training
 13. Testing
 14. Project Meetings
 15. Record Drawings
 16. Special Considerations
- B. Related Sections include but are not necessarily limited to:
1. Division 1 - General Requirements.
 2. Cedar Rapids Metropolitan Area Standard Specifications – Section 02100

1.2 SUMMARY OF WORK

- A. The purpose of this project is to incorporate a new generator and automatic transfer system into the circuit that feeds the Hoosier Lift Station. The automatic transfer switch shall be used to automatically operate the generator and automatically transfer between utility and generator sources; as power feed requires. Work covered by the Lump Sum Base Price shall be as shown on the drawings and specified therein, and as reasonably inferred there from including, but not limited to, the following:
1. Construct new generator foundation.
 2. Provide and install generator on newly constructed foundation.
 3. Provide and install new Automatic Transfer Switch (ATS).
 4. Provide and install piping and regulators between the gas meter and the generator. Supply piping system as required to ensure proper start-up and operation of the generator.
 5. Electrical wiring:
 - a. Provide and install new buried service from existing 400A disconnect to new ATS
 - b. Provide and install new wiring from new generator and controller to new ATS
 - c. Provide and install new buried service from new ATS to existing 480V Distribution Panel in the Hoosier Lift Station Drywell.
 - d. Remove existing 480V wiring from conduit between existing 400A disconnect switch and existing 480V Distribution Panel. Install pull cord in conduit when removing wire.
 - e. Provide and install new wiring from new ATS to existing PLC panel located in Drywell. Pull required wiring in order to pass one discrete signal from ATS to PLC. Terminations will be completed by Owner; advise Owner in writing when Terminations are ready to be completed.
 - f. Grounding shall consist of tying into reinforcing in new generator foundation. Generator foundation grounding shall also be tied in to existing site ground at drop pole using minimum 2 AWG wiring. Ground wire shall follow approximate path of new gas line, as shown in the drawings.
- B. Scheduled Power Outages – No scheduled power outage at the lift station shall be permitted to last longer than 8 hours. All power outages shall occur during normal business hours.

1. Prior to the first scheduled power outage, provide Owner minimum 2 weeks written notice to allow Owner time to install temporary pumping capabilities.
 2. On all subsequent power outages provide Owner minimum one week written notice.
 3. Written notices shall include anticipated date, time and anticipated duration of shutdown.
- C. Conduit – Conduit that is direct-buried in the earth must be of type Schedule 80 PVC. Conduit that is above ground must be 6063-T1 aluminum. All fittings and associated hardware that is not direct-buried must be of type 316 stainless steel. Conduit must be sealed at entrance to: disconnect cabinet on the transformer pole, the 480V Distribution panel in the lift station drywell, and the penetration into the drywell. Conduit in drywell must allow proper access in existing manway. Conduit for the 480V power wiring must be at minimum 2.5 in. diameter. Conduit for control wiring must be at minimum 1 in. diameter.
- D. Electrical Wire Type – All wiring must be of type XHHW-2. New 480V wiring must have a minimum size of 4/0 AWG. Control wiring shall be stranded type with a minimum size of 16 AWG.
- E. Electrical Accessories – All modular strut, connectors, bolts, anchors, etc. shall be stainless steel (316). All enclosures shall be non-metallic with a NEMA rating of 3R.
- F. At completion, clean-up site and return site to pre-work condition.

1.3 WORK BY OTHERS

- A. Other Contractors may be onsite performing work under separate contract.

1.4 WORK BY OWNER

- A. None.

1.5 OWNER FURNISHED PRODUCTS

- A. Owner shall perform utility locates. Please provide at least two weeks advanced written notice of excavation activities to ensure adequate time to complete locates.

1.6 CONTRACTOR'S USE OF SITE AND PREMISES

- A. If provided, locate field office, materials storage and staging areas, and limit use of site and premises to allow:
1. Uninterrupted operation of the Hoosier Lift Station.
 2. Work by others and work by Owner.
 3. Continuous Owner access to the Hoosier Lift Station through the fence entrances.
- B. Temporary Utilities
1. Electricity: Power will be available to Contractor at no cost as long as its use does not hinder Owner's operations at Owner's sole discretion. Provide and maintain required facilities for use of electric power.
 2. Heat: Provide and pay for heat devices and heat as required to maintain specified condition for construction purposes.
 3. Telephone Service: Provide cellular phone service for Contractor's personnel.
 4. Sanitary Facilities: Provide and maintain facilities and enclosures for employees.
 5. Disconnect, dismantle, and/or remove temporary utilities when no longer required for the work.
- C. Safety
1. The Contractor is responsible for becoming fully acquainted with the safety and health policies and procedures at the Cedar Rapids Water Pollution Control Plant/Hoosier Lift Station prior to the commencement of work. This responsibility also extends to any subcontractors or suppliers retained or used by the Contractor. All employees of the Contractor who will be at the work site for more than four (4) consecutive hours shall participate in site-specific safety orientation and pass a written examination prior to work on site. See Supplementary Conditions paragraph SC-6.15.
 2. As specified in the General Conditions the Contractor is responsible for safety of their personnel and shall designate a site safety supervisor.
 3. Contractor's site safety supervisor will jointly investigate with the Cedar Rapids Water Utilities Safety Coordinator any reported condition(s) that may pose a hazard to the safety and health of Cedar Rapids Water Pollution Control Facility employees that the Contractor's employees, including subcontractors and suppliers, may have created in the course of their work.

4. The Contractor will notify the Cedar Rapids Water Utilities Safety Coordinator of any OSHA-recordable illnesses or injuries sustained by the Contractor's employees, including subcontractors and suppliers, on Cedar Rapids Water Pollution Control Facility property and of any OSHA inspections or citations related to work conducted on Cedar Rapids Water Pollution Control Facility property.
 5. The Contractor is responsible for providing gas monitoring equipment capable of monitoring oxygen, combustible gases, and hydrogen sulfide for their personnel.
- D. Lockout/Tagout
1. Contractor shall coordinate all lockout/tagout activities with Owner's Operations Supervisor. Each Contractor employee, including subcontractors and suppliers, shall have their own personal locks. Tagout is NOT permitted.
- E. Security:
1. The perimeter of the Hoosier Lift Station is fenced. There are two vehicle gates, located as part of the North fence. Contractor must provide means to "daisy-chain" locks so that other entities can access the site during off hours.
 2. Contractor vehicle access to and from the site shall be through the North entrance gate. OWNER reserves the right to limit number of Contractor vehicles on site and to tow unidentified vehicles from the site.
 3. Contractor employee parking: Personal cars owned by Contractor employees shall be parked around the lift station such that they do not interfere with plant staff access to the station or interfere with normal traffic on the College Community School District Campus.
 4. At all times during Project: Contractor shall keep roster of its employees and all visitors.
 5. Contractor shall provide, maintain, and pay for security services, fences, and lighting as required to protect stored material, equipment, and field offices.
 6. Deliveries: Contractor shall make arrangements for deliveries, loading, and unloading. Owner employees and/or equipment will not unload Contractor's deliveries.
 7. Visitors: Short term visitors (such as field engineers, day laborers and vendors) to the Project Site who can not reasonably attend the Kirkwood Community College training shall be accompanied at all times by Contractor employee, who has been safety trained.
- F. Cleaning:
1. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
 2. Provide means of removing mud from vehicle wheels before entering school district roadways and adjacent streets. Remove project related mud and other debris from College Community School District roadways and adjacent streets.
 3. Leave the site in a condition with an appearance equal to original condition.
- G. Protect existing facilities and installed work. Repair or replace damaged facilities to original condition.

1.7 COORDINATION WITH OWNER'S OPERATIONS

- A. All work requiring interface with existing facilities and operation of the Hoosier Lift Station must be coordinated with a representative of the Cedar Rapids Water Pollution Control Facility to be designated by the Owner. Provide at least one week advanced notice for any required shutdowns.
- B. The Contractor is prohibited from operating any valves, gates or other equipment at any time.

1.8 ORDER OF CONSTRUCTION AND CONSTRUCTION SCHEDULE

- A. Construction operations will be scheduled to allow the Owner uninterrupted operation of existing adjacent facilities. Coordinate connections with existing work to ensure timely completion of interfaced items.
- B. At no time shall Contractor or his employees modify operation of the existing facilities or start construction modifications without approval of the Owner except in emergency to prevent or minimize damage.
- C. If Contractor does not take necessary action to accomplish work according to schedule, Contractor may be ordered by Owner in writing to take necessary and timely action to improve work progress. Owner may require increased work forces, extra equipment, extra shifts or other action as necessary. Should Contractor refuse or neglect to take such action authorized, under provisions of this contract, Owner may take necessary actions including, but not necessarily limited to, withholding of payment and termination of contract.

1.9 PRECONSTRUCTION CONFERENCE

- A. A preconstruction conference shall be held after award of Contract. Owner will notify the Contractor as to the location, date and time of the conference one week in advance of the proposed date. Contractor's Project Manager and Project Superintendent shall attend.

1.10 CONTRACTOR'S SUPERINTENDENT'S FIELD OFFICE

- A. Not required, but Contractor may establish Contractor's field office in an area identified by Owner.
- B. Remove field office from site upon acceptance of the entire work by the Owner.

1.11 DRAWINGS AND CONTRACT DOCUMENTS FOR CONTRACTOR USE

- A. Additional documents will be furnished as requested to the Contractor.

1.12 SUBMITTALS

- A. Required Submittals
 - 1. Submittals shall be required on the following:
 - a. Crushed Stone (subgrade)
 - b. Concrete Mix
 - 1) Strength Tests
 - c. Concrete Reinforcing
 - d. Automatic Transfer Switch
 - e. Generator
 - f. Generator Controller
 - g. Electrical Wire
 - h. Electrical Enclosure
 - i. Operation and Maintenance Manuals (See Section 1.13.A below for more information)
- B. General:
 - 1. All submittals shall be provided in hard copy form.
 - 2. All submittals and all pages of all copies shall be completely legible
 - a. Submittals which, in the Owner's opinion, are illegible will be returned without review.
 - 3. Scope of any submittal and letter of transmittal
 - a. Provide listing of each component or item in submittal capable or receiving an independent review action.
 - b. Identify each item:
 - 1) Manufactures and Manufactures Drawing or data number.
 - 2) Unique page numbers for each page of each separate item.
 - 3) Coordinate and identify contents so all items can be easily verified.
 - 4) If proposed equipment or materials deviate from the Contract Drawings or Specifications in any way, clearly note the deviation and justify the said deviation in detail in a separate letter immediately following the transmittal sheet.
 - c. When submitting "or-equal" items that are not the products of named manufacturers, include the words "or-equal" in the item description.
 - d. Contractor's review and approval stamp shall be applied either to the letter of transmittal or a separate sheet preceding each independent item in the submittal.
 - e. Transmit all submittals to:

City of Cedar Rapids – Utilities Department
1111 Shaver Rd NE
Cedar Rapids, IA 52402
Attn: Andrew Lundy, P.E.

1.13 START-UP AND TRAINING

- A. Operation and Maintenance Manuals
 - 1. Operation and Maintenance Manuals for Equipment and Systems:

- a. Submission of Operation and Maintenance Manuals for equipment and systems is applicable but not necessarily limited to:
 - 1) Automatic Transfer Switch
 - 2) Generator
 - 3) Generator Controller
- b. Equipment and Systems Operation and Maintenance Manuals shall include, but not necessarily be limited to, the following detailed information, as applicable:
 - 1) Equipment function, normal operating characteristics, limiting operations.
 - 2) Assembly, disassembly, installation, alignment, adjustment, and checking instructions.
 - 3) Operating instructions for start-up, routine and normal operation, regulation and control, shutdown, and emergency conditions.
 - 4) Lubrication and maintenance instructions.
 - 5) Troubleshooting guide.
 - 6) Parts lists and predicted life of parts subjected to wear:
 - a) Comprehensive parts and parts price lists.
 - b) A list of recommended spare parts.
 - c) List of spare parts provided as specified in associated Specification Section.
 - 7) Outline, cross-section, and assembly Drawings; engineering data; and electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, word description of wiring diagrams and interconnection diagrams.
 - 8) Test data and performance curves.
 - 9) As-constructed fabrication or layout Drawings and wiring diagrams.
 - 10) Copies of installation instructions, parts lists or other documents.
 - 11) Instrumentation or tag numbers assigned to the equipment by the Contract Documents are to be used to identify equipment and system components.
 - 12) Additional information as specified in the associated equipment of system Specification Section.
2. Owner's use of manufacturer's Operation and Maintenance materials:
 - a. Materials are provided for Owner's use, reproduction and distribution as training and reference material within Owner's organization.
 - 1) Applicable to hard copy or electronic media
 - 2) Applicable to materials containing copyright notice as well as those with no copyright notice.
 - b. Notify manufacturer of this intended use of materials provided under the Contract.
3. Submittal format:
 - a. Interim submittals: Submit two (2) paper copies until manual is approved.
 - b. Final submittals:
 - 1) Within 30 days of receipt of approval, submit six (6) paper copies and two (2) electronic copies on Compact Disk (CD-ROM) in Portable Document Format (PDF).
 - 2) Electronic copies will be reviewed for conformance with the approved paper copy and the electronic copy (PDF) requirements of this Specification.
4. Paper copy submittals:
 - a. Submit Operation and Maintenance Manuals printed on 8-1/2 x 11 in. size heavy first quality paper with standard three hole punching and bound in stiff metal hinged binder constructed as three-ring style.
 - 1) Provide binder with titles on front and on spine of each binder.
 - a) As space allows, binder titles shall include, Project Name, related Specification Number, Equipment Name(s) and Project Equipment Tag Numbers.
 - 2) Provide a Cover Page with each manual with the following information:
 - a) Manufacturer(s).
 - b) Date.
 - c) Project Owner and Project Name.
 - d) Specification Section.
 - e) Project Equipment Tag Numbers, as applicable.
 - f) Model Numbers
 - g) Engineer.
 - h) Contractor.
 - 3) Provide a Table of Contents or Index for each manual.
 - 4) Use plastic-coated dividers to tab each section of each manual per the manual's Table of Contents/Index for easy reference.
 - b. Reduce Drawings of diagrams bound in manuals to an 8-1/2 x 11 in. or 11 x 17 in. size.

- 1) Where reduction is not practical to ensure readability, fold larger Drawings separately and place in vinyl envelopes which are bound into the binder.
 - 2) Identify vinyl envelopes with Drawing numbers.
 - c. Mark each sheet to clearly identify specific products and component parts and data applicable to the installation of the Project.
 - 1) Delete or cross out information that does not specifically apply to the Project.
 5. Electronic copy submittals:
 - a. Electronic copies of the approved paper copy Operation and Maintenance Manuals are to be produced in Adobe Acrobat's Portable Document Formant (PDF) Version 8.0 or higher.
 - b. Do not password protect and/or lock the PDF document.
 - c. Each equipment O&M Manual shall be incorporate into one (1) PDF document.
 - d. Drawings and other graphics must be converted to PDF format and made part of the one (1) PDF document.
 - 1) Scanning to be used only where actual file conversion is not possible.
 - e. Rotate pages that must be viewed in landscape to the appropriate position for easy reading.
 - f. Images only shall be scanned at a resolution of 300dpi or greater
 - 1) Perform Optical Character Recognition (OCR) capture on all images.
 - 2) Word searches of the PDF document must operate successfully to demonstrate OCR compliance.
 - g. Create bookmarks in the navigation frame, for each entry in the Table of Contents/Index.
 - h. All PDF documents shall be set with the option "Fast Web View" to open the first pages of the document for the viewer while the rest of the document continues to load.
 - i. Labeling:
 - 1) As a minimum, include the following labeling on all (CD-ROM) disc and jewel cases:
 - a) Project Name.
 - b) Equipment Name and Project Tag Number.
 - c) Project Specification Section.
 - d) Manufacturer Name.
 - e) Vendor Name.
- B. Initial Start-up: Shall be completed to check functionality and ensure Automatic Transfer Switch and Standby Generator is functioning correctly. Initial start-up is NOT a load test.
1. Complete the filing of all required submittals:
 - a. Shop Drawings.
 - b. Operation and Maintenance Manuals.
 - c. Training material.
 2. Completion of Construction Work:
 - a. Complete the work to bring the project to a state of substantial completion.
 3. Filing of Contractor's Notice of Substantial Completion and Request for Inspection of equipment:
 - a. File the notice when the following have been completed:
 - 1) Completion of the filing of O&M manuals and all other required submittals.
 - 2) Construction work (brought to state of Substantial Completion).
 4. Perform other tests, checks, and activities required to make the equipment ready for Demonstration Period. Refer to Testing under Section 16250 and Section 16620.
 5. Obtain certifications, without restrictions or qualifications, and deliver to Engineer prior to personnel training:
 - a. Manufacturer's equipment installation check letters.
 - b. Instrumentation Supplier's Instrumentation Installation Certificate.
 6. Ensure Owner's representative is on-site during Initial Start-up activities to ensure no disruption to plant operations. Start-up and equipment testing will be the sole responsibility of the Contractor.
 7. Upon successful completion of Initial Start-Up and personnel training, Owner will authorize the Contractor to commence the Demonstration Period.
- C. Training
1. Conduct all personnel training after completion of Initial Start-up.
 - a. Personnel training on individual equipment or systems will not be considered completed unless:
 - 1) All pre-training deliverables are received and approved before commencement of training on the individual equipment or system. This includes but is not limited to: agenda's, O&M manuals, and training schedules.
 - 2) No system malfunctions occur during training.

- 3) All provisions of field and classroom training specifications are met.
- b. Training not in compliance with the above will be performed again in its entirety at no additional cost to Owner.
- 2. Field and classroom training requirements:
 - a. Hold classroom training on-site.
 - b. Notify each manufacturer specified for on-site training that the Owner reserves the right to video record any or all training sessions.
 - 1) Organize each training session in a format compatible with video recording.
 - c. Training instructor:
 - 1) Factory trained and familiar with giving both classroom and "hands-on" instructions.
 - d. Organize training sessions into maintenance verses operation topics and identify on schedule.
 - e. Plan for minimum class attendance of ten people at each session and provide sufficient classroom materials, samples, and handouts for those in attendance.
 - f. Instructors to have a typed agenda and well prepared instructional material.
 - 1) The use of visual aids, e.g., films, pictures, and slides is recommended for use during the classroom training programs.
 - 2) A draft agenda must be provided to the Owner approved prior to training.
 - 3) Deliver final approved agendas to the Owner a minimum of 14 days prior to the classroom training.
 - g. Provide equipment required for presentation of films, slides, and other visual aids.
 - h. In the on-site training sessions, cover the information required in the Operation and Maintenance manuals submitted.
 - i. Maintain a log of classroom training provided including:
 - 1) Instructors, topics, dates, time, and attendance.
- D. Demonstration Period
 - 1. Demonstrate the functional integrity of the mechanical, electrical, and control interfaces of the respective equipment and components as evidence of Substantial Completion.
 - 2. Demonstration Period shall verify operation of Generator and Automatic Transfer Switch using two methods:
 - a. Utilize the normally open contact on the Automatic Transfer Switch to activate the generator and transfer load.
 - b. Turn off power to Lift Station using existing main disconnect to verify proper generator operation and transfer. Lift station pumps shall be shut down prior to operating main disconnect.
 - c. Lift Station must transfer from utility power to generator power and back during test. If either Demonstration method above fails; deficiency shall be corrected and both methods shall be re-tested until compliance.
 - 3. Duration of Demonstration Period: Generator shall operate lift station for 30 minutes, each method.
 - 4. Owner will provide operational personnel to provide process decisions affecting plant performance.
 - a. Owner will make process decisions and operate all equipment.
 - b. Contractor will be on-site with the Owner at all times during Demonstration Period.
 - c. Contractor will provide all resources and manpower needed to maintain proper operation and functionality of equipment throughout the Demonstration Period until successful completion of the Demonstration Period.
 - 5. Owner reserves the right to simulate operational variables, equipment failures, routine maintenance scenarios, etc., to verify the functional integrity of automatic and manual backup systems and alternate operating modes.

1.14 TESTING

- A. Concrete, as specified in Section 03005.
- B. Earthwork, as specified in Cedar Rapids Metropolitan Area Specification Section 02100.

1.15 PROJECT MEETINGS

- A. Construction Meetings:
 - 1. The Owner will conduct construction meetings involving:
 - a. Contractor's project manager.
 - b. Contractor's project superintendent.
 - c. Owner's designated representative(s).

- d. Engineer's designated representative(s) as appropriate.
- e. Contractor's subcontractors as appropriate to the work in progress.
- 2. Meetings will be conducted on an as needed basis at mutually agreed upon times.
- 3. The Owner will take meeting minutes and submit copies of meeting minutes to participants and designated recipients identified at the Preconstruction Conference. Corrections, additions or deletions to the minutes shall be noted and addressed at the following meeting.
- 4. The Contractor shall have available at each meeting an up-to-date schedule.

1.16 RECORD DRAWINGS

- A. Contractor shall provide record drawings for the following information:
 - 1. Marked up construction drawings to reflect "as-built" condition.
 - a. Drawings shall include all "as-built" information included dimensions.
 - b. At the end of the project the marked set of drawings will be turned over to Owner.
 - c. As-built drawings shall incorporate routing of all new electrical work, including conduit routing and grounding.
 - d. As-built drawings shall be kept up to date during construction and need to be available for Owner's review at Owner's request.
 - 2. Electrical Diagram
 - a. Provide one-line diagram incorporating the Work.
 - b. Provide hard copy of diagram for Owner approval.
 - c. Once approved, diagram shall be provided in AutoCAD format.

1.17 SPECIAL CONSIDERATIONS

- A. Contractor is responsible in obtaining an electrical permit and scheduling all required inspections and is responsible for all costs associated with the electrical permit.
- B. Contractor shall be responsible for negotiations of any waivers or alternate arrangements required to enable transportation of materials to the site.
- C. Maintain conditions of access road to site such that access is not hindered as the result of construction related deterioration.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SECTION)

PART 3 - EXECUTION - (NOT APPLICABLE TO THIS SECTION)

END OF SECTION