

Invitation For Bid: IFB-08-ENG-2023
Ugum Water Treatment Plant Rehabilitation (Re-bid)
GWA Project No. W22-10-BND

Addendum No.: 05

Date: July 18, 2023

All Potential Bidders:

This addendum is issued to modify the previously issued bid documents and/or given for informational purposes, and is hereby made a part of the bid documents. Failure to acknowledge receipt of this addendum shall be grounds for the bidder’s disqualification and rejection of the bidder’s proposal.

1. Assessment and Procurement Report

In reference to the construction schedule mentioned in item no. 5 under the Procurement and Installation Needs, Page 4 of 13, this schedule shall be added as Section 013216 – Construction Progress Schedule. The language shall be amended as follows:

“5. In addition to the construction schedule required under Section 013216 – Construction Progress Schedule, the Contractor shall submit a detailed outage plan and time schedule for all construction activities which will make it necessary to remove a tank, pipeline, electrical circuit, equipment, structure, road or other facilities from service. The Contractor shall schedule all connections to existing facilities with GWA and the interruption to system operations and services shall be held to a minimum. This may require outages to be scheduled at off-peak times. The cost for overtime labor of GWA staff required during an outage shall be borne by the Contractor and considered part of the cost of the outage.”

2. Technical Specifications

Table of Contents – Added Sections 011000 - Summary, 013216 - Construction Progress Schedule, and 407233 - Capacitance Type Level Meters (Continuous and Point Type).

Section 011000 – Summary, 1.4.C., item 5, page 011000-2, added the following sentences.

“This may require outages to be scheduled at off-peak times. The cost for overtime labor of GWA staff required during an outage shall be borne by the Contractor and considered part of the cost of the outage.”



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Telephone No.: (671) 300-6036

Section 013216 – Construction Progress Schedule is added to the Technical Specifications. At the Preconstruction conference, the Contractor shall submit a proposed preliminary bar chart schedule defining planned operations for first 60 days of Work, with general outline for remainder of Work.

Bidders are also notified to visit the GWA website, <http://guamwaterworks.org/bids/> to ensure that addenda to the bid, answers to questions, and reminders communicated are received by all bidders throughout the solicitation process.

MIGUEL C. BORDALLO, P.E.
General Manager

Attachments:

Assessment and Procurement Report (Re-bid Addendum 5)

Specification Table of Contents (Re-bid Addendum 5)

Specification Section 011000 – Summary (Re-bid Addendum 5)

Specification Section 013216 – Construction Progress Schedule (Re-bid Addendum 5)

cc: MCB; elv

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Attachments:

1. Assessment Photos
2. DuPont Report
3. Equipment List
4. Site Sketches and Plan Excerpts

1. Introduction Statement

Duenas Camacho and Associates (DCA) is contracted with the Guam Waterworks Authority (GWA) to provide program and construction management services. As part this contract, DCA has conducted a site assessment of the Ugum Surface Water Treatment plant (Plant) located in Talofofo, see Figure 1. The assessment was intended to cover the existing condition of the plant with the exception of the: Existing Steel 2.0 million gallon storage tank and the plant control system.

The results of the assessment are presented on this report. These results are to be used as part of a procurement package to repair, replace or upgrade equipment. GWA will issue a notice to bid to contractors for the:

- Demolition and removal works
- Purchase and installation of equipment
- Installation and/or replacement of safety equipment

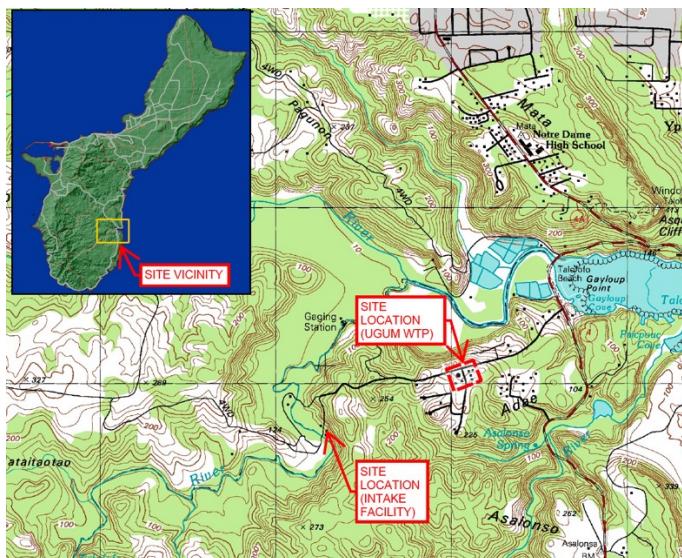


Figure 1: Project Location

2. Assessment Approach

The assessment was conducted in the months of June to August 2021. The project team consisted of process, civil and structural engineers from DCA, Electrical engineers from EMCE, and Mechanical engineer Marvic Acabado. GWA operations staff, Engineers and management assisted in the assessment. The assessment of the plant membranes was conducted by Mr. Charles Heard of DuPont.

Below is a list of the plans and reports provided by GWA and used as part of this assessment:

- 2007 Upgrade Plans Basis of Design
- 1993 As-built Plans
- 2021 DuPont Assessment Report

The objective of this assessment is to determine existing equipment that can be replaced or repaired in kind. In some cases the replacement will include operation modifications requested by the owner. These modifications are listed in section 3 of this report. This assessment is not intended to address any new parts of the plant that will require design works.

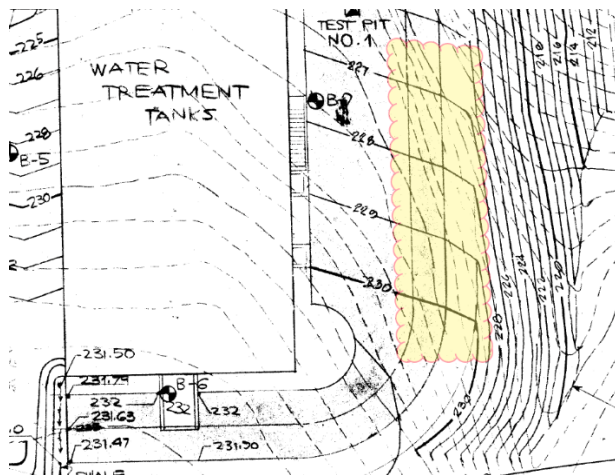
The methodology used for this assessment was:

- Inspect and evaluate all existing equipment
- Take field measurements
- Interview GWA operations and engineering
- Review past plans and record drawings
- Review past assessment reports
- Conduct coordination meetings
- Develop equipment replacement list
- Develop sketches and specifications for replacement works
- Prepare cost estimate
- Provide a listing of future design needs

3. Procurement and Installation Needs

Sections below provide site specific information and shall be used with the project bid form and specifications.

1. GWA will have first right of refusal for all materials removed. Contractor shall dispose of off demolished materials.
2. GWA will allow for the Contractor to utilize a 30ft X 30ft area adjacent to GWA's site clarifiers for the two 40ft containers (Refer to Attachment A Site Plan). This 600 area may be leveled by the contractor.
3. Provide two heavy duty 14-gauge steel, weather resistant forty-foot with exterior dimensions of 40ft X 8ft X 8.5ft (LXWXH) and interior dimensions of 39.25 ft X 8 ft X 8.5 ft containers to be used as storage for new membrane equipment. These containers shall be new, single sided entrance and equipped with security lock box. These two containers shall be delivered to the project site and located on site as shown below. The surface must be level and access into the container shall not exceed 6 inches in height without access steps. Pedestals may be used.



40ft Container Location, Excerpt from 1989 As-built prepared by GMP Associates

INSTALLATION

1. The Contractor shall schedule and conduct activities to enable the existing GWA facilities to operate continuously, unless otherwise specified. The Contractor shall perform Work continuously during critical connections and changeovers as required to prevent interruption of GWA's operations. When necessary plan, design and provide various temporary services, utilities, connections, temporary piping, access, and similar items to maintain continuous operations of GWA's facility at no additional cost to GWA.
2. Modifications to existing facilities, the construction of new facilities, and the connection of new to existing facilities may require the temporary outage of existing water system service. In such cases, the Contractor shall coordinate Work with the Contracting Officer and GWA as described below. The Contractor shall complete the GWA Scheduled Outage Request Form (**Exhibit A GWA Scheduled Outage Request**).
3. Upon GWA approval of the Outage Request Form, GWA Operations will provide the Contractor support for each tank outage. GWA operations may allow for up to an 8-hour outage duration non-peak times (9pm-5am). Contractor will be responsible for all materials needed for each outage.
4. The Contractor shall not close lines, open or close valves, or take other action which would affect the operation of existing systems. Only GWA staff is authorized to operate existing equipment, valves, and systems; and such request by the Contractor will be considered within 48 hours after receipt of Contractor's written request.
5. In addition to the construction schedule required under Section 013216 – Construction Progress Schedule, the Contractor shall submit a detailed outage plan and time schedule for all construction activities which will make it necessary to remove a tank, pipeline, electrical circuit, equipment, structure, road or other facilities from service. The Contractor shall schedule all connections to existing facilities with GWA and the interruption to system

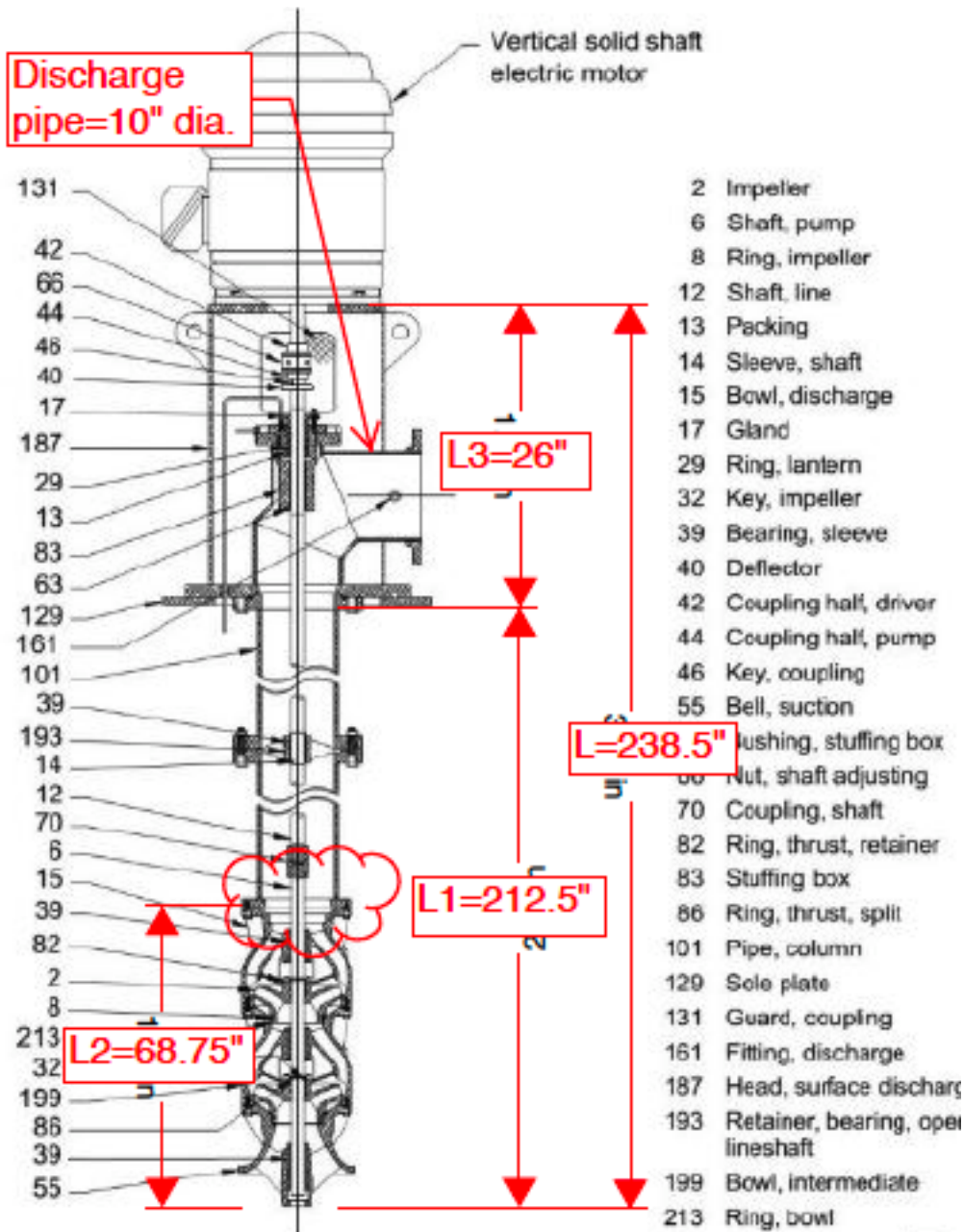
operations and services shall be held to a minimum. This may require outages to be scheduled at off-peak times. The cost for overtime labor of GWA staff required during an outage shall be borne by the Contractor and considered part of the cost of the outage.

6. The outage plans shall be submitted to the Contracting Officer for acceptance and receive a favorable review before submitting the outage request to GWA. The outage plan shall describe the Contractor's method; the length of time required to complete said operation; any necessary temporary power, controls, instrumentation or alarms required to maintain control and monitoring for the water system; and the manpower, plant, and equipment which the Contractor shall provide in order to ensure proper operation of associated water system. All costs for preparing and implementing the outage plans shall be at no increase in cost to GWA.
7. Outages and service connections shall be performed during the dry weather season, unless specifically allowed to occur during the wet weather season. The outage plans shall be coordinated with the construction schedule and shall meet the restrictions and conditions of this Section.
8. The removal of the existing system from service and reconnect the pipelines to resume service shall be completed no more than **8 hours** for each shut down. The Contractor shall perform all cutting, patching, and connection to existing facilities with extreme care and take all precautions necessary to ensure that the existing facilities are not damaged. The Contractor shall be responsible for dewatering of the existing lines and disposal of water as required at no additional cost to GWA.
9. The Contractor shall not begin an alteration affecting existing facilities until specific written approval has been granted by GWA in each case. An outage request shall be submitted to GWA a minimum of 14 calendar days in advance of the time that such outages are required. No more than one outage request will be considered per week. The Contractor shall coordinate the planned procedures with GWA. GWA has the authority to modify any proposed shutdown procedures if such procedures would adversely impact the water system operations.
10. The Contracting Officer shall be notified in writing at least seven (14) calendar days in advance of the required outage if the schedule for performing the work has changed or if revisions to the outage plan are required.
11. The Contractor shall provide written confirmation of the shutdown date and time three (3) working days prior to the actual shutdown.

3.1. RIVER/INTAKE FACILITY

- A. Existing (3) intake pumps are old and outdated. Pumps (P100 and P102) will need to be replaced
 - Existing pumps' seals are leaking

- Pump and motors #1 and #3 will be replaced in kind
- No additional electrical power supply will be needed because of a one-to-one replacement
- See attached photo assessment form for existing information and figure below.

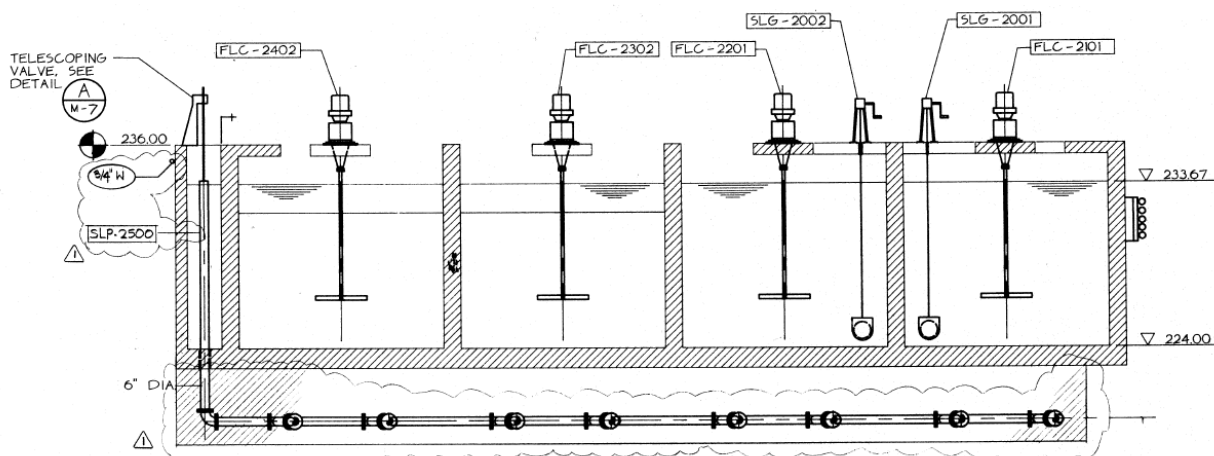


Existing Intact Pump Cross Section

- B. The VFD for pump #1 was removed to address a wastewater emergency and was replaced with MCC. Existing MCC will need to be removed and replaced with VFD. Existing VFD screens for pumps #2 and #3 will need to be replaced in kind.
- C. Existing 16-inch flowmeter screen is unreadable and will need to be replaced in kind
 - No additional electrical power supply will be needed because of a one-to-one replacement
 - Replacement includes all meter supports.
 - See attached photo assessment form for existing information.
- D. Strainers have been bypassed
 - Strainers shall be removed and disposed of. Twelve-inch blind flanges shall be installed.

3.2. FLOCCULATION/SEDIMENTATION TANKS

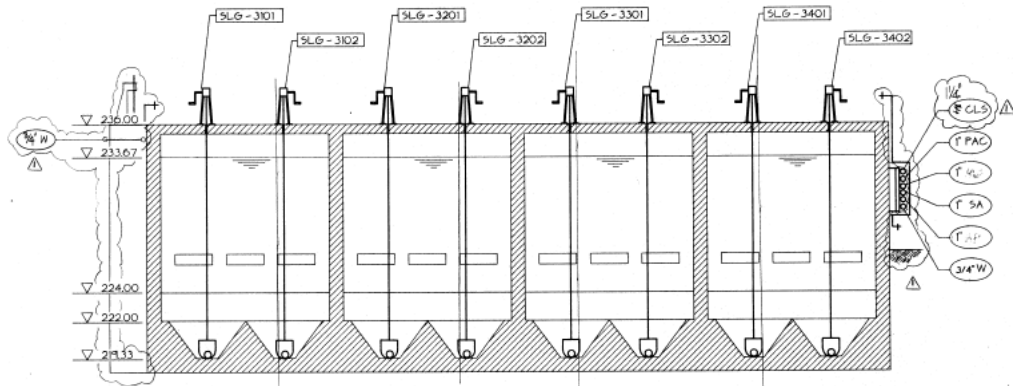
- A. Furnish and install two (2) manual sluice gates on tank inlet.
 - Sluice gates will be removed and replaced in kind with manual ones.
 - Operators will need to be able to operate the new manual sluice gates
 - Water in tanks will need to be removed to replace the sluice gates
 - No electrical supply will be needed as the sluice gates will be operated manually
 - Inv. El. 224.50' 2. Top El. 236.00' 3. Opening 12" 4. Water El. 233.67' 5. Bott. El. 224.00'
 - Contractor will have to bypass at most two of the four basins at any time. Bypassing of two basins must be limited to one sedimentation basin and one backwash clarifying basin. Existing sluice drain line gates do not hold tight so temporary "trash" pumps will be needed to control the leakage from drain line.
 - See attached documents for existing pictures and specification.



Inlet Sluice Gates, Excerpt from 1989 As-built prepared by GMP Associates

- B. Furnish and install eight (8) sluice gates on drain line.
 - Sluice gates will be removed and replaced in kind with manual hand crank.
 - Operators will need to be able to operate the new manual sluice gates
 - Water in drain wells will need to be removed to replace the sluice gates.

- No electrical supply will be needed as the sluice gates will be operated manually
- Inv. El. 219.33' 2. Top El. 236.00' 3. Opening 6" 4. Water El. 233.67' 5. Bott. El. 219.33'
- See attached photo assessment form for existing information.

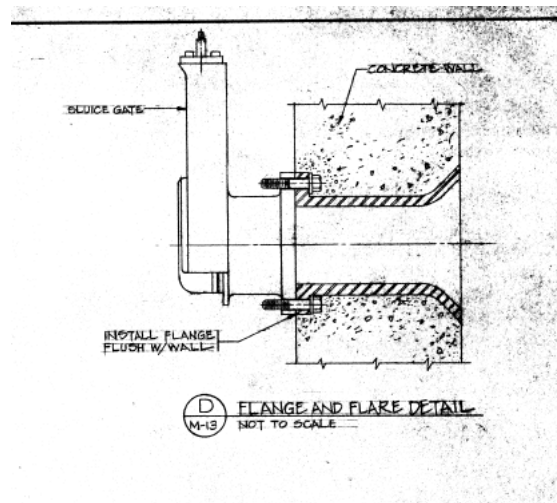


Drain Line Sluice Gates, Excerpt from 1989 As-built prepared by GMP Associates

The flocculation and sedimentation basins will need to be bypassed to install the eight new sluice gates along the drain line. The following is a suggested approach to bypassing these basins. This work may be done in 3 phases. Other, contractor proposed, bypass options may be considered.

Phase 1. GWA operations will stop production and all tanks will be drained. At this time sludge shall be removed and sluice gates may be inspected.

Phase 2. GWA operations will stop production and all tanks will be drained. Existing sluice gates will be removed, and temporary plugs shall be installed in all four basins. These plugs shall be fitted into the drain opening shown below.



Insert 6-inch diameter plug on each of the 8 drains.

Phase 3. Single isolation of each tank may be done. A single tank will be drained while the remaining three tanks remain in operation. The new sluice gates shall be installed into isolated

tank. This process shall then be repeated for the remaining tanks.

- C. Remove and Replace sludge collection system (chain and flight) motors and gear drives at contact basins (2 each) and recycle basins (2 each) total of four (4)
 - Water will need to be removed from the basins to replace the sludge collection system.
 - See attached photo assessment form for existing information.
 - See attached documents for specifications for new chain and flight system.
- D. Remove and dispose of accumulated sludge.

3.3. MEMBRANE CELLS

- A. Remove and replace membrane equipment, see bid form list.
- B. Provide and install new rack lock support and lower guide support brackets at each of the two membrane cells. See record drawings (0211193-241 & 021193-242) for installation specifics. Contractor shall provide all materials and resources needed for the complete bracket install. Owner will provide the bypass needs for each membrane cell. One membrane cell may be worked on at any time.
- C. Membrane parts shall be by Memcor /Dupant or approved equal.
- D. Provide variable speed 1-ton chain hoist (2 each) for membrane cell maintenance.
 - Variable speed chain hoists will be needed to easily access the membranes for cleaning. Existing hoists are considered a hazard for the workers
 - Existing hoists will need to be replaced from its location and replaced in kind with a variable speed 1-ton chain
 - Electrical power supply will be needed to power the variable speed chain hoist
 - See attached photo assessment form for existing information.
- E. Angle irons holding up metal plates on walkway between filter cells are rusted out and need to be replaced.
 - Steel 2X2X1/2 angle iron and 1/4 inch galvanized steel checkered plates with gaskets will be replaced, see sketch.
 - Electrical power supply not applicable
- F. Remove and install new rack lock support guides.
- G. Install new anchor bolts on upper and lower rack lock support angles to match existing. Install at 3 inch off set from existing, see excerpt below and refer to sheets 021193-242-A and 021193-242-A both prepared by TG engineers/Memcor as part of the 2007 Ugum Rehabilitation
 - a. Total number of bolts for upper rack lock support angle: 20
 - 1. Replace with Hilti HSL-GR Stainless Steel heavy duty expansion anchor with 4 inch embedment or approved equal
 - b. Total number of bolts for lower rack lock support angle: 10
 - 1. Replace with Hilti HSL-GR Stainless Steel heavy duty expansion anchor with 4 inch embedment or approved equal



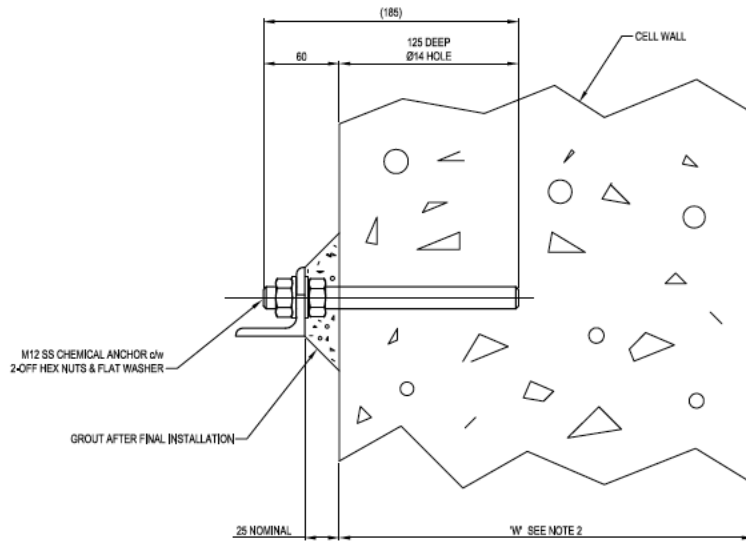
Technical drawing showing the installation of a rack lock support bracket to a concrete wall. The drawing includes dimensions and labels for components and materials.

Dimensions and Labels:

- (200)
- 131 DEEP
- Ø18 HOLE
- 70
- CELL WALL
- CL. FILTRATE MANIFOLD
- 103
- 100
- M16 SS CHEMICAL ANCHOR c/w 2-OFF HEX NUTS & FLAT WASHER
- GROUT AFTER FINAL INSTALLATION
- 25 NOMINAL
- "W" SEE NOTE 2

INSTALLATION OF RACK LOCK SUPPORT BRACKET TO CONCRETE WALL

2022 Ugum Site Assessment/Procurement Report
Re-bid Addendum 5



INSTALLATION OF GUIDE SUPPORT
BRACKET TO CONCRETE WALL

Existing Lower rack bolts, 2007 Memcor Plan Set Excerpt

3.4. FILTER PIPE GALLERY AND GENERATOR ROOM

- A. Replace single (1) aluminum door and jamb in the piping room and double aluminum door (1) and jamb the generator room, two (2) single aluminum doors and jamb at the upstairs MCC room
 - Remove existing steel door and jamb and replace in kind.
- B. Provide butterfly valves actuators and status monitors replacement spares to be turned over to GWA.
 - See attached document for specifications.
 - BRAY BUTTERFLY VALVES: MAINLY SERIES 30/31 (Or approved Equal)
 - 2 each - 16" Flanged butterfly valves
 - 3 each - 14" Flanged butterfly valves
 - 4 each - 12" Flanged butterfly valves
 - 2 each - 10" wafer style butterfly valves
 - 4 each - 8 " wafer style butterfly valves
 - 2 each - 4" wafer style butterfly valves
 - 3 each - 2" wafer style butterfly valves
 - BRAY PNEUMATIC ACTUATORS (Or approved Equal)
 - 5 each - PART# 92-2100-11300-532
 - 4 each - PART# 92-1600-11300-532
 - 2 each - PART# 92-1270-11300-532
 - 2 each - PART# 92-1190-11300-532
 - 4 each - PART# 92-1180-11300-532
 - 4 each - PART# 92-0630-11300-532
 - 2 each - PART # 92-1190-11300-532

- BRAY VALVE STATUS MONITORS (Or approved Equal)
 - o 14 each - PART# 50-0406-12610-532

3.5. BACKWASH (HOLDING TANK)

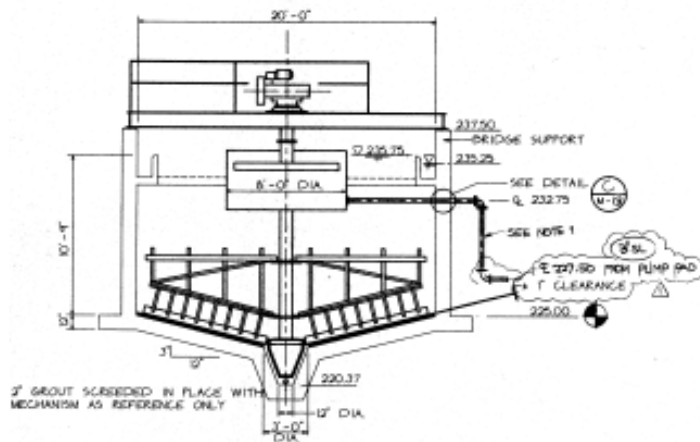
- A. Install new submersible pumps (P301 and P302)
 - The submersible pumps will be replaced in kind.
 - Backwash will have to be drained or lowered to a certain level in order for operators to remove the existing backwash and install new one.
 - See attached document for specifications of submersible pump.
- B. Remove and install new level sensor/level monitor.
 - Level sensors/level monitors (one each) will be replaced in kind.
- C. Remove and install new mixer (M301)
- D. Remove and install new 4-inch magnetic flowmeter.
 - Magnetic flowmeter removed and will be replaced in kind.
 - No additional electrical power supply needed.
- E. Remove and dispose of accumulated sludge.

3.6. NEUTRALIZATION/SLUDGE TANK

- A. Install new submersible pump (P401) and nozzles within the tank.
 - Water will be drained from the neutralization tank for the submersible pump to be removed.
 - Submersible pump and nozzles will be replaced in kind.
 - See attached document for spec and information.
- B. Replace ORP and pH meter.
 - 1 inch pH meter will be replaced in kind.
 - Additional electrical power supply not applicable
 - Future expandability not applicable
- C. Replace level sensor/ level monitors.
 - Level sensors/level monitors one each for Neutralization and sludge tank will be replaced in kind.
- D. Remove and dispose of accumulated sludge.

3.7. THICKENER TANK

- A. Remove and replace thickener assembly (M370), see attachment 4
 - Manufacture shall be IEMCO (Or approved equal), 20ft diameter with 10.75ft side water depth complete with drive assembly. Epoxy coated carbon steel with stainless steel hardware.
 - Complete drive assembly, with gear motor and weatherproof drive torque control. Drive unit shall be factory assembled, calibrated and tested.
 - Provide center drive platform, rake arms with plow blades and pickets, torque tubes and influent pipe.
 - Provide 2 days of startup service with manufacturer representative once unit installed and ready for startup,
 - Aluminum walkway with handrail and supports
 - Installed complete in place



Thickener assembly, Excerpt from 1989 As-built prepared by GMP Associates

- B. Remove and replace thickener feed pumps and motors (P371 and P372).
 - Thickener and feed pumps will be removed.
 - See attached document for additional information.
- C. Remove and dispose of accumulated sludge.

3.8. OPERATIONS BUILDING

- A. Remove and replace existing feed (piping) including metering pumps, 5 total.
- B. Remove and replace existing 2-ton hydraulic lift system to include cables, hydraulic cylinders, pump, hoses and motor assembly

3.9. ADMINISTRATION BUILDING

- A. Remove and replace front door
- B. Repair leak from roof hatch at control room.
- C. Remove and replace the existing roll up door located at the basement level of the administration building. The door opening is 104 inches X 98 Inches.

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463342	Diaphragm-type Metering Pumps
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SECTION 011000 - SUMMARY

PART 1 - GENERAL

A. Section Includes:

1. Contract description.
2. Work by Owner or other Work at the Site.
3. Contractor's use of Site
4. Owner occupancy.
5. Permits.

1.2 CONTRACT DESCRIPTION

- A. Work of the Project includes supply and installation of equipment to the Ugum Water treatment plant.
- B. Perform Work of each Contract under fixed cost Contract with Owner according to Conditions of Contract.

1.3 WORK BY OWNER OR OTHERS

- A. Owner will award a separate contract for the construction of a new water tank located a separate lot adjacent to the Ugum Water Treatment plant.
- B. If Owner-awarded contracts interfere with each other due to work being performed at the same time or at the same Site, Owner will determine the sequence of work under all contracts according to "Contractor's Use of Site and Premises" Articles in this Section.
- C. Coordinate Work with utilities of Owner and public or private agencies.
- D. Where two or more contracts are being performed at one time on the same Site or adjacent land in such manner that work under one contract may interfere with work under another, GWA will determine the sequence and order of the Work in either or both contracts. When the Site of one contract is the necessary or convenient means of access for performance of work under another, GWA may grant privilege of access or other reasonable privilege to the contractor so desiring, to the extent, amount, and in manner and at time that GWA may determine. No GWA determination of method or time or sequence or order of the work or access privilege shall be the basis for a claim for delay or damage except under provisions of the General Provisions for temporary suspensions of the work. The Contractor shall conduct its operations so as to cause a minimum of interference with the work of such other contractors and shall cooperate fully with such contractors to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.
- E. Interference with Work on Utilities: The Contractor shall cooperate fully with all employees or other agents of GWA or employees/agents of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities, which interfere with the progress

of the Work, and shall schedule the Work so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limit use of Site and premises to allow:

1. Owner occupancy.
2. Work by Owner.
3. Work by Others.

B. Construction Operations: Limited to existing tanks, processes, and buildings. Staging and work area shall be limited to the existing Ugum Water treatment site as delineated by the existing project site fence line.

1. Noisy and Disruptive Operations (such as Use of Jack Hammers and Other Noisy Equipment): Not allowed in close proximity to existing building during regular hours of operation. Coordinate and schedule such operations with Owner to minimize disruptions.

C. Utility Outages and Shutdown:

1. Continuous operation of GWA's facilities is of critical importance. The Contractor shall schedule and conduct activities to enable the existing facilities to operate continuously, unless otherwise specified.
2. Modifications to existing facilities, the construction of new facilities, and the connection of new to existing facilities may require the temporary outage of existing water system service. In such cases, the Contractor shall coordinate Work with the RPR as described below.
3. The Contractor shall perform Work continuously during critical connections and changeovers, and as required to prevent interruption of GWA's operations. When necessary, plan, design and provide various temporary services, utilities, connections, temporary piping and heating, access, and similar items to maintain continuous operations of GWA's facility at no additional cost to GWA.
4. The Contractor shall not close lines, open or close valves, or take other action which would affect the operation of existing systems. Only GWA staff is authorized to operate existing equipment, valves, and systems; and such request by the Contractor will be considered within 48 hours after receipt of Contractor's written request.
5. The Contractor shall submit a detailed outage plan and time schedule for all construction activities which will make it necessary to remove a pipeline, electrical circuit, equipment, structure, road or other facilities from service. The Contractor shall schedule all connections to existing facilities with GWA and the interruption to system operations and services shall be held to a minimum. This may require outages to be scheduled at off-peak times. The cost for overtime labor of GWA staff required during an outage shall be borne by the Contractor and considered part of the cost of the outage.
6. The removal of the existing system from service and reconnect the pipelines to resume service shall be completed no more than **8 hours** for each shut down. The Contractor shall perform all cutting, patching, and connection to existing facilities with extreme care and take all precautions necessary to ensure that the existing facilities are not damaged. The Contractor shall be responsible for dewatering of the existing lines and disposal of water as required at no additional cost to GWA.

7. The outage plans shall be submitted to the GWA and RPR for acceptance at a minimum of two (2) weeks in advance of the time that such outages are required. The outage plan shall describe (1) the Contractor's method; (2) the length of time required to complete said operation; (3) any necessary temporary power, controls, instrumentation or alarms required to maintain control and monitoring for the water system; and (4) the manpower, plant, and equipment which the Contractor shall provide in order to ensure proper operation of associated water system. All costs for preparing and implementing the outage plans shall be at no increase in cost to GWA.
8. The Contractor shall not begin an alteration affecting existing facilities until specific written approval has been granted by GWA in each case. The Contractor shall coordinate the planned procedures with GWA. GWA has the authority to modify any proposed shutdown procedures if such procedures would adversely impact the water system operations.
9. The GWA and the RPR shall be notified in writing at least one (1) week in advance of the required outage if the schedule for performing the work has changed or if revisions to the outage plan are required.
10. The Contractor shall provide written confirmation to GWA of the shutdown date and time at least two (2) working days prior to the actual shutdown.

- D. Construction Plan: Before start of construction, submit three copies of construction plan regarding access to Work, use of Site, and utility outages for acceptance by Owner. After acceptance of plan, construction operations shall comply with accepted plan unless deviations are accepted by Owner in writing.

1.5 OWNER OCCUPANCY

- A. Schedule and substantially complete designated portions of the Work for occupancy before Substantial Completion of the entire Work.
1. Owner's use and occupancy of designated areas before Substantial Completion of the entire Project do not relieve Contractor of responsibility to maintain specified insurance coverages on a 100 percent basis until date of final payment.
- B. Schedule the Work to accommodate Owner occupancy.

1.6 PERMITS

- A. Furnish necessary permits for construction of Work including the following:
1. Building permit.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 011000

SECTION 013216 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. Bar chart schedules.
- D. Review and evaluation.
- E. Updating schedules.
- F. Inclement Weather Provisions Of The Schedule.
- G. Acceptance.
- H. Distribution.

1.2 SUBMITTALS

- A. The Contractor shall submit proposed preliminary bar chart schedule at the Preconstruction Conference defining planned operations for first 60 days of Work, with general outline for remainder of Work. The chart shall be so prepared to show the accomplishment of the Contractor's early activities (mobilization, permits, submittals necessary for early material and equipment procurement, submittals necessary for long lead equipment procurement, CPM submittals, initial Site work and other submittals and activities required in the first 60 days).
- B. Participate in review of preliminary and complete bar chart schedule jointly with Contracting Officer.
- C. Within 14 calendar days after joint review of proposed preliminary Gantt bar chart, submit hard copy draft of proposed complete Original CPM Schedule in PDF format and scheduling software files in a format compatible with Primavera P6 software. In addition, provide any related computerized schedule report tabulations for review. This submittal shall have already been reviewed and approved by the Contractor's project manager, project superintendent, and the project estimator prior to submission. The Gantt chart shall describe the activities to be accomplished and their chronological relationships and show the critical path. The Contractor's attention is directed to the requirement that the schedule shall contain sufficient detail and information to cost load the CPM schedule in accordance with the approved schedule of values. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
- D. Submit updated Gantt bar chart schedules at the end of each calendar month and at least seven (7) calendar days prior to each Application for Payment.

- E. Submit one (1) hard copy and electronic files (PDF and schedule software files).
- F. Submit network schedules under transmittal letter form specified in Section 013300 - Submittal Procedures.
- G. Schedule Updates:
 - 1. Overall percent complete, projected and actual.
 - 2. Completion progress by listed activity and subactivity, to within five (5) working days prior to submittal.
 - 3. Changes in Work scope and activities modified since submittal.
 - 4. Delays in submittals or resubmittals, deliveries, or Work.
 - 5. Adjusted or modified sequences of Work.
 - 6. Other identifiable changes.
 - 7. Revised projections of progress and completion.
- H. Narrative Progress Report:
 - 1. Submit with each monthly submission of Progress Schedule.
 - 2. Summary of Work completed during the past period between reports.
 - 3. Work planned during the next two (2) month period, specify critical activities.
 - 4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.
 - 5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
 - 6. The status of major material and equipment procurement.
 - 7. Corrective action taken or proposed.

1.3 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel specializing in CPM scheduling with two years' minimum experience in scheduling construction work of complexity comparable to the Project, and having use of computer facilities capable of delivering detailed graphic printout within 48 hours of request.
- B. Contractor shall submit a statement of computerized CPM capability within 14 calendar days after Notice to Proceed to verify that either (1) the Contractor has in-house capability qualified to use CPM techniques or (2) the Contractor will arrange for the services of a CPM consultant so qualified. In either event the statement shall identify the individual who will perform the CPM scheduling and shall describe the construction project experience. The statement shall also identify the contact persons for the referenced projects with current telephone and address information.

1.4 GANTT BAR CHART SCHEDULES

- A. Format: Gantt bar chart Schedule, to include at least:
 - 1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:

- a. Subcontract Work.
 - b. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
 - c. Move-in and other preliminary activities.
 - d. Equipment and equipment system test and startup activities.
 - e. Project closeout and cleanup.
 - f. Work sequences, constraints, and milestones.
 2. Listings identified by Specification Section number.
 3. Identification of the following:
 - a. Horizontal time frame by year, month, and week.
 - b. Duration, early start, and completion for each activity and subactivity.
 - c. Critical activities and Project float.
 - d. Subschedules to further define critical portions of Work.
- B. All float in the schedule shall belong to the project. The computerized schedule report tabulations shall include the following:
1. Report of activities sorted by activity number. Activity numbers, where practical, shall correlate to the areas designated in the Contract Drawings and further defined in Section 011000 - Summary.
 2. Report of activities sorted by early start date.
 3. Report of activities sorted by total float.
 4. Report of activities sorted by responsibility code. Responsibility codes shall be established for the Contractor, Contracting Officer, GWA, subcontractors, suppliers, etc. These codes shall be identified in the bar chart.
 5. A successor-predecessor report which shall identify the successor and predecessor activities for each activity and ties between schedule activities.

1.5 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of schedules with Contracting Officer at each submittal.
- B. The monthly progress schedule update submittal will be reviewed with the Contractor during the first monthly construction progress meeting after the end of each calendar month. The goal of these meetings is to enable the Contractor and the Contracting Officer to initiate appropriate remedial action to minimize any known or foreseen delay in completion of the Work and to determine the amount of Work completed since the last month's schedule update. The status of the Work will be determined by the percent complete of each activity in the updated CPM schedule. These meetings are considered a critical component of the overall monthly schedule update submittal, and the Contractor shall have appropriate personnel attend. As a minimum, these meetings shall be attended by the Contractor's Project Manager and General Superintendent. The Contractor shall plan on the meeting taking no less than 2 hours per week. Within seven (7) Workdays after the monthly progress meeting, the Contractor shall submit the revised CPM schedule, the revised CPM computerized tabulations as noted in this Section, the revised successor/predecessor report, and the project narrative reports as defined above and the Contractor's application for payment. Within five (5) Workdays of receipt of the revised submittals, the Contracting Officer will either accept or reject the monthly schedule update

submittal. If accepted, the percent complete in the monthly update shall be the basis for the Application for Payment to be submitted by the Contractor. If rejected, the update shall be corrected and resubmitted by the Contractor before the application for payment for the update period will be processed.

- C. Items discussed at monthly construction progress meetings may include status of major Project components (percent complete, amount of time ahead or behind schedule) and an explanation of how the Project will be brought back on schedule if delays have occurred, progress made on critical activities, explanations for lack of work on critical path activities, explanations for schedule changes, a list of critical activities scheduled to be performed within the next two-month period, status of major material and equipment procurement, delays encountered during reporting period, and assessment of inclement weather delays and effects on progress of Work.
- D. After review, revise schedules incorporating results of review, and resubmit within 10 calendar days.

1.6 UPDATING SCHEDULES

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Upon approval of a Change Order, include the change in the next schedule submittal.
- E. Neither the submission nor the updating of the Contractor's original schedule submittal nor the submission, updating, change, or revision of any other report, curve, schedule, or narrative submitted to the Contracting Officer by the Contractor under this Contract, nor the Contracting Officer's review or acceptance of any such report, curve, schedule, or narrative shall have the effect of amending or modifying, in any way, the Contract Times or milestone dates or of modifying or limiting, in any way, the Contractor's obligations under this Contract. Only a signed, fully executed change order can modify contractual obligations.
- F. Indicate changes required to maintain Date of Substantial Completion.
- G. Submit sorts as required to support recommended changes.
- H. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect.
- I. GWA reserves the right to require that the Contractor adjust, add to, or clarify any portion of the schedule which may later be discovered to be insufficient for the monitoring of the Work or approval of partial payment requests. No additional compensation will be provided for such adjustments, additions, or clarifications.

1.7 ABNORMAL WEATHER LOST WORK DAY PROVISIONS OF THE SCHEDULE

- A. See 00800 Supplementary Conditions, Article 4, SC-4.05, 2. Adverse weather conditions.

Account for the Weather Calendar by assigning to any activity that could be impacted by abnormal weather as float for each month. The GWA will issue a modification in accordance with the contract clauses, giving the Contractor a time extension for the difference of days between the anticipated and actual abnormal weather delay if the number of actual abnormal weather delay days exceeds the number of days anticipated for the month in which the delay occurs and the abnormal weather delayed activities are critical to contract completion. A lost workday due to weather conditions is defined as a day in which the Contractor cannot work at least 50 percent of the day on the impacted activity.

- B. In addition to the provisions of paragraph 1.7.A. above, to be eligible for a delay the weather must be experienced at the project Site during the Contract period and must be found to be abnormal weather actually causing a delay to the completion of the project. It will be the Contractor's responsibility to prove in writing that a critical path activity was negatively affected. Weather delays occurring after the required completion date, prior to the date of the Notice to Proceed, and during other non-workdays will not be considered for a time extension. Time extension on account of inclement weather on weekends or holidays shall be granted only if the Contractor confirms in writing at least seven (7) calendar days in advance their intention to work on weekends or holidays.
- C. All inclement weather delays during the original Contract Time or any extended period, regardless of when they are encountered, shall be non-compensable.

1.8 ACCEPTANCE

- A. Acceptance of the Contractor's schedule by the Contracting Officer and GWA will be based solely upon compliance with the requirements. By way of the Contractor assigning activity durations and proposing the sequence of the Work, the Contractor agrees to utilize sufficient and necessary management and other resources to perform the work in accordance with the schedule. Upon submittal of a schedule update, the updated schedule shall be considered the "current" project schedule.
- B. Submission of the Contractor's progress schedule to GWA or Contracting Officer shall not relieve the Contractor of total responsibility for scheduling, sequencing, and pursuing the Work to comply with the requirements of the Contract Documents, including adverse effects such as delays resulting from ill-timed Work.

1.9 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, to Subcontractors, Contracting Officer, and Owner.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 013216