LAKE HAVASU CITY, ARIZONA

ADDENDUM NO. 1

SOUTH INTAKE PROJECT
Project B25-107012-500134

DATED: APRIL 8, 2025

This Addendum No. 1 forms a part of the contract described above.

The following clarification is provided herein by the OWNER:

1. Replace specification section 16900 with the attached version.
2. Replace Specification section 00420-Bidders Statement of Qualifications

ADDENDUM ONE

SECTION 16900

GENERAL REQUIREMENTS INSTRUMENTATION AND CONTROLS

PART 1-GENERAL

1.1 SUMMARY

A. Work Includes:

a. The Engineering, furnishing, installing, calibrating, adjusting, testing, documenting, starting up, and Owner training for process Instrumentation and Control (PIC) for each well site.

B. Major Components:

a. Programmable logic controllers and remote I/O modules.
b. Coordinated startup activities for new PLCs Division includes instruments, meters, control devices. and control panels as specified in each Section.

C. Complete Detailed PIC Design: PIC as shown and specified includes functional and performance requirements and component specifications.

D. Coordinated Startup and Commissioning: Coordinate with other trades, vendors, and programmers for testing, startup, and commissioning.

E. Work performed by Others - Owner/Engineer

a. Programming of PLC.
b. Programming of SCADA Interface.
c. Review of contractor provided submittals, control panels, including I/O tables and tag names, etc.
d. Assistance during Startup and Commissioning.

1.2 Related Work

1. Section 16901 - Control Panels Instrumentation and Controls

2. Section 16924 PLC and Accessories

1.3 References

1. Instrument Society of America (ISA)

S20 - Specification Forms for Process Measurement and Control Instruments, Primary Elements and Control Valves.

2. Others as specified in applicable Sections.

3. National Fire Protection Association

National Electrical Code, NFPA 70

Standard for Electrical Safety in the Workplace, NFPA 70E

4. National Electrical Safety Code, IEEE C2.

5. Occupational Safety and Health Administration, OSHA.

6. All electrical and control equipment and material shall bear the recognized Underwriters Laboratories, Inc. (UL) seal of approval. It is Vendor's responsibility to obtain local inspection approval for all non-UL labeled equipment and pay all fees in connection with the same.

1.4 System Responsibility – System Integrator

Systems may utilize equipment of different manufacturers but one System Integrator is to assume overall responsibility for the complete system.

A. Approved System Integrator

1. Alliance Service and Control Specialists, Inc.
2. Darcor and Associates, Inc.
3. PRIMEX
4. Engineer prior approved equal.

B. System Integrator Pre-Qualification

System Integrator shall be provided by a firm specializing in control panel construction. Request for approval shall be submitted to engineer a minimum of 10 days prior to bid.

PART 2 CONTROL PANEL AND CONTROL DESCRIPTION

2.1 Mulberry Reuse PLC:

Replace and upgrade existing PLC with new. Retain existing interior mounted enclosure. Retrofit new PLC into enclosure. Retain all existing field inputs and outputs. All parts are Allen Bradley and to match established existing City components. Note Mullberry REUSE PLC is formerly tagged in programming as "UV-PLC".

Replacement Component Card List

- Processor 5069-L330ER
- 5069-IA16
- 5069-IA16
- 5069-IA16
- 5069-OW16
- 5069-IF8
- 5069-IF8
- 5069-OF8

Communication:

Fiber Patch: to Mulberry Pond Remote I/O, and Golf Course Pump Station.
Moxa Switch.
Power Supply with UPS.

2.2 Mulberry Pond Valve Control Panel Remote I/O:

Provide new control panel to monitor and control the new motorized operated butterfly valves at the Mulberry Co-Mingling Pond. Reconnect and retain existing I/O. Control panel to control and monitor and monitor pond level. Panel to incorporate PLC Remote I/O with fiber optic interface with the Mulberry Reuse PLC. Retain Existing I/O

Replacement Component Card List

- 5069-AEN2TR- Remote I/O Ethernet Adapter
- 5069-IA16
- 5069-IA16
- 5069-IA16
- 5069-OW16
- 5069-IF8
- 5069-IF8
- 5069-OF8

Communication:

Fiber Patch: to Mulberry Reuse PLC
Moxa Switch.
Power Supply with UPS.

2.3 South Intake Pump Station SCADA/RTU:

Modify existing PLC Based SCADA/RTU to accept new I/O for control of the new Pressure Sustaining Valve and monitor of new Pressure Transducer. Provide a new I/O module. Retain existing I/O.

New Component Card List
5069-OW16

Communication:
Existing SCADA Radio to remain.

2.4 Golf Course Pump Station SCADA/RTU:

Modify existing PLC Based SCADA/RTU. Replace existing Pond Level Transducer. Provide new fiber optic interface with the Mulberry Reuse PLC to replace existing Radio SCADA. Remove Intermediate Pond PLC. Provide new PLC Components as listed.

New / Replacement Component Card List
5069-AEN2TR- Remote I/O Ethernet Adapter
5069-IA16
5069-IA16
5069-OW16
5069-IF8

Communication:
Fiber Patch: to Mulberry Reuse PLC
Moxa Switch.

PLC I/O and PLC Panels shall be fabricated, configured and tested by the Systems Integrator in accordance with these Specifications and Contract Requirements.

Programming and extension of the Existing Mullberry Waste Water Treatment, PLCs, Remote I/O and SCADA System is provided by OWNER/ENGINEER.

Programming of existing East and West Golf Course Level Control and Smoketree Valve Control to be by OWNER/ENGINEER.

PART 3 SUBMITTAL DRAWINGS AND DOCUMENTS

3.1 Compliance Submittals

1. Submit as specified in Section 1330.

2. Manufacturer with prime responsibility shall assume responsibility for all Compliance Submittals.

3. Includes, but not limited to, the following:

a. Fabrication drawings, front elevation, wiring, diagrams, and bills of material for control panels.

b. Engraving schedule and physical dimensions for nameplates and phenolic overlays.

c. Electrical and mechanical connection diagrams for all separately mounted instruments.

d. Individual specification or descriptive sheets for instruments, annunciators and similar major system components to conform to ISA S20.

3.2 Instruction Books

For all instruments, transducers, and similar major system equipment.
In addition to the requirements as specified in DIVISION 1, submit single-page specification sheets for each instrument which lists the type, model number, function, scale, input, actuation, output and other specific features of that instrument.

A. Action Submittals:

1. General:
   a. Shop Drawings, full-scaled details, wiring diagrams, catalog cuts, and descriptive literature.
   b. Identify proposed items and options. Identify installed spares and other provisions for future work (for example, reserved panel space; unused components, wiring, and terminals).
   c. Legends and Abbreviation Lists: Complete definition of symbols and abbreviations used on this Project (for example, engineering units, flow streams, instruments, structures, and other process items used in nameplates, legends, and data sheets).

2. Bill of Materials: List of required equipment.

a. Group equipment items as follows:
   1) I&C Components: By component identification code.
   2) Other Equipment: By equipment type.
b. Data Included:
   1) Equipment tag number.
   2) Description.
   3) Manufacturer, complete model number, and all options not defined by model number.
   4) Quantity supplied.
   5) Component identification code where applicable.

3. Catalog Cuts:
   a. I&C Components, Electrical Devices, and Mechanical Devices:
      1) Catalog information, mark to identify proposed items and options.
      2) Descriptive literature.
      3) External power and signal connections.
      4) Scaled drawings showing exterior dimensions and locations of electrical and mechanical interfaces.

4. Component Data Sheets: Data sheets for I&C components.
   a. Format and Level of Detail: In accordance with ISA-S20.
   b. Include component type identification code and tag number on data sheet.
   c. Specific features and configuration data for each component:
      1) Location or service.
      2) Manufacturer and complete model number.
      3) Size and scale range.
      4) Setpoints.
      5) Materials of construction.
      6) Options included.
   d. Name, address, and telephone number of manufacturer's local office, representative, distributor, or service facility.

5. Sizing and Selection Calculations:
   a. Primary Elements: Complete calculations plus process data used. Example, for flow elements, minimum and maximum values, permanent head loss, and assumptions made.
   b. Controlling, Computing and Function Generating Modules: Actual scaling factors with units and how they were computed.

6. Panel Construction Drawings:
    a. Scale Drawings: Show dimensions and location of panel mounted devices, doors, louvers, and subpanels, internal and external.
    b. Panel Legend: List front of panel devices by tag numbers, nameplate inscriptions, service legends, and annunciator inscriptions.
    c. Bill of Materials: List devices mounted within panel that are not listed in panel legend. Include tag number, description, manufacturer, and model number.
    d. Construction Details: NEMA rating, materials, material thickness, structural stiffeners and brackets, lifting lugs, mounting brackets and tabs, door hinges and latches, and welding and other connection callouts and details.
    e. Construction Notes: Finishes, wire color schemes, wire ratings, wire and terminal block, numbering and labeling scheme.

7. Panel Control Diagrams: For discrete control and power circuits.
    a. Diagram Type: Ladder diagrams. Include devices, related to discrete functions, that are mounted in or on the panel and that require electrical connections. Show unique rung numbers on left side of each rung.
    b. Item Identification: Identify each item with attributes listed.
        1) Wires: Wire number and color. Cable number if part of multiconductor cable.
        2) Terminals: Location (enclosure number, terminal junction box number, or MCC number), terminal strip number, and terminal block number.
        3) Discrete Components:
            a) Tag number, terminal numbers, and location ("FIELD", enclosure number, or MCC number).
            b) Switching action (open or close on rising or falling process variable), setpoint value and units, and process variable description (for example, Sump Level High).
        4) Relay Coils:
            a) Tag number and its function.
            b) On right side of run where coil is located, list

contact location by ladder number and sheet number. Underline normally closed contacts.

5) Relay Contacts: Coil tag number, function, and coil location (ladder rung number and sheet number).

c. Show each circuit individually. No "typical" diagrams or "typical" wire lists will be permitted.

d. Ground wires, surge protectors, and connections.

e. Circuit Names: Show names corresponding to Circuit and Raceway Schedule for circuits entering and leaving a panel.

8. Panel Wiring Diagrams: Show point-to-point and terminal-to-terminal wiring within panel.

9. Installation Details: Include modifications or further details required to adequately define installation of I&C components.

10. List of spares, expendables, test equipment and tools.

11. Additional Equipment Recommended: List of, and descriptive literature for, additional spares, expendables, test equipment and tools recommended.

B. Informational Submittals:

Provide Manufacturer's Certificate of Proper Installation and readiness for operation.

1. Operation and Maintenance (O&M) Manuals: Operation and Maintenance Data, unless otherwise specified in this section.

a. Content and Format:

1) Complete sets O&M manuals.

2) Sufficient detail to allow operation, removal, installation, adjustment, calibration, maintenance and purchasing replacements for each PIC component.

3) Final versions of Legend and Abbreviation Lists.

b. Include:

1) Process and Instrumentation Diagrams: One reproducible copy of revised P&ID to reflect as-built PIC design.

2) Refer to Paragraph Shop Drawings for the following items:

a) Bill of Materials.
b) Catalog Cuts.
c) Component Data Sheets.
d) Panel Control Diagrams.
e) Panel Wiring Diagrams, one reproducible copy.
f) Panel Plumbing Diagrams, one reproducible copy.
g) Loop Diagrams, one reproducible copy.
h) Interconnecting Wiring Diagrams, one reproducible copy.
i) Application Software Documentation.

3) Device O&M manuals for components, electrical devices, and mechanical devices include:
   a) Operations procedures.
   b) Installation requirements and procedures.
   c) Maintenance requirements and procedures.
   d) Troubleshooting procedures.
   e) Calibration procedures.
   f) Internal schematic and wiring diagrams.
   g) Component Calibration Sheets from field quality control calibrations.
4) List of spares, expendables, test equipment and tools provided.
5) List of additional spares, expendables, test equipment and tools recommended.

2. **Performance Acceptance Tests (PAT)** Submittals:
   a. Preliminary Test Procedures: Outlines of proposed tests, forms, and checklists.
   b. Final Test Procedures: Proposed test procedures, forms, and checklists.
   c. Test Documentation: Copy of signed off test procedures when tests are completed.

PART 4 - MATERIALS - Specified in applicable sections, SECTIONS 16901-16924.

PART 5 - EXECUTION

5.1 Testing

A. As a minimum, the manufacturer's standard tests and calibration procedures shall be conducted on all instruments.

B. **Performance Acceptance Tests (PAT):** All field devices to be calibrated at factory prior to shipment to site. Applicable test reports to be shipped with field device.

C. Conduct all tests in the presence of Engineer or Owner under the supervision of equipment manufacturer's field engineer.

1. Notify Engineer two weeks prior to the commencement of all tests.

2. Include all tests recommended by the equipment manufacturer unless specifically waived by Engineer.

3. Include all additional tests recommended by Engineer that he deems necessary because of field conditions, to determine that equipment and material and systems meet requirements of Contract Documents.

4. Be responsible for all damage to equipment and material due to improper test procedures or test apparatus handling.

5.2 Acceptance Testing Procedures – Systems Integrator

1. Prior to Startup and Performance Evaluation period, inspect, test, and document that associated PIC equipment is ready for operation. Divide Functional Test into two parts.
   Functional Test Part 1.
   Functional Test Part 2.

2. **Functional Test Part 1**: Performed by Systems Integrator to test and document that PIC is ready for operation. Excluding Owner/Programmer provided applications software.
   a. Loop/Component Inspections and Tests:
      1) These inspections and tests do not require witnessing will be spot checked by Engineer.
      2) Check PIC for proper installation, calibration, and adjustment on loop-by-loop and component-by-component basis.
      3) Provide space on forms for signoff by PICS Subcontractor.
      4) Use loop status report to organize and track inspection, adjustment, and calibration of each loop and include the following:
         a) Project name.

b) Loop number.
c) Tag number for each component.
d) Checkoffs/Signoffs for Each Component:
   (1) Tag/identification.
   (2) Installation.
   (3) Termination wiring.
   (4) Termination tubing.
   (5) Calibration/adjustment.
e) Checkoffs/Signoffs for the Loop:
   (1) Panel interface terminations.
   (2) I/O interface terminations with PLCs.
f) I/O Signals for PLCs, RTUs are Operational: Received/sent, processed, adjusted.
g) Total loop operational.
h) Space for comments.

5) Component calibration sheet for each active I&C component (except simple hand switches, lights, gauges, and similar items) and each PLCs, I/O module and include the following:
   a) Project name.
   b) Loop number.
   c) Component tag number or I/O module number.
   d) Component code number for I&C elements.
   e) Manufacturer for I&C elements.
   f) Model number/serial number for I&C elements.
   g) Summary of Functional Requirements; For Example:
      (1) Indicators and recorders, scale and chart ranges.
      (2) Transmitters/converters, input and output ranges.
      (3) Computing elements' function.
      (4) Controllers, action (direct/reverse) and control modes (P, I, D).
      (5) Switching elements, unit range, differential (fixed/adjustable), reset (auto/manual).
      (6) I/O Modules: Input or output.
   h) Calibrations, for example, but not limited to:
      (1) Analog Devices: Actual inputs and outputs at 0, 10, 50, and 100 percent of span, rising and falling.
      (2) Discrete Devices: Actual trip points and reset points.
      (3) Controllers: Mode settings (P&ID).

(4) I/O Modules: Actual inputs or outputs of 0, 10, 50, and 100 percent of span, rising and falling.
(5) Space for comments.

b. Maintain loop status reports, and component calibration sheets at Site and make them available to Engineer at all times.
c. Engineer reviews loop status sheets and component calibration sheets and spot-check their entries periodically, and upon completion of Preparation for Testing. Correct deficiencies found.
d. Forms: See example Performance Acceptance Test Sheet in Article Supplements.

3. **Functional Test Part 2:** Combined effort between Contractor, Systems Integrator, and Owner/Programmer/Engineer to confirm PIC is ready for operation. This is to include the software and Owner/Programmer/Engineer provided software configurations.
a. Prerequisite:
1) Completion of Functional Test Part 1.
b. Joint test with Owner/Programmer.
c. Test procedures provided by Engineer based on Functional Test Part 1 and application software tests.
d. Completed when Functional Test has been conducted and Engineer has approved associated test forms and checklists in field.
4. Required Test Documentation: Test procedures, forms, and checklists. Signed by Engineer and Contractor except for Functional Test items signed only by Contractor.

B. Performance Test During and After Facility Startup:

1. Some control processes cannot be completely tested until the facility is up and able to pump water. These functions require an additional performance testing after or during facility startup. Once a facility's Functional Test has been completed, perform jointly with Engineer, and Owner/Programmer. Make O&M data available to Engineer at Site both before and during testing.
2. Determination of Ready for Operation: When Functional Test has been completed.

5.3 System Integrator Field Services

A. Testing and Startup Period: Provide Systems Integrator Field Services for a minimum of **two working days**, with additional days

as necessary to accommodate the commissioning and startup. Coordinate startup periods with the engineer, owner and general contractor.

C. Test and start-up supervision shall continue until the system is in proper operating condition as determined by the Engineer.

D. Provide Systems Integrator Field Services during Work to correct deficiencies in equipment and to correct deficiencies in the installation and wiring of equipment. Corrections shall be at no increase in the contract price.

F. Provide Systems Integrator Field Services for all instruments, control devices, and other devices furnished as a part of the control panel or instruments and associated control devices separately mounted to assure proper installation, setting, connection. and functioning.

PART 6 MEASUREMENT AND PAYMENT

6.1 Measurement

A. No measurement will be made for this item.

6.2 Payment

A. Payment will be made at the contract lump sum price bid and shall be considered full payment for providing labor and materials to perform this work.

**** END OF SECTION 16900 ****

ADDENDUM ONE

SECTION 00420
BIDDER'S STATEMENT OF QUALIFICATIONS

The Undersigned certifies the truth and correctness of all statements and of all answers to questions made hereinafter.

SUBMITTED TO: Lake Havasu City, Arizona
2330 N. McCulloch Boulevard
Lake Havasu City, AZ 86403

SUBMITTED BY: NAME:_____

ADDRESS:_____

PRINCIPAL OFFICE: _____

[ ] Corporation
[ ] Partnership
[ ] Individual
[ ] Joint Venture
[ ] Other

(NOTE: Attach separate sheets as required)

1. How many years has your organization been in business as a Contractor?

2. How many years has your organization been in business under its present business name? _____

3. If a Corporation, answer the following:
   Date of Incorporation: _____
   State of Incorporation:_____
   President: _____
   Vice President(s): _____
   _____
   Secretary: _____
   Treasurer: _____

4. If a Partnership, answer the following:
   Date of organization: _____
   Type of Partnership: _____
   (General/Limited/Assoc.)
   Name and Address of all partners.
   _____
   _____
   _____

5. If other than a Corporation or Partnership, describe Organization and name Principals:
   _____

6. What percent of the work do you normally perform with your own forces?
   List trades:
   _____ _____ _____
   _____ _____ _____

7. Have you ever failed to complete any work awarded to you? If so, indicate when, where and why:
_____
_____
_____

8. Has any Officer or Partner of your Organization ever been an Officer or Partner of another Organization that failed to complete a construction contract? _____If so, state circumstances:
_____
_____

9. List major construction projects your Organization has under contract on this date:

Project Name	Name, Email Address & Telephone Number of Owner	Project Location	Contract Amount	Contract Date	Percent Complete	Scheduled Completion

10. List similar construction projects your Organization has completed in the past five years:

Project Name	Name, Email Address & Telephone Number of Owner	Project Location	Contract Amount	Date Awarded	Date Completed	Percent with Own Forces

11. List the construction experience of the principal individuals in your Organization:

Individual's Name	Construction Experience - Years	Within Your Organization		
		Present Position & Years Experience	Dollar Volume Responsibility	Previous Position & Years Experience

12. Business in Arizona: The City will not enter into contracts with Bidders (or any company(ies)) not granted authority to transact business, or not in good standing in the State of Arizona by the Arizona Corporation Commission, unless the Bidder asserts a statutory exemption prior to entering into a contract with the City. The Undersigned agrees to furnish, upon request by the Owner, within seven days after the Bid Opening, a current Certificate of Good Standing and Compliance, and other related documents as requested.

13. List states and categories in which your Organization is legally qualified to do business:

_____

_____

_____

14. List all Arizona Contractor licenses currently held by your Organization; the status of each license; and provide a photocopy of each license with your bid proposal.

	License Class / #	Status
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

Please attach a list of additional Arizona Contractor licenses, if any.

15. Bank References:

_____

_____

_____

16. Trade References:

_____

_____

_____

17. Name of Bonding and Insurance Companies and Name and Address of Agents: Maximum Bonding Capacity _____

18. The Undersigned agrees to furnish, upon request by the Owner, within seven days after the Bid Opening, a current Statement of Financial Conditions, including Contractor's latest regular dated financial statement or balance sheet which must contain the following items:

    Current Assets: (Cash, joint venture accounts, accounts receivable, notes receivable, accrued interest on notes, deposits, and materials and prepaid expenses), net fixed assets and other assets.

    Current Liabilities: (Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owners, accrued salaries, accrued payroll taxes), other liabilities, and capital (capital stock, authorized and outstanding shares par values, earned surplus).

Date of statement or balance sheet: _____

Name of firm preparing statement: _____

By: _____

(Agent and Capacity)

19. List of Subcontractors. In accordance with paragraph 1.0 of Instructions to Bidders, the following is a breakdown of all subcontractors anticipated to be used for completing this project and their approximate percentage of work to be performed.

The Bidder certifies that all Subcontractors listed are eligible to perform Work on public works projects pursuant to ARS 34-241.

Subcontractor	Description of Work	% of Total Project

Total % of all Subcontractor's work on project _____

Total % for Prime Contractor _____

20. Dated on this _____ day of _____, _____

Name of Organization: _____

By: _____

Title: _____

** END OF SECTION **