



October 02, 2025

**INVITATION TO BID  
BL001-26**

The Gwinnett County Board of Commissioners is soliciting competitive sealed bids from qualified suppliers for the **Purchase of Slide and Sluice Gates with Actuators for the F. Wayne Hill Water Resources Center.**

**Bid Submittal Date and Location:**

Bids should be typed or submitted in ink and returned in a sealed container marked on the outside with the BL# and Company Name. **Sealed Bids will be received until 2:50 P.M. local time on November 20, 2025, at the Gwinnett County Financial Services - Purchasing Division – 4th Floor Charlotte J. Nash Building, 75 Langley Drive, Lawrenceville, Georgia 30046. NOTE THAT THE PURCHASING DIVISION HAS TEMPORARILY RELOCATED. ALL BIDS MUST BE SUBMITTED AT THIS LOCATION. Any bid received after this date and time will not be accepted.** Bids will be publicly opened and read at 3:00 P.M. The bid opening will be virtual ONLY. To access the bid opening virtually, visit the following link (<https://gwinnettgov.webex.com/gwinnettgov/j.php?MTID=mdc4182e7b2817f67df80cd9673d1fed9>) or dial 1-408-418-9388, and enter Conference ID 2332 011 2052. Apparent bid results will be available the following business day on our website [www.GwinnettCounty.com](http://www.GwinnettCounty.com).

**Instruction on Submitting Questions:**

Questions regarding bids should be directed to Brittany Bryant, CPPB, Purchasing Associate III, at [Brittany.Bryant@GwinnettCounty.com](mailto:Brittany.Bryant@GwinnettCounty.com) or by calling 770-822-7759, **no later than 3:00 P.M. on November 05, 2025.** Bids are legal and binding upon the vendor when submitted. All bids should be submitted in duplicate.

Successful contractors will be required to meet insurance requirements. The Insurance Company should be authorized to do business in Georgia by the Georgia Insurance Department and must have an A.M. Best rating of A-7 or higher.

Gwinnett County does not discriminate on the basis of disability in the admission or access to its programs or activities. Any requests for reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County Government should be directed to the ADA Coordinator at the Gwinnett County Justice and Administration Center, 770-822-8165.

The written bid documents supersede any verbal or written prior communications between the parties.

Award will be made to the contractor(s) submitting the lowest responsive and responsible bid. Gwinnett County reserves the right to reject any or all bids to waive technicalities and to make an award deemed in its best interest. Bids may be split or awarded in entirety. Gwinnett County reserves the option to negotiate terms, conditions and pricing with the lowest responsive, responsible vendor(s) at its discretion.

Award notification will be posted after award on the County website, [www.gwinnettcountry.com](http://www.gwinnettcountry.com) and companies submitting a bid will be notified via email.

We look forward to your bid and appreciate your interest in Gwinnett County.

Brittany Bryant, CPPB  
Purchasing Associate III

**The following pages should be returned in duplicate as your bid:** **Bid Schedule, Pages 2-4**  
**References, Page 5**  
**Contractor Affidavit and Agreement, Page 6**  
**Code of Ethics, Page 7**

**FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION**

**BID SCHEDULE**

Bidder submits the following Lump Sum Bid Prices for furnishing slide and sluice gates with actuators and providing start-up and testing services for F. Wayne Hill Water Resources Center, identified as part of this Bid. Work included within each Bid Item is described in the Specifications. It should be noted the offered gates and actuators should meet the performance requirements identified in the Specifications to be accepted as a viable bid. Bidders are **not** required to offer bids for every line item. An award may be made to one or multiple bidders based on the bid price and the gate performance.

The Undersigned agrees to commence all preliminary and submittal work within 10 days of the date of Award Letter issued by Gwinnett County Purchasing Office and to commit adequate resources to deliver the gates and actuators within 180 days of return of approved submittals unless otherwise indicated in the Delivery Schedule.

**Note: Gwinnett County currently has a sole source in place for Rotork Valve Actuators and Associated Control Systems.**

<b>BID ITEM NO.</b>	<b>DESCRIPTION</b>	<b>BID PRICE (LUMP SUM)</b>
<b>SECTION A – SLIDE GATE (ALUMINUM)</b>		
1.	Provide a total of 8 (eight) aluminum slide gates and actuators as specified in the bid package. Provide shipping and delivery of gates and actuators to the job site, off-loading and storage to be performed by Others. Provide startup assistance via the manufacturer or manufacturer’s representative for each of the gates and actuators. Startup will need to be phased based on plant’s operations and construction schedule.	\$ _____ ____ days from Notice to Proceed for Delivery of Gates submittals ____ days from Approval of Submittals for Delivery of Gates and Actuators
<b>SECTION B – SLIDE GATES (STAINLESS STEEL)</b>		
2.	Provide a total of 2 (two) stainless steel slide gates and actuators as specified in the bid package. Provide shipping and delivery of gates and actuators to the job site, off-loading and storage to be performed by Others. Provide startup assistance via the manufacturer or manufacturer’s representative for each of the gates and actuators. Startup will need to be phased based on plant’s operations and construction schedule.	\$ _____ ____ days from Notice to Proceed for Delivery of Gates submittals ____ days from Approval of Submittals for Delivery of Gates and Actuators
<b>SECTION C – SLUICE GATES (CAST IRON)</b>		
3.	Provide a total of 21 (twenty-one) cast iron sluice gates and actuators as specified in the bid package. Provide shipping and delivery of gates and actuators to the job site, off-loading and storage to be performed by Others. Provide startup assistance via the manufacturer or manufacturer’s representative for each of the gates and actuators. Startup will need to be phased based on plant’s operations and construction schedule.	\$ _____ ____ days from Notice to Proceed for Delivery of Gates submittals ____ days from Approval of Submittals for Delivery of Gates and Actuators
<b>OVERALL BID AMOUNT</b>		<b>\$</b>

**COMPANY NAME** \_\_\_\_\_

### Major Equipment Schedule

All major equipment items listed on the bid form shall be bid according to the following:

The Bidder must include in the lump sum Bid Item 1.1, one of the named manufacturers/suppliers in this listing of major equipment items. The Bidder must circle one the named manufacturer/supplier, indicating which manufacturer/supplier the Contractor's Bid is based on. If an acceptable deduct is provided for substitute equipment and the equipment is accepted by the Owner, the amount of deduct shall be accounted for by a change order after award of the contract by the Owner.

Should a Bidder fail to indicate which manufacturer/supplier the Base Bid is based on, or circles more than one listed manufacturer/supplier per specification section, the Bidder shall provide the first listed ("A") manufacturer/supplier at no increase in the Contract amount.

The Bidder may indicate substitute in addition to the circled Base Bid manufacturer/supplier by writing in the substitute and writing in the amount of deduct for the substitute manufacturer/supplier. Should a write-in substitute be disallowed by the Owner as "not equal" or "not desired", then the Bidder shall supply the circled manufacturer/supplier.

A substitute manufacturer/supplier will be deemed equal provided the proposed substitute is explicitly demonstrated by the Bidder to be equivalent to or better than the product named and described in the Specifications in form function performance reliability quality and general configuration. Determination of equality in reference to the project design requirements will be made by the Owner after award of the contract.

Changes by the Bidder to items listed in the Major Equipment Schedule will not be considered after receipt of Bids.

Specification Section	Equipment Description	Vendor
40 0559.21	Aluminum Slide Gates	A. Waterman B. Hydrogate C. Waco
	<b>Substitute</b>	
	<b>Deduction</b>	\$
40 0559.23	Stainless Steel Slide Gates	A. Waterman B. Hydrogate C. Waco
	<b>Substitute</b>	
	<b>Deduction</b>	\$
40 0559.33	Cast Iron Sluice Gates	A. Waterman B. Hydrogate C. Waco
	<b>Substitute</b>	\$
	<b>Deduction</b>	

FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION

**BID SCHEDULE CONTINUED**

The undersigned acknowledges receipt of the following addenda, listed by number and date appearing on each:

Addendum No.	Date	Addendum No.	Date
_____	_____	_____	_____
_____	_____	_____	_____

Certification Of Non-Collusion In Bid Preparation \_\_\_\_\_

Signature Date

In compliance with the attached specifications, the undersigned acknowledges all requirements outlined in the "Instructions to Vendors" and all documents referred to therein, if this bid is accepted by the Board of Commissioners within ninety (90) days of the date of bid opening, to furnish any or all of the items upon which prices are bid, at the price set opposite each item bid, delivered to the designated point(s) within the time specified in the fee schedule. By submission of this bid, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Vendors should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the Electronic Payment information in the Instructions to Vendors.

Legal Business Name \_\_\_\_\_

Address \_\_\_\_\_

Does your company currently have a location within Gwinnett County?    Yes                      No

Representative Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Telephone Number \_\_\_\_\_      E-mail address \_\_\_\_\_

Contact Person (if someone other than the authorized representative listed above)

\_\_\_\_\_

Telephone Number \_\_\_\_\_      E-mail address \_\_\_\_\_

FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION OF BID.

**REFERENCES**

Gwinnett County requests a minimum of three (3) references where work of a similar size and scope has been completed.

Note: References should be customized for each project, rather than submitting the same set of references for every project bid. The references listed should be of similar size and scope of the project being bid on. Do not submit a project list in lieu of this form.

1. Company Name \_\_\_\_\_

Brief Description of Project \_\_\_\_\_

Completion Date \_\_\_\_\_

Contract Amount \$ \_\_\_\_\_ Start Dates \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

2. Company Name \_\_\_\_\_

Brief Description of Project \_\_\_\_\_

Completion Date \_\_\_\_\_

Contract Amount \$ \_\_\_\_\_ Start Date \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

3. Company Name \_\_\_\_\_

Brief Description of Project \_\_\_\_\_

Completion Date \_\_\_\_\_

Contract Amount \$ \_\_\_\_\_ Start Date \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Company Name \_\_\_\_\_



**Solicitation Name & No. BL001-26, Purchase of Slide and Sluice Gates with Actuators for the F. Wayne Hill Water Resources Center**

**CONTRACTOR AFFIDAVIT AND AGREEMENT  
(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL)**

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Gwinnett County Board of Commissioners has registered with and is participating in a federal work authorization program\* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security] to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Gwinnett County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Gwinnett County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

\_\_\_\_\_  
E-Verify \* User Identification Number

\_\_\_\_\_  
Date Registered

\_\_\_\_\_  
Legal Company Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/State/Zip Code

BY: \_\_\_\_\_  
Authorized Officer or Agent  
(Contractor Signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title of Authorized Officer or Agent of Contractor

\_\_\_\_\_  
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE  
\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

<b>For Gwinnett County Use Only:</b> <b>Document ID #</b> _____ <b>Issue Date:</b> _____ <b>Initials:</b> _____
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\* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).



**Bid # & Description** BL001-26, Purchase of Slide and Sluice Gates with Actuators for the F. Wayne Hill Water Resources Center

### CODE OF ETHICS AFFIDAVIT

**PLEASE RETURN THIS FORM COMPLETED WITH YOUR SUBMITTAL. SUBMITTED FORMS ARE REQUIRED PRIOR TO EVALUATION.**

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of their knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the vendor, its affiliates or its subcontractors:

1. \_\_\_\_\_  
Company Submitting Bid/Proposal

2. Please select one of the following:
- No information to disclose (*complete only section 4 below*)
  - Disclosed information below (*complete section 3 & section 4 below*)

3. If additional space is required, please attach list:

\_\_\_\_\_  
Gwinnett County Elected Official Name

\_\_\_\_\_  
Gwinnett County Elected Official Name

\_\_\_\_\_  
Gwinnett County Elected Official Name

\_\_\_\_\_  
Gwinnett County Elected Official Name

4. BY: \_\_\_\_\_  
Authorized Officer or Agent Signature

Sworn to and subscribed before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Printed Name of Authorized Officer or Agent

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Title of Authorized Officer or Agent of Contractor

(seal)

Note: See Gwinnett County Code of Ethics Ordinance E02011, Sec. 54-33. The ordinance will be available to view in its' entirety at **GwinnettCounty.com**



GWINNETT COUNTY FINANCIAL SERVICES |  
RISK MANAGEMENT  
**VENDOR INSURANCE REQUIREMENTS**

**Insurance:**

Contractor shall provide evidence of insurance for at least the coverage and amounts set forth below. All insurance shall be maintained in the form and with a company (or companies) satisfactory to the Gwinnett County Board of Commissioners. The Contractor and their Subcontractor's/vendor's Certificates of Insurance shall require that the County be notified in writing thirty (30) days prior to cancellation, modification, or non-renewal of any insurance policy listed on the certificate(s). Upon request, the County will be provided certified copies of all required insurance policies.

**A. Minimum Coverage**

Commercial General Liability (Occurrence Form):

General Aggregate (other than Prod/Comp Ops Liability)	\$2,000,000
Products/Completed Operations Aggregate	\$2,000,000
Personal & Advertising Injury Liability	\$1,000,000
Each Occurrence	\$1,000,000

- Gwinnett County Board of Commissioners to be named as Additional Insured
- Additional Insured Endorsement CG 20 10 (edition dates of 07/04, 04/13, 12/19 or a substitute endorsement providing equivalent coverage) and CG 2037 (edition dates of 07/04, 04/13, 12/19 or a substitute endorsement providing equivalent coverage) must be provided with your Certificate of Insurance.
- Primary and Non-Contributory Endorsement to be specified in writing
- Contractual Liability
- Broad Form Property Damage
- Severability of Interest
- Underground, explosion, and collapse coverage
- Personal Injury (deleting both contractual and employee exclusions)
- Incidental Medical Malpractice
- Hostile Fire Pollution Wording
- Include Waiver of Subrogation in favor of Gwinnett County Board of Commissioners
- If project or operations are within 50 ft of a railroad, Contractor is required to name the specific Railroad as an Additional Insured and provide a copy of the Additional Insured Endorsement CG2417 or its equivalent.
- In the event the General Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of five (5) years or applicable statute of limitation period following completion of the work.

Automobile Liability to include:

Combined Single Limit – Each Accident	\$1,000,000
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- Comprehensive form providing coverage for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of all owned, non-owned, leased, hired, borrowed vehicles, and any other statutorily required automobile coverage.
- Gwinnett County Board of Commissioners to be named as Additional Insured
- Additional Insured Endorsements must be provided with the Certificate of Insurance
- Coverage to include loading and unloading
- Contractual Liability

Worker's Compensation & Employer's Liability Coverage to include:

Workers Compensation	Georgia State Statutory Limits
Employers Liability	
Bodily Injury by Accident – Each Accident	\$ 500,000
Bodily Injury by Disease – Policy Limit	\$ 500,000
Bodily Injury by Disease – Each Employee	\$ 500,000

- Waiver of Subrogation in favor of Gwinnett County Board of Commissioners

Umbrella/Excess Liability Insurance with policy limits as determined by Contract Sums (higher limits may be required depending on the extent of contract):Contract Sums:

Contracts up to \$999,999	
Each Occurrence and Aggregate Limit	\$1,000,000
Contracts from \$1,000,000 to \$1,999,999	
Each Occurrence and Aggregate Limit	\$3,000,000
Contracts from \$2,000,000 to \$4,999,999	
Each Occurrence and Aggregate Limit	\$5,000,000
Contracts Over \$5,000,000	
Each Occurrence and Aggregate Limit	\$10,000,000

- Concurrency of Effective Dates with Primary
- Blanket Contractual Liability
- Drop Down Feature
- Umbrella Policy must be as broad as the primary policy.
- Coverage excess over General Liability, Business Auto Liability, and Employers Liability
- In the event the Umbrella/Excess Liability insurance required by this Contract is written on a claims- made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of five (5) years or applicable statute of limitation period following completion of the work.
- Evidence of coverage in the form of a Certificate of Insurance shall be provided to the County prior to start of work.
- Gwinnett County Board of Commissioners shall be Additional Insureds.
- Contractor shall be liable for money, securities, or other property of the County.
- Such coverage shall include an owner coverage endorsement for County and County shall be included as a loss payee.
- Additional Insured Endorsements must be provided with the Certificate of Insurance

Cyber Liability Insurance: Applies if scope of work includes the storage or transfer of any County data or sensitive data (including but not limited to personally identifiable, health, or payment card data) or the related hosting of database(s) or internet site(s):

Limit of Insurance per Claim	\$1,000,000
Aggregate Limit	\$1,000,000

The Contractor shall maintain insurance coverage for network security and privacy risks, including, but not limited to, insurance for data breach or introduction of virus or malicious codes, consumer notification, whether or not required by law, forensic investigation, public relations and crisis management and credit or identity monitoring or similar remediation services, unauthorized access, failure of security information theft, damage to destruction of or alteration of electronic information, breach of privacy perils, wrongful disclosure and release of private information, collection, or other negligence in the handling of confidential information, and including coverage for related regulatory fines, defenses, and penalties allowed by law.

Property Insurance:

The Contractor is fully and solely responsible for any physical loss or damage to all tools, equipment, construction office trailers and their contents, vehicles or any other personal property utilized in the performance of the Contractor's work. Contractor agrees to waive its rights of recovery and cause its insurers, if any, to waive their rights of subrogation against Owner and Company for any such damage or loss, however caused.

Riggers Liability Insurance:

If any work to be performed involves the rigging, lifting, lowering or moving of property or equipment, then those parties performing such work shall carry Rigger's Liability Insurance in an amount adequate to insure against the physical loss or damage to the property or equipment in its care

Aviation Insurance: Applies if scope of work requires the use of aircraft, including helicopters, unmanned aircraft systems (e.g., drones) and/or fixed-wing aircraft:

Maintain (or require aircraft owner or operator to maintain), and Contractor shall furnish proof of, Aircraft Liability insurance with minimum limits of \$10,000,000 per occurrence for bodily injury and property damage of all aircraft.

Unmanned aircraft systems, minimum limits of \$2,000,000 for bodily injury, property damage, and personal injury (including invasion of privacy) for unmanned aircraft systems, and guest voluntary settlement bodily injury coverage (for any aircraft except unmanned aircraft systems)

- Such policy shall include contractual liability covering all owned and non-owned aircraft
- If the party providing the Aircraft Liability insurance is not Contractor, then Contractor shall require such party to (a) waive any subrogation rights of recovery they and/or their insurance carriers may have against County and any other indemnified parties and (b) name County and such other parties as Additional Insureds
- The Contractor shall (or shall require aircraft owner or operator) to hire, employ, and utilize pilots certified by the Federal Aviation Administration to operate any such aircraft.

- B. Gwinnett County Board of Commissioners (and any applicable Authority) must be specified in writing as an Additional Insured on General Liability, Auto Liability and Umbrella Liability policies.
- C. Gwinnett County should be provided with a minimum of 30 days advance written notice of cancellation, material change, or non-renewal of policies required by the contract.
- D. Certificate Holder should read:  
 Gwinnett County Board of Commissioners  
 75 Langley Drive  
 Lawrenceville, GA 30046-6935

- E. Insurance Company, except Worker' Compensation carrier, must have an A.M. Best Rating of A-7 or higher. Certain Workers' Comp funds may be accepted subject to the approval of the Gwinnett County Insurance Unit. European markets including those based in London and domestic surplus lines markets that operate on a non-admitted basis are exempt from this requirement provided that the Contractor's broker/agent can provide financial data to establish that a market is equal to or exceeds the financial strengths associated with the A.M. Best's rating of A-7 or better.
- F. Insurance companies providing coverage should be licensed, and authorized to do business by the Office of the Insurance and Safety Fire Commissioner of Georgia ("Insurance Commissioner"), with the exception of non- admitted carriers, in which case the broker placing coverage should be licensed by the Insurance Commissioner. All agents placing coverage should be licensed by the Insurance Commissioner, either as a resident or non- resident.
- G. Certificates of Insurance, and any subsequent renewals, must reference each corresponding bid/contract by project name and project/bid number, if applicable.
- H. The Contractor shall agree to provide complete certified copies of current insurance policy(ies) or a certified letter from the insurance company(ies) if requested by the County to verify compliance with these insurance requirements.
- I. All insurance coverage required to be provided by the Contractor shall state that it is primary over any insurance program carried by the County.
- J. Contractor shall incorporate a copy of the insurance requirements as herein provided in each and every subcontract with each and every subcontractor in any tier and shall require each and every subcontractor of any tier to comply with all such requirements. The Contractor agrees that if for any reason a subcontractor fails to procure and maintain insurance as required, all such required Insurance shall be procured and maintained by Contractor at Contractor's expense.
- K. No Contractor or Subcontractor shall commence any work of any kind under this Contract until all insurance requirements contained in this Contract have been complied with and until evidence of such compliance satisfactory to Gwinnett County as to form and content has been filed with Gwinnett County. The ACORD Certificate of Insurance or a preapproved substitute is the required form in all cases where reference is made to a Certificate of Insurance or an approved substitute.
- L. The Contractor and its insurer(s) shall agree to waive all rights of subrogation against the County, the Board of Commissioners, its officers, officials, employees, and volunteers from losses arising from work performed by the Contractor for the County.
- M. Special Form Contractors' Equipment and Contents Insurance covering owned, used, and leased equipment, tools, supplies, and contents is required to perform the services called for in the Contract. The coverage must be on a replacement cost basis. The County will be included as a Loss Payee in this coverage for County owned equipment, tools, supplies, and contents.
- N. The Contractor shall make available to the County, through its records or the records of its insurer, information regarding any claim related to a County project. Any loss run information relating to a County project will be made available to the County upon its request.
- O. Compliance by the Contractor and Subcontractors with the foregoing insurance requirements shall not relieve the Contractor and Subcontractors of liability under the Contract and any applicable law.
- P. The Contractor and all Subcontractors are to comply with the Occupational Safety and Health Act of 1970, Public Law 91-956, and any other laws that may apply to this Contract.
- Q. The Contractor shall at a minimum apply risk management practices accepted by the Contractors' industry.
- R. The Contractor shall advise the County if required limits of insurance become eroded or impaired.

Surety Bonds (if required)

All of the surety requirements will stay the same except the Surety Company must have the same rating as set forth in item E above.

FAILURE TO RETURN THIS PAGE MAY RESULT IN REMOVAL OF YOUR COMPANY FROM COMMODITY LISTING.

**BL001-26**

**Buyer Initials: BB**

IF YOU DESIRE TO SUBMIT A "NO BID" IN RESPONSE TO THIS PACKAGE, PLEASE INDICATE BY CHECKING ONE OR MORE OF THE REASONS LISTED BELOW AND EXPLAIN.

Do not offer this product or service; remove us from your bidder's list for this item only.

Specifications too "tight"; geared toward one brand or manufacturer only.

Specifications are unclear.

Unable to meet specifications

Unable to meet bond requirements

Unable to meet insurance requirements

Our schedule would not permit us to perform.

Insufficient time to respond.

Other

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COMPANY NAME \_\_\_\_\_

AUTHORIZED REPRESENTATIVE \_\_\_\_\_

**GWINNETT COUNTY  
DEPARTMENT OF FINANCIAL SERVICES – PURCHASING DIVISION  
GENERAL INSTRUCTIONS FOR VENDORS, TERMS AND CONDITIONS**

**\*\*\*ATTENTION\*\*\***

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE SUBMITTAL:

1. FAILURE TO USE COUNTY FEE SCHEDULE.
2. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE COMPLIANCE/SPECIFICATION SHEETS.
3. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE ADDENDA.
4. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
5. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL SOLICITATIONS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION PAGE. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS SOLICITATION DOCUMENT.**
6. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL SOLICITATIONS. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.
7. FAILURE TO PROVIDE AN ETHICS AFFIDAVIT WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE ETHICS AFFIDAVIT IS REQUIRED ON ALL FORMAL SOLICITATIONS OVER \$100,000.00. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.

**I. PREPARATION OF SUBMITTAL**

- A. Each vendor shall examine the drawings, specifications, schedule, and all instructions. Failure to do so will be at the vendor's risk, as the vendor will be held accountable for their submittal.
- B. Each vendor shall furnish all information required by the solicitation form or document. Each vendor shall sign the submittal and print or type his or her name on the fee schedule. The person signing the submittal should initial erasures or other changes. An authorized agent of the vendor must sign the submittal.
- C. Fee schedule pricing should have only two decimal places unless otherwise stated. In the event of a calculation error in total price, the unit pricing prevails.
- D. Except for solicitations for the sale of real property, individuals, firms, and businesses seeking an award of a Gwinnett County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County officer, elected official, employee, or other County representative other than the Purchasing Associate named in the solicitation between the date of the issuance of the solicitation and the date of the final award. The Purchasing Director will review violations. If determined that such communication has compromised the competitive process, the offer submitted by the individual, firm or business may be disqualified from consideration for award. Solicitations for the sale of real property may allow for verbal or written communications with the appropriate Gwinnett County representative.
- E. Sample contracts (if pertinent) are attached. These do NOT have to be filled out with the submittal but are contained for informational purposes only. If awarded, the successful vendor(s) will be required to execute these documents prior to County execution.
- F. Effective July 1, 2013 and in accordance with the Georgia Illegal Immigration Reform Enhancements for 2013, an original signed, notarized and fully completed Contractor Affidavit and Agreement should be included with vendor's submittal, if the solicitation is for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia). Failure to provide the Contractor Affidavit and Agreement with your submittal may result in being deemed non-responsive and automatic rejection.

**II. DELIVERY**

- A. Each vendor should state time of proposed delivery of goods or services.
- B. Words such as "immediate," "as soon as possible," etc. should not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) should be stated. If calendar days are used, include Saturday, Sunday, and holidays in the number.

**III. EXPLANATION TO VENDORS**

Any explanation desired by a vendor regarding the meaning or interpretation of the solicitation, drawings, specifications, etc. must be requested by the question cutoff deadline stated in the solicitation for a reply to reach all vendors before the deadline of the solicitation. Any information given to a prospective vendor concerning a solicitation will be furnished to all prospective vendors as an

addendum to the solicitation if such information is necessary or if the lack of such information would be prejudicial to uninformed vendors. The written solicitation documents supersede any verbal or written communications between the parties. Receipt of addenda should be acknowledged in the submittal. **It is the vendor's responsibility to ensure they have all applicable addenda prior to their submittal.** This may be accomplished by contacting the assigned Purchasing Associate prior to the submittal or visiting the Gwinnett County website.

#### IV. SUBMISSION OF FORMAL OFFERS/SUBMITTALS

- A. Formal bid and proposal submittals shall be enclosed in a sealed package or envelope, addressed to the Gwinnett County Purchasing Division with the name of the vendor, the date and hour of opening and the solicitation number on the face of the package or envelope. Facsimile or emailed submittals will not be considered. Any addenda should be enclosed in the sealed envelopes as well.
- B. ADD/DEDUCT: Add or deduct amounts indicated on the outside of the envelope are allowed and will be applied to the lump sum amount. Amount shall be clearly stated and should be initialed by an authorized representative.
- C. Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the vendor's request and expense, if items are not destroyed by testing.
- D. Items offered must meet required specifications and must be of a quality that will adequately serve the use and purpose for which intended.
- E. Full identification of each item submitted, including brand name, model, catalog number, etc. must be furnished to identify exactly what the vendor is offering. Manufacturer's literature may be furnished but vendor should not submit excessive marketing material.
- F. The vendor must certify that items to be furnished are new and that the quality has not deteriorated to impair its usefulness.
- G. Unsigned submittals will not be considered except in cases where it is enclosed with other documents that have been signed. The County will determine acceptability in these cases.
- H. Gwinnett County is exempt from federal excise tax and Georgia sales tax regarding goods and services purchased directly by Gwinnett County. Vendors are responsible for federal excise tax and sales tax, including taxes for materials incorporated in county construction projects. Vendors should contact the State of Georgia Sales Tax Division for additional information. Agreements were there is a cost-plus mark-up, mark-up will not be paid on taxes.
- I. Information submitted by a vendor in the solicitation process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act.

#### V. WITHDRAWAL DUE TO ERRORS

Vendors must give Gwinnett County Purchasing Division written notice within two (2) business days of completion of the opening stating that they wish to withdraw their submittal without penalty for an obvious clerical or calculation error. Submittal may be withdrawn from consideration if the price was substantially lower than the other submittals due solely to a mistake therein, provided pricing was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake and was due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the submittal. The unintentional arithmetic error or omission can be clearly proven through inspection of the original work papers, documents, and materials used in preparing the submittal sought to be withdrawn. The vendor's original work papers shall be the sole acceptable evidence of error and mistake if a vendor elects to withdraw their submittal. If a quote or bid submittal is withdrawn under the authority of this provision, the lowest remaining responsive offer shall be deemed to be low bid.

No vendor who is permitted to withdraw their submittal shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid or proposal was submitted.

Vendors who fail to request withdrawal by the required forty-eight (48) hours may automatically forfeit bid bond if a bond was required. Bid may not be withdrawn otherwise.

Withdrawal is not automatically granted and will be allowed solely at Gwinnett County's discretion.

#### **VI. TESTING AND INSPECTION**

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of the tests are determined. Cost of inspections and tests of any item that fails to meet the specifications, shall be borne by the vendor.

#### **VII. F.O.B. POINT**

Unless otherwise stated in the request for invitation and any resulting contract, or unless qualified by the vendor, items shall be shipped F.O.B. Destination, Freight Prepaid and Allowed. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

#### **VIII. PATENT INDEMNITY**

The vendor guarantees to hold the County, its agents, officers, or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the vendor is not the patentee, assignee, or licensee.

**IX. BID BONDS AND PAYMENT AND PERFORMANCE BONDS (IF REQUIRED, FORMS WILL BE PROVIDED IN THIS DOCUMENT)**

A five percent (5%) bid bond, a one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond must be furnished to Gwinnett County for any solicitation as required in the solicitation package or document. **Failure to submit a bid bond with the proper rating will result in submittal being deemed non-responsive.** Bonding company must be authorized to do business in Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirement of the solicitation. **The bid bond, payment bond, and performance bond must have the proper A.M. Best rating as stated in the solicitation document.**

**X. DISCOUNTS**

- A. Time payment discounts may be considered in arriving at net prices and in award of solicitations. Offers of discounts for payment within ten (10) days following the end of the month are preferred.
- B. In connection with any discount offered, time will be computed from the date of delivery and acceptance at destination, or from the date correct invoice or voucher is received, whichever is the later date. Payment is deemed to be made for the purpose of earning the discount on the date of the County check.

**XI. AWARD**

- A. Award will be made to either the highest scoring firm (for proposals) or the lowest responsive and responsible vendor (for quotes/bids). The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the vendor to perform, and the vendor shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any submittal if the evidence submitted by, or investigation of such vendor fails to satisfy the County that such vendor is properly qualified to carry out the obligations of the contract.
- B. The County reserves the right to reject or accept any or all offers and to waive technicalities, informalities and minor irregularities in the submittals received.
- C. The County reserves the right to make an award as deemed in its best interest, which may include awarding to a single vendor or multiple vendors; or to award the whole solicitation agreement, only part of the agreement, or none of the agreement, based on its sole discretion of its best interest.
- D. In the event of proposal scores rounded to the nearest whole number result in a tie score, the award will be based on lowest cost.

- E. If proposal negotiations with the highest ranked firm are unsuccessful, the County may then negotiate with the second ranked firm and so on until a satisfactory agreement has been reached.

**XII. DELIVERY FAILURES**

Failure of a vendor to deliver within the time specified or within reasonable time as interpreted by the Purchasing Director, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the Purchasing Director, shall constitute authority for the Purchasing Director to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the vendor shall reimburse the County within a reasonable time specified by the Purchasing Director for any expense incurred in excess of the contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting vendor. Alternatively, the County may penalize the vendor one percent (1%) per day for a period of up to ten (10) days for each day that delivery or replacement is late. Should public necessity demand it, the County reserves the right to use or consume articles/services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

**XIII. COUNTY FURNISHED PROPERTY**

No material, labor or facilities will be furnished by the County unless so provided in the solicitation package.

**XIV. REJECTION OF SUBMITTALS**

Failure to observe any of the instructions or conditions in this solicitation package may constitute grounds for rejection.

**XV. CONTRACT**

Each submittal is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all the commodities or services described therein shall constitute a contract between the vendor and the County which shall bind the vendor on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted submittal. The County, on its part, may order from such vendor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered.

Upon receipt of a solicitation package containing a Gwinnett County "Sample Contract" as part of the requirements, it is understood that the vendor has reviewed the documents with the understanding that Gwinnett County requires that all agreements between the parties must be entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the vendor's submittal. If no exceptions are stated, it is assumed that the vendor fully agrees to the provisions contained in the "Sample Contract" in its entirety.

An  
y Consultant as defined in O.C.G.A. §36-80-28 that is engaged to develop or draft specifications/requirements or serve in a consultative role during the procurement process for any County procurement method, by entering into such an arrangement or executing a contract, the consultant agrees to abide by the current state law and: 1) Avoid any appearance of impropriety and shall follow all policies and procedures of the County, 2) Disclose to the County any material transaction

or relationship pursuant to §36-80-28, that is considered a conflict of interest, any involvement in litigation or other dispute, relationship, or financial interest not disclosed in the ethics affidavit, and 3) Acknowledge that any violation or threatened violation of the agreement may cause irreparable injury to the County, entitling the County to seek injunctive relief in addition to all other legal remedies.

When the vendor has performed in accordance with the provisions of this agreement, Gwinnett County shall pay to the vendor, within thirty (30) days of receipt of any department approved payment request and based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any. If Gwinnett County fails to pay the vendor within sixty (60) days of receipt of a pay request based upon work completed or service provided pursuant to the contract, the County shall pay the vendor interest at the rate of ½% per month or pro rata fraction thereof, beginning the sixty-first (61<sup>st</sup>) day following receipt of pay requests. The vendor's acceptance of progress payments or final payment shall release all claims for interest on said payment.

The parties agree that this Contract shall be governed and construed in accordance with the laws of the State of Georgia.

**XVI. NON-COLLUSION**

Vendor declares that the submittal is not made in connection with any other vendor's submittal for the same commodity or commodities, and that the submittal is bona fide and is in all respects fair and without collusion or fraud. An affidavit of non-collusion shall be executed by each vendor. Collusion and fraud in submittal preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

**XVII. DEFAULT**

The contract may be canceled or annulled by the Purchasing Director in whole or in part by written notice of default to the vendor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible vendor, or the next highest scoring responsive and responsible proposer, or articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting vendor (or their surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the vendor shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the vendor to deliver materials or services within the time stipulated on their offer, unless extended in writing by the Purchasing Director, shall constitute contract default.

**XVIII. TERMINATION FOR CAUSE**

The County may terminate this agreement for cause upon ten days prior written notice to the vendor of the vendor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

**XIX. TERMINATION FOR CONVENIENCE**

The County may terminate this agreement for its convenience at any time upon 30 days written notice to the vendor. In the event of the County's termination of this agreement for convenience, the vendor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the vendor, which shall itemize each element of performance.

**XX. SUBSTITUTIONS**

Vendors offering substitutions or who are deviating from the attached specifications shall list such deviations on a separate sheet to be submitted with their offer. The absence of such a substitution list shall indicate that the vendor has taken no exception to the specifications contained herein.

**XXI. INELIGIBLE VENDORS**

The County may choose not to accept the offer by an individual, firm, or business who is in default on the payment of taxes, licenses, or other monies owed to the County. Additionally, vendors or persons placed on an Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance shall not be eligible to provide any commodities or services to the County during the period such person remains on the Ineligible Source List.

**XXII. PENDING LITIGATION**

An individual, firm, or business that has litigation pending against the County, or anyone representing a firm or business in litigation against the County, not arising out of the procurement process, will be disqualified.

**XXIII. OCCUPATION TAX CERTIFICATE**

Each successful vendor must have a valid Gwinnett County occupation tax certificate if the vendor maintains an office within the unincorporated area of Gwinnett County. Incorporated, out of County, and out of State vendors are required to have any and all certificates necessary to do business in any town, County or municipality in the State of Georgia, or as otherwise required by County ordinance or resolution. Vendors may be required to provide evidence of valid certificates. Out of State vendors are required to have a certificate in the Georgia jurisdiction where they receive the most revenue.

**XXIV. PURCHASING POLICY AND REVIEW COMMITTEE**

The Purchasing Policy & Review Committee has been established to review purchasing procedures and make recommendations for changes; resolve problems regarding the purchasing process; make recommendations for standardization of commodities, schedule buying, qualified products list, annual contracts, supplier performance (Ineligible Source List), and other problems or requirements related to purchasing. The Purchasing Policy & Review Committee has authority to place vendors on the Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance, for a period not to exceed three (3) years.

**XXV. AMERICANS WITH DISABILITIES ACT**

All vendors for Gwinnett County are required to comply with all applicable sections of the Americans with Disabilities Act (ADA) as an equal opportunity employer. In compliance with the Americans with Disabilities Act (ADA), Gwinnett County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees without disabilities. Disabled individuals must satisfy job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations. Any requests for the reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County should be directed to the ADA Coordinator, 75 Langley Drive, Lawrenceville, Georgia 30046, 770-822-8165.

**XXVI. ALTERATIONS OF SOLICITATION AND ASSOCIATED DOCUMENTS**

Alterations of County documents are strictly prohibited and will result in automatic disqualification of the vendor's solicitation response. If there are "exceptions" or comments to any of the solicitation requirements or other language, then the firm may make notes to those areas, but may not materially alter any document language.

**XXVII. TAX LIABILITY**

Local and state governmental entities must notify vendors of their use tax liability on public works projects. Under Georgia law, private vendors are responsible for paying a use tax equal to the sales tax rate on material and equipment purchased under a governmental exemption that is incorporated into a government construction project: excluding material and equipment provided for the installation, repair, or expansion of a public water, gas, or sewer system when the property is installed for general distribution purposes. To the extent the tangible personal property maintains its character (for example, the installation of a kitchen stove), it remains tax-exempt. However, if the installation incorporates the tangible personal property into realty (for example, the installation of sheetrock), it becomes taxable to the private vendor. See O.C.G.A. §48-8-3(2) and O.C.G.A. §48-8-63.

**XXVIII. STATE AND FEDERAL LAW REGARDING WORKER VERIFICATION**

Effective July 1, 2013 State Law requires that all who enter into a contract for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia) and that all who enter into a contract for public works as defined by O.C.G.A. §36-91-2(12) for the County, must satisfy the Illegal Immigration Reform Enhancements for 2013 in conjunction with the Federal Immigration Reform and Control Act (IRCA) of 1986, in all manner, and such are conditions of the contract.

The Purchasing Division Director with the assistance of the Internal Audit Division shall be authorized to conduct random audits of a vendor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The vendor and subcontractors shall retain all documents and records of its compliance for a period of five (5) years following completion of the contract or shall abide by the current time requirements at the time of the contract. This requirement shall apply to all contracts for all public works, labor or service contracts that exceed \$2,499.99 except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia.

Whenever it appears that a vendor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employment of such vendor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security and may result in termination of the contract if it is determined at any time during the work that the vendor or subcontractor is no longer in compliance with worker verification.

By submitting an offer to the County, vendor agrees that, in the event the vendor employs or contracts with any subcontractor(s) in connection with the covered contract, the vendor will secure from the subcontractor(s) such subcontractor(s)' indication of the employee-number category applicable to the subcontractor, as well as attestation(s) from such subcontractor(s) that they follow the Illegal Immigration Reform Enhancements for 2013 in conjunction with all federal requirements. Original signed, notarized Subcontractor Affidavits and Agreements must be maintained by the vendor awarded the contract.

A vendor's or subcontractor's failure to participate in the federal work authorization program as defined above shall be subject to termination of the contract. A vendor's failure to follow Gwinnett County's

instruction to terminate a subcontractor that is not participating in the federal work authorization program may be subject to termination of the contract.

**XXIX. SOLID WASTE ORDINANCE**

No individual, partnership, corporation, or other entity shall engage in solid waste handling except in such a manner as to conform to and comply with the current Gwinnett County Solid Waste Ordinance and all other applicable local, state and federal legislation, rules, regulation, and orders.

**XXX. GENERAL CONTRACTORS LICENSE**

Effective July 1, 2008: **All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law (O.C.G.A. §43-41-17).**

**XXXI. PRODUCTS MANUFACTURED IN GEORGIA**

When contracting for or purchasing supplies, materials, equipment, or agricultural products that exceeds \$100,000.00, excluding beverages for immediate consumption, Gwinnett County shall give preference as far as may be reasonable and practicable to such supplies, materials, equipment, and agricultural products as may be manufactured or produced in this state. Such preference shall not sacrifice quality. Gwinnett County Board of Commissioners shall consider, among other factors, information submitted by the vendor which may include the vendor's estimate of the multiplier effect on gross state domestic product and the effect on public revenues of the state and the effect on public revenues of political subdivisions resulting from acceptance of an offer to sell Georgia manufactured or produced goods as opposed to out-of-state manufactured or produced goods. Any such estimates shall be in writing. **(O.C.G.A. §36-84-1).**

**XXXII. INDEMNIFICATION**

To the fullest extent permitted by law, the vendor shall, at his sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless the County, its commissioners, officers, agents, and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, action, judgment, cost, penalty, liability, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by the negligent acts, errors by any act or omission of the vendor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless whether such claim is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any of the rights or obligations of indemnity which would otherwise exist as to any party or person described in this agreement. In any and all claims against the County, its commissioners, officers, agents, and employees by any employee of the vendor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the vendor or any subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

Vendor shall also indemnify, hold harmless, insure, and defend the County for damages, losses, or expenses to the extent caused by or resulting from the negligence, recklessness, or intentionally wrongful conduct of the vendor or other persons employed or utilized by the vendor in the performance of a contract that utilizes survey services.

**XXXIII. CODE OF ETHICS**

Vendors shall disclose under oath the name of all elected officials whom it employs or who have a direct or indirect pecuniary interest in the business entity, its affiliates, or its subcontractors. (This shall not apply to informal purchases as defined by the Purchasing Ordinance.) The vendor shall execute a Code of Ethics affidavit. Failure to submit the affidavit during the procurement process shall render the offer non-responsive.

Any business entity holding a contract with Gwinnett County that after execution of the contract or issuance of the purchase order employs, subcontracts with, or transfers a direct or indirect pecuniary interest in the business entity to an elected official shall within five (5) days disclose such fact in writing under oath to the Clerk of the Board of Commissioners. Failure to comply, or vendors submitting false information or omitting material information shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution. Note: See Gwinnett County Code of Ethics Ordinance EO2011, Sec. 54-33. The ordinance is available to view in its entirety at [www.gwinnettcountry.com](http://www.gwinnettcountry.com).

**XXXIV. ELECTRONIC PAYMENT**

Vendors accepting procurements should select one of Gwinnett County's electronic payment options.

- A. A vendor may select ePayables payment process which allows acceptance of Gwinnett County's virtual credit card as payment for outstanding invoices. The authorized vendor representative must send an email to: [vendorelectronicpayment@gwinnettcountry.com](mailto:vendorelectronicpayment@gwinnettcountry.com) and indicate the desire to enroll in Gwinnett County's virtual credit card payment process.
- B. A vendor may select Direct Deposit payment process and the payment will be deposited directly into an account at their designated financial institution. To securely enroll in Direct Deposit, either access your online [Vendor Login and Registration](#) on the County's web site and update the requested information on the Direct Deposit tab or mail a [Direct Deposit Authorization Agreement](#) form.

The County will send a Payment Advice notification via email for both payment types. For more information about Electronic Payments, please visit the Gwinnett County Treasury Division page or click here -> [Gwinnett County Electronic Payments](#).

**DIRECTIONS TO GJAC BUILDING FROM I-85**

Take I-85 to Georgia Highway 316 (Lawrenceville/Athens exit). Exit Highway 120 (Lawrenceville/Duluth exit) and turn right. At seventh traffic light, turn right onto Langley Drive. Cross Highway 29 through the traffic light and proceed through the roundabout. Visitors can either proceed to the front parking area on the left or to the parking deck behind the building. Click [here](#) for additional information about parking. **The Purchasing Division is located on the fourth floor of the Charlotte J. Nash Building. NOTE THAT THE PURCHASING DIVISION HAS TEMPORARILY RELOCATED.**

**GWINNETT COUNTY DWR  
PURCHASE OF SLIDE AND SLUICE GATES WITH  
ACTUATORS FOR THE F. WAYNE HILL WATER  
RESOURCES CENTER  
DWR PROJECT #: M-1191-55  
BID #: BL001-26**



**Gwinnett**

**VOLUME 2 of 2  
TECHNICAL SPECIFICATIONS  
ISSUED FOR BID**

Prepared By:



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June 2025

**VOLUME 2**  
**TECHNICAL SPECIFICATIONS**

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**EXHIBITS**

Exhibit A.1 Influent Distribution Box Record Drawings

Exhibit A.2 Influent Distribution Box Original Gates Submittal Drawings

Exhibit B.1 Bioreactors Record Drawings

Exhibit B.2 Bioreactors Original Influent Gates Submittal Drawings

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**END OF TABLE OF CONTENTS**

ISSUED	DATE
ISSUED FOR BID	8/4/2025

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**SECTION 01 1000 - SUMMARY OF WORK**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Project description.
  - 2. Contractor's use of Site.
  - 3. Project Newforma InfoExchange.

**1.2 PROJECT DESCRIPTION**

- A. Contractor to furnish gates and their respective actuators as listed on Sections A, B and C on the Bid Form (or any combination thereof). Schedule for gates and actuators for each of the sections above are shown in their respective specification sections and also listed below:
  - 1. Section A: Provide a total of 8 (eight) aluminum slide gates and actuators to be installed at the Bioreactors located at F. Wayne Hill Water Resources Center. Refer to specification section 40 0559.23 – Fabricated Aluminum Slide Gates.
  - 2. Section B: Provide a total of 2 (two) stainless steel slide gates and actuators to be installed at the Effluent Pump Station located at F. Wayne Hill Water Resources Center. Refer to specification section 40 0559.23 – Fabricated Stainless Steel Gates..
  - 3. Section C: Provide a total of 21 (twenty-one) cast iron sluice gates and actuators to be installed at the Influent Distribution Box, RAS/WAS Pump Station #1 and Effluent Pump Station located at F. Wayne Hill Water Resources Center. Refer to specification section 40 0559.33 – Fabricated Cast Iron Sluice Gates.
- B. Furnish Rotork actuators for use on the furnished gates for their respective sections.
  - 1. Actuators must come with a Pakscan card and have the ability to tie into the plant's existing Pakscan loop.
- C. The work includes but is not limited to all accessories i.e. stems, stem guides, support brackets, pedestals, anchor bolts, etc. Contractor to advise grout and epoxy selection before installation.
  - 1. Contractor to ensure that the gates are provided with all necessary equipment and material to be installed by Others.
  - 2. Contractor to ensure new gates will fit the existing wall openings without any required modifications to the existing openings or slab.
- D. Contractor to ensure shipping and delivery of gates and actuators to the job site. Off-loading and storage will be performed by Others.
- E. Contractor to hire the manufacturer, or manufacturer's representative to provide a CPI (Certificate of Proper Installation) to ensure the gates and actuators have been installed and started up per manufacturer's recommendations.
- F. Project Location: 1500 One Water Way, Buford, GA 30519

**1.3 CONTRACTOR'S USE OF SITE**

- A. Limit use of Site and premises to allow:
  - 1. Delivery of equipment.
  - 2. Installation inspection.
  - 3. Startup of equipment.
- B. General: Contractor shall have limited use of premises for delivery and startup operations, including use of Project site, during delivery and startup period. All use of the Project site shall be coordinated with Owner's Operations Staff and is limited by Owner's right to perform work or to retain other contractors on portions of the Project.

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- C. Regular working hours may be Monday through Friday, excluding holidays, occurring between the hours of 7:00 AM and 4:00 PM, unless restricted otherwise. Contractor shall establish regular scheduled work times, e.g., five 8-hour days, within the hours and days allowed above. Approval for specific work outside regular scheduled work times shall be requested no less than 5 business days prior to the requested work period. Contractor shall request approval of changes in regular scheduled work times no less than one week prior to the desired change. Occasional unscheduled overtime on weekdays may be permitted provided reasonable notice is given to Owner and no inspections are required.

**1.4 PROJECT NEWFORMA INFOEXCHANGE**

- A. Refer to Section 01 3300 – Submittal Procedures.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

<b>ISSUED</b>	<b>DATE</b>
<b>ISSUED FOR BID</b>	<b>8/4/2025</b>

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**END OF SECTION**

## SECTION 01 3300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Owner's responsive action.
- B. Informational Submittals: Written information that does not require Owner's approval. Submittals may be rejected for not complying with requirements.

#### 1.3 SUBMITTAL PROCEDURES

- A. General: Electronic copies of base plans of the Contract Drawings for Contractor's use in preparing submittals will not be provided.
- B. Coordination: Coordinate preparation and processing of submittals with performance of contract activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Owner's receipt of submittal.
  - 1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Owner will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. If resubmittal is necessary, process it in same manner as initial submittal.
  - 3. Allow 10 business days for processing each resubmittal.
  - 4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
  - 5. Submittals out of sequence from agreed upon schedule may result in back charges to the Contractor.
- D. Identification: Place a permanent label or title block on each submittal for identification.
  - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
  - 2. Provide a space on label or beside title block to record Contractor's review and approval markings.
  - 3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of Contractor.
    - d. Name of manufacturer.
    - e. Unique identifier, including revision number.
    - f. Number and title of appropriate Specification Section.
    - g. Drawing number and detail references, as appropriate.
    - h. Other necessary identification.

- E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals. Contractor shall denote ALL exceptions or deviations from the specification by citing the specification section and paragraph that is at issue.
- F. Copies: Unless additional copies are required for final submittal, and unless Owner observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
  - 1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Owner.
  - 2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Owner will return submittals, without review, received from sources other than Contractor.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of contract activities. Show distribution on transmittal forms.

## **PART 2 - PRODUCTS**

### **2.1 ACTION SUBMITTALS**

- A. General: Prepare and submit Action Submittals required by individual Specification Sections. The Engineer will provide access to Newforma document management software without cost to Contractor. Contractor shall use the standard transmittal forms provided by the Engineer. Using e-mail or other proprietary software is not acceptable.
- B. Product Data: Collect information into a single submittal for each type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operating and maintenance manuals.
    - k. Compliance with recognized trade association standards.
    - l. Compliance with recognized testing agency standards.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.

- g. Templates and patterns.
  - h. Schedules.
  - i. Design calculations.
  - j. Compliance with specified standards.
  - k. Notation of coordination requirements.
  - l. Notation of dimensions established by field measurement.
2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

## **2.2 INFORMATIONAL SUBMITTALS**

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  1. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  2. Test and Inspection Reports: Comply with requirements in Division 1 Section 01 4000 - Quality Requirements.
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- D. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- E. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- F. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- G. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- H. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."
- I. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  1. Preparation of substrates.
  2. Required substrate tolerances.
  3. Sequence of installation or erection.
  4. Required installation tolerances.
  5. Required adjustments.
  6. Recommendations for cleaning and protection.
- J. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
  1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.

4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- K. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

### **PART 3 - EXECUTION**

#### **3.1 CONTRACTOR`S REVIEW**

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor`s approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### **3.2 ENGINEER`S ACTION**

- A. General: Engineer will not review submittals that do not bear Contractor`s approval stamp and will return them without action.
  1. Review of submittals by Engineer is only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.
  2. Review of submittals by Engineer is not for purpose of determining the accuracy and completeness of dimensions and quantities, or substantiating installation instructions.
- B. Re-submittal Review: Submittals marked as "Exceptions Noted – Resubmit" or "Resubmit" will be re-reviewed and stamped with an action stamp. Engineer will mark the stamp appropriately to indicate action taken. If the re-submittal is marked as "Exceptions Noted – Resubmit" or "Resubmit", the Owner will deduct the amount of the Engineer`s compensation for subsequent re-submittal review from the final payment to the Contractor as provided on the Bid Form.
- C. Action Submittals: Owner will review each submittal, make marks to indicate corrections or modifications required, and return it. Owner will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  1. No Exceptions Taken: Where submittal is marked "No Exceptions Noted", the Work covered by the submittal may proceed provided it complies with the Contract Documents.
  2. Make Corrections Noted: Where submittal is marked "Make Corrections Noted", the Work covered by the submittal may proceed provided it complies with both Engineer's notations and corrections on the submittal and the Contract Documents.
  3. Revise and Resubmit: Where the submittal is marked "Revise and Resubmit", the Contractor may not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise or prepare a new submittal according to Engineer's notations and corrections.
  4. Rejected: Where the submittal is marked "Rejected", the Contractor may not proceed with the Work covered by the submittal. Prepare a new submittal that complies with the Contract Documents.
  5. Reviewed for General Conformance Only: This response is for when the Engineer is a secondary reviewer to a third party, or Engineer's stamp will demonstrate the submittal was reviewed without providing direction to the submitting entity - because the primary reviewer makes the determination regarding the acceptance of that submittal. The language that would accompany this choice would be as follows: "Submittal was reviewed for general conformance to the project documents. Since

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Gresham Smith is a secondary reviewer to a subcontractor or third party, the acceptability of the submittal is determined by the Primary Reviewer, whose stamp also appears on the submittal. Based upon our review, we are returning this submittal [without comment.]

- 6. Submittal Not Reviewed: Where Gresham Smith receives an information submittal, or Gresham Smith receives a submittal we did not request, the Contractor is receiving no direction from Gresham Smith.
  
- D. Informational Submittals: Engineer will review each informational submittal and will not return it or may return it as a "Submittal Not Reviewed" as noted in the Section above or will return it with comments if it is non-responsive to requirements. Engineer has authority to designate portions of action submittals as informational.
  
- E. Partial submittals prepared for a portion of the Work will be reviewed only when use of partial submittals has received prior approval from Engineer.
  
- F. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
  
- G. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

ISSUED	DATE
ISSUED FOR BID	8/4/2025

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**END OF SECTION**

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**SECTION 40 0557.23 - POWERED ACTUATORS FOR PROCESS VALVES AND GATES**

**PART 1 GENERAL**

**1.1 SUMMARY**

A. Scope

1. This Section specifies electric actuators for gates and appurtenances, including Supplier field services and training.
2. In addition to field services, the Supplier shall review the mechanical layout and instrumentation Plans within the Contract Documents which relate to the equipment specified in this Section to familiarize themselves with the location and the set-up of the equipment specified and shall assure themselves that the equipment specified is appropriate for and coordinated with that which is shown on the Plans.

B. Definitions

1. Antifriction Bearing: The term "antifriction bearing" shall mean rolling element type bearing.
2. Open/Close: To move to the fully open or fully closed position. Open/Close actuators shall use 120volt control signal
3. Throttling: To move to the fully open or fully closed position, or to move to and maintain an intermediate position between fully open and fully closed in response to a manually initiated control.
4. Modulating: To move to the fully open or fully closed position, or to move to intermediate positions in response to a variable control signal. Modulating actuators shall use a 4 to 20mA control signal.

**1.2 QUALITY ASSURANCE**

A. Reference Codes and Standards

1. This Section contains references to the following documents. They are a part of this Section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this Section as if referenced directly. In the event of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there was no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced. In all cases, the effective version of the Georgia Building Code (GBC) at the time of Advertisement for Bids or Invitation to Bid shall be considered the building code in effect.

Reference	Title
ASTM A126	Standard Specification for Gray Iron Castings
AWWA C542	Electric Motor Actuators for Valves and Slide Gates
AWWA C560-21	Cast Iron Slide Gates
ISA-S75.02	Standard Control Valve Capacity Test Procedure
NEMA ICS2	Industrial Control Devices, Controllers and Assemblies

B. Unit Responsibility

1. The Supplier/Subcontractor shall cause equipment assemblies made up of two or more components to be provided as a working unit by the unit responsibility manufacturer, where specified. The unit

responsibility manufacturer shall coordinate selection, coordinate design, and shall provide all mechanical equipment assembly components such that all equipment components furnished under the specification for the equipment assembly, and all equipment components specified elsewhere but referenced in the equipment assembly specification, is compatible and operates reliably and properly to achieve the specified performance requirements. Unless otherwise specified, the unit responsibility manufacturer shall be the manufacturer of the driven component equipment in the equipment assembly. Agents, representatives or other entities that are not a direct division of the driven equipment manufacturing corporation shall not be accepted as a substitute for the driven equipment manufacturer in meeting this requirement.

2. The Supplier/Subcontractor shall ensure that all equipment assemblies provided for the project are products for which unit responsibility has been accepted by the unit responsibility manufacturer(s), where specified. Unit responsibility for related components in a mechanical equipment assembly does not require or obligate the unit responsibility manufacturer to warranty the workmanship or quality of component products not manufactured by them.

C. Factory Testing

1. Factory Testing shall include, at the minimum, all standard tests recommended by the Supplier and AWWA C542, Section 5.3, Performance Tests.
2. Factory testing frequency shall be not less than one per lot of up to 100 units (1 percent).
3. Test certifications shall be submitted.

### **1.3 ENVIRONMENTAL CONDITIONS**

- A. Equipment in this Section shall be subjected to raw wastewater and hydrogen sulfide gasses typical of a wastewater plant's headworks.
- B. Furnish actuators conforming to the requirements specified in the Actuator Schedule
- C. Equipment Tag: as specified in the Actuator Schedule.
- D. Actuator Enclosure, NEMA Type: Enclosure requirements for actuators are specified by NEMA enclosure type.
- E. Maximum Pressure Differential: Pressure drop across each gate is specified for the purpose of actuator and gear box sizing.
- F. Open/Close Time: The open/close time refers to the time required for the gate to travel from full closed to full open. Open/close times are based on continuous operation of the actuator. Entries in this column are minimum values. Configure the actuator to provide an open/close time greater than the value listed in this column. Actuators that include programmed stops or steps are not acceptable.
- G. Fail Position: Fail position indicates the position that the actuator will default to upon loss of electric, pneumatic, or hydraulic power supply for control of the actuator:
  1. Closed. (Fail Closed) Configure actuator to close upon loss of electric, pneumatic, or hydraulic power supply for control of the gate.
  2. Open. (Fail Open) Configure actuator to open upon loss of electric, pneumatic, or hydraulic power supply for control of the gate.
  3. Last. (Fail Last Position) Configure actuator to remain in the position last held by the actuator prior to loss of electric, pneumatic, or hydraulic power supply for control of the gate.
- H. Voltage: This column specifies the supply power voltage and number of phases for the power supply electric motor actuators. Provide actuators for operation with the specified power supply voltage; 480 Volt actuators shall be 3 phase, while 120 Volt actuators shall be single phase.

- I. Maximum Power Demand: This column specifies the maximum amperage rating for the electric power supply to the actuator. Provide actuators with electric power requirements that do not exceed the specified amperage rating listed in this column.
- J. Remote Control Station: This column specifies which actuators are to be furnished with a Remote Control Station. If a check mark () appears in the schedule, furnish the associated actuator with a remote control station, configured as specified on the Drawings.

#### **1.4 SUBMITTALS**

- A. Preconstruction/Action Submittals: The following minimum submittals shall be submitted prior to construction of this element of the Work in accordance with Section 01 3300 - Submittal Procedures.
  - 1. A copy of this Section, with addendum updates included, and all referenced and applicable Sections, with addendum updates included, with each paragraph check-marked to indicate Specification compliance or marked to indicate requested deviations from Specification requirements or those parts which are to be provided by the Contractor or others shall be provided. Check marks () shall denote full compliance with a paragraph as a whole.

If deviations from the Specifications are indicated, and therefore requested, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations.

The remaining portions of the paragraph not underlined shall signify compliance with the Specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the requirements of the Specification shall be cause for rejection of the entire submittal and no further submittal material will be reviewed.
  - 2. Supplier's information and catalog data showing compliance with this Section and a full description of the product. The product data shall include control gate schedule in accordance with this Section, as well as its respective gate specification section.
  - 3. A copy of the control diagrams and process and instrumentation diagrams shown on the Plans that apply to the equipment in this Section marked to show specific changes necessary for the supplied equipment. If no changes are required, the corresponding drawings shall be marked "No Changes Required."
  - 4. Operations and Maintenance Manuals and Data.
  - 5. Spare parts listing in accordance with Section 01 7823 - Operations and Maintenance Data.
  - 6. Application software and complete software manuals for programming field bus master station and gate operator controllers.
  - 7. Mounting adapter Shop Drawings.
  - 8. Mounting adapter design calculations
  - 9. Supplier storage and installation requirements
  - 10. Factory Test Reports
- B. Informational Submittals: The following minimum informational submittals shall be submitted in accordance with the timing requirements specified in these Contract Documents, prior to Substantial Completion and in accordance with Section 01 3300 - Submittal Procedures.
  - 1) Operation and maintenance (O&M) manuals and data shall be provided in accordance with the following and shall be provided prior to delivery of the equipment:
    - a. Each electronic copy shall include all information included in the corresponding printed copy. Cover page shall include the following:
      - 1) Title: "OPERATING AND MAINTENANCE INSTRUCTIONS".
      - 2) Name or type of material or equipment covered in the manual.
      - 3) Project name and building or structure name.

- b. Include drawings, diagrams, and illustrations up to and including 11 inches by 17 inches in size.
- c. Clearly mark to indicate all components of materials and equipment on catalog pages for ease of identification. In standard documents, indicate options furnished or cross out inapplicable content.
- d. Table of Contents:
  - 1) Provide table of contents in each operations and maintenance manual.
  - 2) For ease of identification, each manufacturer's brochure and manual shall be appropriately labeled with the equipment name and equipment number as it appears in the project manual. The information shall be organized in the binders in numerical order by the equipment numbers assigned in the project manual.
- e. File Format:
  - 1) Files shall be in "portable document format" (PDF). Files shall be electronically searchable; the use of scanned pages is to be minimized and is subject to Engineer approval.
  - 2) Within each file, provide bookmarks for the following:
    - i. Each chapter and subsection listed in the corresponding printed copy of the document's table of contents.
    - ii. Each figure.
    - iii. Each table.
    - iv. Each appendix.
  - 3) Factory Test Reports
  - 4) Certificate of proper installation

## **1.5 WARRANTIES**

- A. All Contractors, subcontractors and suppliers shall warrant to the County that all materials and equipment furnished under this contract will be new unless otherwise specified, and the Contractors, subcontractors and suppliers further warrant that all work will be of good quality, free from faults and defects, and in conformance with the Contract Documents. The warranty set forth in this paragraph shall survive final acceptance of the work.
- B. All major pieces of equipment shall be warranted for a period of not less than two (2) years by the manufacturer of the equipment and products. Additional warranty durations may be outlined within the specifications.
- C. Warranty term shall initiate after the startup of each gate indicated on the MCPI (Manufacturer's Certificate of Proper Installation).

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable manufacturer:
  - 1. Rotork

### **2.2 MATERIALS**

- A. Materials specified are considered the minimum acceptable for the purposes of durability, strength, and resistance to erosion and corrosion. The Contractor may propose alternative materials for the purpose of providing greater strength or to meet required stress limitations. However, alternative materials must provide at least the same qualities as those specified for the purpose. If alternatives are proposed, the proposals shall be accompanied with documentation supporting the claimed superiority of the proposed

substitutions. The Engineer shall be the sole decider in the equivalency of alternative materials of construction.

- B. Each gate body or actuator shall have cast thereon the word "OPEN," an arrow indicating the direction to open, and flow direction arrows. "OPEN" decals may be provided on the actuator handwheel in lieu of being cast into the handwheel.

### **2.3 POWERED ACTUATORS**

- A. Actuators shall be sized to produce an operating torque equal to twice the maximum required gate operating torque under the specified flow conditions.
- B. Actuators must be furnished with a Pakscan card and have the ability to connect to the plant's existing Pakscan loop.
- C. Electric Actuators
  - 1. Gate actuators shall be supplied as a complete assembly that includes a self-contained, electric actuator. No separate enclosures or interconnecting cable assemblies shall be required. Unless otherwise specified, electric actuators shall be provided in accordance with the following requirements.
  - 2. Mounting: The gate must be mounted based on specific field conditions. Different actuators may require different orientation depending on where the existing actuator pedestals are located. To be verified by contractor prior to submittals.
  - 3. Motor:
    - a. Actuator motors shall be heavy duty type, specifically designed for gate actuator service. The motor shall be an integral part of the actuator, designed specifically for gate actuator applications. It shall be a low inertia high torque design, class F insulated with a class B temperature rise giving a time rating of 15 minutes at 40°C (104°F) at an average load of at least 33% of maximum gate torque. Temperature shall be limited by Thermistors, which allow digital control of motor temperature, embedded in the motor end windings and integrated into its control. Electrical and mechanical disconnection of the motor should be possible without draining the lubricant from the actuator gearcase.
    - b. Suitable for use with 460 volt, 3-phase, 60-Hertz power with +/- 10% voltage fluctuation.
    - c. Enclosure as specified below and in the Actuator Schedule.
    - d. Four conduit openings.
  - 4. Enclosure:
    - a. Motor and electrical enclosures shall be rated for the application and location specified: Actuators shall be o-ring sealed, watertight to IP66/IP68, NEMA 4X, 6 or 7. The motor and all other internal electrical elements of the actuator shall be protected from ingress of moisture and dust when the terminal cover is removed for site for cabling, the terminal compartment having the same ingress protection rating as the actuator with the terminal cover removed.
    - b. Enclosure must allow for temporary site storage without the need for electrical supply connection.
    - c. All external fasteners shall be plated stainless steel. The use of un-plated stainless steel or steel fasteners is not permitted.
    - d. The actuator shall function normally at temperatures of -40 to 158 degrees F, 0-99 % humidity, and withstand short temperature excursions 10% above the rated temperature with no permanent damage to the unit.
  - 5. Disconnect Switch:
    - a. Actuator shall be provided with a lockable, heavy-duty, nonfused-disconnect switch or circuit breaker that is remotely mounted. Integral/actuator mounted disconnects may be allowable provided the switch is accessible and must be lockable. See Plans and Div. 26 for coordination.

6. Gearing:
  - a. Worm Gears shall be constructed in accordance AWWA C517 and shall be IP68 rated continuous duty to 50ft. Test certificates, signed by chief engineer of gear operator supplier, must be supplied showing full compliance to AWWA C504/C517.
  - b. Actuators shall be enclosed in a ductile iron, cast Iron or cast aluminum housing with a paint primer and two-part polyurethane coating for corrosion resistance, housing with outboard seals to protect the bearings and other internal components. The actuator shaft and the quadrant shall be supported on permanently deep groove ball bearings.
  - c. Input shaft and fasteners shall be made of stainless steel. Gears shall be efficiency optimized 3 stage gear reduction type.
  - d. Arcor coated steel removable and repositionable drive sleeve. Coating shall be in bore and keyway to allow for continuous submersion.
  - e. Amercoat 880 glass flake paint or Approved Equal, suitable for corrosive or heavy wear environment.
  - f. Deep groove ball bearings to support the worm shaft
  - g. Adjustable travel stops
  - h. Ductile Iron or Cast Iron Gear Case
  - i. 316 Stainless Steel or coated cast aluminum Position Indicator
  - j. Arcor coated steel Input Shaft machined from one solid piece of metal.
  - k. Externally adjustable open and closed position stops shall be provided if recommended by the manufacturer. The adjustable closed position stop shall be used to set closing torque and provide adjustment to compensate for change in pressure differential or flow direction. The gearing shall be of the locking design to prevent gate loads from backwinding the actuator. Gears shall incorporate the use of backwinding protection to prevent undesired reverse rotation of the gear train at the extents (i.e. fully closed position) of travel when holding a residual applied torque.
  - l. Gears shall have a two-year warranty from date of shipment and shall have a metal tag containing a serial number, ratio; number of turns shall be riveted to the gear for future identification
  - m. The stem nut shall be fabricated from high tensile strength bronze and shall be the two-piece type, when possible. It shall be possible to remove the stem nut from rising stem actuators from the top without removing the actuator from the gate, disconnecting any electrical wiring, or disassembling any of the gearing. All gearing shall be designed to withstand a 100 percent overload.
7. Local Controls
  - a. The actuator shall incorporate local controls for Open, Close and Stop and a Local/Stop/Remote mode selector switch lockable in any one of the following three positions: local control only, stop (no electrical operation), remote control plus local stop only. It shall be possible to select maintained or non-maintained local control.
  - b. The local controls shall be arranged so that the direction of gate travel can be reversed without the necessity of stopping the actuator.
  - c. The local controls and display shall be rotatable through increments of 90 degrees to suit gate and actuator orientation.
  - d. Local controls shall be accessible from the operating floor elevation or at grade. If the actuator and its integral controls are more than 6 feet above operating floor, a remote mounted, local control station shall be provided, located at 5 feet above operating floor at a location approved by the Engineer.
8. Torque and Limits
  - a. Torque and turns limitation to be adjustable as follows
    - 1) Position setting range – multi-turn: 2.5 to 8,000 turns, with resolution to 7.5 deg. of actuator output.
    - 2) Position setting range – direct drive part turn actuators: 90° +/-10°, with resolution to 0.1 deg. of actuator output.

- 3) Torque setting: 40% to 100% rated torque.
  - b. Position measurement – Absolute position measurement should be incorporated within the actuator. The technology must be capable of reliably measuring position even in the case of a single fault. The design must be simple with the minimum amount of moving parts (no more than 5). Technologies such as LEDs or potentiometers for position measurement are considered unreliable and therefore not preferred.
  - c. Measurement of torque shall be from direct measurement of force at the output of the actuator. Methods of determining torque-using data derived from the motor such as motor speed, current, flux etc. are not acceptable
  - d. A means for automatic “torque switch bypass” to inhibit torque off during gate unseating and “latching” to prevent torque switch hammer under maintained or repeated control signals shall be provided.
  - e. The electrical circuit diagram of the actuator should not vary with gate type remaining identical regardless of whether the gate is to open or close on torque or position limit.
9. Manual Actuator:
- a. Electric actuators shall be provided with a handwheel for manual operation. The handwheel shall not rotate during motor operation nor shall a locked motor prevent manual operation. Motor or manual selection shall be accomplished by a positive declutching knob or lever which will disengage the motor and motor gearing mechanically but not electrically. Prohibit manual and motor simultaneously operation. Hand operation shall not require more than 100 pounds of rim effort at maximum torque.
10. Fail-Safe Action - Upon loss of primary power, the actuators shall fail in last position, remaining locked in place until power is restored or manual operation is engaged. Upon loss or discontinuation of control signal, the actuator shall be capable of failing and locking fully open, fully closed, or in last position. Actuators that must fail in either a closed or open position shall be provided with uninterruptable power supply (UPS) if required.
11. Hammer Blow Device:
- a. Electric actuators shall be provided with a built-in lost-motion device that allows sufficient travel of the worm gear, prior to engaging the stem nut, for the motor to reach full speed. This action shall impart a "hammer blow" to start the gate in motion in either direction. The load shall be shared equally by two lugs cast integrally on the drive sleeve.
12. Conduit Openings:
- a. Electric actuators shall be provided with the largest available: power conduit opening; control conduit opening; and instrument conduit opening.
13. Remote Gate Position and Status Indication
- a. Four contacts shall be provided which can be selected to indicate any position of the gate. Provision shall be made for the selection of a normally closed or open contact form. Contacts shall maintain and update position indication during handwheel operation when all external power to the actuator is isolated.
    - 1) The contacts shall be rated for 5mA to 5A, 120V AC, 30V DC.
  - b. As an alternative to providing gate position indication any of the four above contacts shall be selectable to signal one of the following
    - 1) Gate opening, closing or moving
    - 2) Thermostat tripped, lost phase
    - 3) Motor tripped on torque in mid travel, motor stalled
    - 4) Remote selected
    - 5) Actuator being operated by handwheel
    - 6) Actuator fault
  - c. Provision shall be made in the design for an additional eight contacts having the same functionality.

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- d. A configurable monitor relay shall be provided as standard, which can be used to indicate either Availability or Fault. The relay should be a spring return type with a Normally Open / Normally Closed contact pre-wired to the terminal bung.
  - e. The Monitor (availability or fault) relay, being energized from the control transformer will de-energize under any one or more the following conditions: Loss of main or customer 24V DC power supply
    - 1) Actuator control selected to local or stop
    - 2) Motor thermostat tripped
    - 3) Actuator internal fault
    - 4) Loss of main or customer 24V DC power supply
    - 5) Motor thermostat tripped
    - 6) Actuator internal fault
  - f. Provision shall be made in the design for the addition of a contactless transmitter to give a 4-20mA analogue signal corresponding to gate travel and / or torque for remote indication when required. The transmitter will auto range to the set limits.
14. Local Position Indication
- a. The actuator display shall include a dedicated numeric/symbol digital position indicator displaying gate position from fully open to fully close in 0.1% increments. Gate closed and open positions shall be indicated by symbols showing gate position in relation to the pipework to ensure that gate status is clearly interpreted. With mains power connected, the display shall be backlit to enhance contrast at all ambient light levels and shall be legible from a distance of at least 5m (16ft).
  - b. Red, green, and yellow LEDs corresponding to open, closed and intermediate gate positions shall be included on the actuator display when power is switched on. The yellow LED should also be fully programmable for on/off, blinker and fault indication. The digital display shall be maintained and updated during handwheel operation when mains power to the actuator is isolated.
  - c. The actuator display shall include a fully configurable dot-matrix display element with a minimum pixel resolution of 168 x 132 to display operational, alarm, configuration and graphical datalogger information. The text display shall be selectable between English and other languages such as: Spanish, German, French, and Italian. Provision shall be made to upload a different language without removal of any covers or using specialized tools not provided as standard with the actuator.
  - d. Provision shall be made for the addition of an optional environmental cover to protect the display from high levels of UV radiation or abrasive materials.
  - e. The local controls and display shall be rotatable through increments of 90 degrees to suit gate and actuator orientation.
  - f. Actuators must have the capability of a "mirror image" of the face of the actuator Remote Hand Station. (RHS) shall be suitable for remote connection to an electric actuator up to 100m distance, include local control facilities, a backlit LCD display and terminals for communication highway connection to the host actuator housed within a self-contained, double-sealed enclosure. In order to maintain the integrity of the enclosure, setting of the actuator torque levels, position limits and configuration of the indication contacts etc. shall be carried out without the removal of any covers via a Bluetooth® wireless interface. Or by use of the actuators, password protected, local control knobs, which allow all Bluetooth systems to be turned off to prevent cyber access of the actuator. A simple remote-control station with control knobs and lights shall be an acceptable option.
15. Integral Starter and Transformer
- a. The reversing starter, control transformer and local controls shall be integral with the gate actuator, suitably housed to prevent breathing and condensation. The starter shall be suitable for 600 starts per hour and of rating appropriate to motor size. The controls supply transformer shall be fed from two of the incoming three phases and incorporate overload protection. It shall have the necessary tapping and be adequately rated to provide power for the following functions:

- 1) Energizing of the contactor coils.
  - 2) 24V DC or 110V AC output for remote controls (maximum 5WVA)
  - 3) Supply for all the internal electrical circuits shall be optically isolated from any DCS control signal
16. Remote Control Facilities
- a. The necessary control, wiring and terminals shall be provided integral to the actuator enclosure. Open and close external interlocks shall be made available to inhibit local and remote gate opening / closing control. It shall be possible to configure the interlocks to be active in remote control only.
  - b. Remote control signals fed from an internal 24V DC (or 110VAC) supply and/or from an external supply between 20V and 60 VDC or 40V and 120VAC, to be suitable for any one or more of the following methods of control
    - 1) Open, Close and Stop control.
    - 2) Open and Close maintained or "push to run" (inching) control.
    - 3) Overriding Emergency Shut-down to close (or open) gate from a normally closed or open contact.
    - 4) Two-wire control, energize to close (or open), de-energize to open (or close).
  - c. Additionally, provision shall be made for a separate input to prevent any unwanted electrical operation
  - d. It shall be possible to reverse gate travel without the necessity of stopping the actuator. The motor starter shall be protected from excessive current surges during rapid travel reversal. The internal circuits associated with the remote control and monitoring functions are to be designed to withstand simulated lightning impulses of up to 2kV.
17. Monitoring Facilities
- a. Facilities shall be provided for monitoring actuator operation and availability as follows:
    - 1) Actuator text display indication of the following status/alarms
      - a) Closed Limit, open limit, moving open, moving closed, stopped
      - b) Torque trip closing, torque trip opening, stalled
      - c) ESD active, interlock active
      - d) Thermostat trip, phase lost, 24V supply lost, Local control failure
      - e) Configuration error, Position sensor failure, Torque sensor failure
      - f) Battery low, power loss inhibit
    - 2) Integral datalogger to record and store the following operational data
      - a) Opening last /average torque against position
      - b) Closing last /average torque against position
      - c) Opening motor starts against position
      - d) Closing motor starts against position
      - e) Total open/closed operations
      - f) Maximum recorded opening and closing torque values
      - g) Event recorder logging operational conditions (gate, control and actuator)
  - b. The datalogger shall record relevant time and date information for stored data.
  - c. Datalogger data shall be accessed via non-intrusive Bluetooth® communication and data displayed on the local LCD. Sufficient standard intrinsically safe tools shall be provided for downloading datalogger and actuator configuration files from the actuators and subsequent uploading to a PC. The actuator supplier shall supply PC software to enable datalogger files to be viewed and analyzed.

18. Wiring and Termination
  - a. Internal wiring shall be tropical grade PVC insulated stranded cable of appropriate size for the control and 3-phase power. Each wire shall be clearly identified at each end. The terminals shall be embedded in a terminal block of high tracking resistance compound.
  - b. The terminal compartment shall be separated from the inner electrical components of the actuator by means of a watertight seal and shall be provided with a minimum of 3 threaded cable entries with provision for an additional extra conduit entry. Use of composite nonmetallic materials for compartment access covers, shall not be allowed.
  - c. All wiring supplied as part of the actuator to be contained within the main enclosure for physical and environmental protection. External conduit connections between components are not acceptable.
  - d. A durable terminal identification card showing a plan of terminals shall be provided attached to the inside of the terminal box cover indicating
    - 1) Serial number
    - 2) External voltage values
    - 3) Wiring diagram number
    - 4) Terminal layout
  - e. The code card shall be suitable for the contractor to inscribe cable core identification alongside terminal numbers.
19. Commissioning Kit
  - a. Each actuator shall be supplied with a start-up kit comprising installation instruction manual, electrical wiring diagram and cover seals to make good any site losses during the commissioning period. In addition, sufficient actuator commissioning tools shall be supplied to enable actuator set up and adjustment during gate/actuator testing and site installation commissioning.
20. Performance and Test Certificate
  - a. Each actuator must be performance tested and individual test certificates shall be supplied free of charge. The test equipment should simulate a typical gate load, and the following parameters should be recorded.
    - 1) Current at maximum torque setting
    - 2) Torque at max. torque setting
    - 3) Flash test voltage
    - 4) Actuator output speed or operating time.
  - b. In addition, the test certificate should record details of specification such as gear ratios for both manual and automatic and second stage gearing if provided, drive closing direction, wiring diagram number.
21. On-Site Start Up Assistance
  - a. Prior to start up, contractor shall inform service techs of all requirements of the certificate of proper installation. All forms and documentation required for the certificate of proper installation shall be given to service tech prior to start up. Minimum of 1 day per two actuators. Start-up must be performed by a direct factory tech that resides in the state of Georgia.
22. Acceptable Suppliers
  - a. Rotork

## **2.4 ACTUATOR APPURTENANCES**

- A. Identification Tags
  1. Each powered actuator shall be provided with a 16-gage stainless steel identification tag that bear the equipment description and tag number of the actuator. Characters shall be 1/4 inch, die-stamped. Identification tags shall be securely attached to the actuator in a readily visible location using stainless steel screws or wire.

## **2.5 COATINGS**

- A. Provide complete multi-coat systems formulated and recommended by the manufacturer for the applications indicated.
- B. Coatings of actuators and actuator pedestal shall be factory-applied and provided as follows or approved equal recommended by manufacturer.
- C. Actuator:
  - 1. Manufacturer's standard.
- D. Actuator Pedestal:
  - 1. Blast clean per SPC-SP10
  - 2. Paint two coats (4mils/ct) Tnemec Series 69
  - 3. Polyamide Epoxy & one coat (3 mils) Tnemec Series 74
  - 4. Polyurethane Enamel TDFT – 11 mils minimum
  - 5. Color: Gray

## **PART 3 EXECUTION**

### **3.1 COATINGS**

- A. Any coatings that may have been damaged during shipping must be repaired by the Contractor prior to handing equipment off to Owner/Others.

### **3.2 SHIPMENT AND STORAGE**

- A. Contractor to ship and coordinate delivery with the Owner. Unloading and storage to be performed by others.
- B. Contractor shall provide Owner with detailed recommendations and instructions for equipment storage.

### **3.3 FACTORY TESTING**

- A. All motorized actuators shall be factory tested for both operation and contact limits prior to shipment to the jobsite. The manufacturer shall provide a written certification of the test results for each actuator tested.

### **3.4 FIELD QUALITY CONTROL**

- A. Field Testing:
  - 1. Field testing shall be performed by the installation contractor with a manufacturer's representative present.
- A. Startup Period
  - 1. Contractor must provide prior notice before field visit, no less than 14 (fourteen) days before the commencement of any testing activity.
  - 2. Startup of the system requires the coordinated operation by the Contractor, subcontractors, Owner's operating personnel, and manufacturer's representatives.
  - 3. Startup of system or any portion thereof shall be considered complete when, in opinion of Owner and Engineer, system or designated portion has operated in manner intended for 30 continuous days without significant interruption. This period is in addition to training, functional, or performance test periods.
  - 4. Significant Interruption: May include any of the following events:

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- a) Failure of Contractor to provide and maintain qualified onsite startup personnel as scheduled.
  - b) Failure to meet specified performance for more than 2 consecutive hours.
  - c) Failure of any critical equipment or unit process that is not satisfactorily corrected within 5 hours after failure.
  - d) Failure of any noncritical equipment or unit process that is not satisfactorily corrected within 8 hours after failure.
  - e) As may be determined by Owner.
5. A significant interruption will require the startup then in progress to be stopped and restarted after corrections are made.
    - a) The startup period of 30 continuous days must start over after a significant interruption and at each subsequent significant interruption occurs, as determined by the Owner.
  6. Gates may need to be started up at different dates, depending on the installation progress and shutdown schedules.
- B. Certification
1. Upon completion of startup, the Contractor must provide a Manufacturer's Certificate of Proper Installation (MCPI) from all equipment manufacturers' factory representatives. MCPI must address the equipment installation's compliance with manufacturer's requirements and note any problems noted that may affect the warranty, operation or longevity of the equipment. Written certification must indicate that tests were made in accordance with the manufacturer's recommendations, that the test and start-up operation has been satisfactory completed and that the equipment is fully operational under design requirements. Written certification must be filed with the Engineer on the manufacturer's stationary.

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**PART 4 EQUIPMENT SCHEDULE**

**4.1 ACTUATOR SCHEDULE**

**SECTION A**

Tag Number	Operator Type	Max Open/ Close Travel (seconds)	Maximum Differential Pressure	NEMA Type	Area Hazard Classification	V/Phase	Maximum Power Demand, amps	Remote Control Station Required
23:PG-37	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-38	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-39	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-40	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-47	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-48	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-68	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y
23:PG-70	Open/Close	200	5'	4X	Cl 1, Div 2	460/3	3.7	Y

**SECTION B**

Tag Number	Operator Type	Max Open/ Close Travel (seconds)	Maximum Differential Pressure	NEMA Type	Area Hazard Classification	V/Phase	Maximum Power Demand, amps	Remote Control Station Required
37:SG-11	Open/Close	210	5'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-12	Open/Close	210	5'	4X	Cl 1, Div 2	460/3	4.9	Y

**SECTION C**

Tag Number	Operator Type	Max Open/ Close Travel (seconds)	Maximum Differential Pressure	NEMA Type	Area Hazard Classification	V/Phase	Maximum Power Demand, amps	Remote Control Station Required
21:SG-1	Open/Close	500	57'	4X	Cl 1, Div 2	460/3	44.5	Y
21:SG-2	Open/Close	500	57'	4X	Cl 1, Div 2	460/3	44.5	Y
21:SG-3	Open/Close	500	57'	4X	Cl 1, Div 2	460/3	44.5	Y

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Tag Number	Operator Type	Max Open/ Close Travel (seconds)	Maximum Differential Pressure	NEMA Type	Area Hazard Classification	V/Phase	Maximum Power Demand, amps	Remote Control Station Required
21:SG-4	Open/Close	360	47'	4X	Cl 1, Div 2	460/3	85	Y
21:SG-5	Open/Close	360	47'	4X	Cl 1, Div 2	460/3	85	Y
21:SG-6	Open/Close	360	47'	4X	Cl 1, Div 2	460/3	85	Y
21:SG-7	Open/Close	360	47'	4X	Cl 1, Div 2	460/3	85	Y
25:SG-1	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
25:SG-2	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
25:SG-3	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
25:SG-4	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
25:SG-5	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
25:SG-6	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
25:SG-7	Open/Close	150	30'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-3	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-4	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-6	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-7	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-8	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-9	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y
37:SG-10	Open/Close	210	25'	4X	Cl 1, Div 2	460/3	4.9	Y

ISSUED	DATE
ISSUED FOR BID	8/4/2025

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**END OF SECTION**

**SECTION 40 0559.21 –ALUMINUM SLIDE GATES AND SCHEDULE**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes:
  1. Fabricated aluminum slide gates for control of raw wastewater flows at a municipal wastewater treatment plant.
  2. Each gate consists of a gate, frame, guides, operators, and all specified appurtenances.
  3. Gate frame bolt patterns shall be adequate for the existing concrete wall clearances.

**1.2 RELATED SECTIONS**

- A. This section contains specific references to the following related sections.
  1. Section 01 6000 - Product Requirements
  2. Section 01 7823 - Operation and Maintenance Data
  3. Section 01 8000 - Warranties
  4. Section 40 0557.23 - Powered Actuators for Process Valves and Gates

**1.3 REFERENCES**

- A. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
- B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Die Sheet and Plate
ASTM D2000	Rubber Products in Automotive Applications
AWWA C562-12	Fabricated Aluminum Slide Gates

**1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Unit Responsibility
  1. The Supplier/Subcontractor shall cause equipment assemblies made up of two or more components to be provided as a working unit by the unit responsibility manufacturer, where specified. The unit responsibility manufacturer shall coordinate selection, coordinate design, and shall provide all mechanical equipment assembly components such that all equipment components furnished under the specification for the equipment assembly, and all equipment components specified elsewhere but referenced in the equipment assembly specification, is compatible and operates reliably and properly to achieve the specified performance requirements. Unless otherwise specified, the unit responsibility manufacturer shall be the manufacturer of the driven component equipment in the equipment assembly. Agents, representatives or other entities that are not a direct division of the driven

equipment manufacturing corporation shall not be accepted as a substitute for the driven equipment manufacturer in meeting this requirement.

2. The Supplier/Subcontractor shall ensure that all equipment assemblies provided for the project are products for which unit responsibility has been accepted by the unit responsibility manufacturer(s), where specified. Unit responsibility for related components in a mechanical equipment assembly does not require or obligate the unit responsibility manufacturer to warranty the workmanship or quality of component products not manufactured by them.

## **1.5 SUBMITTALS**

A. Preconstruction/Action Submittals: The following minimum submittals shall be submitted prior to construction of this element of the Work in accordance with Section 01 3300 - Submittal Procedures.

1. A copy of this Section, with addendum updates included, and all referenced and applicable Sections, with addendum updates included, with each paragraph check-marked to indicate Specification compliance or marked to indicate requested deviations from Specification requirements or those parts which are to be provided by the Supplier/Subcontractor or others shall be provided. Check marks (☐) shall denote full compliance with a paragraph as a whole.

If deviations from the Specifications are indicated, and therefore requested, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations.

The remaining portions of the paragraph not underlined shall signify compliance with the Specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the requirements of the Specification shall be cause for rejection of the entire submittal and no further submittal material will be reviewed.

2. For all equipment specifications, a copy from the Plans of the control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this Section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the diagrams shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
3. Certificate of Unit Responsibility attesting that the Supplier/Subcontractor has assigned unit responsibility in accordance with the requirements of this Section. No other submittal material will be reviewed until the certificate has been received and found to be in conformance with these requirements.
4. Equipment literature, cut-sheets and data-sheets for all equipment supplied under this Section.
5. Performance and structural calculations demonstrating conformance to this specification and AWWA C562 in regard to safety factors for frames, gate plates, stems, and operators or actuators.
6. Shop Drawings for the products supplied under this Section, including dimensional drawings for the products supplied under this Section and dimensional information for connection points and sizes for piping, electrical, instrumentation, water supply, and structural connections.
  - a. Include plan, cross-section, and details showing proposed mounting for each size and typical application of gate.
  - b. For all existing gates to be replaced, the contractor shall also field verify the dimensions of all existing openings and required and mounting type. This information shall be provided along with the Shop Drawings.
7. Weights for the provided equipment and major components.
8. Information regarding the materials of construction for all equipment supplied under this Section.
9. Shop painting systems, including descriptive technical catalog literature and specifications.
10. Anchorage calculations demonstrating compliance with the requirements of Section 01 7324 - Design Requirements for Non-Structural Components and Non-Building Structures.
11. Spare parts list.
12. Warranty information.
13. Operation and maintenance information in accordance with Section 01 7823 - Operation and Maintenance Data.
14. Special shipping, storage and protection, and handling instructions.
15. Installation instructions.

16. Electrical elementary diagrams, internal connection diagrams, and external interconnection diagrams. Connection diagrams shall be the conventional type with lines showing point-to-point wiring and must show terminals and devices as viewed by the electrician; wireless or wire schedule types are not acceptable.
  17. Catalog data on all ancillary electrical components, including limit switches and instruments.
  18. Installation instruction and procedures for the gates, mounting and support.
- B. Informational Submittals: The following minimum informational submittals shall be submitted in accordance with the timing requirements specified in these Contract Documents, prior to Substantial Completion and in accordance with Section 01 3300 - Submittal Procedures.
1. Operation and maintenance (O&M) manuals and data shall be provided in accordance with the following and shall be provided prior to delivery of the equipment:
    - a. Each electronic copy shall include all information included in the corresponding printed copy. Cover page shall include the following:
      - 1) Title: "OPERATING AND MAINTENANCE INSTRUCTIONS".
      - 2) Name or type of material or equipment covered in the manual.
      - 3) Project name and building or structure name.
    - b. Include drawings, diagrams, and illustrations up to and including 11 inches by 17 inches in size.
    - c. Clearly mark to indicate all components of materials and equipment on catalog pages for ease of identification. In standard documents, indicate options furnished or cross out inapplicable content.
    - d. Table of Contents:
      - 1) Provide table of contents in each operations and maintenance manual.
      - 2) For ease of identification, each manufacturer's brochure and manual shall be appropriately labeled with the equipment name and equipment number as it appears in the project manual. The information shall be organized in the binders in numerical order by the equipment numbers assigned in the project manual.
    - e. File Format:
      - 1) Files shall be in "portable document format" (PDF). Files shall be electronically searchable; the use of scanned pages is to be minimized and is subject to Engineer approval.
      - 2) Within each file, provide bookmarks for the following:
        - (a) Each chapter and subsection listed in the corresponding printed copy of the document's table of contents.
        - (b) Each figure.
        - (c) Each table.
        - (d) Each appendix.
  2. Factory Test Reports
  3. Certificate of Proper Installation

## **1.6 WARRANTY**

- A. All Contractors, subcontractors and suppliers shall warrant to the County that all materials and equipment furnished under this contract will be new unless otherwise specified, and the Contractors, subcontractors and suppliers further warrant that all work will be of good quality, free from faults and defects, and in conformance with the Contract Documents. The warranty set forth in this paragraph shall survive final acceptance of the work.
- B. All major pieces of equipment shall be warranted for a period of not less than two (2) years by the manufacturer of the equipment and products. Additional warranty durations may be outlined within the specifications.
- C. Warranty term shall initiate after the startup of each gate indicated on the MCPI (Manufacturer's Certificate of Proper Installation).

## **1.7 DELIVERY, STORAGE AND HANDLING**

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- A. Contractor to coordinate delivery dates and times with the Owner.
- B. Storage and Handling to be coordinated by Others.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Manufacturer's: Candidate manufacturers are listed below. The manufacturer's standard product may require modification to conform to specified requirements.
  - 1. Waterman
  - 2. Hydrogate
  - 3. Waco
  - 4. Approved Equal – Submit check marked specification showing compliance with specification or listing any deviations thereof.

**2.2 MATERIALS**

- A. Materials used for the construction of the equipment provided under this Section shall be as follows, refer to Volume 2 – Technical Specifications Exhibit B.2 – Original Gate Submittal Drawings for detailed breakdown.

Component	Material
Gate, guide and Frame	Aluminum: ASTM b-209 Alloy 6061-T6
Stem Connection and Operating Stems	ASTM A276 Type 304 Stainless Steel
Stem cover	Clear Plastic Butyrate Pipe
Rails and yokes	Aluminum: ASTM b-209 Alloy 6061-T6
Seal retainer Bar	ASTM A276 Type 316 Stainless Steel
Slide Seats/Seals and Bearing Strip	UHMW Polyethylene Plastic
Fasteners and anchor bolts	ASTM A276 Type 316 Stainless Steel, ASTM F-593 & 594 Type 316 Stainless Steel
Flush bottom and J-bulb seals	Neoprene Rubber, ASTM D-2000
Operator cranks or hand wheels	Cast aluminum or cast iron

- B. Materials specified are considered the minimum acceptable for the purposes of durability, strength, and resistance to erosion and corrosion. The Supplier/Subcontractor may propose alternative materials for the purpose of providing greater strength or to meet required stress limitations. However, alternative materials must provide at least the same qualities as those specified for the purpose. If alternatives are proposed, the proposals shall be accompanied with documentation supporting the claimed superiority of the proposed substitutions. The Engineer shall be the sole decider in the equivalency of alternative materials of construction.

**2.3 OPERATING AND DESIGN REQUIREMENTS**

- A. General:
  - 1. Gate manufacturer shall review the mechanical and structural layout drawings to familiarize themselves with the location and the setup of the equipment specified and shall assure themselves that the equipment specified is appropriate for and coordinated with what is shown on the contract drawings.
  - 2. The manufacturer shall also review the relevant electrical plan and one-line diagram and the relevant process and instrumentation diagram drawing to ensure that the contract drawings are appropriate and coordinated with the equipment and controls specified.

3. Contractor must ensure that the new gates will fit the existing wall and existing deck openings without need to modify the existing structure before installation.

**B. Design Conditions:**

1. Suitable for continuous exposure to wastewater and a marine environment.
2. Fluid temperature is expected to range from 50 degrees F to 100 degrees F.
3. Ambient temperatures are expected to range from 10 degrees F to 110 degrees F.
4. Wastewater may have high dissolved solids concentration and thus may be corrosive.

## **2.4 COMPONENTS**

**A. Frame and Guides**

1. Each frame shall be an integral unit or welded structural shapes at least 1/4 inch thick. Frames shall be designed for embedment in concrete or installation on the face of concrete walls as indicated on the Plans. Embedded frames shall be recessed so that the waterway is not obstructed.
2. The gate frame shall be made of formed plates or structural members creating the clear opening of the specified dimensions in a rigid one-piece unit. The mounting and bolting flange of the frame to the wall shall be separate and independent from the seating and sealing plane of the slide. The bottom of the frame will be of the flush invert type. Stresses in the frame under design head shall not exceed 20% of the ultimate tensile, compressive, and shear strength and 50% of the yield strength, whichever is less. Minimum material thickness of all members of the frame shall be 1/4 in (6mm).
3. The side guide frame sections shall be formed from one piece to contain and support the UHMW seat/seals, prevent leakage through the side frame, and shall be gusseted as required to meet the loading conditions imposed under the maximum design differential conditions. The guides shall be designed for maximum rigidity, having a weight of not less than 13 pounds per foot. The guides will be of sufficient length to support at least one half (1/2) the height of the slide, when the gate is fully open.
4. On self-contained gates, where the guides extend above the operating floor, they shall be sufficiently strong so that no further reinforcing will be required, excepting requirements for wind-loading, where applicable. The yoke to support the operating device shall be formed by members welded at the top of the guides. The arrangement of the yoke shall be such that the disc and stem can be removed without disconnecting the yoke.

**B. Slide**

1. Slides shall be at least 1/4 inch thick and shall be provided with welded stiffeners to limit deflection to 1/720 or 1/16 of an inch, whichever is less, under the maximum seating or unseating head indicated above. Slides shall have a minimum of two vertical stiffeners and these shall be welded to all of the horizontal stiffeners of the slide. The slide shall have surfaces to engage the guides for its full length. Slides shall be adequately reinforced to withstand, without permanent distortion, the maximum thrust which can be transmitted by the operating stem. Each slide shall have a clevis angles attached to the top of the slide, reinforced pocket or an internally threaded nut welded to the slide for connection of the stem. The pocket or nut shall be designed to withstand the maximum thrust which can be transmitted by the operating stem.

**C. Seals**

1. Seals shall be made of UHMWPE (ultra-high molecular weight polyethylene) and are the self-adjusting type. A continuous compression cord made of nitrile rubber (buna-N) shall ensure contact between the UHMWPE guide and the gate in all positions, J-Bulb seals are not allowed for side and top seals. The sealing system shall maintain efficient sealing in any position of the slide and allow the water to flow only in the opened part of the gate.
2. The bottom seal shall be made of resilient neoprene or EPDM set into the bottom member of the frame and shall form a flush-bottom, or a J-bulb seal as specified for the gate application. Seals held in place with adhesives or press fit into frames shall not be acceptable, seal shall be mechanically fastened to the frame.

**D. Stems**

1. Stems shall be made of 304 stainless steel and shall be a rising stem design, non-rising stem designs will not be allowed. In addition, the stem shall be equipped with stem guides spaced as required to

limit the length-radius of gyration of the stem ratio to 200 or less. The stem guide spacing and size shall be as recommended by the Supplier. The operating stem shall be of a size to safely withstand, without buckling or permanent distortion, the stresses induced by normal operating forces. In addition, the stem shall be designed to transmit in compression at least 2-1/2 times the rated output of the floor stand with a 40 pound effort on the crank or wheel. Stems of more than one section shall be joined by bronze or stainless-steel couplings threaded and keyed to the stems. All threaded and keyed couplings of the same size shall be interchangeable. All gates manually or electrically operated, shall be provided with adjustable stop nuts and stop collars on the stem-as required to prevent over-travel in either direction during manual operation.

2. Where electric-motor-driven actuators are used, the tension and compression design loads shall be those caused by 1.5 times the output thrust of the unit in the stalled motor condition. The tension design load shall not exceed one-fifth of the ultimate tensile strength of the stem material. The stem compression design load shall be less than the critical buckling load as determined by the Euler Column formula, where  $C = 2$ .

E. Stainless Steel

1. All stainless steel shall be pickled or use mechanical passivation in accordance with ASTM A380 at the mill before being shipped. Pickling shall produce a modest etch and shall remove all embedded iron and heat tint. After fabrication, pickled surfaces shall be subjected to a 24-hour water test or a ferroxyl test to detect the presence of residual embedded iron. All pickled and mechanically passivated surfaces damaged during fabrication including welded areas shall be repickled or passivated in accordance with ASTM A380 as needed to remove all traces of iron contamination. All stainless steel surfaces shall be adequately protected during fabrication, shipping, handling, and installation to prevent avoidable contamination from iron or carbon steel objects or surfaces.

## **2.5 OPERATORS**

A. Type designation and design requirements: Paragraph 2.3 Operating and Design Requirements.

B. Powered Gate Operators (Type III):

1. Electric motor actuators shall be in accordance with Section 40 0557.23 - Powered Actuators - 480V and AWWA C542 Electric Motor Actuators for Valves and Slide Gates most recent edition unless otherwise specified.
2. Gate operators shall be 480 volt, 3 phase, 60 hertz, NEMA 4X or NEMA 7 (See 2.03.B, Operating Requirements), Type EMTI operators as specified in Section 40 05 57.23 - Powered Actuators - 480V. Operator speed shall be approximately 12 inches/minute. The operator shall meet the requirements of AWWA C542, except as otherwise specified, and shall be designed to meet the operating requirements specified. The operator shall fail intermediate and maintain the gate's last position. Gate operator must be capable of adjusting the gate position to within 1/2" of the desired position. The Gate position must be relayed back to SCADA and be accurate to within 1/2". Handwheel shall be located 36 inches above the operating floor and shall be removable from the operator.
3. Where electric-motor-driven actuators are used, the tension and compression design loads shall be those caused by 1.5 times the output thrust of the unit in the stalled motor condition. The tension design load shall not exceed one-fifth of the ultimate tensile strength of the stem material. The stem compression design load shall be less than the critical buckling load as determined by the Euler Column formula, where  $C = 2$ .

C. Operator Mounting:

1. Pedestal, bench or wall bracket mounted as specified.
2. Pedestal type floor standards shall be the offset type or the standard type with wall mounting bracket.
3. Pedestal operators located at floor slab openings intended for future gate removal shall be installed on mounting plates that span the slab openings and attach directly to the concrete. Coordinate mounting plate with slab opening cover and provide dielectric isolation between mounting plate and slab opening cover if required.
4. Pedestals, wall bracket or bench stands shall be cast iron, aluminum, or stainless steel. Bench stands and yokes shall be the same materials as the gate frame

5. The head of the pedestal or bench stand operator shall have a solid bronze, internally threaded operating nut.
6. The operator shall be mounted on antifriction roller bearings.
7. Cranks and handwheels shall be removable from the operator.

## **2.6 COATINGS**

- A. Coating of components shall be factory-applied and provided in accordance to Exhibit B.

## **PART 3 - EXECUTION**

### **3.1 FACTORY TESTING**

- A. All wall mounted, four side sealing slide gates be factory tested for both operation and leakage (under design head) prior to shipment to the jobsite. The manufacturer shall provide a written certification of the test results for each gate tested.

### **3.2 FIELD QUALITY CONTROL**

- A. Field Testing:
  1. Field testing shall be performed by the installation contractor with a manufacturer's representative present.
  2. Field leakage tests shall be performed as specified in Section 6 of AWWA C561. The maximum allowable leakage rate shall be 0.10 gallon per minute per foot of sealing perimeter for the seating and unseating heads specified.  
Field leakage tests shall be conducted with no head on the effluent side of the gate being tested.

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**PART 4 EQUIPMENT SCHEDULE**

Equipment Tag Number	Gate Opening <sup>a</sup> size, inches	Frame <sup>b</sup> Type	Frame Mounting <sup>c</sup>	Opening <sup>d</sup> Direction	Bottom Seat <sup>e</sup>	Design head, feet <sup>i</sup>		Gate Operat or Type <sup>f</sup>	Remote Control Station Require d Y/N	Operator Mounting <sup>g</sup>	Include Enclosur e (Y/N) <sup>h</sup>
						Seating	Unseating				
23:PG-37 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-38 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-39 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-40 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-47 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-48 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-68 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y
23:PG-70 <sup>h</sup>	120 x 36	SC	F	D	X	5	5	III-2	Y	F	Y

<sup>a</sup> Gate opening size: Width by height.

<sup>b</sup> Frame type: SC = self-contained, NSC = non-self-contained.

<sup>c</sup> Frame mounting type: E = embedded-frame, F= face-mounted, S = surface-mounted, PF = Pipe Flange Mounted.

<sup>d</sup> Opening direction: U = upward, D – downward.

<sup>e</sup> Bottom seating: FB = flush bottom, X = J-bulb., FBE = embedded flush bottom

<sup>f</sup> Gate operator type: I = geared crank type, II = handwheel type, III = Motorized Actuator (Motorized Actuators to be NEMA 4X [Noted as-1] or NEMA 7 [Noted as -2]).

<sup>g</sup> Gate operator mounting: F = Frame mounted, O = Wall Pedestal With Bracket

<sup>h</sup> Odor enclosure – provide compatible materials with gate suitable to contain odors from the tank below. Properly enclose self-contained gate frames, and properly seal non-self contained gate tank penetrations.

<sup>i</sup> Measured from the invert

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ISSUED	DATE
ISSUED FOR BID	8/4/2025

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**END OF SECTION**

## SECTION 40 0559.23 – FABRICATED STAINLESS STEEL SLIDE GATES AND SCHEDULE

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes:
1. Fabricated stainless steel slide gates for control of raw wastewater flows at a municipal wastewater treatment plant.
  2. Each gate consists of a gate, frame, guides, operators, and all specified appurtenances.
  3. Gate frame bolt patterns shall match the existing thimbles, which shall be reused.

#### 1.2 RELATED SECTIONS

- A. This section contains specific references to the following related sections.
1. Section 01 6000 - Product Requirements
  2. Section 01 7823 - Operation and Maintenance Data
  3. Section 01 8000 - Warranties
  4. Section 40 0557.23 - Powered Actuators for Process Valves and Gates

#### 1.3 REFERENCES

- A. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
- B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM A126	Standard Specification for Gray Iron Castings
ASTM D2000	Rubber Products in Automotive Applications
AWWA C561	Fabricated Stainless Steel Slide Gates

#### 1.4 ADMINISTRATIVE REQUIREMENTS

- A. Unit Responsibility
1. The Supplier/Subcontractor shall cause equipment assemblies made up of two or more components to be provided as a working unit by the unit responsibility manufacturer, where specified. The unit responsibility manufacturer shall coordinate selection, coordinate design, and shall provide all mechanical equipment assembly components such that all equipment components furnished under the specification for the equipment assembly, and all equipment components specified elsewhere but referenced in the equipment assembly specification, is compatible and operates reliably and properly to achieve the specified performance requirements. Unless otherwise specified, the unit responsibility manufacturer shall be the manufacturer of the driven component equipment in the equipment

assembly. Agents, representatives or other entities that are not a direct division of the driven equipment manufacturing corporation shall not be accepted as a substitute for the driven equipment manufacturer in meeting this requirement.

2. The Supplier/Subcontractor shall ensure that all equipment assemblies provided for the project are products for which unit responsibility has been accepted by the unit responsibility manufacturer(s), where specified. Unit responsibility for related components in a mechanical equipment assembly does not require or obligate the unit responsibility manufacturer to warranty the workmanship or quality of component products not manufactured by them.

## **1.5 SUBMITTALS**

- A. Preconstruction/Action Submittals: The following minimum submittals shall be submitted prior to construction of this element of the Work in accordance with Section 01 3300 - Submittal Procedures.
  1. A copy of this Section, with addendum updates included, and all referenced and applicable Sections, with addendum updates included, with each paragraph check-marked to indicate Specification compliance or marked to indicate requested deviations from Specification requirements or those parts which are to be provided by the Supplier/Subcontractor or others shall be provided. Check marks (☐) shall denote full compliance with a paragraph as a whole.

If deviations from the Specifications are indicated, and therefore requested, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations.

The remaining portions of the paragraph not underlined shall signify compliance with the Specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the requirements of the Specification shall be cause for rejection of the entire submittal and no further submittal material will be reviewed.
  2. For all equipment specifications, a copy from the Plans of the control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this Section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the diagrams shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
  3. Certificate of Unit Responsibility attesting that the Supplier/Subcontractor has assigned unit responsibility in accordance with the requirements of this Section. No other submittal material will be reviewed until the certificate has been received and found to be in conformance with these requirements.
  4. Equipment literature, cut-sheets and data-sheets for all equipment supplied under this Section.
  5. Performance and structural calculations demonstrating conformance to this specification and AWWA C561 in regard to safety factors for frames, gate plates, stems, and operators or actuators.
  6. Shop Drawings for the products supplied under this Section, including dimensional drawings for the products supplied under this Section and dimensional information for connection points and sizes for piping, electrical, instrumentation, water supply, and structural connections.
    - a. Include plan, cross-section, and details showing proposed mounting for each size and typical application of gate.
    - b. For all existing gates to be replaced, the contractor shall also field verify the dimensions of all existing openings and required and mounting type. This information shall be provided along with the Shop Drawings.
  7. Weights for the provided equipment and major components.
  8. Information regarding the materials of construction for all equipment supplied under this Section.
  9. Shop painting systems, including descriptive technical catalog literature and specifications.
  10. Anchorage calculations demonstrating compliance with the requirements of Section 01 7324 - Design Requirements for Non-Structural Components and Non-Building Structures.
  11. Spare parts list.
  12. Warranty information.
  13. Operation and maintenance information in accordance with Section 01 7823 - Operation and Maintenance Data.

14. Special shipping, storage and protection, and handling instructions.
15. Installation instructions.
16. Electrical elementary diagrams, internal connection diagrams, and external interconnection diagrams. Connection diagrams shall be the conventional type with lines showing point-to-point wiring and must show terminals and devices as viewed by the electrician; wireless or wire schedule types are not acceptable.
17. Catalog data on all ancillary electrical components, including limit switches and instruments.
18. Installation instruction and procedures for the gates, mounting and support.

- B. Informational Submittals: The following minimum informational submittals shall be submitted in accordance with the timing requirements specified in these Contract Documents, prior to Substantial Completion and in accordance with Section 01 3300 - Submittal Procedures.
1. Operation and maintenance (O&M) manuals and data shall be provided in accordance with the following and shall be provided prior to delivery of the equipment:
    - a. Each electronic copy shall include all information included in the corresponding printed copy. Cover page shall include the following:
      - 1) Title: "OPERATING AND MAINTENANCE INSTRUCTIONS".
      - 2) Name or type of material or equipment covered in the manual.
      - 3) Project name and building or structure name.
    - b. Include drawings, diagrams, and illustrations up to and including 11 inches by 17 inches in size.
    - c. Clearly mark to indicate all components of materials and equipment on catalog pages for ease of identification. In standard documents, indicate options furnished or cross out inapplicable content.
    - d. Table of Contents:
      - 1) Provide table of contents in each operations and maintenance manual.
      - 2) For ease of identification, each manufacturer's brochure and manual shall be appropriately labeled with the equipment name and equipment number as it appears in the project manual. The information shall be organized in the binders in numerical order by the equipment numbers assigned in the project manual.
    - e. File Format:
      - 1) Files shall be in "portable document format" (PDF). Files shall be electronically searchable; the use of scanned pages is to be minimized and is subject to Engineer approval.
      - 2) Within each file, provide bookmarks for the following:
        - (a) Each chapter and subsection listed in the corresponding printed copy of the document's table of contents.
        - (b) Each figure.
        - (c) Each table.
        - (d) Each appendix.
  2. Factory Test Reports
  3. Certificate of Proper Installation

## **1.6 WARRANTY**

- A. All Contractors, subcontractors and suppliers shall warrant to the County that all materials and equipment furnished under this contract will be new unless otherwise specified, and the Contractors, subcontractors and suppliers further warrant that all work will be of good quality, free from faults and defects, and in conformance with the Contract Documents. The warranty set forth in this paragraph shall survive final acceptance of the work.
- B. All major pieces of equipment shall be warranted for a period of not less than two (2) years by the manufacturer of the equipment and products. Additional warranty durations may be outlined within the specifications.

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- C. Warranty term shall initiate after the startup of each gate indicated on the MCPI (Manufacturer's Certificate of Proper Installation).

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Contractor to deliver and coordinate delivery with the Owner. Off-loading and storage to be done by Others.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Manufacturer's: Candidate manufacturers are listed below. The manufacturer's standard product may require modification to conform to specified requirements.
1. Waterman
  2. Hydrogate
  3. Waco
  4. Approved Equal – Submit check marked specification showing compliance with specification or listing any deviations thereof.

**2.2 MATERIALS**

- A. Materials used for the construction of the equipment provided under this Section shall be as follows, refer to Volume 2 – Technical Specifications Exhibit D.3 – Original Gate Submittal Drawings for detailed breakdown.

Component	Material
Gate and Frame	ASTM A276, Type 316 or 316L Stainless Steel (Struct.), A240 Type 316 or 316L Stainless Steel (Plate)
Stem Guide and Wall Bracket	ASTM A276, Type 316 Cast Iron
Stem Connection and Operating Stems	ASTM A276 Type 316 Stainless Steel
Seal retainer Bar	ASTM A276 Type 316 Stainless Steel
Slide Seats/Seals and Bearing Bars	ASTM A276, Type 316 or 316L Stainless Steel
Fasteners and anchor bolts	ASTM A276 Type 316 Stainless Steel, ASTM F594 Type 316 Stainless Steel Alloy Group 2
Flush bottom and J-bulb seals	Neoprene D2000, Grade 1BE625
Stem Guide Collar	ASTM V584, Alloy 873 Silicon Bronze
Lift Assembly	ASTM A36 Carbon Steel, ASTM A126, Class B Cast Iron, ASTM B584, Alloy 865 Manganese Bronze

- B. Materials specified are considered the minimum acceptable for the purposes of durability, strength, and resistance to erosion and corrosion. The Supplier/Subcontractor may propose alternative materials for the purpose of providing greater strength or to meet required stress limitations. However, alternative materials must provide at least the same qualities as those specified for the purpose. If alternatives are proposed, the proposals shall be accompanied with documentation supporting the claimed superiority of the proposed substitutions. The Engineer shall be the sole decider in the equivalency of alternative materials of construction.

**2.3 OPERATING AND DESIGN REQUIREMENTS**

- A. General:

1. Gate manufacturer shall review the mechanical and structural layout drawings to familiarize themselves with the location and the setup of the equipment specified and shall assure themselves that the equipment specified is appropriate for and coordinated with what is shown on the contract drawings.
  2. The manufacturer shall also review the relevant electrical plan and one-line diagram and the relevant process and instrumentation diagram drawing to ensure that the contract drawings are appropriate and coordinated with the equipment and controls specified.
- B. Design Conditions:
1. Suitable for continuous exposure to wastewater and a marine environment.
  2. Fluid temperature is expected to range from 50 degrees F to 100 degrees F.
  3. Ambient temperatures are expected to range from 10 degrees F to 110 degrees F.
  4. Wastewater may have high dissolved solids concentration and thus may be corrosive.

## **2.4 COMPONENTS**

### **A. Frame and Guides**

1. Each frame shall be an integral unit or welded structural shapes at least 1/4 inch thick. Frames shall be designed for embedment in concrete or installation on the face of concrete walls as indicated on the Plans and matching existing thimbles. Embedded frames shall be recessed so that the waterway is not obstructed.
2. The gate frame shall be made of formed plates or structural members creating the clear opening of the specified dimensions in a rigid one-piece unit. The mounting and bolting flange of the frame to the wall shall be separate and independent from the seating and sealing plane of the slide. The bottom of the frame will be of the flush invert type. Stresses in the frame under design head shall not exceed 20% of the ultimate tensile, compressive, and shear strength and 50% of the yield strength, whichever is less. Minimum material thickness of all members of the frame shall be 1/4 in (6mm).
3. The side guide frame sections shall be formed from one piece to contain and support the UHMW seat/seals, prevent leakage through the side frame, and shall be gusseted as required to meet the loading conditions imposed under the maximum design differential conditions. The guides shall be designed for maximum rigidity, having a weight of not less than 13 pounds per foot. The guides will be of sufficient length to support at least one half (1/2) the height of the slide, when the gate is fully open.  
On self-contained gates, where the guides extend above the operating floor, they shall be sufficiently strong so that no further reinforcing will be required, excepting requirements for wind-loading, where applicable. The yoke to support the operating device shall be formed by members welded at the top of the guides. The arrangement of the yoke shall be such that the disc and stem can be removed without disconnecting the yoke.

### **B. Slide**

1. Slides shall be at least 1/4 inch thick and shall be provided with welded stiffeners to limit deflection to 1/720 or 1/16 of an inch, whichever is less, under the maximum seating or unseating head indicated above. Slides shall have a minimum of two vertical stiffeners and these shall be welded to all of the horizontal stiffeners of the slide. The slide shall have surfaces to engage the guides for its full length. Slides shall be adequately reinforced to withstand, without permanent distortion, the maximum thrust which can be transmitted by the operating stem. Each slide shall have a clevis angles attached to the top of the slide, reinforced pocket or an internally threaded nut welded to the slide for connection of the stem. The pocket or nut shall be designed to withstand the maximum thrust which can be transmitted by the operating stem.

### **C. Seals**

1. Side and top seals shall be made of UHMWPE (ultra-high molecular weight polyethylene) and are the self-adjusting type. A continuous compression cord made of nitrile rubber (buna-N) shall ensure contact between the UHMWPE guide and the gate in all positions, J-Bulb seals are not allowed for side and top seals. The sealing system shall maintain efficient sealing in any position of the slide and allow the water to flow only in the opened part of the gate.

2. The bottom seal shall be made of resilient neoprene or EPDM set into the bottom member of the frame and shall form a flush-bottom, or a J-bulb seal as specified for the gate application. Seals held in place with adhesives or press fit into frames shall not be acceptable, seal shall be mechanically fastened to the frame.

D. Stems

1. Stems shall be made of 304 stainless steel and shall be a rising stem design, non-rising stem designs will not be allowed. In addition, the stem shall be equipped with stem guides spaced as required to limit the length-radius of gyration of the stem ratio to 200 or less. The stem guide spacing and size shall be as recommended by the Supplier. The operating stem shall be of a size to safely withstand, without buckling or permanent distortion, the stresses induced by normal operating forces. In addition, the stem shall be designed to transmit in compression at least 2-1/2 times the rated output of the floor stand with a 40 pound effort on the crank or wheel. Stems of more than one section shall be joined by bronze or stainless-steel couplings threaded and keyed to the stems. All threaded and keyed couplings of the same size shall be interchangeable. All gates manually or electrically operated, shall be provided with adjustable stop nuts and stop collars on the stem-as required to prevent over-travel in either direction during manual operation.
2. Where electric-motor-driven actuators are used, the tension and compression design loads shall be those caused by 1.5 times the output thrust of the unit in the stalled motor condition. The tension design load shall not exceed one-fifth of the ultimate tensile strength of the stem material. The stem compression design load shall be less than the critical buckling load as determined by the Euler Column formula, where  $C = 2$ .

E. Stainless Steel

1. All stainless steel shall be pickled or use mechanical passivation in accordance with ASTM A380 at the mill before being shipped. Pickling shall produce a modest etch and shall remove all embedded iron and heat tint. After fabrication, pickled surfaces shall be subjected to a 24-hour water test or a ferroxyl test to detect the presence of residual embedded iron. All pickled and mechanically passivated surfaces damaged during fabrication including welded areas shall be repickled or passivated in accordance with ASTM A380 as needed to remove all traces of iron contamination. All stainless steel surfaces shall be adequately protected during fabrication, shipping, handling, and installation to prevent avoidable contamination from iron or carbon steel objects or surfaces.

## 2.5 OPERATORS

- A. Type designation and design requirements: Paragraph 2.3 Operating and Design Requirements.

B. Manual Operators (Type I and II):

1. Operators shall be hand crank (Type I) or handwheel type (Type II).
2. Operators shall as specified in the schedules above. Operators shall meet AWWA C561 specifications, except as otherwise specified, and shall be designed to meet the operating requirements. Clear plastic stem covers shall be provided as specified in AWWA C561 and the Supplier shall guarantee their clarity for a minimum of five (5) years.
3. All operators, gears, and bearings shall be enclosed in a weatherproof housing, and pressure type fittings shall be provided for grease lubrication of the bearings and gears. A maximum effort of 40 pounds pull of the handwheel or crank shall operate the gate under the specified operating conditions.
4. The operator drive nut (sleeve) shall be mounted on antifriction roller bearings. The operator shall be mounted on the self-contained gate bench (yoke) or non-self-contained gate pedestal (floor stand) as shown in the approved drawings provided by the Supplier. Where frame height requirements result in an operator height in excess of 48 inches from the walkway floor, a side mount or front mount operator system utilizing right angle bevel gear boxes, stainless steel interconnecting shafting, and flexible couplings shall be furnished by the supplier, and will provide for the gate to be operated from a position 36 in above the operating floor. The orientation of the operator shall be as indicated on the Plans or as directed by the Engineer.

5. Handcranks shall be cast aluminum with rotating handles, and shall be capable of fitting on 2" AWWA operating nuts. Cranks that require painting or coating to resist corrosion, that do not have rotating handles shall not be allowed. Maximum crank length shall be 15" from input shaft centerline to handle centerline.
  6. Handwheels shall be cast aluminum or cast iron and shall be connected directly to the bronze drive nut (sleeve) of the operator in a horizontal plane. Handwheels that require painting or coating to resist corrosion shall not be allowed. Maximum handwheel diameter shall be 24".
- C. Powered Gate Operators (Type III):
1. Electric motor actuators shall be in accordance with Section 40 0557.23 - Powered Actuators - 480V and AWWA C542 Electric Motor Actuators for Valves and Slide Gates most recent edition unless otherwise specified.
  2. Gate operators shall be 480 volt, 3 phase, 60 hertz, NEMA 4X or NEMA 7 (See 2.03.B, Operating Requirements), Type EMTI operators as specified in Section 40 05 57.23 - Powered Actuators - 480V. Operator speed shall be approximately 12 inches/minute. The operator shall meet the requirements of AWWA C542, except as otherwise specified, and shall be designed to meet the operating requirements specified. The operator shall fail intermediate and maintain the gate's last position. Gate operator must be capable of adjusting the gate position to within 1/2" of the desired position. The Gate position must be relayed back to SCADA and be accurate to within 1/2". Handwheel shall be located 36 inches above the operating floor and shall be removable from the operator.
  3. Where electric-motor-driven actuators are used, the tension and compression design loads shall be those caused by 1.5 times the output thrust of the unit in the stalled motor condition. The tension design load shall not exceed one-fifth of the ultimate tensile strength of the stem material. The stem compression design load shall be less than the critical buckling load as determined by the Euler Column formula, where C = 2.
- D. Portable Operators:
1. Provide one portable electric operator (120 volt) suitable for operation of gates installed in non-classified areas.
  2. Provide one portable operator suitable for operation of gates installed in classified (Class 1 Div 2) areas.
- E. Operator Mounting:
1. Pedestal, bench or wall bracket mounted as specified.
  2. Pedestal type floor standards shall be the offset type or the standard type with wall mounting bracket.
  3. Pedestal operators located at floor slab openings intended for future gate removal shall be installed on mounting plates that span the slab openings and attach directly to the concrete. Coordinate mounting plate with slab opening cover and provide dielectric isolation between mounting plate and slab opening cover if required.
  4. Pedestals, wall bracket or bench stands shall be cast iron, aluminum, or stainless steel. Bench stands and yokes shall be the same materials as the gate frame
  5. The head of the pedestal or bench stand operator shall have a solid bronze, internally threaded operating nut.
  6. The operator shall be mounted on antifriction roller bearings.
  7. Cranks and handwheels shall be removable from the operator.

## **2.6 COATINGS**

- A. Coating of cast iron components shall be factory-applied and provided in accordance to Section 09 9000 – Painting and Coating.

## **PART 3 - EXECUTION**

### **3.1 FACTORY TESTING**

- A. All wall mounted, four side sealing slide gates be factory tested for both operation and leakage (under design head) prior to shipment to the jobsite. The manufacturer shall provide a written certification of the test results for each gate tested.

### **3.2 FIELD QUALITY CONTROL**

- A. Field Testing:
  - 1. Field testing shall be performed by the installation contractor with a manufacturer's representative present.
  - 2. Field leakage tests shall be performed as specified in Section 6 of AWWA C561. The maximum allowable leakage rate shall be 0.10 gallon per minute per foot of sealing perimeter for the seating and unseating heads specified.
  - 3. Field leakage tests shall be conducted with no head on the effluent side of the gate being tested.

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**PART 4 EQUIPMENT SCHEDULE**

Equipment Tag Number	Gate Opening <sup>a</sup> size, inches	Frame <sup>b</sup> Type	Frame Mounting <sup>c</sup>	Opening <sup>d</sup> Direction	Bottom Seat <sup>e</sup>	Design head, feet <sup>i</sup>		Gate Operator Type <sup>f</sup>	Remote Control Station Required Y/N	Operator Mounting <sup>g</sup>	Include Enclosure (Y/N) <sup>h</sup>
						Seating	Unseating				
37:SG-11	36 x 36	SC	E	U	FB	8	8	III-2	Y	O	Y
37:SG-12	36 x 36	SC	E	U	FB	8	8	III-2	Y	O	Y

- <sup>a</sup> Gate opening size: Width by height.
- <sup>b</sup> Frame type: SC = self-contained, NSC = non-self-contained.
- <sup>c</sup> Frame mounting type: E = embedded-frame, F= face-mounted, S = surface-mounted, PF = Pipe Flange Mounted.
- <sup>d</sup> Opening direction: U = upward, D – downward.
- <sup>e</sup> Bottom seating: FB = flush bottom, X = J-bulb., FBE = embedded flush bottom
- <sup>f</sup> Gate operator type: I = geared crank type, II = handwheel type, III = Motorized Actuator (Motorized Actuators to be NEMA 4X [Noted as-1] or NEMA 7 [Noted as -2]).
- <sup>g</sup> Gate operator mounting: F = Frame mounted, O = Wall Pedestal With Bracket
- <sup>h</sup> Odor enclosure – provide compatible materials with gate suitable to contain odors from the tank below. Properly enclose self-contained gate frames, and properly seal non-self contained gate tank penetrations.
- <sup>i</sup> Measured from the invert

<b>ISSUED</b>	<b>DATE</b>
<b>ISSUED FOR BID</b>	<b>8/4/2025</b>

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**END OF SECTION**

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**SECTION 40 0559.33 –CAST IRON SLUICE GATES AND SCHEDULE**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes:
1. Cast iron sluice gates for control of raw wastewater flows at a municipal wastewater treatment plant.
  2. Each gate consists of a sluice gate, frame, guides, operators, and all specified appurtenances.
  3. Gate frame bolt patterns shall match the existing thimbles, which must be reused.
  4. Gates being provided must be able to be installed without any modifications made to the existing slab.

**1.2 RELATED SECTIONS**

- A. This section contains specific references to the following related sections.
1. Section 40 0557.23 - Powered Actuators for Process Valves and Gates

**1.3 REFERENCES**

- A. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
- B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM A126	Standard Specification for Gray Iron Castings
ASTM D2000	Rubber Products in Automotive Applications
AWWA C560-21	Cast Iron Slide Gates

**1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Unit Responsibility
1. The Supplier/Subcontractor shall cause equipment assemblies made up of two or more components to be provided as a working unit by the unit responsibility manufacturer, where specified. The unit responsibility manufacturer shall coordinate selection, coordinate design, and shall provide all mechanical equipment assembly components such that all equipment components furnished under the specification for the equipment assembly, and all equipment components specified elsewhere but referenced in the equipment assembly specification, is compatible and operates reliably and properly to achieve the specified performance requirements. Unless otherwise specified, the unit responsibility manufacturer shall be the manufacturer of the driven component equipment in the equipment assembly. Agents, representatives or other entities that are not a direct division of the driven

equipment manufacturing corporation shall not be accepted as a substitute for the driven equipment manufacturer in meeting this requirement.

2. The Supplier/Subcontractor shall ensure that all equipment assemblies provided for the project are products for which unit responsibility has been accepted by the unit responsibility manufacturer(s), where specified. Unit responsibility for related components in a mechanical equipment assembly does not require or obligate the unit responsibility manufacturer to warranty the workmanship or quality of component products not manufactured by them.

## **1.5 SUBMITTALS**

A. Preconstruction/Action Submittals: The following minimum submittals shall be submitted prior to construction of this element of the Work in accordance with Section 01 3300 - Submittal Procedures.

1. A copy of this Section, with addendum updates included, and all referenced and applicable Sections, with addendum updates included, with each paragraph check-marked to indicate Specification compliance or marked to indicate requested deviations from Specification requirements or those parts which are to be provided by the Supplier/Subcontractor or others shall be provided. Check marks () shall denote full compliance with a paragraph as a whole.

If deviations from the Specifications are indicated, and therefore requested, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations.

The remaining portions of the paragraph not underlined shall signify compliance with the Specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the requirements of the Specification shall be cause for rejection of the entire submittal and no further submittal material will be reviewed.

2. For all equipment specifications, a copy from the Plans of the control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the equipment in this Section, marked to show specific changes necessary for the equipment proposed in the submittal. If no changes are required, the diagrams shall be marked "no changes required". Failure to include copies of the relevant drawings with the submittal shall be cause for rejection of the entire submittal with no further review.
3. Certificate of Unit Responsibility attesting that the Supplier/Subcontractor has assigned unit responsibility in accordance with the requirements of this Section. No other submittal material will be reviewed until the certificate has been received and found to be in conformance with these requirements.
4. Equipment literature, cut-sheets and data-sheets for all equipment supplied under this Section.
5. Performance and structural calculations demonstrating conformance to this specification and AWWA C560 in regard to safety factors for frames, gate plates, stems, and operators or actuators.
6. Shop Drawings for the products supplied under this Section, including dimensional drawings for the products supplied under this Section and dimensional information for connection points and sizes for piping, electrical, instrumentation, water supply, and structural connections.
  - a. Include plan, cross-section, and details showing proposed mounting for each size and typical application of gate.
  - b. For all existing gates to be replaced, the contractor shall also field verify the dimensions of all existing openings and required and mounting type. This information shall be provided along with the Shop Drawings.
7. Weights for the provided equipment and major components.
8. Information regarding the materials of construction for all equipment supplied under this Section.
9. Shop painting systems, including descriptive technical catalog literature and specifications.
10. Anchorage calculations demonstrating compliance with the requirements of Section 01 7324 - Design Requirements for Non-Structural Components and Non-Building Structures.
11. Spare parts list.
12. Warranty information.
13. Operation and Maintenance Manuals and Data.
14. Special shipping, storage and protection, and handling instructions.
15. Installation instructions.

16. Electrical elementary diagrams, internal connection diagrams, and external interconnection diagrams. Connection diagrams shall be the conventional type with lines showing point-to-point wiring and must show terminals and devices as viewed by the electrician; wireless or wire schedule types are not acceptable.
  17. Catalog data on all ancillary electrical components, including limit switches and instruments.
  18. Installation instruction and procedures for the gates, mounting and support.
- B. Informational Submittals: The following minimum informational submittals shall be submitted in accordance with the timing requirements specified in these Contract Documents, prior to Substantial Completion and in accordance with Section 01 3300 - Submittal Procedures.
1. Operation and maintenance (O&M) manuals and data shall be provided in accordance with the following and shall be provided prior to delivery of the equipment:
    - a. Each electronic copy shall include all information included in the corresponding printed copy. Cover page shall include the following:
      - 1) Title: "OPERATING AND MAINTENANCE INSTRUCTIONS".
      - 2) Name or type of material or equipment covered in the manual.
      - 3) Project name and building or structure name.
    - b. Include drawings, diagrams, and illustrations up to and including 11 inches by 17 inches in size.
    - c. Clearly mark to indicate all components of materials and equipment on catalog pages for ease of identification. In standard documents, indicate options furnished or cross out inapplicable content.
    - d. Table of Contents:
      - 1) Provide table of contents in each operations and maintenance manual.
      - 2) For ease of identification, each manufacturer's brochure and manual shall be appropriately labeled with the equipment name and equipment number as it appears in the project manual. The information shall be organized in the binders in numerical order by the equipment numbers assigned in the project manual.
    - e. File Format:
      - 1) Files shall be in "portable document format" (PDF). Files shall be electronically searchable; the use of scanned pages is to be minimized and is subject to Engineer approval.
      - 2) Within each file, provide bookmarks for the following:
        - (a) Each chapter and subsection listed in the corresponding printed copy of the document's table of contents.
        - (b) Each figure.
        - (c) Each table.
        - (d) Each appendix.
  2. Factory Test Reports
  3. Certificate of Proper Installation

## **1.6 WARRANTIES**

- A. All Contractors, subcontractors and suppliers shall warrant to the County that all materials and equipment furnished under this contract will be new unless otherwise specified, and the Contractors, subcontractors and suppliers further warrant that all work will be of good quality, free from faults and defects, and in conformance with the Contract Documents. The warranty set forth in this paragraph shall survive final acceptance of the work.
- B. All major pieces of equipment shall be warranted for a period of not less than two (2) years by the manufacturer of the equipment and products. Additional warranty durations may be outlined within the specifications.
- C. Warranty term shall initiate after the startup of each gate indicated on the MCPI (Manufacturer's Certificate of Proper Installation).

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Contractor to coordinate delivery dates and times with the Owner.
- B. Storage and Handling to be coordinated by Others.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Manufacturer's: Candidate manufacturers are listed below. The manufacturer's standard product may require modification to conform to specified requirements.
  - 1. Waterman
  - 2. Hydrogate
  - 3. Waco
  - 4. Approved Equal – Submit check marked specification showing compliance with specification or listing any deviations thereof.

**2.2 MATERIALS**

- A. Materials used for the construction of the equipment provided under this Section shall be as follows, refer to Volume 2 – Technical Specifications Exhibits A.2, C.2 and D2 – Original Gate Submittal Drawings for detailed breakdown.

Component	Material
Gate and frame	ASTM A-126, CLASS B, CAST IRON, and ASTM B-126, CLASS C, CAST IRON,
Guide	ASTM A276 Type 316 Stainless Steel
Stem Connection and Operating Stems	ASTM A276 Type 316 Stainless Steel
Rails and yokes	ASTM A-126, CLASS B, CAST IRON
Seal retainer Bar	ASTM A276 Type 316 Stainless Steel
Stem Cover	Clear Plastic Butyrate Pipe
Fasteners and anchor bolts	ASTM A276 Type 316 Stainless Steel
Flush bottom and J-bulb seals	Ultra-high Molecular Weight Polyethylene (UHMW)
Operator cranks or hand wheels	Cast aluminum or cast iron

- B. Materials specified are considered the minimum acceptable for the purposes of durability, strength, and resistance to erosion and corrosion. The Supplier/Subcontractor may propose alternative materials for the purpose of providing greater strength or to meet required stress limitations. However, alternative materials must provide at least the same qualities as those specified for the purpose. If alternatives are proposed, the proposals shall be accompanied with documentation supporting the claimed superiority of the proposed substitutions. The Engineer shall be the sole decider in the equivalency of alternative materials of construction.

**2.3 OPERATING AND DESIGN REQUIREMENTS**

- A. General:
  - 1. Gate manufacturer shall review the mechanical and structural layout drawings to familiarize themselves with the location and the setup of the equipment specified and shall assure themselves that the equipment specified is appropriate for and coordinated with what is shown on the contract drawings.

2. The manufacturer shall also review the relevant electrical plan and one-line diagram and the relevant process and instrumentation diagram drawing to ensure that the contract drawings are appropriate and coordinated with the equipment and controls specified.
- B. Design Conditions:
1. Suitable for continuous exposure to wastewater and a marine environment.
  2. Fluid temperature is expected to range from 50 degrees F to 100 degrees F.
  3. Ambient temperatures are expected to range from 10 degrees F to 110 degrees F.
  4. Wastewater may have high dissolved solids concentration and thus may be corrosive.

## **2.4 COMPONENTS**

- A. Frame and Guides
1. The frame and guides shall be cast one-piece construction.
  2. Frames shall be of the standard flangeback or extended flange type with round or rectangular opening as indicated on the plans and in the sluice gate schedule.
  3. A machined dovetail groove for the mounting of the seat facings shall be provided on the front face of the frame for all dovetail embedded seats.
  4. The frame shall be provided with cast-on pads which shall be machined, drilled, and tapped for the mounting of the wedge device.
  5. The back of the frame flange shall be machined to a plane and drilled to match the existing wall thimble, pipe flange, or anchor bolt pattern.
  6. Guide rails shall be of such length as to retain at least one-half of the vertical height of the slide when it is in the fully opened position.
  7. A groove running the full length of the guide shall be accurately machined to receive the slide tongue, with a nominal clearance of 1/16-inch.
- B. Stem and Stem Guide(s)
1. The stem shall be solid stainless steel of the specified grade.
  2. Stem threads shall be machine cut 29 degree stub Acme type.
  3. Nominal diameter of the stem shall not be less than the crest of the threaded portion.
  4. Stem guides and brackets shall be cast iron or fabricated stainless steel, with bronze bushings.
  5. Two-piece guides shall be adjustable in two directions and shall be so constructed that, when properly spaced, they will hold the stem in alignment and still allow enough play to permit operation per AWWA C560.
  6. Stem guide spacing shall be as recommended by the gate manufacturer for the specific stem size, but in no case shall the unsupported stem length/radius of gyration ( $l/r$ ) exceed 200.
  7. Stem guide brackets shall be secured to the wall by anchor bolts of sufficient strength and arrangement to prevent unacceptable stem guide deflection due to either axial and/or radial stem loading caused by gate operation forces during manual operation, or caused by motor-operator locked rotor stall conditions.
  8. Where electric-motor-driven actuators are used, the tension and compression design loads shall be those caused by 1.5 times the output thrust of the unit in the stalled motor condition. The tension design load shall not exceed one-fifth of the ultimate tensile strength of the stem material. The stem compression design load shall be less than the critical buckling load as determined by the Euler Column formula, where  $C = 2$ .
- C. Slide
1. The slide shall be designed for the design head indicated with a minimum safety factor of 5 with regard to ultimate tensile, compressive and shear strength.
  2. The cover shall be of one piece cast construction with vertical and horizontal ribs, a reinforced pocket to receive the thrust nut, pads to receive the wedges, and a reinforced periphery around the back side of the cover for machining of the dovetail grooves in which the seating faces shall be mounted.
  3. All wedge pads shall be machined, drilled and tapped to receive the wedge devices.
  4. The cover shall have fully machined tongues running the full length of each side to properly engage the guide grooves.

5. A thrust nut shall be provided to attach the slide to the stem. The nut shall be threaded and, in the case of rising stems, provided with keys and/or two set screws locked into indents in the stem to prevent rotation of the stem. The nut shall be designed to withstand the maximum thrust which can be transmitted by the operating stem.
- D. Seating Faces
1. All seating faces for both covers and frames shall be malleable corrosion resistant material (see materials section) of a shape that will permanently lock in the slide and the frame. No other means of attachment will be allowed.
  2. The seats shall be machined to a 63 micro-inch finish, or better.
- E. Wedges
1. All wedges and wedge blocks shall be of solid corrosion resistant material and shall be of sufficient number to provide a practical degree of water tightness per AWWA C560.
  2. All wedge bearing surfaces and contact faces shall be machined to give maximum contact and wedging action.
  3. Wedges shall be fully adjustable, but once set shall not rotate or move from the set position.
  4. All wedge fasteners and adjustment screws shall be corrosion resistant.
- F. Stainless Steel
1. All stainless steel shall be pickled or use mechanical passivation in accordance with ASTM A380 at the mill before being shipped. Pickling shall produce a modest etch and shall remove all embedded iron and heat tint. After fabrication, pickled surfaces shall be subjected to a 24-hour water test or a ferroxyl test to detect the presence of residual embedded iron. All pickled and mechanically passivated surfaces damaged during fabrication including welded areas shall be repickled or passivated in accordance with ASTM A380 as needed to remove all traces of iron contamination. All stainless steel surfaces shall be adequately protected during fabrication, shipping, handling, and installation to prevent avoidable contamination from iron or carbon steel objects or surfaces.
- G. Mechanical stops:
1. All gates must come with mechanical stops to prevent gates from actuating past it's intended limit for the open position.

## **2.5 OPERATORS**

- A. Powered Gate Operators (Type III):
1. Electric motor actuators shall be in accordance with Section 40 0557.23 - Powered Actuators - 480V and AWWA C542 Electric Motor Actuators for Valves and Slide Gates most recent edition unless otherwise specified.
  2. Gate operators shall be 480 volt, 3 phase, 60 hertz, NEMA 4X or NEMA 7 (See 2.03.B, Operating Requirements), Type EMTI operators as specified in Section 40 05 57.23 - Powered Actuators - 480V. Operator speed shall be approximately 12 inches/minute. The operator shall meet the requirements of AWWA C542, except as otherwise specified, and shall be designed to meet the operating requirements specified. The operator shall fail intermediate and maintain the gate's last position. Gate operator must be capable of adjusting the gate position to within 1/2" of the desired position. The Gate position must be relayed back to SCADA and be accurate to within 1/2". Handwheel shall be located 36 inches above the operating floor and shall be removable from the operator.
  3. Where electric-motor-driven actuators are used, the tension and compression design loads shall be those caused by 1.5 times the output thrust of the unit in the stalled motor condition. The tension design load shall not exceed one-fifth of the ultimate tensile strength of the stem material. The stem compression design load shall be less than the critical buckling load as determined by the Euler Column formula, where C = 2.
- B. Operator Mounting:
1. Pedestal, bench or wall bracket mounted as specified.
  2. Pedestal type floor standards shall be the offset type or the standard type with wall mounting bracket.

3. Pedestal operators located at floor slab openings intended for future gate removal shall be installed on mounting plates that span the slab openings and attach directly to the concrete. Coordinate mounting plate with slab opening cover and provide dielectric isolation between mounting plate and slab opening cover if required.
4. Pedestals, wall bracket or bench stands shall be cast iron, aluminum, or stainless steel. Bench stands and yokes shall be the same materials as the gate frame
5. The head of the pedestal or bench stand operator shall have a solid bronze, internally threaded operating nut.
6. The operator shall be mounted on antifriction roller bearings.
7. Cranks and handwheels shall be removable from the operator.

## **2.6 COATINGS**

- A. Provide complete multi-coat systems formulated and recommended by the manufacturer for the applications indicated.
- B. Coating of cast iron components shall be factory-applied and provided as follows or approved equal recommended by manufacturer.
- C. Sluice gate frame, cover, guide rail and stem guide:
  - a. Blast clean per SSPC-SP10.
  - b. Prime one coat (3 mils) Tnemec 69-1211
  - c. Paint two coat (4 mils/ct) Tnemec Series 69
  - d. Polyamide Epoxy TDFT – 12 mils minimum
  - e. Color: Gray

## **PART 3 - EXECUTION**

### **3.1 COATINGS**

- A. Any coatings that may have been damaged during shipping must be repaired by the Contractor prior to handing equipment off to Owner/Others.

### **3.2 SHIPMENT AND STORAGE**

- A. Contractor to ship and coordinate delivery with the Owner. Unloading and storage to be performed by others.
- B. Contractor shall provide Owner with detailed recommendations and instructions for equipment storage.

### **3.3 FACTORY TESTING**

- A. All wall mounted, four side sealing sluice gates shall be factory tested for both operation and leakage (under design head) prior to shipment to the jobsite. The manufacturer shall provide a written certification of the test results for each gate tested.

### **3.4 FIELD QUALITY CONTROL**

- A. Field Testing:
  1. Field testing shall be performed by the installation contractor with a manufacturer's representative present.
  2. Field leakage tests shall be performed as specified in Section 6 of AWWA C561. The maximum allowable leakage rate shall be 0.10 gallon per minute per foot of sealing perimeter for the seating and unseating heads specified.
  3. Field leakage tests shall be conducted with no head on the effluent side of the gate being tested.
- B. Startup Period

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1. Contractor must provide prior notice before field visit, no less than 14 (fourteen) days before the commencement of any testing activity.
  2. Startup of the system requires the coordinated operation by the Contractor, subcontractors, Owner's operating personnel, and manufacturer's representatives.
  3. Startup of system or any portion thereof shall be considered complete when, in opinion of Owner and Engineer, system or designated portion has operated in manner intended for 30 continuous days without significant interruption. This period is in addition to training, functional, or performance test periods.
  4. Significant Interruption: May include any of the following events:
    - a. Failure of Contractor to provide and maintain qualified onsite startup personnel as scheduled.
    - b. Failure to meet specified performance for more than 2 consecutive hours.
    - c. Failure of any critical equipment or unit process that is not satisfactorily corrected within 5 hours after failure.
    - d. Failure of any noncritical equipment or unit process that is not satisfactorily corrected within 8 hours after failure.
    - e. As may be determined by Owner.
  5. A significant interruption will require the startup then in progress to be stopped and restarted after corrections are made.
    - a. The startup period of 30 continuous days must start over after a significant interruption and at each subsequent significant interruption occurs, as determined by the Owner.
  6. Gates may need to be started up at different dates, depending on the installation progress and shutdown schedules.
- C. Certification
1. Upon completion of startup, the Contractor must provide a Manufacturer's Certificate of Proper Installation (MCPI) from all equipment manufacturers' factory representatives. MCPI must address the equipment installation's compliance with manufacturer's requirements and note any problems noted that may affect the warranty, operation or longevity of the equipment. Written certification must indicate that tests were made in accordance with the manufacturer's recommendations, that the test and start-up operation has been satisfactory completed and that the equipment is fully operational under design requirements. Written certification must be filed with the Engineer on the manufacturer's stationary.

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**PART 4 EQUIPMENT SCHEDULE**

Equipment Tag Number	Gate Opening <sup>a</sup> size, inches	Frame <sup>b</sup> Type	Frame Mounting <sup>c</sup>	Opening <sup>d</sup> Direction	Bottom Seat <sup>e</sup>	Design head, feet <sup>i</sup>		Gate Operat or Type <sup>f</sup>	Remote Control Station Require d Y/N	Operator Mounting <sup>g</sup>	Include Enclosur e (Y/N) <sup>h</sup>
						Seating	Unseating				
21:SG-1 <sup>h</sup>	60 x 60	SC	E	U	FB	95	38	III-1	Y	O	Y
21:SG-2 <sup>h</sup>	60 x 60	SC	E	U	FB	95	38	III-1	Y	O	Y
21:SG-3 <sup>h</sup>	60 x 60	SC	E	U	FB	95	38	III-1	Y	O	Y
21:SG-4 <sup>h</sup>	84 x 84	SC	E	U	FB	89	42	III-1	Y	O	Y
21:SG-5 <sup>h</sup>	84 x 84	SC	E	U	FB	89	42	III-1	Y	O	Y
21:SG-6 <sup>h</sup>	84 x 84	SC	E	U	FB	89	42	III-1	Y	O	Y
21:SG-7 <sup>h</sup>	84 x 84	SC	E	U	FB	89	42	III-1	Y	O	Y
25:SG-1 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
25:SG-2 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
25:SG-3 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
25:SG-4 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
25:SG-5 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
25:SG-6 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
25:SG-7 <sup>h</sup>	24 x 24	SC	E	U	FB	60	30	III-1	Y	O	Y
37:SG-3	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y
37:SG-4	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y
37:SG-6	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y
37:SG-7	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y
37:SG-8	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y
37:SG-9	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y
37:SG-10	36 x 36	SC	E	U	FB	60	35	III-1	Y	O	Y

<sup>a</sup> Gate opening size: Width by height.

<sup>b</sup> Frame type: SC = self-contained, NSC = non-self-contained.

<sup>c</sup> Frame mounting type: E = embedded-frame, F= face-mounted, S = surface-mounted, PF = Pipe Flange Mounted.

<sup>d</sup> Opening direction: U = upward, D – downward.

**Gwinnett County DWR**  
**Purchase of Slide and Sluice Gates With Actuators for the**  
**F. Wayne Hill Water Resources Center**  
**DWR Project #: M-1191-55**  
**Bid #: BL001-26**

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- <sup>e</sup> Bottom seating: FB = flush bottom, X = J-bulb., FBE = embedded flush bottom
- <sup>f</sup> Gate operator type: I = geared crank type, II = handwheel type, III = Motorized Actuator (Motorized Actuators to be NEMA 4X [Noted as-1] or NEMA 7 [Noted as -2]).
- <sup>g</sup> Gate operator mounting: F = Frame mounted, O = Wall Pedestal With Bracket
- <sup>h</sup> Odor enclosure – provide compatible materials with gate suitable to contain odors from the tank below. Properly enclose self-contained gate frames, and properly seal non-self contained gate tank penetrations.
- <sup>i</sup> Measured from the invert

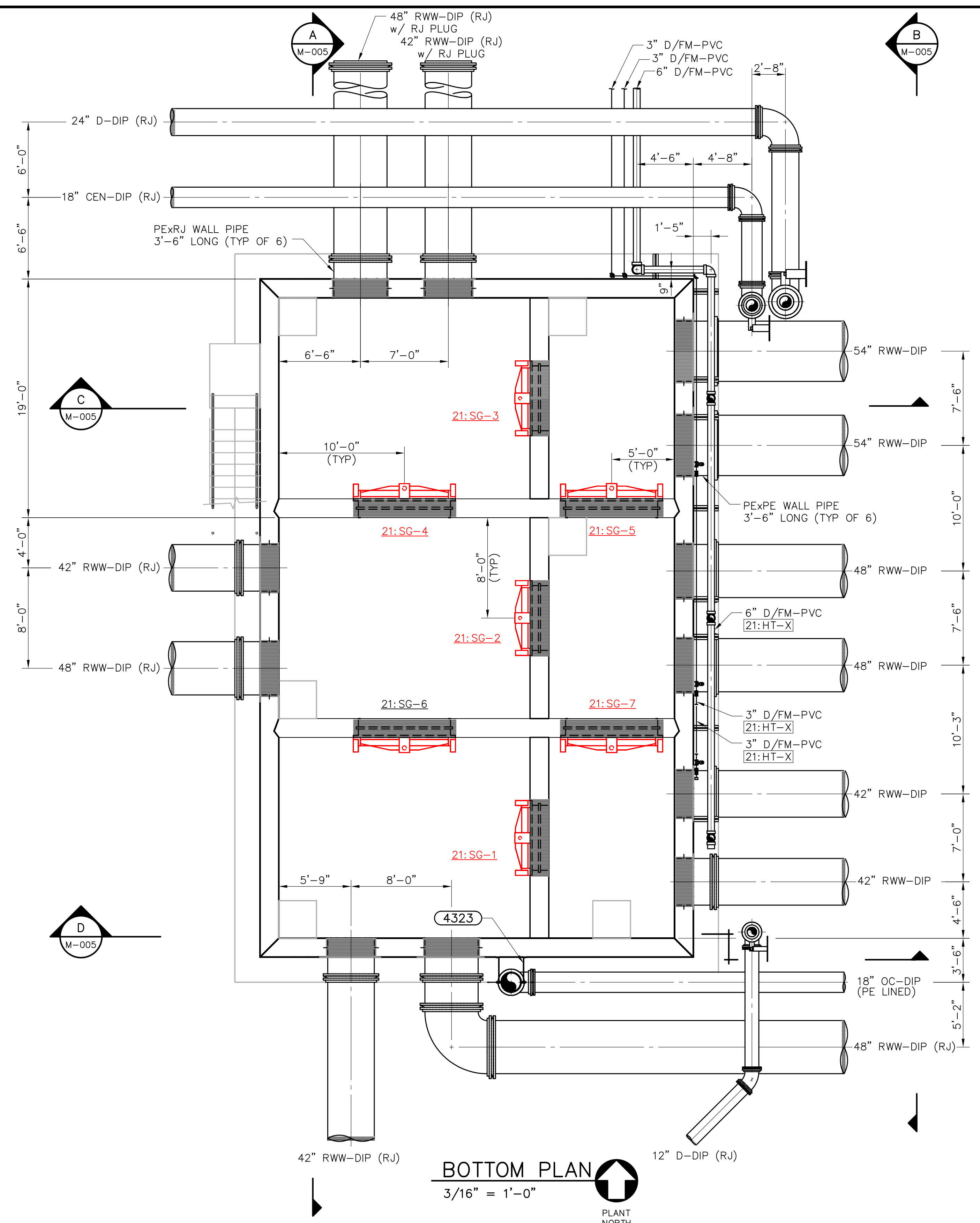
ISSUED	DATE
ISSUED FOR BID	8/4/2025

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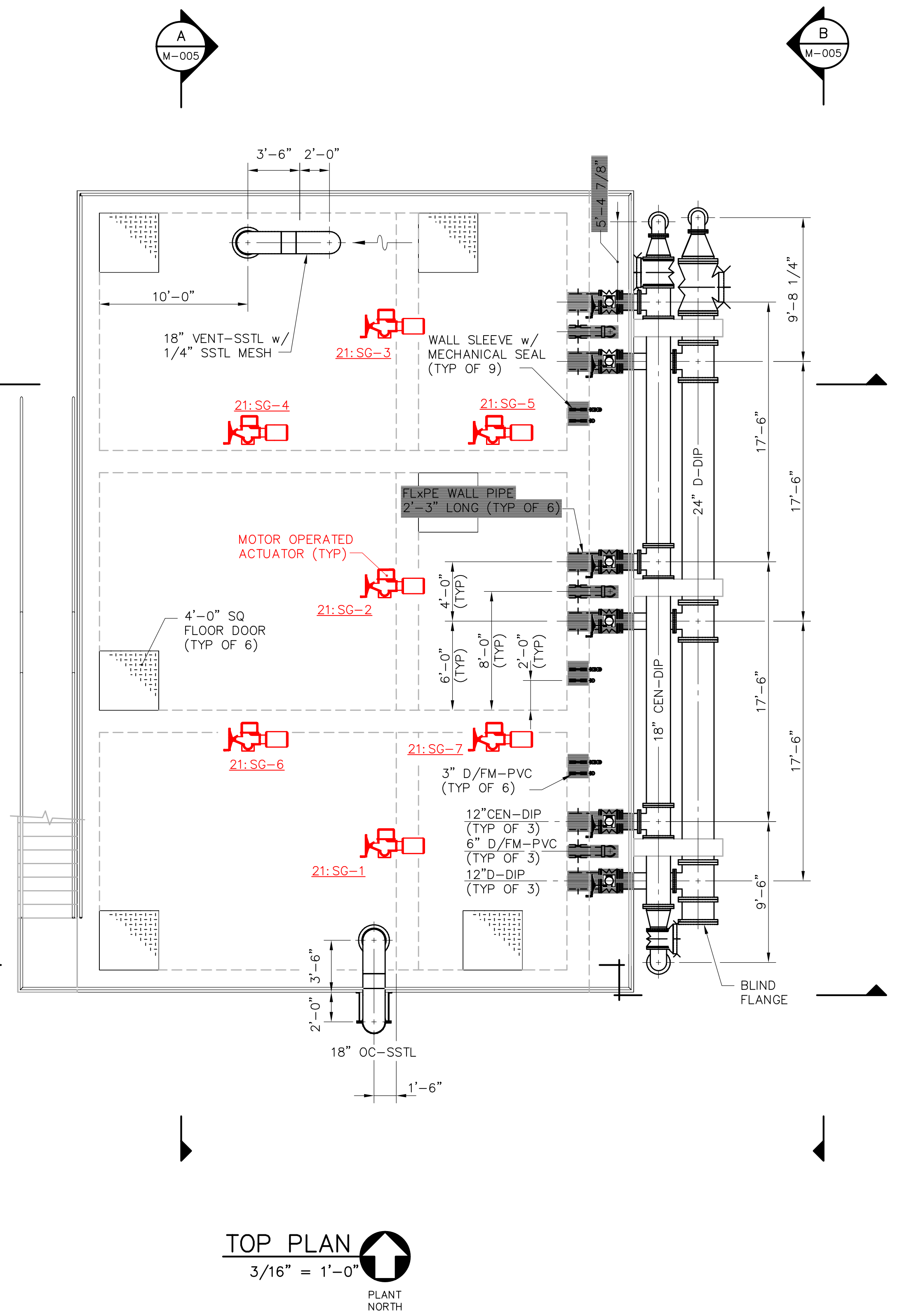
**END OF SECTION**

**Exhibit A.1 – Influent Distribution Box Record Drawings**

Note: Highlighted gates and actuators need to be furnished.



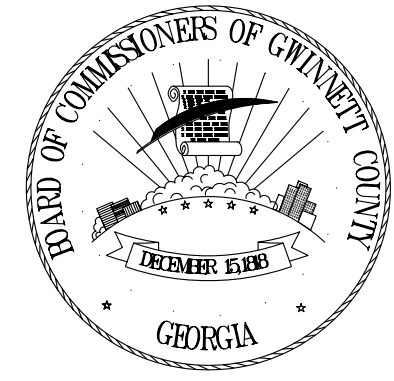
**BOTTOM PLAN**  
3/16" = 1'-0"  
PLANT NORTH



**TOP PLAN**  
3/16" = 1'-0"  
PLANT NORTH

**Jordan, Jones & Goulding**  
**CH2M HILL**  
**Precision Planning, Inc.**

NO.	DATE	DESCRIPTION OF REVISION
R	05-19-06	RECORD DRAWING
O	01-03-02	FIRST RELEASE

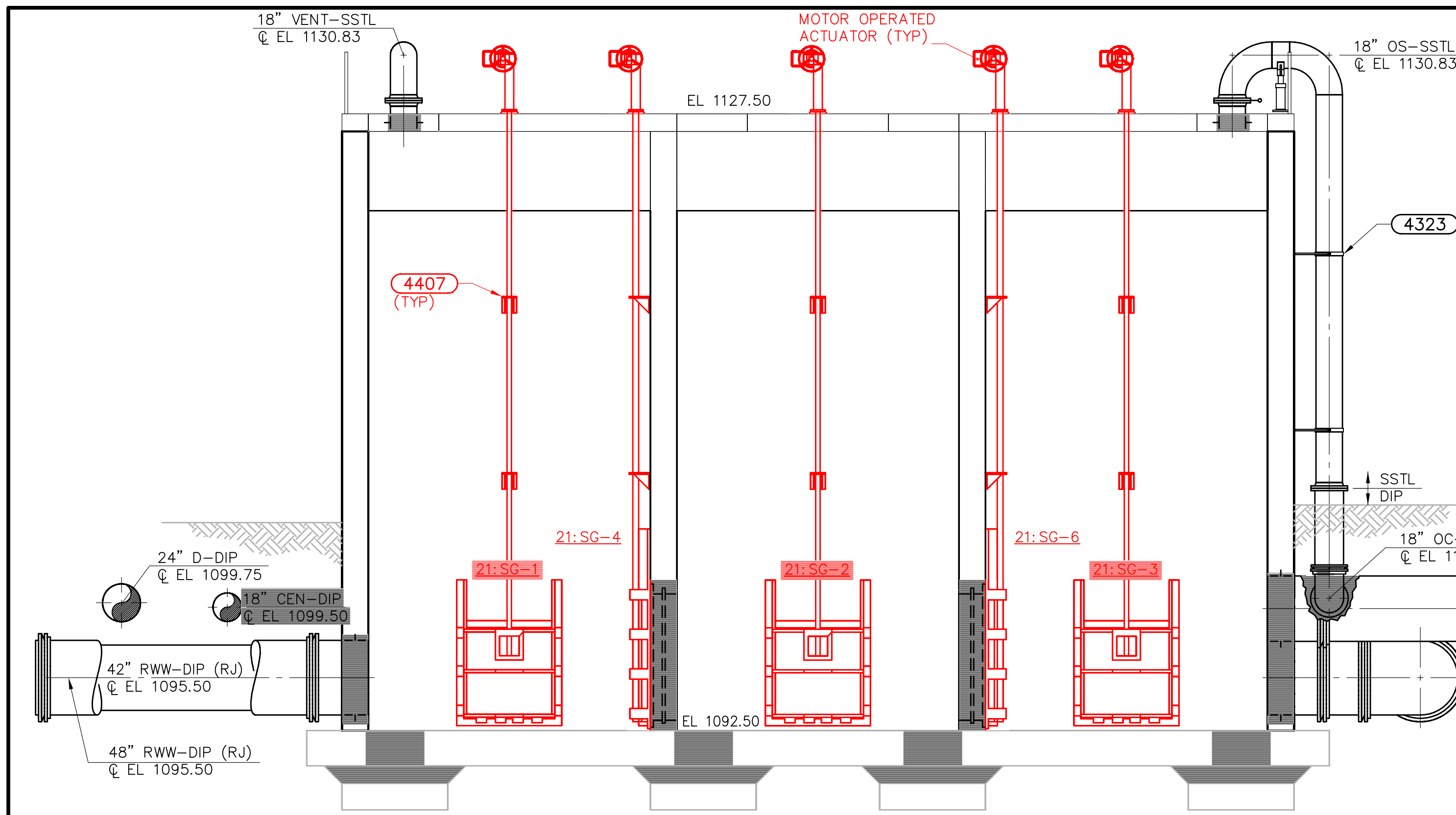


**GWINNETT COUNTY, GEORGIA**  
**DEPARTMENT OF PUBLIC UTILITIES**  
**F. WAYNE HILL**  
**WATER RESOURCES CENTER**  
**PHASE 2**  
**3320 FINANCIAL CENTER WAY**

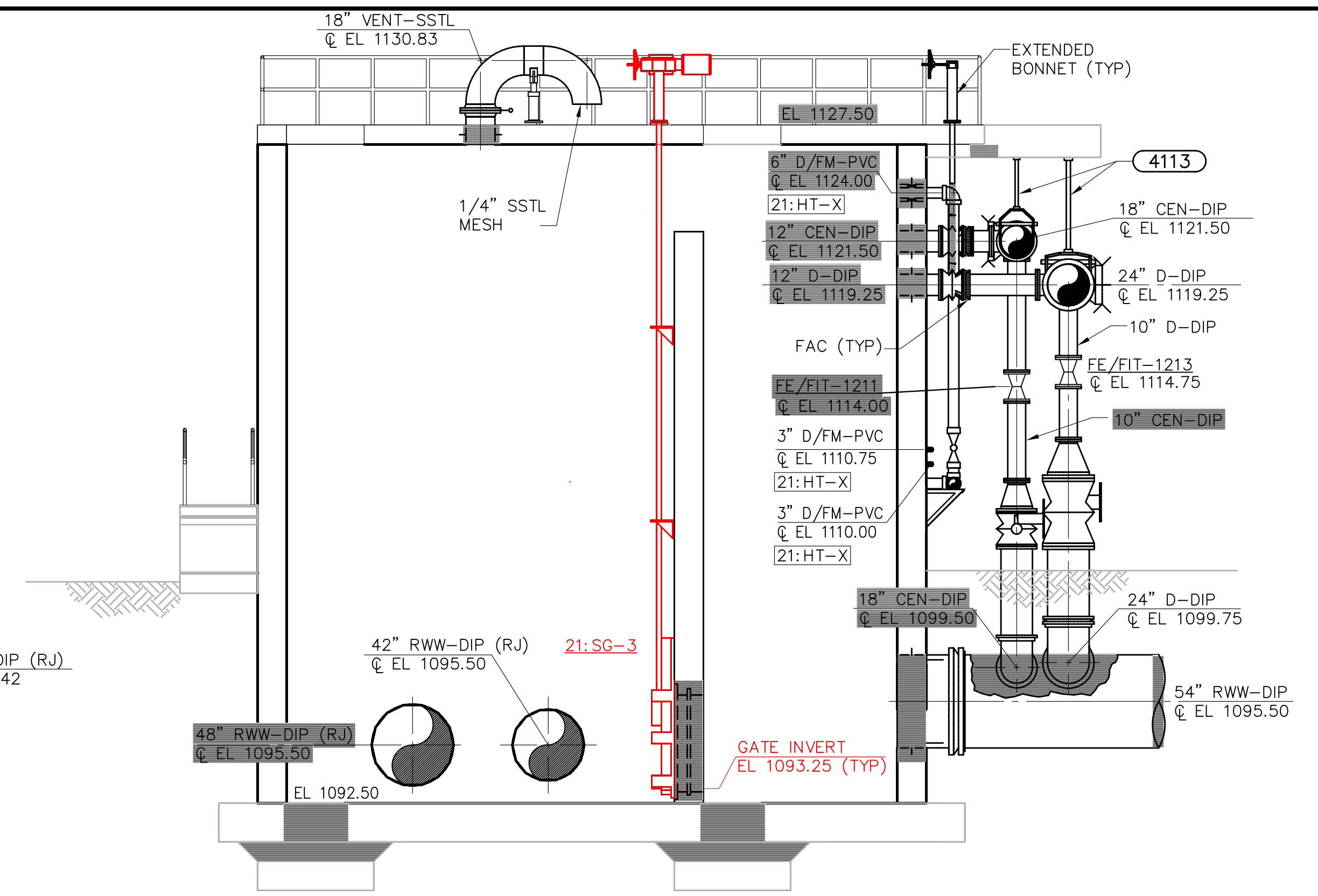
RECORD DRAWINGS  
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
INFLUENT DISTRIBUTION BOX TOP AND BOTTOM PLAN			
DESIGNED: TWW	CHECKED:	DATE: JAN 2002	2-21 M-004
DRAWN: RWO	APP'D.:	SCALE: AS SHOWN	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

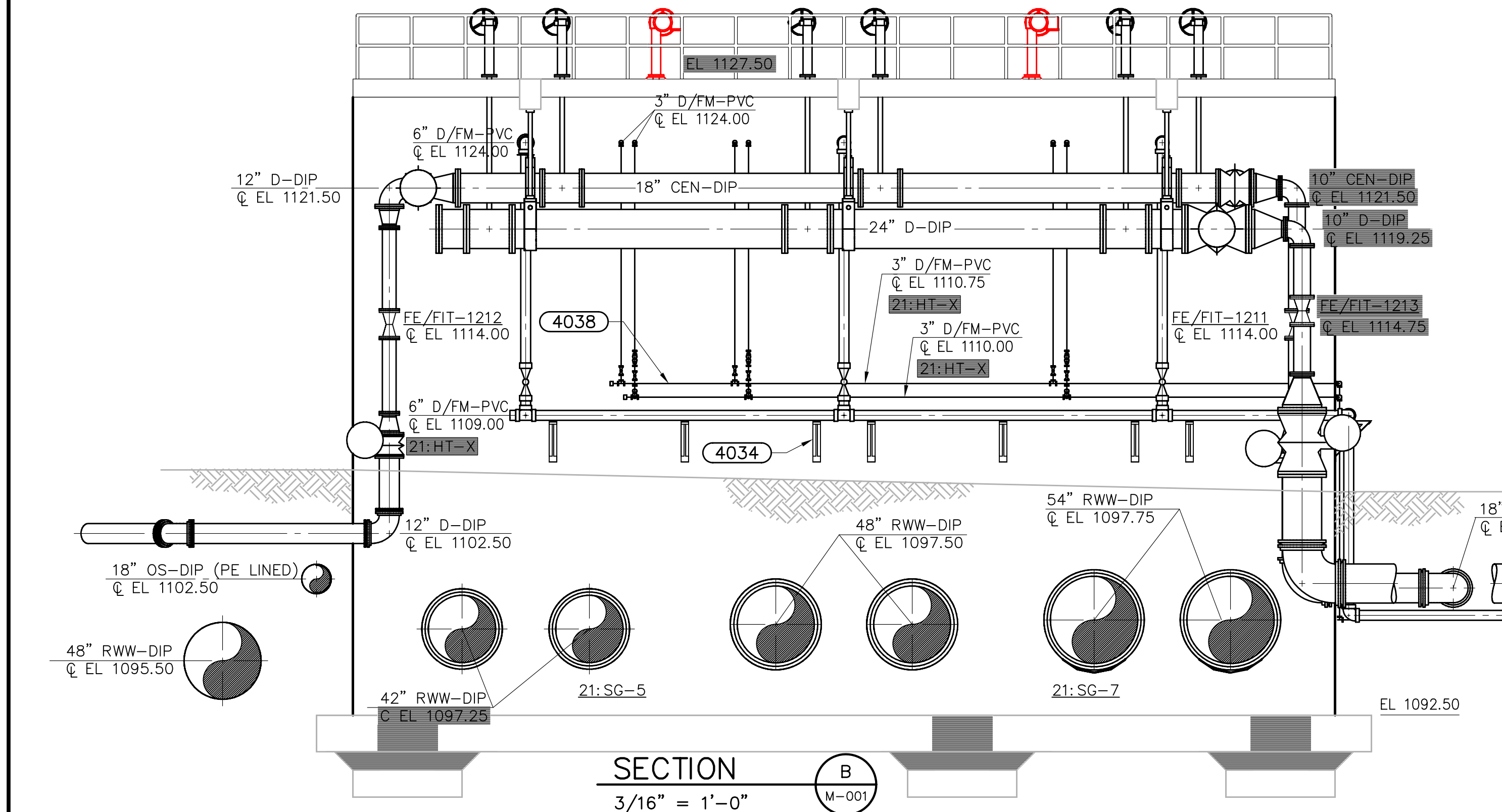


SECTION A  
3/16" = 1'-0" M-001

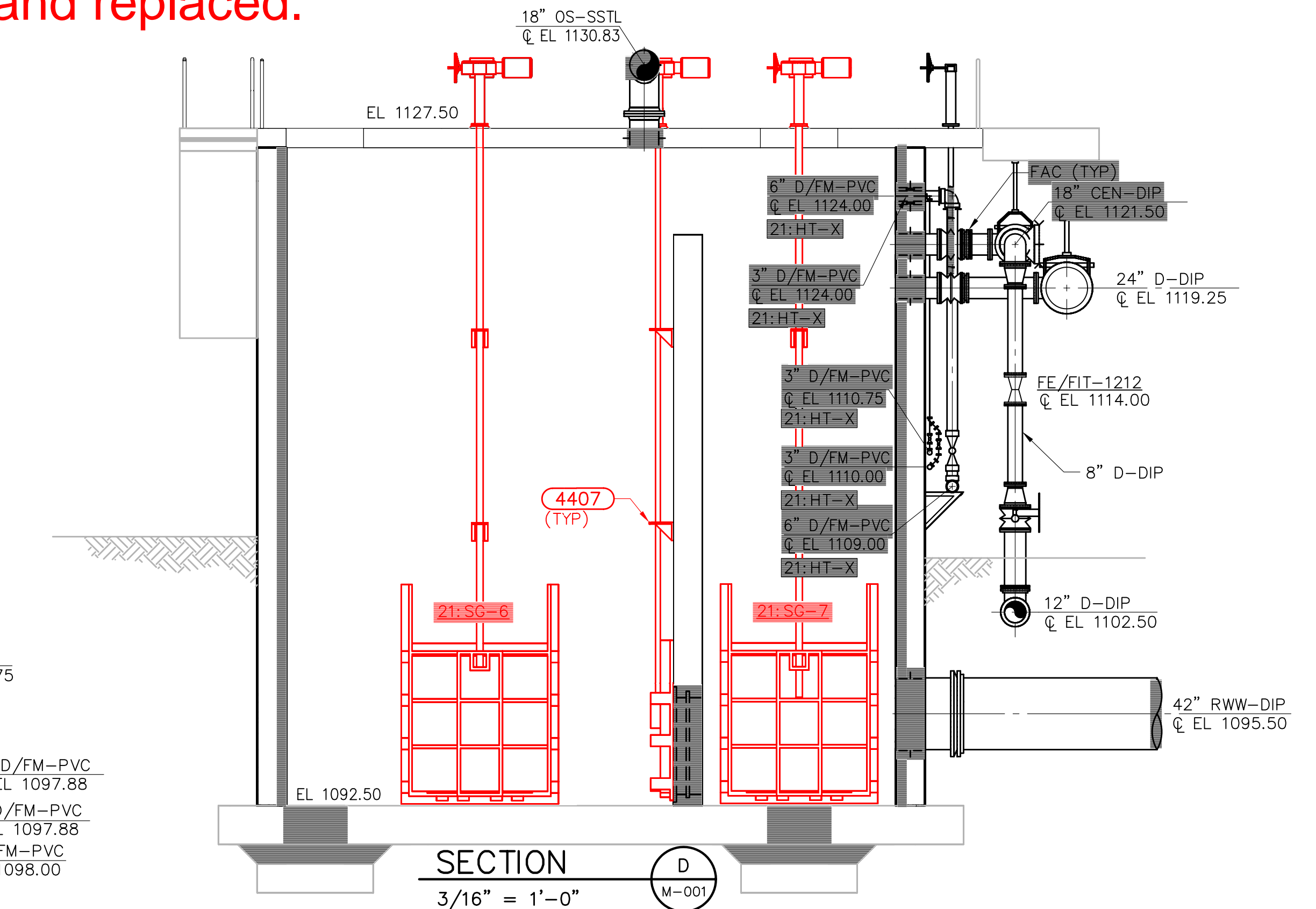


SECTION C  
3/16" = 1'-0" M-001

Note: Highlighted gates and actuators need to be purchased and replaced.



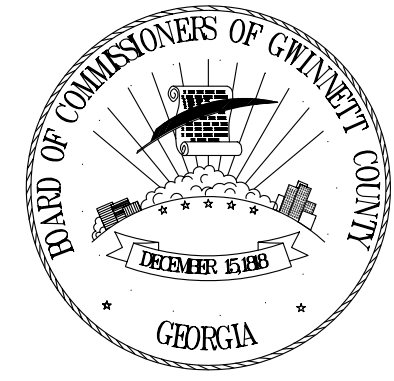
SECTION B  
3/16" = 1'-0" M-001



SECTION D  
3/16" = 1'-0" M-001

Jordan, Jones & Goulding  
CH2M HILL  
Precision Planning, Inc.

NO.	DATE	DESCRIPTION OF REVISION
R	05-19-06	RECORD DRAWING
O	01-03-02	FIRST RELEASE



GWINNETT COUNTY, GEORGIA  
DEPARTMENT OF PUBLIC UTILITIES  
F. WAYNE HILL  
WATER RESOURCES CENTER  
PHASE 2  
3320 FINANCIAL CENTER WAY

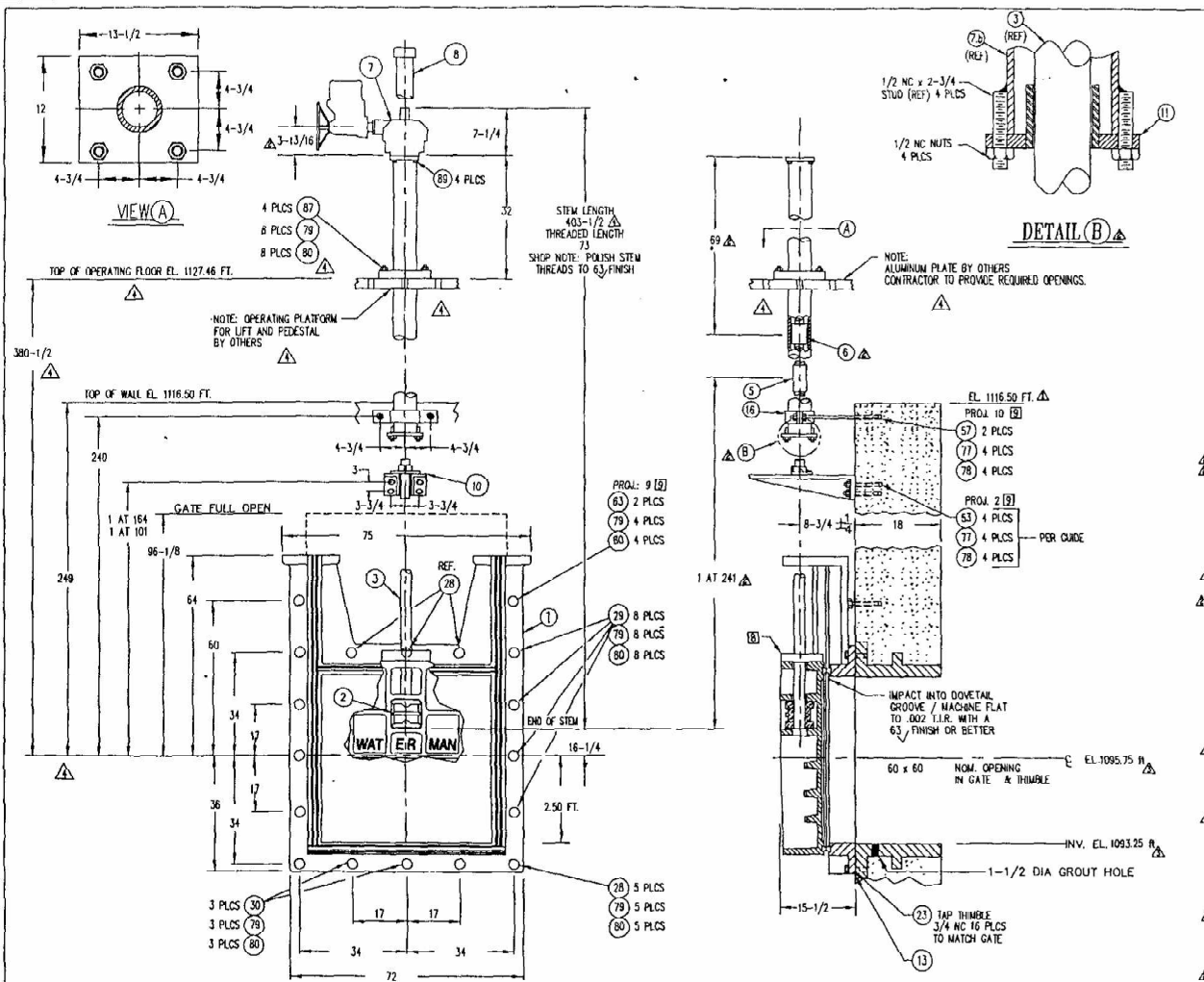
RECORD DRAWINGS  
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
INFLUENT DISTRIBUTION BOX SECTIONS			
DESIGNED: TWW	CHECKED:	DATE: JAN 2002	2-21 M-005
DRAWN: RWO	APP'D.	SCALE: AS SHOWN	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

**Exhibit A.2 – Influent Distribution Box Original Gates Submittal Drawings**

21:SG-1, 21:SG-2, and 21:SG-3  
ORIGINAL SUBMITTAL DRAWINGS



MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON: ASTM A-126 CL B	1. AS CAST	6E BLAST CLEAN PER SSPC-SP10
2. MANGANESE BRONZE: ASTM B-584 ALLOY 865	2. MACHINED	FORME (1) CT (3 MILS) INEMEC 69-1211
3. NAVAL BRONZE: ASTM B-21 ALLOY 482	3. GALVANIZE-ASTM A-123	PAINTE (2) CTS (4 MILS/CT) INEMEC SERIES 69
4. STRUCTURAL STEEL: ASTM A-36	4. GALVANIZE-ASTM A-153	POLYAMIDE EPOXY TUFF-12 MILS MIN.
5B. STAINLESS STEEL: ASTM A-276 TYPE 316	5. GALVANIZE-ASTM A-153	COLOR: GRAY
11. SHEL PIPE: ASTM A-120	6. SEE PAINT KEY	6H BLAST CLEAN PER SSPC-SP10
14. CLEAR PLASTIC BUTYRATE PIPE	7. ZINC PLATE	POLYAMIDE EPOXY (1) CT (3 MILS)
15B. STAINLESS STEEL HARDWARE: ASTM F-593 & 594 TYPE 316 (GRADE 8 & 80)	77. U.S. STEEL HOW: ASTM A-449	(2) CTS (4 MILS/CT) INEMEC SERIES 69
16. MASTIC BUTYL RUBBER		POLYAMIDE EPOXY & (1) CT (3 MILS)
26. PHOSPHOR BRONZE: ASTM B-139 ALLOY C51000		INEMEC SERIES 74 POLYURETHANE
29. CAST IRON: ASTM B-126 CLASS C		ENAMEL (TDF-11 MILS. MR.)
		COLOR: GRAY
		6T MANUFACTURERS STANDARD

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	60 x 60 S-5000-F	1	3
a) FRAME	1	6E	W-5124	1	1
b) COVER	29	6E	W-5505	1	1
c) SEAT	5	2,3	-	1	1
d) GUIDE RAIL	1	6E	CAST INTEGRAL WITH FRAME SYSTEM B	-	-
e) SIDE WEDGE ASSEMBLY	4	1,3	W-5139 & W-5004 L & R	4	4
WEDGES	150	2	-	-	-
f) TOP WEDGE ASSEMBLY	-	-	-	-	-
WEDGES & BRACKETS	4	1,3	W-5006 & W-5007	4	4
ASSEMBLY / ADJUSTING HARDWARE	150	2	-	-	-
g) BOTTOM WEDGE ASSEMBLY	4	1,3	W-5006 & W-5008	4	4
WEDGES & BRACKETS	150	2	-	-	-
ASSEMBLY / ADJUSTING HARDWARE	4	1,3	W-5006 & W-5008	4	4
ASSEMBLY / ADJUSTING HARDWARE	150	2	-	-	-
2. THRUST NUT	4	2,3	W-5014 (2 DIA. (5) TPI, LH)	1	3
3. STEM (RISING)	98	2,3	2 DIA. (5) TPI, LH	1	3
5. COUPLING (7/8 PDS KLS)	98	2,3	REF. 102845-123	1	3
6. STEM SLEEVE	98	2,3	REF. 102646-123	1	3
7. LIFT ASSEMBLY	-	-	-	1	3
a) ELECTRIC MOTOR OPERATOR	-	6T	ROTORK 10208/185	-	-
OUTLINE DRAWING	-	-	-	-	-
b) PEDESTAL	6,11,98	6H	REF. 102806 (MODIFIED (8))	1	1
8. STEM COVER (W/ 4" X 1/4" STRIP)	14	7	REF. 102785 (2-1/2" W) 64 LG.	1	3
10. STEM GUIDE (LZ BRONZE (BUKED))	1,26	6E	TYPE K-28	2	6
11. STEM GUIDE	6,5	6E	1/2 PLT (5-1/2" D.D.) W/ BUSHING	1	3
13. GASKET	16	2	TUBE TYPE	3	9
16. STEM GUIDE	6	4	TYPE SK-3	1	3
23. THUMBLE (PAINT INSIDE ONLY)	1	6E	60 TYPE F-SS X 18 LG.	1	3
28. DOUBLE ENDED STUD	98	2,3	3/4 NC X 4 LG.	5	15
29. DOUBLE ENDED STUD	98	2,3	3/4 NC X 10 LG.	8	24
30. DOUBLE ENDED STUD	98	2,3	3/4 NC X 7-1/2 LG.	3	9
33. ALL THREADED STUD	98	2,3	5/8 NC X 7 LG.	8	24
57. ALL THREADED STUD	98	2,3	5/8 NC X 17-1/2 LG.	2	6
63. ALL THREADED STUD	98	2,3	3/4 NC X 16 LG.	4	12
77. HEX NUT	150	2	5/8 NC	12	36
78. WASHER	150	2	5/8 DIA	12	36
79. HEX NUT	150	2	3/4 NC	28	84
80. WASHER	150	2	3/4 DIA.	28	84
87. HEX HEAD BOLT	150	2	3/4 NC X 4 LG.	4	12
89. HEX HEAD BOLT	37	7	5/8 NC X 1-1/2 LG.	4	12

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAXIMUM SEATING HEAD = 95 FT.; MAXIMUM UNSEATING HEAD = 38 FT.  
 2. OPERATING HEAD FROM GATE CENTER LINE: SEATING HEAD = 20.5 FT.; UNSEATING HEAD = 20.5 FT.  
 3. LIFT CAPACITY = 14774 LBS @ 7.25 IN/MIN (229 FT-LBS TORQUE; 28 RPM)  
 4. TURN HANDWHEEL CCW TO OPEN (RAISE) GATE.  
 5. CONTRACTOR TO VERIFY OR SUPPLY.  
 6. DIMENSION INCLUDES 1 INCH FOR GROUT PAD.  
 7. SHOP NOTE: PROVIDE STEM SUPPORT (2-1/8" I.D.).  
 8. CONTRACTOR TO PROVIDE EPOXY ADHESIVE FOR ANCHOR STUDS.  
 9. GATE AND PIPE BELOW AS SHOWN AND WELD ON STUDS.  
 10. GATES REQ'D @ INFLUENT DISTRIBUTION BOX TAG NO'S: 21-SG-1, 21-SG-2 & 21-SG-3 REF. PLAN SHEET: 2-21-M-004 & 5

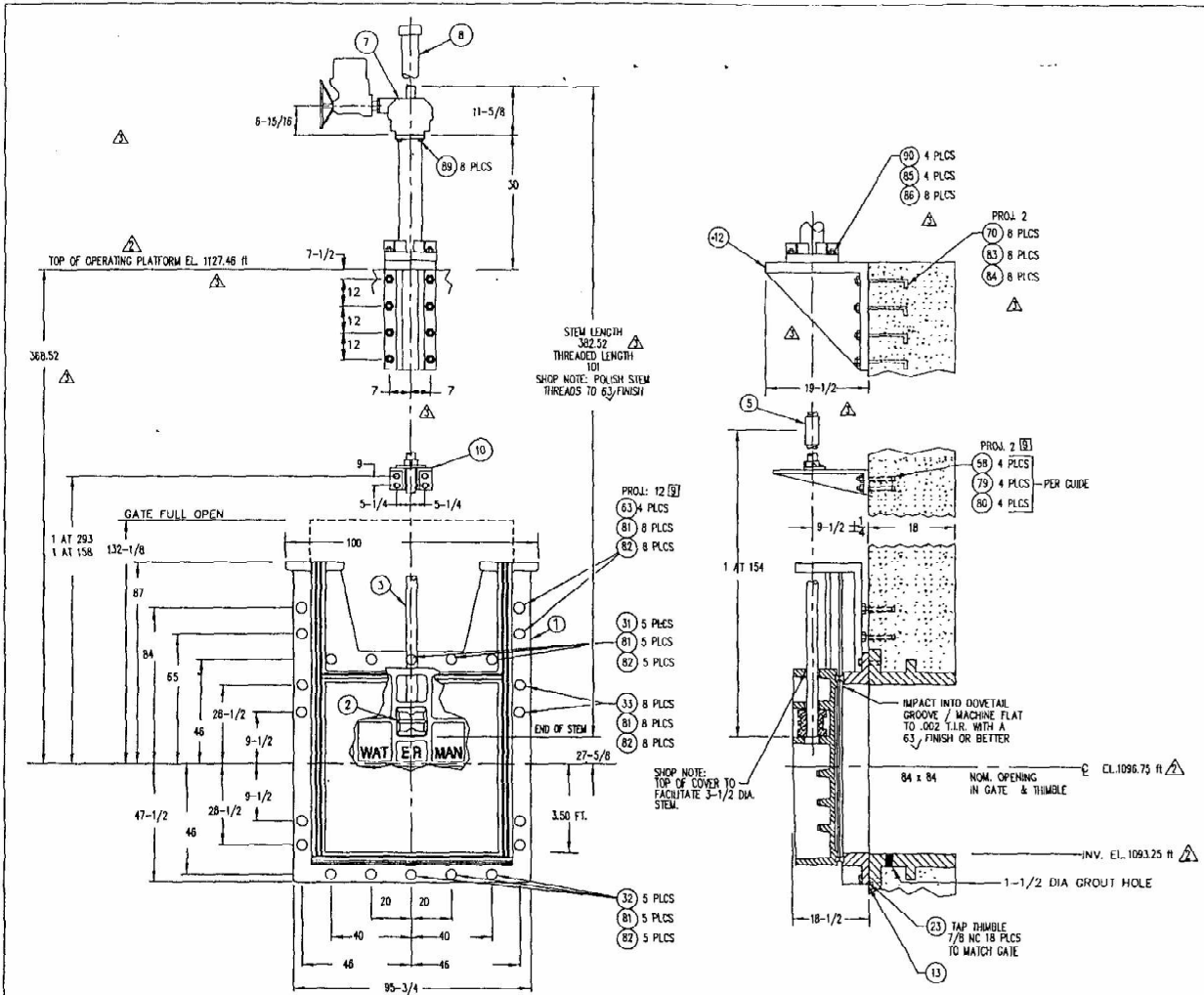
REF. WAYNE WATER RESOURCES CENTER  
 PHASE-II, CONTRACT-II, BID NO. BL010-0202  
 BIOLOGICAL TREATMENT FACILITIES  
 LAWRENCEVILLE, GWINNETT COUNTY, GEORGIA  
 ENGINEERS: JUG / CH2M HILL / PPI

60 x 60 WATERMAN MODEL  
 S-5000-F  
 SLUICE GATE

FOR: PIZZAGALLI CONSTRUCTION  
 411 N. CLARENDON AVENUE  
 SCOTTSDALE, GA 30079

REV. NO.	DATE	BY	LES	JOB NO.	PROJECT
REV. NO. 1	03-17-03	MH	LES	1-7623	LES
REV. NO. 2	1-30-03	ME	LES	QUOTE NO. GQ02-A-099	QUOTE ITEM NO. 1
REV. NO. 3	12-21-02	MH	LES	DRAWN BY GM/MH	CHECKED BY GM/MBH
REV. NO. 4	09-25-02	MT	LES	SCALE NONE	DATE 9/18/02
REV. NO. 5	09-18-02	MT	LES	DRAWING NO. RB-02-1387	

21:SG-4, 21:SG-5, 21:SG-6 AND 21:SG-7  
ORIGINAL SUBMITTAL DRAWINGS



MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON: ASTM A-126 CL. B 4. MANGANESE BRONZE: ASTM B-594 ALLOY #65 5. NAVAL BRONZE: ASTM B-21 ALLOY #82 6. STRUCTURAL STEEL: ASTM A-36 9B. STAINLESS STEEL: ASTM A-276 TYPE 316 11. STEEL PIPE: ASTM A-120 14. CLEAR PLASTIC BUTYRATE PIPE 15B. STAINLESS STEEL HARDWARE: ASTM F-593 & 594 TYPE 316 (GRADE B & 80) 16. MASTIC: BUTYL RUBBER 26. PHOSPHOR BRONZE: ASTM B-139 ALLOY C51000 29. CAST IRON: ASTM B-126 CLASS C	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY 7. ZINC PLATE 37.M.S. STEEL 100W:ASTM A-449	6E BLAST CLEAN PER SSPC-SP10 PRIME (1) CT (3 MILS) INEMEC 69-1211 PAINT (2) CTS (4 MILS/CT) INEMEC SERIES 69 POLYAMIDE EPOXY DPT-12 MILS. MIN. COLOR: GRAY 6H BLAST CLEAN PER SSPC-SP10 (2) CTS (4 MILS/CT) INEMEC SERIES 69 POLYAMIDE EPOXY & (1) CT (3 MILS) INEMEC SERIES 74 POLYURETHANE ENAMEL (TOFT-11 MILS. MIN) COLOR: GRAY 6T MANUFACTURERS STANDARDS

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY / GATE	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	84 x 84 S-5000-F	1	4
a) FRAME	1	6E	W-5081	1	1
b) COVER	29	6E	W-5423	1	1
c) SEAT	5	2,3	-	-	-
d) GUIDE RAIL	1	6E	W-5093 L&R	1 ea	1
e) ATTACHING HARDWARE	15B	2,3	-	-	-
f) SIDE WEDGE ASSEMBLY	4	1,3	SYSTEM B	5 ea	5
g) ASSEMBLY / ADJUSTING HARDWARE	15B	2	W-5139 & W-5004 L & R	-	-
h) TOP WEDGE ASSEMBLY	4	-	-	4	4
i) WEDGES & BRACKETS	4	1,3	W-5006 & W-5007	-	-
j) ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
k) BOTTOM WEDGE ASSEMBLY	4	1,3	W-5008 & W-5008	4	4
l) WEDGES & BRACKETS	4	1,3	-	-	-
m) ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
2. THRUST NUT	4	2,3	W-5350 (5-1/2 DIA. [5] TPL RH)	1	4
3. STEM (RISING)	9B	2,3	3-1/2 DIA. [5] TPL LH	1	4
4. COUPLING (THREAD & KEY)	9B	2,3	5 OD X 14 LG.	1	4
7. LIFT ASSEMBLY	-	-	-	1	4
a) ELECTRIC MOTOR OPERATOR	-	6T	ROTORX J040/B71	1	1
b) OUTLINE DRAWING	-	-	-	-	-
c) SCHEMATIC DRAWING	-	-	-	-	-
d) PEDESTAL	6,11	6H	REF. 102909	1	1
8. STEM COVER (W/ NYLAR STRIP)	14	2	REF. 105093 (6 IN.) 90 LG	1	4
9. STEM GUIDE (L2 BRONZE BUSHED)	1,6,26	6E	TYPE K-20	2	8
10. ANCHOR BOLT	6	6E	REF. 106394-2	1	4
11. GASKET	16	2	FLUE TYPE	4	16
21. THIMBLE (PAINT INSIDE ONLY)	1	6E	84 TYPE F-SS X 18 LG.	1	4
31. DOUBLE ENDED STUD	9B	2,3	7/8 NC X 4-1/2 LG.	5	20
32. DOUBLE ENDED STUD	9B	2,3	7/8 NC X 9-1/2 LG	5	20
33. DOUBLE ENDED STUD	9B	2,3	7/8 NC X 14 LG.	8	32
34. DOUBLE ENDED STUD	9B	2,3	1-1/4 NC X 14 LG.	8	32
35. ALL THREADED STUD	9B	2,3	3/4 NC X 12 LG.	8	32
36. ALL THREADED STUD	9B	2,3	7/8 NC X 20 LG.	4	16
79. HEX NUT	15B	2	3/4 NC	8	32
80. WASHER	15B	2	3/4 DIA.	8	32
81. HEX NUT	15B	2	7/8 NC	26	104
82. WASHER	15B	2	7/8 DIA.	26	104
83. HEX NUT	15B	2	1-1/4 NC	8	32
84. WASHER	15B	2	1-1/4 DIA.	8	32
85. HEX NUT	15B	2	1-1/2 NC	4	16
86. WASHER	15B	2	1-1/2 DIA.	8	32
89. HEX HEAD BOLT	37	7	3/4 NC X 1-3/4 LG.	8	32
90. HEX HEAD BOLT	15B	2	1-1/2 NC X 4 LG.	4	16

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAXIMUM SEATING HEAD = 89 FT.; MAXIMUM UNSEATING HEAD = 42 FT.  
 2. OPERATING HEAD FROM GATE CENTER LINE: SEATING HEAD = 30.5 FT.; UNSEATING HEAD = 30.5 FT. [6]  
 3. LIFT CAPACITY = 4,986 LBS @ 14.30 IN./MIN (1530 FT.-LBS. TORQUE/14.3 RPM)  
 4. TURN HANDWHEEL CCW TO OPEN (RAISE) GATE.  
 5. 3-1/2 DIA., 1/2 PITCH, 1 LEAD, (DOUBLE LEAD), 29° FULL ACME, LH THREADS.  
 6. CONTRACTOR TO VERIFY OR SUPPLY.  
 7. DIMENSION INCLUDES 1 INCH FOR GROUT PAD.  
 8.  
 9. CONTRACTOR TO PROVIDE EPOXY ADHESIVE FOR ANCHOR STUDS.

REF: WAYNE WATER RESOURCES CENTER  
 PHASE-II, CONTRACT-II, BID NO. BL010-0202  
 BIOLOGICAL TREATMENT FACILITIES  
 LAWRENCEVILLE, GWINNETT COUNTY, GEORGIA  
 ENGINEERS: JYG / CH2M HILL / PPI

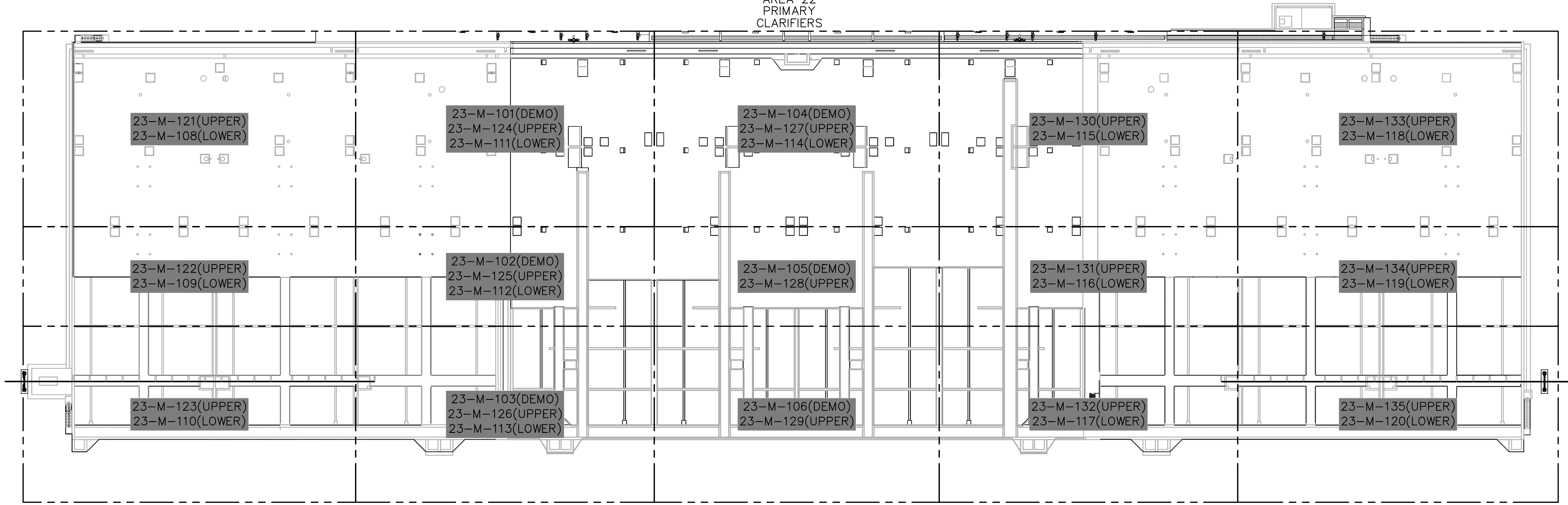
84 x 84 WATERMAN MODEL  
 S-5000-F  
 SLUICE GATE

FOR: PIZZAGALLI CONSTRUCTION  
 411 N. CLARENDON AVENUE  
 SCOTTSDALE, GA 30079

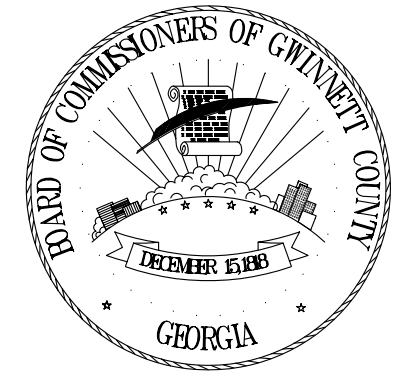
REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER
			L-7623	LES
REV. NO. [A]	DATE 03-17-03	BY MH	QUOTE NO. G002-A-099	QUOTE ITEM NO. 2
REV. NO. [A]	DATE 1-30-03	BY ME	DRAWN BY GM/MH	CHECKED BY GM/MBH
REV. NO. [A]	DATE 12-21-02	BY MH	SCALE NONE	DATE 9/18/02
REV. NO. [A]	DATE (DRAWING ADDED) 08-18-02	BY MT	DRAWING NO. RB-02-1388	

## **Exhibit B.1 – Bioreactors Record Drawings**

AREA 22  
PRIMARY  
CLARIFIERS



<b>Jordan, Jones &amp; Goulding</b> <b>CH2M HILL</b> <i>Precision Planning, Inc.</i>			
R	06-07-06	RECORD DRAWINGS	
O	01-03-02	FIRST RELEASE	
NO.	DATE	DESCRIPTION OF REVISION	



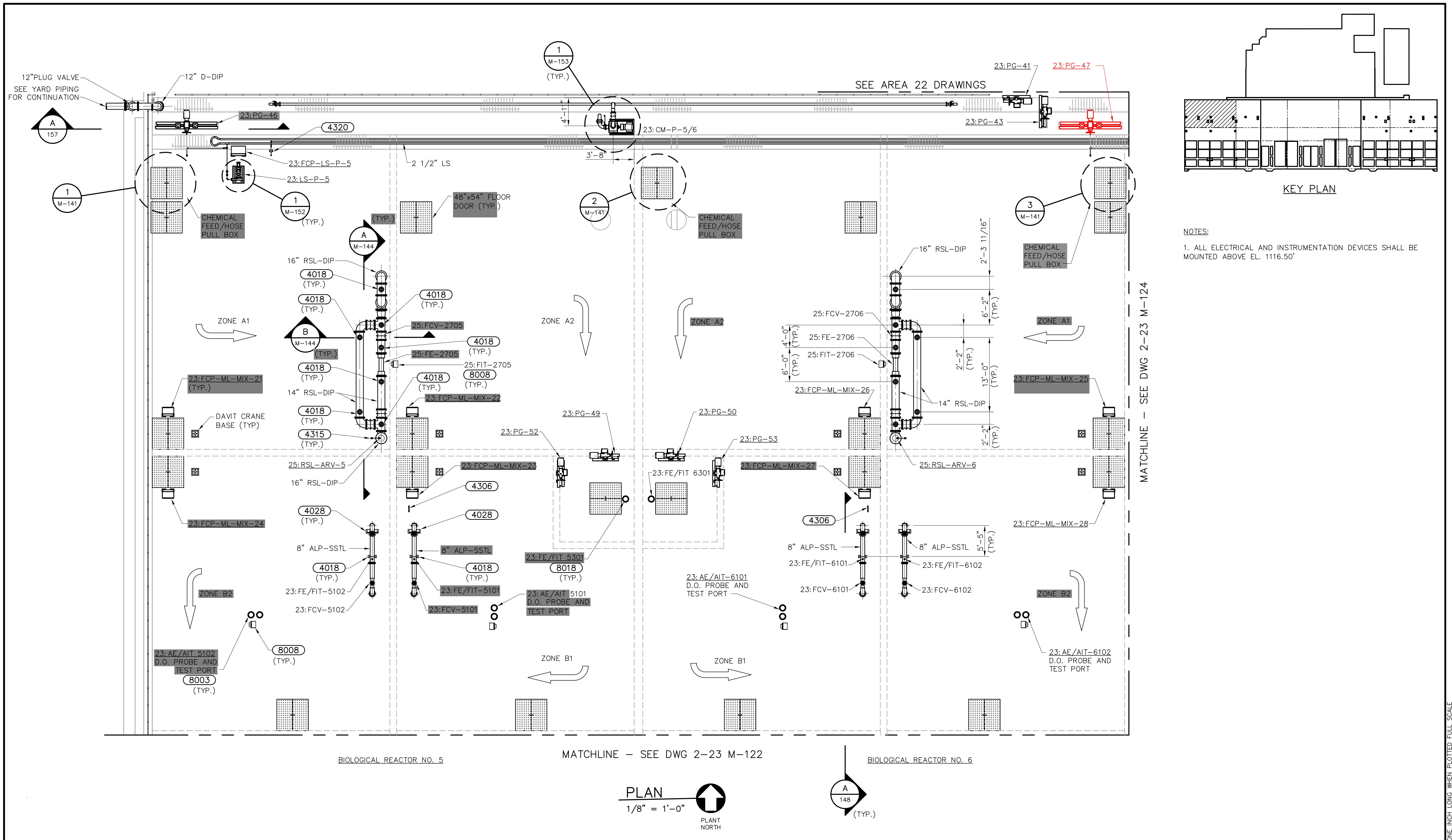
**GWINNETT COUNTY, GEORGIA**  
**DEPARTMENT OF PUBLIC UTILITIES**  
**F. WAYNE HILL**  
**WATER RESOURCES CENTER**  
**PHASE 2**  
**3320 FINANCIAL CENTER WAY**

RECORD DRAWINGS  
 These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
BIOLOGICAL REACTORS KEY PLAN			
DESIGNED: R.L.	CHECKED:	DATE: JAN 2002	2-23 M-100
DRAWN: D.G.H.	APP'D:	SCALE: 1/32"=1'-0"	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

RECORD 3



**Jordan, Jones & Goulding**  
**CH2M HILL**  
**Precision Planning, Inc.**

NO.	DATE	DESCRIPTION OF REVISION
R	05-12-06	RECORD DRAWING
O	01-03-02	FIRST RELEASE
NO.	DATE	DESCRIPTION OF REVISION

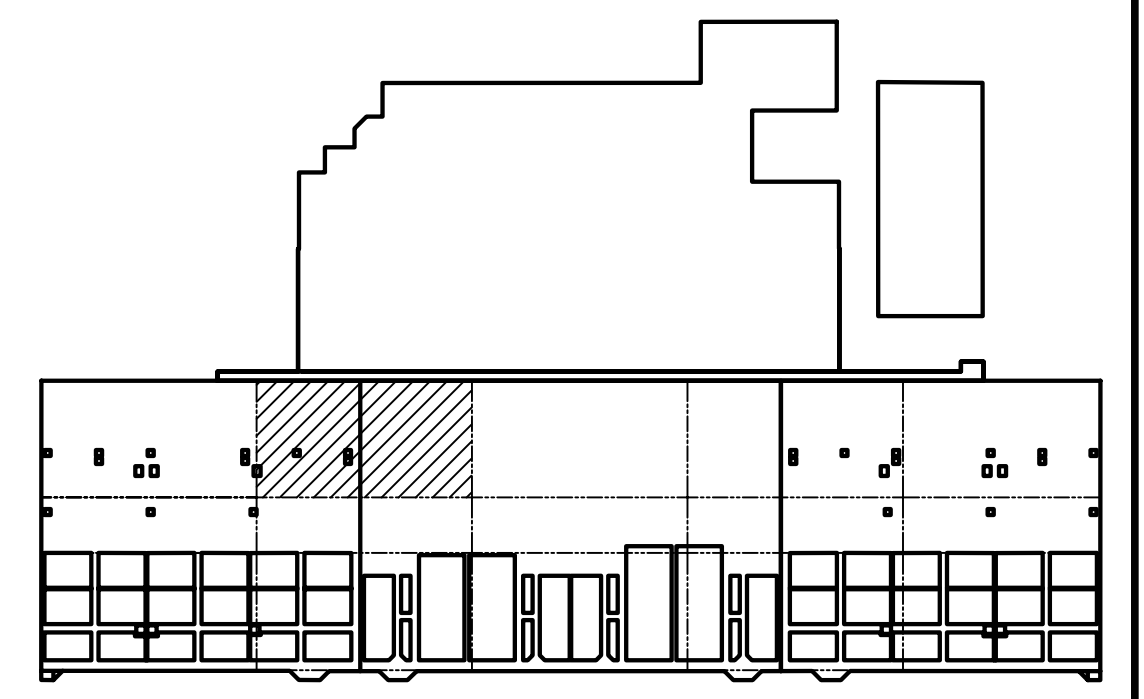
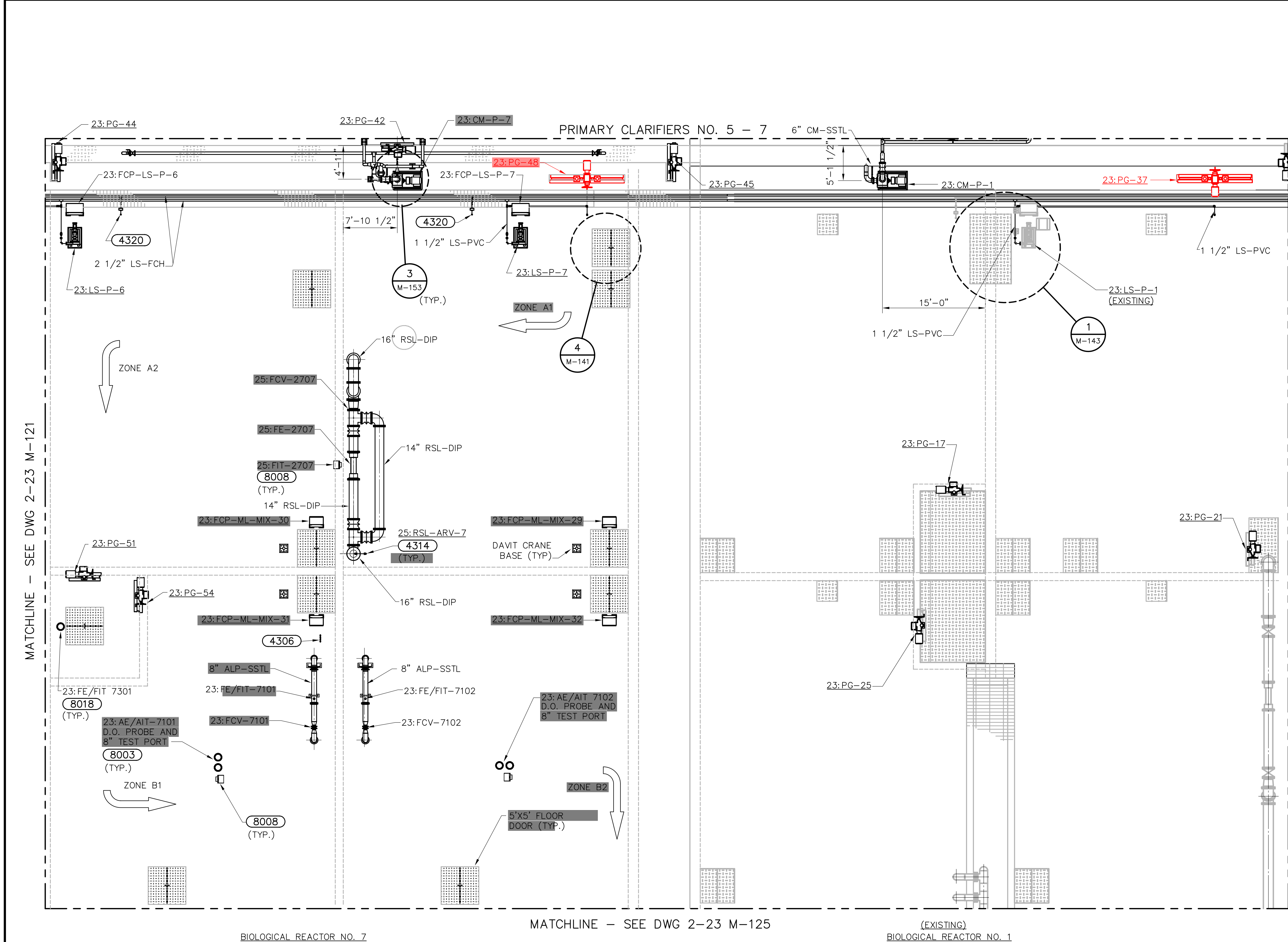


**GWINNETT COUNTY, GEORGIA**  
**DEPARTMENT OF PUBLIC UTILITIES**  
**F. WAYNE HILL**  
**WATER RESOURCES CENTER**  
**PHASE 2**  
**3320 FINANCIAL CENTER WAY**

RECORD DRAWINGS  
 These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
BIOLOGICAL REACTORS BASINS NO. 5 AND 6 UPPER PARTIAL PLAN			
DESIGNED: S.G.	CHECKED:	DATE: JAN 2002	2-23 M-121
DRAWN: D.HELMS	APP'D.	SCALE: 1/8"=1'-0"	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE



KEY PLAN

- NOTES:
1. FOR NITR, RSL AND ALP TYPICAL PIPE SUPPORT DIMENSIONS AND DETAIL CALL-OUTS, SEE DWG'S. : 2-23 M-108, 2-23 M-109, 2-23 M-110, 2-23 M-121, 2-23 M-122 AND 2-23 M-123.
  2. ALL ELECTRICAL AND INSTRUMENTATION DEVICES SHALL BE MOUNTED ABOVE EL. 1116.50'

MATCHLINE - SEE DWG 2-23 M-121

MATCHLINE - SEE DWG 2-23 M-127

BIOLOGICAL REACTOR NO. 7

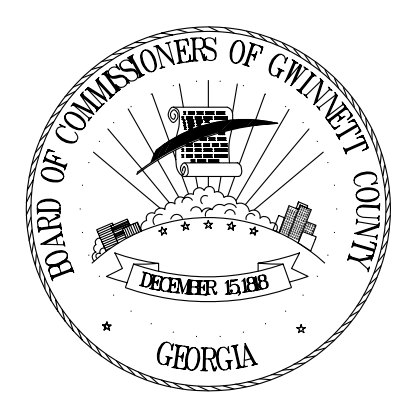
MATCHLINE - SEE DWG 2-23 M-125

(EXISTING)  
BIOLOGICAL REACTOR NO. 1

PLAN  
1/8" = 1'-0"  
PLANT NORTH

**Jordan, Jones & Goulding**  
**CH2M HILL**  
**Precision Planning, Inc.**

NO.	DATE	DESCRIPTION OF REVISION
R	05-12-06	RECORD DRAWING
O	01-03-02	FIRST RELEASE

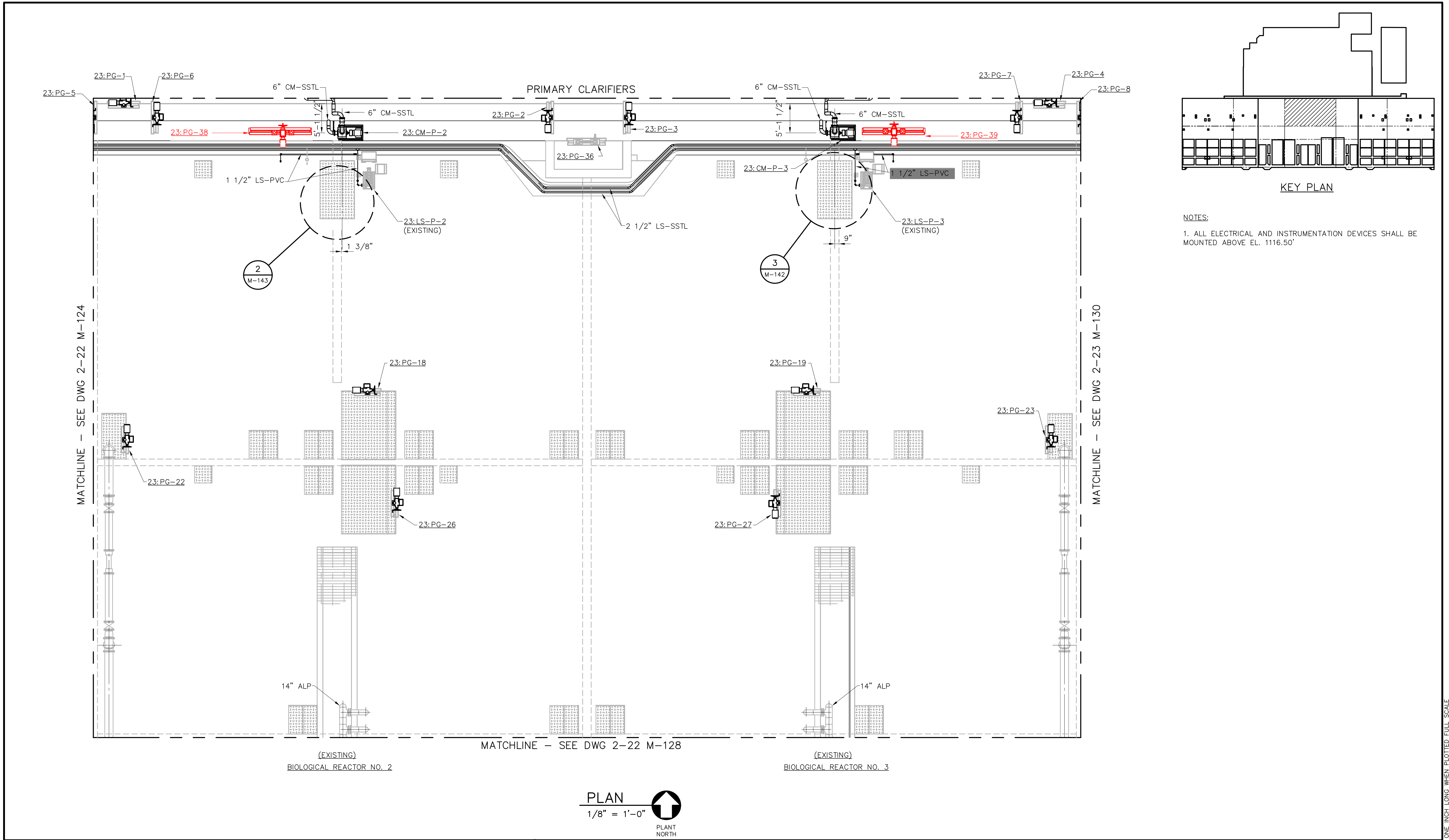


**GWINNETT COUNTY, GEORGIA**  
**DEPARTMENT OF PUBLIC UTILITIES**  
**F. WAYNE HILL**  
**WATER RESOURCES CENTER**  
**PHASE 2**  
**3320 FINANCIAL CENTER WAY**

RECORD DRAWINGS  
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

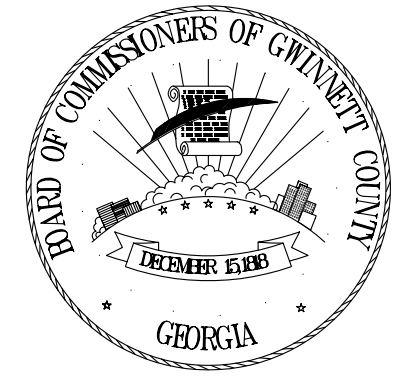
CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
BIOLOGICAL REACTORS BASINS NO. 7 AND 1 UPPER PARTIAL PLAN			
DESIGNED: S.G.	CHECKED:	DATE: JAN 2002	2-23 M-124
DRAWN: D.HELMs	APP'D.	SCALE: 1/8"=1'-0"	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE



**Jordan, Jones & Goulding**  
**CH2M HILL**  
**Precision Planning, Inc.**

NO.	DATE	DESCRIPTION OF REVISION
R	03-06-06	RECORD DRAWINGS
O	01-03-02	FIRST RELEASE
NO.	DATE	DESCRIPTION OF REVISION

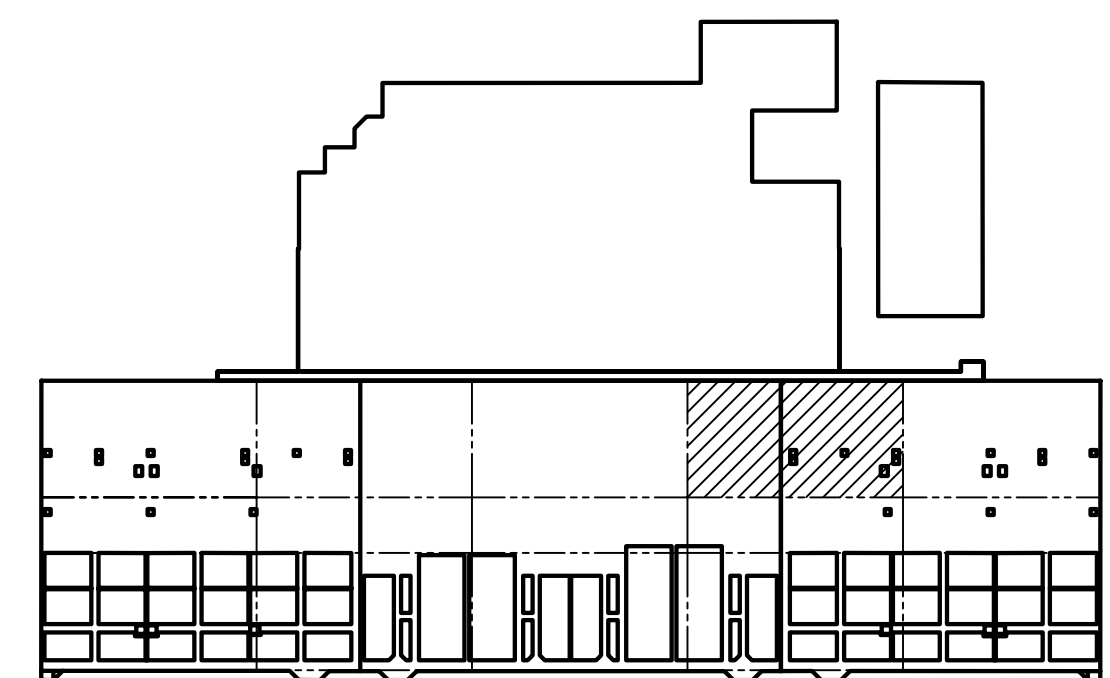
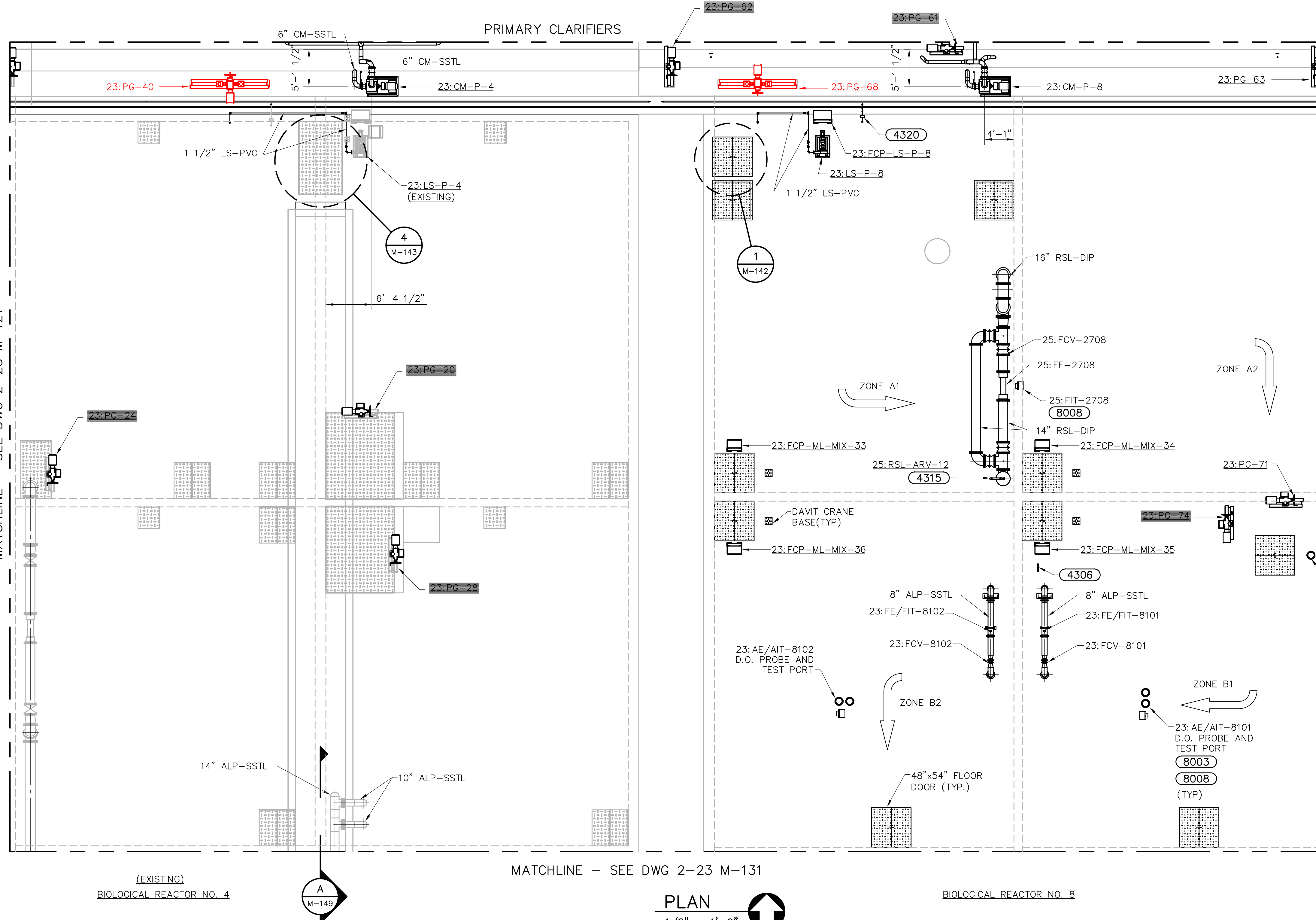


**GWINNETT COUNTY, GEORGIA**  
**DEPARTMENT OF PUBLIC UTILITIES**  
**F. WAYNE HILL**  
**WATER RESOURCES CENTER**  
**PHASE 2**  
**3320 FINANCIAL CENTER WAY**

RECORD DRAWINGS  
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CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
BIOLOGICAL REACTORS BASINS 2 AND 3 UPPER PARTIAL PLAN			
DESIGNED: D.G.H.	CHECKED:	DATE: JAN 2002	2-23 M-127
DRAWN: D.G.H.	APP'D.	SCALE: 1/8"=1'-0"	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE



NOTES:  
 1. FOR NITR, RSL AND ALP TYPICAL PIPE SUPPORT DIMENSIONS AND DETAIL CALL-OUTS, SEE DWG'S. : 2-23 M-108, 2-23 M-109, 2-23 M-110, 2-23 M-121, 2-23 M-122 AND 2-23 M-123.  
 2. ALL ELECTRICAL AND INSTRUMENTATION DEVICES SHALL BE MOUNTED ABOVE EL. 1116.50'

MATCHLINE - SEE DWG 2-23 M-127

MATCHLINE - SEE DWG 2-23 M-133

(EXISTING)  
BIOLOGICAL REACTOR NO. 4

MATCHLINE - SEE DWG 2-23 M-131

BIOLOGICAL REACTOR NO. 8

PLAN  
 1/8" = 1'-0"  
 PLANT NORTH

<b>Jordan, Jones &amp; Goulding</b> <b>CH2M HILL</b> <i>Precision Planning, Inc.</i>		R	05-12-06	RECORD DRAWING
		O	01-03-02	FIRST RELEASE
NO.	DATE	DESCRIPTION OF REVISION		

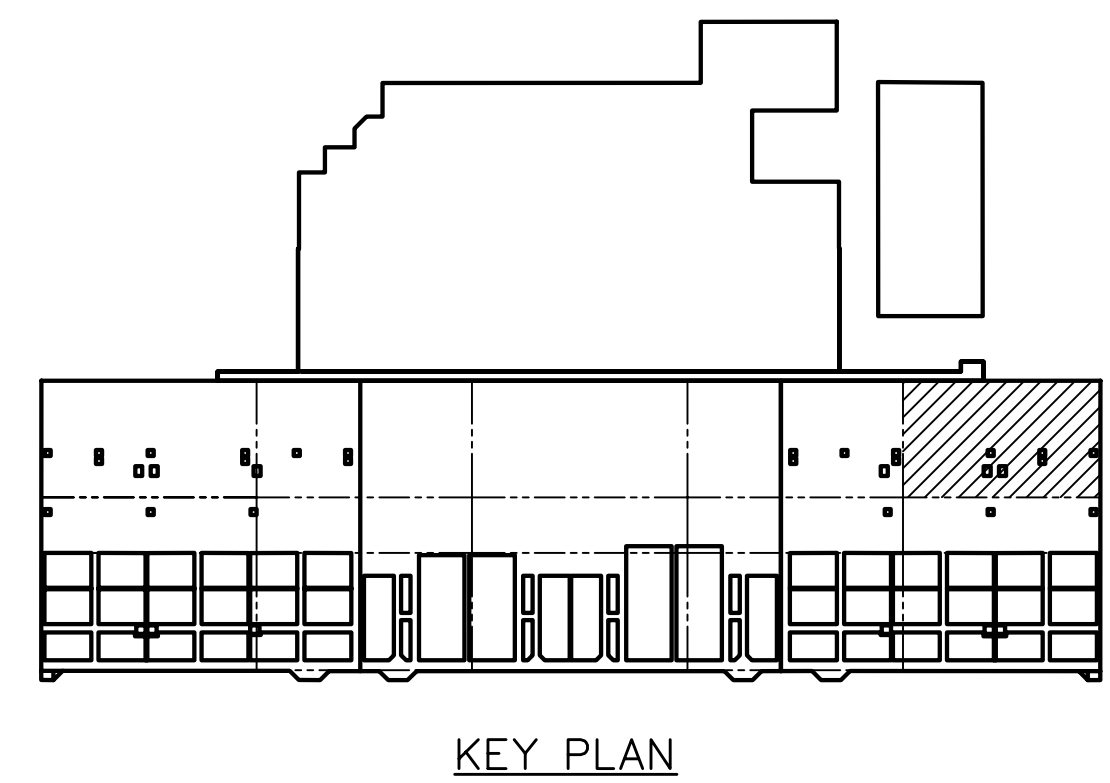
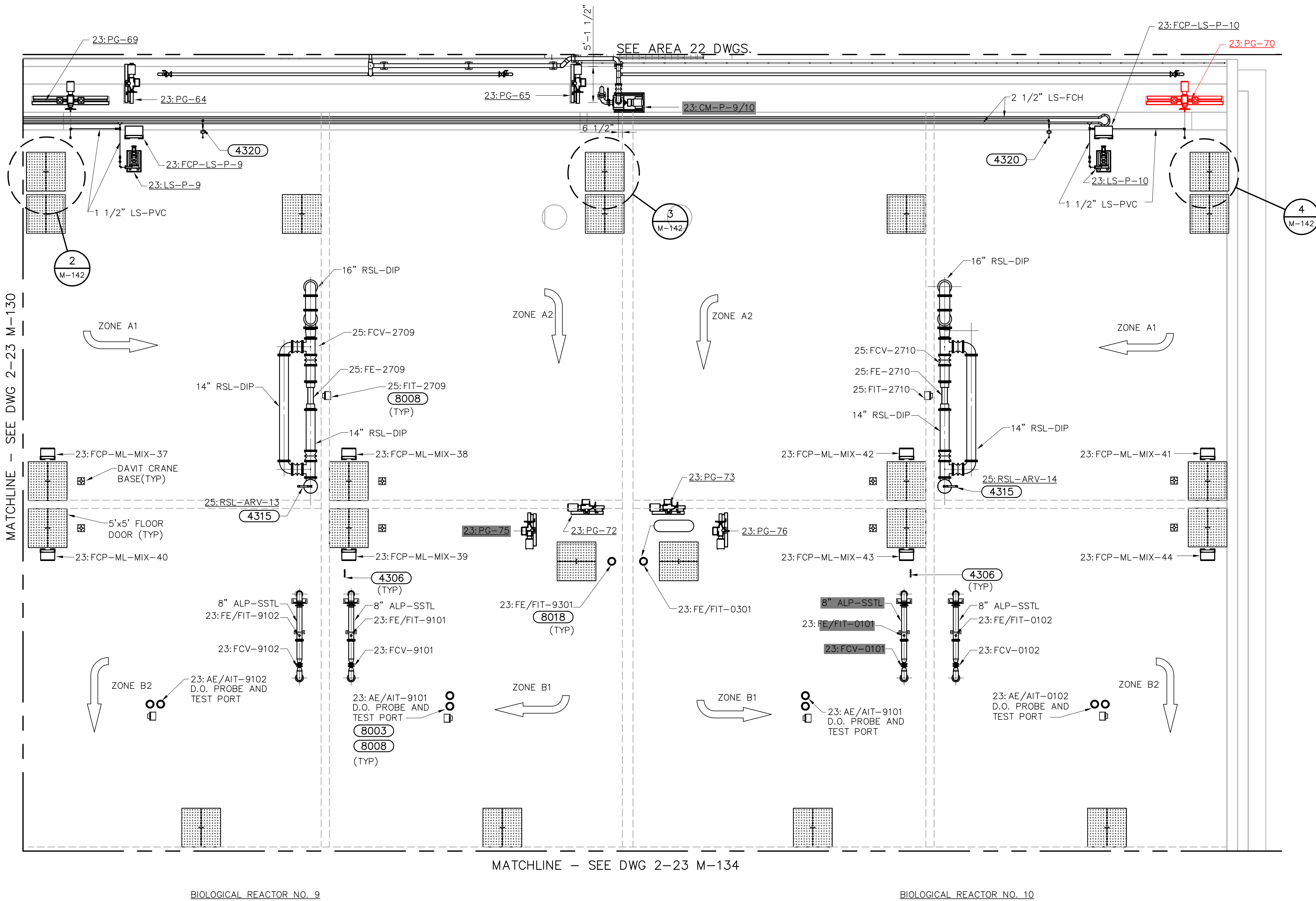


**GWINNETT COUNTY, GEORGIA**  
**DEPARTMENT OF PUBLIC UTILITIES**  
**F. WAYNE HILL**  
**WATER RESOURCES CENTER**  
**PHASE 2**  
**3320 FINANCIAL CENTER WAY**

RECORD DRAWINGS  
 These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES <b>BIOLOGICAL REACTORS</b> <b>BASINS 4 AND 8</b> <b>UPPER PARTIAL PLAN</b>			
DESIGNED: D.G.H.	CHECKED:	DATE: JAN 2002	2-23 M-130
DRAWN: D.G.H.	APP'D.	SCALE: 1/8"=1'-0"	DRAWING
			R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

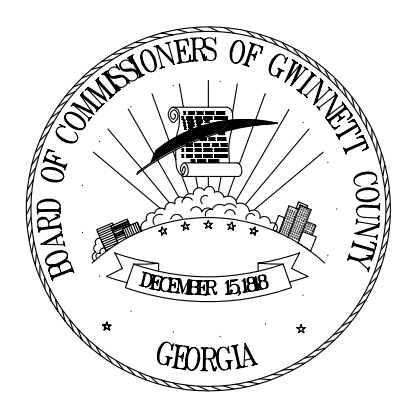


- NOTES:
- FOR NITR, RSL AND ALP TYPICAL PIPE SUPPORT DIMENSIONS AND DETAIL CALL-OUTS, SEE DWG'S. : 2-23 M-108, 2-23 M-109, 2-23 M-110, 2-23 M-121, 2-23 M-122 AND 2-23 M-123.
  - ALL ELECTRICAL AND INSTRUMENTATION DEVICES SHALL BE MOUNTED ABOVE EL. 1116.50'

PLAN  
1/8" = 1'-0"  
PLANT NORTH

Jordan, Jones & Goulding  
CH2M HILL  
Precision Planning, Inc.

NO.	DATE	DESCRIPTION OF REVISION
R	03-06-06	RECORD DRAWINGS
O	01-03-02	FIRST RELEASE



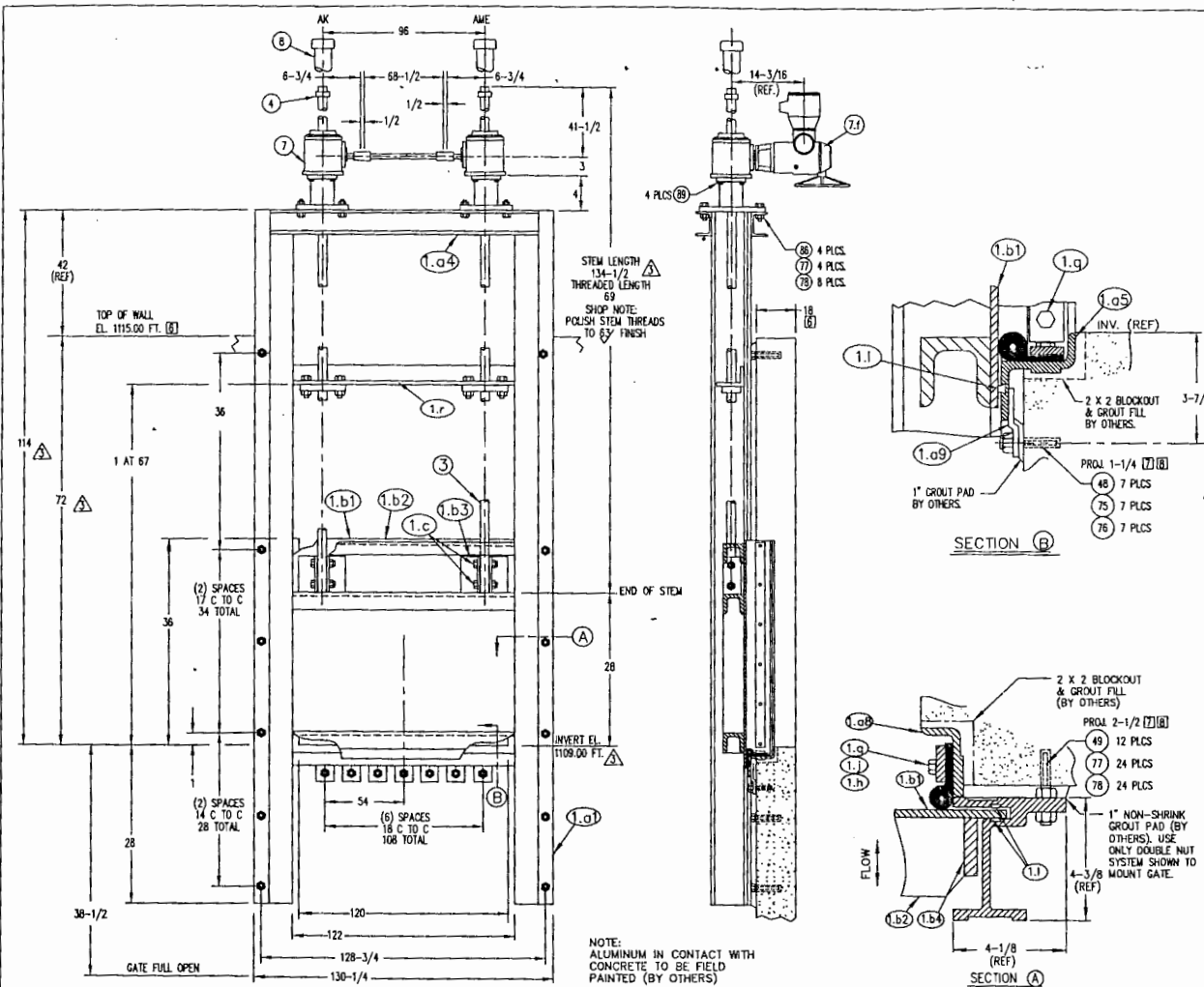
GWINNETT COUNTY, GEORGIA  
DEPARTMENT OF PUBLIC UTILITIES  
F. WAYNE HILL  
WATER RESOURCES CENTER  
PHASE 2  
3320 FINANCIAL CENTER WAY

RECORD DRAWINGS  
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 2 BIOLOGICAL TREATMENT FACILITIES			
BIOLOGICAL REACTORS BASINS NO. 9 AND 10 UPPER PARTIAL PLAN			
DESIGNED: D.G.H.	CHECKED:	DATE: JAN 2002	2-23 M-133
DRAWN: D.G.H.	APP'D.	SCALE: 1/8"=1'-0"	R REV

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

**Exhibit B.2 – Bioreactors Original Influent Gates Submittal Drawings**



MATERIAL KEY	FINISH KEY	PAINT KEY $\Delta$
1. CAST IRON: ASTM A-126 CL B 4. MANGANESE BRONZE: ASTM B-584 ALLOY 865 6. STRUCTURAL STEEL: ASTM A-36 9A. STAINLESS STEEL: ASTM A-276 TYPE 304 9B. STAINLESS STEEL: ASTM A-276 TYPE 316 11. SIL. PIPE: ASTM A-53 TY. E GR. A 13. NEOPRENE RUBBER: ASTM D-2000 14. CLEAR PLASTIC BUTYRATE PIPE 15B. STAIN. SIL. TUB. ASTM F-593 & 594 TYPE 316 17. ALUMINUM: ASTM B-209 ALLOY 6061-T6 21. UHMW POLYETHYLENE PLASTIC	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY 7. ZINC PLATE 37.M.S. STEEL HDR: ASTM A-449	6H BLAST CLEAN PER SSPC-SP10 (2) CTS (4 MILS/CT)-NEMEC SERIES 69 POLYAMIDE EPOXY & (1) CT (3 MILS) NEMEC SERIES 74 POLYURETHANE ENAMEL (TOP)-11 MILS. MIN. COLOR: GRAY 6T MANUFACTURERS STANDARD

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. SLIDE GATE ASSEMBLY - APR-5SJ-1-Y	-	-	-	1	10
a) FRAME ASSEMBLY	-	-	-	1	1
1) GUIDE RAIL	17	2	EXTRUSION 101144 (4.79 lb/ft)	1	1
4) HEAD RAIL	17	2	C5 X 3.11 LB/FT. CHANNEL	2	2
5) BOTTOM RAIL	17	2	EXTRUSION 104695	1	1
8) SPOOT RAIL	17	2	EXTRUSION 100510	2	2
9) ANCHOR TAB	17	2	EXTRUSION 104183	1	1
b) SLIDE WELDMENT	-	-	-	1	1
1) SLIDE PLATE	17	2	125-3/4 X 38-1/2 X 1/4 PLATE	1	1
2) STRONG RIB	17	2	C7 X 3.54 LB/FT. CHANNEL	3	3
3) STEM BRACKET	17	2	2 X 2 X 1/4 ANGLE	2	2
4) VERTICAL RIB	17	2	3/8 X 2 BAR	2	2
c) HEX HEAD BOLT & NUT	15B	2	5/8 NC X 3-1/4 LG	2/2	2
h) J BULB SEAL	13	2	REF. 100159	3	3
j) SEAL RETAINER	9B	2	REF. 106235	3	3
i) BEARING STRIP	21	2	REF. 100917	5	5
q) HEX HEAD BOLT	15B	2	1/4 NC X 1-1/4 LG	A/1	1
r) STEM BRACE	17	2	REF.105438-2	1	1
3. STEM (RISING)	9A	2,3	1-1/2 DIA. (REF. 106219-3,4), [5] [9]	2	20
4. LIMIT NUT	1	5	1-1/2 DIA. 4 TPL [5] [9]	2	20
7. LIFT ASSEMBLY	-	-	-	1	10
a) LIFT (DRIVER)	1,4	6H	TYPE 3ESL-2.1 AXMET (90°)	1	1
b) LIFT (SLANG)	1,4	6H	TYPE 3ESL-2.1 AK	1	1
c) HEAD RAIL, PEDestal (BASE TO MATCH HEAD RAIL)	6,11	6H	103887 (WOODY BASE TO 4 BOLT PATTERN)	2	2
d) EXTENSION SHAFT	9A	2,3	1 DIA. (105283)	1	1
e) COUPLING	-	-	LOVEJOY LD95	2	2
f) ELECTRIC ACTUATOR SCHEMATIC DWG. OUTLINE DWG.	-	-	ROTORK IQ18A* (SIDE HANDWHEEL)	1	1
8. STEM COVER (W/ANILAR STRIP)	14	2	REF. 105803 (3in) 40 LG.	2	20
18. D.C. ENCLOSURE (NOT SHOWN)	17	2	REF. ENCLOSURE-3	2	20
48. ALL THREADED STUD	9B	2,3	1/2 NC X 6 LG.	7	70
49. ALL THREADED STUD	9B	2,3	5/8 NC X 7-1/2 LG.	12	120
75. HEX NUT	15B	2	1/2 NC	7	70
76. WASHER	15B	2	1/2 DIA.	7	70
77. HEX NUT	15B	2	5/8 NC	28	280
78. WASHER	15B	2	5/8 DIA.	32	320
86. HEX HEAD BOLT	15B	2	5/8 NC X 3-1/2 LG.	4	40
89. HEX HEAD BOLT	37	7	1/2 NC X 1-1/2 LG.	4	40

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAXIMUM SEATING HEAD = 5 FT.; MAXIMUM UNSEATING HEAD = 5 FT.  
 2. OPERATING HEAD FROM GATE CENTER LINE: SEATING HEAD = 3.5 FT.; UNSEATING HEAD = 3.5 FT.  
 3. LIFT CAPACITY= 4975 LBS @ 11 IN./MIN. ( 48 FT. LBS. TORQUE; 43 RPM)  
 4. TURN HANDWHEEL CCW TO OPEN (LOWER) GATE.  
 [5] 1-1/2 DIA - 1/4 PITCH; 1/2 LEAD 29° STUB ACME DOUBLE LEAD THREADS.  
 [6] CONTRACTOR TO VERIFY OR SUPPLY.  
 [7] DIMENSION INCLUDES 1 INCH FOR GROUT PAD.  
 [8] CONTRACTOR TO PROVIDE EPOXY FOR ANCHOR STUDS  
 [9] PROVIDE RH THREADS FOR AXMET & LH THREADS FOR AX SIDE.

REF: F. WAYNE HILL WATER RESOURCES CENTER  
 PHASE-II, CONTRACT-II, BID NO. BL010-0202  
 BIOLOGICAL TREATMENT FACILITIES  
 LAWRENCEVILLE, GWINNETT COUNTY, GEORGIA  
 ENGINEERS: JGG / CH2M HILL / PPI

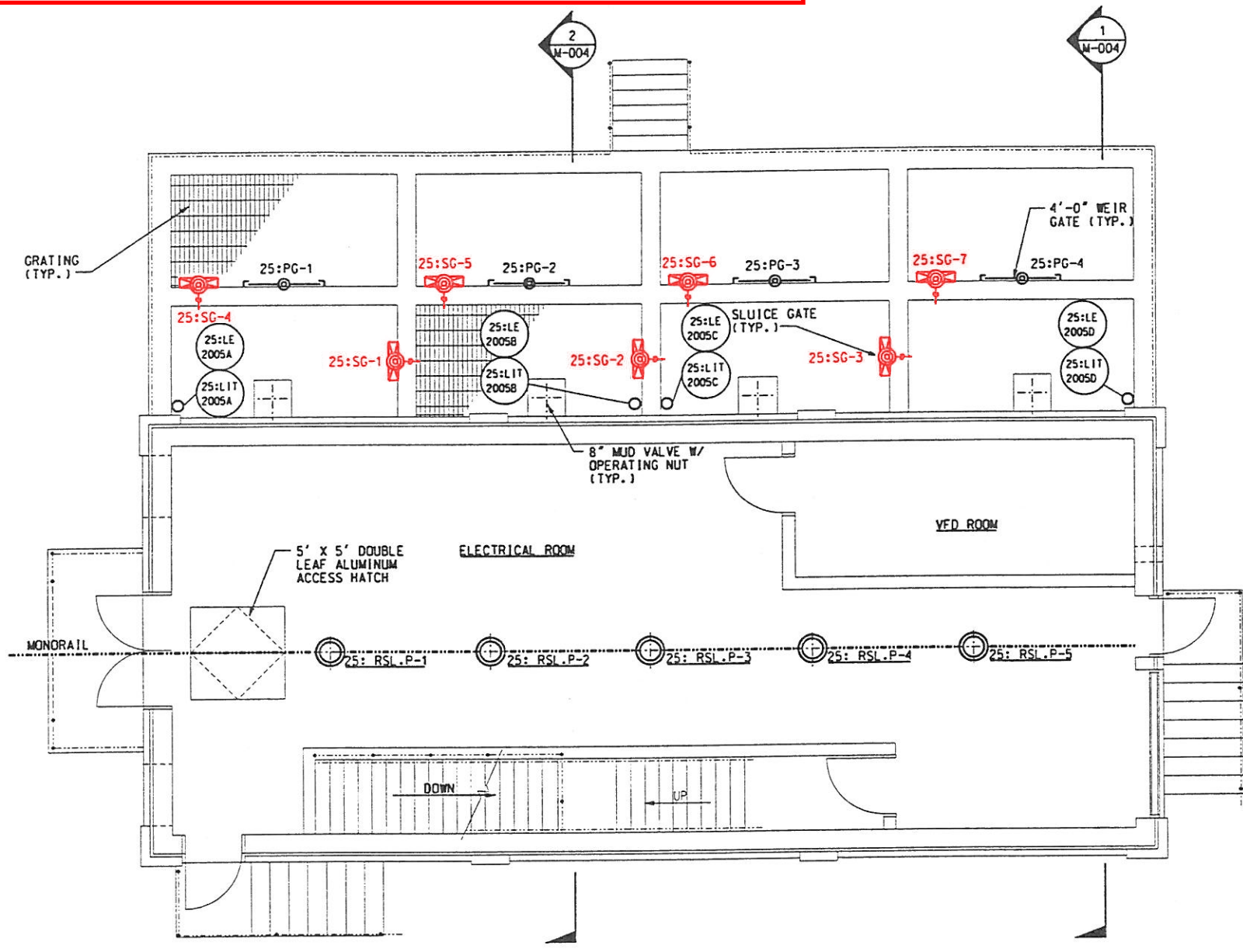
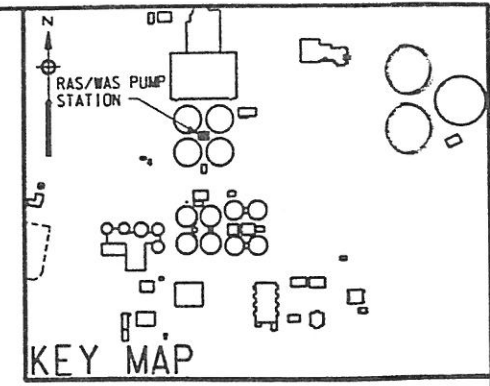
120 x 36 WATERMAN MODEL  
 APR-5SJ-1-Y  
 WEIR GATE

FOR: PIZZAGALI CONSTRUCTION  
 /WESTERN SUMMIT JOINT VENTURE  
 3320-D FINANCIAL CENTER WAY  
 BUFORD, GA 30519-4912  
 P.O. NO.: 11871-009

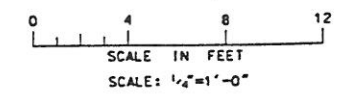
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REV. NO. $\Delta$	DATE	BY	QUOTE NO. L-7623	PROJECT MANAGER LES
REV. NO. $\Delta$	DATE	BY	QUOTE NO. GQ02-A-099	QUOTE ITEM NO. 27
REV. NO. $\Delta$	DATE	BY	DRAWN BY J.P.	CHECKED BY G.M.
REV. NO. $\Delta$	DATE (REDRAWN)	BY	SCALE NONE	DATE 5-16-02
REV. NO. $\Delta$	DATE	BY	DRAWING NO. RB-02-0772	

**Exhibit C.1 – RAS/WAS Pump Station 1 Record Drawings**

Note: Highlighted gates and actuators need to be furnished.



UPPER PLAN  
SCALE: 1/4"=1'-0"



REV NO	DATE	RELEASED BY	DESCRIPTION OF REVISION	NAME	DATE

PIEDMONT OLSEN HENSLEY

**M&E** Metcalf & Eddy  
**Piedmont** Olsen Hensley  
**MA** MORELAND ALTABELLI ASSOCIATES, INC.

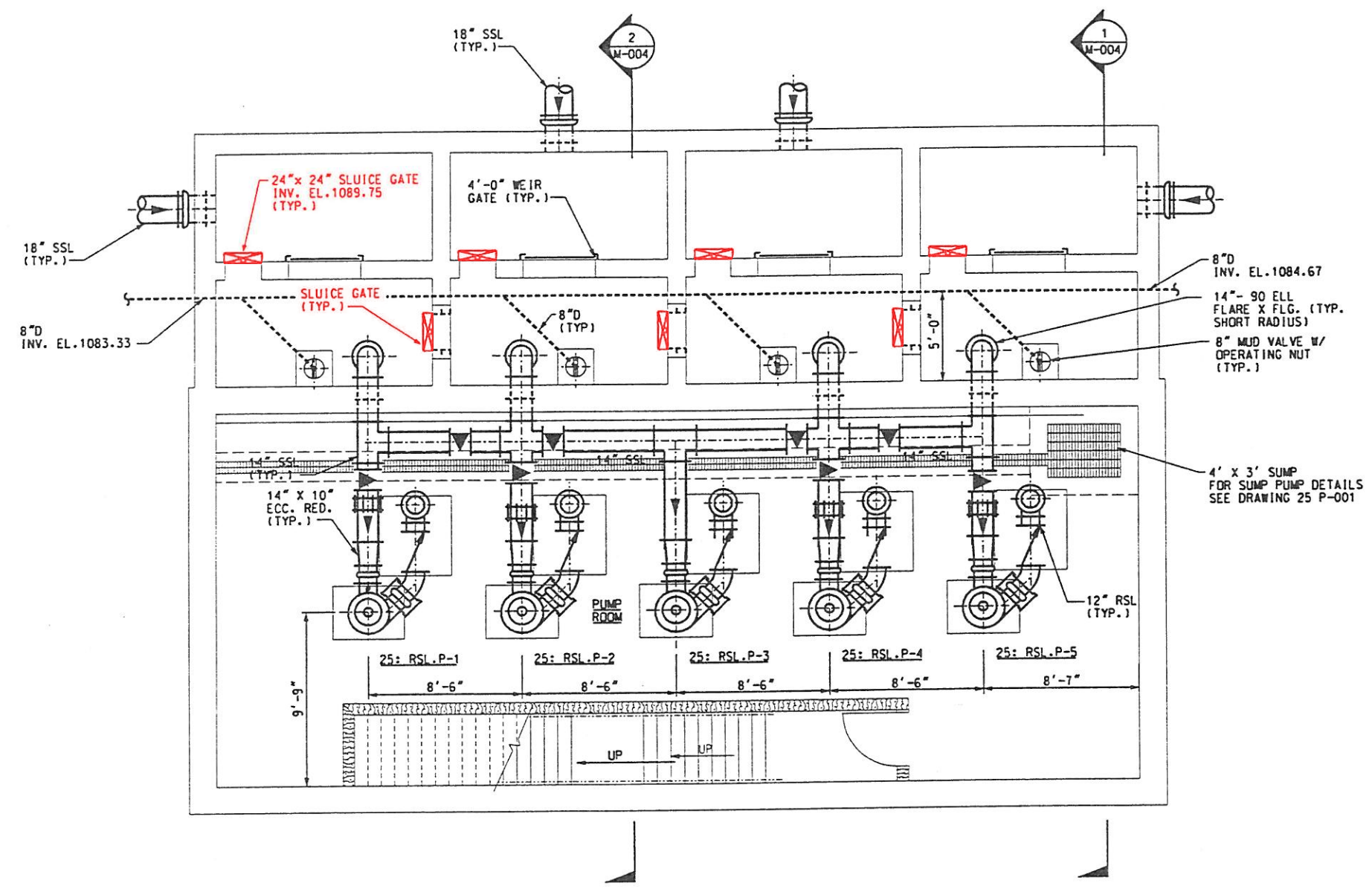
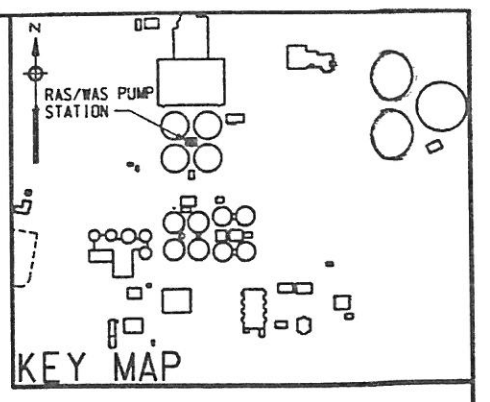
GWINNETT COUNTY, GEORGIA  
 DEPARTMENT OF PUBLIC UTILITIES  
 NORTH ADVANCED WATER RECLAMATION FACILITY  
 3276 BUFORD DRIVE

BIOLOGICAL TREATMENT  
 RAS/WAS PUMP STATION  
 UPPER PLAN  
 MECHANICAL PROCESS

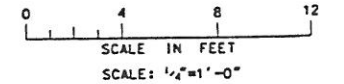
DATE: 10/17/97  
 DRAWING NUMBER: 25 M-001



**Note: Highlighted gates and actuators need to be furnished.**



PLAN @ EL. 1096.50  
SCALE: 1/4" = 1'-0"



REV NO	DATE	RELEASED BY	DESCRIPTION OF REVISION

CONF	NAME	DATE

**M&E** Metcalf & Eddy  
**Piedmont** Olsen Hensley  
**MA** MORELAND ALTOBELLI ASSOCIATES, INC.

GWINNETT COUNTY, GEORGIA  
 DEPARTMENT OF PUBLIC UTILITIES  
 NORTH ADVANCED WATER RECLAMATION FACILITY  
 3276 BUFORD DRIVE

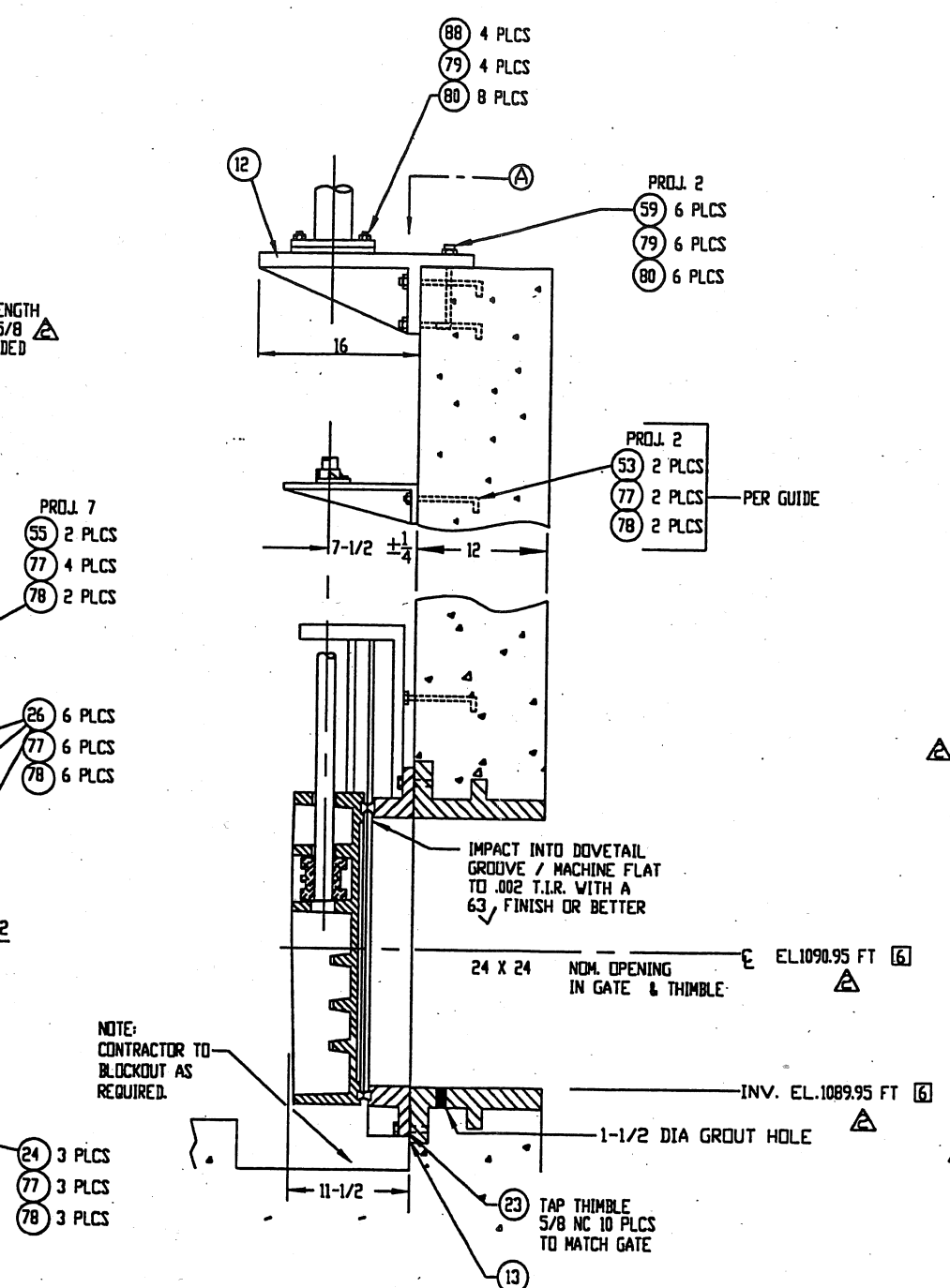
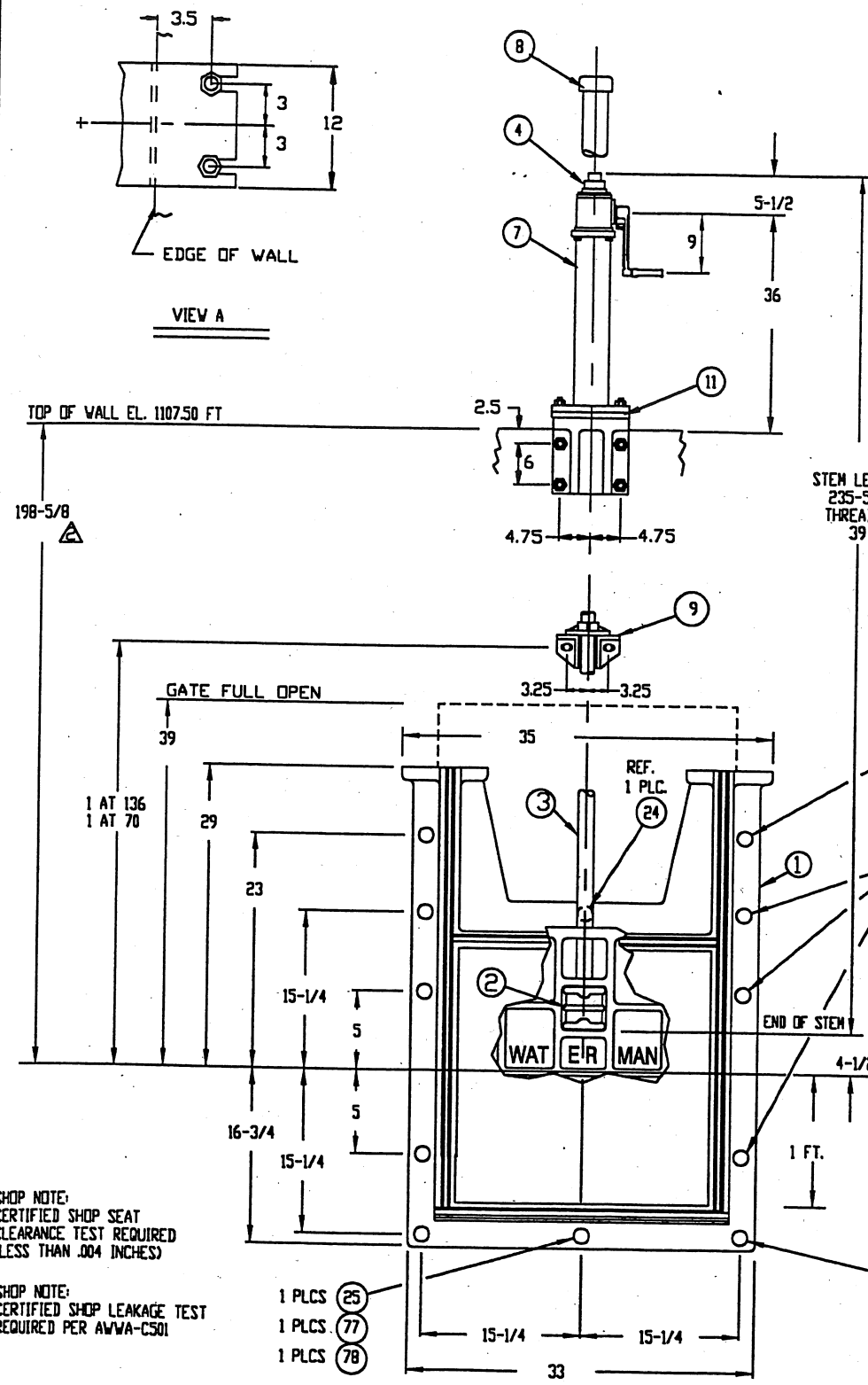
BIOLOGICAL TREATMENT  
 RAS/WAS PUMP STATION  
 LOWER PLAN 2  
 MECHANICAL PROCESS

DATE  
1/30/98  
 DRAWING NUMBER  
25 M-003

**Exhibit C.2 – RAS/WAS Pump Station 1 Original Gates Submittal Drawings**

NOTE: GRATING (BY OTHERS) NOT SHOWN.  
CONTRACTOR TO PROVIDE REQUIRED OPENINGS.

NOTE: DIRECTIONAL ARROW AND WORD  
OPEN CAST IN LIFT HOUSING



MATERIAL KEY		FINISH KEY		PAINT KEY [7]	
1. CAST IRON-ASTM A-126 CL. B 3. COMP. BRZ-ASTM B-584 AL. 844 4. MANG. BRZ-ASTM B-584 AL. C86500 5. NAVAL BRZ-ASTM B-21 AL. C48200 6. STRUCTURAL STEEL-ASTM A-36 8. STEEL HARDWARE-ASTM A-307 9. B.S.T.N. STEEL-ASTM A-276 TY. 316 11. STL. PIPE-ASTM A-53 TY. E GR. A 12. COMMERCIAL BRONZE 14. CLEAR PLASTIC BUTYRATE PIPE 16. MASTIC-BUTYL RUBBER 15. B.S.T.N. STL.HDW.-ASTM F-593 & 594 TYPE 316		1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY		6E- BLAST CLEAN PER SSPC-SP10 (1) CT (3 MILS) TNEC 69-1211 PRIMER (2) CTS (4 MILS/CT) TNEC SERIES 69 POLYAMIDE EPOXY (TDFT-11 MILS) COLOR-LT GRAY 6G- BLAST CLEAN PER SSPC-SP6 (1) CT (3 MILS) TNEC 69-1211 PRIMER & (1) CT (4 MILS) TNEC SERIES 69 POLYAMIDE EPOXY (TDFT-7 MILS) COLOR-LT GRAY	
ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	-	1	3
a) FRAME	41	6E	V-5011	1	1
b) COVER	41	6E	V-5509	1	1
c) SEAT	27	3	-	1	2
d) GUIDE RAIL	41	6E	-	1	2
e) SIDE WEDGE ASSEMBLY	-	-	CAST INTEGRAL WITH FRAME SYSTEM B1	2ea	-
WEDGES	28	1,3	V-5511 L&R & V-5139 L&R	-	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
f) TOP WEDGE ASSEMBLY	-	-	-	-	-
WEDGES & BRACKETS	28	1,3	V-5006 & V-5007	2	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
g) BOTTOM WEDGE ASSEMBLY	-	-	-	-	-
WEDGES & BRACKETS	28	1,3	V-5006 & V-5008	2	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
2. THRUST NUT	28	1,3	V-5014 LZ (1-1/2 DIA, 4TPI, LH)	1	3
3. STEM	9B	2,3	1-1/2 DIA, 4TPI, LH [5]	1	3
4. LIMIT NUT	3	2,3	1-1/2 DIA, 4TPI, LH STD	2	6
7. LIFT ASSEMBLY	-	-	-	1	3
a) LIFT	1,4	6G	TYPE 3ESL-21A	1	1
b) HANDCRANK	1,12	6G	REF. 102671	1	1
c) PEDESTAL	6,11	6G	REF. 102796	1	1
8. STEM COVER (W/ NYLAR STRIP)	14	2	REF. 105903 (3 in) 28 LG.	1	3
9. STEM GUIDE (LZ BRONZE BUSHED)	1,26	6E	TYPE K-2	2	6
10. STEM GUIDE (BRONZE BUSHED)	1,5	6G	TYPE K-SG-2	1	3
11. TOP WALL MOUNTING BRACKET	1	6E	TYPE K-3B	1	3
12. GASKET	16	2	TUBE TYPE	1	3
13. I.D. TAG (NOT SHOWN)	12	2	SEE DRAWING RA-98-0308	1	3
23. THIMBLE (PAINT INSIDE ONLY)	30	6E	24 TYPE F-SS X 12 LG.	1	3
24. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 3-1/2 LG.	3	9
25. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 6-1/2 LG.	1	3
26. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 8 LG.	6	18
53. ANCHOR BOLT	9B	2,3	5/8 NC X 10 LG.	4	12
55. ANCHOR BOLT	9B	2,3	5/8 NC X 14 LG.	2	6
59. ANCHOR BOLT	9B	2,3	3/4 NC X 12 LG.	6	18
77. HEX NUT	15B	2	5/8 NC	18	54
78. WASHER	15B	2	5/8 DIA	16	48
79. HEX NUT	15B	2	3/4 NC	10	30
80. WASHER	15B	2	3/4 DIA	14	42
88. HEX HEAD BOLT	15B	2	3/4 NC X 4-1/2 LG.	4	12

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAX. SEATING HD.= 60 FT.; MAX UNSEATING HD.= 30 FT.  
 2. OPERATING HEAD FROM CENTER LINE: SEATING= 9.5 FT.; UNSEATING= 9.5 FT. [6]  
 3. LIFT CAPACITY @ 40 LBS. PULL = 3800 LBS.  
 4. TURN HANDCRANK CCW TO OPEN (RAISE) GATE.  
 [5] 29° MODIFIED STUB ACME THREADS.  
 [6] CONTRACTOR TO VERIFY OR SUPPLY.  
 [7] SHOP NOTE: PAINT DRY FILM THICKNESS & HOLIDAY TESTS (BY OTHERS) MAY BE REQUIRED.

REF: NORTH ADVANCED WATER RECLAMATION FACILITY - CONTRACT 4 GWINNETT COUNTY, GEORGIA  
 ENGRS: METCALF & EDDY

**24 X 24 WATERMAN MODEL S-5000-F SLUICE GATE**

FOR: BEERS CONSTRUCTION CO. TO ELLIS STREET NE ATLANTA, GA 30303  
 P.O.

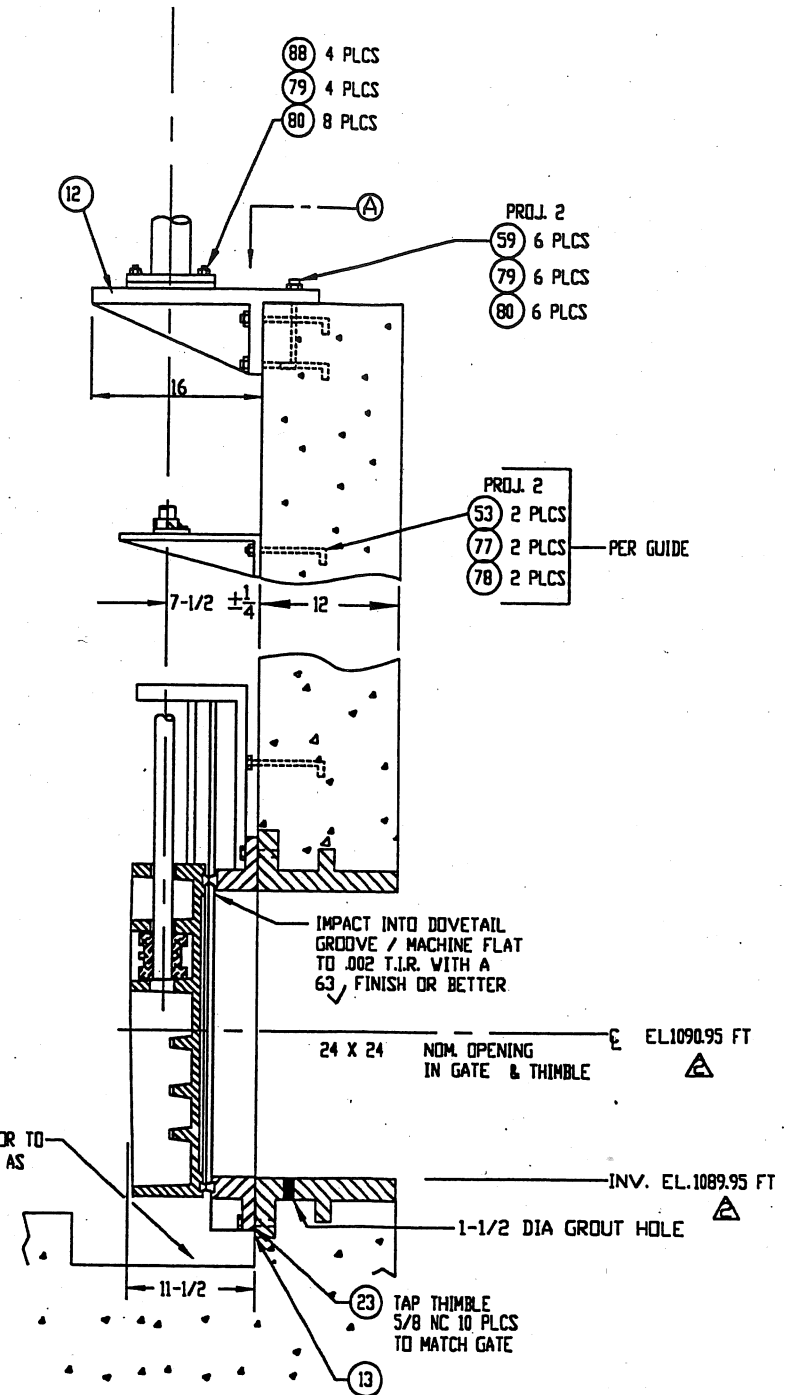
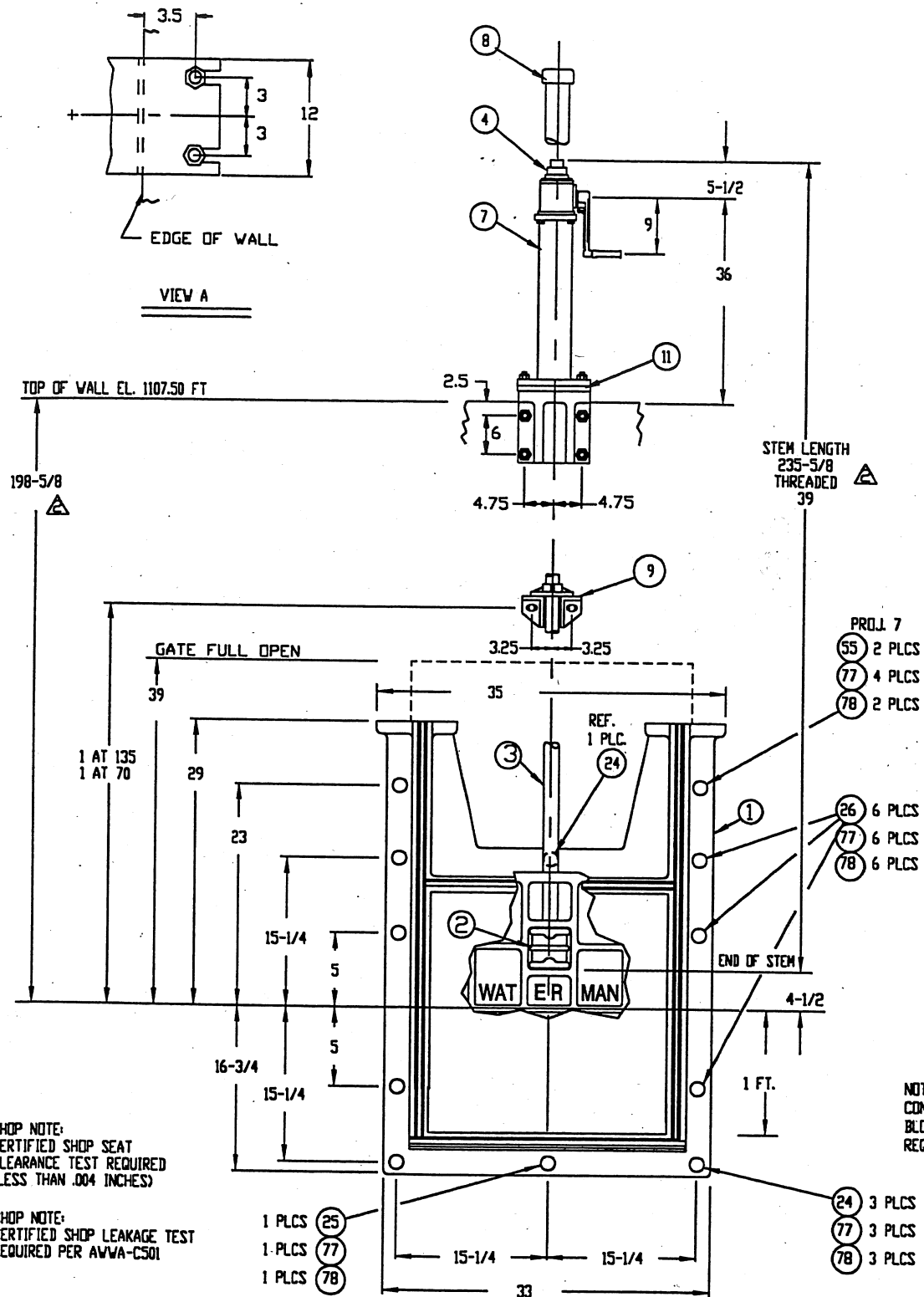
(3) GATES REQ'D @ RAS/WAS PUMP STATION, TAG NO. 25-SG-1 THRU 3 REF PLAN SHEET 25-M-001

REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER
REV. NO.	DATE	BY	L-2619	LES
REV. NO.	DATE	BY	QUOTE NO. GQ98-A-019	QUOTE ITEM NO. 1A
REV. NO.	DATE	BY	DRAWN BY DR	CHECKED BY SH
REV. NO. [7]	DATE 7-30-98 ME	BY LES	SCALE NONE	DATE 3/16/98
REV. NO. [7]	DATE 05/18/98 MH	BY LES	DRAWING NO.	

RB-98-0252

NOTE: GRATING (BY OTHERS) NOT SHOWN.  
CONTRACTOR TO PROVIDE REQUIRED OPENINGS.

NOTE:  
DIRECTIONAL ARROW AND WORD  
OPEN CAST IN LIFT HOUSING



MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON-ASTM A-126 CL. B 3. COMP. BRZ-ASTM B-584 AL. B44 4. MANG. BRZ-ASTM B-584 AL. C86500 5. NAVAL BRZ-ASTM B-21 AL. C48200 6. STRUCTURAL STEEL-ASTM A-36 9. B.S.TN. STEEL-ASTM A-276 T.Y.316 11. STL PIPE-ASTM A-53 T.Y. E GR. A 12. COMMERCIAL BRONZE 14. CLEAR PLASTIC BUTYRATE PIPE 15. B.S.TN. STL HDW-ASTM F-593 & 594 TYPE 316 16. MASTIC-BUTYL RUBBER	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY	6E- BLAST CLEAN PER SSPC-SP10 (1) CT (3 MILS) TNEPEC 69-1211 PRIMER (2) CTS (4 MILS/CT) TNEPEC SERIES 69 POLYAMIDE EPOXY (TDF-11 MILS) COLOR-LT GRAY 6G- BLAST CLEAN PER SSPC-SP6 (1) CT (3 MILS) TNEPEC 69-1211 PRIMER & (1) CT (4 MILS) TNEPEC SERIES 69 POLYAMIDE EPOXY (TDF-7 MILS) COLOR-LT GRAY

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	-	1	4
a) FRAME	41	6E	W-5011	1	4
b) COVER	41	6E	W-5509	1	4
c) SEAT	27	3	-	2	-
d) GUIDE RAIL	41	6E	CAST INTEGRAL WITH FRAME SYSTEM B1	-	-
e) SIDE WEDGE ASSEMBLY	-	-	W-5511 L&R & W-5139 L&R	2ea	-
WEDGES	28	1,3	-	-	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
f) TOP WEDGE ASSEMBLY	-	-	W-5006 & W-5007	2	-
WEDGES & BRACKETS	28	1,3	-	-	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
g) BOTTOM WEDGE ASSEMBLY	-	-	W-5006 & W-5008	2	-
WEDGES & BRACKETS	28	1,3	-	-	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
2. THRUST NUT	28	1,3	W-5014 L2 (1-1/2 DIA, 4TPI, LHD)	1	4
3. STEM	9B	2,3	1-1/2 DIA, 4TPI, LH [5]	1	4
4. LIMIT NUT	3	2,3	1-1/2 DIA, 4TPI, LH STD	2	8
7. LIFT ASSEMBLY	-	-	-	1	4
a) LIFT	1,4	6G	TYPE 3ESL-21A	1	4
b) HANDCRANK	1,12	6G	REF. 102671	1	4
c) PEDESTAL	6,11	6G	REF. 102796	1	4
8. STEM COVER (W/HYLAR STRIP)	14	2	REF 105903 (3 in) 28 LG.	1	4
9. STEM GUIDE (LZ BRONZE BUSHED)	1,26	6E	TYPE K-2	2	8
11. STEM GUIDE (BRONZE BUSHED)	1,5	6G	TYPE K-SG-2	1	4
12. TOP WALL MOUNTING BRACKET	1	6E	TYPE K-3B	1	4
13. GASKET	16	2	TUBE TYPE	1	4
14. I.D. TAG (NOT SHOWN)	12	2	SEE DRAWING RA-98-0308	1	4
23. THIMBLE (PAINT INSIDE ONLY)	30	6E	24 TYPE F-SS X 12 LG.	1	4
24. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 3-1/2 LG.	3	12
25. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 6-1/2 LG.	1	4
26. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 8 LG.	6	24
53. ANCHOR BOLT	9B	2,3	5/8 NC X 10 LG.	4	16
55. ANCHOR BOLT	9B	2,3	5/8 NC X 14 LG.	2	8
59. ANCHOR BOLT	9B	2,3	3/4 NC X 12 LG.	6	24
77. HEX NUT	15B	2	5/8 NC	18	72
78. WASHER	15B	2	5/8 DIA	16	64
79. HEX NUT	15B	2	3/4 NC	10	40
80. WASHER	15B	2	3/4 DIA	14	56
88. HEX HEAD BOLT	15B	2	3/4 NC X 4-1/2 LG.	4	16

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. GATE CAPACITY: MAX. SEATING HD.= 60 FT.; MAX. UNSEATING HD.= 30 FT.  
 2. OPERATING HEAD FROM CENTER LINE: SEATING= 14.5 FT.; UNSEATING= 14.5 FT. [6]  
 3. LIFT CAPACITY @ 40 LBS. PULL = 3800 LBS.  
 4. TURN HANDCRANK CCW TO OPEN (RAISE) GATE.  
 [5] 29° MODIFIED STUB ACME THREADS.  
 [6] CONTRACTOR TO VERIFY OR SUPPLY.  
 [7] SHOP NOTE: PAINT DRY FILM THICKNESS & HOLIDAY TESTS (BY OTHERS) MAY BE REQUIRED.

REF: NORTH ADVANCED WATER RECLAMATION FACILITY - CONTRACT 4 GWINNETT COUNTY, GEORGIA  
 ENGRS: METCALF & EDDY

**24 X 24 WATERMAN MODEL S-5000-F SLUICE GATE**

FOR: BEERS CONSTRUCTION CO. TO ELLIS STREET NE ATLANTA, GA 30303  
 P.O.

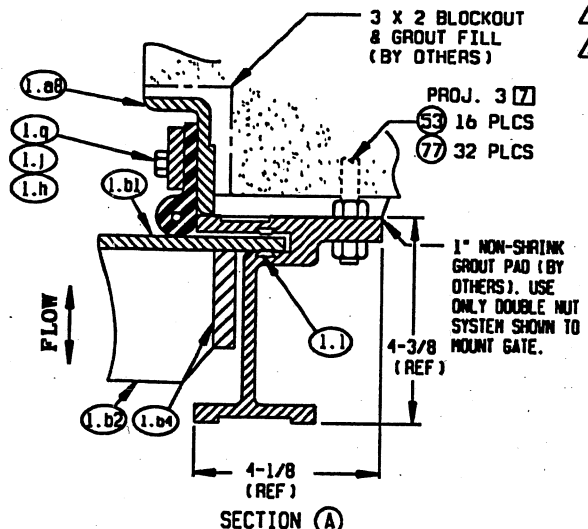
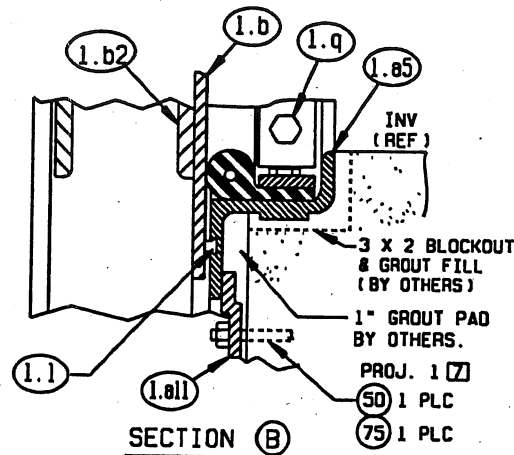
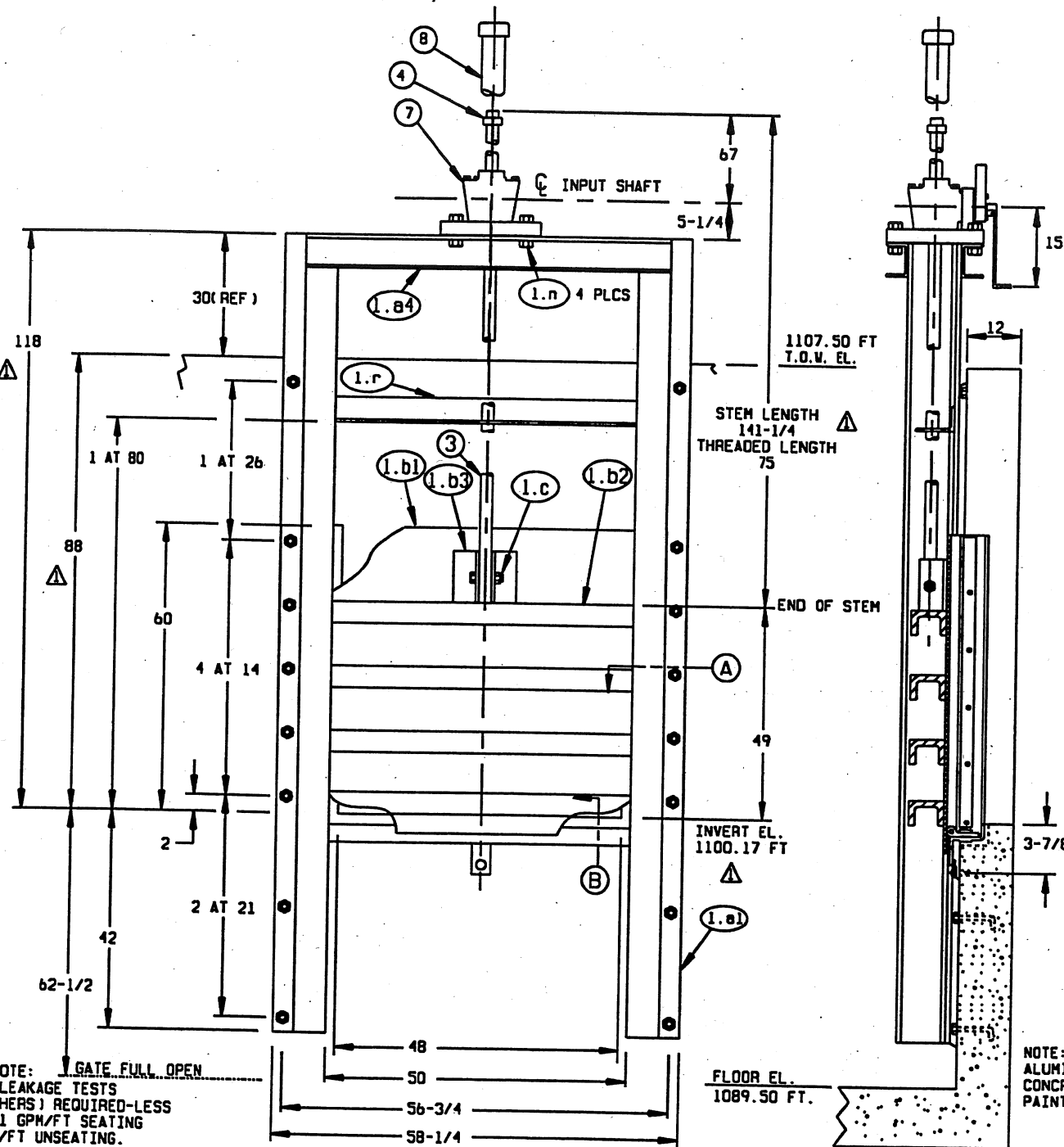
(4) GATES REQ'D @ RAS/WAS PUMP STATION, TAG NO. 25-SG-4 THRU 7 REF PLAN SHEET 25-M-001

REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER
			L-2619	LES
REV. NO.	DATE	BY	QUOTE NO.	QUOTE ITEM NO.
			GQ98-A-019	1B
REV. NO.	DATE	BY	DRAWN BY	CHECKED BY
			DR	SH
REV. NO.	DATE	BY	SCALE	DATE
△	7-30-98 ME	LES	NONE	3/16/98
REV. NO.	DATE	BY	DRAWING NO.	
△	05/18/98 MH	LES	RB-98-0253	

NOTE: HANDRAIL (BY OTHERS) NOT SHOWN.  
CONTRACTOR TO ENSURE CLEARANCE  
FOR HANDCRANK OPERATION.

NOTE: GRATING (BY OTHERS) NOT SHOWN.  
CONTRACTOR TO PROVIDE REQUIRED OPENINGS.

NOTE:  
DIRECTIONAL ARROW AND WORD  
OPEN CAST IN LIFT HOUSING



MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON: ASTM A-126 CL. B 4. MANG. BRZ.: ASTM B-584 AL. C85500 6. STRUCTURAL STEEL: ASTM A-36 9B. STN. STEEL: ASTM A-276 TY. 316 12. COMMERCIAL BRONZE 13. NEOPRENE RUBBER: ASTM D-2000 14. CLEAR PLASTIC BUTYRATE PIPE 15B. STN. STL. HDV.: ASTM F-593 & 594 TYPE 316 17. ALUMINUM: ASTM B-209 AL. 6061-T6 21. UHMW POLYETHYLENE	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY	66 BLAST CLEAN PER SSPC-SP6 (1) CT (3 MILS) TNEHEC 69-1211 PRIMER (1) CT (4 MILS) TNEHEC 69 (TOFT 7 MILS) COLOR: LT. GRAY ▲

ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/GATE	TOTAL QTY
1. SLIDE GATE ASSEMBLY	-	-	-	1	4
a) FRAME WELDMENT	-	-	-	1	4
1) GUIDE RAIL	17	2	EXTRUSION 101144 (4.79 LBS/FT.)	1	4
4) HEADRAIL	17	2	CS X 3.11	2	8
5) BOTTOM RAIL	17	2	EXTRUSION 104695	1	4
8) SPIGOT RAIL	17	2	EXTRUSION 100510	1	4
11) ANCHOR TAB	17	2	EXTRUSION 104183	1	4
b) SLIDE WELDMENT	-	-	-	1	4
1) SLIDE PLATE	17	2	53-3/4 X 62-1/2 X 1/4 PLATE	1	4
2) STRONG RIB	17	2	C3 X 1.73 CHANNEL	4	16
3) STEM BRACKET	17	2	REF. 101102	1	4
4) VERTICAL RIB	17	2	3/8 X 2 BAR	2	8
c) HEX HEAD BOLT & NUT	15B	2	3/4 NC X 3-1/2 LG	1/1	4/4
h) J BULB SEAL	13	2	REF. 100159	3	12
j) SEAL RETAINER	17	2	1/4 X 1-1/4 BAR	3	12
l) BEARING STRIP	21	2	EXTRUSION 100917	A/R	A/R
n) HEX HEAD BOLT & NUT	15B	2	5/8 NC X 3 LG	4/4	16
q) HEX HEAD BOLT	15B	2	1/4 NC X 1-1/4 LG	A/R	A/R
r) STEM BRACE	17	2	3 X 2 X 1/4 ANGLE	1	4
3. STEM	9B	2,3	2 DIA., 4TPI, RH [5]	1	4
4. LIMIT NUT	1	5	2 DIA., 4TPI, RH STD	2	8
7. LIFT ASSEMBLY	1,4	66	TYPE 3EN-2-1A	1	4
c) HANDCRANK	1,12	66	101653	1	4
d) BASEPLATE	1	66	V-2044 (REF 105115)	1	4
e) PORTABLE OPERATOR ADAPTER	6	66	REF. 105335	1	4
8. STEM COVER (W/HYLAR STRIP)	14	2	REF. 102786 (3in); 64 LG.	1	4
14. I.O. TAG (NOT SHOWN)	12	2	SEE DRAWING RA-98-0308	1	4
50. ANCHOR BOLT	9B	2,3	1/2 NC X 8 LG.	1	4
53. ANCHOR BOLT	9B	2,3	5/8 NC X 10 LG.	16	64
75. HEX NUT	15B	2	1/2 NC	1	4
77. HEX NUT	15B	2	5/8 NC	32	128

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAX. SEATING HD. = 5 FT.; MAX UNSEATING HD. = 5 FT.  
 2. OPERATING HEAD FROM S: SEATING = 2 FT.; UNSEATING = 2 FT. [6]  
 3. LIFT CAPACITY @ 40 LBS. PULL = 5920 LBS.  
 4. TURN HANDCRANK CCW TO OPEN (LOWER) GATE.  
 [5] 29° MODIFIED STUB ACME THREADS.  
 [6] CONTRACTOR TO VERIFY OR SUPPLY.  
 [7] DIMENSION INCLUDES 1 INCH FOR GROUT PAD.  
 [8] SHOP NOTE: PAINT DRY FILM THICKNESS & HOLIDAY TESTS (BY OTHERS) MAY BE REQUIRED.

REF: NORTH ADVANCED WATER RECLAMATION FACILITY - CONTRACT 4 GWINNETT COUNTY, GEORGIA  
ENGRS: METCALF & EDDY

48 X 60 WATERMAN MODEL  
APR-5SJ-Y-I  
WEIR GATE

FOR: BEERS CONSTRUCTION CO. TO ELLIS STREET NE ATLANTA, GA 30303  
P.O.

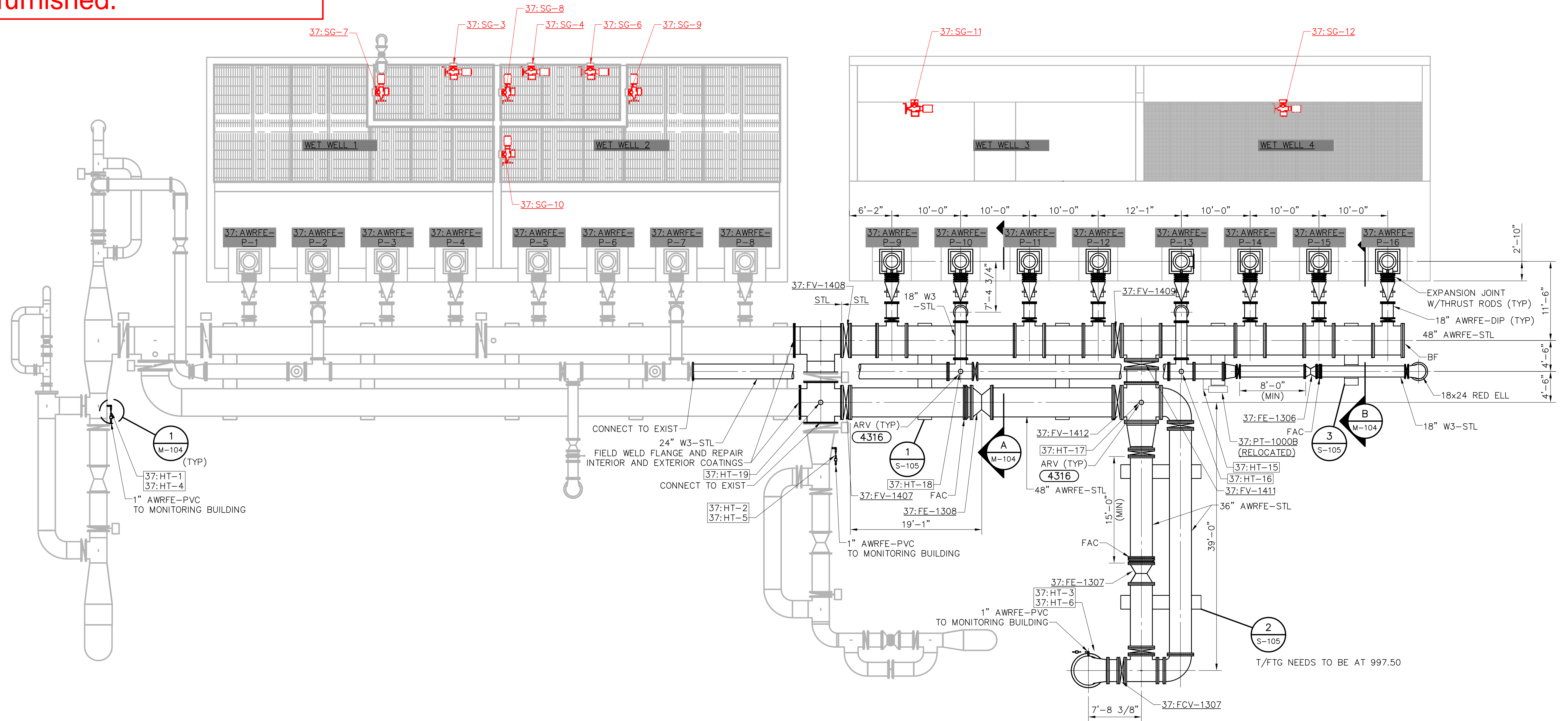
(4) GATES RED'D @ RAS/WAS PUMP STATION WETWELL.  
TAG NO. 25-PG-1 THRU 4

REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER
REV. NO.	DATE	BY	L-2619-2	LES
REV. NO.	DATE	BY	QUOTE NO. GQ98-A-019	QUOTE ITEM NO. 41
REV. NO.	DATE	BY	DRAWN BY DR	CHECKED BY SH
REV. NO.	DATE	BY	SCALE NONE	DATE 03-18-1998
REV. NO.	DATE 7-30-98 ME	BY LES	DRAWING NO. RB-98-0299	

**Exhibit D.1 – Effluent Pump Station Record Drawings**

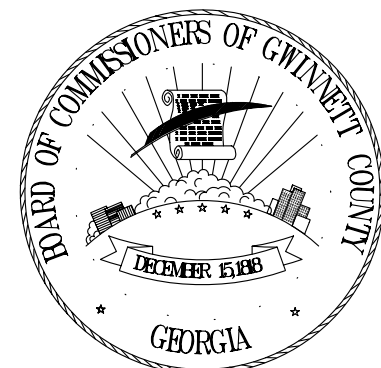


Note: Highlighted gates and actuators need to be furnished.



PLAN  
1/8" = 1'-0"  
PLANT NORTH

Jordan, Jones & Goulding  
CH2M HILL  
Precision Planning, Inc.



GWINNETT COUNTY, GEORGIA  
DEPARTMENT OF PUBLIC UTILITIES  
F. WAYNE HILL  
WATER RESOURCES CENTER  
PHASE 2  
3320 FINANCIAL CENTER WAY

RECORD DRAWINGS  
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

CONTRACT 3  
SOLIDS, STORAGE, AWT FACILITIES

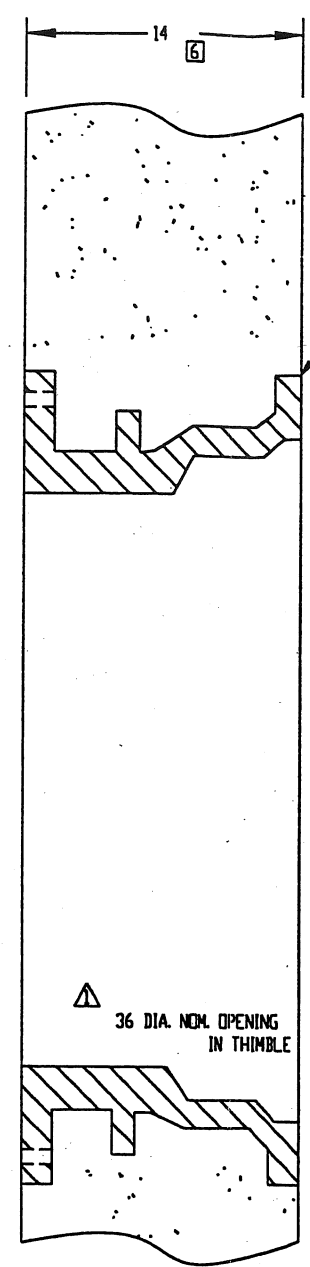
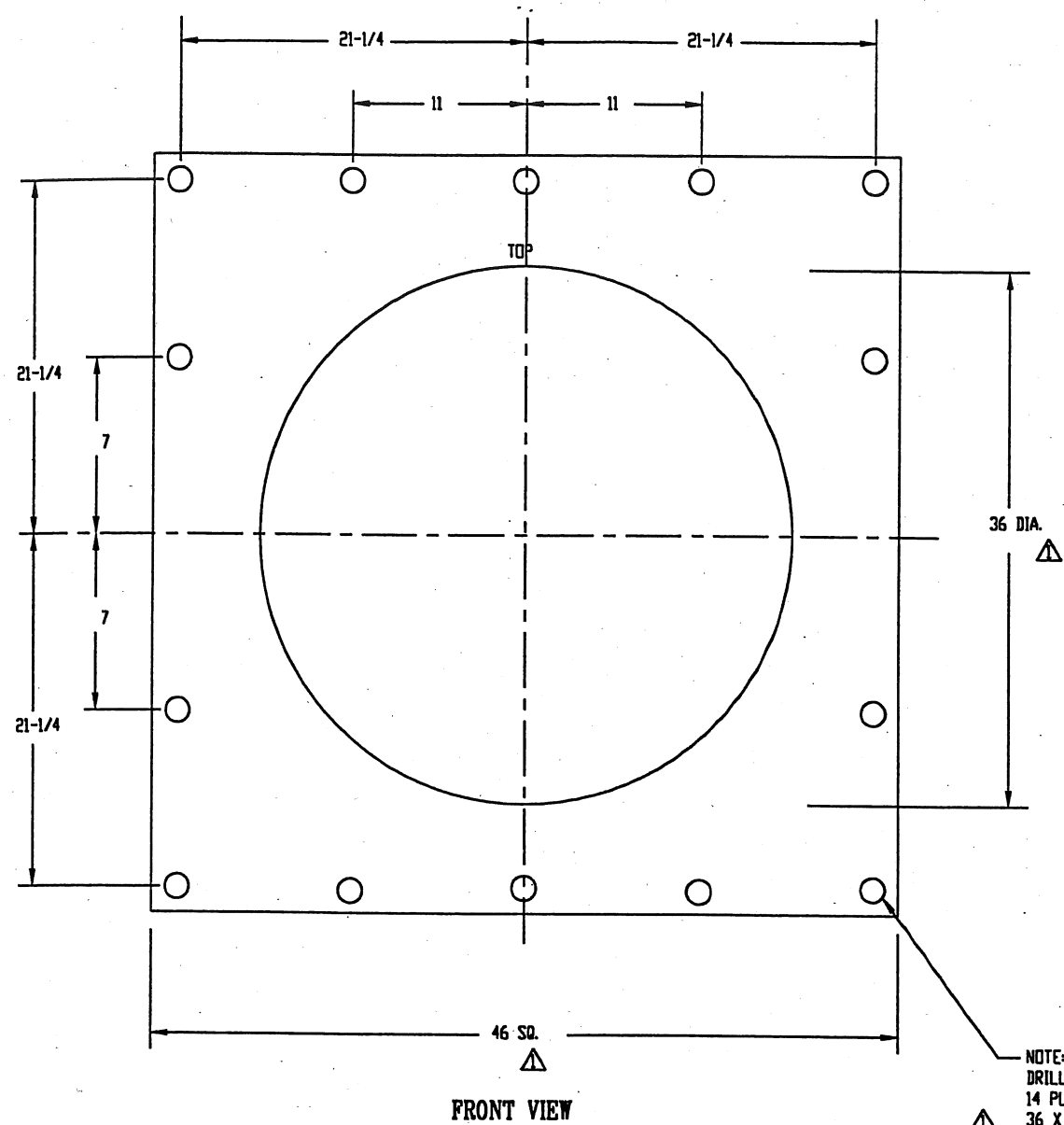
EFFLUENT PUMP STATION  
UPPER PLAN

DESIGNED: JH	CHECKED:	DATE: OCT 2002	2-37 M-103	R
DRAWN: AJP	APP'D.	SCALE: 1/8" = 1'-0"	DRAWING	REV

NO.	DATE	DESCRIPTION OF REVISION
R	06-17-06	RECORD DRAWING
O	08-08-02	FIRST RELEASE

**Exhibit D.2 – Effluent Pump Station Original Gates Submittal Drawings (Cast Iron)**





MJ THIMBLE PER AWWA C111/A21. 11-85 REFERENCE DRAWING 103725-36 FOR THIMBLE MACHINING, ATTACHING HARDWARE, FOLLOW-RING AND GASKET BY OTHERS.

NOTE: BLIND FLANGE OR MJ PLUG BY OTHERS (NOT SHOWN).

NOTE: DRILL & TAP THIMBLE 5/8 NC 14 PLCS. PATTERN TO MATCH 36 X 36 WATERMAN S-5000-F SLUICE GATE.

MATERIAL KEY		FINISH KEY		PAINT KEY	
30.NI-RESIST CAST IRON-ASTM A-436 TYPE 1B		1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY		6E- BLAST CLEAN PER SSPC-SP10 (1) CT (3 MILS) TNEPEC 69-1211 PRIMER (2) CTS (4 MILS/CT) TNEPEC SERIES 69 POLYAMIDE EPOXY (TDF-11 MILS) COLOR-LT GRAY	
ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/GATE	TOTAL QTY
23. THIMBLE (PAINT INSIDE ONLY)	30	6E	36 TYPE MJ-SCC X 14 LG.	1	1

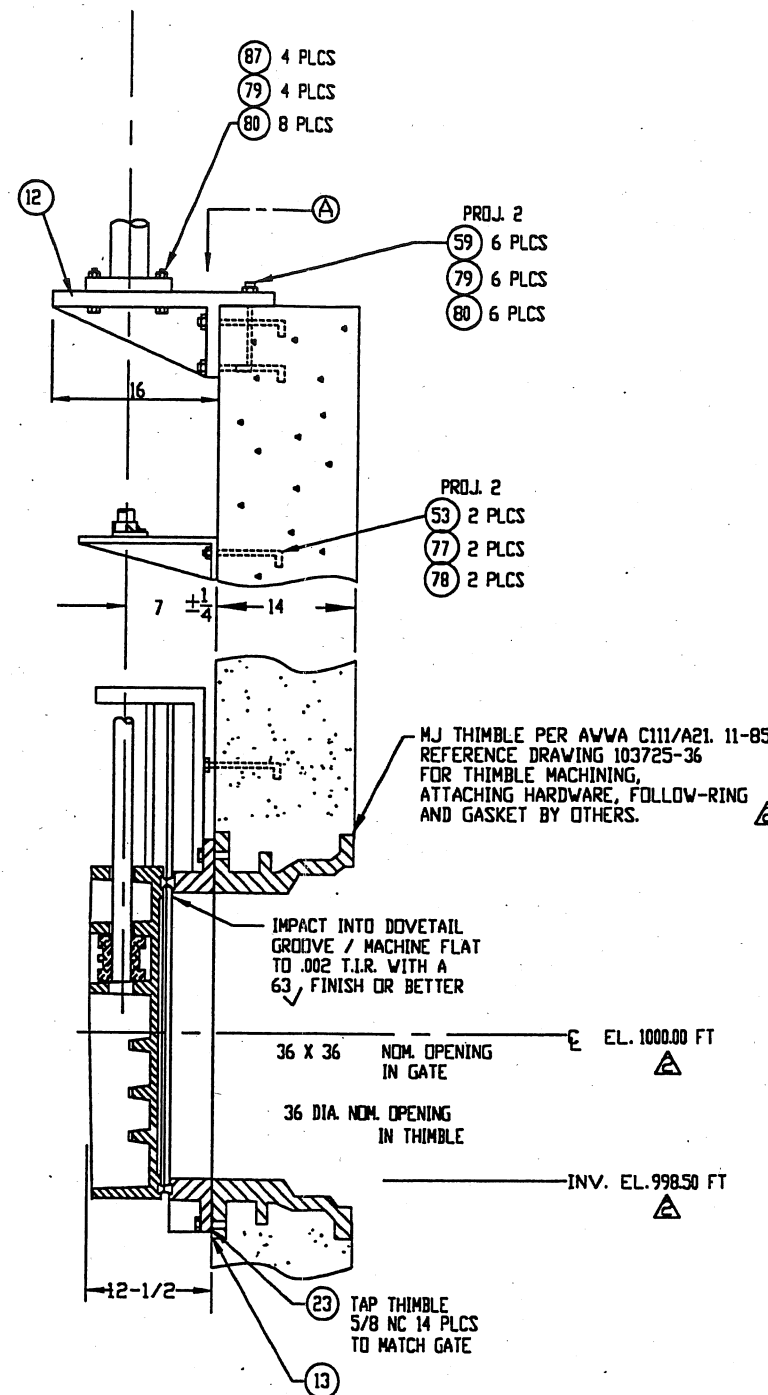
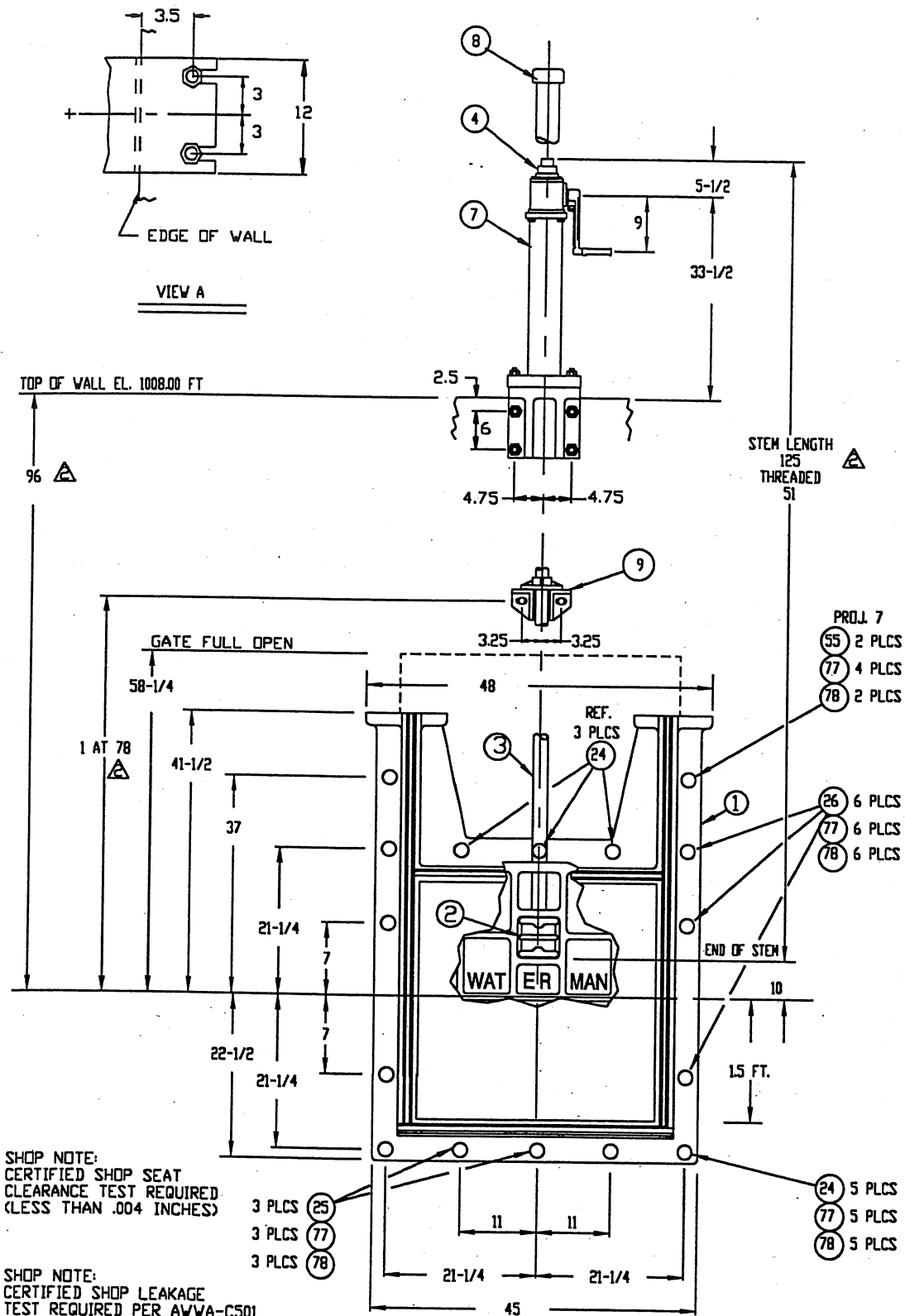
NOTES: UNLESS OTHERWISE SPECIFIED.

- 1.
- 2.
- 3.
- 4.
- 5.
6. CONTRACTOR TO VERIFY OR SUPPLY.
7. SHOP NOTE: PAINT DRY FILM THICKNESS & HOLIDAY TESTS (BY OTHERS) MAY BE REQUIRED.

REF: NORTH ADVANCED WATER RECLAMATION FACILITY - CONTRACT 4 GWINNETT COUNTY, GEORGIA ENGRS: METCALF & EDDY	<h2 style="margin: 0;">36 DIA. WATERMAN MODEL</h2> <h3 style="margin: 0;">MJ-SCC</h3> <h2 style="margin: 0;">WALL THIMBLE</h2>	FOR: BEERS CONSTRUCTION TO ELLIS STREET NE ATLANTA, GA 30303  P.O.	(1) THIMBLE REQ'D @ EFFLUENT PUMP STATION, TAG NO. 37-SG-5	REF PLAN SHEET 37-M-101	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>REV. NO.</td> <td>DATE</td> <td>BY</td> <td>JOB NO.</td> <td>PROJECT MANAGER</td> </tr> <tr> <td></td> <td></td> <td></td> <td>L-2619</td> <td>LES</td> </tr> <tr> <td>REV. NO.</td> <td>DATE</td> <td>BY</td> <td>QUOTE NO.</td> <td>QUOTE ITEM NO.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>GQ98-A-019</td> <td>20</td> </tr> <tr> <td>REV. NO.</td> <td>DATE</td> <td>BY</td> <td>DRAWN BY</td> <td>CHECKED BY</td> </tr> <tr> <td></td> <td></td> <td></td> <td>DR</td> <td>SH</td> </tr> <tr> <td>REV. NO.</td> <td>DATE</td> <td>BY</td> <td>SCALE</td> <td>DATE</td> </tr> <tr> <td>6</td> <td>7-30-98 ME</td> <td>LES</td> <td>NONE</td> <td>3/16/98</td> </tr> <tr> <td>REV. NO.</td> <td>DATE</td> <td>BY</td> <td>DRAWING NO.</td> <td></td> </tr> <tr> <td>7</td> <td>05/18/98 MH</td> <td>LES</td> <td>RB-98-0273</td> <td></td> </tr> </table>	REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER				L-2619	LES	REV. NO.	DATE	BY	QUOTE NO.	QUOTE ITEM NO.				GQ98-A-019	20	REV. NO.	DATE	BY	DRAWN BY	CHECKED BY				DR	SH	REV. NO.	DATE	BY	SCALE	DATE	6	7-30-98 ME	LES	NONE	3/16/98	REV. NO.	DATE	BY	DRAWING NO.		7	05/18/98 MH	LES	RB-98-0273	
REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER																																																			
			L-2619	LES																																																			
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REV. NO.	DATE	BY	DRAWING NO.																																																				
7	05/18/98 MH	LES	RB-98-0273																																																				
		WATERMAN INDUSTRIES INC. EXETER, CALIFORNIA 93221																																																					

NOTE: GRATING (BY OTHERS) NOT SHOWN.  
CONTRACTOR TO PROVIDE REQUIRED OPENINGS.

NOTE: DIRECTIONAL ARROW AND WORD  
OPEN CAST IN LIFT HOUSING



MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON-ASTM A-126 CL. B 3. COMP. BRZ-ASTM B-584 AL. B44 4. MANG. BRZ-ASTM B-584 AL. CB6500 6. STRUCTURAL STEEL-ASTM A-36 9. B.S.TN. STEEL-ASTM A-276 TY.316 11. STL. PIPE-ASTM A-53 TY. E GR. A 12. COMMERCIAL BRONZE 14. CLEAR PLASTIC BUTYRATE PIPE 15. B.S.TN. STL.HDW-ASTM F-593 & 594 TYPE 316 16. MASTIC-BUTYL RUBBER 26. PHOSPHOR BRZ-ASTM B-139 AL. 510	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY 7. 30% NI-RESIST CAST IRON-ASTM A-436 TYPE 18 27. SILICON BRZ-ASTM B-98 AL. C655 28. CAST SILICON BRZ-ASTM B-588 AL. CB73 41. CAST IRON W/2% NICKEL: ASTM A-126 CL.B + 2% NI	6E- BLAST CLEAN PER SSPC-SP10 (1) CT (3 MILS) TNE MEC 69-1211 PRIMER (2) CTS (4 MILS/CT) TNE MEC SERIES 69 POLYAMIDE EPOXY (TDF-11 MILS) COLOR: LT GRAY 6G- BLAST CLEAN PER SSPC-SP6 (1) CT (3 MILS) TNE MEC 69-1211 PRIMER & (1) CT (4 MILS) TNE MEC SERIES 69 POLYAMIDE EPOXY (TDF-7 MILS) COLOR: LT GRAY

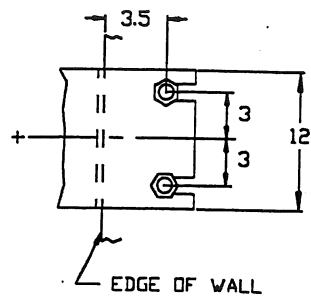
ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	-	1	1
a) FRAME	41	6E	V-5514	1	1
b) COVER	41	6E	V-5001	1	1
c) SEAT	27	3	-	2	2
d) GUIDE RAIL	41	6E	-	-	-
e) SIDE WEDGE ASSEMBLY	-	-	CAST INTEGRAL WITH FRAME SYSTEM B1	-	-
WEDGES	1,27,28	1,3	V-5511 L&R & V-5139 L&R	3ea	3ea
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
f) TOP WEDGE ASSEMBLY	-	-	-	-	-
WEDGES & BRACKETS	28	1,3	V-5006 & V-5007	2	2
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
g) BOTTOM WEDGE ASSEMBLY	-	-	-	-	-
WEDGES & BRACKETS	28	1,3	V-5006 & V-5008	2	2
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
2. THRUST NUT	28	1,3	V-5014 L2 (1-1/2 DIA, 4TPI, LH)	1	1
3. STEM	9B	2,3	1-1/2 DIA, 4TPI, LH [5]	1	1
4. LIMIT NUT	3	1,3	1-1/2 DIA, 4TPI, LH STD	1	1
7. LIFT ASSEMBLY	-	-	-	1	1
a) LIFT	1,4	6G	TYPE 3ESL-21A	1	1
b) HANDCRANK	1,12	6G	REF. 102671	1	1
c) PEDESTAL	6,11	6G	REF. 102796	1	1
8. STEM COVER (W/HYLAR STRIP)	14	2	REF. 105903 (3in) 52 LG.	1	1
9. STEM GUIDE (LZ BRONZE BUSHED)	1,26	6E	TYPE K-2	1	1
12. TOP WALL MOUNTING BRACKET	1	6E	TYPE K-3B	1	1
13. GASKET	16	2	TUBE TYPE	2	2
14. I.D. TAG (NOT SHOWN)	12	2	SEE DRAWING RA-98-0308	1	1
23. THIMBLE (PAINT INSIDE ONLY)	30	6E	36 TYPE MJ-SCC X 14 LG.	1	1
24. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 3-1/2 LG.	1	1
25. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 6-1/2 LG.	3	3
26. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 8 LG.	6	6
53. ANCHOR BOLT	9B	2,3	5/8 NC X 10 LG.	2	2
55. ANCHOR BOLT	9B	2,3	5/8 NC X 14 LG.	2	2
59. ANCHOR BOLT	9B	2,3	3/4 NC X 12 LG.	6	6
77. HEX NUT	15B	2	5/8 NC	20	20
78. WASHER	15B	2	5/8 DIA	18	18
79. HEX NUT	15B	2	3/4 NC	10	10
80. WASHER	15B	2	3/4 DIA	14	14
87. HEX HEAD BOLT	15B	2	3/4 NC X 3-1/2 LG.	4	4

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAX. SEATING HD. = 60 FT.; MAX UNSEATING HD. = 35 FT.  
 2. OPERATING HEAD FROM CENTER LINE: SEATING = 10 FT.; UNSEATING = 10 FT. [6]  
 3. LIFT CAPACITY @ 40 LBS. PULL = 3800 LBS.  
 4. TURN HANDCRANK CCV TO OPEN (RAISE) GATE.  
 [5] 29° MODIFIED STUB ACME THREADS.  
 [6] CONTRACTOR TO VERIFY OR SUPPLY.  
 [7] SHOP NOTE: PAINT DRY FILM THICKNESS & HOLIDAY TESTS ( BY OTHERS) MAY BE REQUIRED.

REF: NORTH ADVANCED WATER RECLAMATION FACILITY - CONTRACT 4 GWINNETT COUNTY, GEORGIA ENGRS: METCALF & EDDY	<b>36 X 36 WATERMAN MODEL S-5000-F SLUICE GATE</b>	FOR: BEERS CONSTRUCTION CO. TO ELLIS STREET NE ATLANTA, GA 30303 P.O.	(1) GATE REQ'D @ EFFLUENT PUMP STATION, TAG NO. 37-SG-6	REF PLAN SHEET 37-M-101
REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER
REV. NO.	DATE	BY	QUOTE NO.	QUOTE ITEM NO.
REV. NO.	DATE	BY	DRAWN BY	CHECKED BY
REV. NO.	DATE	BY	SCALE	DATE
REV. NO.	DATE (REDRAWN)	BY	DRAWING NO.	

NOTE: GRATING (BY OTHERS) NOT SHOWN.  
CONTRACTOR TO PROVIDE REQUIRED OPENINGS.

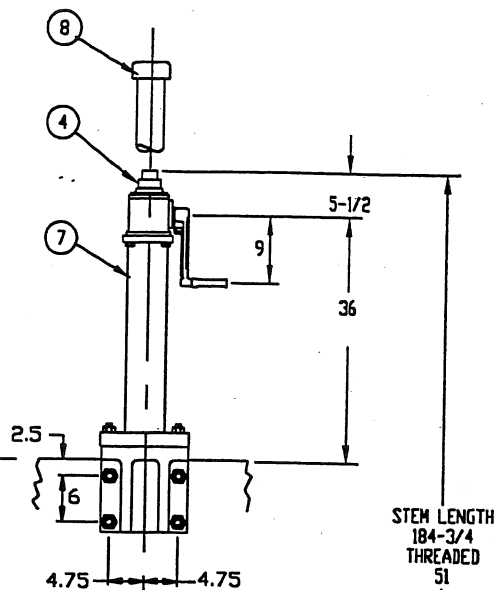
NOTE:  
DIRECTIONAL ARROW AND WORD  
OPEN CAST IN LIFT HOUSING



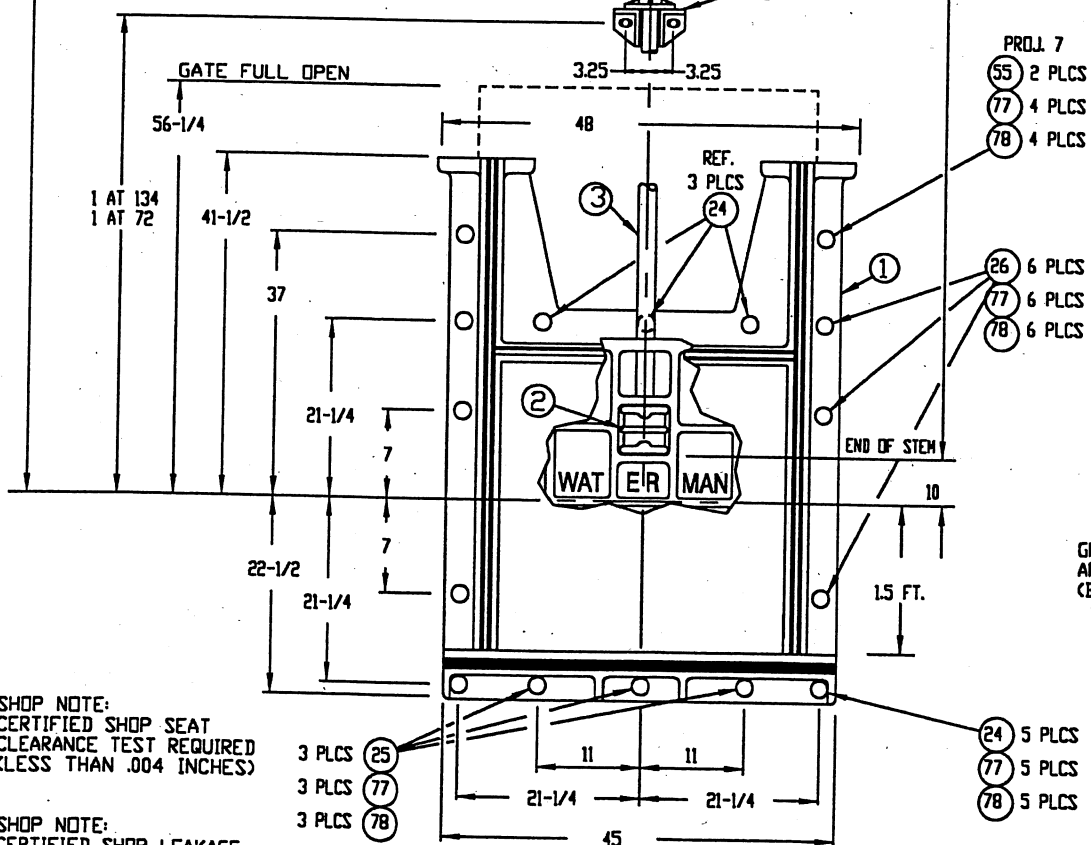
VIEW A

TOP OF WALL EL. 1008.00 FT

153-1/4

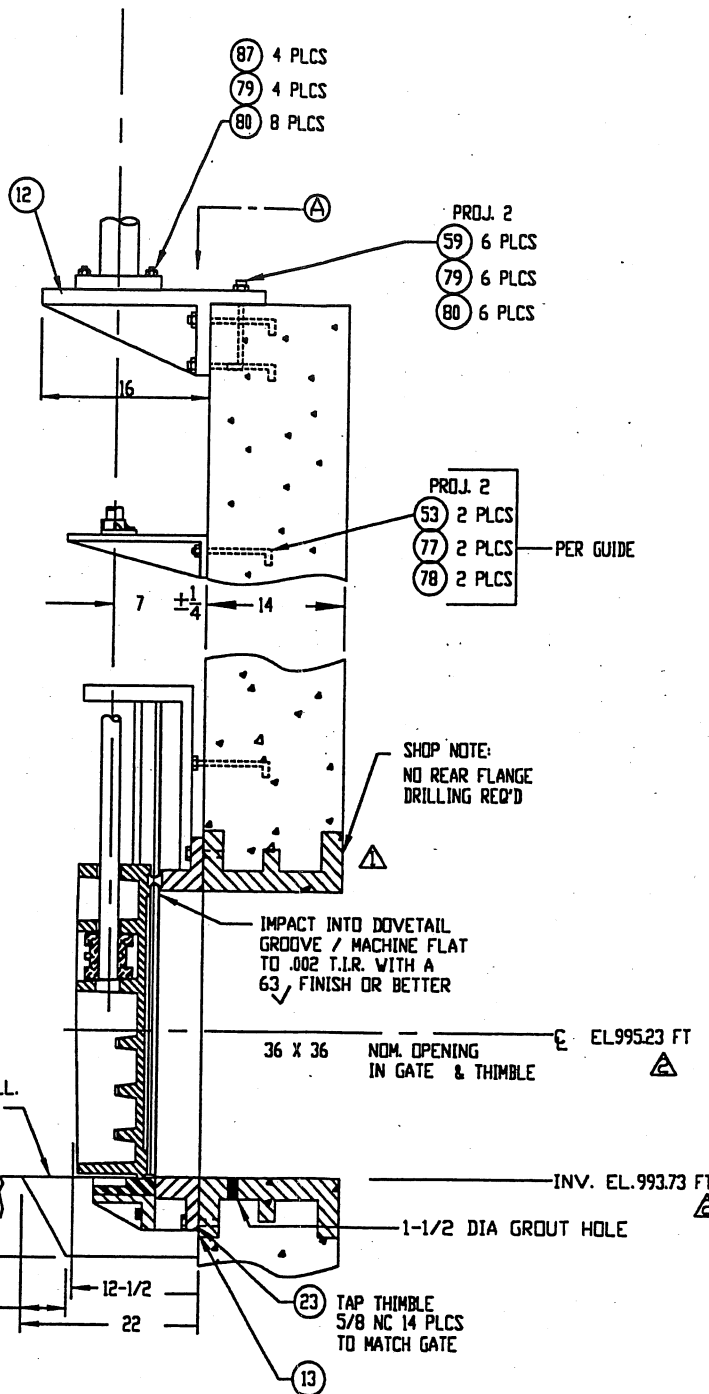


STEM LENGTH  
184-3/4  
THREADED  
51



SHOP NOTE:  
CERTIFIED SHOP SEAT  
CLEARANCE TEST REQUIRED  
(LESS THAN .004 INCHES)

SHOP NOTE:  
CERTIFIED SHOP LEAKAGE  
TEST REQUIRED PER AWWA-C501



GROUT FILL  
AFTER INSTALL.  
(BY OTHERS)

SHOP NOTE:  
NO REAR FLANGE  
DRILLING REQ'D

IMPACT INTO DOVETAIL  
GROOVE / MACHINE FLAT  
TO .002 T.I.R. WITH A  
63 FINISH OR BETTER

MATERIAL KEY		FINISH KEY		PAINT KEY	
1. CAST IRON-ASTM A-126 CL. B 3. COMP. BRZ-ASTM B-584 AL. 844 4. MANG. BRZ-ASTM B-584 AL. C86500 6. STRUCTURAL STEEL-ASTM A-36 8. STEEL HARDWARE-ASTM A-307 9. B. STN. STEEL-ASTM A-276 TY. 316 11. STL. PIPE-ASTM A-53 TY. E GR. A 12. COMMERCIAL BRONZE 13. NEOPRENE RUBBER-ASTM D-2000 14. CLEAR PLASTIC BUTYRATE PIPE 15. B. STN. STL. HDW-ASTM F-593 & 594 TYPE 316 16. MASTIC-BUTYL RUBBER 30. NI-RESIST CAST IRON-ASTM A-436 TYPE 1B 26. PHOSPHOR BRZ-ASTM B-139 AL. 510 27. SILICON BRZ-ASTM B-98 AL. C655 28. CAST SILICON BRZ-ASTM B-588 AL. C873 41. CAST IRON W/2% NICKEL-ASTM A-126 CL. B + 2% NI		1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY		6E- BLAST CLEAN PER SSPC-SP10 (1) CT (3 MILS) TNEPEC 69-1211 PRIMER (2) CTS (4 MILS/CT) TNEPEC SERIES 69 POLYAMIDE EPOXY (TDFT-11 MILS) COLOR: LT. GRAY 6G- BLAST CLEAN PER SSPC-SP6 (1) CT (3 MILS) TNEPEC 69-1211 PRIMER & (1) CT (4 MILS) TNEPEC SERIES 69 POLYAMIDE EPOXY (TDFT-7 MILS) COLOR: LT. GRAY	
ITEM DESCRIPTION	MATERIAL KEY	FIN KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	-	1	4
a) FRAME	41	6J1	V-5514	1	4
b) COVER	41	6J1	V-5001	1	4
c) SEAT	27	3	-	2	-
d) GUIDE RAIL	41	6J1	CAST INTEGRAL WITH FRAME SYSTEM B1	-	-
e) SIDE WEDGE ASSEMBLY	-	-	V-5511 L&R & V-5139 L&R	3ea	-
WEDGES	1,27,28	1,3	-	-	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
f) TOP WEDGE ASSEMBLY	-	-	V-5006 & V-5007	2	-
WEDGES & BRACKETS	28	1,3	-	-	-
ASSEMBLY / ADJUSTING HARDWARE	15B	2	-	-	-
h) FLUSH BOTTOM ASSEMBLY	-	-	-	-	-
BRACKET	1	6E	V-4058	1	4
SEAL	13	2	39.12 INCHES	1	4
SEAL RETAINER	9B	2,3	36 INCHES	1	4
ASSEMBLY HARDWARE	15B	2	-	-	-
2. THRUST NUT	28	1,3	V-5014 L2 (1-1/2 DIA, 4TPI, LHD)	1	4
3. STEM	9B	2,3	1-1/2 DIA, 4TPI, LH [5]	1	4
4. LIMIT NUT	3	1,3	1-1/2 DIA, 4TPI, LH STD	2	8
7. LIFT ASSEMBLY	-	-	-	1	4
a) LIFT	1,4	6G	TYPE 3ESL-21A	1	4
b) HANDCRANK	1,12	6G	REF. 102671	1	4
c) PEDESTAL	6,11	6G	REF. 102796	1	4
8. STEM COVER (W/MYLAR STRIP)	14	2	REF. 105903 (3in) 40 LG.	1	4
9. STEM GUIDE (LZ BRONZE BUSHED)	1,26	6E	TYPE K-2	2	8
12. TOP WALL MOUNTING BRACKET	1	6E	TYPE K-3B	1	4
13. GASKET	16	2	TUBE TYPE	2	8
14. I.D. TAG (NOT SHOWN)	12	2	SEE DRAWING RA-98-0308	1	4
23. THIMBLE (PAINT INSIDE ONLY)	30	6E	36 TYPE E-SS X 14 LG.	1	4
24. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 3-1/2 LG.	5	20
25. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 6-1/2 LG.	3	12
26. DOUBLE ENDED STUD	9B	2,3	5/8 NC X 8 LG.	6	24
53. ANCHOR BOLT	9B	2,3	5/8 NC X 10 LG.	4	16
55. ANCHOR BOLT	9B	2,3	5/8 NC X 14 LG.	2	8
59. ANCHOR BOLT	9B	2,3	5/8 NC X 10 LG.	6	24
77. HEX NUT	15B	2	5/8 NC	22	88
78. WASHER	15B	2	5/8 DIA	22	88
79. HEX NUT	15B	2	3/4 NC	10	40
80. WASHER	15B	2	3/4 DIA	14	56
87. HEX HEAD BOLT	15B	2	3/4 NC X 3-1/2 LG.	4	16

NOTES: UNLESS OTHERWISE SPECIFIED.  
 1. (GATE CAPACITY) MAX. SEATING HD= 60 FT.; MAX UNSEATING HD= 35 FT.  
 2. OPERATING HEAD FROM CENTER LINE: SEATING= 11.5 FT.; UNSEATING= 11.5 FT.  
 3. LIFT CAPACITY @ 40 LBS. PULL = 3800 LBS.  
 4. TURN HANDCRANK CCW TO OPEN (RAISE) GATE.  
 [5] 29° MODIFIED STUB ACME THREADS.  
 [6] CONTRACTOR TO VERIFY OR SUPPLY.  
 [7] SHOP NOTE: PAINT DRY FILM THICKNESS & HOLIDAY TESTS (BY OTHERS) MAY BE REQUIRED.

REF: NORTH ADVANCED WATER RECLAMATION  
 FACILITY - CONTRACT 4  
 GWINNETT COUNTY, GEORGIA  
 ENGRS: METCALF & EDDY

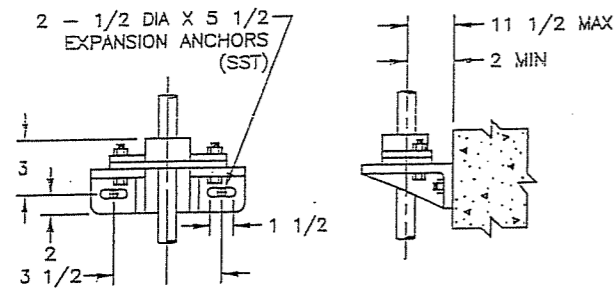
# 36 X 36 WATERMAN MODEL QS-5000-F SLUICE GATE

FOR: BEERS CONSTRUCTION CO.  
 TO ELLIS STREET NE  
 ATLANTA, GA 30303  
 P.O.

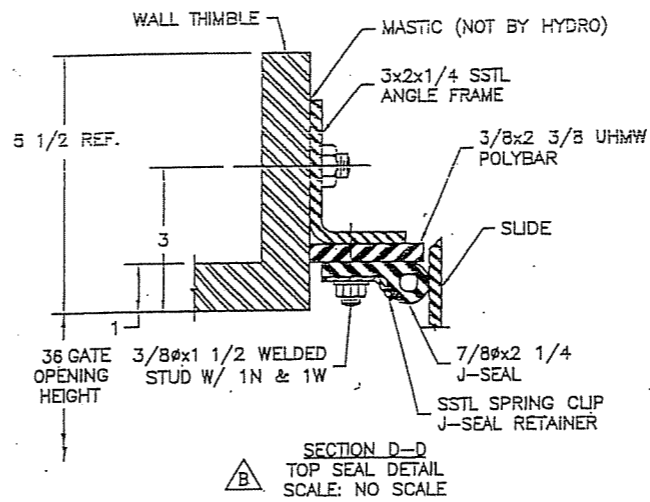
(4) GATES REQ'D @ EFFLUENT PUMP STATION, TAG NO. 37-SG-7 THRU 10 REF PLAN SHEET 37-M-101

REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER
			L-2619	LES
REV. NO.	DATE	BY	QUOTE NO.	QUOTE ITEM NO.
			GQ98-A-019	22
REV. NO.	DATE	BY	DRAWN BY	CHECKED BY
			DR	SH
REV. NO.	DATE	BY	SCALE	DATE
[A]	7-30-98 ME	LES	NONE	3/18/98
REV. NO.	DATE	BY	DRAWING NO.	
[A]	05/18/98 MH	LES	RB-98-0275	

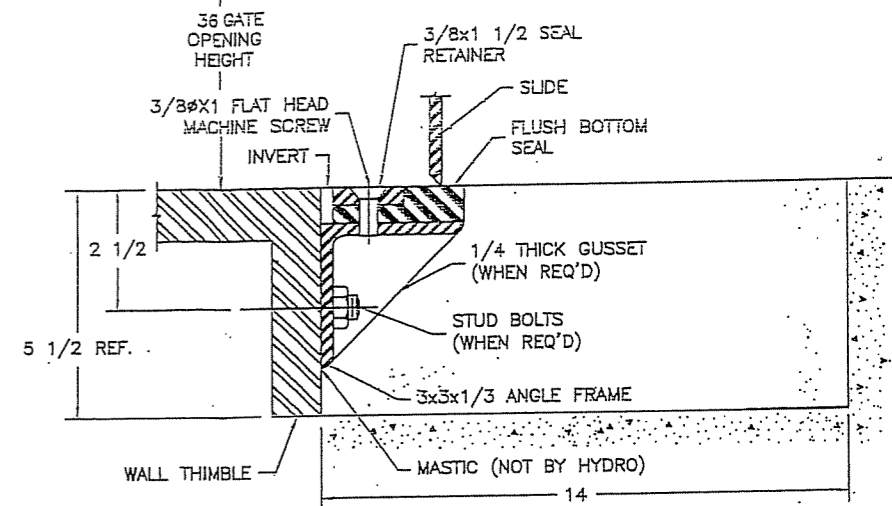
**Exhibit D.3 – Effluent Pump Station Original Gates Submittal Drawings (Stainless Steel)**



TYPE B STEM GUIDE  
WITH TWO PIECE SPLIT COLLAR



SECTION D-D  
TOP SEAL DETAIL  
SCALE: NO SCALE

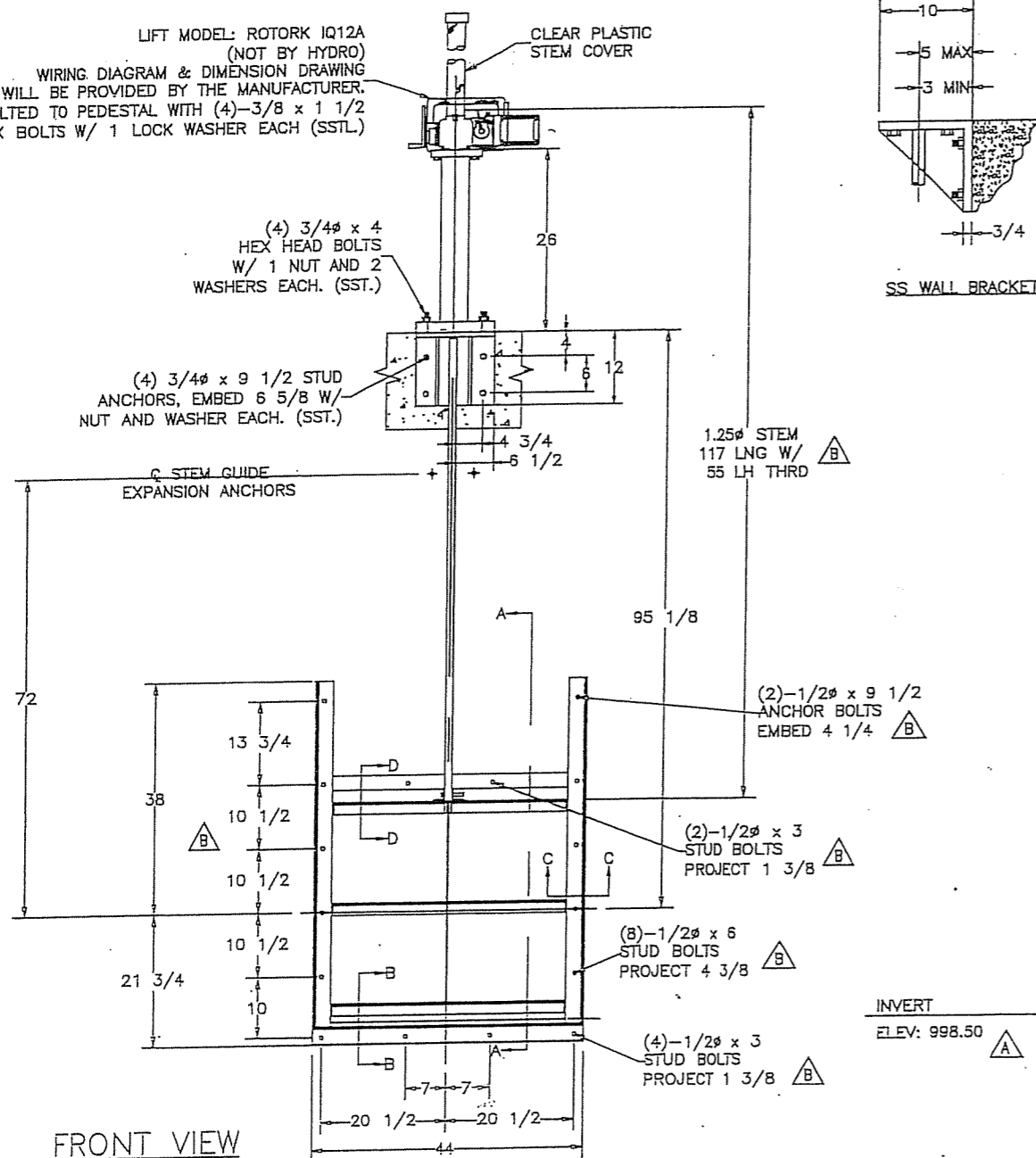


SECTION B-B  
INVERT DETAIL  
SCALE: NO SCALE

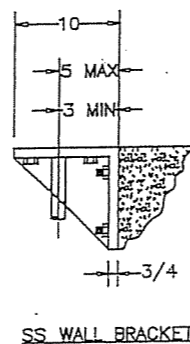
LIFT MODEL: ROTORK IQ12A  
(NOT BY HYDRO)  
WIRING DIAGRAM & DIMENSION DRAWING  
WILL BE PROVIDED BY THE MANUFACTURER.  
LIFT BOLTED TO PEDESTAL WITH (4)-3/8 x 1 1/2  
HEX BOLTS W/ 1 LOCK WASHER EACH (SSTL.)

(4) 3/4 x 4  
HEX HEAD BOLTS  
W/ 1 NUT AND 2  
WASHERS EACH. (SST.)

(4) 3/4 x 9 1/2 STUD  
ANCHORS, EMBED 6 5/8 W/  
NUT AND WASHER EACH. (SST.)

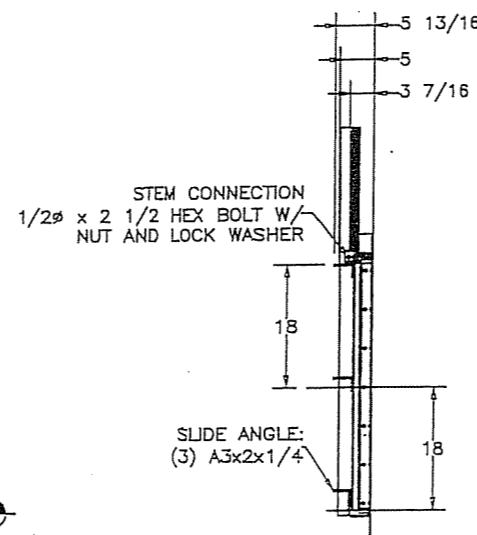


FRONT VIEW  
GATE IN CLOSED POSITION

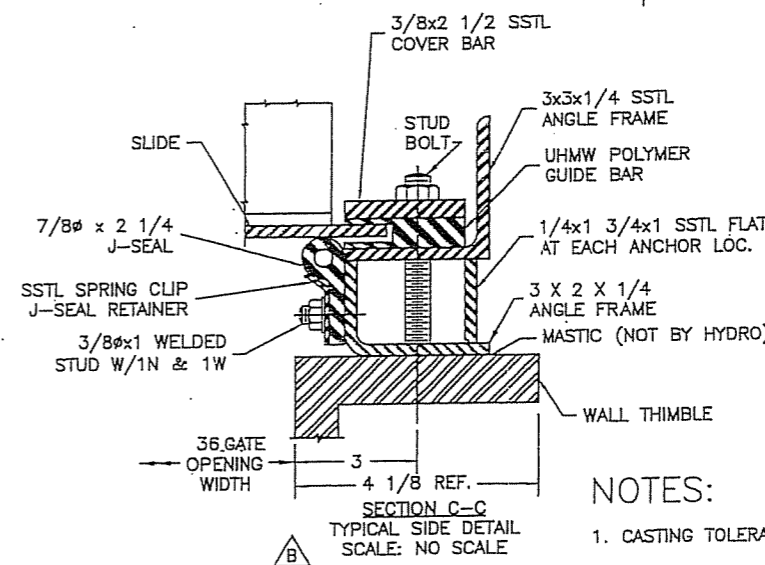


SS WALL BRACKET

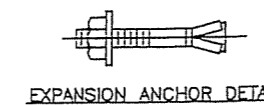
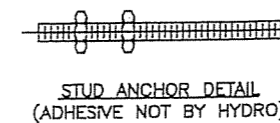
TOP OF CONCRETE  
ELEV: 1007.93



SECTION A-A  
ANCHORS/STEM REMOVED FOR CLARITY



SECTION C-C  
TYPICAL SIDE DETAIL  
SCALE: NO SCALE



NOTES:

- CASTING TOLERANCES APPLY ON ALL UNMACHINED SURFACES.
- SEE MANUAL G-1900 FOR INSTALLATION AND ADJUSTMENT INSTRUCTIONS.
- ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
- MATERIAL SPECIFICATIONS AND COATINGS PER DRAWING: 04-0132502
- GATE HEAD DESIGN SEATING: 8.0  
MEASURED FROM GATE C UNSEATING: 8.0  
OPERATING DESIGN HEAD SEATING: 8.0  
MEASURED FROM GATE C UNSEATING: 8.0
- TAG: 37-SG-11, 37-SG-12
- LOCATION: EFFLUENT PUMP STATION
- REFERENCE SPECIFICATIONS SECTION:
- REFERENCE PLAN DRAWINGS: VOL 8, DWG. 2-37 M-102
- GATES ARE MOUNTED ON 14" FABRICATED "E" TYPE THIMBLE.



36" x 36" FABRICATED SLIDE GATE

QUANTITY: 2	MATERIAL: SS304	SCALE: 1'=7/16"
THIS IS A PROPRIETARY DESIGN OF HYDRO GATE CORP. THE DESIGN, DATA AND INFORMATION RELATING THERETO IS NOT TO BE USED, DISSEMINATED OR REPRODUCED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN CONSENT OF HYDRO GATE CORP.		
DRAWN BY BPS	CUSTOMER NO. 712	SALES 04-0132
CHECKED BY	DATE 4/15/04	DRAWING NO. 04-0132010

REV.	DATE	INITIALS
A	4/20/04	BPS
B	6/28/04	BPS

## MATERIAL SPECIFICATIONS

GATE PART OR ITEM OF ASSEMBLY	MATERIAL DESCRIPTION	MATERIAL CODE	MATERIALS SHOWN IN ASTM SPECIFICATION UNLESS NOTED OTHERWISE
<u>EMBEDMENTS</u>			
ANCHOR BOLTS ANCHOR BOLT NUTS	STAINLESS STEEL STAINLESS STEEL	△ (P) (P)	A276, TYPE 316 F594, ALLOY GROUP 2 (316)
<u>GATE ASSEMBLY</u>			
FRAME (SIDE ANGLES, FILLER AND COVER BARS) SLIDE PLATES AND REINFORCINGS FASTENERS	STAINLESS STEEL	△ (P)	A276, TYPE 316 OR 316L (STRUCT.) A240, TYPE 316 OR 316L (PLATES)
RETAINER FLUSH BOTTOM SEAL AND J-SEAL J-SEAL SPRING CLIP UHMW POLYMER	STAINLESS STEEL STAINLESS STEEL NEOPRENE	△ (P) △ (P) (BB)	F593 (BOLTS), ALLOY GROUP 2 (316) F594 (NUTS), ALLOY GROUP 2 (316) A276, TYPE 316 OR 316L D2000, GRADE 1BE625
<u>STEM AND ACCESSORIES</u>			
STEM	STAINLESS STEEL	(P)	A276, TYPE 316
<u>LIFT ASSEMBLY</u>			
LIFT PEDESTAL LIFT HOUSING LIFT NUT	CARBON STEEL CAST IRON MANGANESE BRONZE	(V) (A) (K)	A36 A126, CLASS B B584, ALLOY 865
<u>STEM GUIDE AND WALL BRACKET</u>			
STEM GUIDE BRACKET STEM GUIDE COLLAR FASTENERS	CAST IRON SILICON BRONZE STAINLESS STEEL	△ (P) (J) (P)	A276, TYPE 316 B584, ALLOY 873 F593 (BOLTS), ALLOY GROUP 2 (316) F594 (NUTS), ALLOY GROUP 2 (316)
WALL BRACKET	CAST IRON	△ (P)	A276, TYPE 316

## COATING SPECIFICATIONS

CLEANING:  STANDARD CLEAN - REMOVAL OF LOOSE RUST, MILL SCALE AND PAINT BY AIR HOSE, SCRAPING, AND WIRE BRUSH.

BLAST CLEAN (PER STEEL STRUCTURES PAINTING COUNCIL)

COMMERCIAL BLAST      GRADE      SSPC-SP6

COATING:      ROCKHARD POLYURETHANE ENAMEL #649      COLOR      GRAY

PART NO. 45610T

2      SHOP COATS FOR A DRY FILM THICKNESS OF      3-4      MILS

FOR THE FOLLOWING COMPONENTS:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> GATE                  | <input type="checkbox"/> THIMBLE                 | <input type="checkbox"/> STEM            |
| <input type="checkbox"/> STEM GUIDES           | <input checked="" type="checkbox"/> WALL BRACKET | <input checked="" type="checkbox"/> LIFT |
| <input type="checkbox"/> BASE PLATE STEM GUIDE | <input type="checkbox"/> STEM BLOCK              | <input type="checkbox"/> _____           |

COATING:      TNEMEC SERIES 46H-413 COAL TAR EPOXY      COLOR      BLACK

PART NO. 34100T

1      SHOP COATS FOR A DRY FILM THICKNESS OF      8      MILS

FOR THE FOLLOWING COMPONENTS:

- |                                       |   |  |
|---------------------------------------|---|--|
| <input type="checkbox"/> LIFT         | <input checked="" type="checkbox"/> STEM GUIDES | <input type="checkbox"/> BASE PLATE STEM GUIDE |
| <input type="checkbox"/> WALL BRACKET |   |  |

NOTES:



### MATERIAL AND COATING SPECIFICATIONS FOR STAINLESS STEEL SLIDE GATES

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REV.	DATE	INITIALS	DRAWN BY	CUSTOMER NO.	SALES
A	4/20/04	BPS	BPS	712	04-0132
B	6/25/04	BPS	CHECKED BY	DATE	DRAWING NO.
				4/15/04	04-0132502