



MACON WATER AUTHORITY

CONTRACT FOR

Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF

PROJECT ID: 52GRAV-RBLD-25

PROPRIETARY NOTICE

This document is prepared by the Macon Water Authority for the sole purpose of communicating to our vendors. The proprietary information contained herein is based on the requirements of the project. None of the information in this document is to be shared with any third parties without the expressed written consent of the Macon Water Authority.

INDEX

SECTION 00020	Invitation to Bid
SECTION 00100	Instructions to Bidders
SECTION 00210	Federal Employment Affidavits
SECTION 00300	Bid
SECTION 00410	Bid Bond
SECTION 00420	Statement of Bidder's Qualifications
SECTION 00421	Statement of Equipment
SECTION 00422	Corporate Certificate
SECTION 00423	Statement of Disadvantaged Firm Utilization
SECTION 00425	Contractor's License Certification
SECTION 00426	Contractor Screening Certification
SECTION 00430	Contractor's Certification of Authority
SECTION 00480	Non-Collusion Affidavit of Prime Bidder
SECTION 00500	Contract Agreement
SECTION 00550	Pre-Award Oath
SECTION 00600	Performance Bond
SECTION 00601	Blank Page – Performance Bond Surety Location
SECTION 00610	Payment Bond
SECTION 00611	Blank Page – Payment Bond Surety Location
SECTION 00700	General Conditions
SECTION 00800	Supplementary Conditions
SECTION 00810	Pay Estimate Summary Sheet

TECHNICAL SPECIFICATIONS

SECTION 01010	Summary of Work
SECTION 01020	Allowances
SECTION 01025	Measurement & Payment
SECTION 01200	Project Meetings
SECTION 01310	Construction Schedules
SECTION 013300	Submittal Procedures
SECTION 01569	Safety in Water/Wastewater Works
SECTION 01701	Contract Closeout Procedures
SECTION 01730	Operation and Maintenance Data
SECTION 01740	Warranties and Bonds

APPENDIX A

Rocky Creek Thickener, 1,2, and 3 Replacement Specification
Specifications for Coating
Clarifier #6 Replacement Specification
Stainless Steel Slide and Weir Gate Specifications

APPENDIX B

Drawing for Weir Gates

APPENDIX C

S-3 Final Clarifier No. 6- Plans and Sections

S-4 Final Clarifier No. 6 – Sections

P-2 Final Clarifier No. 6 – Plans and Sections

P-3 Final Clarifier No. 6 – Sections and Details

E-5 Final Clarifier No. 6 – Electrical

APPENDIX D

Thickener Drawings

END OF INDEX

INVITATION TO BID

THE MACON WATER AUTHORITY
MACON, GEORGIA

Sealed Bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the **Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF** (the “Project”) will be received by the Macon Water Authority (the “Owner”), at the Macon Water Authority, 537 Hemlock Street, Human Resources Training Room, Macon, Georgia 31201 until **2:00P. M.**, local time, **October 20, 2026**, and then at said office publicly opened and read aloud. All bidders must attend a mandatory pre-bid meeting at the **Rocky Creek WRF at 5007 Old Gaul City Road, Macon GA at 10:00 A.M.** on **October 6, 2026**. All bid questions must be submitted to the Owner by **10:00 A.M.** on **October 13, 2026**. **The Bidder should attend the pre-bid meeting in its entirety.**

The Project consists of replacing three (3) 75’ diameter Thickener mechanisms and associated components, and clarifier #6 as described within the specification and summary of work. Three (3) aluminum slide gates will also be replaced with stainless steel gates as per specifications.

The Project will be awarded in one Contract. Fifty-one percent (51%) of the Work under the Contract Documents must be self-performed by the General Contractor. The Project will be awarded by base bid on a lump sum basis for the performance and completion of all Work required by the Contract Documents.

The Contract Documents include, but may not be limited to, the Instructions to Bidders, the Contract Agreement, the General Conditions, the Drawings, the Specifications (Divisions 01 through 46, inclusive, where applicable), and the forms of Bid Bond, Performance Bond, and Payment Bond. These and any other Contract Documents may be examined at the following location:

Engineering Department
Macon Water Authority
537 Hemlock Street
Macon, GA 31201

Copies of Contract Documents may be obtained at the Engineering Department, Macon Water Authority, 537 Hemlock Street, Macon, GA 31201, by contacting Heather Veal, Telephone 478-464-5642 upon a non-refundable payment of **\$150.00** for each set. A street address must be provided to ensure prompt delivery. No partial sets of bidding documents shall be issued. **Bidders must purchase the Contract Documents in order to be eligible to submit a bid.** Bid documents on the MWA website are for informational purposes only.

Each Bid must be accompanied by a Bid Bond in the amount of 10% of the Bid, prepared on the form of Bid Bond that is part of the Contract Documents, duly executed by the Bidder as principal and having as surety thereon a surety company licensed to do business in the State of Georgia and listed in the latest issue of U.S. Treasury Circular 570.

Bidders must comply with the Disadvantaged Business Enterprise Participation Requirements specified in the Instructions to Bidders.

The Bidder shall affix to the outside of its Bid envelope the Bidder's Georgia Utility Contractor License Number. A license number of a Utility Manager or a subcontractor is insufficient, and any Bid that fails to affix to the outside of its Bid envelope the Bidder's Georgia Utility Contractor License Number may be rejected.

The successful Bidder for this Project shall be required to furnish a Performance Bond and Payment Bond, satisfactory to the Owner, each in the amount of 100 % of the Contract Price.

Employment of Local Businesses and Contractors: It is the desire of the Owner that local businesses--including disadvantaged, minority, and women enterprise subcontractors-- be given the opportunity to participate on the various parts of the Work.

The Owner's encouragement of participation of disadvantaged, minority, and women enterprises and of locally owned businesses and contractors is not intended to restrict or limit competitive bidding or to increase the cost of the Work. The Owner supports a healthy, free market system that seeks to include responsible local businesses and provide ample opportunities for local business growth and development.

In an effort to assist minority-owned businesses, Georgia law permits an income tax adjustment on the state tax return of any company that subcontracts with a certified minority-owned firm to furnish goods, property or services to the State of Georgia pursuant to O.C.G.A. §48-7-38. Suppliers should consult with their tax advisors to find out how to take advantage of these tax credits.

The Owner reserves the right to reject any or all Bids. The Owner reserves the right to waive informalities and technicalities.

The Macon Water Authority
Michel Wanna
Interim Executive Director & President

END OF SECTION

INSTRUCTIONS TO BIDDERS

1.01 CONTRACT DOCUMENTS

- A. The Bidder's attention is directed to the General Conditions and other Contract Documents, all of which should be reviewed and studied by the Bidders before submitting a Bid.
- B. The Contract Documents shall define and describe the complete Work to which they relate.

1.02 DEFINITIONS

The Bidder's attention is called to the definitions set forth in Article 41 of the General Conditions.

1.03 PREPARATION AND EXECUTION OF BID

- A. Each Bid must be prepared to represent that it is based solely upon the materials and equipment specified in the Contract Documents.
 - 1. *Trade Names.*— When reference is made in the Contract Documents to trade names, brand names, or to the names of manufacturers, such references are made solely to indicate that products of that description may be furnished and are not intended to restrict competitive bidding. Unless requests for approvals of other products have been received and approvals have been published by addendum in accordance with the procedure described below in this Section, the successful Bidder may furnish no products of any trade names, brand names, or manufacturers' names except those designated in the Contract Documents.
 - 2. *Use of other products.*—If a Bidder desires to use products of trade or brand names or of manufacturers' names which are different from those specified in the Contract Documents, application for the approval of the use of such products must be received by the Engineer at least ten (10) days prior to the date set for the opening of Bids. The application to the Engineer for approval of a proposed product must be accompanied by:
 - a. a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Contract Documents; and
 - b. a copy of the published recommendations of the manufacturer for the installation of the product together with a complete schedule of changes in the drawings and specifications, if any, which must be made in other work in order to permit the use and installation of the proposed product in accordance with the recommendations of the manufacturer of the product.

In addition, the Engineer will give consideration to reports from reputable independent testing laboratories, verified experience records showing the reputation

- of the proposed product with previous users, evidence of reputation of the manufacturer for prompt delivery, evidence of reputation of the manufacturer for efficiency in servicing its products, or any other written information that is helpful in the circumstances. To be approved, a proposed product must also meet or exceed all express requirements of the Contract Documents.
3. *Burden of proof.*— The degree of proof required for approval of a proposed product as acceptable for use in place of a named product or products is that amount of proof necessary to convince a reasonable person beyond all doubt.
 4. *Request for conference.*—Any Bidder who alleges that rejection of a submittal is the result of bias, prejudice, caprice, or error on the part of the Engineer may request a conference with a representative of the Owner: PROVIDED, that the request for said conference, submitted in writing, shall be received by the Owner at least five (5) days prior to the date set for the opening of Bids, time being of the essence.
 5. *Issuance of addenda.*— If the submittal is approved by the Engineer, an addendum will be issued to all prospective Bidders. Issuance of an addendum is a representation to all Bidders that the Engineer, in the exercise of its professional judgment and discretion, established that the product submitted for approval is acceptable and meets or exceeds all express requirements.
- B. Each Bid must be submitted on the Bid forms which are a part of the Contract Documents. **All blank spaces for Bid prices, both words and figures, must be filled in and completed in ink.** In case of discrepancy, the amount shown in words will govern. All required enclosed certifications or other documents must be fully completed and executed when submitted.
- C. In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to correspond with the unit prices. In case of discrepancies between written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over the Bidders input of the Bid Total.
- D. Each Bid must be submitted in a sealed envelope, addressed to the Macon Water Authority (the “Owner”). Each sealed envelope containing a Bid must be plainly marked on the outside as, **“Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF”**.
- E. The Bidder shall provide on the outside of the sealed envelope the following information:
1. Bidder's Name;
 2. Bidder's Georgia Utility Contractor License Number (if applicable); and,
 3. The words, “SEALED BID”
- F. Any Bid submitted which does not contain the above information on the outside of the sealed envelope will not be opened and will be returned to the Bidder.

- G. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed as follows:
- THE MACON WATER AUTHORITY
Attn: Heather Veal
790 Second Street
Post Office Box 108
Macon, Georgia 31202-0108
- H. Any and all Bids not meeting the aforementioned criteria for Bid submittal may be declared non-responsive, and subsequently returned to the Bidder unopened.
- I. The Bidder, in signing a Bid on the whole or any portion of the Project, shall conform to the following requirements:
1. Bids which are not signed by individuals making the Bid shall have attached thereto a power of attorney evidencing authority to sign the Bid in the name of the person for whom it is signed.
 2. Bids which are signed for a partnership shall be signed by all of the partners or by an attorney-in-fact. If a Bid is signed by an attorney-in-fact, there should be attached to the Bid a power of attorney executed by the partners evidencing authority to sign the Bid.
 3. Bids which are signed for a corporation shall have the correct, legal corporate name thereof, as reflected in the records of the Georgia Secretary of State, and the signature of the president or other authorized officer of the corporation manually written below the corporate name following the wording "By _____." If applicable, the corporate seal shall be affixed to the Bid.
 4. The Bidder shall complete, execute and submit the following documents, (if applicable to the Bidder) which are a part of the Contract Documents:
 - a. The Bid;
 - b. The Bid Bond;
 - c. Statement of Bidder's Qualifications;
 - d. Statement of Equipment;
 - e. Corporate Certificate, if the Bidder is a corporation;
 - f. Statement of Disadvantaged Business Enterprise ("DBE") compliance;
 - g. Contractor's License Certification;
 - ~~h. Photocopy of State of Georgia Utility Contractor's License;~~
 - i. Photocopy of Certificate of Authority from Georgia Secretary of State's Office to do work in Georgia (if out of state contractor);
 - j. Non-Collusion Affidavit of Prime Bidder;
 - k. Any and all forms, certifications or other documentation required by the Georgia Department of Natural Resources Environmental Protection Division.

1.04 METHOD OF BIDDING

The unit or lump sum price for each of the several items in the Bid of each Bidder shall include its pro rata share of overhead and profit so that the sum of the products, obtained by multiplying the quantity shown for each item by the unit price, represents the total Bid. Any Bid not conforming to this requirement may be rejected. Additionally, unbalanced Bids (including unbalanced unit prices) may be rejected. Conditional Bids shall not be accepted. **The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities, nor extra compensation allowed.**

1.05 ADDENDA AND INTERPRETATIONS

- A. No interpretation of the meaning of the Drawings, Specifications or other pre-bid documents or Contract Documents shall be made to any Bidder orally.
- B. Any and all such interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be mailed, shipped or faxed to all prospective Bidders (at the respective addresses furnished) at least seventy-two (72) hours (exclusive of weekends and holidays) prior to the date fixed for the opening of Bids.
- C. Failure of Bidders to receive or acknowledge any Addendum shall not relieve them of any obligation under the Bid or the Contract Documents. All Addenda shall become part of the Contract Documents and obligations there under binding.

1.06 BID MODIFICATIONS

Bidders may modify their Bid by facsimile communication at any time prior to the scheduled closing time for receipt of Bids, provided such facsimile communication is received by the Owner prior to the time Bids are required, and provided further that the Owner is satisfied that a written confirmation of the facsimile modification over the signature of the Bidder was mailed by the Bidder to the Owner prior to the time Bids are required. The facsimile communication should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed Bid is opened. If written confirmation from the Bidder is not received by the Owner within two business days from the time Bids are required, no consideration will be given to the facsimile modification and the facsimile modification shall be rejected.

1.07 BID SECURITY

- A. Each Bid must be accompanied by a Bid Bond, prepared on the form of Bid Bond included herein, duly executed by the Bidder as principal and having as surety thereon a surety company authorized to do business in the State of Georgia and listed in the

latest issue of U.S. Treasury Circular 570, in the amount of **five (5%)** percent of the Bid. Attorneys-in-fact who sign Bonds must file with each Bond a currently dated and valid original of their power of attorney. Where validity and currentness of a power of attorney are established by certification executed by a corporate officer, the certification shall be made and executed by a corporate officer of record, as reflected in the records of the Georgia Secretary of State, or by valid corporate resolution or authorization identifying such corporate officer.

- B. Except as provided in O.C.G.A. §§ 36-91-52 and 36-91-53, if for any reason whatsoever the successful Bidder withdraws from the competition after opening of the Bids, or if Bidder refuses to execute and deliver the Contract and Bonds required in Article 2 of the General Conditions, the provisions of the Bid Bond may be enforced.
- C. Except as provided in O.C.G.A. §§ 36-91-52 and 36-91-53, a Bid may not be revoked or withdrawn until sixty (60) days after the time set for opening the Bids. Upon expiration of this time period, the Bid will cease to be valid, unless the Bidder provides written notice to the Owner prior to the scheduled expiration date that the Bid will be extended for a time period specified by the Owner.

1.08 RECEIPT AND OPENING OF BIDS

The Owner may consider a technicality and informality in any Bid not prepared and submitted in strict accordance with the provisions hereof and may waive any technicality and informality or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be opened.

1.09 CONDITIONS OF THE PROJECT

- A. Each Bidder must be informed fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of the obligation to furnish all material and labor necessary to carry out the provisions of the Contract Documents. Insofar as possible, the Bidder, in carrying out the Work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.
- B. The Bidder is advised to examine the location of the Project and to be informed fully as to its conditions; access requirements, the conformation of the ground; the character, quality and quantity of the products needed preliminary to and during the prosecution of the work; the general and local conditions and all other matters which can in any way affect the work to be done under the Contract Documents. Failure to examine the site will not relieve the successful Bidder of an obligation to furnish all products and labor necessary to carry out the provisions of the Contract Documents.
- C. The Bidder shall notify the Owner of the date and time Bidder proposes to examine the location of the Project. The Bidder shall confine examination to the specific areas designated for the proposed construction, including easements and public right-of-ways.

If, due to some unforeseen reason, the proceedings for obtaining the proposed construction site (including easements), have not been completed, the Bidder may enter the site only with the express consent of the property owner. The Bidder is solely responsible for any damages caused by examination of the site.

- C. All anticipated federal, state and local permits required for the Project NA have been obtained.
- D. All rights of way and easements anticipated for the Project NA been obtained.

1.10 EQUAL EMPLOYMENT OPPORTU0000NITY

- A. During the performance of the Contract, the Bidder agrees as follows:
 - 1. The Bidder shall not discriminate against any employee or applicant for employment, or in any employment action during employment, based upon any applicable, legally-recognized and protected basis, including, but not limited to, veteran status, uniformed service member status, race, color, religion, sex, sexual orientation, gender identity, age (40 and over), pregnancy (including childbirth, lactation and related medical conditions), national origin or ancestry, citizenship status, physical or mental disability, genetic information (including testing and characteristics), or any other consideration protected by federal, state, or local law.
 - 2. The Bidder shall, in all solicitation or advertisement for employees placed by or on behalf of Bidder, state that all qualified applicants will receive consideration for employment without regard to any applicable, legally-recognized and protected consideration, including, but not limited to veteran status, uniformed service member status, race, color, religion, sex, sexual orientation, gender identity, age (40 and over), pregnancy (including childbirth, lactation and related medical conditions), national origin or ancestry, citizenship status, physical or mental disability, genetic information (including testing and characteristics), or any other characteristic or basis protected by federal, state, or local law.
 - 3. The Bidder shall send to each labor union or representative of the workers, with which the Bidder has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or worker's representative of the Bidder's commitments under the Equal Employment Opportunity Program of the Owner and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - 4. The Bidder and its subcontractors, if any, shall file compliance reports at reasonable times and intervals with the Owner in the form and to the extent prescribed by the Owner or the Georgia Department of Natural Resources. Compliance reports filed at such times as directed shall contain information as to the employment practices, policies, programs and statistics of the Bidder and its subcontractors.

5. The Bidder shall demonstrate by the documentation required in Paragraph C, below, that a “Good Faith Effort” has been made to achieve compliance with the Owner’s goal that a minimum of ten percent (10%) of the Contract Price shall be subcontracted to a Disadvantaged Business Enterprise (DBE). “DBE” shall have the meaning as is defined in applicable federal law, including the current rules and regulations of the United States Department of Transportation More specifically, the term “DBE” means a firm or business which is at least fifty-one percent (51%) owned, operated, capitalized, and controlled by one or more United States citizens or lawfully admitted residents who are socially and economically disadvantaged.

As used herein, the term “subcontracted” means providing subcontracting services or furnishing products or materials to be utilized in the performance of the Work.

6. The Bidder shall include the provisions of paragraphs 1 through 6 of this Section 1.10.A in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor.
- B. In determining whether a Bidder has made “Good Faith Efforts”, the Owner will look effort that a Bidder has made.
 - C. The following list of kinds of efforts is provided for consideration, but this is not an exhaustive list of efforts that may be considered by the Owner:
 1. Whether the Bidder attended any pre-solicitation or pre-bid meetings that were scheduled by the Agent to inform DBEs of contracting and subcontracting opportunities;
 2. Whether the Bidder advertised in general circulation, trade association, and DBE-focus media concerning the sub-contracting opportunities;
 3. Whether the Bidder provided written notice to DBEs that their interest in the Contract was being solicited, in sufficient time to allow the DBEs to participate effectively;
 4. Whether the Bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;
 5. Whether the Bidder selected portions of the Work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation);
 6. Whether the Bidder provided interested DBEs with adequate information about the Drawings, Specifications and requirements of the Contract Documents;
 7. Whether the Bidder negotiated in good faith with interested DBEs, not rejecting DBEs as unqualified without sound reasons based on a thorough investigation of

their capabilities;

8. Whether the Bidder made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance required by the Contract Documents or Contractor; and
- D. Each Bidder shall include with his or her Bid a Statement of Disadvantaged Firm Utilization. Such statement shall include, as a minimum, the names and addresses of all DBE firms providing subcontracting services, furnishing products or materials, etc., the nature of the work to be contracted; and the anticipated cost of the services by each named firm as a percentage of the total Contract Price set forth in the Bid. The percentage participation should be calculated on the basis of the proportion of total dollar value of the Bid, including bulk purchase materials supplied by DBEs.
- E. It is the desire of the Owner that DBEs be given the opportunity to bid on the various parts of the Work, and that to the extent feasible, DBE firms in the Middle Georgia area will be solicited and used. However, this desire is not intended to restrict or limit competitive bidding or to increase the cost of the Work. The Owner supports a healthy, free market system that seeks to include responsible businesses and provide ample opportunities for business growth and development.

In an effort to assist minority-owned businesses, Georgia law permits an income tax adjustment on the state tax return of any company that subcontracts with a certified minority-owned firm to furnish goods, property or services to the State of Georgia pursuant to O.C.G.A. § 48-7-38. Suppliers should consult with their tax advisors to find out how to take advantage of these tax credits.

1.11 NOTICE OF SPECIAL CONDITIONS

If any special federal, state, county or city laws, municipal ordinances, and the rules and regulations of any authorities having jurisdiction over construction of the Project, enclosed, herein referred to, or applicable by law to the Project, conflict with requirements of the Contract Documents, then the federal, state, county or city laws, municipal ordinances, and the rules and regulations of any authorities having jurisdiction over construction of the Project shall prevail and supersede the conflicting requirements of the Contract Documents.

1.12 OBLIGATION OF BIDDER

- A. By submission of a Bid, each Bidder warrants that Bidder has inspected the site and has read and is thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from any obligation in respect to the Bid.

- C. Special attention is directed to Article 4, "Insurance" contained at pages 00700-3 through 00700-6 in the General Conditions. The Owner requires (1) "Worker's Compensation and Employer's Liability Insurance," (2) "Commercial General and Umbrella Liability Insurance," (3) "Business Auto and Umbrella Liability Insurance," and (4) "Materials and Floater" Insurance. For each of the required policies, the Owner requires a certificate of insurance at least quarterly, a copy of the endorsement of the insurance company showing the Owner as an additional insured, and a copy of the insurance policy declaration and any necessary endorsements.
- D. Attention is further directed to Paragraph 6 of 00500, Contract Agreement and Article 9 of 00700, General Conditions regarding assignments. Prior written consent of the Owner is required for any assignment of any portion of this Contract, including any assignment due to "buyout" of Bidder or other acquisition of Bidder where the Bidder is a corporation or where Bidder is 50 percent or more owned by a corporation, firm, or person.

1.13 METHOD OF AWARD

- A. The Contract, if awarded, will be awarded to the lowest responsible and responsive Bidder whose Bid meets the requirements and criteria set forth in the Contract Documents. The Contract, if awarded, will be awarded by base bid on a lump sum basis, comprised of unit prices, for the performance and completion of all Work required by the Contract Documents.
- B. The Bidder to whom the award is made will be notified. The Owner reserves the right to reject any and all Bids and to waive any technicalities and informalities in Bids received whenever such rejection or waiver is in the Owner's interest.
- C. A responsive Bidder shall be one who submits a Bid in the proper form without qualification or intent other than as called for in the Contract Documents, and who binds itself on behalf of the Bid to the Owner with the proper Bid Bond completed and attached, and who properly completes all forms required to be completed and submitted at the time of the Bidding. The Bidder shall furnish all data, documents, forms, and certifications required by the Contract Documents. Failure to do so may result in the Bid being declared non-responsive.
- D. A responsible Bidder shall be one who can fulfill the following requirements:
 - 1. The Bidder shall maintain a permanent place of business. This requirement applies to the Bidder where the Bidder is a division of a corporation, or where the Bidder is 50 percent or more owned by a person, corporation or firm.
 - 2. The Bidder shall demonstrate adequate construction experience and sufficient equipment resources to properly perform the work under and in conformance with the Contract Documents. This evaluation will be based upon a list of completed or active projects and a list of construction equipment available to the Bidder to perform the work. The Owner may make such investigations as

deemed necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may reasonably request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract Documents and to complete the Project contemplated therein.

3. The Bidder shall demonstrate financial resources of sufficient strength to meet the obligations incident to the performance of the Work covered by the Contract Documents. The ability to obtain the required Performance and Payment Bonds will not alone demonstrate adequate financial capability.

1.14 EMPLOYMENT OF LOCAL LABOR

Preference in employment on the Project shall, insofar as practical, be given to qualified local labor.

END OF SECTION

FEDERAL WORK AUTHORIZATION PROGRAM AFFIDAVITS

**EACH BIDDER MUST PROVIDE THE OWNER WITH THE
PROPERLY COMPLETED AND PROPERLY SIGNED FEDERAL
WORK AUTHORIZATION PROGRAM AFFIDAVITS AS
REQUIRED BY O.C.G.A. § 13-10-91**

**THIS FORM MUST BE COMPLETED BY ALL CONTRACTORS, ALL
SUBCONTRACTORS AND ALL SUB-SUBCONTRACTORS**

THE FORMS ARE ATTACHED HERETO.

Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor

Name of Project

Name of Public Employer: the Macon Water Authority

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____, 20__.

Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____ [insert name of contractor] on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Subcontractor

Name of Project

Name of Public Employer: Macon Water Authority

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____, 20__.

Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract for _____ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract] and _____ [insert name of contractor] on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to _____ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract]. Additionally, the undersigned sub-subcontractor will forward notice of the receipt of any affidavit from a sub-subcontractor to _____ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract]. Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Sub-subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____, 20__.

BID

TO: MACON WATER AUTHORITY

FROM: _____
(Bidder's Name)

FOR: _____

Submitted: _____, 20__

The undersigned Bidder, in compliance with your Invitation to Bid for the construction of this Project, having examined the Contract Documents and the site of the proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to construct the Project in accordance with the Contract Documents.

The Bidder proposes and agrees, if this Bid is accepted, to contract with the Macon Water Authority, in the form of Contract Agreement specified, and to furnish all necessary products, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of the Work in full and complete accordance with the reasonably intended requirements of the Contract Documents to the full and entire satisfaction of the Macon Water Authority with a definite understanding that no money will be allowed for extra work except as set forth in the Contract Documents, for the following prices:

Item No.	Quantity	Unit	Description	Unit Price	Total Price
1	REPLACE THICKENER 1, 2 AND 3				
a.	3	EA	Replace three (3) 75' diameter Thickener mechanisms and associated components as described within this specification. The equipment shall include but not be limited to a center drive unit with torque control, walkway and platform with handrail, stationary center influent column, center feed well, drive cage, scum skimmer, scum box, anchor bolts and all other appurtenances required.		
2	REPLACE CLARIFIER #6				
a.	1	EA	Identify and repair spalled and damaged concrete, furnish and install a chemical resistant lining system, complete, to the clarifier troughs inside Clarifier #6 Work includes, but is not limited to, the following: Bug hole repair, honeycomb repair, crack and joint detailing, penetration detailing, concrete surface preparation and installation of a chemical resistant lining system.		
3	REPLACE SLIDE GATES				
a	3	EA	Replace three weir gates with 304 stainless steel gates, Gates shall have a 30" diameter handwheel for operation and a stem with a clear plastic over to protect from the elements.		

	*****AS DIRECTED AT THE OWNER'S DISCRETION*****				
4	ALLOWANCES				
a.	1	LS	a. Contingency - 10%		
	TOTAL BASE BID (ITEMS 1-4A):				

Total Bid for Items 1 through 4a , inclusive, in the amount of

_____ Dollars

(\$ _____) which sum hereinafter is called the "Base Bid".

The Bidder agrees hereby to commence Work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order of the Engineer, and to fully complete all Work under this Contract within **Seven Hundred Thirty (730) consecutive calendar days** from and including said date specified in the written order of the Engineer. Bidder understands that time is of the essence for the work under this Contract, and timely completion of the Work is important for MWA's operations. Therefore, Bidder further agrees to pay as damages, the sum of **\$250.00** for each calendar day thereafter required to achieve substantial completion of all Work which Bidder agrees is a reasonable estimate of the damages that MWA would incur as a result in Bidder's delay in achieving substantial completion of the Work.

The Bidder declares an understanding that the quantities shown for unit price items are subject to either increase or decrease, and that should the quantities of any of the items of Work be increased, the Bidder proposes to do the additional Work at the unit prices stated herein; and should the quantities be decreased, the Bidder also understands that payment will be made on the basis of actual quantities at the unit price bid and will make no claim for additional costs or anticipated profits for any decrease in quantities; and that actual quantities will be determined upon completion of Work, at which time adjustment will be made to the Contract Price by direct increase or decrease.

In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to agree with the unit prices. In case of discrepancies between written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over the Bidder's represented BID TOTAL.

The Bidder furthermore agrees that, in the case of a failure to execute the Contract Agreement and Bonds within ten days after receipt of conformed Contract Documents for execution, the attached Bid Bond accompanying this Bid and the monies payable thereon shall be paid into the funds of the Macon Water Authority as liquidated damages for such failure.

Bid

Attached hereto is a Bid Bond for the sum of _____

_____ Dollars (\$_____) according to the conditions of "Instructions to Bidders" and provisions thereof.

Bidder acknowledges receipt of the Following Addenda:

Addendum No. 1, dated: _____

Addendum No. 2, dated: _____

Addendum No. 3, dated: _____

Addendum No. 4, dated: _____

Remainder of Page Left Blank
[Signatures, attestations, and seal on following page]

BIDDER: _____

By: _____

Name: _____
(Print or Type)

Title: _____

Address: _____

Phone: _____

Attest: _____

Name: _____
(Print or Type)

Title: _____

(SEAL)

Note: Attest for a corporation must be by the secretary of record for the corporation, as reflected in the records of the Georgia Secretary of State; for a partnership by another partner; for an individual by a notary.

Note: If the Bidder is a corporation, the Bid shall be signed by an officer of the corporation; if a partnership, it shall be signed by a partner. If signed by others, authority for signature shall be attached.

The full names and addresses of persons or parties interested in the foregoing Bid, as principals, are as follows:

<u>Name</u>	<u>Address</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

END OF SECTION

BID BOND

STATE OF GEORGIA

COUNTY OF MACON-BIBB

KNOW ALL MEN BY THESE PRESENTS, that we, _____, as Principal, and _____, as Surety, are held and firmly bound unto the Owner, the Macon Water Authority, in the sum of _____ Dollars (\$ _____) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted to the Owner a Bid for the **Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF**.

NOW THEREFORE, the conditions of this obligation are such that if the Bid be accepted, the Principal shall, within ten days after receipt of conformed Contract Documents, execute a Contract in accordance with the Bid upon the terms, conditions and prices set forth therein, and in the form and manner required by the Contract Documents and execute sufficient and satisfactory separate Performance and Payment Bonds payable to the Owner, each in an amount of 100 percent of the total Contract Price, in form satisfactory to the Owner, then this obligation shall be void; otherwise, it shall be and remain in full force and effect in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid Owner, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

This bond is given pursuant to and in accordance with the provisions of the Georgia Procurement Manual and Georgia Local Government Public Works Construction Law, O.C.G.A. § 36-91-1 et. seq.. All the provisions of the law referring to this character of bond as set forth in said Manual or Code Sections or as may be hereinafter enacted and these are hereby made a part hereof to the same extent as if set out herein in full.

*Remainder of Page Left Blank
[Signatures, attestations, and seals on following page]*

IN WITNESS WHEREOF, the said Principal has hereunder affixed its signature and seal, and said Surety has hereunto caused to be affixed its corporate signature and seal, by its duly authorized officers, on this _____ day of _____, 20__.

CONTRACTOR - PRINCIPAL: _____

By: _____

Name: _____

(Print or Type)

Address: _____

Phone: _____

Attest: _____

Name: _____

(Print or Type)

Title: _____

(SEAL)

Note: Attest for a corporation must be by the secretary of record for the corporation, as reflected in the records of the Georgia Secretary of State; for a partnership by another partner; for an individual by a notary.

SURETY: _____

By: _____

Name: _____

(Print or Type)

Title: _____

Phone: _____

Attest: _____

Name: _____

(Print or Type)

Title: _____

(SEAL)

Note: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is

located.

END OF SECTION

SECTION 00420

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information desired. Attach all additional sheets to this statement.

1. Name of Bidder: _____
2. Permanent main office address: _____
3. When organized: _____
4. If a Corporation, where incorporated: _____
5. How many years have you been engaged in the contracting business under your present firm or trade name? _____
6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion): _____
7. General description of type of work performed by your company: _____

8. Have you ever failed to complete any work awarded to you? If so, where and why?

9. Have you ever defaulted on a contract? If so, where and why?

10. Attach a list of the most important projects recently completed by your company which are similar in scope to this Project. For each project, list its: official name and owner, a contact person's name, company and position, address and phone number; completion date; and contract amount.
11. Names, background and experience of the principal members of your organization, including officers: _____

Statement of Bidder's Qualifications

12. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated this _____ day of _____, 20__.

BIDDER:_____

By:_____

Title:_____

State of _____

County of _____

_____ being duly sworn deposes and says that he or she is
_____ of _____ and that the answers to the foregoing
questions and all statements therein contained are true and correct. Subscribed and sworn to before
me this _____ day of _____, 20__.

Notary Public:_____

(SEAL)

My Commission Expires:_____

(Date)

END OF SECTION

SECTION 00421**STATEMENT OF EQUIPMENT**

Show machinery and other equipment available to the Bidder for prosecuting the Work required by the Contract Documents. (To be filled in by Bidder and submitted with Bid.)

Available Machinery and Other Equipment			Date Proposed To Be Placed On Work
Kind - Size - Capacity	Location	Ownership	

The above is a true statement of the equipment available to the undersigned Bidder for prosecuting the Work required by the Contract Documents. Where it is shown that the equipment is not owned by the Bidder, arrangements have been made with the owners to furnish the equipment.

Signed:_____

Name:_____

Title:_____

END OF SECTION

SECTION 00422

CORPORATE CERTIFICATE

I, _____, certify that I am the Secretary of the Corporation named as Bidder in the foregoing Bid; that _____, who signed said Bid on behalf of the Bidder was then _____ of said Corporation; that said Bid was duly signed for and on behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said Corporation is organized under the laws of the State of _____.

This _____ day of _____, 20____.

(Corporate Secretary) _____

(SEAL)

END OF SECTION

SECTION 00423

STATEMENT OF DISADVANTAGED FIRM UTILIZATION

The Bidder shall list all disadvantaged firms, as are defined in the Instructions to Bidders, providing subcontracting services, furnishing products or materials, etc., to be utilized in the performance of the work. This list shall be submitted in the following format:

Subcontractor (Name & Address)	Nature of Work to be Contracted	Group (Local, DBE)	Anticipated Cost of Services (\$ Value, %)
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%

NOTE: Any proposed changes from the above list shall be submitted in writing to the Macon Water Authority prior to initiation of the action, with the reason for the proposed deviation.

END OF SECTION

SECTION 00425

CONTRACTOR'S LICENSE CERTIFICATION

Contractor's Name: _____

Georgia Contractor's License Number: _____

Expiration Date of License: _____

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: _____

Printed: _____

Date: _____

END OF SECTION

Contractor Personnel Screening Certification
Motor Vehicle Record (MVR) and Background Check Verification

Project / Location: _____

Contractor Company Name: _____

MWA Project Manager: Heather Veal

Contract Effective Date: _____

Contract End Date: _____

Purpose

To protect Macon Water Authority (MWA) facilities, employees, customers, and critical infrastructure, contractors performing work at MWA locations are required to screen personnel assigned to work on-site. These requirements support MWA's risk management practices, insurance obligations, and overall site security expectations.

Contractor Responsibilities

- Conduct background checks on all employees, subcontractors, and representatives assigned to perform work at MWA facilities.
- Conduct Motor Vehicle Record (MVR) reviews for all personnel operating vehicles or equipment in connection with work performed for MWA.
- Ensure screenings are completed by the Contractor, at the Contractor's expense, and in compliance with all applicable laws and employment regulations.
- Not assign personnel who present safety, security, or driving risks based on screening results.
- Maintain documentation of completed screenings and provide confirmation of compliance to MWA upon request.
- Ensure newly assigned personnel complete required screenings prior to receiving MWA site access.

Minimum Screening Categories Required by MWA

All contractor personnel assigned to MWA facilities must be screened for the following categories at a minimum. Contractors are responsible for determining their own pass/fail thresholds within each category, provided that no personnel who present a risk in any of the areas below are assigned to MWA sites.

- **Identity Verification** — Confirmation that all personnel are who they represent themselves to be prior to receiving site access. (*FCRA, 15 U.S.C. § 1681 et seq.; E-Verify/Immigration Reform and Control Act of 1986*)

- **Substance Abuse Screening** — Required for all personnel working in safety-sensitive areas of MWA facilities. The contractor determines their own acceptable standards for substance abuse screening results. (*Drug-Free Workplace Act of 1988; DOT 49 C.F.R. Part 40, where applicable; O.C.G.A. § 34-9-410 et seq.*)
- **Criminal History** to include the following:
 1. **Violent Crime History** — No history of violent crimes, assault, armed robbery, extortion, homicide, or offenses involving physical harm to others. Look-back window of 7–10 years applies. (*FCRA, 15 U.S.C. § 1681 et seq.; AWWA G430 Security Standard; O.C.G.A. § 35-3-34*)
 2. **Terroristic Activity or Threats / National Security** — No history of terroristic acts, threats, or activity related to infrastructure sabotage. Includes screening against the DHS/OFAC Terrorist Watchlist and review for convictions related to espionage, treason, or domestic terrorism. This category is required given the critical infrastructure nature of MWA’s water and wastewater facilities. (*America’s Water Infrastructure Act of 2018; AWWA G430 Security Standard; 18 U.S.C. § 2332; Executive Order 13224*)
 3. **Computer & Cyber Crimes** — No history of unauthorized computer access, hacking, malware deployment, or network disruption. This category is required given contractor access to or proximity to MWA’s SCADA and operational technology systems. (*Computer Fraud and Abuse Act, 18 U.S.C. § 1030; AWWA G430 Security Standard; EPA Water Sector Cybersecurity Guidelines*)
 4. **Chemical / Hazardous Material Violations** — No history of illegal handling, theft, or weaponization of toxic chemicals or biological agents. This category is required given contractor access to MWA’s chemical dosing and treatment areas. (*Safe Drinking Water Act, 42 U.S.C. § 300f et seq.; Chemical Facility Anti-Terrorism Standards, 6 C.F.R. Part 27; AWWA G430 Security Standard*)
 5. **Infrastructure Sabotage / Property Crimes** — No convictions for damaging utilities, trespassing on restricted government or utility property, arson, grand larceny, burglary, or severe vandalism. Look-back window of 7–10 years applies. (*18 U.S.C. § 1366, Destruction of Energy Facilities; O.C.G.A. § 16-7-2, Criminal Damage to Property; AWWA G430 Security Standard*)
 6. **Identity Theft & Credential Fraud** — No history of falsifying credentials, identity theft, corporate fraud, or severe financial crimes that indicate a risk of bribery or coercion. Look-back window of 7–10 years applies. (*Identity Theft Enforcement and Restitution Act, 18 U.S.C. § 1028; FCRA, 15 U.S.C. § 1681 et seq.; O.C.G.A. § 16-9-121*)

Insurance and Risk Acknowledgment

The Contractor acknowledges that these screening requirements are part of MWA’s loss prevention and insurance risk management practices. Failure to comply may result in removal from the project site, denial of access, contract termination, or potential liability exposure for damages, incidents, or losses arising from inadequate personnel screening.

MWA does not conduct, manage, or retain contractor screening records. Responsibility for compliance rests solely with the Contractor.

Certification

I certify that my company will comply with the requirements outlined above and will ensure all personnel assigned to MWA facilities meet these standards.

Authorized Contractor Representative Name: _____

Title: _____

Signature: _____

Date: _____

CONTRACTOR'S CERTIFICATION OF AUTHORITY
(IF OUT OF STATE CONTRACTOR)

Contractor's Name: _____

Georgia Certificate of Authority Number: _____

Expiration Date of Certificate: _____

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: _____

Printed: _____

Date: _____

END OF SECTION

SECTION 00480

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

STATE OF GEORGIA COUNTY OF _____
_____, being first duly sworn, deposes and says that:

He or she is _____
(Owner, Partner, Officer, Representative or Agent)
of _____, the Bidder that has submitted the attached Bid;

He or she is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

He or she understands that collusive bidding is a violation of State and Federal law and can result in fines, prison sentences, and civil damages awards;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this Affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner, the Macon Water Authority, or any person interested in the proposed Contract; and

The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this Affiant. Affiant agrees to abide by all conditions of this Bid, and certifies that he or she is authorized to sign this Bid for the Bidder.

(Signed) _____

(Title) _____

Subscribed and Sworn to before me this _____ day of _____, 20____.

(Notary Public)
(SEAL)

My Commission Expires: _____

Note: If the Bidder is a partnership, all of the partners and any officer, agent or other person who may have represented or acted for the partnership shall also make the foregoing oath. If the Bidder is a corporation, all officers, agents, or other persons who may have acted for or represented the corporation shall also make the oath.

END OF SECTION

CONTRACT AGREEMENT

AGREEMENT BETWEEN CONTRACTOR AND OWNER

THIS AGREEMENT is made and entered into on the ___ day of _____ in the year Two Thousand and _____ (20___) by and between _____, hereinafter referred to as the "Contractor", and THE MACON WATER AUTHORITY, hereinafter (the "Owner") (collectively, "the Parties").

WITNESSETH, that the Contractor and the Owner, for the consideration hereinafter named, agree as follows:

1. **SCOPE OF WORK.** - That the Contractor will furnish all products, tools, construction equipment, materials, skill and labor of every description necessary to carry out and to complete in a good, firm, substantial workmanlike manner perform the **Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF** project and will complete the Work in strict conformity with the Drawings and the Specifications (Divisions 01 through 46), inclusive, together with the foregoing Bid made by the Contractor, the Invitation to Bid, Instructions to Bidders, General and Supplementary Conditions, Special Conditions, Performance and Payment Bonds and all Addenda hereto incorporated (if applicable) which form essential parts of this Contract Agreement, as if fully contained herein, the same collectively referred to as the "Contract Documents."

2. **TIME OF COMPLETION.**-The Contractor shall commence the Work to be performed under this Contract Agreement on a date to be specified in a written Notice to Proceed and shall achieve substantial completion of all Work required by the Contract Documents within **Seven Hundred Thirty (730) consecutive calendar days** (the "Contract Time"). Time is of the essence and is an essential element of this Contract, and the Contractor shall pay to the Owner, not as a penalty, but as damages, the sum of **two hundred fifty Dollars (\$250.00)** for each calendar day for which there is an unexcused delay in achieving substantial completion of the Work within the time limit set forth herein. These damages are not established as a penalty but are reasonably calculated in good faith and agreed upon in advance by the Owner and the Contractor due to the uncertainty and impossibility of determining the actual and consequential damages that will be incurred by the Owner and the general public of Macon-Bibb County, Georgia as a result of the failure on the part of the Contractor to achieve substantial completion of the Work on time. Such damages referred to herein are intended to be and are cumulative and shall be in addition to every other remedy now or hereafter enforceable at law, in equity, by statute, or under the Contract Documents.

3. **THE CONTRACT PRICE.**-The Owner shall pay to the Contractor for the faithful performance of the Contract Agreement, subject to additions and deductions as provided for in the Contract Documents, in current funds a sum of _____ Dollars (\$ _____ .00) (the "Contract Price") which sum shall also pay for loss or damage arising out of the nature of the Work aforesaid, or from the action of the elements, or from unforeseen obstructions or difficulties encountered in the prosecution of the Work, and for all expenses incurred by, or in consequence of the Work, its suspension or discontinuance and for well and faithfully completing the Work and the whole thereof, as herein provided, and for replacing

defective Work or products for a period of one year after completion.

4. **PROGRESS PAYMENTS** The Owner shall make progress payments on account of the Contract Price as follows: On or about the 20th day of each month, ninety-five percent (95%) of the value, based on the contract prices, of labor and materials incorporated in the Work and of materials suitably stored at the site thereof up to the twenty-fifth day of the month preceding, as estimated by the Engineer, less the aggregate of previous payments. Application for Payment must be made on the standard Owner's form to be provided by the Owner to the Contractor. No form of collateral in lieu of cash will be acceptable as retainage. At the discretion of the Owner, the retainage of each Subcontractor may be released separately as each Subcontractor completes its work. An application for release of a Subcontractor's retainage shall bear the certificates of the Subcontractor, the Contractor, and the Engineer that the Subcontractor's work has been fully performed and that the sum for which payment is requested is due by the Contractor to the Subcontractor. Checks releasing a Subcontractor's retainage shall be made payable to the Contractor, the Contractor's surety, and the Subcontractor, and shall be mailed to the Contractor's surety. This Article does not create any contractual relationship between the Owner and the Subcontractor or any duty of the Owner to any Subcontractor. Payments pursuant to this Article shall in no way diminish, change, alter or affect the rights of the Owner under the Contract Documents.

5. **FINAL PAYMENT.**-(a)-Final payment including retainage, shall be due 30 days after the date of notice from the Owner of the final acceptance of the Work, provided that all other requirements of the Contract Documents shall have been met in full. Final payment shall be made by a check payable jointly to the Contractor and surety and shall be mailed to the surety.

(b)-Upon receipt of written notice from the Contractor pursuant to Article 30 of the General Conditions that the Work is ready for final inspection, the Engineer shall promptly make such inspection, and when he/she finds the Work complies with the Contract Documents, and when the Contract shall have been fully performed the Engineer shall promptly issue a final certificate of recommendation to the Owner, over the Engineer's signature, stating that the Work required by the Contract Documents has been completed under the terms and conditions thereof, and that the entire balance of the Contract Price found to be due to the Contractor and noted in said final certificate, is due and payable.

(c)-Before issuance of a final certificate of recommendation, the Contractor shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and all other indebtedness in connection with the Work has been paid in full.

(d)-If full completion of the Work is materially delayed through no fault of the Contractor, and the Engineer so certifies same, the Owner shall, upon certificate of the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed. Such payment shall be made under the terms and conditions of the General Conditions governing final payment, except that it shall not constitute a waiver of claims.

6. **NO ASSIGNMENT.**- This Contract and the proceeds of this Contract may not be assigned nor may the performance thereunder be assigned, except with the prior written consent of the Owner.

7. BONDS. – The Contractor shall furnish both a performance bond and a payment bond and shall pay the premium thereon. The performance bond shall guarantee the full performance of the Contract.

Remainder of Page Left Blank

[Signatures, attestations, and seals on following page]

IN WITNESS WHEREOF, the parties hereto have executed this Contract Agreement under their respective seals on the day and date first above written in six counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original Contract.

Signed, sealed, and delivered
in the presence of:

THE MACON WATER AUTHORITY

1. _____

By: _____
Gary Bechtel, Chairman

2. _____

Attest: _____
Michel Wanna, Interim Executive Director & President

(Official Seal)

Signed, sealed, and delivered
in the presence of:

CONTRACTOR: _____

1. _____

By: (Signed) _____

2. _____

(Printed) _____

Attest: (Signed) _____

(Printed) _____

(Secretary)

(Corporate Seal)

APPROVED AS TO FORM

(Printed Name)
Attorney for the Macon Water Authority

END OF SECTION

PRE-AWARD OATH

STATE OF GEORGIA
COUNTY OF _____

In accordance with O.C.G.A. 36-91-21(e), we, the undersigned of _____

being first duly sworn, depose and say that:

We have not directly or indirectly violated O.C.G.A. 36-91-21(d), and more specifically, we have not

- prevented or attempted to prevent competition in such bidding or proposals by any means whatever,
- prevented or endeavored to prevent anyone from making a bid or proposal thereof by any means whatever, nor
- caused or induced another to withdraw a bid or proposal for the work.

We, the undersigned, to the best of our knowledge, affirm that no other officers, agents or other persons acted for or represented the Contractor in the bidding for and procurement of this Contract.

Signature	Printed Name	Title	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Notary Public) My Commission Expires: _____

(SEAL)

END OF SECTION

SECTION 00600

PERFORMANCE BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS:

That

(Legal title and address of the Contractor)

as Principal (hereinafter referred to as "Contractor"), and _____

(Legal title and address of Surety)

as Surety (hereinafter referred to as "Surety"), do hereby acknowledge ourselves indebted and firmly bound and held unto the Macon Water Authority (the "Owner") in the amount of _____ Dollars (\$ _____ .00) to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bound Principal has entered into a Contract with Owner bearing date of _____ for construction of **Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF** Project in accordance with Contract Documents prepared by Owner all of which said Contract Documents are incorporated herein by reference and made a part hereof, and are hereinafter collectively referred to as the "Contract."

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform and comply with the terms and conditions of said Contract; and shall indemnify and save harmless the Owner against and from all costs, expenses, damages, injury or loss to which said Owner may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default or failure of performance on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said Contract, and shall fully reimburse and repay the said Owner any and all outlay, costs, and expense which it may incur in making good any such default and shall guarantee all products and workmanship against defects, as provided in the Contract Documents which comprise and constitute the Contract, for a period of one year and shall replace all defective work and products for such period of one year then this obligation shall be null and void; otherwise it shall remain in full force and effect.

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change or changes, extension of time or

extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work or to the specifications or drawings.

2. It is expressly agreed that this bond shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than 20 percent in excess of the original Contract Price, so as to bind the Principal and Surety to the full and faithful performance of the Contract as so amended. The term "amendment" shall include any alteration, addition, extension, or modification of any character whatsoever.
3. If pursuant to the Contract Documents the Contractor shall be declared in default by the Owner under the aforesaid Contract, the Owner shall take possession of the Project and finish the Work by whatever method the Owner may deem expedient, in accordance with Article 7 of the General Conditions.
4. Supplementary to and in addition to the foregoing, whenever the Owner shall notify the Surety that the Owner has notice that the Contractor has failed to pay any subcontractor, materialman, or laborer for labor or materials certified by the Contractor as having been paid for by the Contractor, the Surety shall, within thirty (30) days of receipt of such notice, cause to be paid any unpaid amount for such labor or materials.
5. It is expressly agreed by the Principal and the Surety that the Owner, if it desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.
6. The Surety agrees that other than as is provided in this bond it may not demand of the Owner that the Owner shall (a) perform any thing or act, (b) give any notice, (c) furnish any clerical assistance, (d) render any service, (e) furnish any papers or documents, or (f) take any action of any nature or description which is not required of the Owner to be done under the Contract Documents.
7. No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the legal successors of the Owner.

This bond is given pursuant to and in accordance with the provisions of the Georgia Procurement Manual and of Title 36, Chapter 91 of the Official Code of Georgia Annotated, as may be amended or modified from time to time, and all the provisions of the law referring to this character of bond as set forth in said sections or as may be hereafter enacted or amended and these are hereby made a part hereof to the same extent as if set out in full herein.

Remainder of Page Left Blank

[Signatures, attestations, and seals on following Page]

Performance Bond

Signed and sealed this _____ day of _____, 20__.

Signed, sealed and delivered
in the presence of:

(Insert Name of Contractor)

1. _____

By: (Signed)_____

(Printed)_____

2. _____

Attest :(Signed) _____

(Printed)_____

(CORPORATE SEAL)

Signed, sealed and delivered
in the presence of:

(Insert Name of Surety)

1. _____

By: (Signed)_____

(Printed)_____

2. _____

Attest :(Signed) _____

(Printed)_____

(CORPORATE SEAL)

APPROVED AS TO FORM:

(Printed Name)

Attorney for the Macon Water Authority

END OF SECTION

PLACE SURETY FOR PERFORMANCE BOND HERE

PAYMENT BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS:

That

(Legal title and address of the Contractor)

as Principal (hereinafter referred to as "Contractor"), and _____

(Legal title and address of Surety)

as Surety (hereinafter referred to as "Surety"), do hereby acknowledge ourselves indebted and firmly bound and held unto the Macon Water Authority (the "Owner"), in the amount of _____ Dollars (\$ _____ .00) to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a Contract with Owner bearing date of _____ for construction of **Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF** Project in accordance with the Contract Documents prepared by Owner, all of which said Contract Documents are incorporated herein by reference and made a part hereof, and are hereinafter collectively referred to as the "Contract."

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly make payment to all claimants as hereinafter defined for all labor and material supplied in the prosecution of the work provided for in said Contract Documents, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the work or to the specifications or drawings.
2. It is expressly agreed that this bond shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract Documents not increasing the Contract Price more than 20 percent in excess of the original Contract Price, so as to bind the Contractor and Surety to the full and faithful performance of the Contract as so amended. The term "amendment" shall include any alteration, addition, extension, or modification of any character whatsoever.

3. A Claimant is defined as any subcontractor and any person supplying labor, materials, machinery, or equipment in the prosecution of the Work provided for in said Contract.
4. Every person or entity entitled to the protection hereunder and that has not been paid in full for labor or materials furnished in the prosecution of the Work referred to in said bond before the expiration of a period of ninety days after the day on which the last of the labor was done or performed by them, or materials or equipment or machinery was furnished or supplied by them for which such claim is made, or when they have completed its subcontract for which claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of the commencement of such action and to prosecute such action to final execution and judgment for the sum or sums due them; provided, however, that any person or entity having direct contractual relationship with a subcontractor, but no contractual relationship, express or implied, with the Contractor, shall have the right of action upon this bond upon giving written notice to said Contractor within ninety days from the day on which such person or entity did or performed the last of the labor, or furnished the last of the materials or machinery or equipment for which such claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or supplied or for whom the labor was performed or done; provided further that nothing contained herein shall limit the right of action to said 90-day period. Notice may be served by depositing a notice, registered mail, postage prepaid, duly addressed to the Contractor at any place the Contractor maintains an office or conducts business, including any post office or branch post office or any letter box under the control of the United States Postal Service, or notice may be served in any manner in which the sheriffs of Georgia are authorized by law to serve summons or process.
5. Every suit instituted under this section shall be brought in the name of the claimant without the Owner being made a party thereto. The official who has the custody of said bond is authorized and directed to furnish, to any person or entity making application therefor who submits an affidavit that it has supplied labor or material for such work and payment therefor has not been made, or that it is being sued on any such bond, a copy of such bond and the Contract for which it was given, certified by the official who has custody of said bond; this copy shall be primary evidence of this bond and Contract and shall be admitted as evidence without further proof. Applicants shall pay for such certified copies and such certified statements such as fees as the official fixes to cover the cost of preparation thereof, but in no case shall the fee exceed the fees which the clerks of the superior courts are permitted to charge for similar copies.
6. No action can be instituted on this bond after one year from the date of the final acceptance of the Owner.

This bond is given pursuant to and in accordance with the provisions of the Georgia Procurement Manual and of Title 36, Chapter 91 of the Official Code of Georgia Annotated, as may be amended or modified from time to time, and all the provisions of the law referring to this character of bond as set forth in said sections or as may be hereafter enacted or amended and these are hereby made a part hereof to the same extent as if set out in full herein.

[Signatures, attestations, and seals on following Page]

Signed and sealed this _____ day of _____, 20__

Signed, sealed and delivered
in the presence of:

(Insert Name of Contractor)

1. _____

By: (Signed) _____

(Printed) _____

2. _____

Attest: (Signed) _____

(Printed) _____

(CORPORATE SEAL)

Signed, sealed and delivered
in the presence of:

(Insert Name of Surety)

1. _____

By: (Signed) _____

(Printed) _____

2. _____

Attest: (Signed) _____

(Printed) _____

(CORPORATE SEAL)

APPROVED AS TO FORM:

(Printed Name)

Attorney for the Macon Water Authority

END OF SECTION

PLACE SURETY FOR PAYMENT BOND HERE

SECTION 00700

GENERAL CONDITIONS

Article 1. - Notice of Award of Contract.....	00700-2
Article 2. - Execution of Contract Documents.....	00700-2
Article 3. - Contract Security.....	00700-2
Article 4. - Insurance.	00700-3
Article 5. - Hazards and Indemnification.	00700-5
Article 6. - Notice to Proceed.	00700-6
Article 7. - Termination of Work for Default.....	00700-6
Article 8. - Termination for Convenience of Owner.....	00700-7
Article 9. - Assignments.	00700-8
Article 10. - Subcontractors, Materialmen, Suppliers and Employees.....	00700-8
Article 11. - Engineer.	00700-11
Article 12. - Separate Contracts.....	00700-12
Article 13. - Laws and Regulations.	00700-13
Article 14. - Taxes.	00700-14
Article 15. - Notice and Service Thereof.....	00700-14
Article 16. - Patents and Royalties.	00700-15
Article 17. - Land and Rights-of-Way.....	00700-15
Article 18. - Products.....	00700-15
Article 19. - Supervision of Work.	00700-16
Article 20. - Interruption of Facility Operations.	00700-16
Article 21. - Protection of Work, Property and Persons.....	00700-17
Article 22. - Protection of the Environment.	00700-18
Article 23. - Protection, Location and Relocation of Utilities.	00700-18
Article 24. - Schedules, Reports and Records.....	00700-19
Article 25. - Drawings and Specifications.....	00700-21
Article 26. - Surveys and Permits.....	00700-23
Article 27. - Testing, Inspection and Rejection of Work.	00700-23
Article 28. - Contract Time and Damages.....	00700-25
Article 29. - Changes in the Work.....	00700-27
Article 30. - Payments and Completion.	00700-33
Article 31. - Certificates of Payment.....	00700-37
Article 32. - Payments Withheld.....	00700-38
Article 33. - Notice of Commencement.	00700-38
Article 34. - Correction of Work after Final Payment.	00700-39
Article 35. - Cash Allowances.....	00700-40
Article 36. - Contractor's Warranty as to Performance.....	00700-40
Article 37. - Claims.....	00700-40
Article 38. - Use of Premises.....	00700-42
Article 39. - Specification Arrangement.	00700-42
Article 40. - Valuable Material, Geological Specimens	00700-42

Article 41. - Definitions..... 00700-42

Article 1. - Notice of Award of Contract. Within sixty (60) days after receipt of Bids, the Owner will notify the successful Bidder of the award of the Contract. Should the Owner require additional time to award a Contract, the time may be extended by the mutual agreement between the Owner and the successful Bidder. If an award of Contract has not been made within 60 days from the Bid date or within the extension mutually agreed upon, the Bidder may withdraw the Bid without further liability on the part of either party.

Article 2. - Execution of Contract Documents. (a) *Time Limits.*—Within fifteen (15) days of notification of Award of Contract, the Owner will furnish the Contractor with conformed copies of Contract Documents for execution by the Contractor and the surety. The Contractor and its surety must execute the bond forms contained in the conformed Contract Documents without any changes. Within ten (10) days after receipt, the Contractor shall return all the Contract Documents properly executed by the Contractor and the surety. Attached to each set of Contract Documents shall be original powers-of-attorney for the person executing the Bonds for the surety and certificates, endorsements, and declarations of insurance for the required insurance coverages, all as required by Article 3 and Article 4. Within thirty (30) days after receipt of the conformed Contract Documents properly completed and executed by the Contractor and the surety together with the power-of-attorney, and the proper certificates, endorsements and declarations of insurance, the Owner will complete the execution of the Contract Documents. Distribution of the completed Documents will be made upon execution by the Owner.

(b) *Failure of Contractor or Surety to Execute Documents.*—Should the Contractor or the surety fail to properly execute the Documents within the specified time the Owner will have the right to proceed on the Bid Bond accompanying the Bid.

(c) *Failure of Owner to Execute Documents.*—If the Owner fails to execute the Documents within the time limit specified, the Contractor will have the right to withdraw the Bid without penalty. In such event the Owner will have no liability to the Contractor under these Documents or otherwise.

(d) *Extensions of Time.*—Should either party require an extension of any of the time limits stated above, this shall be done only by mutual agreement between both parties.

(e) *Changes to Documents.*-- Insertion, addition, alteration, modification, revision, or deletion of any text, verbiage, provision, statement, term, condition, or other component of the Contract Documents, whether textual, numerical, or pictorial, is prohibited and no such unilateral change to the Contract Documents shall be binding. In the event the Owner discovers any attempt by the Contractor to modify the Contract Documents by insertion, addition, alteration, revision, or deletion of any text, verbiage, provision, statement, term, condition, or other portion of the Contract Documents without the written assent and approval of the Owner, the Owner shall have grounds to withdraw the contract award, terminate all proceedings related to contractual relationship with the Contractor for the subject Project, and to award the contract to the next bidder which met the

requirements of the invitation to bid.

(f) *Incorporation of Prior Agreements.* — All agreements between the parties are incorporated into this Agreement. In the event of any conflict or inconsistency between this Agreement and any provisions, terms or conditions of any other prior agreement, the provisions, terms and conditions of this Agreement shall supersede, control and prevail over the conflicting or inconsistent provisions of the prior agreement.

Article 3. - Contract Security.—The Contractor shall furnish separate Performance and Payment Bonds each in a sum equal to the amount of the Contract Price on the Owner’s forms. Such Bonds shall be executed by the Contractor and a bonding company licensed to transact such business in Georgia and named on the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds” as published in the Treasury Department Circular Number 570. The expense of these Bonds shall be borne by the Contractor.

If at any time a surety on any such Bond is declared bankrupt, becomes insolvent, loses its right to do business in Georgia or is removed from the list of Surety Companies accepted on Federal Bonds, the Contractor shall, within ten (10) days after notice from the Owner to do so, substitute acceptable Bonds in such form and sum and signed by such other surety as may be satisfactory to the Owner. The premium on such substitute Bonds shall be paid by the Contractor. No further progress payments shall be deemed due, nor shall any be made, until the new surety furnishes acceptable Bonds to the Owner. The person executing the substitute Bonds on behalf of the surety shall submit with the Bonds valid powers-of-attorney certified to by an official of said surety company.

Article 4. - Insurance—Proof of insurance coverage and furnishing of insurance policies acceptable to the Owner shall be as set forth in this Article.

(a) *Policies, Certificates, Limits and Disposition of Documents.*—The Contractor shall obtain at his expense insurance with limits as shown hereinbelow, unless the Contractor desires to broaden the limits and obtain more protection. The Contractor shall provide the Owner with all insurance documentation and evidence of insurance as required herein, and updated certificates of all insurance required herein must be provided to the Owner at least quarterly until Final Payment.

(1) **WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE.**—The Contractor shall procure and maintain Worker's Compensation and Employers Liability Insurance for all of his employees to be engaged in Work on the project under this contract, and in case any such Work is sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Compensation and Employer's Liability Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's insurance. Worker's Compensation insurance policies shall include GEORGIA under Section 3A and shall include Other States coverage and Voluntary Compensation.

Worker's Compensation Limits: Statutory

Employers Liability Limits:

Each Accident	\$1,000,000
Disease - Policy Limit	\$1,000,000
Disease - Each Employee	\$1,000,000

Contractor waives all rights against Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by the worker's compensation and employer's liability or commercial umbrella liability insurance obtained by Contractor pursuant to Article 4 of this agreement. The Waiver of Our right To Recover From Others Endorsement, ISO Form SC 00 03 13 shall be attached to the policy showing the Owner listed in the Schedule.

Disposition: Certificate(s) of insurance showing the required coverage and copy of declaration page must be returned to the Owner with properly executed Contract Documents. If requested by the Owner, Contractor shall also provide a certified copy of the policy(ies) required by Article 4(a)(1).

(2) COMMERCIAL GENERAL AND UMBRELLA LIABILITY INSURANCE.—The Contractor shall procure and shall maintain commercial general liability (CGL) and if necessary, commercial umbrella insurance with a limit of not less than \$2,000,000 each occurrence, as shall protect him and any Subcontractor performing Work covered by this Contract from claims for damages for bodily injury, including accidental death, as well as from claims for property damages, which may arise from operations under the Contract Agreement, whether such operations are by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them.

CGL insurance shall be written on ISO occurrence form CG 00 01 10 93 (or substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). If such CGL insurance contains a general aggregate limit, it shall apply separately to this project, (Per Project Aggregate Endorsement). Each policy shall be indorsed with ISO Form CG 25 03 11 85 or equivalent form with wording satisfactory to Owner.

The Owner shall be included as an additional insured under the CGL, using ISO additional insured endorsement CG 20 33 or a substitute providing equivalent coverage, and under the commercial umbrella, if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Owner.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

Contractor waives all rights against the Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by commercial general

liability or commercial umbrella liability insurance maintained pursuant to Article 4 of this agreement.

Disposition: Certificate(s) of insurance showing the required coverage and copy of declaration page must be returned to the Owner with properly executed Contract Documents. If requested by the Owner, Contractor shall also provide a certified copy of the policy(ies) required by Article 4(a)(2).

(3) BUSINESS AUTO AND UMBRELLA LIABILITY INSURANCE.—The Contractor shall procure and shall maintain business automobile liability, and if necessary, commercial umbrella liability insurance with a limit of not less than \$2,000,000 each occurrence.

Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Business auto coverage shall be written on ISO form CA 00 01, CA 00 05, CA 00 12, CA 00 20 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of ISO form CA 00 01. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Owner. Owner is named as additional insured.

Contractor waives all rights against the Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by the business auto liability or commercial umbrella liability insurance obtained by Contractor pursuant to Article 4 of this agreement or under any applicable auto coverage.

Disposition: Certificate(s) of insurance showing the required coverage and copy of declaration page must be returned to the Owner with properly executed Contract Documents. If requested by the Owner, Contractor shall also provide a certified copy of the policy(ies) required by Article 4(a)(2).

Cross-Liability Coverage.—If Contractor's liability policies do not provide the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

(3) By proper endorsement, the policy must name

MACON WATER AUTHORITY
790 Second Street
P. O. Box 108
Macon, GA 31202

as an additional insured and shall provide for not less than thirty (30) days prior written notice before cancellation or any material change in the policy, except for non-payment of premium which shall require ten (10) days prior written notice of cancellation, to the Owner.

(4) Commercial Umbrella/Excess Policy:

Contractor shall procure a commercial umbrella or excess policy with a limit of no less than \$5,000,000. Coverage must follow form over underlying policies including GL, Auto and Employer's Liability insurance.

(5) MATERIALS AND EQUIPMENT FLOATER. - The Contractor shall procure, and shall maintain during the performance of the Contract Agreement, Materials and Equipment Floater (May be labeled as *Equipment Floater* or Installation Floater or Builders Risk) Insurance to protect the interests of the Owner, the Contractor and Subcontractors against loss by vandalism, malicious mischief, and all hazards included in a standard All Risk Endorsement. The amount of insurance shall at all times equal or exceed the amount of the materials in the Contract + \$30k for Owner furnished materials. The policies shall be in the names of the Owner and the Contractor.

Disposition: Original policy must be returned to the Owner with properly executed Contract Documents. Owner may accept with returned, executed Contract Documents in lieu of an original policy, an insurance binder evidencing the policy coverage, but Contractor shall not be relieved of the obligation to furnish the actual policy.

Endorsement on Materials and Equipment Floater Policy.—There shall be attached to and made a part of the insurance policy for MATERIALS AND EQUIPMENT FLOATER an endorsement of the insurance company in accordance with the specimen shown in preceding Paragraph (a)(3).

Article 5. - Hazards and Indemnification. (a) *Hazards.* —The Contractor shall be responsible from the time of his execution of the Contract Documents or from the time of the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from the Work to persons or property regardless of who may be the owner of the property. It is the intention of this paragraph to shift the full and complete risk of all such loss to the Contractor for the period of construction and until notice from the Owner of the final acceptance of the Work is made in accordance with Article 30, regardless of whether or not any particular hazard shall be insured against.

(b) *Indemnification.*—In addition to the liability imposed upon the Contractor on account of bodily injury (including death) or property damage, which liability is not impaired or otherwise affected hereby, the Contractor assumes the obligation to save the Owner harmless and to indemnify and defend the Owner, the Engineer and their agents and employees from and against all claims, damages, losses and expenses including claims consultant's and attorney's fees arising out of or through bodily injury, sickness, disease or death of any person or persons or damage to property (regardless of who may be the owner of the property) including the loss of use resulting therefrom arising out of or suffered through any act or omission of the Contractor or any Subcontractor, or

anyone either

- (1) directly or indirectly employed by the Contractor, or
- (2) under the supervision of the Contractor or any subcontractor in the prosecution of the Work required by the Contract Documents.

In any and all claims against the Owner or the Engineer, or any of their agents or employees, by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, this indemnification obligation 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 Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefits acts.

(c) *Sole Negligence Exception.* —The Contractor shall not be liable or responsible for loss or damage, and the indemnity obligation set forth above will not apply if the incident from which the loss or damage arose was the result of the sole negligence or sole cause of the Owner, the Engineer, or their agents, servants and employees.

Article 6. - Notice to Proceed. The Notice to Proceed will be issued, following the pre-construction conference, within thirty (30) days of the execution of the Contract Agreement by the Owner. The time may be extended by mutual agreement between the Owner and the Contractor. If the Notice to Proceed has not been issued within the thirty (30) day period or within the period mutually agreed upon, the Contractor may terminate the Contract Agreement without further liability on the part of either party.

Within ten (10) days of receiving the Notice to Proceed, the Contractor must initiate on-site construction activity. If on-site construction activity is not initiated within this time period, the Owner may begin proceedings for Termination of Work for Default.

Article 7. - Termination of Work for Default. —(a) *Definition.*—The Work may be terminated for default if any one of the following events or circumstances occurs:

- (1) The Contractor is adjudged bankrupt or becomes insolvent;
- (2) The Contractor makes a general assignment for the benefit of creditors;
- (3) A trustee or receiver is appointed for the Contractor or for any of Contractor's property;
- (4) The Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws;
- (5) The Contractor fails to supply sufficient skilled workmen, materials or equipment;

- (6) The Contractor fails to make satisfactory progress toward timely completion of the Work;
- (7) The Contractor fails to make prompt payments to Subcontractors or material suppliers for labor, materials or equipment;
- (8) The Contractor disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction of the Work;
- (9) The Contractor fails to comply with directives of the Engineer; or,
- (10) The Contractor otherwise violates any provision of the Contract Documents.

(b) *Grounds for Issuance of Notice of Declaration of Default.* —It shall be a sufficient ground for the issuance of a notice of declaration of default that the Contractor has been unfaithful or delinquent in the performance of the Contract or any part of it in any respect. The Engineer does not have authority to declare the Contractor in default.

(c) *Termination of Services and Possession of the Project.* —The Owner may, without prejudice to any other right or remedy and after giving the Contractor and surety written notice ten (10) days in advance, terminate the services of the Contractor and take possession of the Project, the Work and of all products thereon owned by the Contractor, and finish the Work by whatever method the Owner may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project and all Work, including compensation for additional professional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor or surety shall pay the difference to the Owner. Such costs incurred by the Owner will be determined by the Engineer and incorporated in a Change Order.

(d) *Effect of Termination.* —Where the Contractor's services have been so terminated by the Owner, said termination will not affect any right of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor will not release the Contractor from compliance with the Contract Documents.

Article 8. - Termination for Convenience of Owner. (a) *General.* —If, for any reason other than those provided for under Article 7, the Owner elects to discontinue, in whole or in part, the Work under this Contract, the Owner may, ten (10) days after delivery of a written notice to the Contractor and the Engineer, terminate, in whole or in part, the Contractor's performance of the Work under this Contract. The notice of termination shall specify the extent to which performance of the Work under the Contract is terminated.

(b) *Entitlement to Payment.* —In the event of such termination by the Owner, the Contractor shall be entitled to payment for the Work properly performed up to the time of the termination and reimbursement for such actual costs as are reasonably incurred by the Contractor due to the

termination and not otherwise compensated. The Contractor shall also be entitled to profit on the amounts payable to the Contractor, but such profit shall be limited to six (6%) percent of such amounts. The Contractor shall not be entitled to any payment, including any anticipated profit, on Work not performed, and the Contractor shall not be entitled to any compensation or recovery of damages for any other costs, losses, or damages of any nature.

Article 9. - Assignments. The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without prior written consent of the Owner.

Should the Owner consent, in writing, to Contractor's assigning of all or any part of any monies due, or to become due, under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of any assignee in and to any monies due or to become due to the Contractor shall be subject to any set-offs then due to the Owner and to prior liens of all persons, firms, and corporations for services rendered or materials supplied for the performance of the Work called for under this Contract.

Article 10. - Subcontractors, Materialmen, Suppliers and Employees. —(a) *Submission of List.* -As soon as possible after notice of award of the Contract and in any event not later than the time fixed in the Contract for delivery of the executed Contract Documents to the Owner, the Contractor shall submit in writing to the Engineer a list of the names of Subcontractors that the Contractor will engage for the Work. The list of Subcontractors is not submitted for approval, but is for the purpose of establishing:

- (1) What trades and portions of the Work are to be performed under subcontract; and,
- (2) The names of the entities selected by the Contractor to perform work by subcontract, the aforesaid selection being a matter lying solely within the discretion of the Contractor.

The Contractor shall utilize the services of specialty Subcontractors on those parts of the Work which, under normal construction practices, are best performed by specialty Subcontractors and as may be required by the Engineer in the Engineer's sole discretion, at no additional cost to the Owner. If the Contractor desires to self-perform specialty Work, the Contractor shall submit a notice to the Owner accompanied by evidence that the Contractor's own organization has successfully performed the type of work, and the performance of the Work by specialty Subcontractors will result in materially increased costs or inordinate delays.

(b) *No Approval of Subcontractors.*—Neither the Owner nor the Engineer undertakes to pass upon or approve any Subcontractor.

(c) *Warranty of Contractor.*—The Contractor warrants that the Subcontractors selected by the Contractor are reputable, skilled, reliable, competent, qualified in the trade or field in which such Subcontractors are to perform Work on the Project, and that all Subcontractors are thoroughly familiar with applicable codes.

(d) *Certification on account of.*—The Engineer shall, upon written request, furnish to any Subcontractor, wherever practicable, evidence of the amounts certified as payable or paid on the Subcontractor's account. Furnishing any such evidence shall not establish any relationship between the Engineer and any Subcontractor.

(e) *Contractor Responsible for Acts and Omissions of Subcontractors, Materialmen, Suppliers and Employees.*—The Contractor agrees that it is as fully responsible for the acts and omissions of its Subcontractors, materialmen, suppliers, and employees (and of entities either directly or indirectly employed by any of them) as the Contractor is for the acts and omissions of entities directly employed or engaged by the Contractor. The failure of a Subcontractor, materialman, supplier, or employee to timely and properly perform any Work shall not be asserted by the Contractor as an excuse for any omission from, or noncompliance with, the requirements of the Contract Documents; nor shall the Contractor be entitled to an extension of the Contract Time because of any failure of a Subcontractor, materialman, supplier, or employee to timely perform the Work unless such failure was a direct result of some critical delay to the Subcontractor, materialman, supplier or employee of the kind and character described under Article 28 of the General Conditions for which the Contractor shall have requested and received an extension of time under the terms of Article 28 of the General Conditions. The subcontracting of work does not relieve the Contractor of the full responsibility for the execution of the Work and for compliance with all requirements of the Contract Documents. The Contractor may not assert negligence, inefficiency, insolvency, bankruptcy, or incompetence of any Subcontractor, materialman, supplier, or employee as excuse for any noncompliance with methods and material designated in the Contract Documents. As to Subcontractors, materialmen, suppliers and employees of the Contractor, the doctrine that a principal is liable for acts and omissions of his agent shall be binding on the Contractor, and the Contractor may not reverse the aforesaid doctrine by serving as a conduit or agent for its Subcontractors, materialmen, suppliers and employees. Any provision in any Contract between the Contractor and any Subcontractor pursuant to which the Contractor is obliged to present to the Owner any claim of any Subcontractor shall be invalid, null and void.

(f) *No Contract Between Owner and Any Subcontractor, Materialman, Supplier, or Employee.*—Nothing contained in the Contract Documents shall create any contractual relationship between the Owner and any Subcontractor or between the Owner and any materialman, supplier or employee of the Contractor or its Subcontractors.

(g) *Relationship of Contractor and Subcontractors.*—The Contractor agrees to bind every Subcontractor to, and every Subcontractor agrees to be bound by, the terms of the Contract Documents, including the following provisions of this Article:

The Subcontractor agrees

- (1) To be bound to the Contractor by the terms of the Contract Documents and to assume toward the Contractor all the obligations and responsibilities that the Contractor by the Contract Documents assumes toward the Owner.

- (2) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Article 30 of the General Conditions.
- (3) To make claims for extras, for extensions of time or for damages to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner.

The Contractor agrees

- (1) To be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Contract Documents.
- (2) To pay the Subcontractor upon the payment of certificates issued under the schedule of values described in Article 24 of the General Conditions the amount allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein; amounts retained by the Contractor from payments due to Subcontractors (expressed as a percentage) shall not exceed that being retained by the Owner.
- (3) To pay the Subcontractor as required by the Contract Documents.
- (4) To pay the Subcontractor on demand for its work or materials as far as executed and fixed in place, less the retained percentage, even though the Engineer fails to approve payment to the Contractor for any cause not the fault of the Subcontractor.
- (5) To pay the Subcontractor a just share of any fire insurance money received by the Contractor.
- (6) To make no demand for delay damages or penalty for delay in any sum in excess of such amount as may be specifically identified in the subcontract.
- (7) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten days of the calendar month following that in which the claim originated.
- (8) To give the Subcontractor an opportunity to be present and to submit evidence in any dispute involving rights of the Subcontractor.

(b) *Owner Not Obligated to any Subcontractor.*—There is no obligation on the part of the Owner to pay, or to see to the payment of, any sums to any (1) Subcontractor, (2) materialman, (3) supplier, (4) laborer, (5) employee, or (6) claimant as defined in the Payment Bond.

(c) *Incorporation of Terms in Subcontracts.*—The Contractor agrees that failure on its part to incorporate in all subcontracts an express provision in accordance with this Article shall be deemed to be and is a breach of an essential covenant, and that, in the event of such breach, that Contractor shall, within five (5) days after demand of the Owner, furnish proof in writing that the deficiency has been remedied and that (1) the Contractor may not maintain that it is beyond the Contractor's right or ability to require performance of terms of the Contract Documents by a Subcontractor and (2) no Subcontractor may maintain that it has not assumed toward the Contractor all the obligations and responsibilities that the Contractor has assumed toward the Owner.

Article 11 - Engineer.—(a) *Supervision.*—The Engineer shall have general supervision and direction of the Work except in respect to safety and except as qualified by Articles 27 and 36 of the General Conditions. He/she shall make visits to the Project site and make determination as to whether the Work is proceeding in accordance with the Contract Documents. Except for projects on which the Macon Water Authority itself serves in the capacity of engineer by use of its employees, which shall be indicated in the Contract Documents, the Engineer is an independent contractor and acts as the agent of the Owner only when in special instances he/she is authorized in writing by the Owner so to act, and in such instances he/she shall, upon request, show the Contractor written authority. The Engineer has authority to stop the Work whenever such stoppage may be necessary to ensure the proper execution of the Contract.

(b) *Interpreter and Impartial Judge.*—As the Engineer is the interpreter of the conditions of the Contract and the judge of its performance, the Engineer shall side neither with the Owner nor with the Contractor but shall use the Engineer's powers to enforce the faithful performance of the Contract by both the Owner and the Contractor.

(c) *Succession.*—In case of the termination of the employment of the Engineer, the Owner shall appoint a capable and reputable Engineer against whom the Contractor shall make no objection and whose status under the Contract shall be that of the former Engineer.

(d) *Promptness.*—The Engineer shall make decisions with reasonable promptness after presentation of evidence on (i) any claim of the Owner or Contractor, (ii) a demand of the Owner or Contractor for a decision on any matter relating to the execution, or progress, of the Work, or (iii) a demand of the Contractor or Owner for interpretation of or additional instructions ("Request for Information" or "RFI") with respect to the Contract Documents.

(e) *Engineer's Authority.*—The Engineer shall be vested with the authority to judge, determine and direct the following:

- (1) Whether products furnished are of the quality, type and kind called for by the Contract Documents and are otherwise acceptable for the Work as provided in the Contract Documents, and if not, to reject those not so qualifying or otherwise unacceptable;
- (2) Whether products incorporated in the Work comply with the standards and requirements of the Contract Documents as to installation and operation and, if

not, to require their removal and replacement, at the expense of the Contractor, with products which do meet the qualifications and operating ability, requirements, performance and standards as provided in said Contract Documents;

- (3) The accuracy of quantities, amount of Work performed and all other submittals by the Contractor submitted in partial or periodic payment estimates, and whether all or any part of such quantities and other submittals are acceptable and comply with the Contract Documents, and to disallow any submittals not approved by the Engineer until the deficiencies causing such disallowance have been eliminated and rectified;
- (4) The validity and merit of any and all claims for additional compensation or extension of the Contract Time;
- (5) All matters relating to artistic effect;
- (6) The validity and reasonableness of any notice of facility interruption given under Article 20 of the General Conditions; and,
- (7) All other matters relating to the proper execution of the Work in conformity with the Contract Documents, including workmanship.

The determination and decision, and any resulting approval, non-approval, condemnation, rejection, requirements of removal or replacement in all the foregoing matters of or by the Engineer shall be final and conclusive and binding upon the Contractor, all Subcontractors and all suppliers of products materials and equipment.

(f) *Claims for alleged procrastination.*—No claim for delay to the Contractor or for additional expense to the Contractor shall commence to accrue on account of failure of the Engineer to render decisions, make interpretations, or furnish additional instructions until ten (10) days after receipt of written claim for additional compensation, damages, or extension of time served upon the Engineer and the Owner and not then unless such claim be reasonable and otherwise permitted under the Contract Documents.

Article 12. - Separate Contracts.—(a) *Cooperation of Contractor.*—The Owner reserves the right to let other contracts in connection with, or related to, this Project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their products and the execution of their work, and the Contractor and other contractors shall properly connect and coordinate their respective work with each other. If the proper execution or results of any part of the Contractor's Work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such other contractor's work that render it unsuitable for such proper execution and results.

(b) *Performance of Work by Owner.*—The Owner may perform additional work related to

the Project with Owner's own forces. The Contractor shall afford the Owner reasonable opportunity for the introduction and storage of products and the execution of such work and shall properly connect and coordinate Contractor's work with work performed by Owner's own forces.

(c) *Claims for Extra Expense.*—If the performance of additional work by other contractors or the Owner is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof will be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such additional work by the Owner or others causes the Contractor any additional expense or entitles the Contractor to an extension of the Contract Time, the Contractor may make a claim therefor as provided in Article 29 of the General Conditions.

Article 13. - Laws and Regulations. (a) *General.*—The Contractor acknowledges and agrees that all applicable federal, state, county and city laws, municipal ordinances, and the codes, rules, and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract as though written out in full herein. The Contractor shall keep fully informed of all laws, ordinances and regulations of the federal, state, county, city and municipal governments or authorities in any manner affecting those engaged or employed in the Work or the material used in the Work or in any way affecting the conduct of the Work and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency should be discovered in these Contract Documents herein referred to, in relation to any such law, ordinance, regulation, order or decree, the Contractor shall herewith report the same, in writing, to the Owner and the Engineer.

(b) *Expense for Violation of Laws, Ordinances, etc.*—If the Contractor performs any work knowing or reasonably knowing it to be contrary to such laws, ordinances, rules or regulations without such notice to the Owner, the Contractor shall bear all costs arising therefrom.

(c) *Indemnification.*—The Contractor shall at all times observe and comply with all such existing and future laws, ordinances, and regulations, and shall protect and indemnify the Owner, the Engineer and their agents against the violation of any such law, ordinance regulation, order or decree, whether by the Contractor or by the Contractor's employees or Subcontractors.

(d) *Drug Free Workplace Act.*—The Contractor certifies that the provisions of O.C.G.A. §§ 50-24-1 through 50-24-6 (as may be amended or re-numbered) relating to the "Drug Free Workplace Act" will be complied with in full. The Contractor further certifies that: (i) A Drug Free Workplace will be provided for employees during the performance of the Contract, and (ii) that if a Subcontractor is engaged by the Contractor to work in a Drug Free Workplace, the Contractor shall secure from the Subcontractor the following written certification:

"As part of the subcontracting agreement with _____
(Contractor's name) _____, _____ (Subcontractor's name)
certifies to the Contractor that a drug-free workplace will be provided for the Subcontractor's employees during the performance of this Contract pursuant to the 'Drug Free Workplace Act'". Contractor also certifies to the Owner and the Engineer that the Contractor and its employees will

not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of any controlled substance or marijuana during the performance of the Contract.

(e) *Alcoholic Beverages on the Jobsite.*—The Contractor will strictly enforce a policy prohibiting the possession and consumption of alcoholic beverages on the jobsite before, during or after working hours for duration of the Work.

Article 14. - Taxes. (a) *General.*—The Contractor shall pay all sales, consumer, use and other similar taxes required by the law of the place where the Work is performed. The Owner will be responsible for any sales or use tax due on products furnished by the Owner to the Contractor to be incorporated into the Work.

(b) *Tabulation.*—The Contractor shall provide a written tabulation, plus other documentation as may be required, of all taxes, including sales tax, paid by the Contractor to assist the Owner in obtaining sales or use tax refunds for eligible machinery and equipment used for the primary purpose of reducing or eliminating air or water pollution as provided for in Chapter 48-8-3 (36) and (37) of the Official Code of Georgia (as may be amended). Such written tabulation shall be included with each partial payment request. Additionally, the tabulation shall be documented with copies of invoices indicating the amount of tax paid, with all blanks completed on the invoice, and with a description of the function of the item included in the tabulation. All taxes will be paid by the Contractor. All refunds will accrue to the Owner.

(c) *Tariffs* – “Tariffs” includes applicable tariffs, duties, customs fees, import taxes, or similar charges imposed by a governmental authority. “Tariffs” does not include sales, consumer, use, and similar taxes that are legally enacted by a governmental entity as outlined in subsection (a) above. If the cost of materials and/or equipment increases by more than 10% over the amount estimated in calculating the Contract Price, which increase is directly attributable to Tariffs, Contractor shall promptly provide to Owner or Owner’s representative with a written request for an equitable adjustment for an amount above the 10% increase. Prior to Contractor making such a request, Contractor shall determine whether substantially similar materials and/or equipment may be utilized that is not subject to Tariffs. If no substantially similar materials are available, Contractor may request a Change Order to increase the Contract Price by the difference between the original cost plus the 10% increase due to Tariffs and the actual costs to be paid by the Contractor, without markup or overhead. In no event shall the Contract Price be adjusted by more than 10% over the original Contract Price for the aggregate of all such increases due to Tariffs. Any adjustment of the Contract Price under this provision shall not be duplicated in any contingency amounts established under the terms of the Contract, or by any allowance.

Article 15. - Notice and Service Thereof. (a) *General.*—All notices, demands, requests, instructions, approvals, and claims shall be in writing.

(b) *Notice to Contractor.*—Any notice to or demand upon the Contractor will be sufficiently

given if delivered at the office of the Contractor specified in the Bid (or at such other office as the Contractor may from time to time designate to the Owner in writing), or if delivered by the United States Mail in a sealed, postage-prepaid envelope, or delivered by facsimile transmission, followed by written confirmation, in each case addressed to such office.

(c) *Notice to Owner.*—All papers required to be delivered to the Owner shall, unless otherwise specified in writing to the Contractor, be delivered to:

Macon Water Authority
790 Second Street
Macon, GA 31201
FAX (478) 750-2007

Any notice to or demand upon the Owner shall be sufficiently given if delivered to the Office of the Executive Director or if delivered by the United States Mail in a sealed, postage-prepaid envelope, or delivered by facsimile addressed to said Executive Director or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes. Any such notice or demand shall be deemed to have been given to the Owner or made only as of the time of actual delivery to Owner.

(d) *Delivery to Engineer or Resident Inspector.*—Notice in writing or orally to the Engineer or to the resident inspector is not notice to the Owner unless a copy of the aforesaid notice in writing shall have been properly served upon the Owner as provided in this Article.

Article 16. - Patents and Royalties. (a) *General.*—If the Contractor uses any patented, trademarked or copyrighted design, process, device, material or other item, the Contractor shall provide for such use by suitable agreement between the Owner and the holder of such patented, trademarked or copyrighted design, device or material. The Contract Prices shall include royalties or costs arising from the use of such design, device, or materials, in any way involved in the Work.

(b) *Indemnification.*—The Contractor and the Contractor's surety shall indemnify and save harmless the Owner, the Engineer and their agents from claims for infringement by reason of the use of such patented, trademarked or copyrighted design, process, device or materials in connection with Work agreed to be performed under this Contract, and shall indemnify the Owner, the Engineer and their agents for any cost, expense, damage and reasonable attorneys' fees which the Owner, the Engineer or their agents may be obliged to pay by reason of such infringement, at any time during the prosecution of the Work or after completion of the Work.

Article 17. - Land and Rights-of-Way. (a) *Project Site.*—The Owner will provide, as indicated in the Contract Documents and prior to the Notice to Proceed, the lands upon which the Work is to be performed, rights-of-way for access thereto, and such other lands which are designated for the use of the Contractor. The Contractor shall confine all Work and all associated activities to the easements and other areas designated for the Contractor's use. The Contractor shall comply with any limits on construction methods and practices which may be required by easement agreements.

(b) *Delays in Providing Access.*—If, due to some unforeseen reason, the necessary easements are not obtained, the Contractor shall receive an equitable extension of Contract Time or an equitable increase in the Contract Price, or both, to cover the Contractor's additional costs as a result thereof, provided the Owner is notified in writing of the claim. The Contractor's claim therefor shall be made as provided for in Article 29 of the General Conditions.

(c) *Additional Easements.*—Should additional temporary easements for ingress or egress be required by the Contractor for access to the Work, these easements shall be obtained by the Contractor, at no additional cost to the Owner.

Article 18. - Products. (a) *Storage.*—Products shall be stored in accordance with the manufacturer's recommendations to insure the preservation of their quality and fitness for the Work. Stored products to be incorporated in the Work shall be located so as to facilitate prompt inspection by the Owner or the Engineer.

(b) *Installation.*—Manufactured products shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer.

(c) *Conformance with Shop Drawings.*—Products shall be furnished in accordance with shop drawings or samples submitted by the Contractor and approved by the Engineer.

(d) *Quality and Ownership.*—Unless otherwise specified, all products incorporated into the Work shall be new, and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of products. The burden of proof is on the Contractor. Products to be incorporated into the Work shall not be purchased by the Contractor or Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

Article 19. - Supervision of Work. (a) *Supervision by Contractor.*—The Contractor shall give efficient supervision to the Work, using its best skill and attention. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

(b) *Superintendent of Contractor.*—The Contractor shall employ and maintain on the Work a qualified superintendent and any necessary assistants, all satisfactory to the Owner and Engineer, who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The superintendent shall not be changed except with the consent of the Owner and Engineer unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in the Contractor's employ. The superintendent shall represent the Contractor and shall be present on the site at all times as required to perform adequate supervision and coordination of the Work. The superintendent's sole responsibility shall be to superintend the construction of the Project; he shall not be a "working foreman." The superintendent shall have full authority to act on behalf of the Contractor and to execute orders or directions of the Engineer without delay. The superintendent shall have full authority to promptly supply products, tools, plant equipment and labor as may be

required. The superintendent's authority shall be such that all communication given to the supervisor shall be as binding as if given to the Contractor.

(c) *Contractor's Personnel.*—The Contractor shall employ only competent and skilled personnel. The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the work assigned to him. The Contractor shall, upon demand from the Engineer, immediately remove any superintendent, foreman, or worker whom the Engineer or Owner may consider incompetent or undesirable.

Article 20. - Interruption of Facility Operations. (a) *General.*—The Contractor shall provide the Owner with written notice at least five (5) days prior to any interruption in facility operations required by any construction activity. The notice shall include the date and time of the scheduled interruption; the length of time the interruption will be in effect; the procedures to be followed in effecting the interruption; a complete identification of all those processes, equipment and operations to be affected; and all other information the Owner may require. The Contractor shall provide any and all equipment, piping, auxiliary power or other means necessary to sustain facility operations or function for interruptions which have not been identified by the Contract Documents, or when interruptions must exceed the time allowed by the Contract Documents.

(b) *Damages and Fines.*—Any damages resulting from surcharging, overflow or back-up caused by the Contractor's operations shall be the Contractor's responsibility. Any fines levied against the Owner resulting from a surcharge, overflow or backup caused by the Contractor shall be paid by the Contractor.

Article 21. - Protection of Work, Property and Persons. (a) *Duty to Protect Persons and Property.*—The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all products to be incorporated therein, whether in storage on or off the site, and other property at the site and adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall pay for any such damage, injury, or loss except such as may be directly the result of errors in the Contract Documents or such as shall be caused directly by agents or employees of the Owner.

(b) *Safety Precautions.*—The Contractor shall comply with the Occupational Safety and Health Act, the Contract Work Hours and Safety Standards Act, and all rules and regulations relating thereto. Contractor warrants and represents that it is thoroughly familiar with the safety requirements with regard to scaffolding set forth in O.C.G.A. § 25-15-110, the requirements concerning blasting or excavating near underground gas pipes and utility facilities contained in O.C.G.A. § 25-9-1, *et seq.*, and the High Voltage Safety Act, O.C.G.A. § 46-3-30, *et seq.*, and that the Work shall be prosecuted in complete accord with all limitations and requirements set forth in

these, and other applicable, laws. The contractor's operation of the jobsite shall be consistent with the provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on the Work. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of its plant, appliances, and methods and for any damage which may result from their improper construction, maintenance, or operation. The Contractor shall erect and properly maintain at all times as required by the conditions and progress of the work proper safeguards for the protection of workers and the public and shall post danger warnings against any hazards created by the construction operations. The Contractor shall designate a responsible member of its organization on the Work whose duty shall be the prevention of accidents. In the absence of notice to the contrary filed with the Engineer in writing with a copy to the Owner, this person shall be the superintendent of the Contractor.

(c) *Emergencies.*—In an emergency affecting the safety of life or the Work or adjoining property, the Contractor, without special instruction or authorization from the Engineer or Owner, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury. Any remuneration claimed by the Contractor on account of emergency work shall be determined in accordance with allowances permitted on force account under section (c), Case(c) of Article 29 of the General Conditions.

(d) *Injury or Loss to Persons or Property.*—The Contractor shall remedy all damage, injury or loss to any property, improvements or facilities caused, directly or indirectly, in whole or in part, by the Contractor or any of the Contractor's Subcontractors or anyone directly or indirectly employed by and of them or anyone for whose acts any of them may be liable. The property, improvements or facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the Work. In case of failure on the part of the Contractor to restore such property, or pay for such damages or injury, the Owner may, after 48 hours written notice, proceed to repair, rebuild, or otherwise restore such property, improvements or facilities as may be deemed necessary. The cost thereof will be deducted from any monies due or which may become due to the Contractor under this Contract.

(e) *Blasting.*—In the absence of an express provision in the Contract Documents permitting blasting, there shall be no blasting. If blasting is permitted under the Contract Documents and under the law which is applicable to the Project site, such blasting shall be done in such manner as to prevent all damage and injury.

(f) *Rain Water, Surface Water, and Backup.*—The Contractor shall protect all Work, including but not limited to excavations and trenches, from rain water, surface water, and back-up of drains and sewers. The Contractor shall furnish all labor, pumps, shoring, enclosures, and equipment necessary to protect and keep the Work free of water. Completed Work and stored products shall be suitably protected during inclement weather to allow Work to proceed in a timely fashion. Work planned, or in progress, should be performed to minimize impact of adverse weather conditions.

Article 22. - Protection of the Environment. (a) *General.*—The Contractor shall be responsible for taking all measures required to minimize all types of pollution associated with the undertaking of the proposed Work, and shall abide by the requirements of all governmental agencies having jurisdiction over the Work or Contractor's Project operations.

(b) *Restoration.*—Any area used or involved in the Project that is disturbed by the Contractor, shall be restored to original or better condition, even though such area is outside the limits of that specified for grading, grassing or landscaping.

Article 23. - Protection, Location and Relocation of Utilities. (a) *Notification and Protection.*—The Contractor shall notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor shall protect from damage all existing improvements or utilities at, or in proximity to, the site of the Work, and shall repair or restore any damage to such facilities resulting from the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, the Owner may have the Work performed and charge the cost thereof to the Contractor.

(b) *Relocation.*—Prior to the construction or installation of any proposed facility or pipeline, the Contractor shall expose all existing utilities true to their vertical and horizontal location, within the vicinity of the Work. In order to avoid conflicts between existing and proposed facilities or utilities, the Contractor shall either relocate the existing or proposed utility on a temporary or permanent basis, or shall take whatever means necessary to protect the existing facilities or utilities during the installation of proposed utilities, as approved by the Engineer. No separate or additional payment will be made for the relocation of existing utilities or for any work associated with the protection of existing facilities or utilities.

Article 24. - Schedules, Reports and Records.—(a) *Progress Reports.*—Within such reasonable time as the Owner shall designate in writing, the Contractor shall submit to the Owner such schedule of quantities and costs, construction progress schedules, payrolls, bills, vouchers, correct copies of all subcontracts, statements, reports, correct copies of all agreements, correspondence, and written transactions with the surety that have any relevance to the Work, estimates, records, and other data as the Owner may request concerning Work performed or to be performed under this Contract. When requested by the Owner, the Contractor shall give the Owner access to accounts relating to the foregoing. The above reports shall include but are not limited to (i) written notice of dates by which specified Work will have been completed, (ii) written notice of dates by which condemned Work shall have been remedied, (iii) written notice that condemned Work has been remedied, (iv) written notice as to the date or dates by which Work that has not been performed with equal steps and at the same rate required by the construction progress schedule shall have been brought into conformity with the schedule, (v) written notice of the date by which any undisputed claim of a Subcontractor, materialman, or laborer shall have been paid, (vi) written advice regarding the nature and amount of any disputed claim of a Subcontractor, materialman, or laborer, and (vii) information regarding work performed under Sections (c), Case (b) and Case (c) of Article 29 of the General Conditions.

(b) *Construction Progress Schedule.*—Within ten (10) days of the Notice to Proceed, the Contractor shall submit to the Engineer a Preliminary Progress Schedule (“PPS”) and a Near Term Schedule (“NTS”) in the form and with the content required by the Specifications. Within forty-five (45) days of the Notice to Proceed, the Contractor shall submit to the Engineer the Overall Project Schedule (“OPS”) as required in the Specifications.

(c) *Schedule of Values.*—The Contractor shall, within ten (10) days of the Notice to Proceed, submit to the Engineer a Schedule of Values of the various parts of the Work, including quantities, aggregating the total Contract Price, divided in such manner as to facilitate payments to Subcontractors in accordance with Article 10, with a complete breakdown of the Contract Price so arranged and so itemized in accordance with the Specifications as to meet the approval of the Engineer, and, if requested, supported by such evidence as to its correctness as the Engineer may direct. This schedule, designated herein as the Schedule of Values, when approved by the Engineer shall be used as a basis for certificates of payment.

(d) *Shop Drawings.*—The Contractor shall prepare, execute, and submit shop drawings as required by the Specifications. No shop drawings shall be submitted which do not comply with the Contract Documents.

(e) *Schedule of Submittals.*—Within ten (10) days of the Notice to Proceed, the Contractor shall prepare and submit for the approval of the Engineer a Schedule of Submittals showing the estimated date of submittal of all shop drawings and the desired approval date for each shop drawing anticipated. The Contractor shall submit in accordance with the schedule and the Engineer shall furnish approval in accordance with the schedule. The schedule must be consistent with the construction progress schedules.

(f) *Submitting Updated Schedules.*—An updated OPS and NTS together with an updated Schedule of Submittals shall be presented with each periodical payment request. Failure to timely submit such schedules will delay processing of the pay request until receipt of the updated schedules.

(g) *Float in the Schedule.*—If the OPS reflects a completion date prior to the completion date established in the Contract Agreement, or as extended by Change Order, this shall afford no basis for a claim of delay should the Contractor not complete the Work prior to the projected date set forth in the OPS. All “float” between the completion date in the OPS and the completion date established in the Contract Agreement shall belong to and be exclusively available to the Owner. Should a Change Order be executed with a revised completion date, the progress schedule shall be revised to reflect the new completion date.

(h) *Record Drawings.*—The Contractor shall maintain on the Project site throughout the Contract Time an up-to-date set of records and drawings as required by the Specifications.

(i) *Project Coordination Meetings.*—The Contractor shall participate in Project Coordination Meetings to be held on the site monthly, or more often if conditions warrant, to establish the current

state of completion and revise the schedule as necessary. The Project Coordination Meeting will be conducted by the Owner and the Engineer.

(j) *Maintenance of Project Scheduling System.*—The Contractor shall take the following steps to ensure that the Project stays on schedule:

- (1) The Contractor shall implement the detailed NTS of activities to the fullest extent possible between Project Coordination Meetings.
- (2) The Contractor shall provide a copy of the Contractor's Daily Report to the Resident Inspector by 10:00 a.m. of the day following the Report date. This Daily Report will contain, as a minimum, the weather conditions; number of workers by craft, including supervision and management personnel on site; active and inactive equipment on site; Work accomplished by Critical Path Method activity item; problems; and visitors to the jobsite.
- (3) If a current activity or series of activities on the OPS is behind schedule and if the late status is not due to an excusable delay for which an extension of the Contract Time would be forthcoming, the Contractor shall attempt to reschedule the activity to be consistent with the OPS so as not to delay completion of the Contract. The Contractor agrees that:
 - a. The Contractor shall attempt to expedite the activity to completion so as to have it agree with the OPS. Such measures as the Contractor may choose shall be made explicit during the Project Coordination Meeting;
 - b. If, within two weeks of identification of such behind-schedule activity, the Contractor is not successful in restoring the activity to an on-schedule status, the Contractor shall:
 1. Carry out the activity with the scheduled crew on an overtime basis until the activity is complete or back on schedule;
 2. Increase the crew size or add shifts so the activity can be completed as scheduled; or,
 3. Commit to overtime or increased crew sizes for subsequent activities, or some combination of the above as deemed suitable by the Engineer.

These actions shall be taken at no increase in the Contract Price.

- (4) Maintain a current copy of all construction schedules on prominent display in the Contractor's field office at the Project site; and,
- (5) Cooperate with the Owner or Owner's representative in all aspects of the Project Scheduling System. Failure to implement the Project Scheduling System or to provide specified schedules, diagrams, and reports, or to implement actions to re-establish progress consistent with the OPS may be causes for withholding of payment.

Article 25. - Drawings and Specifications.

(a) *Identification.*— The Contract Documents shall be as defined in Article 41(e) of the General Conditions. They are intended to define, describe, and provide for all Work necessary to complete the Project in an acceptable manner, ready for use, occupancy, or operation by the Owner. Insertion, addition, alteration, modification, revision, or deletion of any text, verbiage, provision, statement, term, condition, or other component of the Contract Documents, whether textual, numerical, or pictorial, is prohibited and no such unilateral change to the Contract Documents shall be binding.

(b) *Number of Copies.*—The Engineer will furnish the Contractor two copies of the Contract Documents, one copy of which the Contractor shall have available at all times on the Project site. Any additional copies will be furnished at additional cost.

(c) *Correlation and Intent.*—The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment, and transportation necessary for the proper execution of the Work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, branch, class, or trade of the Specifications shall be supplied unless distinctly noted on the drawings. Materials or Work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards. In the event the Engineer shall have used such phrases anywhere in the Specifications as: “work indicated on the drawings and herein specified”, “work shown and specified”, “in accordance with the drawings and Specifications”, “indicated on the drawings and Specifications”, “in accordance with Specifications and applicable drawings”, “these Specifications and the accompanying drawings”, “as indicated on the drawings and as specified herein”, or similar expressions, they shall not be deemed to be and are not a defeasance of the provisions under this Article of the General Conditions, and they are not to be construed as requiring Work to be called for both in the Specifications and in the drawings in order to be a requirement under the Contract. Any of the aforesaid conjunctive expressions and phrases or any cross-references between drawings and Specifications, between Specifications and Specifications, or between drawings and drawings to the contrary notwithstanding, the Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all.

(d) *Refinement of Documents.*—The Contractor shall do no Work without complete, definite, and clear Drawings and Specifications. In the event the Contract Documents are not complete, definite, and clear, the Contractor shall make demand upon the Engineer, in writing, for a Request for Instructions (RFI) in accordance with Section (d) (iii) of Article 11 of the General Conditions. A copy of such demand shall be served upon the Owner. With reasonable promptness the Engineer shall furnish complete, definite, and clear instructions in writing, or by means of drawings, or in writing and by means of drawings. Such additional instructions if given orally shall be confirmed in writing or by drawings or both within a reasonable time. All such additional instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom. The Work shall be executed in conformity with the aforesaid instructions. The Engineer

shall furnish the Owner a copy of all additional instructions issued to the Contractor. No clarification of the Drawings and Specifications hereunder by the Engineer will entitle the Contractor to any additional monies unless a Change Order has been processed as provided by Article 29 of the General Conditions.

(e) *Conflicts.*—The following principles shall govern the settlement of disputes which may arise over conflicts in the Contract Documents:

- (i) as between figures given on drawings and the scaled measurements, the figures shall govern;
- (ii) as between large-scale drawings and small-scale drawings, the larger scale shall govern;
- (iii) As between Drawings and Specifications, the requirements of the Specifications shall govern;
- (iv) as between the form of the Contract Agreement, General Conditions or agency funding documents, the requirements of the agency funding documents shall govern; and,
- (v) in cases where products or quantities are omitted from the Specifications, the description and quantities on the Drawings shall govern.

Conflicts noted shall be reported to the Engineer. The principles set forth herein shall not alter the provisions of subsection (c) herein. Schedules, lists, indexes, tables, inventories, written instructions, written descriptions, summaries, statements, classifications, specifications, written selections, or written designations although appearing on the drawings are deemed to be and are “Specifications” within the meaning of this Article.

(f) *Materially Differing Site Conditions.*—Any materially differing site condition as between what is shown on the Drawings and Specifications and actually found on site shall be immediately reported to the Engineer and Owner, in writing, prior to the continuance of Work at the site. Failure of the Contractor to notify the Engineer, in writing, of the differing site condition prior to performance of Work at the site shall constitute a waiver of any claim for additional monies. Any Change Order necessitated by the differing site condition shall be processed as provided under Article 29 of the General Conditions. Any Work done by the Contractor following a discovery of such differing site condition or ambiguity or need for clarification in the Contract Drawings and Specifications, prior to a written report to the Engineer, shall not entitle the Contractor to additional monies and shall be done at the Contractor's risk.

Article 26. - Surveys and Permits.—(a) *Surveys.*—The Owner will furnish a land survey to establish a base line for locating the principal component parts of the Work, as shown in the Contract Documents. A bench mark will be otherwise specified in the Contract Documents; the Contractor shall develop and make all detailed surveys needed for construction, such as alignment, slope stakes, batter boards, stakes for pile location and other working points, lines, elevations and cut sheets.

(b) *Permits.*—Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be obtained and paid for by the Contractor. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be obtained and paid for by the Owner unless otherwise specified.

Article 27. - Testing, Inspection and Rejection of Work.—(a) *Testing of Materials.*—Unless otherwise specifically provided for in the Specifications, the inspection and testing of materials and products to be incorporated in the Work at the site shall be made by bureaus, laboratories, or agencies approved by the Owner; the cost of such inspection and testing shall be paid by the Contractor. The Contractor shall furnish evidence, satisfactory to the Owner and Engineer, that the materials and products have passed the required tests prior to their incorporation into the Work. The Contractor shall promptly segregate and remove rejected materials and products from the site of the Work.

(b) *Access to Work.*—The Owner and Engineer and their representatives shall at all times have access to the Work wherever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for inspection.

(c) *Notice to Engineer from Contractor Prior to Covering Work.*—If the Specifications, the Engineer's instructions (either in the Specifications or issued later in writing), laws, ordinances or any public authority require any Work to be specially tested or approved, the Contractor shall give the Engineer timely notice in writing of its readiness for inspection, and if the inspection is by any authority other than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be made promptly and where practicable at the source of supply. If any Work should be covered without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.

(d) *Re-examination or Re-testing of Work Covered pursuant to Consent of Engineer.*—Re-examination or re-testing of questioned work covered pursuant to consent of the Engineer may be ordered by the Engineer, and if so ordered the Work must be uncovered by the Contractor. If such Work is found in accordance with the Contract Documents the Owner shall pay the cost of re-examination and replacement or of re-testing. If such Work is found not in accordance with the Contract Documents the Contractor shall pay such cost unless he shall show that the defect in the Work was caused by another contractor of the Owner, and in that event the Owner shall pay such cost. Re-examination or re-testing under the terms of this section applies only to Work which has been covered with consent of the Engineer. Work covered without consent of the Engineer must be uncovered for examination as provided under Article 27(c) of the General Conditions.

(e) *Inspection Does Not Relieve Contractor.*—Under the Contract Documents, the Contractor has assumed the responsibility of furnishing all services, labor, and materials for the entire Work in accordance with such documents. No provisions of this Article or any inspection of the Work by the Owner, representatives of the Owner, resident inspector, clerk-of-the-works, architects employed by the Engineer, representatives of the Engineer, or the Engineer shall in any way

diminish, relieve, or alter said responsibility and undertaking of the Contractor; nor shall the omission of any of the foregoing to discover or to bring to the attention of the Contractor the existence of any Work or materials injured or done not in accordance with said Contract Documents in any way diminish, relieve, or alter such obligation of the Contractor nor shall the aforesaid omission diminish or alter the rights or remedies of the Owner as set forth in the Contract Documents. Subject to the provisions of Section (g) herein, the resident inspector has no power to make decisions, to accept or reject Work, or to consent to the covering of Work. The resident inspector owes no duty to the Contractor.

(f) *False Start.*—In the event notice of readiness pursuant to Article 30(g) of the General Conditions shall have been issued prematurely by the Contractor, the Contractor's action shall be deemed to be a "false start", and the Contractor shall be liable for the damage resulting from the aforesaid false start, including but not limited to the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the aforesaid false start.

(g) *Authority and Duties of the Resident Inspector.*—The Resident Inspector will be authorized to inspect all Work done and all products furnished, including preparation, fabrication and manufacture of the products to be used, but the Resident Inspector is not authorized to alter or waive any requirements of the Contract Documents. The Resident Inspector may temporarily reject products or suspend the Work until any question at issue can be referred to and decided by the Engineer. The responsibility of the Contractor is not lessened by the presence of the Resident Inspector.

(h) *Rejection of Work; Orders of Condemnation.*—The Contractor shall remove from the premises within the time designated in orders of condemnation all Work condemned by the Engineer as failing to conform to the Contract Documents, whether incorporated in the Work or not, and the Contractor shall promptly replace and re-execute the Work in accordance with the Contract Documents and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed by such removal or replacement. The Contractor shall supply any omitted Work and perform all unexecuted Work within the time fixed by the Engineer in orders of condemnation.

(i) *Remedy of the Owner for Breach of Order of Condemnation.*—If the Contractor does not make good a deficiency within the time fixed in an Order of Condemnation, the Owner may:

- (1) Remove the condemned Work and store it at the expense of the Contractor. If the Contractor does not pay the expenses of such removal and storing within ten (10) days after receipt of written demand of the Owner, the Owner may upon three (3) days' notice in writing to the Contractor sell such materials at private sale or at auction and shall account for the net proceeds thereof after deducting all proper costs incurred by the Owner; or
- (2) Supply omitted Work, perform unexecuted Work, or replace and re-execute Work not done in accordance with the methods and materials designated in the Contract

Documents and deduct the cost thereof from any payment then or thereafter due the Contractor; or,

- (3) Accept the condemned Work and deduct the reasonable value of such Work from the Contract Price.

The remedies stated in this Article are in addition to the remedies otherwise available to the Owner, do not exclude such other remedies, and are without prejudice to any other remedies. Time limits stated in orders of condemnation are of the essence of the Contract. Unless otherwise agreed to by the Owner in writing, the making good of condemned Work shall physically commence at the site in not more than seven (7) days after receipt of the Order of Condemnation except that in case of emergency correction shall physically commence immediately and except that the Contractor shall in any event physically commence the correction at the site early enough to complete within the time allowed in the Order of Condemnation. The Owner shall give prompt consideration to reasonable requests for delay in commencement of the making good of orders of condemnation. The making good of condemned Work shall be completed within the time allowed in the Order of Condemnation unless the Contractor shall have requested from the Engineer an increase in the amount of time allowed and the Engineer shall have given notice to the Contractor in writing, with copy to the Owner, stating the additional time, if any, allowed. An extension of the time allowed to correct condemned Work shall not extend the Contract Time.

(j) *Notice of Correction from Contractor.*—The Contractor shall give prompt notice in writing to the Engineer, with copy to the Owner, upon completion of the correction of any Work, the supplying of any omission of any Work or materials or the performance of any unexecuted Work condemned by the Engineer. In the absence of such notice, it shall be and is presumed under this Contract that there has been no correction, supplying remedy, or performance of unexecuted Work.

Article 28. - Contract Time and Damages. (a) *Rate of Progress.*—The Contractor shall proceed with the Work at a rate of progress which will insure substantial completion of the Project within the Contract Time. It is expressly understood and agreed by and between the Contractor and the Owner that the Contract Time for the Work is a reasonable time, taking into consideration the average climatic and economic conditions, and other factors prevailing in the locality of the Work. It is understood that the Contractor's proposed construction schedule is based on a normal 40-hour work week, less recognized holidays. If the Contractor desires to work in excess of a normal 40-hour work week, the Contractor shall submit a written request to the Owner and Engineer a minimum of two (2) days prior to the desired work date. The Contractor shall be responsible for any additional expenses incurred by the Owner as a result of any extended work hours, including resident inspection overtime. The cost associated with resident inspector overtime will be deducted from the Contractor's monthly progress payment request.

(b) *Grounds for Delays and Extensions of Time.*—If the Contractor be delayed at any time in the progress of the Work by any act or neglect of the Owner or the Engineer, or of any employee of either, or by any separate contractor of the Owner, or by changes ordered in the Work, or by strikes, lockouts, pickets, abnormal and unforeseeable weather, unforeseeable subsurface conditions, fire,

unusual delay in transportation, unavoidable casualties, or any causes beyond the Contractor's control, or by any cause which the Engineer shall decide to justify the delay, then the Contract Time may be extended for such reasonable time as the Engineer may decide.

(c) *Filing of Claims.*—No extension of the Contract Time shall be made for delay occurring more than ten (10) days before claim therefor is made in writing to the Engineer with a copy to the Owner. In the case of a continuing cause of delay, only one claim is necessary, but no claim for a continuing delay shall be valid unless the Contractor, within ten (10) days of the commencement of the delay, shall have given notice in writing to the Engineer, with copy to the Owner.

(d) *Weather Delays.*—The Contractor is held to be familiar with weather conditions in the Macon-Bibb County area. When a claim for extension of the Contract Time is based on abnormal and unforeseeable weather conditions the request must be accompanied by U.S. Weather Bureau data for the past ten (10) years for the Macon/Macon-Bibb County, Georgia area that substantiates the claim of abnormal and unforeseeable weather conditions. Each day of inclement weather is not, by itself, reason for an extension of the Contract Time. Extensions of the Contract Time will be based solely on the number of rain days in a monthly period that are in excess of the ten (10) year average as established for the Macon/Macon-Bibb County area. A rain day, for purposes of calculating the ten (10) year average, is defined as a day in which 0.10 inch of rain or more was measured by the Weather Bureau.

(e) *Delay in Furnishing Drawings.*—If no Schedule of Submittals or agreement stating the dates upon which drawings or approval of shop drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure of the Engineer to furnish drawings or approval of shop drawings until fourteen (14) days after demand therefor and not then unless such claim be reasonable.

(f) *No Damages for Delay.*—In the event of any delay as set forth in Section (b) herein, the Contractor may be entitled to an extension of the Contract Time only, and shall not be entitled to any additional payment on account of such delay. Without limiting the foregoing, except as otherwise specifically provided under Article 29, the Contractor shall not be entitled to payment or compensation of any kind from the Owner for direct, indirect or impact damages, including but not limited to costs of acceleration or extended home office overhead arising because of hindrance or delay from any cause whatsoever, whether such hindrances or delays be reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable.

(g) *Damages from Contractor for Delay.*—If the Contractor shall fail to perform the Work required within the Contract Time, or extended Contract Time if authorized by Change Order, then the Contractor shall pay Owner the full amount of damages specified in the Contract Documents for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents shall have expired, and the Owner shall deduct such damages from the Contractor's monthly progress payment request.

Article 29. - Changes in the Work.—(a) *Owner's Right to Make Changes.*—The Owner without

invalidating the Contract may authorize or order extra work or may authorize or order changes by altering, adding to, or deducting from the Work, the Contract Price or the Contract Time, or both, being adjusted accordingly. The Contractor hereby expressly agrees that the Contractor shall have no right to a claim for damages or extended overhead of any nature because of changes made by the Owner. Such Work is hereinafter designated “change” or “changes”.

(b) *Field Orders.*—The Engineer may at any time, by issuing a field order, make changes in the details of the Work. These changes by field order will not affect Contract Time or Contract Price. The Contractor shall proceed with the performance of any such changes in the Work so ordered by the Engineer, unless the Contractor believes that such field order entitles Contractor to a change in Contract Price or Contract Time, or both, in which event Contractor shall give the Engineer immediate, written notice thereof and if required by the Owner, an immediate estimate of the direct cost of Work as outlined in Case (b) below, after the receipt of the ordered change, and the Contractor shall not execute such changes pending the receipt of an executed Change Order or further written instruction from the Owner.

(c) *Cost to Owner for Changes.*—The cost to the Owner of any change shall be determined in one or more of the following ways:

CASE (a) By estimate and acceptance in a lump sum.

CASE (b) By unit prices identified in the Contract or subsequently agreed upon. Unit prices are net including overhead and profit. Neither establishment of unit prices in the Contract or later agreement to unit prices shall entitle the Contractor to execute any change under Case (b) prior to issuance of an authorization or order of the Owner in writing.

CASE (c) By force account, which is defined as expenditures allowed under Article 29(i) plus a percentage or percentages as stated under Article 29(i).

(d) *Changes Forbidden without Consent of Owner.*—Neither the Engineer or the Contractor shall make any change whatsoever in the Work without authorization or order of the Owner in writing except in emergency as described hereinbelow. The making of any change without authorization or order of the Owner in writing is a breach of contract except in emergency as referred to under Article 21 of the General Conditions. In the absence of authorization or order of the Owner given in advance in writing (except in emergency as referred to under Article 21 of the General Conditions) the Contractor shall have no claim for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, injury, damages or time based upon or resulting from any change.

(e) *Notice of demand of Contractor for extraordinary remuneration or for damages.*—For a change in the Work, the Contractor shall be entitled to no claim other than or in excess of

allowances permitted under Article 29(i) unless prior to commencement of execution of the change (a) the Contractor shall have notified the Owner in writing of the nature of the claim and (b) the Owner shall have agreed in writing to the claim. Commencement of execution of a change authorized by the Owner in the absence of the aforesaid written notice from the Contractor and written agreement to the claim by the Owner shall be deemed to be and is conclusive proof that the Contractor acknowledges that it makes no claim other than or in excess of allowances permitted under Article 29(i).

(f) *Subsurface Conditions.*—Material below the surface of the ground is assumed to be earth and other material that can be removed by a backhoe or similar equipment. Should conditions encountered below the surface of the ground be at variance to conditions indicated by Drawings, Specifications, or geotechnical reports, and subject to Article 23 of the General Conditions, the Contract Price may be adjusted as provided in this Article for changes in the Work upon claim by either party made in writing within a reasonable time after the first observance of the conditions; PROVIDED, however, that the Contractor shall in any event give written notice to the Owner before proceeding to execute any change resulting from subsurface conditions; and PROVIDED FURTHER; that the Owner shall not be liable to the Contractor for any claim occasioned by the aforesaid subsurface conditions except in accordance with and pursuant to authorization of the Owner issued in writing prior to commencement of execution of the aforesaid change to which authorization the Contractor shall have taken no exception. If exception to the authorization be taken by the Contractor, the Owner may issue an order pursuant to Article 29(i). Commencement of execution of work pursuant to Article 29(i) shall not exclude the recovery of damages by the Contractor under other Articles of the General Conditions, but the cost to the Owner for the changes executed pursuant to the aforesaid order shall not exceed the “net allowable expenditures” permitted to the Contractor under Article 29(i) plus the “allowance for overhead and profit” permitted under Article 29(i).

(g) *Rock.*—If rock, as hereinafter defined, is encountered, no claim for additional compensation for changes shall lie against the Owner in the absence of previous authorization by the Owner in writing, and the cost to the Owner for any changes shall be determined as provided in this Article. **CAUTION: No rock for which extra compensation is expected to be received shall be removed except pursuant to and in conformity with a written authorization or order of the Owner.** Shale, rotten stone, or stratified rock that can be loosened with a pick or removed by a backhoe or similar equipment shall not be classified as rock. Rock is defined as follows: any material which cannot be excavated with conventional equipment, and must be removed by drilling, chemical cracking, or blasting, and occupies an original volume of at least one-half cubic yard.

(h) *Existing Conditions.*—The Contractor in undertaking the Work under this Contract is assumed to have visited the premises and to have taken into consideration all conditions which might affect the Work. No consideration will be given any claim based on lack of knowledge of existing conditions except where existing conditions are such as cannot be readily ascertained. Any claims relating to conditions which were not readily ascertainable shall be adjusted as provided in this Article for changes in the Work.

(i) *Cost to Owner, Allowances for Contractor, and Allowable Expenditures.*—In Cases (a) and (c), above, the “allowance for overhead and profit” combined, included in the total cost to the Owner, shall be based upon the following schedule:

- (1) For the Contractor an allowance for Work which it performs with its own forces, not to exceed 16% of its “net additional allowable expenditures”, if any, for changes.
- (2) For a Subcontractor an allowance for Work which it performs with its own forces, not to exceed 16% of its “net additional allowable expenditures”, if any, for changes. A Subcontractor shall receive no allowance for overhead and profit on Work not performed by its own forces. Under these Contract Documents, the forces of a Sub-subcontractor of a Subcontractor are deemed to be and are the forces of the Subcontractor.
- (3) For the Contractor an allowance for Work performed by its Subcontractor, not to exceed 10% of the amount, if any, due the Subcontractor for changes.

The above percentages shall be applied to the “net additional allowable expenditures”, if any, as limited and defined herein. If the net difference between “allowable expenditures” and savings results in a decrease in expenditures, the amount of credit allowed the Owner shall be the net decrease without any credit for profit and overhead. “Net additional allowable expenditures” as used herein shall mean the difference between all “allowable expenditures” and savings. The term “allowable expenditures” is limited to and defined as items of:

- (1) Labor which is defined as the specific labor wages including a thirty percent (30%) markup on the cost of direct payroll wages. The Contractor shall furnish, if required by the Owner, certified payrolls to verify wages.
- (2) Material delivered and used on the designated Work, including sales tax, if paid for by the Contractor and as verified by original invoices or otherwise verifiable to the Engineer's acceptance.
- (3) Rental, or Ownership cost of equipment, including necessary transportation of equipment, having a purchase value in excess of \$300.00. Rental or Ownership cost will be allowed for only those hours during which the equipment is required on the Project site. Cost allowances will not exceed the rates defined as follows: the hourly rate, for equipment not used exclusively in the change to the scope of Work, will be the monthly rate, as printed in the current Rental Blue Book for Construction Equipment published by Dataquest, divided by 176; the rate, for equipment used exclusively for those tasks identified in the change to the scope of Work, will be the daily, weekly or monthly rate, used singularly or in combination, which will provide the lowest total cost. The rates will be modified by the Rate Adjustment Table factors to reflect a depreciation allowance indexed to the year a machine was originally manufactured and

sold. The rates will be adjusted to account for regional differences in annual use hours, cost of labor, freight, taxes, etc. The amount by which basic rates will be increased or decreased is shown on the adjustment maps included in the "Blue Book". The equipment use period will begin only at the time equipment is unloaded at the site of the changed Work; will include each day that the equipment is required at the site of the changed Work; and will terminate at the end of the day on which the use of such equipment becomes unnecessary, plus reasonable transportation time. The maximum time to be paid per day will not exceed eight hours unless the equipment is in operation for a longer time. The time which will be paid for per day for equipment not used exclusively in the change to the scope of Work, will be the hours which the equipment was actually in operation on the changed Work.

- (4) In cases where there is an extension of the Contract Time, *pro rata* expenditures for time of foremen employed in the direct superintendence of productive labor in execution of changes.

All expenditures not included in the term "allowable expenditures" as limited and defined in this Article shall be considered as overhead, including, but not limited to, bond premiums, supervision, travel (meals, transportation, and lodging), superintendence [except *pro rata* time of foremen as referred to herein], timekeepers, clerks, watchmen, hand tools, small tools, incidental job burdens, engineering, drafting, and office expense. Any other provisions in the Contract Documents to the contrary notwithstanding, only demonstrable, direct, out-of-pocket expenditures for the changes plus percentages as set forth hereinabove shall be allowable for changes. No wages of a foreman shall be allowable for a change carried on concurrently with contract Work unless the claim includes a demand for extension of time caused by the authorizing or ordering of the change.

(j) *Execution of Changes Pursuant to Order.*—In the event neither Case (a) nor Case (b) can be mutually agreed upon as the method of determining the cost to the Owner for a change, the Contractor, provided it receives a written order from the Owner, shall proceed on force account under Case (c), and he shall keep and present in such form as the Engineer may direct a correct account of the expenditures together with vouchers. Allowable expenditures shall in no event exceed current costs for like services and materials, the burden of proof being on the Contractor.

(k) *Stipulated Maximum Sum.*—Under Case (b) and Case (c), the Owner shall prescribe the limits of any authorization or order for a change by means of an authorization or order in writing stipulating the maximum sum of money committed toward execution of the said change, and the Contractor shall have no authority to perform any change which will cost the Owner in excess of the stipulated maximum sum. It shall be solely the Contractor's responsibility **to apply in writing to the Owner, NOT [repeat NOT] to the Engineer,** for an enlargement of the scope of the authorization or order by an increase in the said stipulated maximum sum if during the course of the performance of a change on force account under Case (c) the additional cost of the change to the Owner as established in accordance with allowable expenditures and allowances for profit and overhead permitted under Article 29(i) is approaching, or may exceed, the said stipulated maximum sum. It shall likewise be the responsibility of the Contractor to apply for an enlargement of the scope of the

authorization or order if the total value of units at any agreed unit price under Case (b) is approaching the said stipulated maximum sum. For changes in the Work no claim for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, injury or damages shall lie against the Owner for any amount in excess of such amount as shall have been mutually agreed to under Case (a) or in excess of such amount as shall have been established as the stipulated maximum sum under Case (b) or Case (c). The cost to the Owner for any change in the Work, except a change based upon agreed unit prices under Case (b), shall be established in accordance with the schedule of allowances and percentages stipulated under Article 29(i).

(l) *Breakdown of Expenditures.*—To accompany all Change Orders, the Contractor shall furnish a breakdown of expenditures for labor and materials by units and quantities in the form prescribed by the Owner, and the breakdown shall be accompanied by the following declaration: “I do solemnly swear, under criminal penalty, that the costs shown hereinabove do not exceed current costs for like services or materials and do not exceed the actual costs to the Contractor therefor, and that the quantities shown do not exceed actual requirements.” For all force account changes, the Contractor shall promptly, and in no event later than thirty (30) days after receipt of written demand therefor, pursuant to Article 29(i) submit to the Engineer a complete, accurate, and final breakdown and account together with vouchers, showing all expenditures and percentages allowable under Case (c). For all unit price changes, the Contractor shall promptly, and in no event later than thirty (30) days after receipt of written demand therefor, pursuant to Article 29(i) submit to the Engineer an accurate account of the quantity of Work performed under Case (b). In any case, the Engineer shall certify to the amount [including under Case (a) and Case (c) the allowance prescribed in the Contract for overhead and profit] due the Contractor. The Contractor shall obtain and furnish as back-up to the Contractor’s breakdown a separate breakdown for each Subcontractor’s charges prepared by each Subcontractor on the letterhead of the Subcontractor and properly signed by the Subcontractor.

(m) *Payment on Account.*—If the Contractor desires to obtain payment on account before any change in the Work has been completed, a Change Order certified by the Engineer and signed by the Contractor and the Owner must have been executed for so much of the change as has been completed at the time of the filing of the request for payment on account.

(n) *Form and Execution of Change Orders.*—Change Orders shall be recommended by the Engineer and signed by the Contractor and the Owner in accordance with the form of change order prescribed by the Owner. No request for payment of the Contractor for account of a change shall be due, nor shall any such request appear on a progress payment request or demand for final payment until (1) the Change Order shall have been certified by the Engineer and (2) a Change Order shall have been executed by the Contractor and the Owner.

(o) *Claims Distinguished from Changes.*— Claims for damages arising out of alleged negligence of the Engineer or Owner as provided for under Article 37 of the General Conditions are distinguished from claims for allowances for changes as provided for under Article 29. Claims for

damages must be filed entirely separately pursuant to Article 37 of the General Conditions and claims for allowances for changes must be filed entirely separately pursuant to Article 29 unless the Contractor and Owner agree in writing otherwise.

(p) *Conditions Different from Those Indicated in Contract Documents.*—The parties contemplate delays necessary to complete tests, to redesign, and to perform change order Work in the event conditions encountered at the site are different from those indicated in the Contract Documents, or to perform change order Work to correct errors and omissions in the Drawings and Specifications. Execution of any change must be authorized. In such event there shall be an adjustment in the Contract Price as provided in the Contract for changes in the Work, but no claim for damages shall lie against the Owner for the aforesaid delays. Such delays are not a breach of contract because the parties contemplate such delays as a natural and probable consequence of construction operations. The parties agree that such delays constitute no wrong or injury, create no right to a claim for damages, and are not a ground for claiming extraordinary remuneration.

(q) *Unit Prices.*— The term “net” as used in reference to “unit prices” means in respect to Change Orders performed in accordance with Case (b) of Article 29 of the General Conditions that the unit prices offered by the Contractor and accepted by the Owner shall be inclusive of all sums for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, or injury. Upon request of the Owner in writing and within such reasonable space of time as the Owner shall designate in writing, the Contractor shall submit for consideration of the Owner proposals in writing for unit prices to be applied in the event Work is authorized by the Owner to be performed under Case (b) of Article 29. Under penalty of false swearing, a principal of the contracting firm shall certify that the unit prices submitted do not exceed current costs for like services or materials.

(r) *Combining Small Change Orders.*—The Owner may, with the Contractor’s concurrence, elect to postpone the issuance of a Change Order until such time that a single Change Order of substantial importance can be issued incorporating several changes. In such cases, the Owner will indicate this intent for each change in the Contract in a written notice to the Contractor, following agreement by the Owner and Contractor on the scope, price and time, if any, of the change.

(s) *Changes in the Contract Time.*—The Contract Time may be changed only by a Change Order. Changes in the Work described in section (a) of this Article and any other claim made by the Contractor for a change in the Contract Time will be evaluated by the Engineer and if the conditions warrant, an appropriate adjustment of the Contract Time will be made. The Engineer, when making these evaluations will take into consideration the amount and scope of Work which has been changed and will evaluate if the change in Work has affected the Critical Path as currently accepted on the Progress Schedule such that it would delay the completion of the Project. If after these evaluations have been made, and in the sole opinion of the Engineer the Contractor is due an extension of the Contract Time, then it will be granted by a Change Order. Extensions of the Contract Time granted as a result of weather will not result in a change in Contract Price.

(t) *Effect of Executed Change Order.*—The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, the Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order. The foregoing waiver and release expressly includes, without limitation, claims for additional compensation or time based on the theory that the Contractor has suffered so-called "impact" damage attributable to the effect of change order Work on other change orders Work or on unchanged Work.

Article 30. - Payments and Completion.—(a) *Contract Price.*— The Contract Price is either a lump sum or the sum of the unit prices stated in the Contract Agreement, for each item multiplied by the actual quantities installed of each item, and is the total amount payable by the Owner to the Contractor for the performance of the Work set forth in the Contract Documents. It is understood that the Contractor shall provide and pay for all products, labor, (including labor performed after regular working hours, on Sundays, or on legal holidays), equipment, tools, water, light, power, sewer, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, place into operation, and deliver the Work.

(b) *Application for Payment and Receipts.*—The Contractor shall submit to the Engineer in accordance with a form to be supplied by the Owner an application for each monthly progress payment, and, if requested by the Owner or Engineer, receipts or other vouchers, showing his payments for materials and labor, including payments to Subcontractors as required by Article 10 of the General Conditions.

(c) *Progress Payments.*—If progress payments are made on valuation of Work done, such complete application shall be submitted to the Engineer at least twenty (20) days before payment falls due. In applying for payments, the Contractor shall submit a statement based upon the Schedule of Values on a progress payment form to be supplied by the Owner, and, if requested by the Engineer or Owner, itemized in such form and supported by such evidence as the Engineer or Owner may direct showing the Contractor's right to the payment claimed.

(d) *Materials stored.*—Application for payment may include, at the Contractor's option, the cost of products not yet incorporated into the Work which have been delivered to the site or to other storage locations authorized and approved by the Engineer. The Owner reserves the right to accept or reject pay requests for stored materials, and to limit payments to those stored materials which, in the Engineer's judgment, are necessary for continuing satisfactory Project progress.

Payment for stored products will be subject to the following conditions being met or satisfied:

- (1) The products shall be received in a condition satisfactory for incorporation in the Work, including manufacturer's storage and installation instructions;

- (2) The products shall be stored in accordance with the manufacturer's recommendations and in such manner that any and all manufacturer's warranties will be maintained and that they will not be damaged due to weather, construction operation, or any other cause;
- (3) An invoice from the manufacturer shall be furnished for each item on which payment is requested. The request may include reimbursement for cost of delivery, limited to common carrier rates, to the site, but will not include the Contractor handling, on or off site, or for storage expense;
- (4) The Contractor shall, on request of the Engineer, furnish written proof from the supplier of payment (less retention equal in percentage to that being retained by the Owner) for the products no later than 30 days after receipt of payment for same from the Owner. The Owner will have the right to deduct from the next payment estimate an amount equal to the payment for products if reasonable and adequate proof is not submitted; and,
- (5) Shop drawings, product data and samples, showing "No Exceptions Taken", have been received from the Contractor for that specific equipment or material.

(e) *Operating Test Period.*—Upon receipt of written notice from the Contractor that the Work is ready to be placed into service for the operating test period, the Engineer will, within a reasonable time, inspect the Work. Prior to initiating the operating test, Work required by the Contract Documents must be in place and operable as determined by the Engineer, which includes, but is not limited to the following:

- (1) Pressure testing all lines as required in the Specifications;
- (2) Making adjustments of manhole rims;
- (3) Performing functional tests and providing manufacturers' required certification as specified;
- (4) Removing temporary plugs, bulkheads, bypasses, etc., and diverting flow into the facility when directed by the Engineer; and,
- (5) All painting, grassing and restoration of the Work area, provided the Work area is not part of another segment not yet in the 30-day operating test period.

When the Engineer finds the Work of the Contractor ready for initiation of the operating test period, the Engineer will recommend to the Owner that the operating test period begin.

Certain segments of the Work, whether new or existing to be modified, may need to be placed in

service prior to completion of the entire Project. Prior to placing these segments in operation, the requirements above, which pertain to the operating test period, must be complete for each segment.

The operating test period begins upon written notification from the Owner and runs for a period of 30 days. During this period, the Contractor shall complete all remaining items of Work, make adjustments found to be necessary, and ensure that all equipment and systems are functioning properly, and continue to function properly. The beginning of the operating test period initiates the Owner's responsibility for providing chemicals, power, and operating personnel. The Contractor retains responsibility for maintaining equipment until acceptance by the Owner. The segments to be placed into service prior to completion of the entire Project will be determined solely by the Engineer or the Owner.

(f) *Conditions Precedent to Application for Final Payment.*—ALL WORK REQUIRED BY THE CONTRACT DOCUMENTS MUST BE COMPLETED BEFORE THE FINAL INSPECTION IS PERFORMED. This includes, but is not limited to, the following:

- (1) Performing infiltration and pressure tests as described in the detailed Specifications;
- (2) Removing temporary plugs, bulkheads, bypasses, etc.;
- (3) Flushing all lines with potable water furnished by Contractor;
- (4) Pressure testing all lines as required in the Specifications;
- (5) Demonstrating the operation of all valves;
- (6) Providing specified instruction for the Owner's personnel;
- (7) Disinfecting all water mains as required in the Specifications; and,
- (8) Grassing and restoration of the Work area.

(g) *Notification of Readiness for Final Inspection.*—When all conditions precedent for the application have been completed, the Contractor shall submit completed Record Drawings to the Engineer and give notice to the Engineer in accordance with Article 5 of the Contract Agreement with a copy to the Owner in the following words:

The work on the Contract for the **Rebuild Gravity Thickeners 1,2, and 3 and Clarifier #6 at Rocky Creek WRF** having been fully completed except as stipulated hereinbelow, it is requested that a final inspection be made promptly by the Engineer in accordance with Article 5 of the Contract Agreement. The following Work is incomplete through no fault of the Contractor:

No final inspection shall be made until such time as the Engineer has received a letter in the exact form indicated above and a copy thereof has been received by the Owner. In the event the Contractor shall have issued the "Notice of Readiness for Final Inspection" prematurely [hereinafter referred to as "false start"] he shall be liable for the damage resulting from the aforesaid false start including but not limited to the salaries, professional fees, and travel and living expenses of the persons or parties inconvenienced by the aforesaid false start. The Contractor acknowledges and agrees that he has an indivisible, non-delegable, and non-transferable contractual obligation to the Owner to make its own inspections of the Work at all stages of construction; and the Contractor shall supervise and superintend performance of the Contract in such manner as to enable it to confirm and corroborate at all times that all Work has been executed strictly, literally, rigidly, and inflexibly in accordance with the methods and materials designated in the Contract Documents so that (a) its certifications on periodical estimates shall be true and correct and (b) its notice of readiness for final inspection shall be true and correct. Accordingly, the Contractor agrees that it may not defend or excuse any deviation from the Contract Documents on the ground (a) that the deviation was not brought to its attention by another person or party or other persons or parties or (b) that a Subcontractor is, or Subcontractors are, at fault.

(h) *Final Acceptance.*—If the Engineer finds the Work of the Contractor complete and acceptable in accordance with the provisions of the Contract Documents and that the Record Drawings accurately depict the complete Work, the Engineer will recommend to the Owner that the Project be accepted and that final payment be made. In the event that the final inspection reveals deficiencies in meeting the Contract requirements, the Contractor shall complete all remaining items of Work, and make adjustments found to be necessary. Upon receipt of written notice from the Contractor that the Work is complete and ready for re-inspection, the Engineer will make another final inspection. The Contractor will be notified, in writing, by the Owner of the final acceptance of the Work. The date of final acceptance shall be the beginning of the warranty period.

(i) *Liens.*—Neither the final payment or any part of the retained percentage shall become due until the Contractor has furnished the Owner proper and satisfactory evidence (under oath if required) that all claims for labor employed and materials used in the construction of the Work under this Contract have been paid, satisfied or waived, and that no claims can be filed against the Owner for such labor or materials. If required, the Contractor shall deliver to the Owner a complete release of all liens or claims arising out of this Contract, and an affidavit that so far as it has knowledge or information the releases include all labor and materials for which a lien or claim could be filed; provided, however, that the Contractor may, if any Subcontractor or claimant refuses to furnish a release, furnish a bond satisfactory to the Owner to indemnify the Owner against any lien or claim. If any lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the Owner may be compelled to pay in discharging such lien or claim, including all costs and a reasonable attorneys' fees.

(j) *Compliance with O.C.G.A. §§ 13-10-80 and 13-10-81.*—For purposes of O.C.G.A. § 13-10-80(b) the term "substantial completion of the Work" shall mean that "the Work has been satisfactorily completed and is accepted in accordance with the Contract Documents." If upon completion of the second "final" inspection provided for in subsection (g) of this Article there are

still remaining (i) any disputed indebtedness or (ii) if there are liens upon the property, or (iii) there are any items of Work uncompleted which in the opinion of the Engineer are “incomplete items” within the meaning of O.C.G.A. §§ 13-10-80(b)(2)(B) and/or 13-10-81(c), an amount equal to two hundred percent (200%) of each such item of indebtedness, lien or uncompleted Work as determined by the Engineer shall be withheld until such item or items are paid, settled or completed and the remaining retainage shall be paid to the Contractor.

Article 31. - Certificates of Payment.—(a) *Issuance.*—If the Contractor has made application for payment as provided under Article 30, the Engineer shall not later than the date when each payment falls due issue to the Owner a certificate for such amounts as he decides to be properly due or state in writing his reasons for withholding a certificate.

(b) *Warranty of Title.*—The Contractor warrants that title to all Work and products covered by a Certificate of Payment, whether incorporated into the Project or not, will pass to the Owner upon the receipt of such payment by the Contractor, free and clear of all liens, claims, security interests or encumbrances except retention equal in percentage to that being retained by the Owner.

(c) *Effect.*—No Certificate issued, or payment made to the Contractor, or partial or entire use of occupancy of the Project by the Owner shall be an acceptance of any Work or materials not in accordance with the Contract Documents. The making of the final payment shall constitute a waiver of all claims by the Owner other than those arising from unsettled liens, from faulty work appearing after final payment, or from the requirements of the Contract Documents, including but not limited to the provisions of Article 5, Hazards and Indemnification, of these General Conditions. Acceptance of the final payment shall operate as and shall be a release by the Contractor to the Owner from all claims of any kind or character arising out of or related to the Contract except for such specific amount or amounts as may have been withheld to cover the fair value of any incomplete Work which has been certified by the Engineer under the provision of Paragraph (d) of Article 5 of the Contract Agreement as incomplete through no fault on the part of the Contractor.

(d) *Date and Rate of Payment.*—Progress payments will be made by the Owner to the Contractor in accordance with Article 4 of the Contract Agreement. Final payment will be made in accordance with Article 5 of the Contract Agreement. The date and rate of payment are subject to Article 32 of the General Conditions. Sums retained pursuant to this Article are and remain the property of the Owner until such time as the Contractor shall have become entitled to receive payment of such retainage by complying with the full terms of the Contract Documents.

(e) *Delays in Making Payments.*—The date on which any progress payment is due shall be extended for such period of time as may be necessary in the determination of the Engineer for the Contractor to remedy any incorrect or incomplete application for payment.

(f) *Interest.*—Should the Owner fail to pay the sum named in any certificate of the Engineer when due, the Contractor shall receive, in addition to the sum approved in the certificate, simple interest thereon at the legal rate; PROVIDED, however, that the Contractor shall have given the Owner written notice of the date on which payment was properly due, and no interest shall be

payable if the Owner makes payment when due or within three days after receipt of the aforesaid notice from the contractor. Such notice shall be in writing, and shall set forth:

- (1)— A short and concise statement that interest is due pursuant to this Article;
- (2)— The principal amount of the progress or final payment which is allegedly due to the Contractor; and,
- (3)— The first day and date upon which the Contractor alleges that interest will begin to accrue, pursuant to this Article.

(g) *Integration with the Prompt Pay Act (O.C.G.A. § 13-11-1, et seq.)*.—The provisions of the Contract Documents with respect to time limits for payments, grounds for withholding payment, conditions authorizing payments, and interest on late payments shall supersede all provisions of the Georgia Prompt Pay Act, as originally enacted or as amended, and any dispute arising between the parties hereto as to whether or not the provisions of this Contract or the Georgia Prompt Pay Act control will be resolved in favor of the terms of these Contract Documents.

Article 32. - Payments Withheld.—The Engineer may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

- (a)—Defective work not remedied;
- (b)—Claims filed or reasonable evidence indicating probable filing of claims;
- (c)—Failure of the Contractor to make payments properly to Subcontractors or for materials or labor;
- (d)—A reasonable doubt that the Project can be completed for the unpaid balance of the Contract Price.
- (e)—Damage to another Contractor or to some third party;
- (f)—Failure to maintain a rate of progress in accordance with the currently approved construction progress schedule;
- (g)—Failure to supply enough skilled workers or proper materials; or,
- (h)—Failure to complete all Work within the Contract Time.

When the above grounds are removed, the Engineer shall issue to the Owner a certificate for such withheld amounts as he determines to be properly due, and the Owner shall pay such amounts within thirty (30) days. At the option of the Owner adherence to the construction progress schedule shall be a condition precedent to the right of the Contractor to demand payment of a progress payment. No omission on the part of the Owner to exercise the aforesaid option shall be construed

to be a waiver of breach of the construction progress schedule or acquiescence therein, and the Owner may exercise its option from time to time as often as may, in its judgment, be expedient.

Article 33. - Notice of Commencement.—See Notice to Proceed, as used throughout these General Conditions.

Article 34. - Correction of Work after Final Payment.—Neither (1) the final certificate, (2) or any decision of the Engineer, (3) nor payment, (4) nor any provision in the Contract shall relieve the Contractor of responsibility for faulty materials, faulty workmanship, or omission of Work required by the Contract Documents, and the Contractor shall remedy any defects or supply any omissions resulting therefrom and pay for any damage to other Work resulting therefrom. The Owner shall give notice of observed defects or omissions with reasonable promptness. The Contractor shall within the time designated in orders of condemnation and without expense to the Owner, correct, remedy, replace, re-execute, supply omitted Work, or remove from the premises all Work condemned by the Engineer. The Contractor shall give prompt notice in writing to the Engineer, with copy to the Owner, upon completion of the supplying of any omitted Work or the correction of any Work condemned by the Engineer. In the absence of said notice, it shall be and is presumed under this Contract that there has been no correction of the condemned Work or supplying of omitted Work. If the Contractor does not remove, make good the deficiency, correct, or remedy faulty Work, or supply any omitted Work within the time designated in orders of condemnation without expense to the Owner, the Owner, after ten (10) days' notice in writing to the Contractor, may remove the Work, correct the Work, remedy the Work or supply omitted Work at the expense of the Contractor. In case of emergency involving health, safety of property, or safety of life the Owner may proceed at once. Correction of defective Work executed under the Contract Documents or supplying of omitted Work, whether or not covered by warranty of a Subcontractor or materialmen, remains the primary, direct responsibility of the Contractor. The foregoing obligation of the Contractor shall remain in effect until the same shall have been extinguished by operation of the statute of limitations.

As additional security for the fulfillment of such obligation, but in no way limiting the same, the Contractor warrants and guarantees (1) that all work executed under the Contract Documents shall be free from defects of materials or workmanship for a period of one year from the notice of final acceptance of the Work by the Owner, and (2) that for not less than one year from such final acceptance, or for such greater time as may have been designated in the Contract Documents, products of manufacturers shall be free from defects of materials and workmanship. Whenever written guaranties or warranties are called for, the Contractor shall furnish the aforesaid for such period of time as may be required. The aforesaid instruments shall be in such form as to permit direct enforcement by the Owner against any Subcontractor, materialmen, or manufacturer whose guaranty or warranty is called for, and the Contractor agrees that:

- (a) The Contractor is jointly and severally liable with such Subcontractors, materialmen, or manufacturers;
- (b) The said Subcontractors, materialmen, or manufacturers are agents of the

Contractor for purposes of performance under this Article, and the Contractor, as principal, ratifies the warranties or guaranties of his aforesaid agents by the filing of the aforesaid instruments with the Owner. The Contractor as principal is liable for the acts or omissions of his agents;

- (c) Service of notice on the Contractor that there has been breach of any warranty or guaranty will be sufficient to invoke the terms of the instrument; provided, however, that the Owner shall have furnished the Contractor with a copy of notice served on the Subcontractor, materialmen, or manufacturer; and,
- (d) The Contractor will bind his Subcontractor, materialmen, and manufacturers to the terms of this Article.

The calling for or the furnishing of written warranties shall in no way limit the contractual obligation of the Contractor as set forth hereinabove. The remedies stated in this Article are in addition to the remedies otherwise available to the Owner, do not exclude such other remedies, and are without prejudice to any other remedies.

Article 35. - Cash Allowances.—The Contractor shall include in the Contract Price all cash allowances named in the Contract Documents and shall cause the Work thus covered to be done by such contractors or firms and for such sums as the Engineer may direct, the Contract Price being adjusted in conformity therewith. The Contractor declares that the Contract Price includes such sums for overhead and profit on account of cash allowances as he deems proper. No demand for overhead and profit other than those included in the Contract Price shall be allowed. The Contractor shall not be required to employ for any such Work persons against whom he has a reasonable objection.

Article 36. – Contractor’s Warranty as to Performance.—The Contractor warrants that it is familiar with the codes applicable to the Work and that it has the skill, knowledge, competence, organization, and plan to execute the Work promptly and efficiently in compliance with the requirements of the Contract Documents. The Contractor having the obligation to keep a competent superintendent engaged on the Work during its progress, to employ only skilled mechanics, and to enforce strict discipline and good order among its employees, the Contractor, itself, is responsible for seeing that the Work is installed in accordance with the Contract Documents. Failure or omission on the part of the Owner, representatives of the Owner, agents of the Owner, resident engineer inspector, clerk-of-the-works, engineers employed by the Engineer, representatives of the Engineer, or the Engineer either to discover or to bring to the attention of the Contractor any deviation from, omission from, or noncompliance with the Contract Documents shall not be asserted by the Contractor as a defense for failure on the Contractor’s part to install the Work in accordance with the Contract Documents or for any other neglect to fulfill requirements of the Contract; nor shall the presence of any one, or all, or any of the foregoing at the site or the fact that any one, or all, or any of the foregoing may have examined the Work or any part of it be asserted as a defense by the Contractor against a claim for failure on its part to install the Work in accordance with the Contract Documents or for any neglect to fulfill requirements of the Contract. No

requirement of this Contract may be altered or waived except in pursuance of a written order of the Owner and in strict accordance with the provisions in the Contract for changes in the Work.

Article 37. - Claims.—(a) *Extra Cost.*—If the Contractor maintains that any instructions by drawings or otherwise involve extra cost to the Owner under this Contract, the Contractor shall give the Owner and the Engineer written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute any change except in emergency endangering life or property. The allowances to the Contractor shall then be as provided under Article 29 of the General Conditions. No claim for extra cost shall be valid unless so made.

(b) *Protest.*—All references to arbitration are deleted from the Contract Documents. Decisions of the Engineer shall be rendered in all cases as provided for under the General Conditions of the Contract, but no decision of the Engineer shall deprive the Owner or the Contractor of any form of redress which may be available under the laws of the State of Georgia to contracting parties. Any decision of the Engineer shall be final and binding on the Contractor in the absence of written notice of protest from the Contractor received by the Owner by registered mail within twelve (12) days of the date of the decision of the Engineer. The Owner shall have twelve (12) days from the date of receipt of a protest within which to investigate and make a reply. There is no provision under the Contract for execution of work “under protest”. A protest must contain (1) the date of the decision of the Engineer to which exception is taken, (2) a statement of the issue or issues, (3) a citation of the provision or provisions of the Contract Documents which govern the issue or issues, (4) a summary of the logical principle or principles on which the protest is based, and (5) a summary of the legal grounds for taking exception. Filing a written notice of protest shall not be grounds for an extension of the Contract Time.

(c) *Shall be Based on the Legal Assertions of the Contractor.*—The Contractor shall assert claims solely on the basis of (a) principles of logic and (b) principles of law to which the Contractor, itself, has prescribed. The Contractor shall not protest a decision or request a conference on the ground merely that a Subcontractor, materialmen, or supplier has protested to the Contractor. Accordingly, the Contractor shall neither file a claim or make a request for a conference with the Owner regarding a claim except as it shall be for the purpose of asserting in the exercise of the Contractor’s best judgment such views, requests, and legal propositions as he deems the Contractor is entitled to maintain independently of any right of any Subcontractor, materialmen, or supplier against the Contractor.

(d) *Conference with the Owner.*—

(1) *Effect of.*—The Owner has no legal obligation to confer orally with the Contractor about the terms of the Contract or its performance and may insist that all transactions and all intercourse shall be in writing. Agreement of the Owner to confer with a Contractor shall not be construed as an offer of the Owner to reconsider or alter the Owner’s policies, practices, procedures, or prior position, and no such agreement shall constitute a waiver of any right or defense of the Owner. Such a conference is without prejudice to any rights or defense of the

Owner. After the conference there will be nothing to confirm since the Owner does not engage itself to do or not to do a thing by agreeing to confer with the Contractor. It is expressly agreed that no conference between the Contractor and the Owner shall cure any failure of the Contractor to give any notice nor shall it cure any breach of any time limit or revive any right in the Contract.

(2) *Conditions precedent to.*—A proposal from the Contractor for a conference in respect to (a) a dispute, (b) a controversy, or (c) an interpretation or construction of any provision of the Contract Documents shall contain (a) a statement of the issue or issues, (b) a citation of the provisions of the Contract Documents which govern the issue or issues, (c) a precise summary of the logical principle or principles on which the issue or issues are based, and (d) a summary of the legal grounds which the Contractor takes with respect to the issue or issues.

(3) *Basis for and Terms of.*—All conferences between the Owner and the Contractor shall be pursuant to, under the terms of, and in accordance with this Article of the General Conditions.

Article 38. - Use of Premises.—The Contractor shall confine its equipment, apparatus, the staging and storage of materials, the operations of its forces, and the Work to limits indicated by law, ordinances, permits, or the Contract Documents and shall not unreasonably encumber the premises with materials. The Contractor shall not load or permit any part of the Work to be loaded with weight that will endanger its safety. The Contractor shall enforce the Engineer's instructions regarding signs, advertisements, fires, and smoking.

Article 39. - Specification Arrangement.—The Specifications are separated into numbered and titled divisions for convenience of reference. Neither the Owner nor the Engineer assumes any responsibility for defining the limits of any subcontracts on account of the arrangement of the Specifications. Notwithstanding the appearance of such language in the various divisions of the Specifications as, "The Mechanical Contractor", "The Electrical Contractor", "The Roofing Contractor", etc., the Contractor is responsible to the Owner for the entire Contract and the execution of all of the Work referred to in the Contract Documents.

Article 40. - Valuable Material, Geological Specimens.—If during the execution of the Work the Contractor, any Subcontractor, or any servant, employee, or agent of either should uncover any valuable material or materials such as, but not limited to, treasure, geological specimen or specimens, archival material or materials, or ore, the Contractor acknowledges that title to the foregoing is vested in the Owner. The Contractor shall notify the Owner upon discovery of any of the foregoing, shall guard it, and shall deliver it promptly to the Owner. The Contractor agrees that the Geologic and Water Resources Division of the Georgia Department of Natural Resources may inspect the Work at reasonable times consistent with the convenience of the Contractor.

Article 41. - Definitions.—(a) *Applicable Law.*—This Contract shall be governed by the law of Georgia.

(b) *Article Not Plenary*.—This Article is not entire, plenary, or exhaustive of all terms used in the General Conditions which require definition. There are definitions of other terms under Articles to which the terms are related.

(c) *Balanced Bid*.—Balanced Bid shall mean a Bid in which each of the unit prices and total amount bid for each of the listed items reasonably reflects the value of that item with regard to the entire Project considering the prevailing cost of labor, material and equipment in the relevant market. A Bid is unbalanced when, in the opinion of the Owner, any unit prices or total amounts Bid on any of the listed items do not reasonably reflect such actual values.

(d) *Change Order Form*.—The Change Order Form is the instrument by which adjustments in the Contract Price and Contract Time are effected pursuant to changes made in accordance with Case (a), Case (b) or Case (c) of Article 29 of the General Conditions or in accordance with Subparagraph (i) of Article 29 of the General Conditions. The Change Order Form shall be accompanied by a breakdown in the form prescribed in a specimen, which the Owner will supply to the Contractor. The Engineer shall certify to the amount of the adjustment. The Change Order Form shall be signed by the Contractor and the Owner. The breakdown is only for the purpose of enabling the Engineer and the Owner to make a judgment on the dollar amount of the adjustment in the Contract Price. No condition, term, qualification, limitation, exception, exemption, modification, or proviso shall appear in the breakdown. The breakdown shall be in the exact form and language of the above-mentioned specimen. In the event any condition, term, qualification, limitation, exception, exemption, modification, or proviso shall appear in a breakdown, it shall be invalid.

(e) *Contract; Contract Documents*.—The terms Contract and Contract Documents include the Invitation to Bid, Instructions to Bidders, Contractor's Bid (including all documentation accompanying the Bid and any post-Bid documentation required by the Owner prior to the Notice of Award), the Contract Agreement, Bonds, all Special Conditions, General Conditions, Supplementary Conditions, Specifications (Divisions 01 through 46, inclusive), Drawings, and Addenda, together with written amendments, Change Orders, field orders and the Engineer's written interpretations and clarifications issued in accordance with the General Conditions on or after the date of the Contract Agreement. Shop drawing submittals reviewed in accordance with the General Conditions, geotechnical investigations and soils reports, and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site are not Contract Documents.

(f) *Contract Time*.—Contract Time shall mean the number of consecutive calendar days as provided in the Contract Agreement for substantial completion of the Project, to be computed from and including the date of the Notice to Proceed. All time limits stated in the Contract Documents or shown on the construction progress schedule are of the essence of the Contract.

(g) *Contractor*.—The Contractor shall mean the party identified in the Contract Agreement and its authorized and legal representatives.

(h) *Cross-reference and Citations of Articles and Paragraphs of the General Conditions.*—Cross-references and citations of Articles and paragraphs of the General Conditions are for the convenience of the Contractor, Engineer and the Owner, and are not intended to be plenary or exhaustive nor are they to be considered in interpreting the Contract Documents or any part of the Contract Documents.

(i) *Engineer.*—The Engineer shall mean Macon Water Authority.

(j) *Furnished by Owner.*—Furnished by Owner shall mean that the Owner shall pre-purchase specific products and have them delivered to a place mutually agreed upon by the supplier, the Owner and the Contractor, at no cost to the Contractor. In connection with an item furnished by the Owner, “Install” shall mean to take delivery of the item, off-load and transport to the job site, store as necessary and install according to the Drawings and Specifications.

(k) *Install, Deliver, Furnish, Supply, Provide.*—Such words mean the work in question shall be put in place by the Contractor ready for occupancy and use, unless expressly provided to the contrary.

(l) *Damages for Delay by Contractor.*—Damages for Delay by Contractor shall mean the good faith, reasonable estimate of damages stated in the Contract Agreement which the Contractor agrees to pay for each consecutive calendar day beyond the Contract Time required to achieve substantial completion of the Project. Such Damages will end upon written notification from the Owner that the Project is ready for initiation of the Operating Test Period for the total Project.

(m) *Meaning of words and phrases.*—Unless the context or the Contract Documents taken as a whole indicate to the contrary, words used in the Contract Documents that have usual and common meanings shall be given their usual and common meanings and words having technical or trade meanings shall be given their customary meaning in the subject business, trade or profession.

(n) *Notices.*—Unless otherwise provided in the Contract Documents, written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered or sent by certified mail to the last business address known to the party that gives notice.

(o) *Notice to Proceed.*—The Notice to Proceed is a written notice from the Owner pursuant to which the Contractor shall commence physical work on the Project site. A Notice to Proceed is a condition precedent to the execution of any Work on the site by the Contractor.

(p) *Order of Condemnation.*—An Order of Condemnation shall be in writing, shall be dated, shall be signed by the Engineer, shall be addressed to the Contractor with a copy to the Owner, and shall contain three elements as follows:

FIRST ELEMENT: Description of Work

- (1) which has been omitted or
- (2) which is unexecuted as of the date of the Order of Condemnation, the time for its incorporation into the Work under the construction progress schedule having expired, or
- (3) which has not been executed in accordance with the methods and materials designated in the Contract Documents.

SECOND ELEMENT: Citation of the provision or provisions of the Contract Documents which has or have been violated.

THIRD ELEMENT: Fixing of a reasonable time within which the Contractor shall have made good or remedied the deficiency which said time shall not be deemed to be an extension of Contract Time or deemed to be authorization for amendment to the construction progress schedule.

An Order of Condemnation may be issued for failure of the Contractor to supply enough workers or enough materials or proper materials, the Order of Condemnation in such event being based on Article 28 of the General Conditions and upon the definition of Work as set forth under Article 41(u).

(q) *Owner*.—The Owner shall mean THE MACON WATER AUTHORITY or its authorized and legal representatives.

(r) *Products*.—Products shall mean materials or equipment permanently incorporated into the Work.

(s) *Specifications*.—The term “Specifications” shall include all written matter in the bound volume (Divisions 01 through 46, inclusive) or on the drawings and any addenda or modifications thereto.

(t) *Subcontractor*.—The term Subcontractor as employed herein includes only those having a direct contract with the Contractor. It includes one who furnishes labor and materials which are incorporated into the Work but does not include one who merely furnished materials incorporated into the Work by the labor of others.

(u) *Work; Project*.—The terms Work and Project shall mean the entire completed construction required to be furnished under the Contract Documents.

END OF SECTION

SUPPLEMENTARY CONDITIONS**GENERAL** (Example, if any conditions exist)

The provisions in these Supplementary Conditions shall govern in the event of any conflict between the General Conditions and the provisions herein.

Policy “A”. – Compaction Tests and Shop Drawing Submittals

Please contact Mr. Joel Herndon, the Macon Water Authority’s (the “Owner’s”) Chief Inspector, at 478.464.5639 before commencing the construction activity. Compaction tests, where required, shall be performed in accordance with Macon Water Authority’s policy. The **Contractor** and the soil testing laboratory shall contact Mr. Herndon before the testing. The location at which the tests are performed will be decided by our inspection crew. The test report shall be submitted to the Engineering Division before the Owner can accept the Project for operation and maintenance. The **Contractor** shall submit five (5) copies of the shop drawings (ductile iron pipe, gate valve, valve box, ductile iron fittings, fire hydrant, manholes, manhole frames and covers, gravity sewer pipe, support structures, appurtenances, etc.) before installation. The **Contractor** will not be permitted to install materials and appurtenances until all the shop drawings are approved. The **Contractor** shall submit two copies of as-built drawings after the completion of construction but before the Project is accepted for operation and maintenance. The as-built drawings shall include the following for water/sewer portion of the Project: location of water main, valves, fire hydrants, fittings, water services to each lot, location of sewer mains, manholes (including rim and invert elevations), distance and angle between manholes, distance and length of each lateral from manholes, location of water main, gate valves, fire hydrants and fittings, width of easements and any other pertinent information.

Note: See Section 01720 for additional requirements.

Policy “B”. – Televising: NOT USED

Policy “C”. – As-Built: Produce and submit “AS-BUILT” survey of the generator, electrical lines to and from transfer switch, and any other underground utilities that were encountered during the installation. As-Built drawings shall be prepared by a licensed Professional Engineer or Georgia Registered Land Surveyor, as appropriate for the project, and shall be submitted before the project is accepted by the Owner for operation and maintenance and before any project plat is signed.

The As-Built drawings shall be submitted in either the (.dxf) or the (.dwg) version DWG 2010 or later on a USB Flash Drive, along with two (2) sets of plans in the same format as shown on the drive. The As-Built drawings shall be submitted on a (24” x 36”) sheet. The vertical and horizontal accuracy of the as-builts shall be within 0.1-foot accuracy.

All relative information such as right-of-way, property corners, state plane monuments, etc. shall be located and tied to Georgia State Plane Coordinates.

Policy “D” – Payment Estimate Form – The **Contractor** shall generate an EXCEL spreadsheet listing all items in the Proposal and columns for quantities this period, total this period, total quantities to date, and total amount to date for a detail backup for the attached pay estimate summary sheet.

MWA PAY ESTIMATE FORM – FOLLOWS ON SEPARATE PAGE

- **Project Milestone & Scheduling-** It is the desire of the Owner to complete this Project within the Contract Time allocated in the Contract Documents.

END OF SECTION



PAY ESTIMATE Summary Sheet

Macon Water Authority

790 Second Street P.O. Box 108
Macon GA 31202

Phone: (478) 464-5600

Fax: (478) 738-3864

Project Name: _____

MWA's Project Number: 52GRAV-RBLD-25

Pay Estimate Number: _____ Partial: _____

Pay Period: _____ Final: _____

Original Contract Amount: \$ _____

Total Change Orders to Date: _____

Current Contract Amount: \$ _____

Original contract Work Performed to Date: _____

Change Order Work Performed to Date: _____

Materials Stored on Job Site: _____

Subtotal: _____

Less (5 %) Previous Retainage: _____

Subtotal: _____

Less Previous Payments: _____

Current Invoice Amount: _____

Less (5 %) Current Retainage: _____

Balance Due This Payment: _____

According to the best of my knowledge and belief, all items and amounts shown on the face of this Pay Estimate are correct; that all Work has been performed or materials supplied, or both, in full accordance with the requirements of the Contract Documents, or duly authorized deviations or additions thereto; that the foregoing is a true and correct statement of the Contract Price account up to and including the last day of the period covered by this Pay Estimate; that none of the "Balance Due This Payment" has been received, and that the undersigned and its Subcontractors have complied with all the labor provisions of the Contract Documents.

The Contractor further certifies that on those items of Work not disputed that all payables, materials, bills, and other indebtedness connected with the Work have been paid (less retention equal to that being retained by the Owner) for Work covered by previous payments. Quantities on request for partial payment are estimated only. Final quantities are by a final survey and "as built" drawings by Contractor.

(Contractor's Company Name-PRINT)

By: _____
(Signature of Contractor's Authorized Representative)

Date: _____

Title: _____

By: _____
MWA-Inspector

By: _____
Project Engineer

By: _____
MWA-Project Manager

Date: _____

Date: _____

Date: _____

SECTION 01010**SUMMARY OF WORK****PART 1 GENERAL****1.1 DESCRIPTION**

- A. The Work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals and performing all operations in connection with replacing three (3) 75' diameter Thickener mechanisms and associated components, and clarifier #6.
- B. All Work described above shall be performed as specified in writing to the Contractor. All work shall be done by those skilled in the type of work involved. When new work adjoins, connects or abuts existing work, the latter shall be altered as necessary and the work connected in a substantial and approved workmanlike manner. All work shall match as nearly as practical the existing, adjoining, and/or adjacent similar work. All existing work which is to remain, that is moved or disturbed or damaged by the contractor's operations shall be restored properly to original condition or replaced at no cost to the Owner.

1.2 PROJECT LOCATION

The equipment and materials proposed to be installed are shown on the project plans. The bidders are encouraged to visit the work sites and acquaint themselves with all the requirements of these specifications and all local conditions that may affect the work.

1.3 QUANTITIES

The exact quantities and dates of service are unknown at this time. The Owner reserves the right to alter the quantities of work to be performed or to extend or shorten the improvements at any time when and as found necessary, and the Contractor shall perform the work as altered, increased or decreased. Payment for such increased or decreased quantity will be made in accordance with the Instructions to Bidders. No allowance will be made for any change in anticipated profits nor shall such changes be considered as waiving or invalidating any conditions or provisions of the Contract.

1.4 SCOPE OF WORK

The work to be performed will include, but is not limited to the following items, which shall be provided by the contractor:

- A. Furnishing all labor, materials, tools, equipment and incidentals and performing all operations in connection with replacing three (3) 75' diameter thickener mechanism and associated components and replace clarifier #6. Also consists of replacing three (3) Hydro Gate weir gates located at the splitter box prior to the thickeners per specifications. See Appendix A.

- B. Any additional areas that is required to be removed or modified that exceeds the area or length indicated in the bid document must be approved by the engineer of record prior to the demolition. No payment will be made for any work not identified in the bid document without having been approved by the engineer of record prior to the work being completed.
- C. Work is to be performed Monday through Friday. Work hours can be during regular business hours or from sunrise to sunset. Any weekend work must be approved by the Owner and properly notified, preferably 48 hours in advance.
- D. Contractor acknowledges and agrees that restroom facilities at the project site are not available for use by Contractor or its employees, agents, or subcontractors. Contractor shall ensure that all such personnel utilize restroom facilities located off-site or at Contractor's option, Contractor may, at its sole cost and expense, provide and maintain a portable toilet (e.g., port-a-potty) for use by its employees, subject to Owner's prior approval of the type and placement, and in compliance with all applicable laws, regulations, and sanitation requirements.
- E. Coordination. All sequencing of Work affecting Plant operations shall be coordinated in advance with the Plant Operations Manager (or their designee). Contractor shall submit a proposed sequence and schedule at least 14 calendar days prior to commencement of any activity that could affect Plant operations. The Owner or Plant Operations Manager may require reasonable modifications to the sequence or schedule to maintain safe and continuous Plant operations.
- F. At no time shall more than one (1) thickener be taken offline for work. Contractor shall plan and execute activities so as to ensure that all other thickeners remain fully operational.
- G. Site Check-In/Check-Out. Contractor personnel shall report to Plant personnel upon arrival each morning and immediately prior to departure each evening. The Contractor shall maintain a daily log of arrivals and departures, including time and names of personnel, and shall provide the log to the Owner on a weekly basis.. Failure to comply may result in the removal of personnel from the Site and/or other remedies as set forth in this Agreement.

1.5 PARTIAL OWNER OCCUPANCY

The existing facilities to which these improvements are being made will continue operation during the period of construction.

PART 2.0 CONSTRUCTION SPECIFICATIONS

2.1 CONSTRUCTION

- A. Guarantee: In the event that an examination by the Owner reveals evidence of defective materials or workmanship within a period of one year after final completion and acceptance of the work, the Owner may order such defective material replaced and the contractor shall remove and replace the material at his own expense, in a manner acceptable to the Owner.

2.2 PAYMENT

- A. Payment: All work included in the contract will be paid for on a unit and quantities basis.

END OF SECTION

ALLOWANCES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall include in his lump sum bid proposal the allowances stated on the Bid Form. The contractor shall cause the work covered by this allowance to be provided by such suppliers as the Owner may select. The Contractor's cost for overhead and profit, handling, coordinating and any other costs that are necessary to complete items to be completed using allowances will be agreed to in writing by all parties prior to any work beginning.

PART 2 – PRODUCTS: As noted on the Bid Form.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Contractor shall submit proposals for all work to be covered by Allowances.

END OF SECTION

MEASUREMENT AND PAYMENT**PART 1 GENERAL****1.01 SCOPE**

- A. The Bid lists each item of the Project for which payment will be made. No payment will be made for any items other than those listed in the Bid.
- B. Required items of work and incidentals necessary for the satisfactory completion of the work which are not specifically listed in the Bid, and which are not specified in this Section to be measured or to be included in one of the items listed in the Bid, shall be considered as incidental to the work. All costs thereof, including Contractor's overhead costs and profit, shall be considered as included in the lump sum or unit prices bid for the various Bid items. The Contractor shall prepare the Bid accordingly.
- C. Work includes the clearing and mowing of various existing easements, complete as specified herein, when executed as a separate bid item for the restoration or maintenance of access along the easement. Furnishing all labor, equipment, tools and materials, which are not furnished by the Owner and performing all operations required to complete the work satisfactorily, in place, as specified.

1.02 DESCRIPTIONS

- A. Measurement of an item of work will be by the unit indicated in the Bid.
- B. Final payment quantities shall be determined from documented measurements.
- C. Payment will include all necessary and incidental related work not specified to be included in any other item of work listed in the Bid.
- D. Unless otherwise stated in individual sections of the Specifications or in the Bid, no separate payment will be made for any item of work, materials, parts, equipment, supplies or related items required to perform and complete the work. The costs for all such items required shall be included in the price bid for item of which it is a part.
- E. Payment will be made by extending unit prices multiplied by quantities provided and then summing the extended prices to reflect actual work. Such price and payment shall constitute full compensation to the Contractor for furnishing all labor, equipment, tools and materials not furnished by the Owner and for performing all operations required to provide to the Owner the entire Project, complete in place, as specified and as indicated on the Drawings.
- F. "Products" shall mean materials or equipment permanently incorporated into the work.

1.03 CASH ALLOWANCES

- A. **See Section 01020.**

1.04 MOBILIZATION

- A. No separate payment shall be made for mobilization. All mobilization costs shall be included in the unit price bid for the item to which it pertains.

END OF SECTION

PROJECT MEETING

PART 1 GENERAL

1.01 SCOPE

- A. Work under this Section includes all scheduling and administering of pre-construction and progress meetings as herein specified and necessary for the proper and complete performance of this Work.
- B. Scheduling and Administration by Engineer:
 - 1. Prepare agenda.
 - 2. Make physical arrangements for the meetings.
 - 3. Preside at meetings.
 - 4. Record minutes and include significant proceedings and decisions.
 - 5. Distribute copies of the minutes to participants.

1.02 PRECONSTRUCTION CONFERENCE

- A. The Engineer shall schedule the preconstruction conference prior to the issuance of the Notice to Proceed.
- B. Representatives of the following parties are to be in attendance at the meeting:
 - 1. Owner.
 - 2. Engineer.
 - 3. Contractor and superintendent.
 - 4. Major subcontractors.
 - 5. Representatives of governmental or regulatory agencies when appropriate.
- C. The agenda for the preconstruction conference shall consist of the following as a minimum:
 - 1. Distribute and discuss a list of major subcontractors and a tentative construction schedule.
 - 2. Critical work sequencing.

3. Designation of responsible personnel and emergency telephone numbers.
4. Processing of field decisions and change orders.
5. Adequacy of distribution of Contract Documents.
6. Schedule and submittal of shop drawings, product data and samples.
7. Pay request format, submittal cutoff date, paydate and retainage.
8. Procedures for maintaining record documents.
9. Use of premises, including office and storage areas and Owner's requirements.
10. Major equipment deliveries and priorities.
11. Safety and first aid procedures.
12. Security procedures.
13. Housekeeping procedures.
14. Workhours.

1.03 PROJECT COORDINATION MEETINGS

Project Coordination Meetings may be requested at any time at the discretion of the Owner, Engineer or Contractor. The party requesting a meeting shall provide the other two parties with as much notice as possible, as well as a written agenda for such meeting.

END OF SECTION

CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.01 SCOPE

- A. The work under this Section includes preparing, furnishing, distributing, and periodic updating of the construction schedules as specified herein.
- B. The purpose of the schedule is to demonstrate that the Contractor can complete the overall Project within the Contract Time and meet all required interim milestones.

1.02 SUBMITTALS

- A. Overall Project Schedule (OPS)
 - 1. Submit the schedule within 10 days after date of the Notice to Proceed.
 - 2. The Engineer will review the schedule and return it within 10 days after receipt.
 - 3. If required, resubmit within 10 days after receipt of a returned copy.
- B. Near Term Schedule (NTS)
 - 1. Submit the first Near Term Schedule within 10 days of the Notice to Proceed.
 - 2. The Engineer will review the schedule and return it within 10 days after receipt.
- C. Submit an update of the OPS and NTS with each progress payment request. Can be submitted electronically.

1.03 APPROVAL

Approval of the Contractor's detailed construction program and revisions thereto shall in no way relieve the Contractor of any of Contractor's duties and obligations under the Contract. Approval is limited to the format of the schedule and does not in any way indicate approval of, or concurrence with, the Contractor's means, methods and ability to carry out the Work.

1.04 OVERALL PROJECT SCHEDULE (OPS)

- A. The Contractor shall submit to the Engineer for approval a detailed Overall Project Schedule of the Contractor's proposed operations for the duration of the Project. The OPS shall be in the form of a Gantt/bar chart.

B. Gantt/Bar Chart Schedule

1. Each activity with a duration of five or more days shall be identified by a separate bar. Activities with a duration of more than 20 days shall be sub-divided into separate activities.
2. The schedule shall include activities for shop drawing preparation and review, fabrication, delivery, and installation of major or critical path materials and equipment items.
3. The schedule shall show the proposed start and completion date for each activity. A separate listing of activity start and stop dates and working day requirements shall be provided unless the information is shown in text form on the Gantt/bar chart.
4. The schedule shall identify the Notice to Proceed date, the Contract Completion date, major milestone dates, and a critical path.
5. The schedule shall be printed on a maximum 11 x 17-inch size paper. If the OPS needs to be shown on multiple sheets, a simplified, one page, summary bar chart showing the entire Project shall be provided.
6. The schedule shall have a horizontal time scale based on calendar days and shall identify the Monday of each week.
7. The schedule shall show the precedence relationship for each activity.

1.05 NEAR TERM SCHEDULE (NTS)

- A. The Contractor shall develop and refine a detailed Near Term Schedule showing the day to day activities with committed completion dates which must be performed during the upcoming 30 day period. The detailed schedule shall represent the Contractor's best approach to the Work which must be accomplished to maintain progress consistent with the Overall Project Schedule.
- B. The Near Term Schedule shall be in the form of Gantt/bar chart and shall include a written narrative description of all activities to be performed and describe corrective action to be taken for items that are behind schedule.

1.06 UPDATING

- A. Show all changes occurring since previous submission of the updated schedule.
- B. Indicate progress of each activity and show actual completion dates.
- C. The Contractor shall be prepared to provide a narrative report at the Project Coordination Meetings. The report shall include the following:

1. A description of the overall Project status and comparison to the OPS.
2. Identify activities which are behind schedule and describe corrective action to be taken.
3. A description of changes or revisions to the Project and their effect on the OPS.
4. A description of the Near Term Schedule of the activities to be completed during the next 30 days. The report shall include a description of all activities requiring participation by the Engineer and/or Owner.

END OF SECTION

Part 1 General

1.1 Scope

- A. The work under this Section includes submittal to the Engineer of shop drawings, product data and samples required by the various Sections of these Specifications.
- B. Submittal Contents: The submittal contents required are specified in each Section.
- C. Definitions: Submittals are categorized as follows:
 - 1. Shop Drawings
 - a. Shop drawings shall include technical data, drawings, diagrams, procedure and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.
 - b. Provide newly-prepared information with graphic information at accurate scale (except as otherwise indicated) with name or preparer (firm name) indicated. The Contract Drawings shall not be reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note dimensions that are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawings to be used in connection with the Work without appropriate final "Action" markings by the Engineer.
 - c. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, Specification Section, schedule or room numbers shown on the Contract Drawings.
 - d. Minimum assembly drawings sheet size shall be 11 x 17-inches.
 - e. Minimum detail sheet size shall be 8-1/2 x 11-inches.
 - f. Minimum Scale:
 - i. Assembly Drawings Sheet, Scale: 1-inch = 30 feet.
 - ii. Detail Sheet, Scale: 1/4-inch = 1 foot.
 - 2. Product Data
 - a. Product data includes standard published information on materials, products and systems, not specially prepared for this Project, other than the designation of selections from among available choices printed therein.

- b. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to the Project. Include manufacturer's standard published recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements.
3. Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work but not processed as shop drawings, product data or samples.

1.2 Specific Category Requirements

- A. General: Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal. Submittals shall contain:
 1. The date of submittal and the dates of any previous submittals.
 2. The Project title.
 3. Numerical submittal numbers, starting with 1.0, 2.0, etc. Revisions to be numbered 1.1, 1.2, etc.
 4. The Names of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
 5. Identification of the product, with the Specification Section number, permanent equipment tag numbers and applicable Drawing No.
 6. Field dimensions, clearly identified as such.
 7. Relation to adjacent or critical features of the work or materials.
 8. Applicable standards, such as ASTM .
 9. Notification to the Engineer in writing, at time of submissions, of any deviations on the submittals from requirements of the Contract Documents.

10. Identification of revisions on resubmittals.
11. An 8 x 3-inch blank space for Contractor and Engineer stamps.
12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria and coordination of the information within the submittal with requirements of the work and of Contract Documents.
13. Submittals showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

1.3 Routing of Submittals

- A. Submittals and routine correspondence shall be routed as follows:
 1. Supplier to Contractor (through representative if applicable)
 2. Contractor to Engineer
 3. Engineer to Contractor and Owner
 4. Contractor to Supplier

Part 2 Products

2.1 Shop Drawings

- A. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work.
- B. Submit all shop assembly drawings, as a digital image, pdf format, scanned at the original scale.
- C. Submit all shop drawings as a digital image, pdf format, scanned at the original scale.

2.2 Manufacturer's Literature

- A. Where content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the Engineer's review.

Part 3 Execution

3.1 Contractor's Coordination of Submittals

- A. Prior to submittal for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:
 - 1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.
 - 2. Coordinate as required with all trades and all public agencies involved.
 - 3. Submit a written statement of review and compliance with the requirements of all applicable technical Specifications as well as the requirements of this Section.
 - 4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, all deviations from the Contract Documents.
- B. Each and every copy of the shop drawings and data shall bear the Contractor's stamp showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement.
- C. The Owner may backcharge the Contractor for costs associated with having to review a particular shop drawing, product data or sample more than two times to receive a "No Exceptions Taken" mark.
- D. Grouping of Submittals
 - 1. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items.
 - 2. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the Contractor's responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them and then make one submittal to the Engineer along with Contractor's comments as to compliance, non-compliance or features requiring special attention.
- E. Schedule of Submittals
 - 1. Within 30 days of Contract award and prior to any shop drawing submittal, the Contractor shall submit a schedule showing the estimated date of submittal and the desired approval date for each shop drawing anticipated. A reasonable period shall be scheduled for review and comments. Time lost due to unacceptable submittals shall be the Contractor's responsibility and some time allowance for resubmittal shall be provided. The schedule shall provide for submittal of items which relate to one another to be submitted concurrently.

3.2 Timing of Submittals

- A. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.
- B. In scheduling, allow sufficient time for the Engineer's review following the receipt of the submittal.

3.3 Reviewed Shop Drawings

- A. Engineer Review
 - 1. Allow a minimum of 30 days for the Engineer's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination. Allow a minimum of two weeks for reprocessing each submittal. Advise the Engineer on each submittal as to whether processing time is critical to progress of the work, and therefore the work would be expedited if processing time could be foreshortened.
 - 2. Acceptable submittals without any comments will be marked "No Exceptions Taken".
 - 3. Submittals containing comments for clarification will be marked "Exceptions Noted".
 - 4. Submittals marked "Revise and Resubmit" must be revised to reflect required changes and the initial review procedure repeated.
 - 5. The "Rejected" notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.
- B. No work or products shall be installed without a drawing or submittal bearing the "No Exceptions Taken" notation. The Contractor shall maintain at the job site a complete set of shop drawings bearing the Engineer's stamp.
- C. Substitutions: In the event the Contractor obtains the Engineer's approval for the use of products other than those which are listed first in the Contract Documents, the Contractor shall, at the Contractor's own expense and using methods approved by the Engineer, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.
- D. Use of the "No Exceptions Taken" notation on shop drawings or other submittals is general and shall not relieve the Contractor of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the Contract

Submittal Procedures

Documents. The Engineer's review shall not relieve the Contractor of responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. The Contractor is also responsible for information that pertains solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

3.4 Resubmission Requirements

- A. Shop Drawings
 - 1. Revise initial Drawings as required and resubmit as specified for initial submittal, with the resubmittal number shown.
 - 2. Indicate on Drawings all changes which have been made other than those requested by the Engineer.
- B. Project Data and Samples: Resubmit new data and samples as specified for initial submittal, with the resubmittal number shown.

END OF SECTION

SAFETY IN WATER / WASTEWATER WORKS

PART 1 - GENERAL

1.01 SCOPE

- A. The Contractor shall be responsible for conducting all Work in a safe manner and shall take reasonable precautions to ensure the safety and protection of workers, property and the general public. The Contractor's responsibility for protection is described in Articles 21 and 22 of the General Conditions.
- B. All construction shall be conducted in accordance with the latest applicable requirements for Part 1926 of the Occupational Safety and Health Act, Safety and Health Regulations for Construction, Section 107 of the Contract Work Hours and Safety Standards Act, as well as any other local, state or federal safety codes and regulations.
- C. The Contractor shall designate a trained and qualified employee who is to be responsible for ensuring that the Work is performed safely and in conformance with all applicable regulations.
- D. The Contractor shall determine the safety hazards involved in prosecuting the Work and the precautions necessary to conduct the Work safely. If the Contractor is unsure as to any special hazards which may be unique to the various processes and facilities at the project site, it shall be Contractor's responsibility to determine such information prior to beginning the Work.
- E. The Contractor shall bear all risks associated with performing the Work and shall fully indemnify and hold harmless the Owner and Engineer.

1.02 SPECIAL REQUIREMENTS – Not Used.

END OF SECTION

4/29/2026

Rebuild Gravity Thickeners 1,2, and 3
and Clarifier #6 at Rocky Creek WRF

SECTION 01701

CONTRACT CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Administrative provisions for Substantial Completion and for final acceptance.

1.02 RELATED REQUIREMENTS

- A. Section 01340 – Shop Drawings, Product Data and Samples
- B. Section 01720 – Record Documents
- C. Section 01730 – Operation and Maintenance Data
- D. Section 01740 – Warranties and Bonds

1.03 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the work substantially complete, he shall prepare a punch list of uncompleted items and send to the Engineer for review. At the same time, the Contractor shall request in writing that the Engineer schedules a pre-final inspection.
- B. The Engineer will review the punch list submitted by the Contractor and determine if the project is substantially complete.
- C. If the Engineer determines that the project is not substantially complete, he will notify the Contractor in writing which items need to be finished before the project can be considered substantially complete. The Contractor shall continue working to complete all punch list items and resubmit a revised punch list when he considers the work is substantially complete.
- D. When the Engineer determines that the work is substantially complete, he will schedule a pre-final inspection with the Owner, Contractor and Engineer. A final punch list will be prepared at this time.
- E. After all punch list items have been completed, the Contractor shall send a request in writing to the Engineer to schedule a final inspection. When all punch list items are complete, the Engineer will issue a certificate of substantial completion.

1.04 FINAL COMPLETION

- A. When the Contractor considers that all of the work is complete, he shall submit the following certificates:
 - 1. All work has been completed and inspected for compliance with the Contract Documents and all deficiencies listed with the certificate of substantial completion have been corrected.
 - 2. All equipment and systems have been tested, adjusted and are fully operational.
 - 3. Owner's personnel have been fully instructed in the operation of all equipment (include sign off for each system).
 - 4. Work is complete and ready for final inspection.
- B. Should Engineer's inspection find work incomplete, he will promptly notify Contractor in writing listing observed deficiencies.
- C. Contractor shall remedy deficiencies and send a request for another final inspection.
- D. When Engineer finds work is complete, he will process final pay request documents.

1.05 REINSPECTION FEES

- A. Should status of completion of work require reinspection by Engineer due to failure of work to comply with Contractor's claims on pre-final or final inspection, the Owner will back charge the Contractor for each extra reinspection required of the Engineer. The Contractor shall reimburse the Owner by certified check prior to final payment of retainage.

1.06 CLOSEOUT SUBMITTALS

- A. Evidence of Compliance with Requirements of Governing Authorities –
 - 1. Certificate of Occupancy as required by local codes.
 - 2. Certificates of Inspection approvals required for plumbing, mechanical and electrical systems as required by local codes if applicable.
 - 3. Project acceptance and punchlist items as required by Macon Water Authority Inspector.
- B. Project Record Documents – Under provisions of Section 01720.
- C. Operation and Maintenance Data – Under provisions of Section 01730.

- D. Warranties and Bonds – Under provisions of Section 01740.
- E. Keys and Keying Schedule.
- F. Evidence of Payment and Release of Liens – In accordance with Conditions of the Contract.
- G. Consent of Surety to Final Payment – Consent of Surety is to be sent by Surety directly to Carter and Sloope to the attention of the Project Engineer.

1.07 APPLICATION FOR FINAL PAYMENT

- A. Prior to application for final payment, the Contractor shall give the Engineer a list of all additions or deletions not previously approved by change order.
- B. The Engineer will review this list and prepare a final closeout change order for the items that are justified by the terms of the contract or approved by field order.
- C. After approval of the final closeout change order the Contractor may submit his application for final payment.

PART 2 – PRODUCTS: Not Used.

PART 3 – EXECUTION: Not Used.

END OF SECTION

OPERATION AND MAINTENANCE DATA

1.1 REQUIREMENTS INCLUDED:

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract.
- B. Furnish any special tools provided by manufacturer for such maintenance and operation.
- C. Instruct Owner's personnel in operation of equipment and systems.

1.2 RELATED REQUIREMENTS

- A. Section 00 17 00: Contract Closeout Procedures

1.3 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional manual for use by Owner's personnel. Submit two copies of complete manual in final form.
- B. Format:
 - 1. Size: 8 1/2 x 11 inches.
 - 2. Text: Manufacturer's printed data, or neatly typewritten.
 - 3. Drawings:
 - a. Provide reinforced punched binder tab; bind in with text.
 - b. Fold larger drawings to size of text pages.
 - 4. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - a. Provide typed description of product, and major component parts of equipment.
 - b. Provide indexed tabs.
 - 5. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List the following:
 - a. Title of project.
 - b. Identity of separate structure as applicable.
 - c. Identification of general subject matter covered in the manual.
 - 6. Binders:
 - a. Commercial quality three-ring binders with durable and cleanable plastic covers.
 - b. Maximum ring size: 1 inch.
 - c. When multiple binders are used, correlate the data into related consistent groups.

1.4 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
 - 1. Contractor, name of responsible principal, address and telephone number.
 - 2. A list of each product required to be included, indexed to content of the

volume.

3. List, with 3 EACH product, name, address and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement.
4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

B. Product Data:

1. Include only those sheets which are pertinent to the specific product. 1 00 17 30
2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable information.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
 - c. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 - d. Do not use Project Record Documents as maintenance drawings.

D. Written text, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.
2. Provide logical sequence of instructions for each procedure.
3. Copy of each warranty and service contract issued.
4. Provide information sheet for Owner's personnel, indicating:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties.

E. Other information required by pertinent Sections of the Project Manual.

1.5 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection of acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction.
- C. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

END OF SECTION

4/29/2026

Rebuild Gravity Thickeners 1,2, and 3 and
Clarifier #6 at Rocky Creek WRF

WARRANTIES AND BONDS**PART 1 GENERAL****1.01 PROJECT MAINTENANCE AND WARRANTY**

- A. Maintain and keep in good repair the Work covered by these Drawings and Specifications until acceptance by the Owner.
- B. The Contractor shall warrant for a period of one year from the date of Owner's written acceptance of certain segments of the Work and/or Owner's written final acceptance of the Project, as defined in the Contract Documents, that the completed Work is free from all defects due to faulty products or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect throughout the warranty period.
- C. The Contractor shall not be obligated to make replacements which become necessary because of ordinary wear and tear, or as a result of improper operation or maintenance, or as a result of improper work or damage by another Contractor or the Owner, or to perform any work which is normally performed by a maintenance crew during operation.
- D. In the event of multiple failures of major consequences prior to the expiration of the one year warranty described above, the affected unit shall be disassembled, inspected and modified or replaced as necessary to prevent further occurrences. All related components which may have been damaged or rendered non-serviceable as a consequence of the failure shall be replaced. A new 12 month warranty against defective or deficient design, workmanship, and materials shall commence on the day that the item is reassembled and placed back into operation. As used herein, multiple failure shall be interpreted to mean two or more successive failures of the same kind in the same item or failures of the same kind in two or more items. Major failures may include, but are not limited to, cracked or broken housings, piping, or vessels, excessive deflections, bent or broken shafts, broken or chipped gear teeth, premature bearing failure, excessive wear or excessive leakage around seals. Failures which are directly and clearly traceable to operator abuse, such as operations in conflict with published operating procedures or improper maintenance, such as substitution of unauthorized replacement parts, use of incorrect lubricants or chemicals, flagrant over or under lubrication and using maintenance procedures not conforming with published maintenance instructions, shall be exempted from the scope of the one year warranty. Should multiple failures occur in a given item, all products of the same size and type shall be disassembled, inspected, modified or replaced as necessary and rewarranted for

one year.

- E. The Contractor shall, at Contractor's own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals and shall perform such work or reconstruction as may be made necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the Work performed by the Contractor. Such repair shall also include refilling of trenches, excavations or embankments which show settlement or erosion after backfilling or placement.
- F. Except as noted on the Drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the Contract. Any and all damage to any facility not designated for removal, resulting from the Contractor's operations, shall be promptly repaired by the Contractor at no cost to the Owner.
- G. The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of one year from the date of final acceptance. In the event the repairs and maintenance are not made immediately and it becomes necessary for the owner of the road to make such repairs, the Contractor shall reimburse the owner of the road for the cost of such repairs.
- H. In the event the Contractor fails to proceed to remedy the defects upon notification within 15 days of the date of such notice, the Owner reserves the right to cause the required materials to be procured and the work to be done, as described in the Drawings and Specifications, and to hold the Contractor and the sureties on Contractor's bond liable for the cost and expense thereof.
- I. Notice to Contractor for repairs and reconstruction will be made in the form of a registered letter addressed to the Contractor at Contractor's home office.
- J. Neither the foregoing paragraphs nor any provision in the Contract Documents, nor any special guarantee time limit implies any limitation of the Contractor's liability within the law of the place of construction.

END OF SECTION

APPENDIX A

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

Part 1 – General

1. DESCRIPTION OF WORK

- A. Replace three (3) 75' diameter Thickener mechanisms and associated components as described within this specification. The equipment shall include but not be limited to a center drive unit with torque control, walkway and platform with handrail, stationary center influent column, center feed well, drive cage, scum skimmer, scum box, anchor bolts and all other appurtenances required or shown on the drawings.
- B. Replace three (3) Hydro Gate weir gates located at the splitter box prior to the thickeners. A drawing of the current gates will be included with this specification.
- C. The thickeners were originally designed by EIMCO. The design parameters per the original drawing: 23920-01-A, B, & C: December 1983

2. DIMENSIONAL INFORMATION UNDERSTANDING

- A. All dimensional information shall be field verified by contractor prior to issuing prefabrication submittals and start of any manufacturing.
- B. Prefabrication site visit to see the equipment must be arranged with two weeks advanced notice

3. WARRANTY

- A. The mechanism shall be warranted for two years from the time the mechanism is approved as operationally functional.
- B. The drive and main bearings shall be warranted for ten years.

Part 2-PRODUCTS

1. GENERAL REQUIREMENTS

- A. The thickeners shall be the center drive type supported on a stationary influent column with the flow entering the bottom of the influent column and flowing upwards to the inlet openings at the water surface. See attached drawings.
- B. Major Components of the thickener's equipment shall include but not be limited to:
 - 1. Center drive mechanism, gear motor and overload alarm
 - 2. Walkway support with handrail and grating
 - 3. Center support/influent column
 - 4. Center drive cage

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

5. Feed well and supports
 6. Scum skimmers
 7. Scum trough with flush valve
 8. Fasteners and anchor bolts
 9. Stainless steel baffles with stand-off bracketing
 10. Stainless steel notched weir plates
 11. All other components necessary for a complete operating system.
 12. Bead blast all non-submerged stainless components
- C. Require that all structural sections show a comparable price for fabrication out of 304L Stainless Steel and 316L Stainless Steel
- D. The weir gates at the splitter box are constructed of aluminum. The new gates shall be made of 304L stainless steel to prevent corrosion.
1. The gates shall have a 30" diameter handwheel for operation.
 2. The stem shall have a clear plastic cover to protect from the elements

2. GENERAL DESIGN CRITERIA

- A. Drive Design Requirements
1. Mechanism design shall be such that there are no chains, sprockets, or bearings below or in contact with any water, including condensate.
 - a) Drive shall have no lower pinion support bearing.
 2. All planetary gear designs. No worm gearing.
 3. Primary load-carrying bearing shall be a four-point loading, precision bearing.
 4. Gearing shall be designed and rated per the current American Gear Manufacturers Association Standards. (AGMA)
 5. Drive shall have a minimum operating life of 20 years at the continuous torque and speed rating.
 6. All electrical and torque-limiting equipment is to be enclosed in NEMA 4X SS boxes. No plastic or fiber-reinforced plastics.
 7. All conduits shall be 1" SS.
- B. Fabricated assemblies shall be shipped in the largest sections permitted by carrier regulations and properly match marked for ease of construction. Match markings shall be clearly defined on all supplied installation and fabrication drawings.
- C. Fabricated and Structural Steel shall be per ASTM 304L SS standards and alternate of ASTM 316L SS standards.
- D. Minimum metal thickness shall be ¼" for all submerged plate and members unless otherwise specified.
- E. Submittal Requirements:
1. Mechanism
 - a) General arrangement drawings showing:

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

1. All major tank and mechanism dimensions and elevations,
 2. Anchor bolt's locations,
 3. Mechanism loadings on the tank,
2. Engineering calculations showing the mechanism components meet the design torque requirements listed above.
Engineering calculations showing the walkway and platform meet the design criteria listed in the Bridge Walkway section.
3. Drive
 - a) Calculations shall clearly specify the values used for the following design parameters for Surface Durability and Strength rating.
 - b) Number of Pinions
 - c) Actual face widths
 - d) Tooth geometry factor (I and J factors)
 - e) Load distribution factor
 - f) Allowable contact stress
 - g) Allowable bending stress
 - h) Pinion pitch diameter
 - i) Tooth diametral pitch
 - j) Hardness ratio factor
 - k) Elastic coefficient
 - l) Life factor

3. EQUIPMENT DESCRIPTION

A. DRIVE MECHANISM

1. General
 - a) The drive mechanism shall consist of an electric motor, primary reduction unit, and an enclosed final reduction unit consisting of a pinion and an internal tooth gear with a four-point contact precision bearing. Helical and planetary gear designs preferred.
2. Primary Reduction Unit
 - a) The primary reduction unit shall be mounted on the top of the final reduction unit and properly registered to maintain accurate centers for the final reduction gearing.
 1. All gears shall be planetary or helical, no worm gears or chains.
 2. The primary reduction unit shall have sufficient bearing capacity to fully support the pinion gear without a lower support bearing.
 3. The life of the primary gearbox bearings shall be more than 100,000 hours at the operating torque listed in the Equipment Design Criteria section.

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

4. The primary reducer shall be AGMA rated for 10 million cycles, when the drive is operating at the continuous output torque listed in the Equipment Design Criteria section.
5. The primary reduction unit shall be coated with two-part epoxy paint for high corrosion resistance or unit shall be constructed of 304L SS.

3. Final Reduction Unit

- a) The final reduction housing shall be manufactured from stainless steel plate 304L SS, supply alternate pricing for 316L SS. All welds shall conform to applicable specifications of the American Welding Standards (AWS). After welding, all mounting, and mating surfaces shall be machined to insure proper fit and alignment of the drive pinion and mating gear. The base plate on which the gear and bearing is mounted shall be flat within 0.008". The stainless-steel plate to which the intermediate pinion drive gearbox is mounted shall be a minimum of 1" thick. Thickness is to be established by vendor engineering.
- b) The final reduction housing shall employ a labyrinth seal between the housing and the main gear driven rotating member.
- c) The final reduction unit internal tooth gear shall be machined to AGMA grade 6 or higher. Gear teeth shall have a core hardness of 250 to 300 BHN, and be induction hardened to 55 Rc. The main gear set shall be rated per AGMA Standard 2001-C95 for 20 years at a continuous torque load of at least 36,000 ft. lbs. Gear pitch diameter shall be a minimum of 40".
- d) The main gear support bearings shall be four-point contact precision bearing.
- e) The final reduction unit pinion shall be made of heat-treated alloy steel and shall be mounted on the output shaft of the intermediate reduction gearbox. The gear teeth shall be induction hardened to 55 to 60 Rc.

4. Electric Motor

- a) The drive motor shall be IP65 Wash-down Rated, 1.15 Service Factor, Class H insulation.
 1. The motor will have a NEMA 4X disconnect mounted to the adjacent handrail. There shall also be an 8"x8" stainless steel panel with a On/Off selector switch with a phenolic tag indicating Hand/Off position.

5. Overload Device

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

- a) The overload protection device shall be housed in a stainless-steel housing and have two independent switches, which may energize an alarm circuit when the load on the mechanism approaches overload and open the motor circuit when an excessive overload occurs. The switches shall be enclosed in a NEMA 4X SS housing. Overload device shall have a 6" diameter Stainless Steel torque gauge indicating torque load on drive unit in ft-lbs. Overload alarm, and overload cut off torque settings shall be factory preset per customer specifications.
 - b) Supply 4-20 mA remote torque monitoring feedback signal.
 - c) The entire drive unit shall be designed for a maximum overload torque listed in the Equipment Design Criteria section, and the final reduction unit main gear set shall be designed for a momentary peak torque listed in the Equipment Design Criteria section. All calculations of gear and bearing life shall be made in accordance with the latest AGMA and AFBMA standards.
 - d) All lubrication shall be Mobil brand.
6. CENTER DRIVE PLATFORM
- a) The center drive platform shall provide access to the center drive assembly, lubrication fill and drainpipes, drive torque control and SS load rated NEMA 4X disconnect and a NEMA 4X panel with H/O/A switch, with phenolic placard indicating switch position.
 - b) The platform shall provide 36" clearance around the drive components. A removable section of the flooring shall provide access to the drive maintenance points.
 - c) The platform shall consist of Aluminum supported by the platform bottom members. Handrail shall be 2" Dia. aluminum.
7. BRIDGE WALKWAY
- a) The walkway bridge shall be constructed of structural I-beams or two side structural trusses of welded 3041 SS, alternate pricing for 3161 SS, with a 48" wide walkway consisting of Aluminum grating supported by the walkway bottom members. Handrail shall be 2 - rail aluminum handrail. In the case of structural truss construction, the side truss may serve as handrails for the walkway.
 - b) The bridge shall be supported by the center drive platform and the outer tank wall.
 - c) The bridge shall be designed for a total deadload plus a live load of 50 lbs. per square foot with the deflection not to exceed 1/480 of the span.
 - d) The bridge will have three sets of lighting similar to Clarifier #6.

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

- e) Six (6) lights total, Topaz Low Power Flood Light, Model: F-FL/50/XXK/KN/BZ-87, 120V
- f) 12"x10"x6" Hoffman Stainless Steel junction box to tie existing lighting circuit and conduit.
- g) All SS 1" conduit and fittings. Myers Hubs for all junction box penetrations.
- h) Lights will be on a Dusk to Dawn Photocell with a HOA switch located on the junction box.

8. STATIONARY INFLUENT COLUMN

- a) The influent column shall have a minimum $\frac{1}{4}$ " wall thickness with the diameter as listed in the Equipment Design Criteria. This shall conform to current engineering calculations by manufacture and not less than $\frac{1}{4}$ ".
- b) Top mounting plate shall be drilled and tapped per the hold down bolt pattern and size determined by gear box manufacture. Mounting surface to be fabricated from 304L SS, alternate pricing for 316L SS, plate and machined true to the vertical column within acceptable OEM standards. Top plate shall have rainwater relief hole installed in the middle, no less than 1-1/2" Dia.
- c) The column shall be designed to support the weight of the entire structure resting upon it and to withstand the mechanism design strength criteria.
- d) Influent discharge ports shall be included at the upper end of the influent column. These ports shall diffuse the flow entering the tank and ensure low velocity into the Influent Dispersion Well. Influent velocity shall not exceed 1.0 fps at the peak flow rate specified.

9. CENTER CAGE

- a) The center cage shall be a 304L SS, alternate pricing for 316L SS, box truss construction with connections for the sludge removal arms.
- b) The cage top shall bolt to the main gear.
- c) The cage shall be designed to withstand the mechanism's design torque.

10. FEED WELL

- a) The feed well shall be of the size indicated in the Equipment Design Criteria. It shall be supported by stainless steel supports attached to the center cage. The well shall be fabricated of $\frac{1}{4}$ " 304 SS, alternate pricing for 316L SS, plate with top and bottom reinforcing angles. Plate shall be thicker if OEM design designates yet not less than $\frac{1}{4}$ ".

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

- b) The feed well shall include (4) 4" by 12" scum port openings to allow escape of surface scum inside the well. A removable scum baffle shall be provided over the ports.
- c) Supply a ¾" Stainless Steel water line to the center of the clarifier to provide water to the feed well area. Discharge end should have a 6" nipple directing water to the feed well. A SS ball valve shall be installed near the perimeter wall of the clarifier to shut the water supply off.

11. SKIMMER

- a) There shall be mounted on each sludge collector arm a skimming device arranged to sweep the surface of the clarification compartment once per revolution, automatically removing scum and floating material into a scum box at the stainless-steel channel supported and extended tangentially from the feed well to a recessed adjustable pivoted scum scraper at the tank periphery.
- b) The scum scraper shall consist of aluminum scraper, double acting hinged connection, support arms, neoprene wipers, outer wear strip and positive means to maintain the blade against the baffle.
- c) The scum scrapers shall trap floating scum pushed outwards by the tangential stainless steel scum blade and efficiently deposit the solids into the scum trough.
- d) The scum trough shall be the size indicated in the Equipment Design Criteria and constructed of minimum ¼" 304L SS, alternate pricing for 316L SS, plate with a 6" outlet. To include an automatic flush valve mechanism to assure scum is effectively flushed.

12. ANCHOR BOLTS AND FASTENERS

- a) Anchor bolts shall be 304 stainless steel and be furnished by the equipment manufacture. All fasteners to be 304 stainless steel with 316 SS nuts.

Part 3 -Execution

A. INSTALLATION

- 1. Fabricator shall field verify tank dimensions prior to any material purchases and starting fabrication.
- 2. OEM shall establish hold points for contractor to allow for field verification from OEM that installation is correct.
- 3. OEM shall supply training for plant personnel.

Rocky Creek Thickener 1, 2, and 3

Replacement Specification

4. OEM shall review with maintenance the PPM's and Maintenance of the equipment.
5. Check and certify installation and instruct the plant personnel in the operation and maintenance. A minimum of 3 trips, per thickener for 5 days total, per thickener shall be provided.
6. Units will be taken out of service for supplier to get actual dimensions once bids have been awarded. Will coordinate this as to not disrupt operations.

Demolish the electrical in the photo below. Cap off below grade. Remove from power source in the control panel.



Rocky Creek Thickener 1, 2, and 3 Replacement Specification

Install a 12"x10"x6" Hoffman Stainless Steel junction box for the conduit in the below photo, as indicated in section 3. 7. f. Box shall be supported from the wall.



1.0 - GENERAL

1.01 Scope:

- A. This specification covers the work necessary to identify and repair spalled and damaged concrete, furnish and install a chemical resistant lining system, complete, to the clarifier troughs inside Clarifier #6 at the Rocky Creek Water Reclamation Facility. Work includes, but is not limited to, the following:
1. Bug hole repair, honeycomb repair, crack and joint detailing, penetration detailing, concrete surface preparation and installation of a chemical resistant lining system.

1.02 Referenced Specifications Codes and Standards

- A. Without limiting the generality of other requirements of these specifications, all work hereunder shall conform to the applicable requirements of the referenced portions of the following documents, to the extent that the requirements therein are not in conflict with the provisions of this Section. All references and standards listed shall be the latest revisions. Joint and individual documents are referenced.
1. SSPC – The Society for Protective Coatings
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4643
(412) 281-2331
 2. NACE – National Association of Corrosion Engineers
P.O. Box 218340
Houston, TX 77218-8340
(281) 492-0535
 - a. SSPC-SP 13/NACE No. 6 Surface Preparation of Concrete
 - b. SSPC-TU 2/NACE 6G197 "Design, Installation, and Maintenance of Coating Systems for Concrete Used in Secondary Containment"
 - c. SSPC-SP 5/NACE No. 1, White Metal Blast Cleaning
 - d. SSPC-SP10/NACE No. 2, Near White Metal Blast Cleaning
 - e. SSPC-SP 6/NACE No. 3, Commercial Blast Cleaning
 - f. NACE SP0892 "Linings over Concrete for Immersion Service"
 - g. NACE SP0188 "Discontinuity Holiday Testing of Protective Coatings"
 - h. NACE RP 6F-164 "Curing of Interior Tank Linings"
 - i. NACE RP 6F-166 "Recommended Practice for Inspection of Linings on Steel and Concrete"
 3. ICRI – International Concrete Repair Institute
3166 S. River Rd., Suite 132
Des Plaines, IL 60018

(847) 827-0830

- a. Technical Guideline No.03372, "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays"
- b. Technical Guideline No. 03731, "Guide for Selecting Application Methods for the Repair of Concrete Surfaces"
- c. Technical Guideline No. 03741/SSPC-TR 5/NACE Pub 02203, "Design, Installation, and Maintenance of Protective Polymer Flooring Systems for Concrete"

4. ASTM – American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
(610) 832-9585

- a. ASTM F1869 "Standard Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"
- b. ASTM E-337: Test Method for Measuring Humidity with a Psychrometer
- c. ASTM D 4258 "Practice for Surface Cleaning Concrete for Coating"
- d. ASTM D 4261 "Practice for Surface Cleaning Unit Masonry for Coating"
- e. ASTM D 4262 "Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces"
- f. ASTM D 4414 "Standard Practice for Measurement of Wet Film Thickness by Notch Gages"
- g. ASTM Committee D01.23: Test Method for Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Gauge
- h. ASTM D 4541 "Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers"
- i. ASTM D 4787 "Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates"
- j. ASTM D 5162 "Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates"

5. ACI – American Concrete Institute
Box 19150, Redford Station
Detroit, Michigan 48219
(248) 848-3700

- a. ACI 344R-T "Design and Construction of Circular Pre-stressed Concrete Structures with Circumferential Tendons"
- b. ACI 344R-W "Design and Construction of Circular Wire and Strand Wrapped Pre-stressed Concrete Structures"

- c. ACI 350-01 "Code Requirements for Environmental Engineering Concrete Structures"
- d. ACI 350.1 "Testing of Reinforced Concrete Structures for Water Tightness"
- e. ACI 350.2 "Concrete Structures for Containment of Hazardous Material"
- f. ACI 503 "Use of Epoxy Compounds with Concrete"
- g. ACI 504 "Guide to Sealing Joints in Concrete Structures"

1.03 Submittals:

- A. Submit product data for each component specified including data substantiating that the proposed materials comply with specified requirements, and recommendations by the manufacturer covering all materials.
- B. Samples of the cured system to include the following:
 - 1. Finish texture as determined by the owner or owners' authorized representative.
 - 2. Stepped samples showing stages of multi-layer applications.

1.04 Quality Assurance

- A. Applicator Qualifications:
 - 1. Minimum 5 years experience in application of specified products.
 - 2. Approved by manufacturer of specified coating system.
- B. The Applicator is solely responsible for the quality control inspection and testing. Applicator shall monitor and be responsible for all environmental, surface preparation, application and quality control testing compliance at the location where coating work is undertaken.
- C. Pre-Installation Conference:
 - 1. The Applicator and the Coating System Manufacturer's representative shall meet on site with the Owner's Representative. Particular emphasis shall be placed on the following:
 - a. Extent and quantity of concrete repair required.
 - b. Specific surface preparation requirements.
 - c. Material application requirements.
 - d. Environmental conditions.
 - e. Project specifications.
 - f. Safety.
 - g. Quality control and inspection.

2. The contractor shall submit to the owner's representative any revisions or changes agreed upon, reasons thereof, and parties agreeing or disagreeing with them.
- D. Mockup:
1. Before proceeding with work, finish one (1) complete space (16 sq./ft.) showing each color, finish texture, materials, quality of work, and special details. Use a "step down" mockup as follows:
 - a. Leave one-quarter of the surface exposed to allow observation of the surface preparation.
 - b. Apply primer to three-quarters of remaining surface.
 - c. Apply filler/surfacer to one-half of the surface, over the primer, leaving one-quarter of the surface exposed with primer.
 - d. Apply finish coat to filler/surfacer, leaving one-quarter of the surface exposed with surfacer/filler.
 2. After Owner's approval the mockup shall serve as a standard for remaining work throughout the project.

1.05 Delivery, Storage, and Handling

- A. Deliver products to the job site in manufacturer's original, unopened containers bearing manufacturer's name and label and the following information
1. Product name
 2. Product description (generic product classification)
 3. Manufacturer's lot number
 4. Color
- B. Store materials in sealed original manufacturer's containers. Store materials in a protected area out of direct sunlight. Keep containers clean and undamaged. Adhere to manufacturer's published storage temperature and shelf life recommendations. Protect all materials from freezing.

1.06 Project Conditions

- A. Environmental Requirements:
1. Provide environmental controls necessary to meet application and curing requirements of the coatings specified.
 2. Do not apply paint in temperatures or moisture conditions outside of manufacturer's recommended maximum or minimum allowable.
 3. If painting is to occur outside of required window, provide a temporary enclosure over the clarifier to allow field abrasive blasting and painting

work to be performed in a controlled environment. Submit proposed enclosure procedure to the Owner for review prior to the beginning of the work.

B. Concrete:

1. Apply coating only when substrate, ambient air, and coating material are within manufacturer's recommended range. It is the Subcontractor's responsibility to provide temporary facilities that may be required for proper installation of coating, such as covers, enclosures, air heating and cooling, and dehumidification.
2. Moisture content shall be within manufacturer's recommended range for product application.

2.00 PRODUCTS

2.01 Manufacturers

- A. The Lining System shall consist of one or more systems for concrete repair and corrosion protection. Products are specified as a standard of quality, and are manufactured by The Sherwin-Williams Company, Cleveland, Ohio.

2.02 Abrasive Materials

- A. Select abrasive type and size to produce surface profile that meets coating manufacturer's recommendations for specific primer and coating system to be applied.

2.03 Materials

A. General:

1. Manufacturer's highest quality products suitable for intended service.
2. Compatibility: Only compatible materials from a single manufacturer shall be used in the Work. Particular attention shall be directed to compatibility of primers and finish coats.
3. Thinners, Cleaners, Driers, and Other Additives: As recommended by coating manufacturer.

B. Products:

Product	Definition
Corobond 100	Epoxy Primer
AW Cook Gel Patch	Repair Mortar
Steel-Seam FT910	Epoxy Surfacing and Patching Compound
AW Cook Silatec MSM (Micosilica Mortar) or Cemtec Thinpatch	Cementitious Resurfacer
Dura-plate 6000	100% solids High Build Epoxy Lining
Sherloxane 800	Algae Control Topcoat

B. Multiple Component Coatings:

1. Prepare using each component as packaged by paint manufacturer.
2. No partial batches will be permitted.
3. Do not use multiple-component coatings that have been mixed beyond their pot life.
4. Do not intermix additional components for reasons of color or otherwise, even within the same generic type of coating.
5. Follow manufacturer's recommendations regarding proper mixing, mixing time, induction time if necessary, and appropriate thinners if applicable.

3.0 EXECUTION

3.01.1 Surface Preparation

A. Concrete

1. The NACE/SSPC Joint Surface Preparation Standards for concrete surface preparation are incorporated in and made part of this specification. All references to SSPC SP-13/NACE No 6 designate the definitions and other requirements in these documents. The International Concrete Repair Institute (ICRI) Technical Guideline #03732, Guide to Surface Preparation of Concrete to Receive Sealers, Coatings and Polymer Overlays shall be used to visually evaluate the concrete surface profile. Refer to Sherwin-Williams' Concrete Surface Preparation Guide.
2. Inspect concrete surface for soundness, flatness, levelness and overall condition. Remove and repair all loose, cracked or damaged concrete. If rebar is exposed removed loose concrete under rebar a minimum of 1". Owner shall evaluate and make a determination on soundness and integrity of any exposed rebar. All exposed rebar shall be thoroughly cleaned and repaired if necessary. All cleaned and prepared rebar shall

be coated using Dura-Plate 5900 and grouted using A.W. Cook Gel Patch to a level surface with the surrounding concrete substrate.

3. Create a minimum surface profile for the system specified in accordance with the methods described in ICRI No. 03732 to achieve profile CSP-3 to CSP-5
4. Concrete Surface Repair: Bug holes and honeycombs
 - a. Areas less than 1/2" deep shall be repaired with either Steel-Seam FT910 epoxy patching and resurfacing compound or AW Cook Cemtec Thinpatch resurfacer (based on environmental conditions).
 - b. Areas that are greater than 1/2" deep shall be repaired with A.W. Cook Gel Patch repair mortar. This material may be applied up to 2" in a single lift. Successive lifts may be used if needed.
5. Provide a clean, saturated surface dry (SSD) concrete surface with no free standing or moving water, with a minimum surface profile as defined above. All substrates are to be vacuumed, swept and blown down with clean, dry air to remove spent abrasive, dust and other foreign material that might interfere with the adhesion of the primer and lining.

B. Miscellaneous Metals

1. The NACE / SSPC Joint Surface Preparation Standards for abrasive blasting approved in October 1994 are incorporated in and made a part of this specification. All references to SSPC-SP7 / NACE No. 3 and SSPC-SP10 / NACE No. 2 designate the definitions and other requirements in these documents. SSPC VIS 1-89 Visual Standard for Abrasive Blast Cleaned steel shall be used to visually evaluate the blast cleanliness.
2. Remove all oil and grease from surface by solvent cleaning per SSPC-SP1. Minimum surface preparation is SSPC-SP10 / NACE No. 2, Near White Metal Blast Cleaning. Abrasive blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (3 mils). Prime any bare steel the same day as it is cleaned and before flash rusting occurs.
 - a. Inspect the surfaces to be coated. All holes in the steel surfaces or pits greater than 1/8 inch shall be repaired in accordance with the owner's repair procedures.
 - b. Remove or grind down all sharp burrs, edges, and weld spatter from all steel that is to be coated. Corners and edges shall be chamfered 1/16" at a 45° angle minimum or rounded to a 1/16" radius (1/8" diameter) minimum. Abrasive blasting prior to the application of the coating materials shall restore the anchor profile.

- c. All substrates are to be vacuumed, swept and blown down with clean, dry air to remove spent abrasive, dust and other foreign material that might interfere with the adhesion of the primer or basecoat.
- d. The maximum allowable residual salt contamination, as measured with a KTA Scat Kit or equivalent field test method, immediately prior to the application of the first coat is as follows:
 - 5 micrograms per square centimeter (50mg/m²) most commodities up to 120°F
- e. Corrosion pits in the blasted steel shall be filled flush with the substrate with Steel-Seam FT 910 patching and resurfacing compound.
- f. Projections and lap joints on welded plates and on riveted plates to be coated shall be filled with Steel-Seam FT 910 patching and resurfacing compound in order to smooth out the surface and provide for a smooth transition of the coating over the substrate.

3.02 Application

- A. Comply with manufacturers written installation procedures and individual product data sheet application bulletins.
- B. Apply materials in accordance with the following material coverage:

Duraplate 6000 Epoxy Medium Film Coating/Lining System

Products

Thickness (mils dft)

Primer

Corobond 100 (if required)

4-6

Repair/Patching and resurfacing Compound

Steel-Seam FT910 or Dura-Plate 2300

As needed

First Coat

Dura-Plate 6000

80-100

Second Coat

None

**Optional Algae Control System for launder*
Sherloxane 800

6-8 mils

80-100 mils total dft
(in addition to primer/resurfacer)
and optional Algae Control Coat

*if Optional Algae Control coat is installed, Duraplate 6000 must be washed with solution of mild detergent and water, and allowed to dry prior to application, to ensure that no blush is present.

3.03. Inspection and Testing

- A. The owner or owner's authorized representative may require the services of an independent testing laboratory to test the installed system.
- B. If test results indicate noncompliance with the specification, the following corrective action may be required of the Contractor:
 - 1. Remove non-compliant systems or components.
 - 2. Replace system or components in (1)
 - 3. Assume the testing expenses.
- C. Minimum requirements of the chemical resistant system are that it be free of the following:
 - 1. Uncured material
 - 2. Inadequate thickness
 - 3. Pinholes
 - 4. Blisters
 - 5. Delamination
 - 6. Foreign matter
 - 7. Unspecified materials

3.04. Protection

- A. Chemical resistant system shall be protected from damage or detrimental elements during cure and until the time of final acceptance.



Protective & Marine Coatings

COROBOND™ 100 EPOXY PRIMER/SEALER

PART A
PART B

B58-5100
B58V5100

SERIES
HARDENER

Revised: November 16, 2020

PRODUCT INFORMATION

TRM.73

PRODUCT DESCRIPTION

COROBOND 100 EPOXY PRIMER/SEALER is a high solids, low viscosity, penetrating epoxy primer/sealer formulated specifically for use over concrete surfaces in secondary containment environments.

- Helps prevent "blow-back" and "outgassing"
- Low viscosity
- Fast dry
- Superior penetrating characteristics
- Improved visibility during application

PRODUCT CHARACTERISTICS

Finish:	Flat sheen
Color:	Off White, Haze Gray
Volume Solids:	100%, mixed
VOC (calculated):	<100 g/l; .83 lb/gal, mixed
Mix Ratio:	2:1 by volume, premeasured

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.0 (100)	6.0 (150)
Dry mils (microns)	4.0 (100)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	265 (6.5)	400 (9.8)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1604 (39.4)	

Apply primer to achieve uniform hiding, appearance, and complete wetting of the concrete surface, approximately 4.0-6.0 mils (100-150 microns) wft. Coating will be partially absorbed into the concrete. Roll out any puddles.

Drying Schedule @ 5.0 mils wet (125 microns):

@ 77°F/25°C

50% RH

To touch: 2 hours

To recoat:

minimum: 3 hours

maximum: 24 hours*

To cure: 7 days

*Can be topcoated up to 30 days after application with Phenicon HS, Phenicon HS FF, Cor-Cote HCR, Cor-Cote RPP, Macropoxy 646, Sher-Glass FF, or Steel-Seam FT910. 30 day recoat acceptable for non-immersion or secondary containment applications. Check adhesion as necessary.

Primer can be topcoated even if the surface is still tacky.

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life: 45 minutes

Sweat-in-time: None required

Shelf Life: 36 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C).

Flash Point: 100°F (38°C), PMCC, mixed

Reduction: Not recommended

Clean Up: Reducer #54, R7K54

RECOMMENDED USES

- Corobond 100 can be used on all bare concrete surfaces where a 2 part epoxy, penetrating primer is recommended. Its low viscosity and quick recoat time allow it to be used for areas that need a fast turnaround.
- Secondary Containment
- Designed specifically as a high performance primer sealer for secondary containment applications
- Suitable for use in the Mining & Minerals Industry

PERFORMANCE CHARACTERISTICS

A high performance primer/sealer for new or existing bare concrete surfaces

Helps prevent "blow-back" and "outgassing" of topcoats superior penetrating characteristics

Superior penetrating characteristics

Refer to applicable topcoat for additional performance information

White in color to provide contrast with concrete

Excellent penetrating properties to provide a "tight and sound" substrate prior to subsequent topcoats

Can recoat while primer is still tacky

Designed to be topcoated



Protective & Marine Coatings

COROBOND™ 100 EPOXY PRIMER/SEALER

PART A
PART B

B58-5100
B58V5100

SERIES
HARDENER

Revised: November 16, 2020

PRODUCT INFORMATION

TRM.73

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Concrete, Secondary Containment:			
Concrete & Masonry:			
1 ct.	Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
Apply primer to achieve uniform hiding, appearance, and complete wetting of the concrete surface. Coating will be partially absorbed into the concrete. Roll out any puddles.			
1-2 cts.	Kem Cati-Coat HS Epoxy Filler/Sealer, as required to fill voids and bugholes to provide a continuous substrate.	10.0-20.0	(250-500)
1-2 cts.	Cor-Cote E.N. 7000 Epoxy Novolac Coating	10.0-14.0*	(250-350)*

*Dependent on the severity of the environment, other acceptable topcoats may include Cor-Cote HCR FF, Phenicon HS, or Shelcote II.

Mortar System:

1 ct.	Corobond 100 Epoxy Primer/Sealer	4.0-6.0	(100-150)
1 ct.	Cor-Cote HCR Epoxy with 70 lbs Type T Aggregate per 1.25 gallons/3/16" dft yields 44 sq. ft.		
1 ct.	Cor-Cote HCR Epoxy	15.0-20.0	(375-500)
1 ct.	Cor-Cote HCR FF Flake Filled Epoxy	15.0-20.0	(375-500)

The systems listed above are representative of the product's use, other systems may be appropriate.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Concrete & Masonry: SSPC-SP13/NACE 6, or
ICRI No. 310.2R, CSP 3-6

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Pitted & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:	55°F (13°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

3 gallon (11.3L) mix	Part A: 2 gallons (7.56L) Part B: 1 gallon (3.78L)
15 gallon (75L) mix	Part A: Two 5 gallon (18.9L) containers Part B: One 5 gallon (18.9L) container

Weight: 9.5 ± 0.2 lb/gal ; 1.15 Kg/L, mixed

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.



Protective & Marine Coatings

COROBOND™ 100 EPOXY PRIMER/SEALER

PART A
PART B

B58-5100
B58V5100

SERIES
HARDENER

Revised: November 16, 2020

APPLICATION BULLETIN

TRM.73

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 3-6. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910.

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

APPLICATION CONDITIONS

Temperature: 55°F (13°C) minimum, 100°F (38°C) maximum
(air, surface, and material)
At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

ReductionNot recommended

Clean UpReducer #54, R7K54

Airless Spray

Pump.....30:1 minimum
Hose.....3/8" ID
Tip0.019"
Filter.....60 mesh

Brush

Brush.....Natural Bristle

Roller

Cover3/8" woven with solvent resistant core

If specific application equipment is not listed above, equivalent equipment may be substituted.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rust	C St 2	SP 2	-
Pitted & Rust	D St 2	D St 2	SP 2	-
Rust	C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rust	D St 3	SP 3	-



Protective & Marine Coatings

COROBOND™ 100 EPOXY PRIMER/SEALER

PART A
PART B

B58-5100
B58V5100

SERIES
HARDENER

Revised: November 16, 2020

APPLICATION BULLETIN

TRM.73

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix components only after all surfaces are completely prepared and ready to be coated. Thoroughly agitate each component using low speed mechanical agitation, i.e., Jiffy Blade model ES. Then combine 2 parts by volume of Part A with 1 part by volume Part B. Using mechanical agitation, Jiffy Blade ES, thoroughly mix material for three minutes at 250 rpm. Only mix full units. Be sure to mix material from the bottom and sides of the containers.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.0 (100)	6.0 (150)
Dry mils (microns)	4.0 (100)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	265 (6.5)	400 (9.8)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1604 (39.4)	

Apply primer to achieve uniform hiding, appearance, and complete wetting of the concrete surface, approximately 4.0-6.0 mils (100-150 microns) wft. Coating will be partially absorbed into the concrete. Roll out any puddles.

Drying Schedule @ 5.0 mils wet (125 microns):

@ 77°F/25°C

50% RH

To touch:

2 hours

To recoat:

minimum: 3 hours

maximum: 24 hours*

To cure:

7 days

*Can be topcoated up to 30 days after application with Phenicon HS, Phenicon HS FF, Cor-Cote HCR, Cor-Cote RPP, Macropoxy 646, Sher-Glass FF, or Steel-Seam FT910. 30 day recoat acceptable for non-immersion or secondary containment applications. Check adhesion as necessary.

Primer can be topcoated even if the surface is still tacky.

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life: 45 minutes

Sweat-in-time: None required

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #54, R7K54. Clean tools immediately after use with Reducer #54, R7K54. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

PERFORMANCE TIPS

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #54, R7K54.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



Protective & Marine Coatings

STEEL-SEAM FT910 EPOXY PATCHING AND SURFACING COMPOUND

PART A B58W910 RESIN (WHITE)
PART B B58V910 HARDENER (BLACK)

Revised: June 6, 2024

PRODUCT INFORMATION

TRM.67

PRODUCT DESCRIPTION

STEEL-SEAM FT910 EPOXY PATCHING AND SURFACING COMPOUND is a 100% solids epoxy surfacing compound for steel or patching compound for concrete. It is formulated for ease of application with squeegee, trowel, or airless spray on horizontal, vertical or overhead applications. Cures down to 35°F/1.7°C.

- 100% solids
- Tolerates moisture during cure
- Outstanding workability
- Easy to use
- May be applied from 5 mils to 1/2" wft/dft vertically
- May be applied up to 1" thick with aggregate addition
- Cured down to 35°F/1.7°C
- Reduced or low gaps HAPS

PRODUCT CHARACTERISTICS

Color: Gray

Volume Solids: 100%, mixed

VOC (calculated): <100 g/l; 1.67 lb/gal, mixed

Mix Ratio: 3:1 by volume

Recommended Spreading Rate:

Coverage: 1" cove ~ 38 lf/gal
3" cove ~ 10 lf/gal
1 mil wft/dft ~ 1604 sf/gal

Drying Schedule @ 40.0 mils wet (1000 microns):

	@ 35°F/1.7°C	@ 73°F/23°C 50% RH
To touch:	6 hours	4 hours
To recoat:		
minimum:	12 hours	6 hours
maximum:	4 days	2 days
To cure:	7 days	7 days

If maximum recoat time is exceeded, abrade surface before recoating. Maximum recoat time is shorter when using polyurea topcoat, refer to topcoat data page.

Hardening time is temperature, humidity, and film thickness dependent.

Pot Life*: 50 minutes 30 minutes

*@ 90°F/32°C, Pot Life is 20 minutes

Sweat-in-Time: None

Shelf Life: 36 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C)

Reduction: Not recommended

Clean Up: Reducer R7K54

RECOMMENDED USES

May be used as a versatile filler/surfer for uneven surfaces found in formed, open or corroded concrete and masonry surfaces. May also be used as a fairing compound for weld seams, riveted connections, lap seams and chine angles in steel tanks prior to epoxy coating and lining applications.

Concrete Uses:

- To smooth rough concrete
- To fill bugholes, tie rod holes, cavities, honeycombs and other surface defects on horizontal, vertical, or overhead surfaces
- To form transition coves at vertical and horizontal coves

Steel Uses:

- To smooth riveted, lapped or welded seams
- To fill corrosion pits on steel surfaces
- To form chine coves and fill sharp angles

Acceptable for use in Canadian Food Processing facilities (Confirm acceptance of specific part numbers/rexes with your SW Sales Representative).

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060	69 mg lost
Adhesion	Concrete, ASTM D4541; Steel, ASTM D1002	350 psi, 100% concrete failure (ASTM D4541); 1,400 psi (ASTM D1002)
Elongation	ASTM D412	17.9%
Flammability	ASTM D635	Self-extinguishing
Hardness, Shore D	ASTM D2240	55-60
Tensile Strength	ASTM D412	2,672 psi
Thermal Cycling	ASTM C884, 5 cycles	No cracking



Protective & Marine Coatings

STEEL-SEAM FT910 EPOXY PATCHING AND SURFACING COMPOUND

PART A B58W910 RESIN (WHITE)
PART B B58V910 HARDENER (BLACK)

Revised: June 6, 2024

PRODUCT INFORMATION

TRM.67

RECOMMENDED SYSTEMS

May be applied directly to prepared concrete or steel.

May be applied over 100% solids primers to include:

- Cor-Cote HCR
- Corobond 100
- Dura-Plate UHS Primer
- Macropoxy 920 PrePrime
- EnviroLastic LT

Maybe applied over solvented primers, after the minimum recoat has been obtained. Primers to include:

- Macropoxy 5000
- Epo-Phen FF
- Macropoxy 646
- Dura-Plate 235
- Phenicon HS
- Tank Clad HS

May be topcoated with a variety of coatings to include:

- Acrolon 218 HS
- Cor-Cote HCR, HCR FF
- Cor-Cote E.N. 7000
- Cor-Cote HP
- Dura-Plate 235
- Dura-Plate UHS Laminate
- Dura-Plate UHS
- EnviroLastic Polyurea
- Macropoxy 646
- Phenicon HS
- SherFlex

The systems listed above are representative of the product's use, other systems may be appropriate.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel: SSPC SP-10/NACE2, 3 mils
(75 microns) profile
Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI
No. 310.2R, CSP 4-6

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	C St 2	SP 2	-
Rusted	D St 2	D St 2	SP 3	-
Pitted & Rusted	D St 3	D St 3	SP 3	-
Power Tool Cleaning	D St 3	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:

Air and Surface: 35°F (1.7°C) minimum, 120°F (49°C) maximum

Material: 50°F (10°C) minimum, 95°F (35°C) maximum
At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

Part A: 11.2 lb / 1.3 Kg/L
(~1.5 gal / 5.6L) in a 3 gallon (11.3L) pail
Part B: 4.4 lb / 0.53 Kg/L
(~.5 gal / 1.9L) in a 1 gallon (3.78L) pail

Weight per mixed unit: 15.6 lbs. ; 1.9 Kg/L
(462 cu. in.)

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.



Protective & Marine Coatings

STEEL-SEAM FT910 EPOXY PATCHING AND SURFACING COMPOUND

PART A B58W910 RESIN (WHITE)
PART B B58V910 HARDENER (BLACK)

Revised: June 6, 2024

APPLICATION BULLETIN

TRM.67

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel, Immersion Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (3 mils / 75 microns). Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel, Atmospheric Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Concrete & Masonry, Atmospheric & Immersion Service:

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 4-6. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910.

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Surface Preparation Standards					
Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE	
White Metal	Sa 3	Sa 3	SP 5	1	
Near White Metal	Sa 2.5	Sa 2.5	SP 10	2	
Commercial Blast	Sa 2	Sa 2	SP 6	3	
Brush-Off Blast	Sa 1	Sa 1	SP 7	4	
Hand Tool Cleaning	C St 2	C St 2	SP 2	-	
Pitted & Rusty	D St 2	D St 2	SP 2	-	
Rusty	C St 3	C St 3	SP 3	-	
Power Tool Cleaning	Pitted & Rusty	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:
Air and Surface: 35°F (1.7°C) minimum, 120°F (49°C) maximum
Material: 50°F (10°C) minimum, 95°F (35°C) maximum
At least 5°F (2.8°C) above dew point
Relative humidity: 85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

ReductionNot recommended

CleanupReducer R7K54

Squeegee:
Squeegee.....Flat

Trowel:
TrowelFlat blade
For applications over severely damaged or eroded concrete, use a rubber faced grout float trowel.

Putty KnifeAcceptable

Airless Spray
Pump45:1 (minimum) with gravity feed
hopper connected to a high volume
lower unit (minimum 220 cc/cycle)
Pressure2400-3000 psi
Hose3/8" ID, with 1/4" whip hose
acceptable
Tip......019 - .031
Gun.....Graco Silver Plus, XTR, or Pistol
Grip Mastic
Filter(s)remove
Reductionnot recommended

Have material agitated with lids open to ensure rapid mixing. Multiple passes will allow film thickness up to 250 mils. An orange peel appearance is normal. If a smoother finished is desired, 1-2 hours after application use a 1/8" nap roller dampened with R7K54 to smooth the surface. Use a large spatula to continually wipe the material down into the hopper.

If specific application equipment is not listed above, equivalent equipment may be substituted.



Protective & Marine Coatings

STEEL-SEAM FT910 EPOXY PATCHING AND SURFACING COMPOUND

PART A B58W910 RESIN (WHITE)
PART B B58V910 HARDENER (BLACK)

Revised: June 6, 2024

APPLICATION BULLETIN

TRM.67

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Stir each component with low speed power agitation prior to mixing. Mix 3 parts Part A (white) to 1 part Part B (black) by volume. Mix with low speed drill and Jiffy Mixer for approximately three minutes until uniform gray with no white or black streaks.

Temperature:

Do not apply product when ambient or surface temperatures are below 35°F (1.7°C). Surface temperature must be at least 5°F (2.8°C) above dew point.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate:

Coverage:	1" cove ~ 38 lf/gal
	3" cove ~ 10 lf/gal
	1 mil wft/dft ~ 1604 sf/gal

Drying Schedule @ 40.0 mils wet (1000 microns):

	@ 35°F/1.7°C	@ 73°F/23°C 50% RH
To touch:	6 hours	4 hours
To recoat:		
minimum:	12 hours	6 hours
maximum:	4 days	2 days
To cure:	7 days	7 days

If maximum recoat time is exceeded, abrade surface before recoating. Maximum recoat time is shorter when using polyurea topcoat, refer to topcoat data page.

Hardening time is temperature, humidity, and film thickness dependent.

Pot Life*: 50 minutes 30 minutes

*@ 90°F/32°C, Pot Life is 20 minutes

Sweat-in-Time: None

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer R7K54. Clean tools immediately after use with Reducer R7K54. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

PERFORMANCE TIPS

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

Check surfaces of primer, FT910, and subsequent coats for amine blush (oily film). If detected, remove before applying the next layer or coat.

For filling larger defects in concrete, one to four quarts of 30 to 100 mesh aggregate may be added per gallon of mixed FT910, depending on the size of hole and slump required.

Ambient air cured FT910 is acceptable for use on interior of potable water storage tanks and reservoirs when overcoated with an ANSI / NSF Std. 61 certified Sherwin-Williams coating.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



THIN PATCH

MANUFACTURER

A.W. Cook Cement Products
242 Amy Industrial Lane
Hoschton, GA. 30548
Phone 706-654-3677
Fax 706-654-3662

GENERAL USES

For leveling and repairing deteriorated concrete. Thin Patch may be used above or below grade and on horizontal or vertical surfaces. From 1/8" to 1/2".

FEATURES

- One component.
- Superior adhesion.
- Similar modulus of elasticity to concrete.
- Extremely low shrinkage.
- Vapor permeable.
- Resistant to freeze/thaw cycling.
- Contains a corrosion inhibitor.
- May be feather edged.
- Fiber reinforced.
- Coatings may be applied 24-36 hours @ 70°F (check with coating manufacturer)

INSTRUCTIONS FOR USE

Surface Preparation: All surfaces must be clean and free of dirt, dust, paint, sealers, coatings, loose material, adhesives, curing compounds or any material that will inhibit patching material from coming in contact with the concrete pores. Tight, steel troweled concrete should be abraded or etched with sulfamic or muriatic acid solution, then neutralized to open up the concrete pores. Removal of any anti adherents or loose materials must be accomplished mechanically with a wire brush, chipping hammer, or by sand or water blasting. Solvents or strippers are not acceptable.

Mixing: For normal applications, add 5-1/2 to 6 quarts of water per 60 pound bag of Thin Patch, depending upon the desired consistency. Mixing can be achieved either manually or mechanically. Mechanical mixing is preferred. Mixing should continue until a uniform, lump-free consistency is obtained. Avoid over mixing which could lead to over aeration of the mix.

Application: Dampen the surface thoroughly with clean water to a saturated surface dry (SSD) condition. While the surface is damp, fill the desired area with Thin Patch to a maximum thickness of 1/2 inch. Alternatively, prime surface with UNIVERSAL POLYMER CONCENTRATE diluted one to one with water or an epoxy bonding agent. After

rough leveling and consolidation, the product can be finished to desired texture. For applications greater than 1/2 inch in thickness, apply in successive lifts.

Curing: The formulation of Thin Patch minimizes the need for curing. However, application in direct sunlight or in windy conditions may lead to rapid surface drying. The use of a curing compound that complies with ASTM C-309 or damp curing is recommended.

Limitations: Ambient and surface temperatures must be 38°F or above during application.

Minimum thickness: 1/8 inch.

Maximum thickness: 1/2 inch

Clean Up: Remove uncured Thin Patch from tools and equipment with water. Cured material may only be removed mechanically.

PACKAGING

60 pound bag.

COVERAGE

50 square feet per unit @ 1/8" thick.

STORAGE AND HANDLING

Shell Life: 12 months in the original unopened container.

Storage: Store in a dry area away from direct sunlight. The product should be conditioned to between 40° F and 95°F before use.

HEALTH AND SAFETY

Health Precautions: This product contains Portland cement and crystalline free silica. Avoid breathing the dust. Exercise care; as with handling any chemical construction product.

Safety Precautions: Use adequate ventilation. Use of a NIOSH/ MSA approved dust respirator, safety goggles and chemical resistant gloves are strongly recommended. Remove contaminated clothing immediately.

First Aid: Skin Contact: wash thoroughly with soap and water. Eye Contact: flush immediately with water and contact a physician. Respiratory Problems: remove affected person to fresh air immediately and contact a physician. Hygiene: wash hands immediately after use. Wash clothing before reuse.

Spills: Collect in appropriate container. Uncured material may be removed with water.

Disposal: Dispose of in accordance with local, state or federal regulations.

Warning: KEEP CONTAINER CLOSED WHEN NOT IN USE. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY BY A



THIN PATCH

QUALIFIED TECHNICIAN. Consult the Material Safety Data Sheet for further health and safety information.

TECHNICAL DATA

Compressive Strength

ASTM C-109 Mortar (mod.)

1 day	2870 psi
7 day	4250 psi
28 day	5500 psi

Flexural Strength

ASTM C-78

1 day	450 psi
7 days	1200 psi
28 days	1440 psi

Split Tensile Strength

ASTM C-496

1 day	200 psi
7 days	510 psi
28 days	725 psi

Bond Strength

ASTM C-882 Modified

1 day	300 psi
7 days	1100 psi
28 days	1650 psi

Shrinkage (inch/inch)

ASTM C-596

1 day	0.0006
7 days	0.0009
28 days	0.0012



MANUFACTURER

A.W. Cook Cement Products
242 Amy Industrial Lane
Hoschton, GA. 30548
Phone (706) 654-3677
Fax (706) 654-3662

DESCRIPTION

MICROSILICA MORTAR is a blend of Portland cement, graded silica sand, fibers and silica fume. The mortar may be hand or spray applied. A nominal thickness of 1/4" up to 2". Thicker applications can be achieved by applying in successive lifts. Uses include repairing concrete walls, ceilings, lining brick or concrete manholes and lift stations and horizontal pipe repair. Microsilica Mortar provides an extremely dense matrix and will accept coatings at earlier ages than typical Portland cement repair products. This product contains a migrating corrosion inhibitor.

SURFACE PREPARATION

Remove all loose concrete, brick or mortar from affected area by mechanical means. Surfaces shall be free of paints, oils, dirt, dust, curing compounds, sealers, form release agents or any material that would prevent mortar from coming into contact with the open pores of the concrete. Create a minimum surface profile for the system specified in accordance with the methods described in ICRI No. 03732 to achieve profile CSP-3 to CSP-9. Shot blasting, sandblasting, chipping and high pressure water blasting are all excellent surface preparation methods. Dampen area to achieve a saturated, surface dry condition (SSD). Leaving no puddles.

MIXING & APPLICATION

NOTE: [The material will flash set if contaminated with calcium aluminate cement.] Make sure all equipment for mixing, pumping, etc. are free from any calcium aluminate cement or products that contain calcium aluminate cement. Begin by adding 1 gallon clean water to mixing vessel and then add 1 bag (60#) Microsilica Mortar. Adjust water as needed (up to 1.25 gallons) to provide proper consistency for placing by hand or pump sprayer. Apply in successive

SILATEC MSM MICROSILICA MORTAR

lifts to desired thickness. Use brush, float or trowel to achieve desired texture.

CURING

Damp curing or use of a curing compound, that complies with ASTM C-309, may be necessary to prevent rapid drying of mortar. Curing compounds may need to be removed prior to coating. Replace manhole cover as soon as troweling is finished.

LIMITATIONS

Ambient and surface temperatures must be 38° F and rising during application. Protect from rain until initial set has been achieved. To avoid flash setting, Do Not contaminate Silatec MSM with Cemtec Hydraulic cement, Rapid Cure Vertical or Silatec CAM.

Minimum thickness: ¼ inch

Maximum thickness: 4 inches in successive applications

STORAGE & HANDLING

Shelf life: 12 months in the original unopened container.

Storage: Store in a dry area away from direct sunlight. The product should be conditioned to between 40° F and 95° F before use.

PRECAUTIONS

Contains Portland cement-avoid eye contact or prolonged contact with skin, Wash thoroughly after handling. In case of eye contact, flush with water for at least 15 minutes. Consult a physician immediately. Keep out of reach of children. Contains free silica- DO NOT breathe dust. May cause delayed lung injury. Follow OSHA safety and health standards for crystalline silica (quartz). See material safety data sheet for detailed information.

Spills: Collect in appropriate container. Uncured material may be removed with water.

Disposal: Dispose of in accordance with local, state or federal regulations.

PACKAGING

60 lb. / 27 kg multiwall bags.



SILATEC MSM MICROSILICA MORTAR

TECHNICAL DATA

COMPRESSIVE STRENGTH

ASTM C-109

24 Hr. 4310 PSI
7 Day 6000 PSI
28 Day 10000 PSI

SHRINKAGE

ASTM 596

28 Day (0.001)

BOND STRENGTH

ASTM C-882 (modified)

28 Day 2500 PSI

FLEXURAL STRENGTH

ASTM C-293

24 Hour 720 PSI
7 Day 850 PSI
28 Day 1695 PSI

SPLITTING TENSILE

ASTM C-496

24 Hour 420 PSI
28 Days 805 PSI

CHLORIDE PERMEABILITY

ASTM C-1202

28 Day 205 Coulombs

MODULUS OF ELASTICITY

ASTM 469-02

24 Hour 3,433,333
28 Day 4,533,333

FREEZE/THAW

ASTM C-666

300 cycles – No Damage

Unit Weight 128.3 PCF



ONE COMPONENT GEL PATCH

MANUFACTURER

A.W. Cook Cement Products
242 Amy Industrial Lane
Hoschton, GA 30548
Phone 706-654-3677
Fax 706-654-3662

GENERAL USES

For the structural repair of deteriorated concrete. Gel Patch can be used above or below grade and on vertical or overhead surfaces.

FEATURES

- Superior adhesion.
- Polymer Modified
- Similar modulus of elasticity to concrete.
- Extremely low shrinkage.
- Vapor permeable.
- Resistant to freeze/thaw cycling.
- Easy to apply and finish.
- May be built up to 2 inches overhead in one application.
- Contains a corrosion inhibitor.
- Coatings may be applied after 24 hours.

INSTRUCTIONS FOR USE

A. Surface Preparation: All surfaces must be clean and free of dirt, dust, paint, sealers, coatings, loose material, adhesives, curing compounds or any material that will inhibit patching material from coming in contact with the concrete pores. Tight, steel troweled concrete should be abraded or etched with sulfamic or muriatic acid solution, then neutralized to open up the concrete pores. Removal of any anti adherents or loose materials must be accomplished mechanically with a wire brush, chipping hammer, or by sand or water blasting. Solvents or strippers are not acceptable.

B. Mixing: For normal applications, add 1 gallon clean water to a clean container. Add 50# powder. Mixing can be achieved either manually or mechanically. Mechanical mixing is preferred for quantities greater than 1 bag. Mixing should continue until a uniform, lump-free consistency is obtained, small amounts of water may be added up

to 12 ounces per bag. Avoid over mixing which could lead to over aeration of the mix.

Application: Dampen the surface thoroughly with clean water to a saturated surface dry (SSD) condition. While the surface is damp, fill the desired area with Gel Patch to a maximum thickness of 2 inches. Alternatively, prime surface with UNIVERSAL POLYMER CONCENTRATE diluted one to one with water or an epoxy bonding agent. After rough leveling and consolidation, the product can be finished to desired texture. For applications greater than 2 inches in thickness, apply in successive lifts.

Curing: The formulation of Gel Patch minimizes the need for curing. However, application in direct sunlight or in windy conditions may lead to rapid surface drying. The use of a curing compound that complies with ASTM C-309 or damp curing is recommended.

E. Limitations: Ambient and surface temperatures must be 38 F. or above during application.

Minimum thickness: 1/8 inch.

Maximum thickness: 2 inches. Per lift.

F. Clean Up: Remove uncured Gel Patch from tools and equipment with water. Cured material may only be removed mechanically.

PACKAGING

50 pound bag.

COVERAGE

50 pounds will yield approx. 0.40 cubic feet.

STORAGE AND HANDLING

A. Shelf Life: 12 months in the original unopened container.

B. Storage: Store in a dry area away from direct sunlight. The product should be conditioned to between 40°F and 95°F before use.



ONE COMPONENT GEL PATCH

HEALTH AND SAFETY

A. Health Precautions: This product contains

Portland cement and crystalline free silica. Avoid breathing the dust. Exercise care, as with handling any chemical construction product.

B. Safety Precautions: Use adequate ventilation. Use of a NIOSH/ MSA approved dust respirator, safety goggles and chemicals resistant gloves are strongly recommended. Remove contaminated clothing immediately.

C. First Aid: Skin Contact: wash thoroughly with soap and water. Eye Contact: flush immediately with water and contact a physician. Respiratory Problems: remove affected person to fresh air immediately and contact a physician. Hygiene: wash hands immediately after use. Wash clothing before reuse.

D. Spills: Collect in appropriate container. Uncured material may be removed with water.

E. Disposal: Dispose of in accordance with local, state and federal regulations.

F. Warning: KEEP CONTAINER CLOSED WHEN NOT IN USE. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY BY A QUALIFIED TECHNICIAN. Consult the Material Safety Data Sheet for further health and safety information.

TECHNICAL DATA

Compressive Strength

ASTM C-109 Mortar (Mod.)

1 day	3010 psi
7 days	4050 psi
28 days	7000 psi

Flexural Strength

ASTM C-78

1 day	400 psi
7 day	850 psi
28 day	1580 psi

Split Tensile Strength

ASTM C-496

28 day	1010 psi
--------	----------

Bond Strength

ASTM C-882 Modified

1 day	500 psi
7 day	1200 psi
28 day	2000 psi

Shrinkage (inch/inch)

ASTM C-596

1 day	0.0009
7 day	0.0012
28 day	0.0012

Rapid Chloride Permeability

ASTM C-1202

28 day	800
--------	-----

Modulus of Elasticity in Compression

ASTM C-469

28 day	1.9×10^6
--------	-------------------



Protective & Marine Coatings



Certified to
NSF/ANSI/CAN 61

Meeting Health
Effects Requirements
of NSF/ANSI/CAN
600

DURA-PLATE® 6000 REINFORCED EPOXY

PART A
PART B
PART B

B62W710
B62V710
B62BV710

WHITE
OFF WHITE HARDENER
BLACK HARDENER

Revised: March 13, 2026

PRODUCT INFORMATION

TRM.116

PRODUCT DESCRIPTION

DURA-PLATE 6000 is a 100% solids, high build, high strength, reinforced epoxy lining for concrete, steel and iron in severe service environments including splashzone areas on offshore platforms, wharf piles, jetties, chemical plants, pulp and paper mills and water treatment plants. Dura-Plate 6000 provides fast return-to-service times and the option for single leg application. It eliminates the application challenges associated with standard reinforced epoxy products while providing long-term life expectancy with extremely low permeability and excellent chemical resistance.

- Glass flake reinforced
- Hangs up to 125+ mils* (3,125 microns)
- NSF 61/600 approved to tanks >1000 gallons and pipe >2
- Single leg or plural component spray application
- Long pot life
- Return to service in 10 hours
- Continues to cure underwater
- Extremely low permeability
- May be applied to an SSD (Saturated Surface Dry) substrate

*Refer to NSF website for product restrictions or recommendations on dry film thickness, reducer restrictions and cure times.

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color:	White, Gray
Volume Solids:	100%, mixed
Weight Solids:	100%, mixed
Mix Ratio:	2:1 by volume
VOC (unreduced):	16 g/L ; 0.13 lb/gal, mixed

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	20.0 (500)	125.0+ (3,125)
Dry mils* (microns)	20.0 (500)	125.0+** (3,125)
~Coverage sq ft/gal (m²/L)	13 (0.3)	80 (2.0)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1604 (39.4)	

*Consult systems guide on second page for specific concrete and steel recommendations.

**Refer to NSF website for product restrictions or recommendations on dry film thickness, reducer restrictions and cure times.

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 120.0 mils wet (3,000 microns):

	@ 35°F/1.7°C 50% RH	@ 55°F/13°C 50% RH	@ 77°F/25°C 50% RH
To touch:	4 hours	3 hours	2 hours
To handle:	12 hours	5 hours	4 hours
To recoat:			
minimum:	10 hours	5 hours	5 hours
maximum:	10 days	7 days	5 days
Cure to service:	10 hours	10 hours	10 hours
Pot life:	not recommended*	1 hour	1 hour

*It is recommended that the product is kept above 55°F (13°C) for application and mixing.

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

PRODUCT CHARACTERISTICS (CONT'D)

Drying Schedule @ 120.0 mils wet (3,000 microns):

	@ 95°F/35°C <50% RH	@ 120°F/49°C <50% RH	@ 150°F/66°C <50% RH
To touch:	2 hours	1.5 hours	1 hour
To handle:	4 hours	3 hours	2 hours
To recoat:			
minimum:	5 hours	5 hours	5 hours
maximum:	3 days	24 hours	6 hours
Cure to service:	10 hours	10 hours	10 hours
Pot life:	40 minutes	40 minutes	10 minutes

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Shelf Life:	24 months, unopened. Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	>212°F (100°C), PMCC or SETA, mixed
Reducer:	Not recommended
Clean Up:	MEK

RECOMMENDED USES

For use over properly prepared concrete, steel and iron surfaces in industrial environments and water and wastewater exposures, such as but not limited to:

- Acceptable for use with cathodic protection
- Severe wastewater immersion and headspace environments
- Sewer collection systems
- Wastewater treatment plants
- Industrial and wastewater tankage
- Suitable for use in USDA-inspected food processing facilities
- Pre-Qualified to NORSOK M-501 Rev. 6 System 7A & 7B

For NSF approved applications:

- Refer to NSF website for product restrictions or recommendations on dry film thickness, reducer restrictions and cure times
- Meets the requirements of AWWA C210-15

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE2

System Tested*:

1 ct. Dura-Plate 6000 @ 120 mils (3,000 microns) dft
*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060	<120 mg loss
Adhesion	ASTM D4541 (Steel) ASTM D7234 (Concrete)	>3,000 psi substrate failure
Compressive Strength	ASTM D695	10,000 psi
Direct Impact Resistance	ASTM D2794	80 in. lb.
Elongation Percentage	ASTM D2794	2%
Flexural Modulus	ASTM D790	670,000 psi
Flexural Strength	ASTM D790	12,000 psi
Hardness, Shore D	ASTM D2240	75
Humidity Resistance	ASTM D4585	Pass
Severe Wastewater Analysis Test	ASTM G210	Pass
Tensile Strength	ASTM D638	7,300 psi
Water Vapor Transmission	ASTM D1653	0 gms/m ² (24 hours)

Third party testing available upon request.



Protective & Marine Coatings



Certified to
NSF/ANSI/CAN 61

Meeting Health
Effects Requirements
of NSF/ANSI/CAN
600

DURA-PLATE® 6000 REINFORCED EPOXY

PART A
PART B
PART B

B62W710
B62V710
B62BV710

WHITE
OFF WHITE HARDENER
BLACK HARDENER

Revised: March 13, 2026

PRODUCT INFORMATION

TRM.116

RECOMMENDED SYSTEMS

Dry Film Thickness / ct.
Mils (Microns)

Concrete & Masonry:

Primer (optional for below grade structures to reduce out gassing potential and required for above ground open top structures to reduce outgassing potential): Corobond 100 or Resuprime MVT

1 ct. Dura-Plate 6000	60.0-125.0** (1,500-3,125)
or	
1 ct. Dura-Plate 2300 as needed to fill surface imperfections	
1 ct. (Optional) Primer as defined above	
1 ct. Dura-Plate 6000	60.0-125.0** (1,500-3,125)

**Refer to NSF website for product restrictions or recommendations on dry film thickness, reducer restrictions and cure times.

Contact your Sherwin-Williams Representative for other available primer options.

Steel:

1 ct. Dura-Plate 6000	20.0	(500)
-----------------------	------	-------

Non-NSF Applications only:

Concrete & Masonry, Immersion

Thick Film / Severe Service*:

1 ct. Macropoxy 5000 (Clear) - 400-500 sq ft/gal (9.8-13.0 m²/L)	
1 ct. Dura-Plate 6000	80.0-250.0 (2000-6250)
or	
Dura-Plate 6000 Mortar	125.0-500.0 (3125-12500)

Concrete & Masonry, Immersion

Medium Film / Moderate Service*:

1 ct. Macropoxy 5000 (Clear) - 400-500 sq ft/gal (9.8-13.0 m²/L)	
1 ct. Dura-Plate 6000	40.0-80.0 (1000-2000)

*consult your Sherwin-Williams representative for immersion suitability

The systems listed above are representative of the product's use, other systems may be appropriate.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel: SSPC-SP10/NACE 2, 3 mil (75 micron) profile

Concrete & Masonry: SSPC-SP13/NACE 6 or ICRI No. 310.2R CSP 3-5

Ductile Iron: See Surface Preparation details on Page 3.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
White Metal	Sa 3	SP 5	1
Near White Metal	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	SP 2	-
Pitted & Rusty	D St 2	SP 2	-
Rusty	C St 3	SP 3	-
Power Tool Cleaning	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:

Air & Surface: 35°F (1.7°C) minimum, 150°F (66°C) maximum

Material: 77°F (25°C) minimum, 150°F (66°C) maximum

At least 5°F (2.8°C) above dew point

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

Part A: 3 gallons (11.3L) in a 5 gallon (18.9L) pail, 5 gallons (18.9L) in a 5 gallon (18.9L) pail, and 50 gallons (189L) in a 55 gallon (208L) drum

Part B: 1.5 gallons (5.7L) in a 2 gallon (7.6L) container, 5 gallons (18.9L) in a 5 gallon (18.9L) pail, and 50 gallons (189L) in a 55 gallon (208L) drum

Weight: 10.45 lb/gal ; 1.25 Kg/L, mixed, White

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



Protective & Marine Coatings



Certified to
NSF/ANSI/CAN 61

Meeting Health
Effects Requirements
of NSF/ANSI/CAN
600

DURA-PLATE® 6000 REINFORCED EPOXY

PART A	B62W710	WHITE
PART B	B62V710	OFF WHITE HARDENER
PART B	B62BV710	BLACK HARDENER

Revised: March 13, 2026

APPLICATION BULLETIN

TRM.116

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. The substrate shall not contain soluble salt concentrations in excess of 3 ppm for chlorides, 5 ppm for nitrates, and 10 ppm for sulfates. Surface with soluble salt concentrations in excess of these values shall be cleaned until satisfactory results are obtained. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (3 mils / 75 microns). Remove all weld spatter and round all sharp edges. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Concrete and Masonry:

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 3-5. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910.

Ductile Iron:

Prior to abrasive blasting, any areas where oil, grease, or soluble deposits is present shall be solvent cleaned in accordance with NAF 500-03-01. The exterior surfaces shall be free of all visible dirt, dust, mold coating and other foreign matter.

Pipe Exterior: Uniformly abrasive blast using angular abrasive to a NAF 500-03-04 paragraph 2.1. When viewed without magnification, the exterior surfaces shall be free of all visible dirt, dust, loose annealing oxide, rust, mold coating and other foreign matter. Any area where rust reappears before application shall be re-blasted. The surface shall contain a minimum angular anchor profile of 3.0 mils (75 microns). Abrasive blasting should be performed with sand or grit abrasive media.

Pipe Interior: Uniformly abrasive blast using angular abrasive to a NAF 500-03-04, paragraph 2.2. When viewed without magnification, the interior surfaces shall be free of visible dirt, dust, annealing layer, rust, mold coating and other foreign matter. Random staining and tightly adhered annealing oxide residue shall be limited to no more than 5 percent of the surface area (any 9 square inches). Any area where rust appears before application shall be re-blasted. The surface shall contain a minimum angular anchor profile of 3.0 mils (75 microns).

Fittings: Uniformly abrasive blast using angular abrasive to a NAF 500-03-05, paragraph 2.1.1 (#1 Condition). When viewed without magnification, the interior surfaces shall be free of all visible dirt, dust, annealing oxide, rust, mold coating and other foreign matter. Any area where rust reappears before application shall be re-blasted. The surface shall contain a minimum angular anchor profile of 3.0 mils (75 microns). Blasting should be performed with sand or grit abrasive media (no steel shot).

Follow the standard methods listed below when applicable:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP13/NACE 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Surface Preparation Standards

Condition of Surface	ISO 8501-1 BS7099:A1	SSPC	NACE
White Metal	Sa 3	SP 5	1
Near White Metal	Sa 2.5	SP 10	2
Commercial Blast	Sa 2	SP 6	3
Brush-Off Blast	Sa 1	SP 7	4
Hand Tool Cleaning	C St 2	SP 2	-
Pitted & Rusted	D St 2	SP 2	-
Rusted	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:

Air & Surface: 35°F (1.7°C) minimum, 150°F (66°C) maximum

Material: 77°F (25°C) minimum, 150°F (66°C) maximum

At least 5°F (2.8°C) above dew point

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Application requires a hopper feed or direct immersion delivery of mixed materials. Changes in pressures and tip sizes may be needed for proper spray characteristics.

Reduction Not recommended
Clean Up MEK

Airless Spray

Pump..... 70:1 or larger
Pressure..... 4,000-5,000 psi
Hose..... 1/2"
Tip..... .023"-.025"
Gun Mastic or High Flow Gun
Product Temperature precondition material to 77-85°F (25-29°C)
Filter remove all filters

Plural Component Equipment

Pump..... 70:1 proportioner with in-line heaters, 2:1 lowers and hose bundle configuration
Pressure..... 4,000-5,000 psi at tip/gun
Heated Hose Bundle..... 1/2" Part A x 3/8" Part B
Mix Manifold..... 2 x 6" static mixers directly attached
Integrated Hose 3/8" x 50 ft. max with in-line 6" clean-up static mixer (do not recommend 1/4" whip end)
Tip..... .023"-.025"
Gun Mastic or High Flow Gun
Heat Requirements..... Part A: 110-130°F (43-54°C),
Part B: 110-130°F (43-54°C),
Hose Bundle: 130°F (54°C)
Filter remove all filters

Conventional Spray

Pump..... Binks Conventional Pressure Pot (dual regulators, bottom-feed)
Gun Graco HTX 2023 AirSpray Trigger Gun (p/n 24R054), Spray Disk Size "D"
Air Pressure 80 psi
Fluid Pressure..... 55 psi
Distance 20-24 inches, perpendicular to surface
Reduction* Sherwin-Williams Xylene up to 6% by volume

*Other VOC areas (>100 g/L): can be reduced up to 10%. Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules.

Brush and Roll..... for small areas only

If specific application equipment is not listed above, equivalent equipment may be substituted.



Protective & Marine Coatings



Certified to
NSF/ANSI/CAN 61

Meeting Health
Effects Requirements
of NSF/ANSI/CAN
600

DURA-PLATE® 6000 REINFORCED EPOXY

PART A
PART B
PART B

B62W710
B62V710
B62BV710

WHITE
OFF WHITE HARDENER
BLACK HARDENER

Revised: March 13, 2026

APPLICATION BULLETIN

TRM.116

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: pre-mix each individual component with mechanical agitation (drill and mixing blade - Jiffy mixer ES or equivalent). Pour Part A (2 parts by volume) in with Part B (1 part by volume) and mechanically agitate for 3 minutes minimum until uniform and homogenous, without introducing excessive air. Cut-in periodically from container wall and bottom to avoid unmixed material.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	20.0 (500)	125.0+ (3,125)
Dry mils* (microns)	20.0 (500)	125.0+** (3,125)
~Coverage sq ft/gal (m ² /L)	13 (0.3)	80 (2.0)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1604 (39.4)	

*Consult systems guide on second page for specific concrete and steel recommendations.

**Refer to NSF website for product restrictions or recommendations on dry film thickness, reducer restrictions and cure times.

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 120.0 mils wet (3,000 microns):

	@ 35°F/1.7°C 50% RH	@ 55°F/13°C 50% RH	@ 77°F/25°C 50% RH
To touch:	4 hours	3 hours	2 hours
To handle:	12 hours	5 hours	4 hours
To recoat:			
minimum:	10 hours	5 hours	5 hours
maximum:	10 days	7 days	5 days
Cure to service:	10 hours	10 hours	10 hours
Pot life:	not recommended*	1 hour	1 hour

*It is recommended that the product is kept above 55°F (13°C) for application and mixing.

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Drying Schedule @ 120.0 mils wet (3,000 microns):

	@ 95°F/35°C <50% RH	@ 120°F/49°C <50% RH	@ 150°F/66°C <50% RH
To touch:	2 hours	1.5 hours	1 hour
To handle:	4 hours	3 hours	2 hours
To recoat:			
minimum:	5 hours	5 hours	5 hours
maximum:	3 days	24 hours	6 hours
Cure to service:	10 hours	10 hours	10 hours
Pot life:	40 minutes	40 minutes	10 minutes

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

PERFORMANCE TIPS

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes.

For high build applications a crosshatch spray technique is best.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, over thinning, climatic conditions, and excessive film build.

No reduction of material is recommended, as this can affect film build, appearance and performance.

Brush and roll application may be used for stripe coating, touch up, and small jobs where spraying may not be conducive, however this may require multiple coats to achieve target mil thickness.

Premix each individual component prior to application.

Pre-conditioning of material to between 77-85°F (25-29°C) is required and will aid in lower pressure needed for atomization and a smoother overall finish.

For Mortar Applications (Lining and Resurfacing): Clean, dry 20/40 mesh sand may be used at a mix ratio of 1:1 by volume or approximately 12 lbs/gallon.

For Immersion Service (if required): Holiday test in accordance with ASTM D 5162 for steel, or ASTM D 4787 for concrete.

When applying or repairing Dura-Plate 6000 in multiple coats, the surface should be checked for amine blush prior to applying the next coat or repair.

Refer to Product Information sheet for additional performance characteristics and properties.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with MEK. Clean pump, hose, and gun by flushing system with MEK. Where possible, slowly recirculate MEK until to remove any remaining glass flake from areas it could collect inside the pump. Wash tools immediately after use with MEK. Follow manufacturer's safety recommendations when using any solvent.

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Rocky Creek Clarifier #6 Mechanism Replacement Specification

Part 1 – General

1. DESCRIPTION OF WORK

- A. There shall be provided One (1) 130' diameter circular cage drive clarifier. The equipment shall include but not be limited to a center drive unit with torque control, walkway and platform with handrail, stationary center influent column, rotating sludge collection box, center feed well, drive cage, sludge collection arms, scum skimmer, scum box, anchor bolts and all other appurtenances required or shown on the drawings.
- B. Clarifier #6 was originally designed by EIMCO. The design parameters per the original drawing: 25584-01: Nov. 11, 1997
 - a) Clarifier Effluent - 12.5 MGD
 - b) Mixed Liquor Flow - 18.64 MGD
 - c) Return Sludge - 6.14 MGD
- C. The mechanism shall be capable of removing settled sludge solids from the tank floor and delivering them to a central pocket where the sludge will be removed through the suction line to the return sludge pumps. A skimming device shall collect floating solids to the scum box to be removed through the scum pumping system. See associated drawings from EIMCO.

2. DIMENSIONAL INFORMATION UNDERSTANDING

- A. All dimensional information shall be field verified by contractor prior to issuing prefabrication submittals and start of any manufacturing.
 - a) Prefabrication site visit to see the equipment must be arranged with two weeks advanced notice

3. WARRANTY

- A. The mechanism shall be warranted for two years from the time the mechanism is approved as operationally functional.
- B. The drive, main bearings, shall be warranted for ten years.

Part 2 – PRODUCTS

1. GENERAL REQUIREMENTS

- A. Clarifier #6 shall be the center drive type supported on a stationary influent column with the flow entering the bottom of the influent column and flowing upwards to the inlet openings at the water surface. See attached drawings.
- B. Major Components of the clarification equipment shall include but not be limited to:
 - a. Center drive mechanism, gear motor and overload alarm

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

- b. Walkway support with handrail and grating
 - c. Center support/influent column
 - d. Center drive cage
 - e. Feed well and supports
 - f. Rotating sludge collection arms
 - g. Truss rake arms with suction pipes and control valves
 - h. Scum skimmers
 - i. Scum trough with flush valve
 - j. Fasteners and anchor bolts
 - k. Stainless steel baffles with stand-off bracketing
 - l. Stainless steel notched weir plates
 - m. And all other components necessary for a complete operating system.
 - n. Bead blast all non-submerged stainless components
- C. Require that all structural sections show a comparable price for fabrication out of 304L Stainless Steel and 316L Stainless Steel

2. GENERAL DESIGN CRITERIA

- A. Design flows (MGD) of plant, with 6 final clarifiers
- a. Average Daily: 18 MGD
 - b. Design: 28 MGD
 - c. Peale 35 MGD
 - d. Hydraulic Design: $Z+100\% \text{ RAS} = 4,900 \text{ GPM} + 4,900 \text{ GPM} = 9,800 \text{ GPM}$
- B. Equipment Design Criteria:

See 1.1.B and 1.1.C

- C. Drive Design Requirements
- a. Mechanism design shall be such that there are no chains, sprockets, or bearings below or in contact with any water, including condensate.
 - 1. Drive shall have no lower pinion support bearing.
 - b. All planetary gear designs. No worm gearing.
 - c. Primary load carrying bearing shall be four-point loading, precision bearing.
 - d. Gearing shall be designed and rated per the current American Gear Manufacturers Association Standards. (AGMA)
 - e. Drive shall have a minimum operating life of 20 years at the continuous torque and speed rating.
 - f. All electrical and torque-limiting equipment is to be enclosed in NEMA 4X SS boxes. No plastic or fiber reinforced plastics.
- D. Speed and Torque Specifications
- a. Mechanism Speed - Approximately 0.017 RPM
 - b. Continuous (AGMA Rated) Torque 36,000 ft. lbs.

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

- c. Alarm Torque 39,600 ft. lbs.
 - d. Motor Cut-Off Torque 43,200 ft. lbs.
 - e. Momentary Peak Torque 72,000 ft. lbs.
- E. Fabricated assemblies shall be shipped in the largest sections permitted by carrier regulations and properly match marked for ease of construction. Match markings shall be clearly defined on all supplied installation and fabrication drawings.
- F. Fabricated and Structural Steel shall be per ASTM 304L SS standards and alternate of ASTM 316L SS standards.
- G. Minimum metal thickness shall be ¼" for all submerged plate and members unless otherwise specified.
- H. Submittal Requirements:
- a. Mechanism
 - 1. General arrangement drawings showing:
 - a. All major tank and mechanism dimensions and elevations,
 - b. Anchor bolt's locations,
 - c. Mechanism loadings on the tank,
 - 2. Engineering calculations showing the mechanism components meet the design torque requirements listed above.
Engineering calculations showing the walkway and platform meet the design criteria listed in the Bridge Walkway section.
 - b. Drive
 - 1. Calculations shall clearly specify the values used for the following
 - a. design parameters for Surface Durability and Strength rating:
 - b. Number of Pinions
 - c. Actual face widths
 - d. Tooth geometry factor (I and J factors)
 - e. Load distribution factor
 - f. Allowable contact stress
 - g. Allowable bending stress
 - h. Pinion pitch diameter
 - i. Tooth diametral pitch
 - j. Hardness ratio factor
 - k. Elastic coefficient
 - l. Life factor
3. EQUIPMENT DESCRIPTION
- A. DRIVE MECHANISM
- a. General: The drive mechanism shall consist of an electric motor, primary reduction unit, and an enclosed final reduction unit consisting of a pinion and

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

an internal tooth gear with a four-point contact precision bearing. Helical and planetary gear designs preferred.

- b. Primary Reduction Unit: The primary reduction unit shall be mounted on the top of the final reduction unit and properly registered to maintain accurate centers for the final reduction gearing.
 - 1. All gears shall be planetary or helical, no worm gears or chains.
 - 2. The primary reduction unit shall have sufficient bearing capacity to fully support the pinion gear without a lower support bearing.
 - 3. The life of the primary gearbox bearings shall be more than 100,000 hours at the operating torque listed in the Equipment Design Criteria section.
 - 4. The primary reducer shall be AGMA rated for 10 million cycles, when drive operates at the continuous output torque listed in the Equipment Design Criteria section.
 - 5. The primary reduction unit shall be coated with two-part epoxy paint for high corrosion resistance or unit shall be constructed of 304L SS.
- c. Final Reduction Unit:
 - 1. The final reduction housing shall be manufactured from stainless steel plate 304L SS, supply alternate pricing for 316L SS, all welds shall conform to applicable specifications of the American Welding Standards (AWS). After welding, all mounting and mating surfaces shall be machined to ensure proper fit and alignment of the drive pinion and mating gear. The base plate on which the gear and bearing is mounted shall be flat within 0.008". The stainless-steel plate to which the intermediate pinion drive gearbox is mounted shall be a minimum of 1" thick. Thickness is to be established by vendor engineering.
 - 2. The final reduction housing shall employ a labyrinth seal between the housing and the main gear driven rotating member.
 - 3. The final reduction unit internal tooth gear shall be machined to AGMA grade 6 or higher. Gear teeth shall have a core hardness of 250 to 300 BHN, and be induction hardened to 55 Rc. The main gear set shall be rated per AGMA Standard 2001-C95 for 20 years at a continuous torque load of at least 36,000 ft. lbs. Gear pitch diameter shall be a minimum of 40".
 - 4. The main gear support bearings shall be four-point contact precision bearing.
 - 5. The final reduction unit pinion shall be made of heat-treated alloy steel and shall be mounted on the output shaft of the intermediate reduction gearbox. The gear teeth shall be induction hardened to 55 to 60 Rc.
- d. Electric Motor
 - 1. The drive motor shall be IP65 Wash-down Rated, 1.15 Service Factor, Class H insulation.

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

- a. The motor will have a stainless steel NEMA 4X disconnect mounted to the adjacent handrail. There shall also be an 8"x8" stainless steel panel with a On/Off selector switch with a phenolic tag indicating Hand/Off position.
 - e. Conduit
 - 1. All conduits shall be 1" stainless steel.
 - f. Overload Device
 - 1. The overload protection device shall be housed in a stainless steel housing and have two independent switches, which may energize an alarm circuit when the load on the mechanism approaches overload and open the motor circuit when an excessive overload occurs. The switches shall be enclosed in a NEMA 4X SS housing. Overload device shall have a 6" diameter Stainless Steel torque gauge indicating torque load on drive unit in ft-lbs. Overload alarm, and overload cut off torque settings shall be factory preset per customer specifications.
 - g. Supply 4-20 mA remote torque monitoring feedback signal.
 - h. The entire drive unit shall be designed for a maximum overload torque listed in the Equipment Design Criteria section, and the final reduction unit main gear set shall be designed for a momentary peak torque listed in the Equipment Design Criteria section. All calculations of gear & bearing life shall be made in accordance with the latest AGMA and AFBMA standards.
 - i. All lubrication shall be Mobil brand.
- B. CENTER DRIVE PLATFORM**
- a. The center drive platform shall provide access to the center drive assembly, lubrication fill and drainpipes, drive torque control and SS electric control panel.
 - b. The platform should provide 36" clearance around the drive components. A removable section of the flooring shall provide access to the drive maintenance points.
 - c. The platform shall consist of Aluminum supported by the platform bottom members. Handrail shall be 2" Dia. aluminum.
- C. BRIDGE WALKWAY**
- a. The walkway bridge shall be constructed of structural I-beams or two side structural trusses of welded 3041 SS, alternate pricing for 3161 SS, with a 48" wide walkway consisting of Aluminum grating supported by the walkway bottom members. Handrail shall be 2 - rail aluminum handrail. In the case of structural truss construction, the side truss may serve as handrails for the walkway.
 - b. The bridge shall be supported by the center drive platform and the outer tank wall.

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

- c. The bridge shall be designed for a total deadload plus a live load of 50 lbs. per square foot with the deflection not to exceed 1/480 of the span.
- d. The bridge will have three sets of lighting, refer to adjacent Clarifier.
 - 1. Six (6) lights total, Topaz Low Power Flood Light, Model: F-FL/50/XXK/KN/BZ-87, 120V
 - 2. 12"x10"x6" Hoffman Stainless Steel junction box to tie existing lighting circuit and conduit.
 - 3. All SS 1" conduit and fittings. Myers Hubs for all junction box penetrations.
 - 4. Lights will be on a Dusk to Dawn Photocell with a HOA switch located on the junction box.

D. STATIONARY INFLUENT COLUMN

- a. The influent column shall have a minimum ¼" wall thickness with the diameter as listed in the Equipment Design Criteria. This shall conform to current engineering calculations by manufacture and not less the ¼".
- b. Top mounting plate shall be drilled and tapped per the hold down bolt pattern and size determined by gear box manufacture. Mounting surface to be fabricated from 304L SS, alternate pricing for 316L SS, plate and machined true to the vertical column within acceptable OEM standards. Top plate shall have rainwater relief hole installed in the middle, no less than 1-1/2" Dia.
- c. The column shall be designed to support the weight of the entire structure resting upon it and to withstand the mechanism design strength criteria.
- d. Influent discharge ports shall be included at the upper end of the influent column. These ports shall diffuse the flow entering the tank and ensure low velocity into the Influent Dispersion Well. Influent velocity shall not exceed
- e. 1.0 fps at the peak flow rate specified.
- f. Clarifier #6 will have a rotating sludge collection box that shall be mounted around the top of the center column to house the overflow valves from the suction pipes and arranged to convey the sludge from the suction pipes to the central Return Activated Sludge (RAS) withdrawal pipe within the center column. The collection box shall be connected to and rotate with the cage truss.
- g. A stainless-steel RAS withdrawal pipe shall be mounted within the center influent column, extending from a flexible connector at the base of the column to the sludge collection box. A plate mounted within the column shall be provided to convey sludge from the sludge collection box into the RAS withdrawal pipe. Minimum wall thickness of the pipe shall be ¼".

E. CENTER CAGE

- a. The center cage shall be a 304L SS, alternate pricing for 316L SS, box truss construction with connections for the sludge removal arms.
- b. The cage top shall bolt to the main gear.
- c. The cage shall be designed to withstand the mechanism's design torque.

F. SLUDGE COLLECTOR ARMS

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

- a. The sludge collector arms shall be of 304L SS, alternate pricing for 316L SS, truss construction with 304L SS, alternate pricing for 316L SS, scraper blades and adjustable stainless-steel squeegees (OEM to give feedback to Macon Water Authority as per best available squeegee materials.) Squeegees shall be fastened to the rake blade with 316L bolts and 304L stainless steel nuts. The blades shall be properly sized to insure complete raking of the bottom twice per revolution. The blades shall rake heavy sludge to a center hopper while directing solids to the inlets of the individual sludge suction pipes.
- b. Suction pipes and control valves: PVC suction pipes shall be provided on each rake arm. The lower end of each pipe shall be attached to the rake arm by means of a stainless-steel U-bolt clamp and the pipes shall be supported by the rake arm and cage. The pipes shall be arranged to slope upward toward the tank center, in the same horizontal plane, and shall continue to the sludge collection box so that each pipe drains freely in the event the tank is drained. Each sludge suction pipe shall terminate at the sludge collection box and shall discharge into the box by means of an adjustable overflow valve located within the box. Each valve shall be a concentric tube type, consisting of a fixed riser having a vertical slot. The sleeve shall be easily tuned to control the flow through the slot. The sleeve shall also be completely removable to allow flushing of the suction pipe. The valves shall be so arranged that they can be operated from the walkway without the use of an access platform below the elevation of the walkway and so that the flow from each can be observed, estimated, and sampled. An operating handle shall be furnished to adjust the valves.
- c. The arms shall be adjustable to ensure an even travel above the installed grout in the tank bottom.

G. FEED WELL

- a. The feed well shall be of the size indicated in the Equipment Design Criteria. It shall be supported by stainless steel supports attached to the center cage. The well shall be fabricated of ¼" 304 SS, alternate pricing for 316L SS, plate with top and bottom reinforcing angles. Plate shall be thicker if OEM design designates yet not less than ¼".
- b. The feed well shall include (4) 4" by 12" scum port openings to allow escape of surface scum inside the well. A removable scum baffle shall be provided over the ports.
- c. Supply a ¾" Stainless Steel water line to the center of the clarifier to provide water to the feed well area. Discharge end should have a 6" nipple directing water to the feed well. A SS ball valve shall be installed near the perimeter wall of the clarifier to shut the water supply off.

H. SKIMMER

- a. There shall be mounted on each sludge collector arm a skimming device arranged to sweep the surface of the of the clarification compartment once per revolution, automatically removing scum and floating material into a scum

Rocky Creek Clarifier #6 Mechanism

Replacement Specification

box at the stainless-steel channel supported and extended tangentially from the feed well to a recessed adjustable pivoted scum scraper at the tank periphery.

- b. The scum scraper shall consist of aluminum scraper, double acting hinged connection, support arms, neoprene wipers, outer wear strip and positive means to maintain the blade against the baffle.
- c. The scum scrapers shall trap floating scum pushed outwards by the tangential stainless steel scum blade and efficiently deposit the solids into the scum trough.
- d. The scum trough shall be the size indicated in the Equipment Design Criteria and constructed of minimum ¼" 304L SS, alternate pricing for 316L SS, plate with a 6" outlet. To include an automatic flush valve mechanism to assure scum is effectively flushed.

I. ANCHOR BOLTS AND FASTENERS

- a. Anchor bolts shall be 304 stainless steel and be furnished by the equipment manufacture. All fasteners to be 304 stainless steel with 316 SS nuts.

J. CONCRETE REPAIR AND PROTECTIVE BIOLOGICAL INHIBITING COATING

- a. The concrete effluent trough and any damaged areas of the clarifier exposing re-bar shall be blasted, cleaned, and coated in accordance with the attached specifications as issued by Sherwin Williams. Specification attached.
- b. The effluent trough shall be coated with a protective biological inhibiting coating. This coating shall extend over the wall, under the weir plate, the entire trough and up the clarifier wall as illustrated in the attached document.

Part 3 – EXECUTION

1. INSTALLATION

- A. Fabricator shall field verify tank dimensions prior to any material purchases and starting fabrication.
- B. OEM shall establish hold points for contractor to allow for field verification from OEM that installation is correct.
- C. OEM shall supply training for plant personnel.
- D. OEM shall review with maintenance the PPM's and Maintenance of the equipment.
- E. Check and certify installation and instruct the plant personnel in the operation and maintenance. A minimum of 3 trips, per clarifier for 5 days total, per clarifier shall be provided.
- F. The clarifier will be taken out of service for supplier to get actual dimensions once bids have been awarded. We will coordinate this as to not disrupt operations.

Rocky Creek Clarifier #6 Mechanism Replacement Specification



Add a 12"x10"x6" Hoffman Stainless Steel junction box to tie existing power circuit and conduit.



STAINLESS STEEL SLIDE & WEIR GATE

Product Specifications

GENERAL

SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and incidentals required to furnish and install slide gates, operating stems, and operating floor stands, complete and operational with all necessary accessories as shown on the Contract Drawings, as specified herein, or as required for complete operation.
- B. The Contractor shall obtain all equipment specified in this Section from one manufacturer to ensure proper coordination and functionality. The manufacturer shall have responsibility for performance and compatibility of the entire system. This does in no way relieve the Contractor for ultimate responsibility under this Contract for equipment, coordination, installation, operation and guarantee.
- C. The Contract Drawings are for the purpose of guidance and to show functional features and required external connections. They do not necessarily show all components necessary to accomplish the desired results nor do they necessarily show all components required to interface with the equipment. The Contractor shall provide all parts, equipment, and devices necessary to meet the functional requirements of the system.

REFERENCES

- A. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:
 - 1. American Water Works Association (AWWA C561)
 - 2. American National Standards Institute (ANSI)
 - 3. American Society for Testing and Materials (ASTM)

SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. The slide gates shall be manufactured in accordance with the latest version of AWWA C561, and shall be constructed of stainless steel (ASTM 304L or 316L).
 - 2. Liberal safety factors will be used in the design of all equipment. Working stresses will not exceed the lower value of one half of the yield strength or one fourth of the ultimate strength of the material, whichever is less. The slide gates and appurtenances shall be designed for installation in the structures as shown on the plans.

SUBMITTALS

- A. For approval: Submit the following shop drawings for approval:
 - 1. Manufacturer's information, specifications, and data showing dimensions, materials of construction, and weight of all major items of equipment.
 - 2. Installation diagrams showing location, arrangement, and size of all fasteners required for the equipment.
 - 3. Setting drawings, templates, and instructions for installation of frames, thimbles, etc.

For more information about Hydro Gate or to view our full line of water products, please visit www.hydrogate.com or call Hydro Gate customer service at 1.800.423.1323.

Mueller refers to one or more of Mueller Water Products, Inc., a Delaware corporation ("MWP"), and its subsidiaries. MWP and each of its subsidiaries are legally separate and independent entities when providing products and services. MWP does not provide products or services to third parties. MWP and each of its subsidiaries are liable only for their own acts and omissions and not those of each other. MWP brands include Mueller®, Echologics®, Hydro Gate®, Hydro-Guard®, Jones®, Mi.Net®, Milliken®, Pratt®, Singer®, and U.S. Pipe Valve & Hydrant. Please see www.muellerwp.com/about to learn more.

Copyright © 2019 Henry Pratt Company, LLC. All Rights Reserved. The trademarks, logos and service marks displayed in this document are the property of Mueller Water Products, Inc., its affiliates or other third parties. Products marked with a section symbol (§) are subject to patents or patent applications. For details, visit www.mwppat.com. These products are intended for use in potable water applications. Please contact your Mueller Sales or Customer Service Representative concerning any other application(s).

4. Certification that all components were designed based upon the maximum seating and unseating heads described herein.
- B. Upon completion of installation, submit a digital copy of the Operation and Maintenance Manual for this equipment. A final copy of this manual shall be approved by the Engineer prior to distribution and as a minimum shall contain the following:
 1. Operational and maintenance manuals shall include all approved shop drawings associated with this Section, complete instructions for installation, and parts list for all components.
 2. Include a list and frequency of specific maintenance activities.

PRODUCTS

MANUFACTURERS

- A. Provide slide gates as manufactured by the following:
 1. Us (Hydro Gate products).
 2. Approved equal.

EQUIPMENT MATERIALS

- A. All slide gates shown on the plans and listed in the specifications shall conform in all respects to the latest version of AWWA C561, with the noted changes and additions: Materials used in construction of slide gates and appurtenances will be best suited for the application and will conform to the following specifications:
 1. Frame, Slide, Reinforcing Members and Self-contained Yoke (as required): Stainless Steel, ASTM A240/A240M, Type 304L or 316L.
 2. Stems and retainer bars: Stainless Steel, ASTM A276, Type 304 or 316.
 3. Fasteners: Stainless Steel, ASTM F593/F594, Alloy Group 1 or 2 (Type 304 or 316).
 4. Invert seals and compression load pad: Neoprene or EPDM, ASTM D2000, 60 Durometer.
 5. Side seal: Ultra High Molecular Weight (UHMW) Polymer, ASTM D4020.
 6. Top wedges: Stainless Steel, ASTM A351-CF8M, Type 304 or 316
 7. Pedestals, Wall Brackets and Stem Guide Brackets: Cast Iron, ASTM A126, Class B or Stainless Steel, ASTM A276, Type 304 or 316.
 8. Stem Guide Bushings: Silicon Bronze, ASTM B584, Alloy 873 or Ultra High Molecular Weight (UHMW) Polymer, ASTM D4020
- B. Gate frame shall be flat back, embedded or channel mount as shown in the "Gate Schedule." Spigot-back frames are not acceptable. The frame shall be an integral unit of brake form and structural shapes, rigidly assembled to form the waterway openings. Holes shall be provided for mounting on anchor bolts. Seats and seals shall be secured to the frame in a manner to insure they will remain in place, free from distortion or loosening during the life of the gate. Seat contact pressure shall not exceed 600psi at the design head.
- C. Gate slide shall conform to the safety factors stated under "General", but shall, in no case, be less than 1/4 inch thick. Deflection under full head shall be limited to 1/720 of the span. The stem connector clips or stem block pocket shall be welded to the slide. Gates over 24" wide shall have adjustable top wedges in order to prevent deflection in the slide resulting from over closure.
- D. Flush Bottom: Slide gates shall incorporate a flush-bottom seal that is mechanically fastened to the bottom frame invert member. The seal shall be of the materials shown in "Materials of Construction." Press fit seals are not acceptable.
- E. Side Seals: UHMW seals shall be provided as specified in the "Gate Schedule." Seals shall be securely fastened to the frame with formed stainless steel retainers and shall be replaceable and adjustable without removing the gate from the installed position. A compression load pad shall be set behind the UHMW seal to allow for a self-adjusting seal system. The face of the UHMW guide that is in contact with the cover bar shall have a machined or extruded groove, in order to create a raised surface on each side, to allow for secondary adjustment of the seal clamp force.
- F. Yoke: Self-contained gates shall be provided with a yoke designed to withstand the thrust of the operator. Yoke deflection shall not exceed 1/360 of the gate width or a maximum of ¼ inch, whichever is less at maximum operating load. The yoke head channels shall be welded to the gate frame. The channels shall be sufficiently spaced to allow removal of the gate slide.

- G. 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 times the rated output of the floor stand or bench stand with a 40-pound effort on the crank or handwheel. The threaded portion of the stem will have cold rolled threads of the double lead Acme type. Stainless Steel couplings, threaded and keyed to the stems, will join stems of more than one section. All threaded and keyed couplings of the same size will be interchangeable. Manually operated, rising stem type gates will be provided with an adjustable stop collar on the stem to prevent over-opening of the gate.
- H. Gates 48 inch and wider and having widths greater than twice their height shall be provided with two operators connected by a tandem shaft for simultaneous operation.
- I. Stem guides will be split collar bronze type, mounted on cast iron brackets to allow for installation after the stem is placed. They will be adjustable in two directions and will be spaced at sufficient intervals to adequately support the stem. The inside diameter of the guide shall be 1/8 inch to 1/4 inch larger than the outside diameter of the stem. Stem guide spacing will not exceed an L/r ratio of 200.
- J. Manually operated lifts shall be handwheel or geared crank type as shown in the "Gate Schedule." Lifts shall operate the gate with a maximum pull of 40 lb on the handwheel or crank. Handwheel or crank shall be located approximately 36 in. above grating or walkway. All lifts shall have thrust bearings, bronze lift nuts, and a bronze stop nut to limit the downward travel of the stem and slide. All geared lifts shall have cast or ductile iron housings and cast or fabricated pedestals. All lifts shall be rising stem type if possible. Lifts shall be grease lubricated and regreasable through grease zerks. Oil bath lifts are not acceptable.
- K. Motor operated lifts shall be a 460-V, 3-phase, 60-Hz motor with precision reduction gearing enclosed in weatherproof housing. The operator shall be designed to raise the gate at a rate of approximately 10 to 14 inches/min. Integral controls shall include a control power transformer, reversing controller, torque switches, limit switches, internal atmospheric controls to prevent condensation, open-stop-closed push-buttons, and gate position indicator. Where applicable, the controls shall also include a local-off remote selector switch. Motor reduction helical gear and pinion shall be of heat-treated alloy steel. Final reduction worm shall be of alloy steel and worm gear of machined, high-tensile strength bronze. All gearing shall be proportioned for 100% overload condition. Operator shall have a de-clutch lever and handwheel for manual operation.
- L. A clear, polycarbonate plastic stem cover and indicator shall be provided on each slide gate operator. Stem indication shall be provided to denote gate level. A cast aluminum adaptor shall be used to mount the cover to the lift or operator. The covers shall be capped, vented, and of sufficient length to allow full travel of the gate.

FINISHES

- A. The gate manufacturer shall be responsible for shop prime and finish painting of all cast iron and steel accessories supplied under this contract. All coatings shall conform to VOC Emission Regulations in effect at the manufacturing location and at the project site to allow touch up or recoating to be performed with the same products.
- B. Submerged surfaces shall be cleaned to SSPC SP10, dry, and grease-free prior to painting in conformance with the paint manufacturer's instructions. Non-submerged surfaces shall be cleaned to SSPC SP6.
- C. Stainless steel gates and accessories shall not be painted.
- D. All cast iron and steel accessories shall receive a primer and finished coat with a high-solids epoxy coat or approved equal for potable water use. Primer and finished coats shall be applied in the manufacturer's shop.
- E. Where required by application, the coating shall be approved for contact with drinking water by the NSF, EPA, or other appropriate governing agencies. Number of coats, mil thickness, and surface preparation shall be in accordance with the paint manufacturer's recommendations for that application.
- F. Coating for all cast iron and steel accessories shall be Ameron Amerlock 400, medium gray color.

SHOP TESTING

The completely assembled gate will be shop inspected for proper seating. Seals shall be adjusted to exclude a 0.004 inch thickness gauge between the seating surfaces. The slide gate shall be shop-operated from the fully open to the fully closed position to verify the assembly is workable.

EXECUTION

INSTALLATION

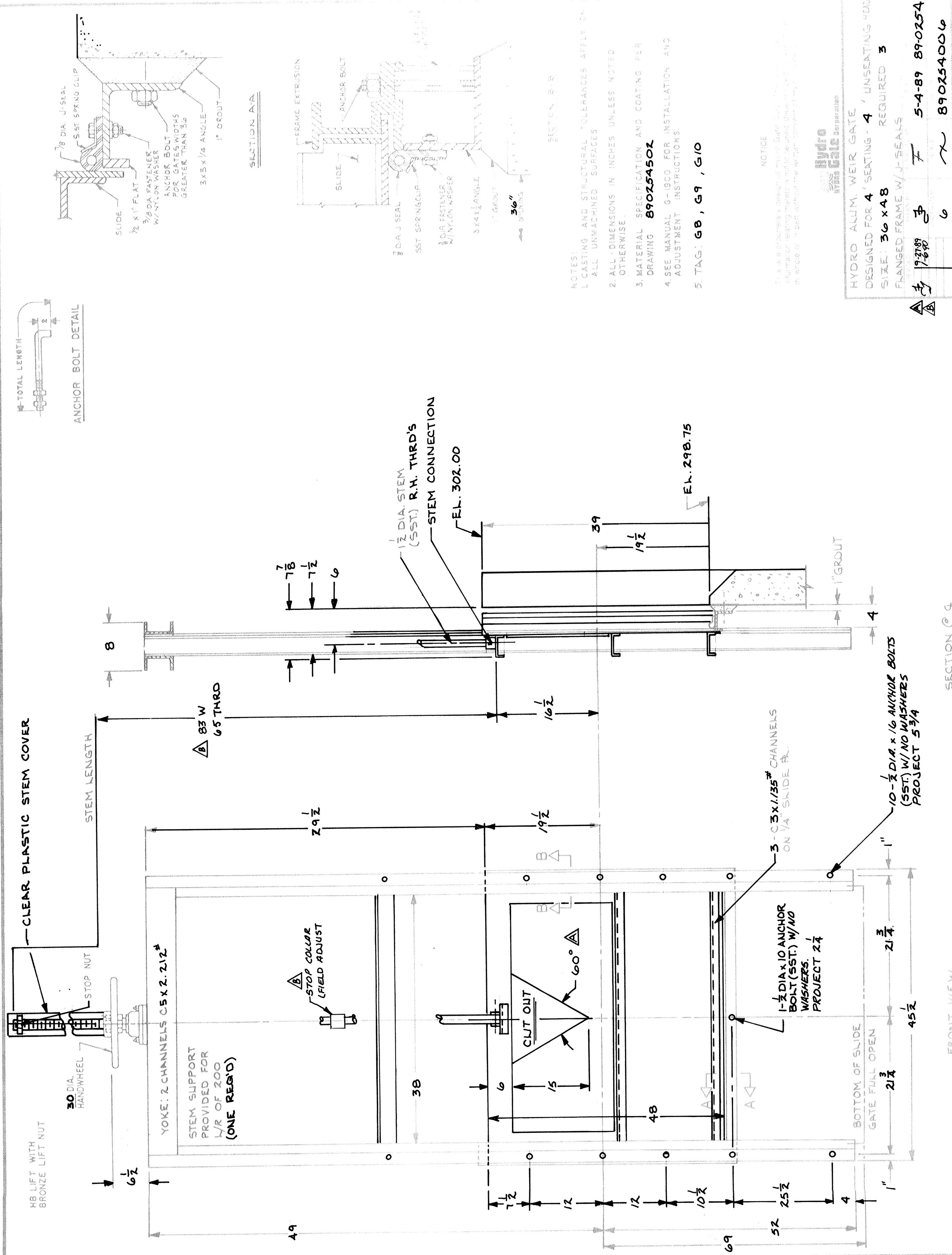
- A. The slide gate equipment and appurtenances shall be installed in accordance with the Installation Manual furnished by the gate manufacturer. Extreme care should be used in handling, storage, and installation of this equipment to prevent damage or distortion of the equipment and to insure proper performance.

FIELD QUALITY CONTROL

- A. Field testing shall be performed after installation of the equipment. The field testing shall demonstrate the following:
 - 1. The equipment has been properly installed in accordance with manufacturer's instructions and recommendations.
 - 2. The equipment has been installed in the specified location and orientation or as shown on the Contract Drawings.
 - 3. The equipment has been aligned.
 - 4. There are no mechanical defects in any of the parts.
 - 5. The slide gates shall undergo a leakage test following installation. The leakage test shall be in accordance with the latest version of AWWA C561.



APPENDIX B



APPENDIX C

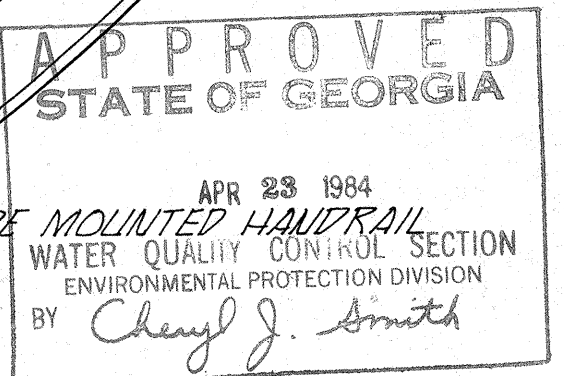


TOP PLAN
SCALE : 1/8" = 1' - 0"

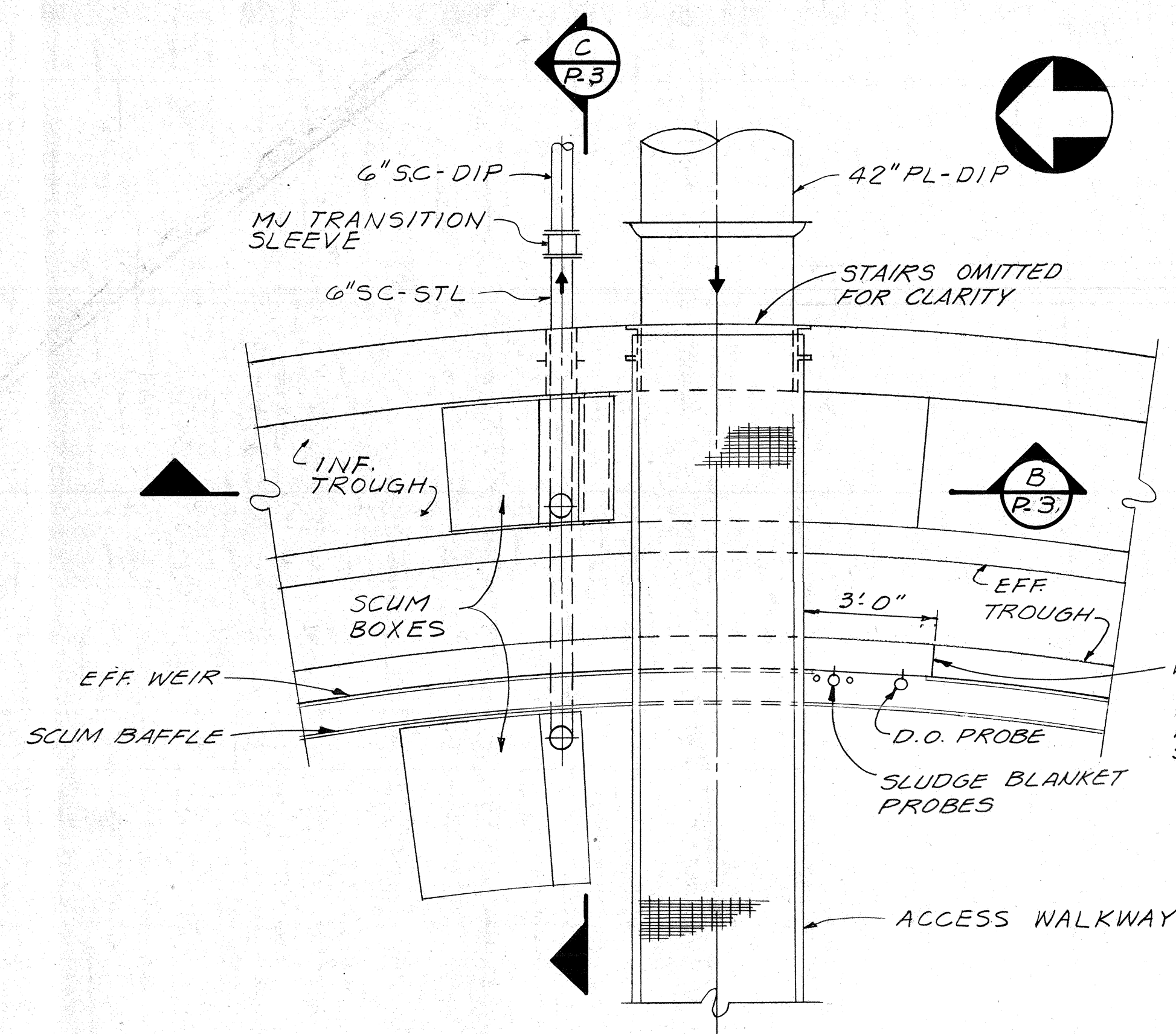
ROCKY CREEK W.P.C.P.
FINAL CLARIFIER NO. 6
PLAN & SECTIONS

DATE	DECEMBER, 1982	SHEET S-3 OF 64
SCALE	AS NOTED	

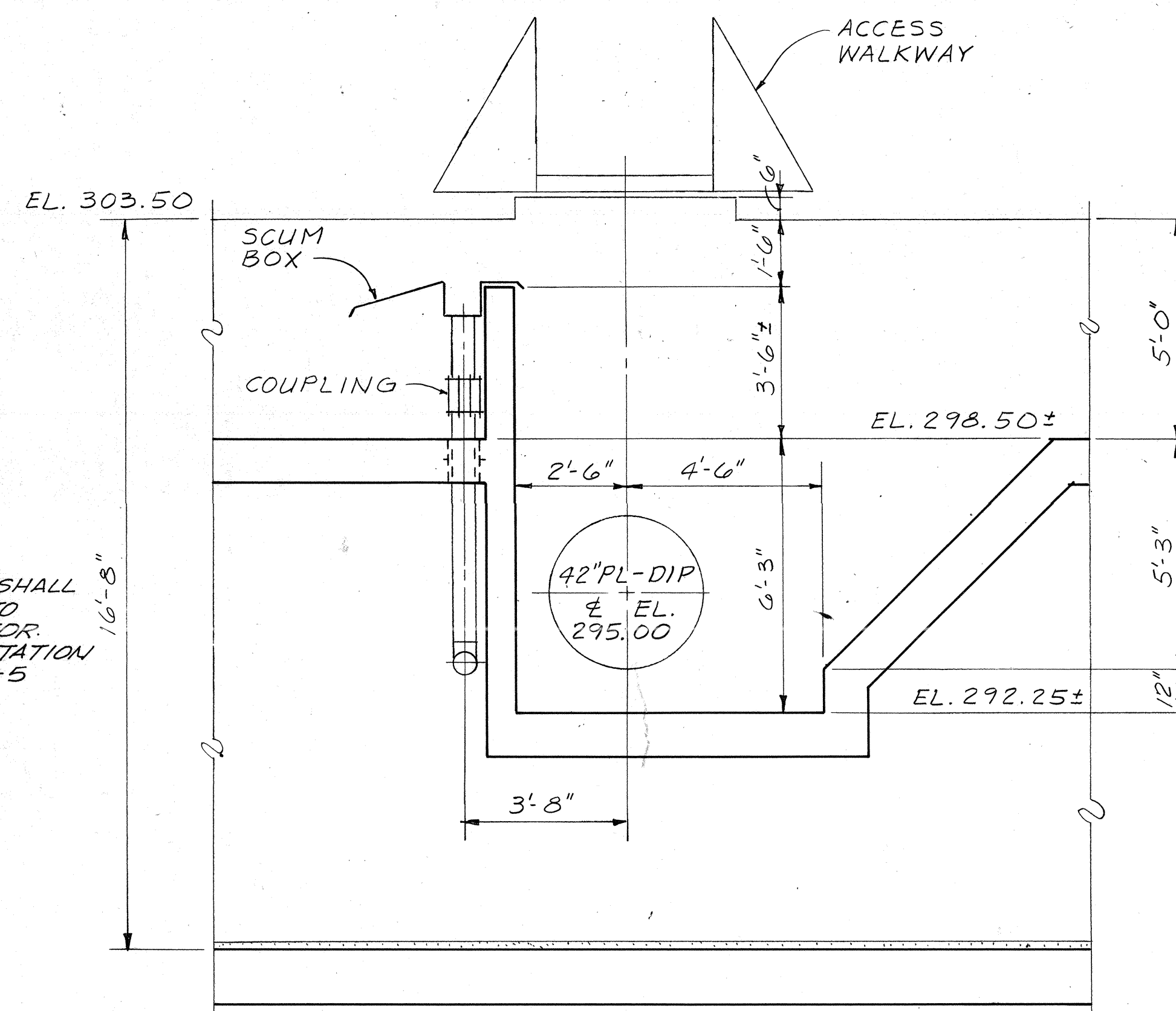
SHEET S-3 OF 64



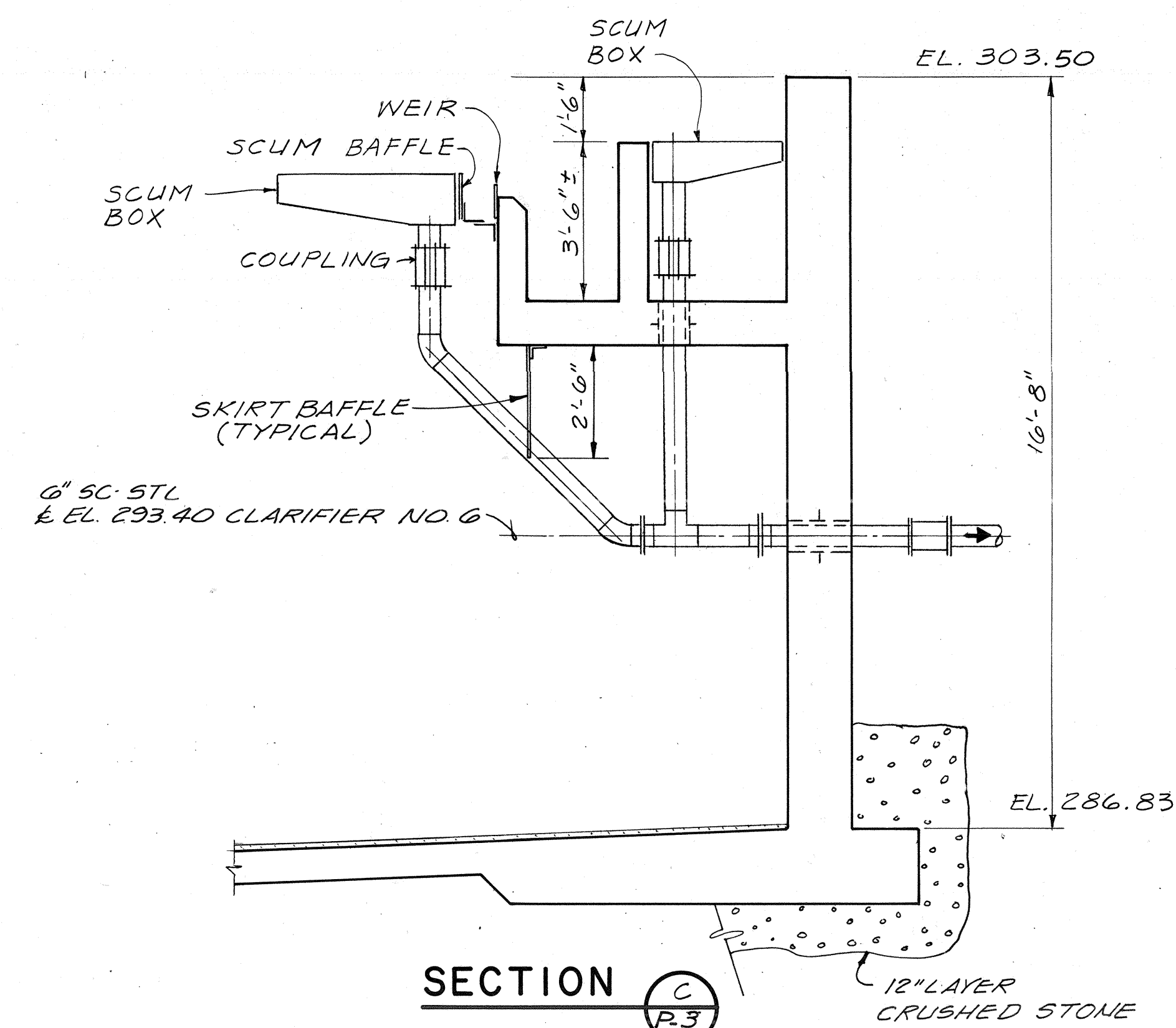
SHEET P-2 OF 64



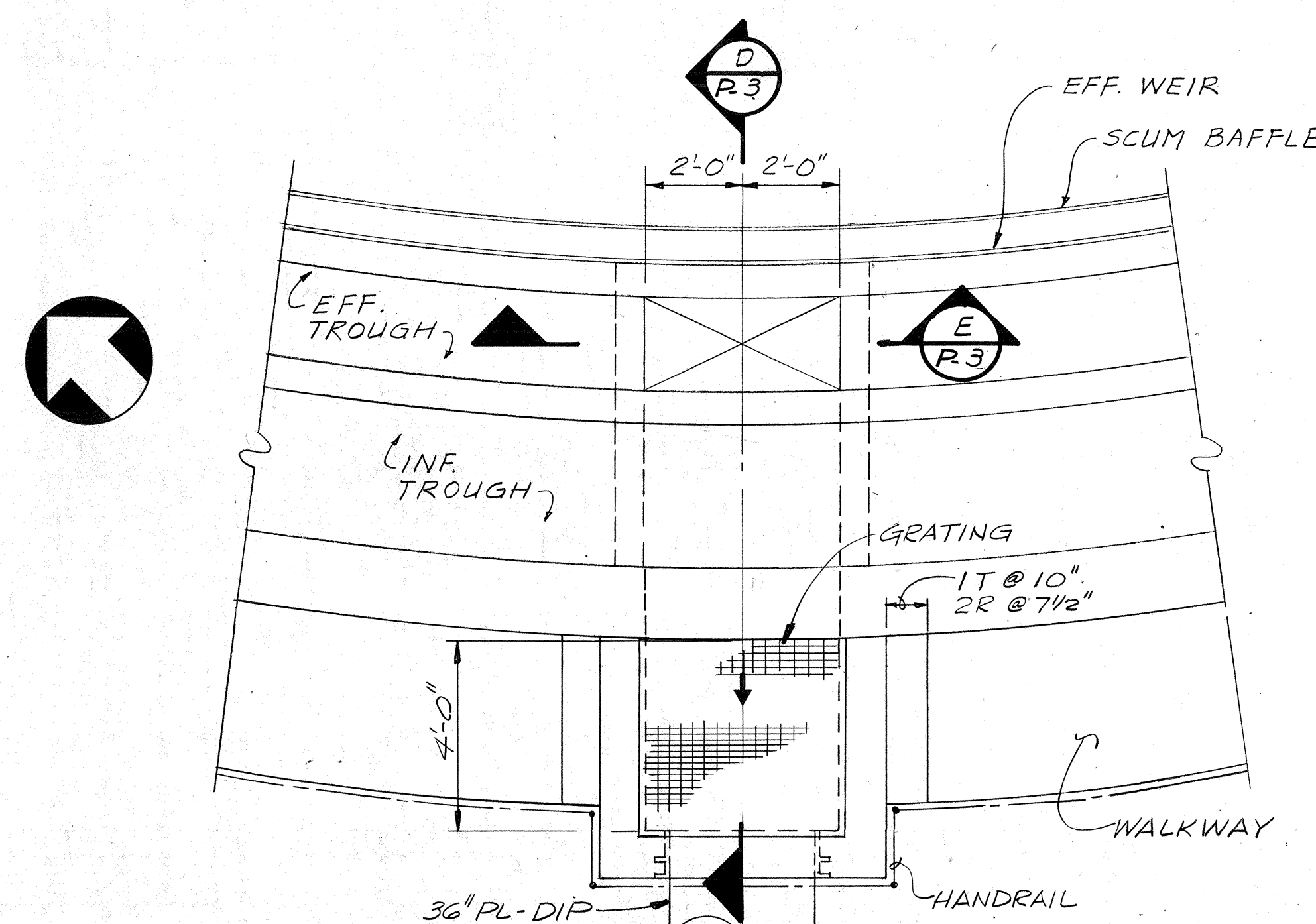
DETAIL PLAN 1
(P.3)



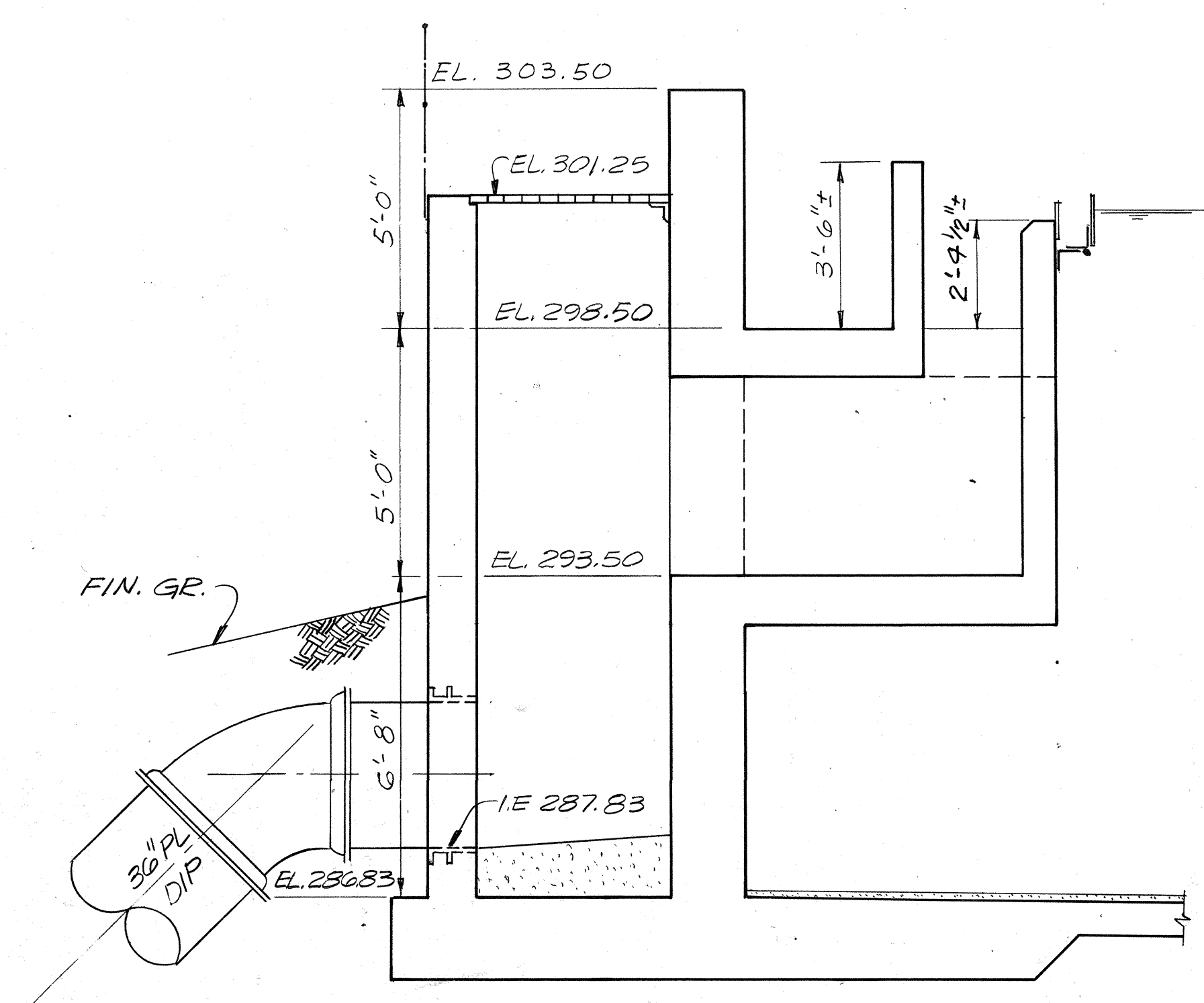
SECTION B
(P.3)



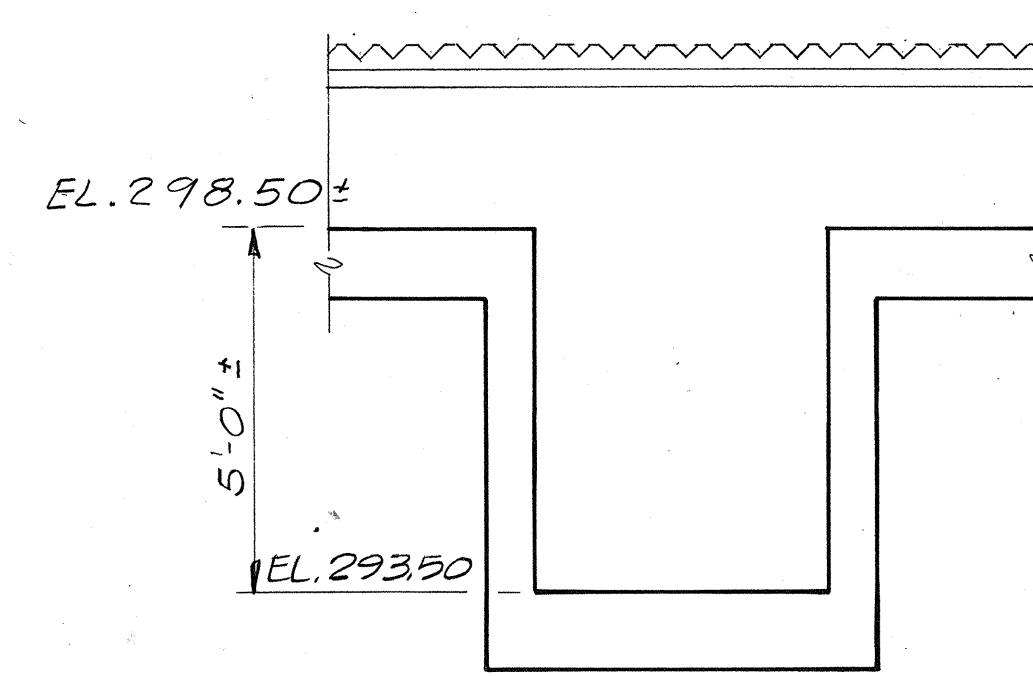
SECTION C
(P.3)



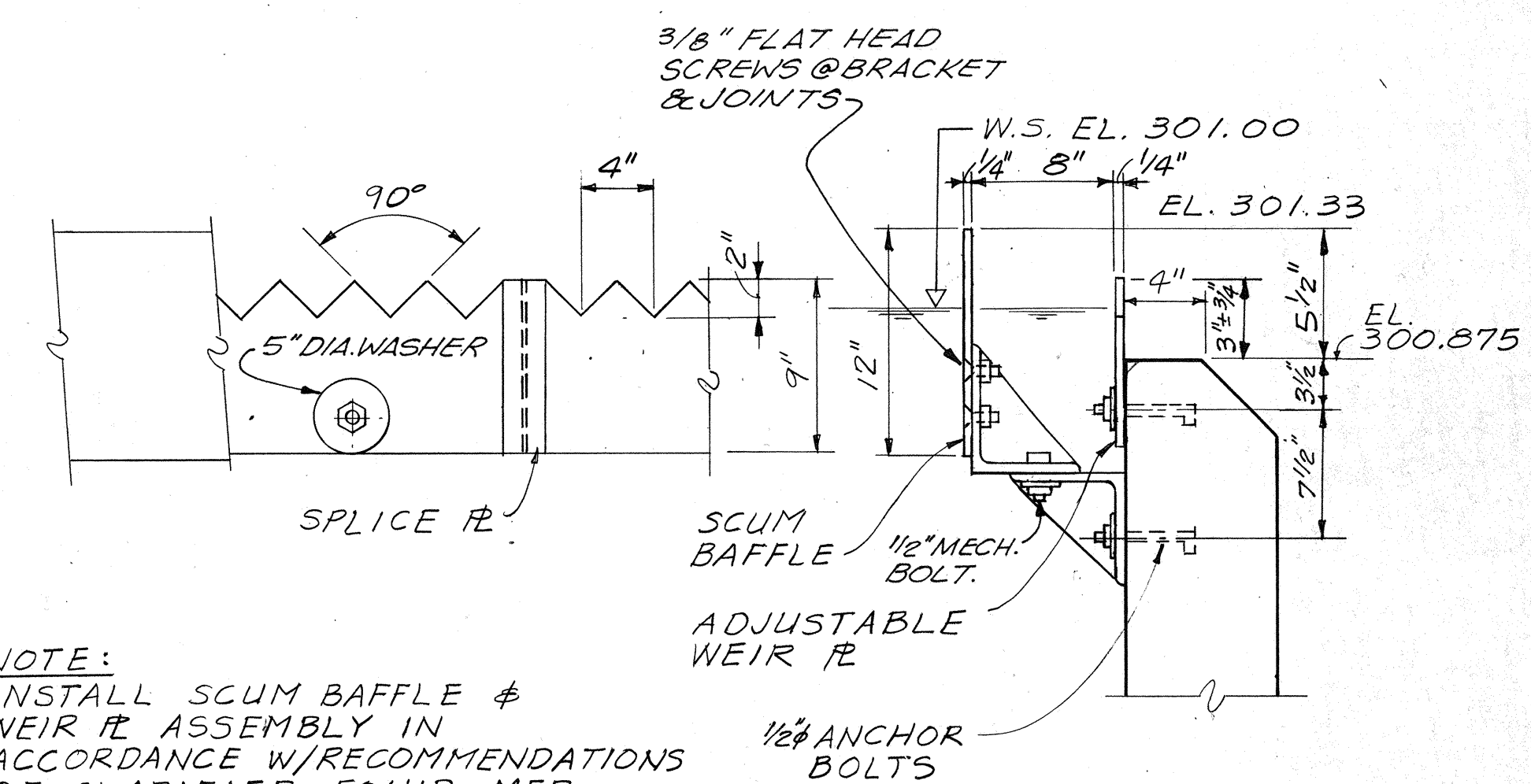
DETAIL PLAN 2
(P.3)



SECTION D
(P.3)

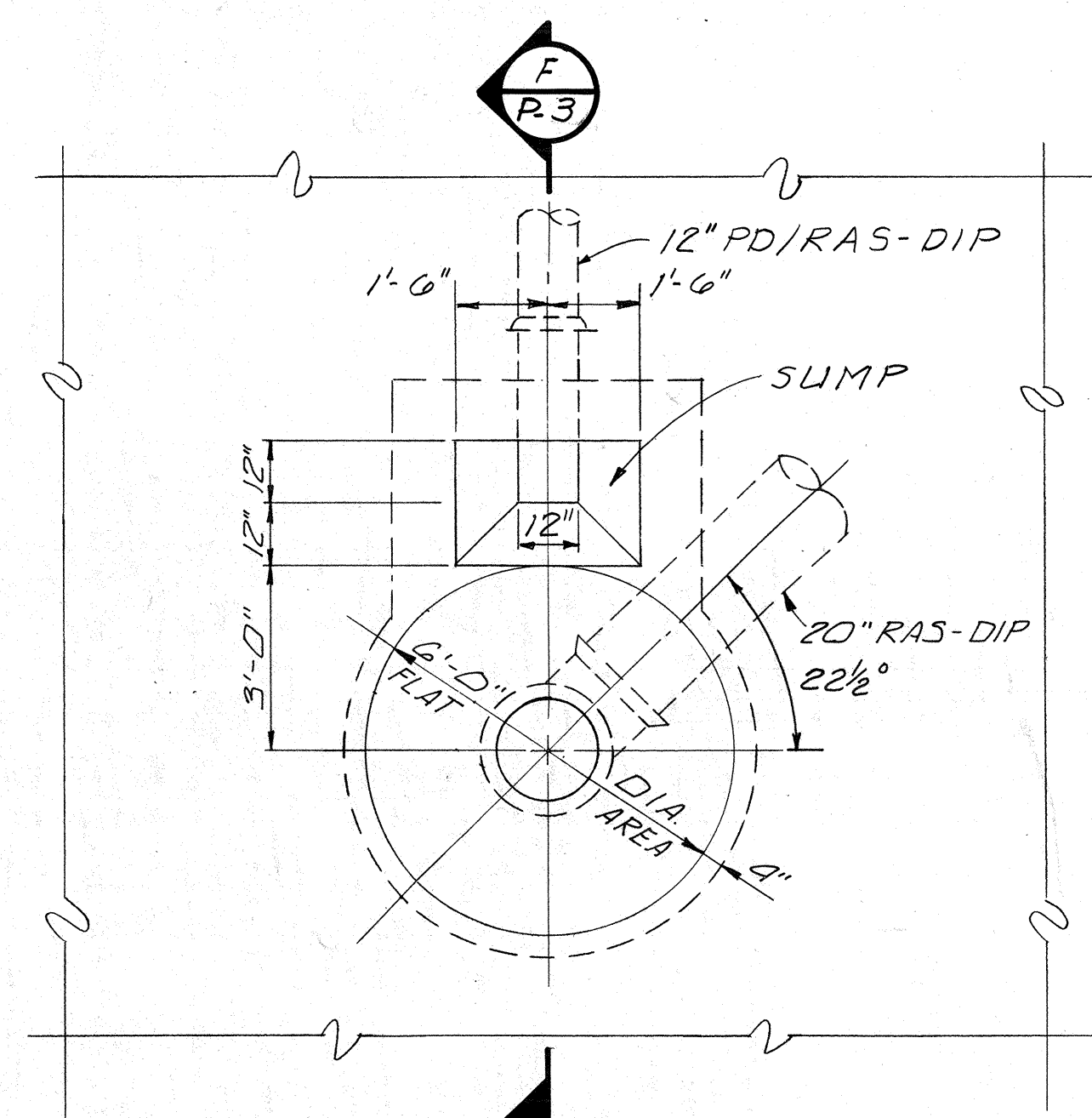


SECTION E
(P.3)



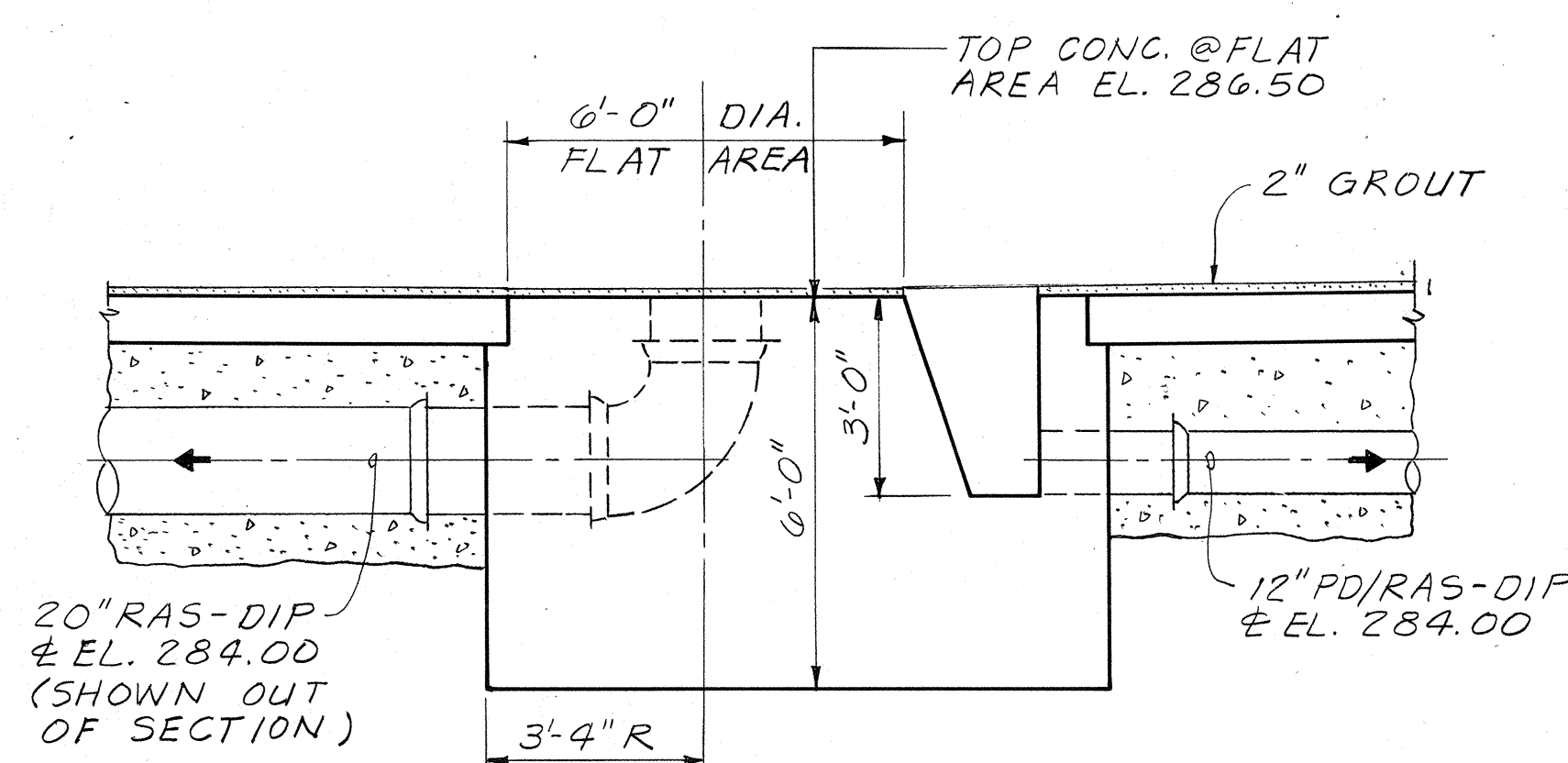
NOTE:
INSTALL SCUM BAFFLE &
WEIR PLATE ASSEMBLY IN
ACCORDANCE W/RECOMMENDATIONS
OF CLARIFIER EQUIP. MFR.
NOTE: SCUM BAFFLE, WEIR PLATE & SUPPORT
BRACKETS SHALL BE FRP - ALL BOLTS
AND NUTS SHALL BE STAINLESS STEEL

WEIR AND SCUM BAFFLE DETAIL
N.T.S.

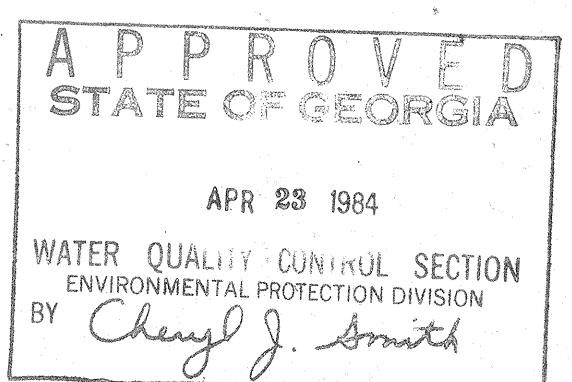


DETAIL PLAN 3
(P.3)

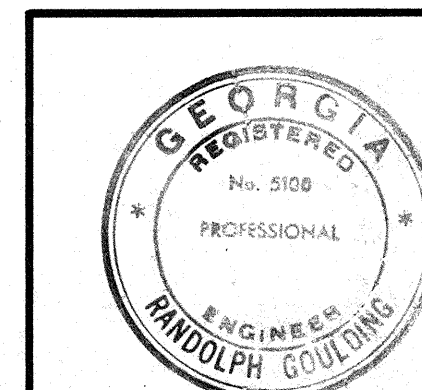
NOTES:
1. CLARIFIER EQUIP NOT
SHOWN.



SECTION F
(P.3)



JACK C. DOZIER P.E.
CONTRACT - B (DIVISION ONE)



MACON-BIBB COUNTY WATER & SEWERAGE AUTHORITY
MACON, GEORGIA

ROCKY CREEK W.P.C.P.

FINAL CLARIFIER NO. 6
SECTIONS AND DETAILS

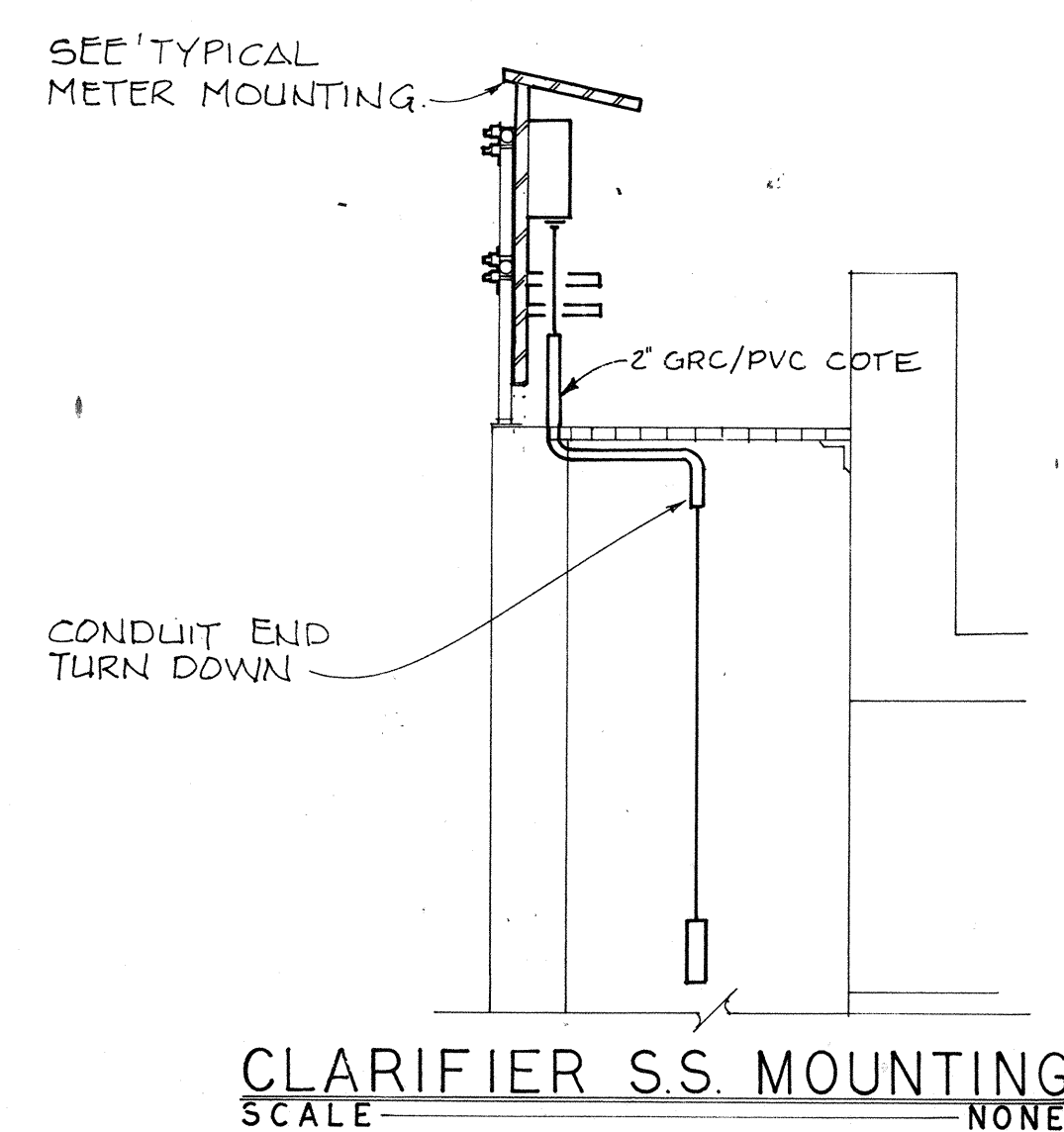
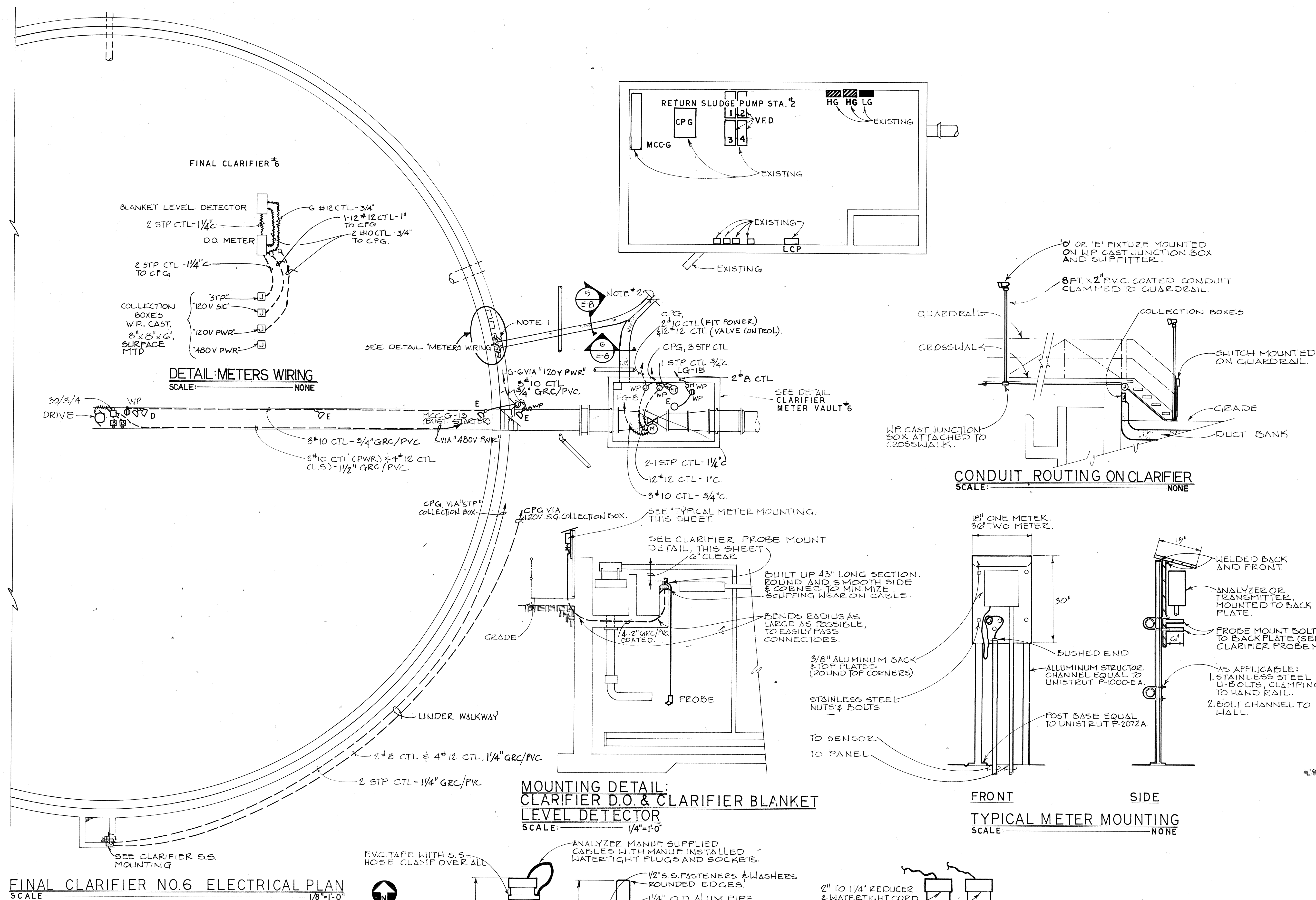
JORDAN, JONES & GOULDING, INC.
CONSULTING ENGINEERS - ATLANTA, GEORGIA

DSGN. RLP
CHKD. JP

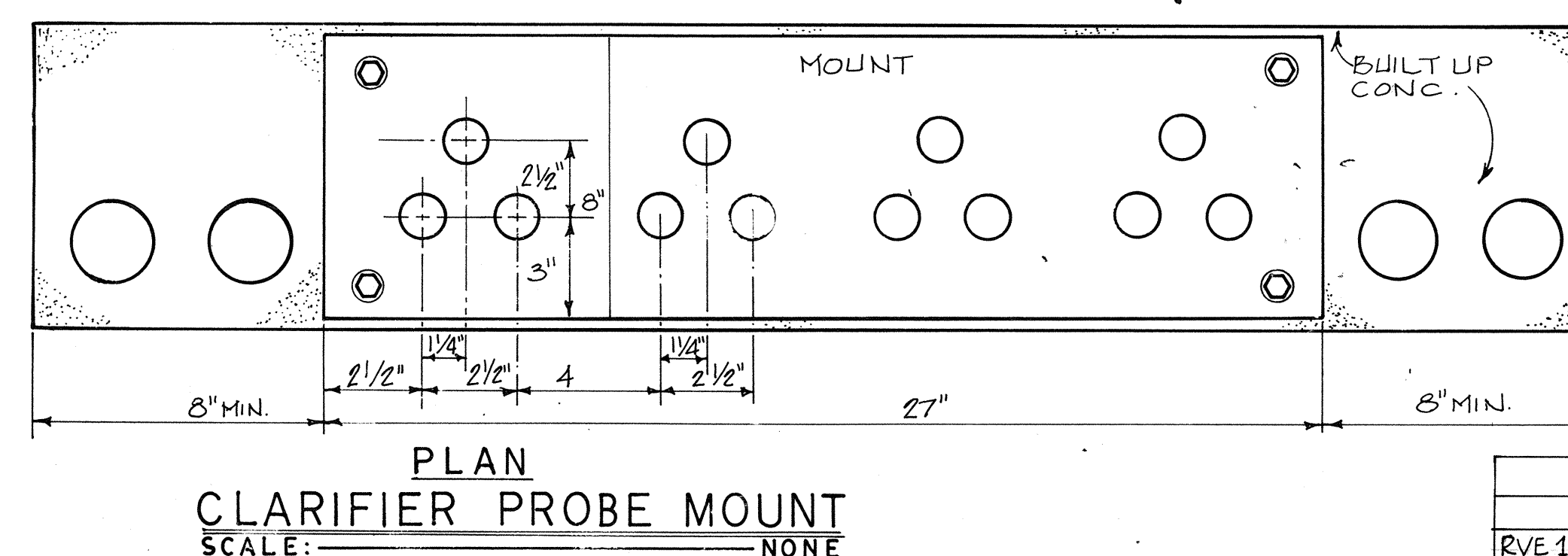
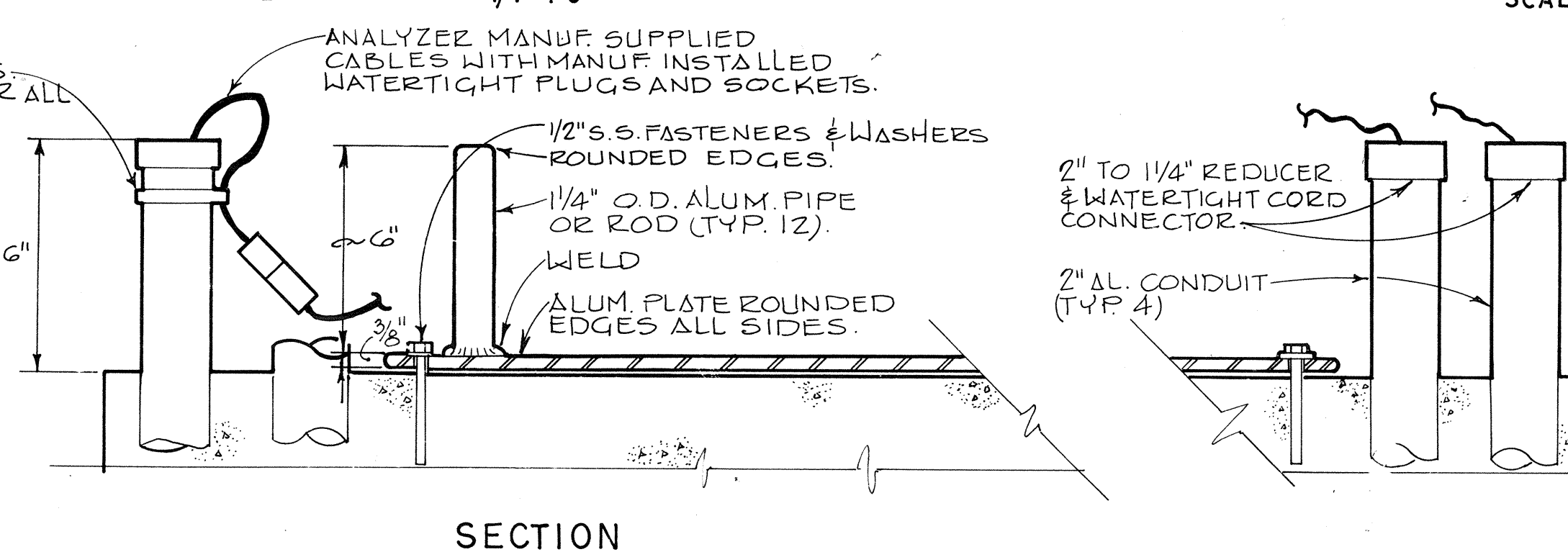
DRWN. LHT
DATE DECEMBER, 1982
SCALE 3/8"=1'-0"

SHEET P-3 OF 64

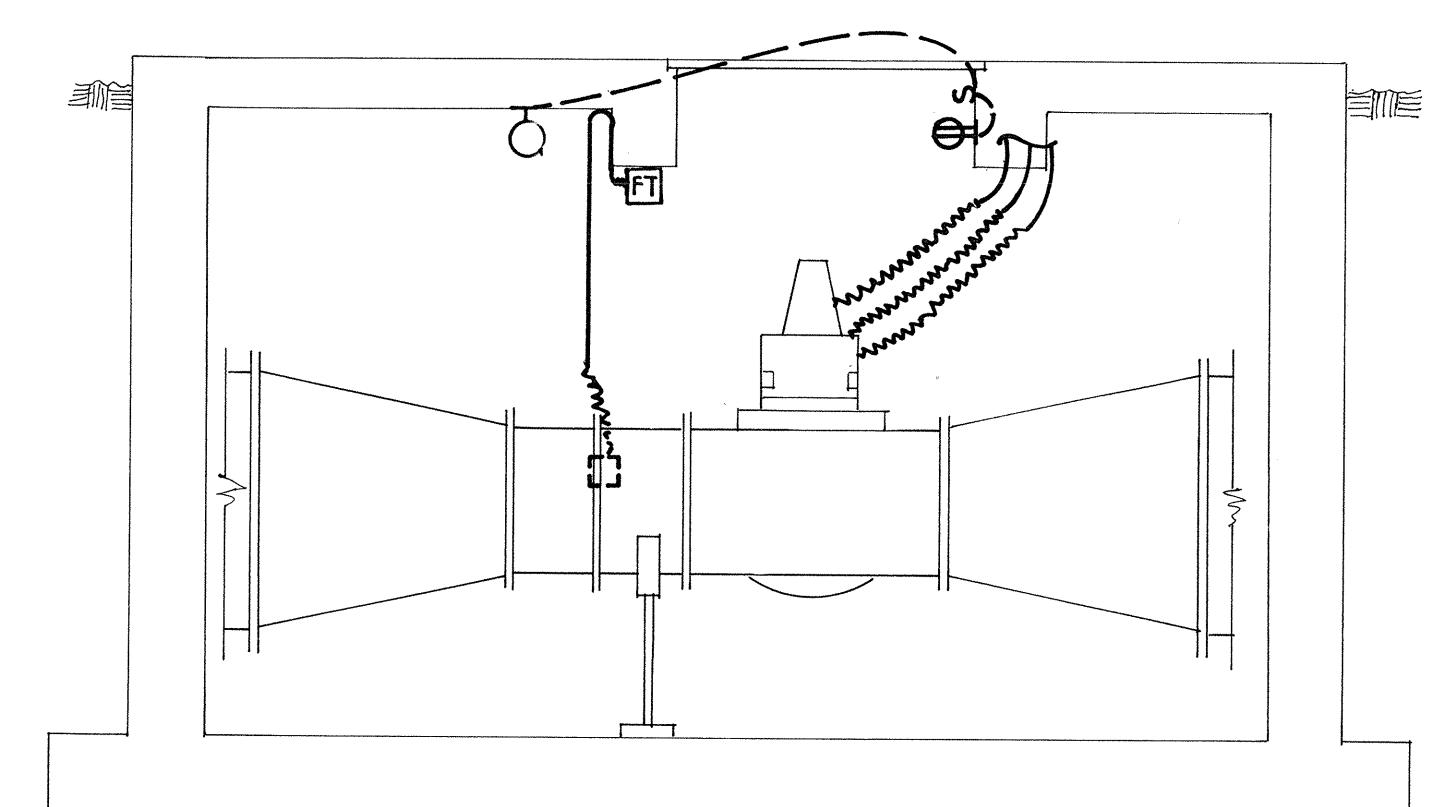
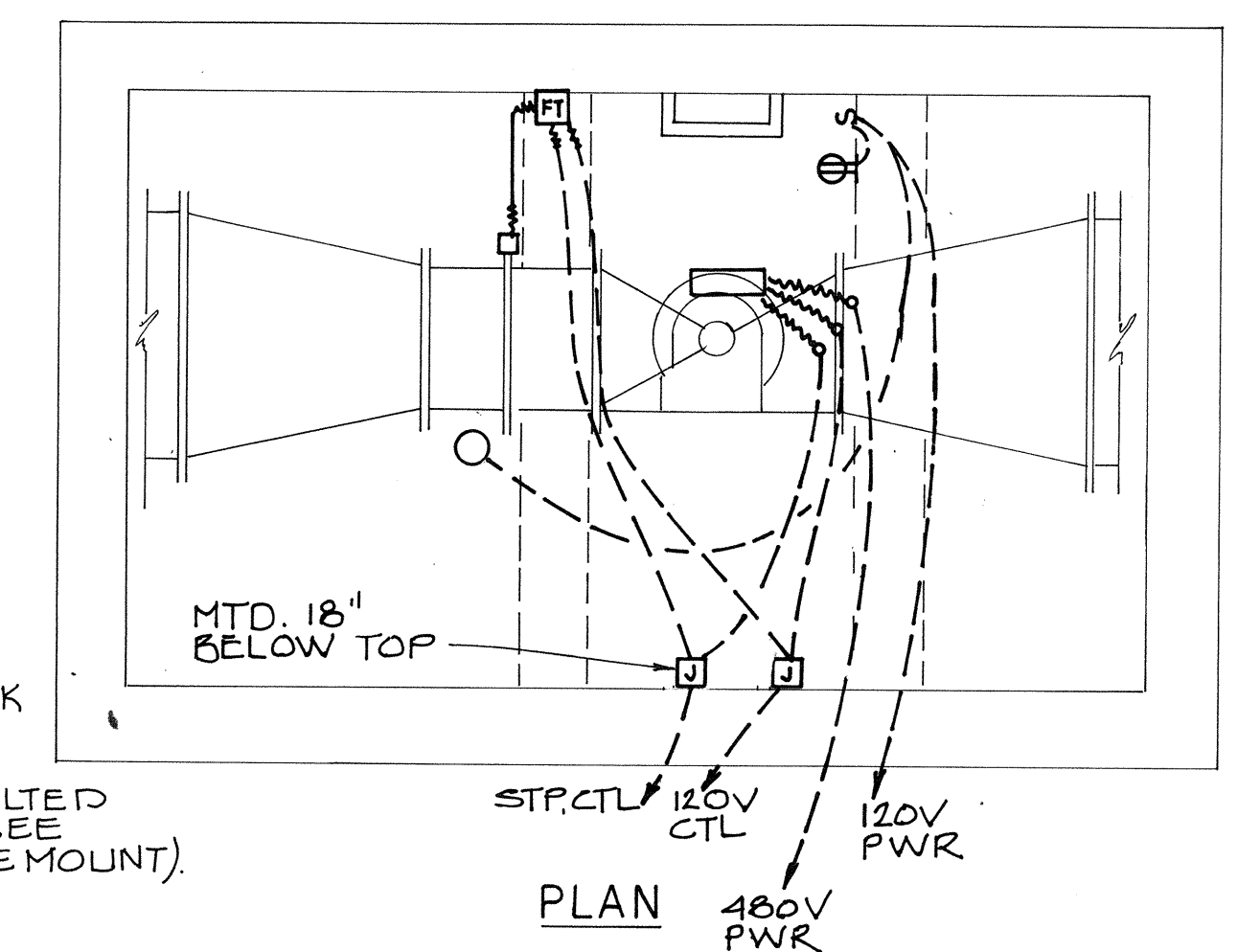
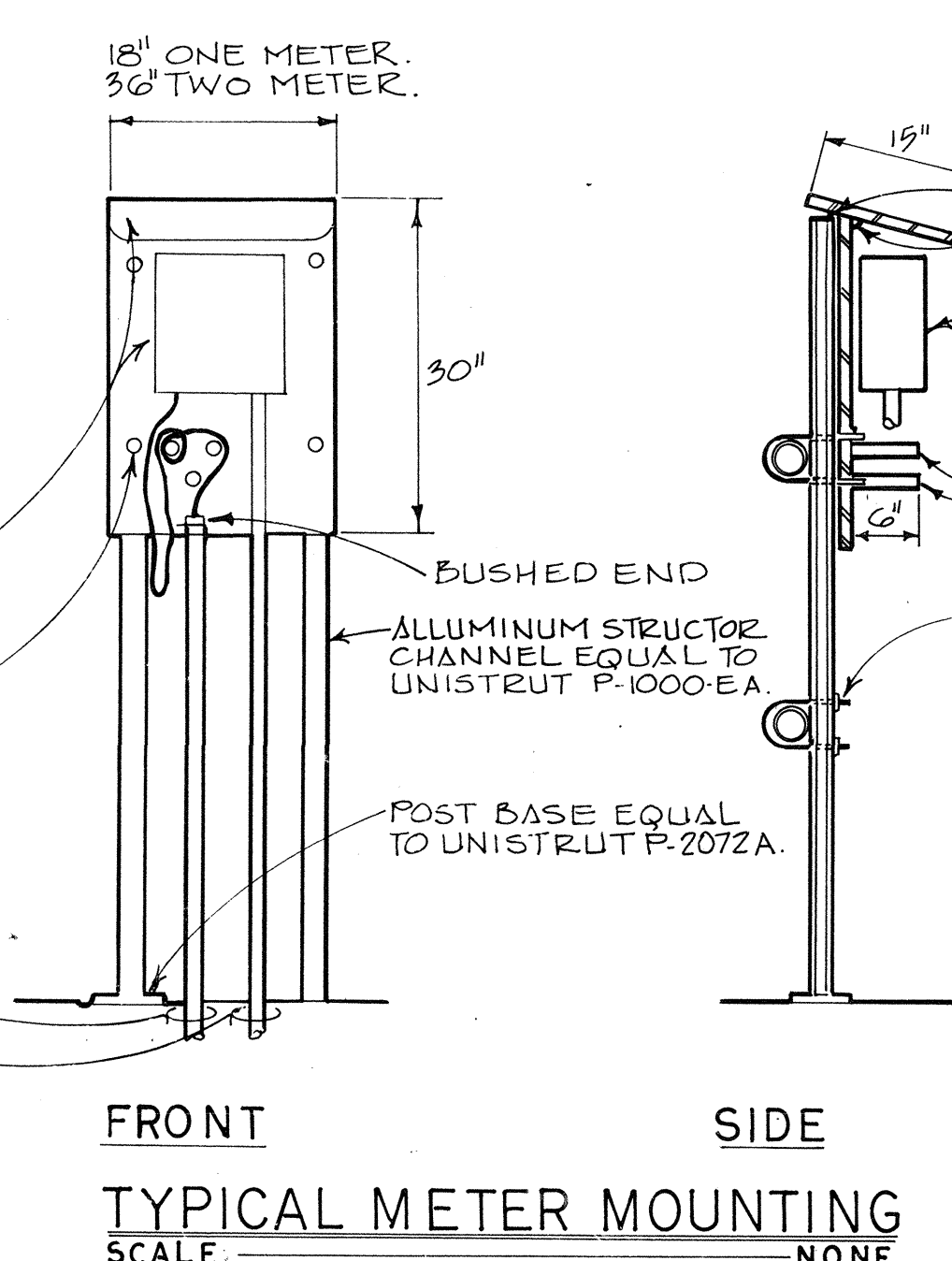
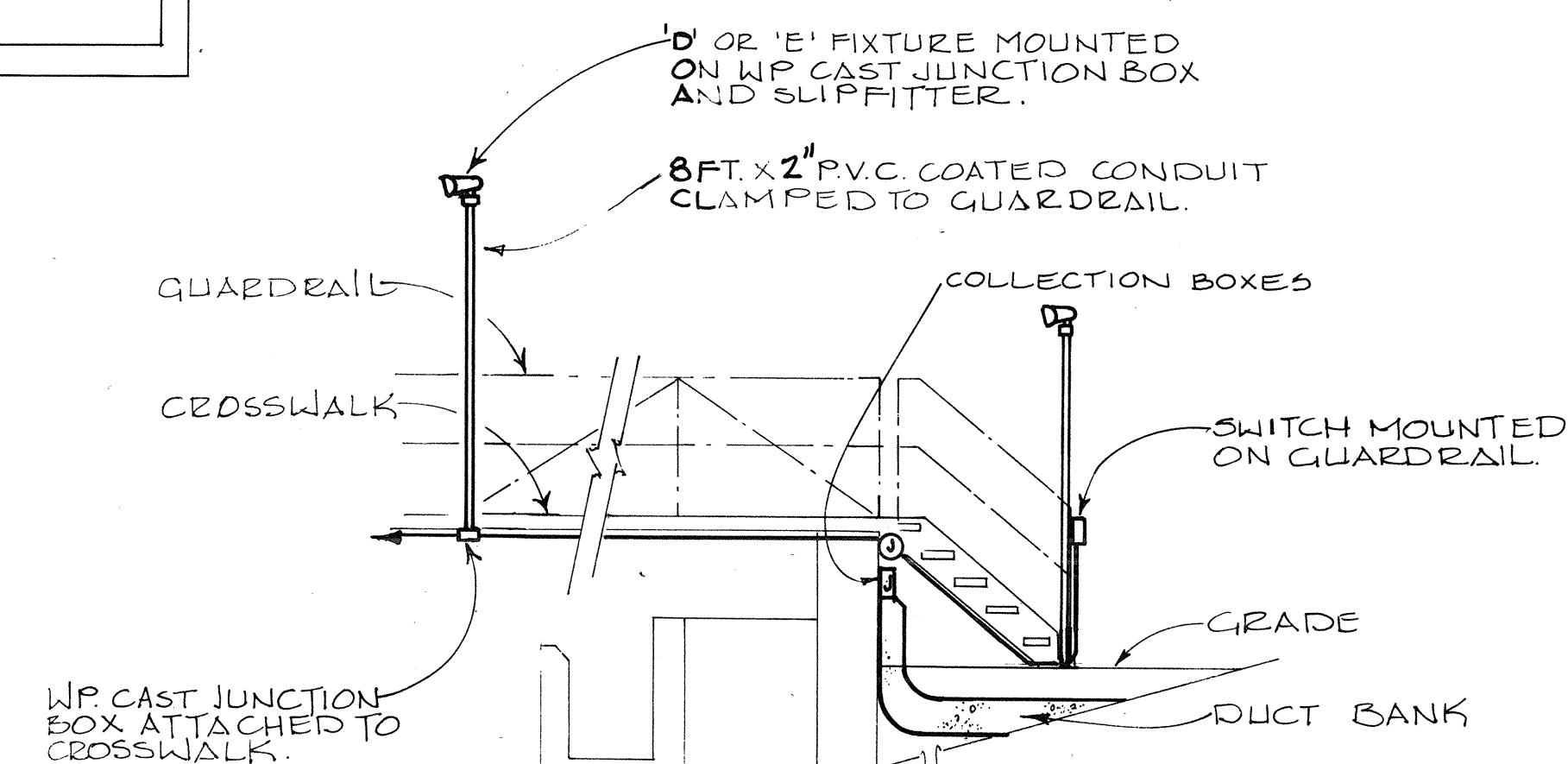
- NOTES:
1. RUN CIRCUITS THROUGH COLLECTION BOXES & DUCT SYSTEMS.
 2. REMOVE CAPS FROM EXIST. CONDUIT AND EXTEND EXIST. CONDUITS AND DUCT SYSTEM AS INDICATED.
 3. ALL EXPOSED CONDUIT AND FITTINGS IN CLARIFIER AREA SHALL BE PVC COATED.



**MOUNTING DETAIL:
CLARIFIER D.O. & CLARIFIER BLANKET
LEVEL DETECTOR**
SCALE: 1/4"=1'-0"



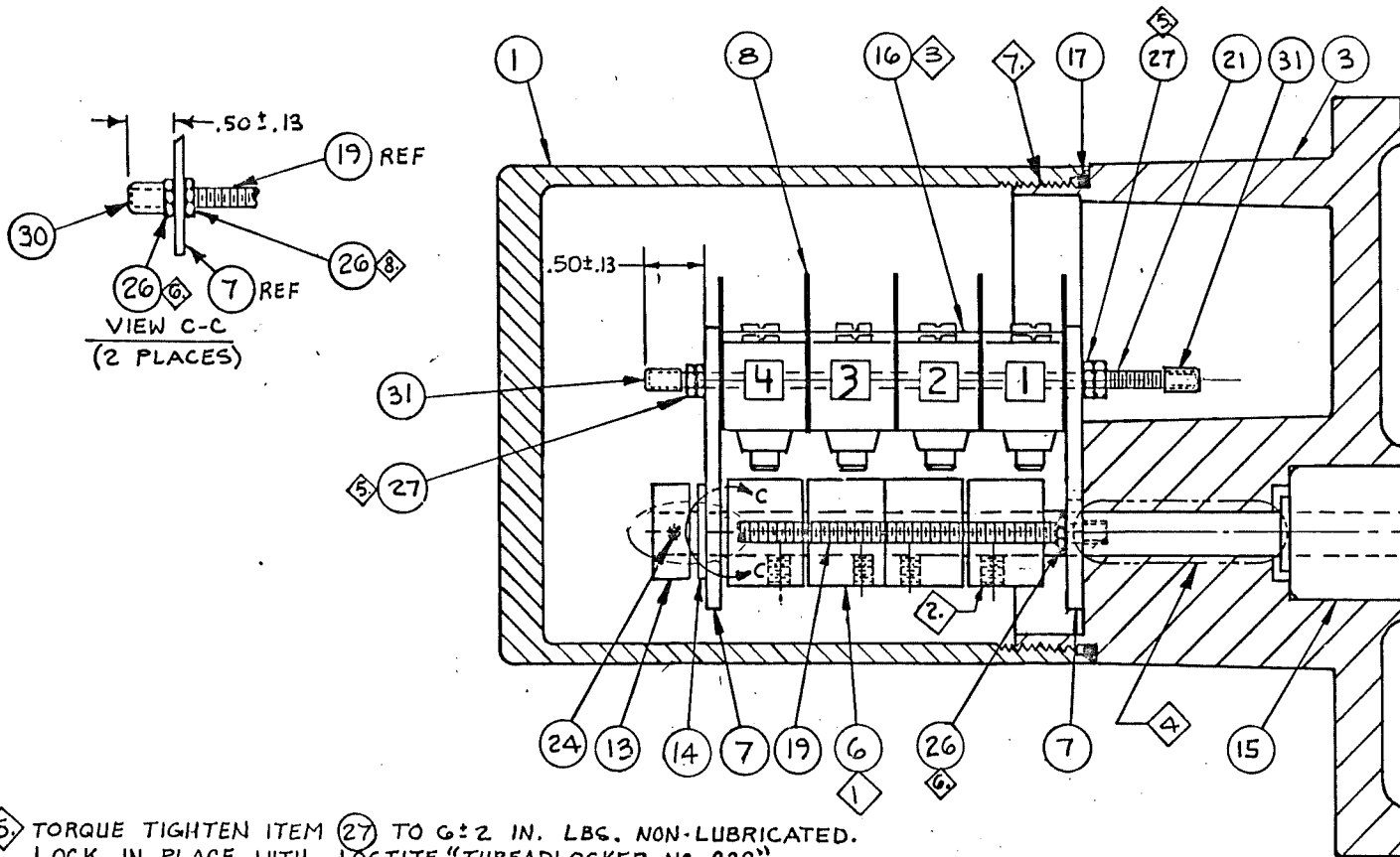
CONDUIT ROUTING ON CLARIFIER
SCALE: NONE



CLARIFIER METER VAULT NO. 6
SCALE: NONE
APR 28 1984
WATER QUALITY CONTROL SECTION
ENVIRONMENTAL PROTECTION DIVISION
BY *Cheryl J. Smith*
CONTRACT-B

		MACON-BIBB COUNTY WATER & SEWERAGE AUTHORITY MACON, GEORGIA	
ROCKY CREEK W.P.C.P. ELECTRICAL: FINAL CLARIFIER # 6		JORDAN, JONES & GOULDING, INC. CONSULTING ENGINEERS - ATLANTA, GEORGIA	
DESGN. WWH CHKD. STT	DRWN. E.H. 	DATE: DECEMBER 1982 SCALE: AS SHOWN	SHEET E 5 OF 64

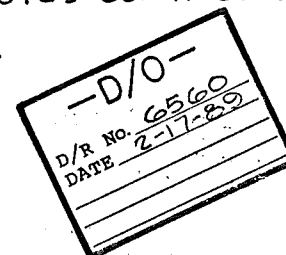
APPENDIX D



NOTES:

1. POSITION CAMS, ITEM (6) & SECURE SETSCREWS AS SHOWN.
2. POSITION CAM NEXT TO WASHERS AS SHOWN.
3. MARK SWITCHES, ITEM (16), AS SHOWN.
4. APPLY ANTI-SEIZE COMPOUND TO SHAFT WHERE INDICATED.

NOTES CONTINUED....



5. TORQUE TIGHTEN ITEM (27) TO 6 ± 2 IN. LBS. NON-LUBRICATED. LOCK IN PLACE WITH LOCTITE "THREADLOCKER No. 222." APPLY TO THREADS OF ITEMS (2) & (27).
6. TORQUE TIGHTEN ITEM (26) TO 22 ± 5 IN. LBS. NON-LUBRICATED. (ONLY WHERE INDICATED WITH (6)) LOCK IN PLACE WITH LOCTITE "THREADLOCKER No. 222." APPLY TO THREADS OF ITEMS (19) & (26).
7. APPLY ANTI-SEIZE COMPOUND TO THREADS.
8. EXTREME CARE SHOULD BE USED SO THAT BINDING DOES NOT OCCUR BETWEEN MOUNTING PLATE & SHAFT. THEREFORE, ADJUST NUT, ITEM (26), SO THAT MOUNTING PLATE, ITEM (7), DOES NOT BIND SHAFT, ITEM (5).

PARTS LIST: L48923-1

NET WT:

3/8 DIA WEEP HOLE

F	6621	9-27-83
E	6608	7-20-83
D	6452	2-25-88
C	6180	8-12-85
B	6162	6-18-85
A	6050	9-13-84
	D/R	DATE

REVISION



EIMCO Process Equipment Company - Salt Lake City, Utah

This drawing and all information thereon is the property of Eimco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.

HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64"$

DO NOT SCALE PRINTS

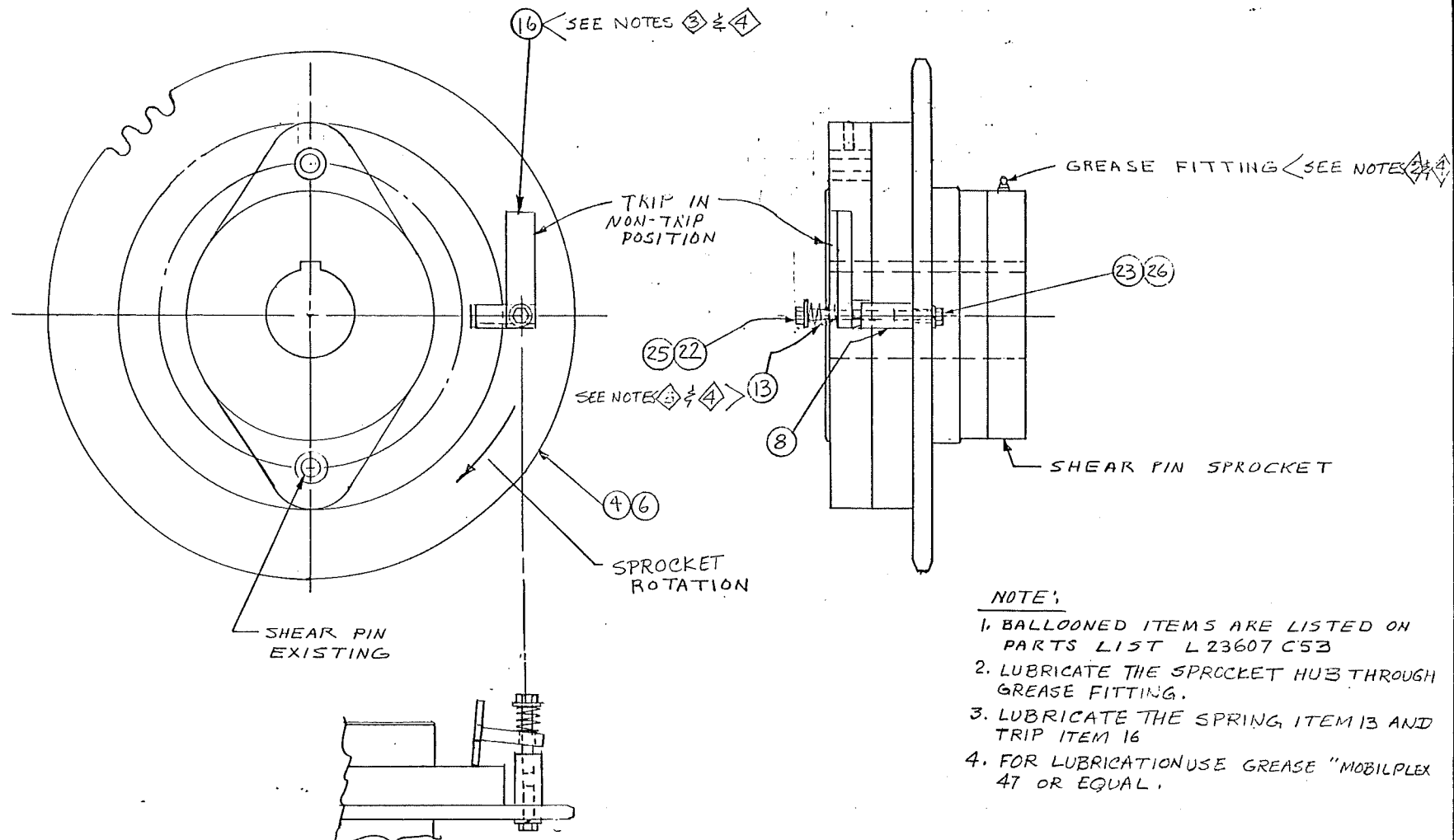
DATE	4-9-84
DRAWN	CWJ
CHECK'D	JRM
APPR.	GEN

SWITCH-ROTARY 4SPDT
RIGHT HAND OR LEFT HAND
EXPLOSION PROOF

DWG. NO. 48923

REV. F

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/RL	TOTAL WEIGHT
---------------	--------------	----------	----------------	-----------------

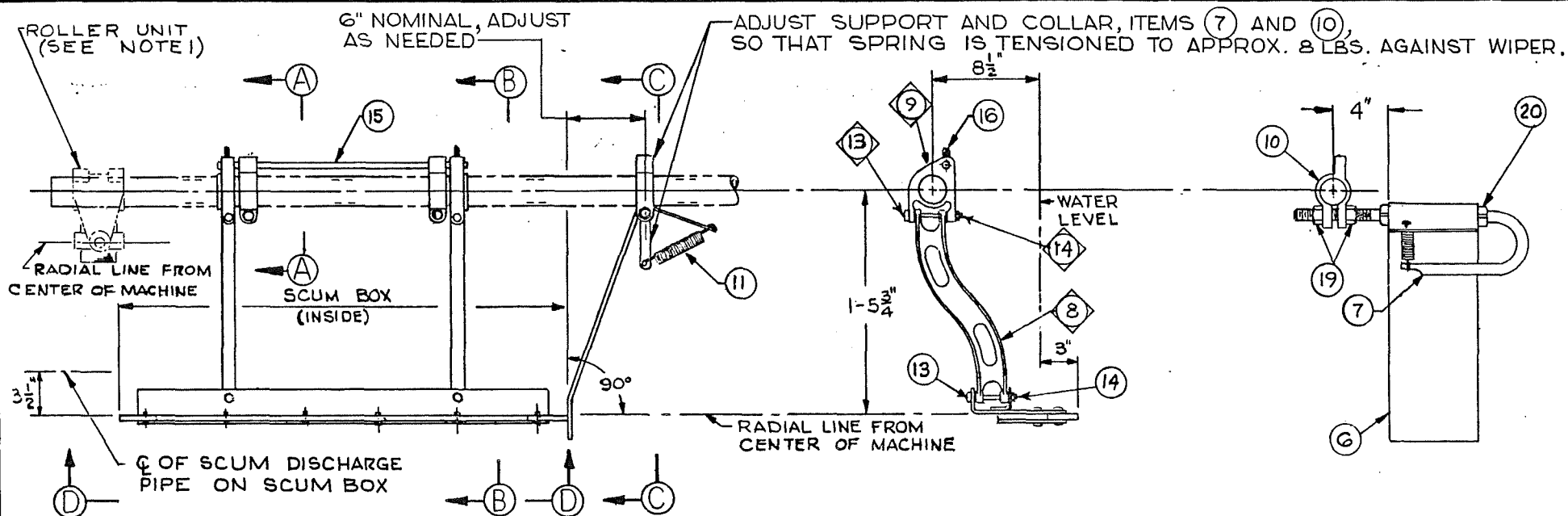


NOTE:

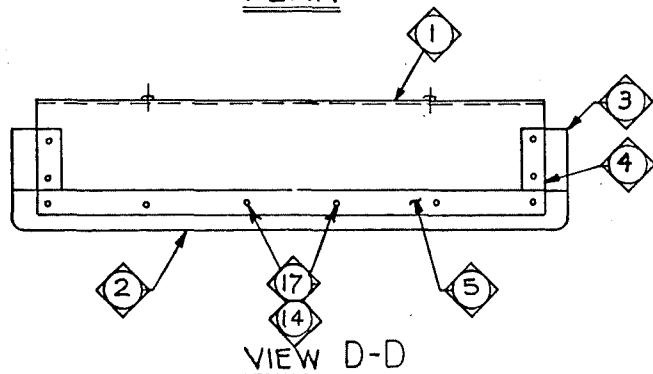
1. BALLOONED ITEMS ARE LISTED ON PARTS LIST L 23607 C53
2. LUBRICATE THE SPROCKET HUB THROUGH GREASE FITTING.
3. LUBRICATE THE SPRING, ITEM 13 AND TRIP ITEM 16
4. FOR LUBRICATION USE GREASE "MOBILPLEX 47 OR EQUAL."

SEPIA FROM 23255 C 53

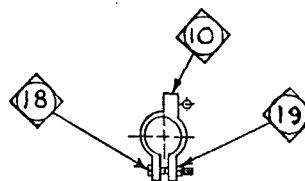
		EIMCO PROCESS EQUIPMENT COMPANY — Salt Lake City, Utah	
		This drawing and all information thereon is the property of Elmco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
DO NOT SCALE PRINTS DATE 10-13-87 DRAWN NK CHECK'D GILBERT APPR. ED		SHOP ASSEMBLY DWG. OF SP-22 SHEAR PIN SPROCKET FOR ORIT COLLECTOR	
REVISION BY CHECKED DATE		DWG. NO. 23607 C53	REV.



PLAN



SECTION B-B



SECTION C-C

PART LISTS	
L 42700-1	(20 LG. UNIT)
L 42700-2	(30 LG. UNIT)
L 42700-3	(40 LG. UNIT)
L 42700-4	(50 LG. UNIT)
L 42700-5	(60 LG. UNIT)

G	4665	7-20-76
F	3629	11-5-73
E	2755	2-2-72
D	2626	10-26-71
C	1053	11-17-69
B	446	5-15-68
A	7	1-11-67
D/R		DATE
REVISION		

NOTE:

1. ROLLER UNIT PART N° L46378 IS USED ONLY WHEN REQUIRED REFER TO JOB G.A. DRAWING
2. DENOTES SHOP ASSEMBLED

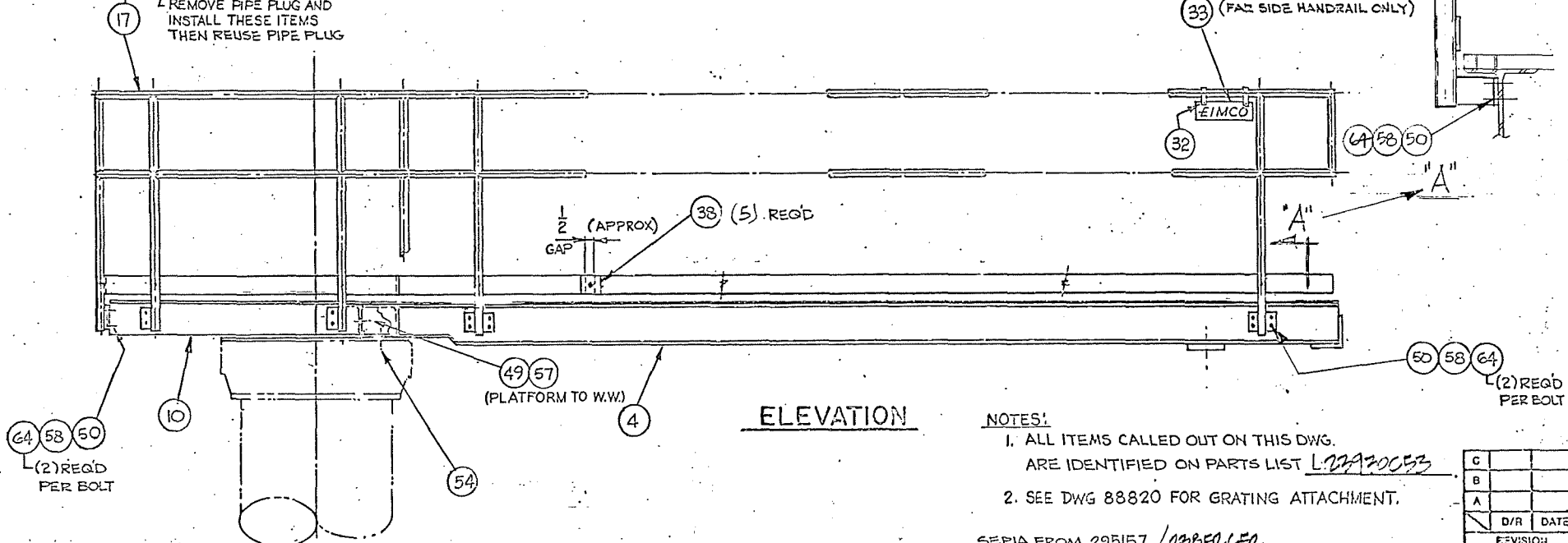
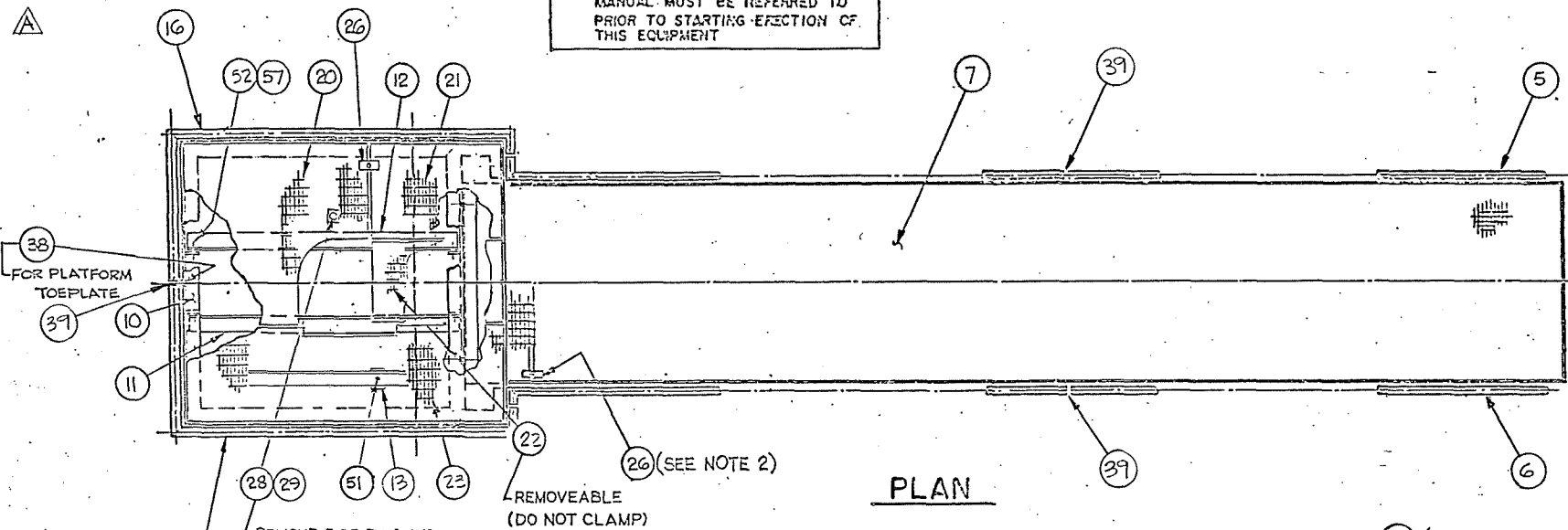
THE EIMCO CORPORATION		Salt Lake City, Utah	
This drawing and all information thereon is the property of the Eimco Corporation and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.			
DO NOT SCALE PRINTS		HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/64"$	
DATE	8-25-66	ORDER No.	
DR'WN	T.T.M.	DATE ISSUED	
CH'K'D	V.C.	DRAWING No.	42700
APPR.		REV.	C

APR 24 1964

11A 1 84

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/REF.	TOTAL
------------	-----------	----------	------------------	-------

NOTE:
THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE REFERRED TO PRIOR TO STARTING ERECTION OF THIS EQUIPMENT



- NOTES:
- ALL ITEMS CALLED OUT ON THIS DWG. ARE IDENTIFIED ON PARTS LIST L. 22A20053
 - SEE DWG 88820 FOR GRATING ATTACHMENT.

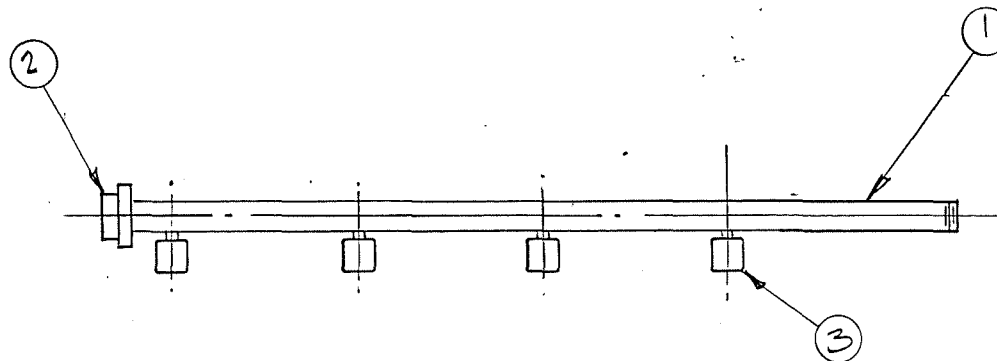
C	
B	
A	
D/R	DATE
REVISION	

SEPIA FROM 295157 / 12850053

		EMCO PROCESSING MACHINERY DIVISION-ENVOTEC CORPORATION-SAN LEO, CALIF.	
This drawing and all information thereon is the property of Emco and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.			
WALKWAY, PLATFORM & HANDRAIL ASSEMBLY 75.0 DIA. C3 CLARIFIER		2	
12A20053		A	

REVISED & REDRAWN	ASC	HCN	11-27-89
REVISION	BY	CHECKED	DATE

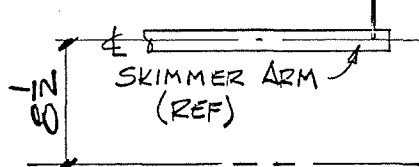
PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/REMARKS	TOTAL WEIGHT
---------------	--------------	----------	---------------------	-----------------



FIELD ADJUST TRIP
ROD AS REQ'D

④ LIMIT SWITCH (REF)
(LOCATION & MTN'G)
(NOT BY EIMCO)

⑥ LOCATE AS
NEEDED.



LIMIT SWITCH MTN'G
R (NOT BY EIMCO)

W.L. 7

SUGGESTED MTN'G
FOR LIMIT SWITCH

BAFFLE
(NOT BY EIMCO)

FOR ITEMS IDENTIFIED BY BUBBLES
SEE L23930B55

WORK W/ DWG 23930D3



EIMCO PROCESS EQUIPMENT COMPANY — Salt Lake City, Utah

This drawing and all information thereon is the property of Eimco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.

HOLD FRACTIONAL
MACHINED
DIMENSIONS
TO $\pm 1/32"$

DO NOT SCALE PRINTS
DATE 8-9-89
DRAWN HCN
CHECK'D HCN
APPR. MDP

SPRAY SYSTEM
ASSEMBLY

2	REV.
DWG. NO. 123930B55	A

ADD ITEM #6

REVISION

MDP	A.C.	11/27/89
BY	CHECKED	DATE

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/RF	TOTAL WEIGHT
---------------	--------------	----------	----------------	-----------------

NOTES:

1. ASTERISK (*) DENOTES VARIANCE FROM CONTRACT DOCUMENTS AND SHOULD BE PARTICULARLY NOTED.
2. THE FOLLOWING DEFINES THE RESPONSIBILITY OF THE EMCO PROCESS EQUIPMENT COMPANY (EMCO), WITH REGARD TO THE INFORMATION AND DIMENSIONS SHOWN ON THIS DRAWING: (A) DIMENSIONS, LOADS, AND OTHER INFORMATION ARE PROVIDED TO ACCOMMODATE THE EQUIPMENT TO THE STRUCTURE AS SHOWN. (B) THE CUSTOMER IS TO PROVIDE REINFORCING STEEL AND DESIGN FOR CONCRETE STRUCTURES AND IS TO DETERMINE SIZES TO SUIT LOCAL CONDITIONS. (C) THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR INSTALLATION PURPOSES UNLESS IT BEARS THE APPROVAL OF THE OWNER, THE ENGINEER OR THEIR AUTHORIZED REPRESENTATIVE. (D) THE MECHANISM SHOWN IS DESIGNED FOR DIRECTION OF ROTATION AS INDICATED. EMCO DOES NOT ASSUME RESPONSIBILITY FOR DAMAGE IF OPERATED IN THE OPPOSITE DIRECTION. (E) CHARGES FOR MODIFICATIONS, ADDITIONS OR CORRECTIONS TO THE EQUIPMENT WILL NOT BE ACCEPTED BY EMCO UNLESS PRIOR APPROVAL IS OBTAINED IN WRITING FROM AN AUTHORIZED EMCO REPRESENTATIVE.
3. EMCO DOES NOT FURNISH ELECTRICAL WIRING, CONDUIT OR ELECTRICAL EQUIPMENT, PIPING, VALVES OR FITTINGS, LUBRICATING OIL OR GREASE, FIELD PAINTING, FIELD WELDING OR ERECTION, (EXCEPT AS SPECIFICALLY NOTED).
4. SHOP PRIMER PAINT IS INTENDED TO SERVE ONLY AS A PROTECTIVE OR SEALING COAT. AS SUCH IT AFFORDS THE METAL ONLY MINIMAL PROTECTION AGAINST THE ELEMENTS. EMCO CANNOT BE RESPONSIBLE FOR DETERIORATION OF SHOP-PRIMED EQUIPMENT DURING TRANSIT, JOB STORAGE OR OTHER EXPOSURE TO THE ELEMENTS PRIOR TO APPLICATION OF FINISH COAT(S).

5. SURFACE PREPARATION TO CONSIST OF: DRIVE: SSPC-SP3
- STEEL TO BE CLEANED PER ASTM 123.

6. SHOP PAINTING TO CONSIST OF: DRIVE: (H) SHOP COAT OF TMEC 90-93 (2.0 MILS DFT), SUBMERGED & NON-SUBMERGED STEEL: HOT DIP GALV AFTER APPLICATION. PER ASTM 123

7. FOR ADDITIONAL DETAILS, REFER TO DRAWINGS:

- 23930 D2 - GENERAL ARRANGEMENT
- 23930 D3 - TANK DETAILS
- 23930 C5 - TORQUE TEST
- 23930 C6 - DRIVE CONTROL WIRING
- 23930 C20 - ALARM PANEL
- 23930 C21 - WIRING DIAGRAM
- 11-711 DRIVE

A B

8. EMCO TO SUPPLY (B) MECHANISMS AS SHOWN AND NOTED WITH ALL PLATES AND STRUCTURAL MEMBERS HAVING A MINIMUM STEEL THICKNESS OF 0.25 INCHES, UNLESS NOTED.
9. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF A.W.S. WELDING PROCEDURES WITH QUALIFICATION RECORDS PER A.W.S. D11.
10. ALL STRUCTURAL SHAPES AND PLATES TO BE ASTM A36.

11. ISOLATION MUST BE PROVIDED FOR ALL ALUMINUM TO STEEL CONTACT SURFACES (ISOLATION NOT BY EMCO).

12. ANCHOR BOLTS - 3/4" S5 (BY EMCO)
ASSEMBLY BOLTS: HOT DIP GALV. STEEL UNLESS NOTED (BY EMCO)

13. EMCO WILL SUPPLY HANDRAIL AS FOLLOWS: All WELDED 1 1/4" Ø SCH 40 ALUMINUM (6063-T6) PIPE WITH ANODIZED FINISH AAMI0C22A41 (215R1) 0.7 MIL MIN. THICKNESS. FASTENERS TO BE STAINLESS STEEL. AN ALUM. TOE BOARD WILL BE INCLUDED.

14. EMCO WILL SUPPLY GRATING AS FOLLOWS: GRATING SHALL BE BAR TYPE WITH A DEPTH OF 1 1/2", BEARING BARS SPACED AT 1 13/16" CTR TO CTR, CROSS BARS SHALL BE SPACED AT 2" CTR TO CTR. CROSS BARS SHALL BE COLD FORGED AND SPACED INTO THE BEARING BARS. GRATING SHALL BE SERRETTED AND BANDED AT ALL EDGES AND CUT-OUTS. MAT'L TO BE ALUMINUM ALLOY 6063.

15. THE WALKWAY BEAMS SHALL BE DESIGNED TO SUPPORT A LIVE LOAD OF 100 PSF PLUS ALL DEAD LOADS. MAXIMUM DEFLECTION TO BE LESS THAN 1/360 OF THE SPAN.

16. THE ARMS & CAGE ARE 4'0" BOX TRUSS. THE ARMS ARE DESIGNED TO WITHSTAND TWICE THE RATED DRIVE TORQUE.

THIS DRAWING IS CERTIFIED FOR		E-25707A Rev. 9/92
CUSTOMER <u>T & B SCOTTS INC</u>		
CUSTOMER ORDER NUMBER <u>8101-17-11374</u>		
EMCO ORDER NUMBER <u>23930-01</u>		
PROJECT <u>ROCKY CREEK WWTP</u>		
PROJECT LOCATION <u>MACON, GA</u>		
CONSULTING ENGINEER <u>WEDON, JONES & GUILDING</u>		
BY <u>EMCO</u> DATE <u>6/2/97</u>		
EMCO PROCESS EQUIPMENT COMPANY		



EMCO PROCESS EQUIPMENT COMPANY — Salt Lake City, Utah

This drawing and all information thereon is the property of Emco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.

HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/32"

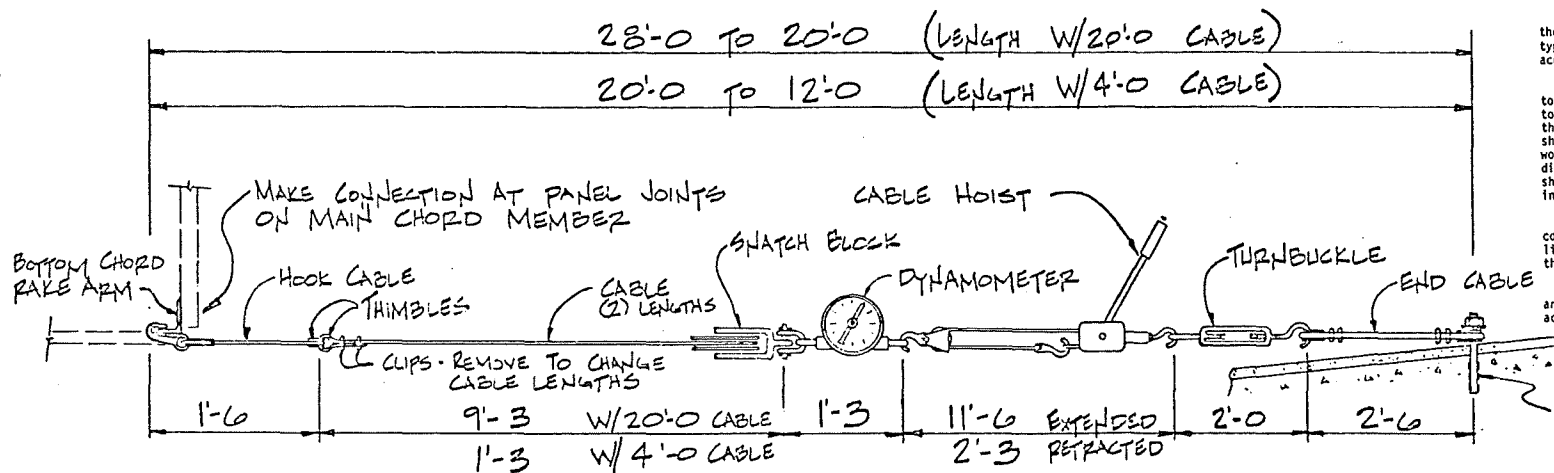
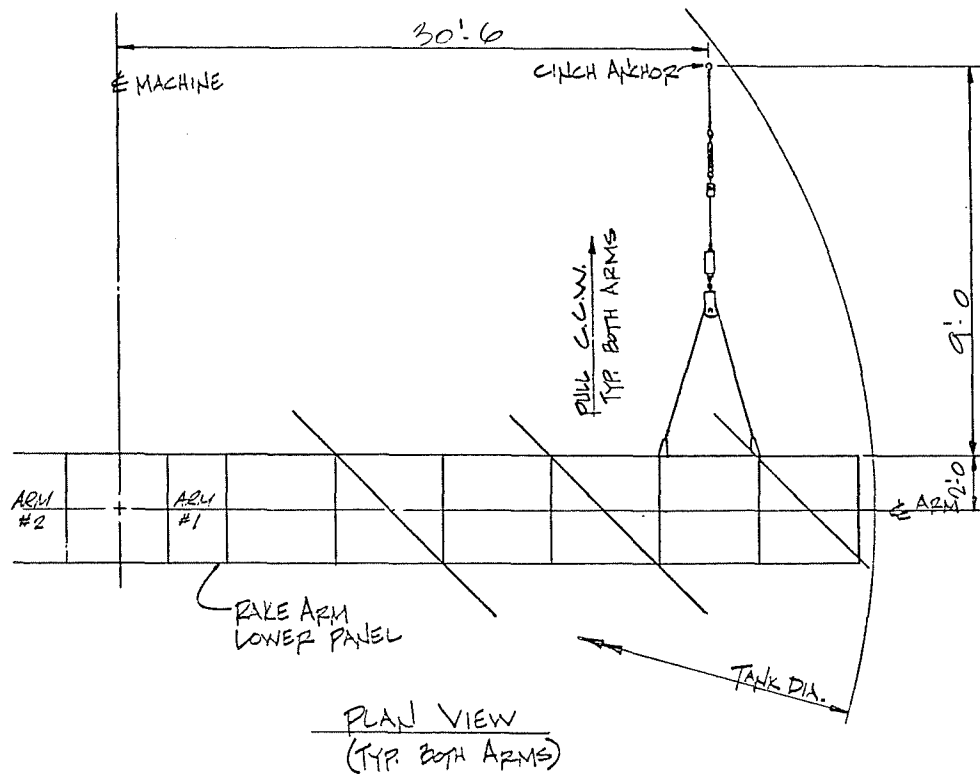
DO NOT SCALE PRINTS
DATE <u>6/2/97</u>
DRAWN <u>TWP</u>
CHECK'D <u>WCLARK</u>
APPR. <u>TWP</u>

GENERAL NOTES

GRAVITY THICKENER

REVISION	BY	CHECKED	DATE
REMOVE PANEL - HANDRAIL NOW WELDED	TWP	AC	11/27/89
REVISED NOTE #6 & #7. PER APPROVAL D.W.S.	TWP	AC	7/2/89

DWG. NO.	REV.
23930 C4	B



PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/R/L	TOTAL WEIGHT
------------	-----------	----------	-----------------	--------------

TORQUE TEST PROCEDURE

1. MECHANISM HAS BEEN FINAL LEVELED. BOLTS ARE TIGHT & WELDING IS COMPLETE.
2. RUN MECHANISM TWO COMPLETE REVOLUTIONS TO MINIMIZE SLACK IN GEARING.
3. INSTALL TEST EQUIPMENT AS ILLUSTRATED WITH RAKE ARMS IN PROPER POSITION.
4. USING HOIST - TIGHTEN ALL CABLES UNTIL DYNAMOMETER NEEDLE BEGINS TO MOVE.
5. BEGIN TEST: TIGHTEN TURNBUCKLES ON BOTH RAKE ARMS SLOWLY AND SIMULTANEOUSLY TO CALCULATED READINGS ON THE DYNAMOMETER, AS SHOWN BELOW, AND RECORD ACTUAL READINGS.

1ST TEST 75% TORQUE
52,500 FT-LBS.

CALCULATED LOAD: ARM #1 ARM #2
ACTUAL READING: 861 861

2ND TEST 90% TORQUE
63,300 FT-LBS

CALCULATED LOAD: 1033 1033
ACTUAL READING: 1033 1033

3RD TEST 100% TORQUE
70,000 FT-LBS

CALCULATED LOAD: 1148 1148
ACTUAL READING: 1148 1148

NOTE: DURING TEST, MONITOR DRIVE CONTROL TORQUE INDICATOR ON THE DRIVE UNIT. IF THE INDICATOR EXCEEDS 100% TORQUE AT ANY TIME DURING THIS PROCEDURE, DISCONTINUE TESTING AND CONTACT EIMCO ENGINEERING.

6. RELEASE HOISTS SIMULTANEOUSLY TO ZERO, DISCONNECT AND REMOVE EQUIPMENT FROM THE TANK.

7. CUT ANCHORS FROM TANK BOTTOM AND REMOVED FROM TANK.

8. UPON APPROVAL OF EIMCO REPRESENTATIVE, RUN THE MECHANISM AT LEAST ONE COMPLETE REVOLUTION.

The torque indicator on the drive may not correlate with the readings from the Eimco torque test equipment. This is a typical condition and should not be cause for concern about accuracy of either the test or the torque indicator.

Accuracy within + 7% (the calibrated torque spring tolerance) will be indicated during normal operation when torque is applied from the gear motor. When torque is applied through the rake arm, it creates a static load on the worm shaft of the drive. This static load condition (non rotating worm shaft) can result in compression of the torque spring different than that produced by a rotating (motor driven) worm shaft. The compression of the torque spring results in torque indication on the torque indicator.

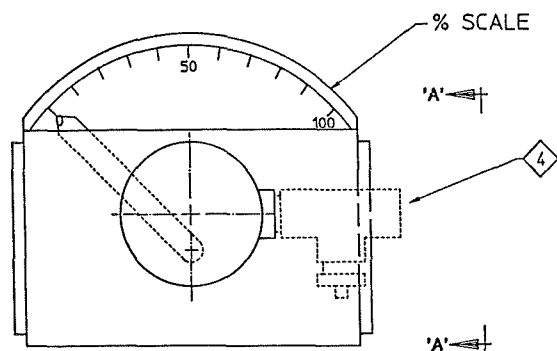
The torque indicator is factory preset and tested for correct operational accuracy of load indication. Reset of limit switches in the field is not required. Resetting of these switches void the Eimco Warranty.

The torque test is to demonstrate structural capability and is not intended to serve as a check on torque indicator accuracy.

ENVIROTECH		EIMCO PMD - ENVIROTECH CORPORATION - Salt Lake City, Utah		
DO NOT SCALE PRINTS		This drawing and all information thereon is the property of Eimco PMD and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.		HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"
DATE	6/1/90	TORQUE TEST SCHEMATIC		
DRAWN	W.P.			
CHECK'D	EA			
APPR	W.P.			
REV. NO.		23930C5		REV. A

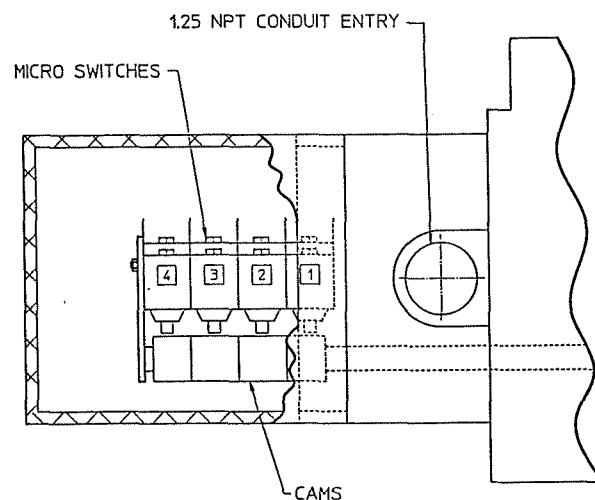
REPLACES PREVIOUS DWG. SAME NUMBER			
BY	SG	DATE	6/1/90
CHECKED			
DATE			

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/RE	TOTAL WEIGHT
---------------	--------------	----------	----------------	-----------------

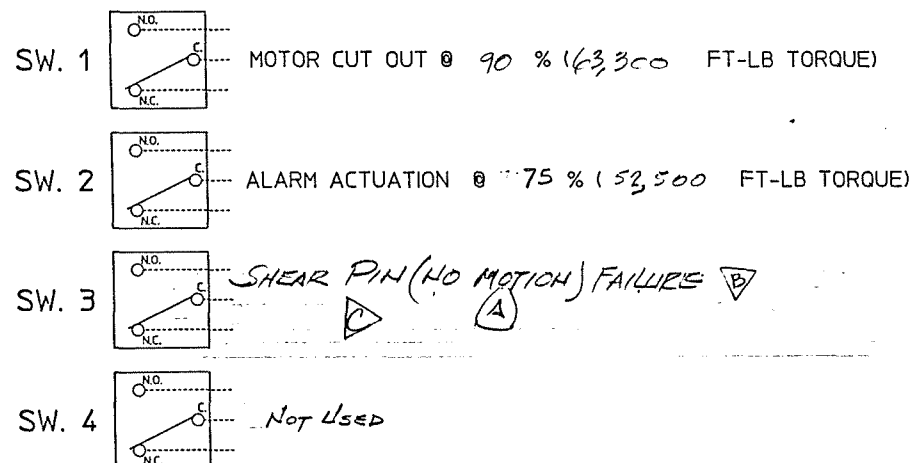


RIGHT HAND DRIVE CONTROL
CONFIGURATION
(LEFT HAND OPPOSITE)

△ DRIVE CONTROL IS NEMA 4X ALUMINUM CONSTRUCTION W/ EPOXY COATING.



VIEW 'A' - 'A'
(ENLARGED)



NOTES:

1. CUT-OUT SWITCH (LIMIT SWITCH #1) ACTUATES ON INCREASING LOAD DE-ENERGIZING RAKE DRIVE UNIT MOTOR STARTER. THIS SWITCH MUST BE UTILIZED TO PROTECT DRIVE MECHANISM. IT IS FACTORY SET AND SHOULD NOT BE CHANGED WITHOUT PRIOR AUTHORIZATION BY EIMCO.
2. ALARM SWITCH (SWITCH #2) ACTUATES ON INCREASING LOAD, INDICATING IMPENDING OVERLOAD.
3. ENCLOSURE IS RATED NEMA 7 EXPLOSION-PROOF AND NEMA 4 WEATHERPROOF
- △ APPROPRIATE FITTING AND DRAIN MUST BE USED, PER N.E.C. TO ELIMINATE WATER CONDENSATION. (NOT BY EIMCO)

NOTE:

100% TORQUE IS BASED ON
70,000 FT-LBS

REVISED SW #3 -
REVISED SW-#3 ADD NOTE.
SW #3. Not Used APPROVAL

AC	TWP	1-19-90
TWP	AC	11-28-89
TWP	AC	9-26-89
BY	CHECKED	DATE

DO NOT SCALE PRINTS
DATE 4/24/89
DRAWN TWP
CHECKED W. LACK
APPR. 1/4

EIMCO PROCESS EQUIPMENT COMPANY — Salt Lake City, Utah	
This drawing and all information thereon is the property of Eimco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/32"	
DRIVE CONTROL BASIC (4) SWITCH UNIT	
SWG. NO. 23930C6	REV. C

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/RE:	TOTAL WEIGHT
---------------	--------------	----------	-----------------	-----------------

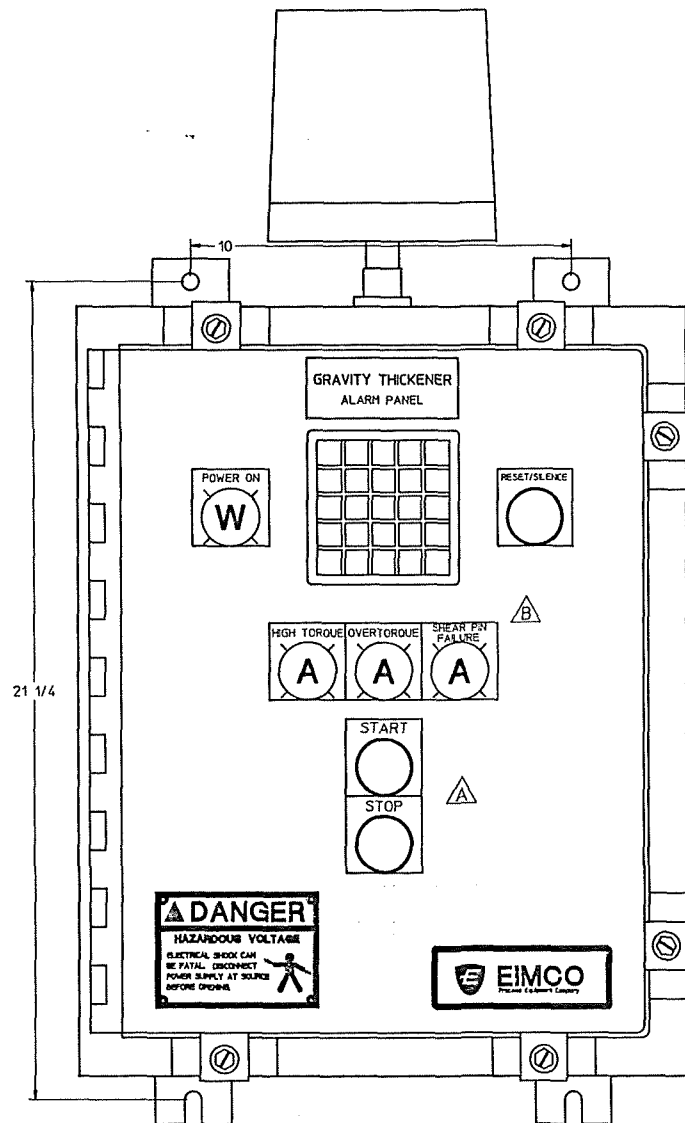
NOTES

1. WORK WITH: PARTS LIST NO. L23930C20
WIRING DIAGRAM NO. 23930C21
2. STAMP "CONTROL" NAMEPLATE AS SHOWN

CONTROL

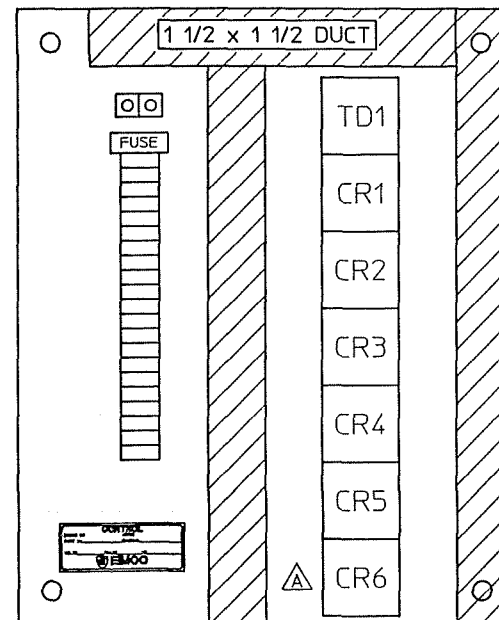
ORDER OR WIRING
PART NO. L23930C20 DIAGRAM 23930C21
VOLTS 120 PHASE 1 HERTZ 60

4. ENCLOSURE TO BE NEMA 4X STAINLESS STEEL.
5. ATTACH ALL NAME PLATES WITH STAINLESS STEEL
SELF TAPPING SCREWS.



NEMA 4X S.S.

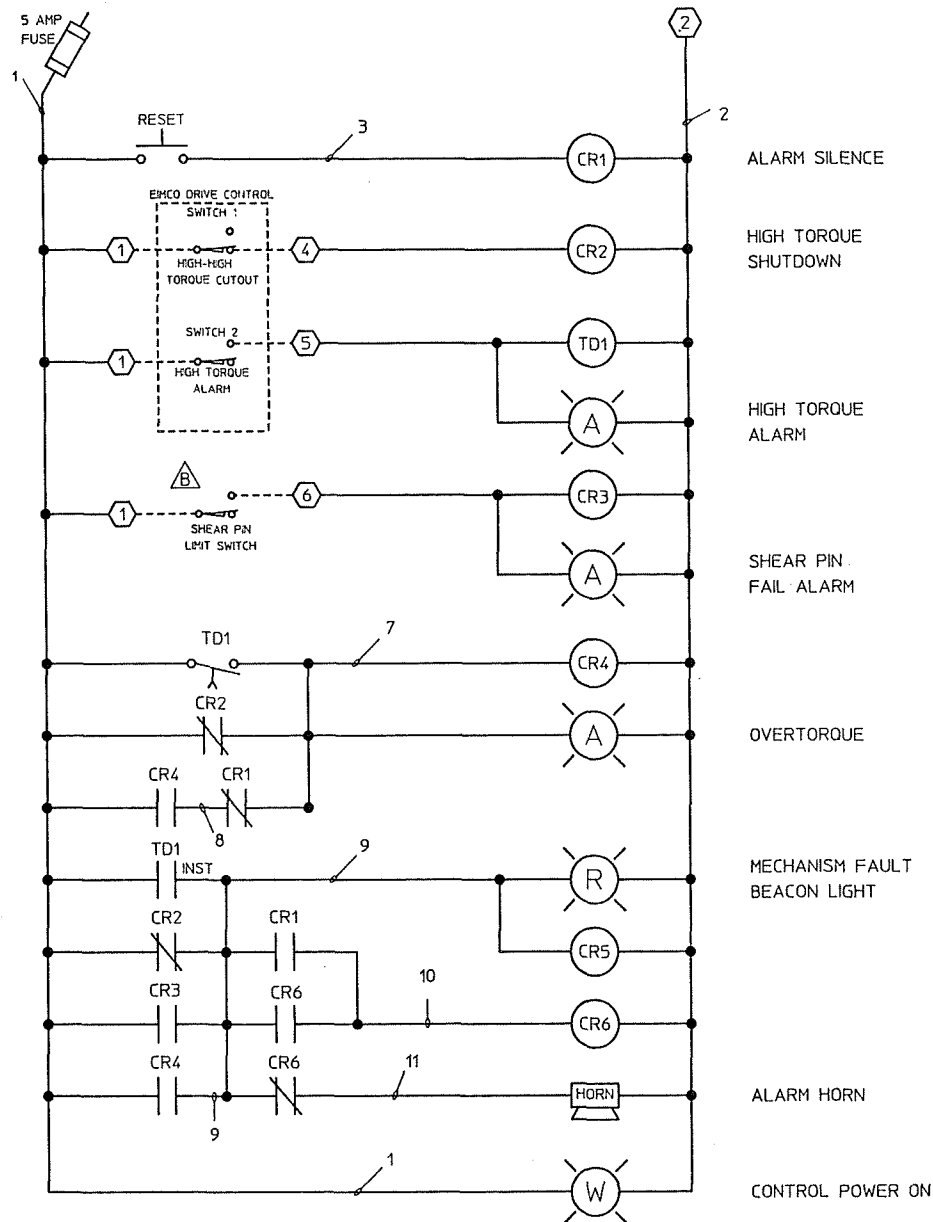
20 x 16 x 6



		EIMCO PROCESS EQUIPMENT COMPANY — Salt Lake City, Utah		HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/32"	
This drawing and all information thereon is the property of Eimco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.					
DO NOT SCALE PRINTS		GRAVITY THICKENER ALARM PANEL		2	
DATE	6-13-89				
DRAWN	DGZ				
CHECK'D	B.H.			QWG. NO.	
APPR.	B.H.			23930C20	
				REV.	B

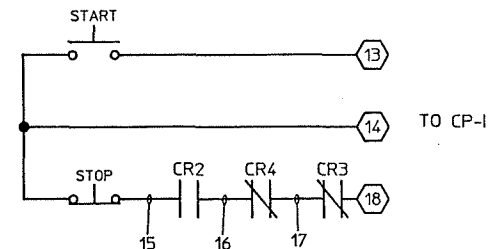
CHANGED FAIL SAFE TO SHEAR PIN	DGZ	B.H.	9-21-89
CORRECTED TO CONFORM TO WIRING DIAGRAM	DGZ	B.H.	9-01-89
REVISION	BY	CHECKED	DATE

PIECE MARK	NO. REQ'D	MATERIAL	DESCRIPTION/RE/	TOTAL WEIGHT
---------------	--------------	----------	-----------------	-----------------



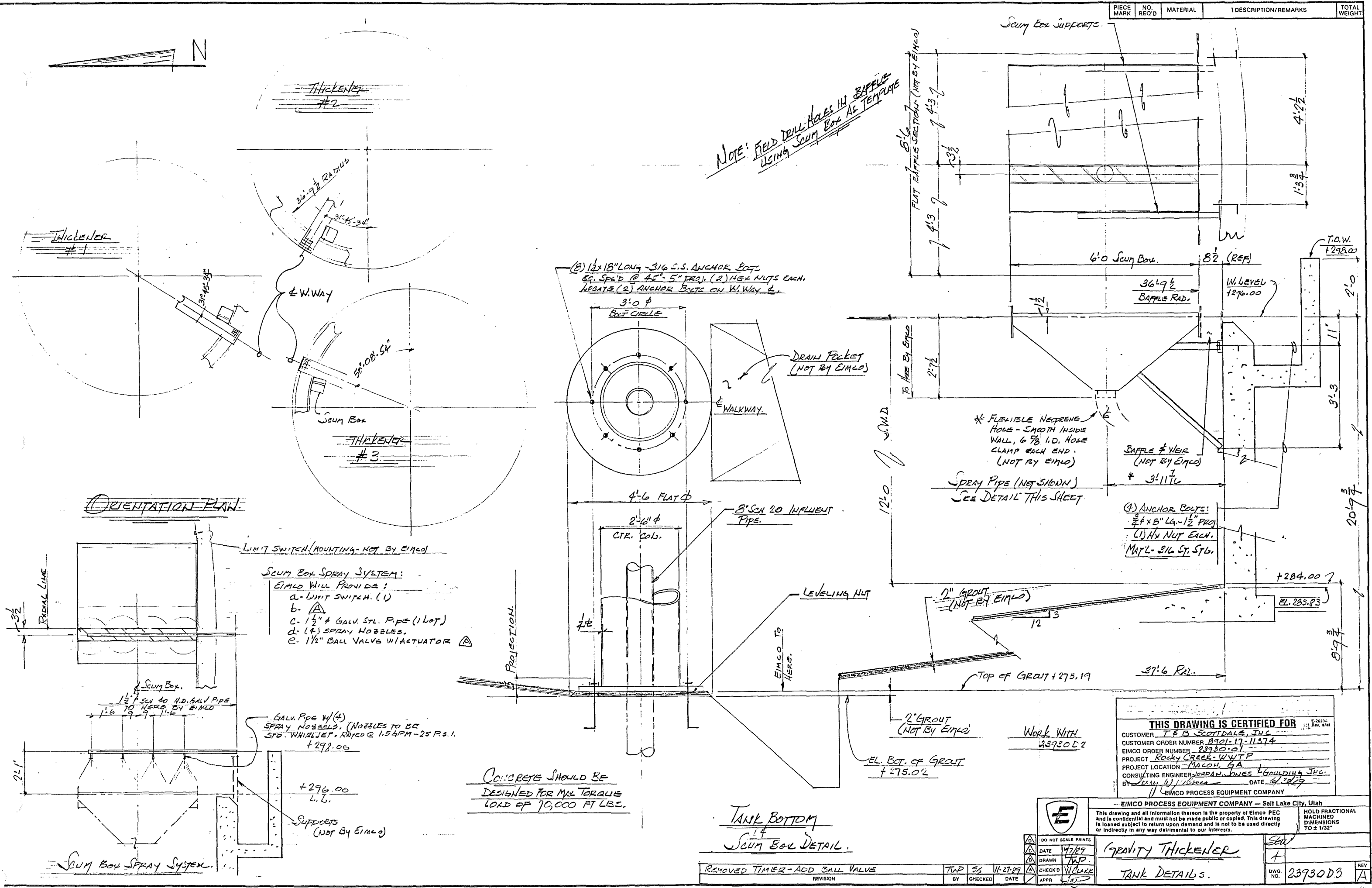
NOTES:

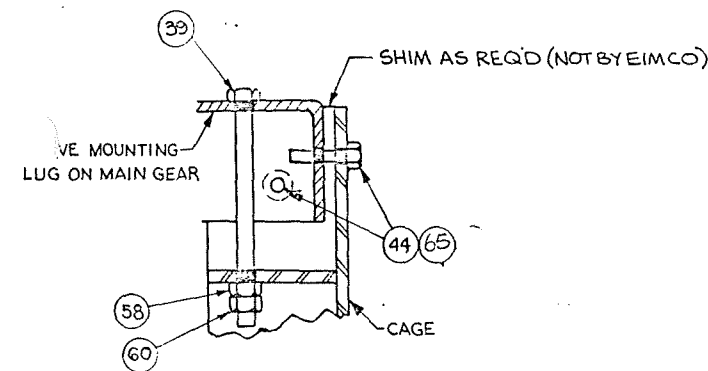
- WORK WITH: PARTS LIST NO. L23930C20
DRAWING NO. 23930C20
- POWER WIRING TO BE SIZED FOR LOAD.
- WIRING SHALL BE COLOR CODED IN ACCORDANCE WITH JIC ELECTRICAL STANDARDS.
 - (A) BLACK - LOAD AND CONTROL CIRCUIT AT LINE VOLTAGE, AC OR DC.
 - (B) RED - AC CONTROL CIRCUITS.
 - (C) BLUE - DC CONTROL CIRCUITS.
 - (D) YELLOW - INTERLOCK CONTROL CIRCUITS WIRED FROM AN EXTERNAL POWER SOURCE.
 - (E) GREEN - EQUIPMENT GROUNDING CONDUCTORS.
 - (F) WHITE - NEUTRAL.
- USE 14 GAUGE (MINIMUM) STRANDED MACHINE TOOL WIRE FOR CONTROL WIRING.
- WIRING SHOWN BROKEN ----- IS EXTERNAL TO PANEL AND 'NOT BY EMCO'.
- WIRING SHOWN ——— IS INTERNAL TO PANEL AND 'BY EMCO'.
- ALL WIRES MUST BE TAGGED AT BOTH ENDS. TERMINAL NUMBER AND WIRE NUMBERS TO BE THE SAME. IE. TERMINAL 7, WIRE 7.
- CONTROL CIRCUIT VOLTAGE IS 120 VAC.



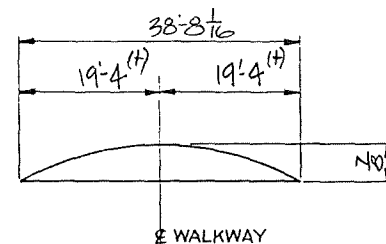
				EIMCO PROCESS EQUIPMENT COMPANY — Salt Lake City, Utah			
				This drawing and all information thereon is the property of Eimco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.			
DO NOT SCALE PRINTS				HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/32"			
DATE 6-13-89				3			
DRAWN DGZ				THICKENER DRIVE WITH SHEAR PIN WIRING DIAGRAM			
CHECK'D B.H.				DWG. NO. 23930C21			
APPR. B.H.				REV. B			

CHANGED FAIL SAFE TO SHEAR PIN	DGZ	B.H.	9-21-89
CORRECTED RELAY NUMBERING	DGZ	B.H.	9-01-89
REVISION	BY	CHECKED	DATE

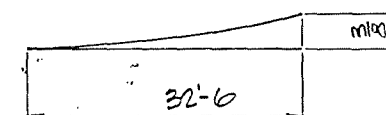




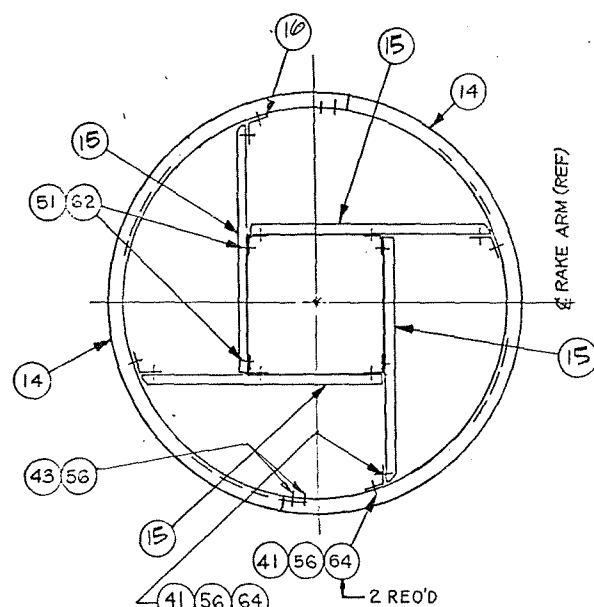
DETAIL C



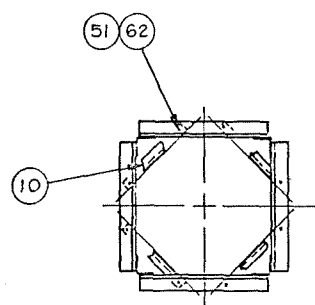
WALKWAY CAMBER



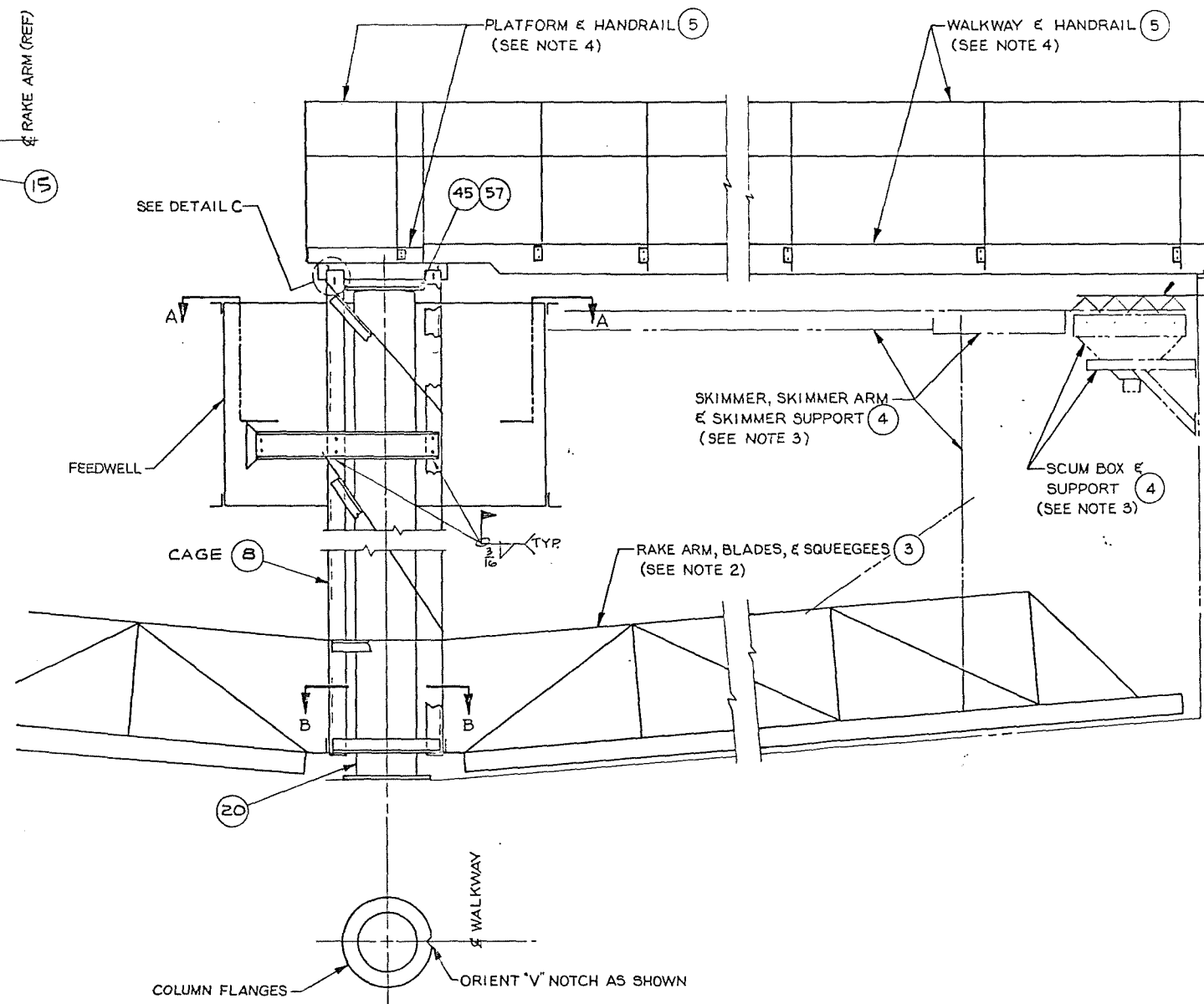
RAKE ARM CAMBER



SECTION A-A



SECTION B-B



HIGH STRENGTH (H.S.) BOLTS (ASTM A325)

MUST BE USED WHERE SHOWN AND SPECIFIED.
 ASSEMBLY INSTRUCTIONS. TURN-OF-NUT METHOD.
 ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS, AND FOREIGN MATERIAL.
 ENOUGH BOLTS SHALL BE BROUGHT TO A "SNUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E., BROUGHT INTO FULL CONTACT WITH EACH OTHER. SNUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THE INITIAL TIGHTENING, BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SNUG TIGHTNESS.
 ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BELOW, WITH TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

Disposition of Outer Faces of Bolts in Joints			
Bolt Length as measured from underside of head to extreme end of joint	One face normal to bolt axis and other face sloped not more than 1:20 from normal to bolt axis	Both faces normal to bolt axis	Both faces sloped not more than 1:20 from normal to bolt axis
Up to and including 4 diameters	1/3 turn	1/2 turn	2/3 turn
Over 4 diameters but not exceeding 6 diameters	1/2 turn	2/3 turn	5/6 turn

NUT ROTATION IS ROTATION RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED.
 TOLERANCE ON ROTATION: 30° OVER OR UNDER.
 FOR OTHER THAN TURN-OF-NUT METHOD, FOLLOW PROCEDURES OUTLINED IN LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.
 E-2299, Rev. 5-81

NOTES:

- ALL ITEMS CALLED OUT ON THIS DRAWING ARE IDENTIFIED ON PARTS LIST [23930051].
- FOR ERECTION OF RAKE ARMS, BLADES, SQUEEGEES, AND ARM TO CAGE CONNECTION, SEE DRAWING [23930052].
- FOR SKIMMING MECHANISM ERECTION, SEE DRAWING [23930054].
- FOR ERECTION OF PLATFORM, WALKWAY, RELATED HANDRAIL AND FLOOR PLATE, SEE DWG [23930053].
- THE INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE STUDIED PRIOR TO STARTING ERECTION OF THIS EQUIPMENT.

6. AFTER FIELD WELDING - APPLY GALVANOX TO WELDED AREAS (TYP) (NOT BY EIMCO)

SEPIA FROM 114996

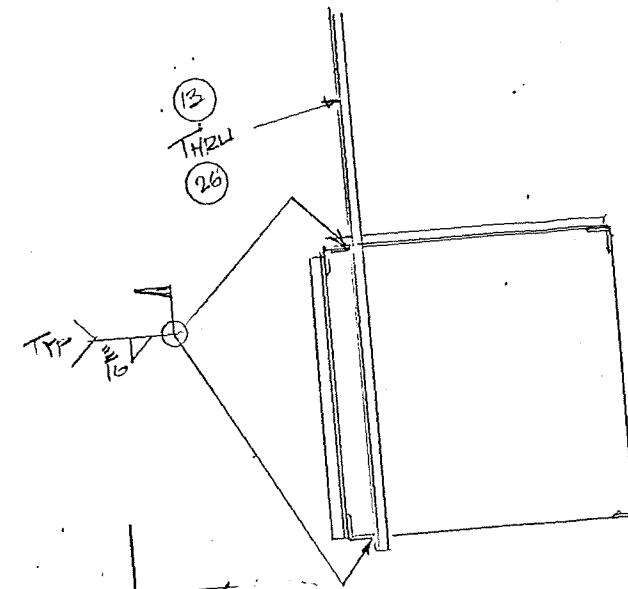
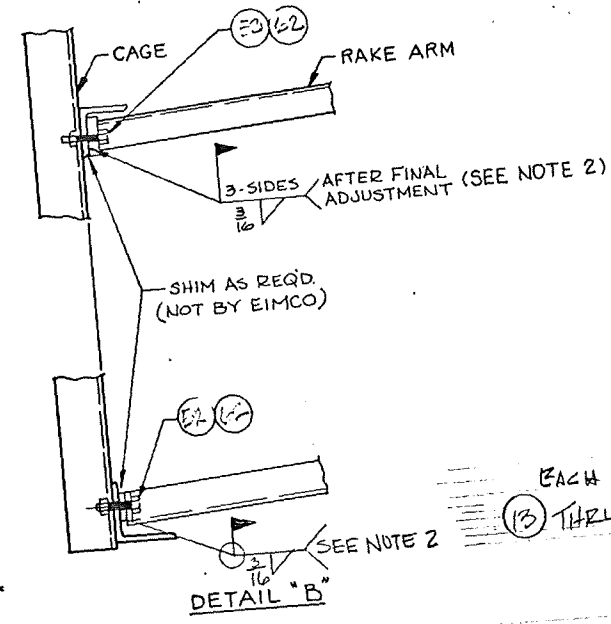
ENVIROTECH		EIMCO BSP DIVISION - ENVIROTECH CORPORATION - Salt Lake City, Utah	
DO NOT SCALE PRINTS		This drawing and all information thereon is the property of Eimco BSP and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
DATE: 8-9-89	DRAWN: HCN	CHECKED: HCN	APPR: TRD
GENERAL ERECTION		HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"	
PANEL CAGE		2	
15-0 DIA		DWA NO. 23930051	
GRAVITY THICKENER		REV.	

HIGH STRENGTH (H.S.) BOLTS (ASTM A325)

MUST BE USED WHERE SHOWN AND SPECIFIED.
 ASSEMBLY INSTRUCTIONS, TURN-OF-NUT METHOD.
 ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS, AND FOREIGN MATERIAL.
 ENOUGH BOLTS SHALL BE BROUGHT TO A "SNUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E., BROUGHT INTO FULL CONTACT WITH EACH OTHER. SNUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THE INITIAL TIGHTENING, BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SNUG TIGHTNESS.
 ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BY THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

DISPOSITION OF OUTER FACES OF BOLTED PARTS:	
BOTH FACES NORMAL TO BOLT AXIS OR ONE FACE SLOPED 1:20 MAX. (BEVEL WASHERS NOT USED)	BOTH FACES SLOPED NOT MORE THAN 1:20 (BEVEL WASHERS NOT USED)
1/2 TURN	1/4 TURN
NUT ROTATION IS ROTATION RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED.	
TOLERANCE IN ROTATION: 30° OVER OR UNDER	

E-2299 Rev. 4-71



TYP. SECTION C-C.

(13) PICKETS @ APPROX 2'-0" CTRS.
 ADJUST TO MISS RAKE ARM MEMBERS - SEE NOTE # 3

NOTES:

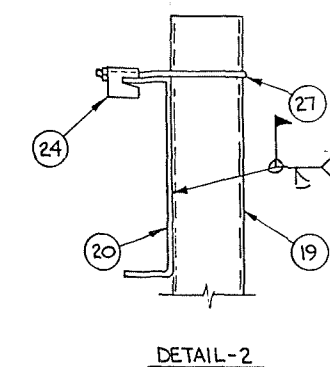
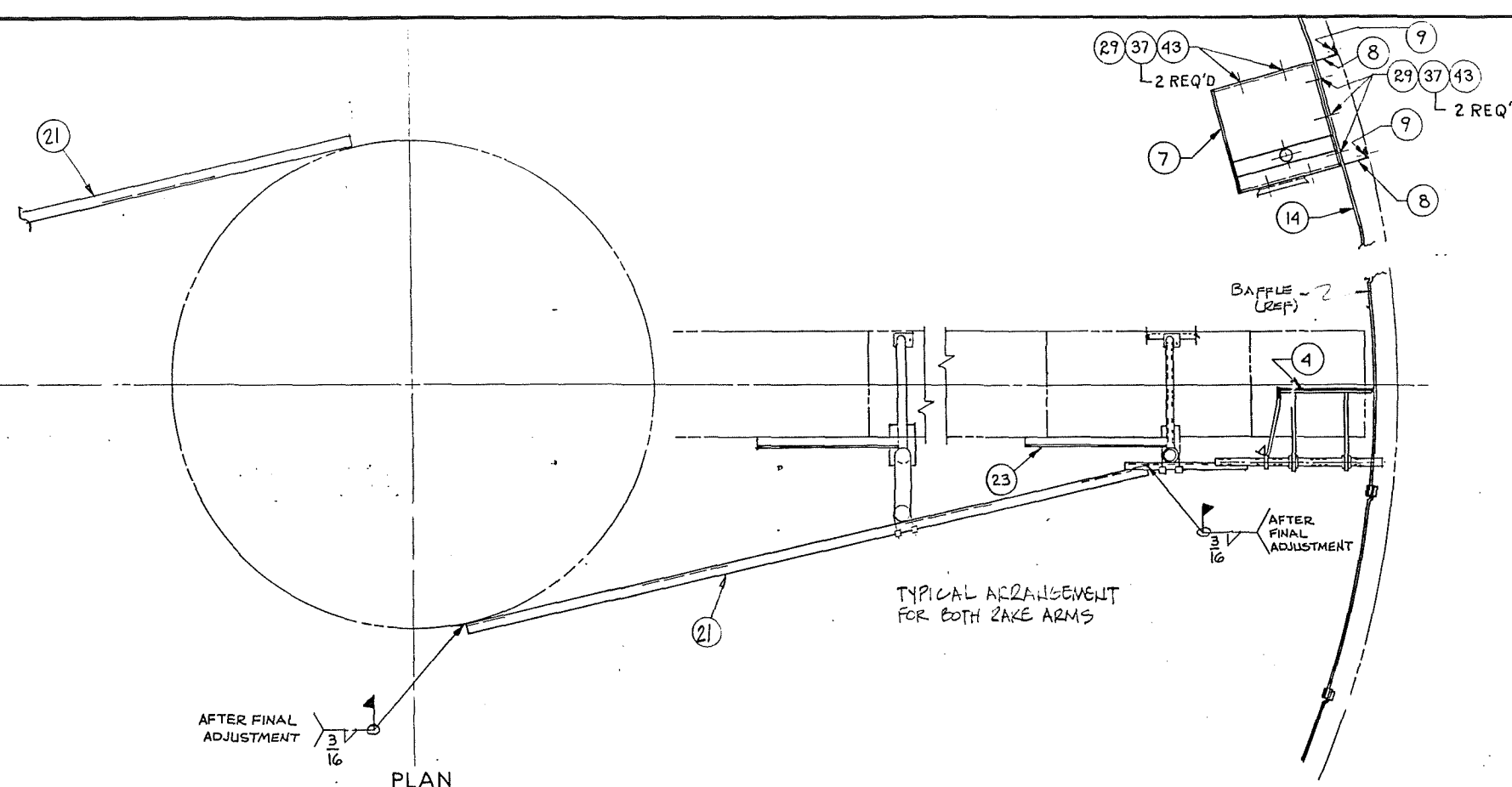
1. WORK THIS DRAWING WITH GENERAL ERECTION DRAWING N° 23930D51
2. IF SHIMS ARE USED, WELD MUST BE ENLARGED SO THAT THE LOAD WILL BE TRANSFERRED FROM THE ARMS TO THE CAGE, NOT FROM ARMS TO SHIMS.
3. ADJUST PICKETS TO CLEAR RAKE ARM MEMBERS AND FIELD WELD - AFTER FIELD WELD - TOUCH UP WITH GOWANOL (NOT BY EIMCO)

SEE DETAIL "B"

SECTION A-A

FOR ITEMS IDENTIFIED BY BUBBLES SEE PARTS LIST 23930D52

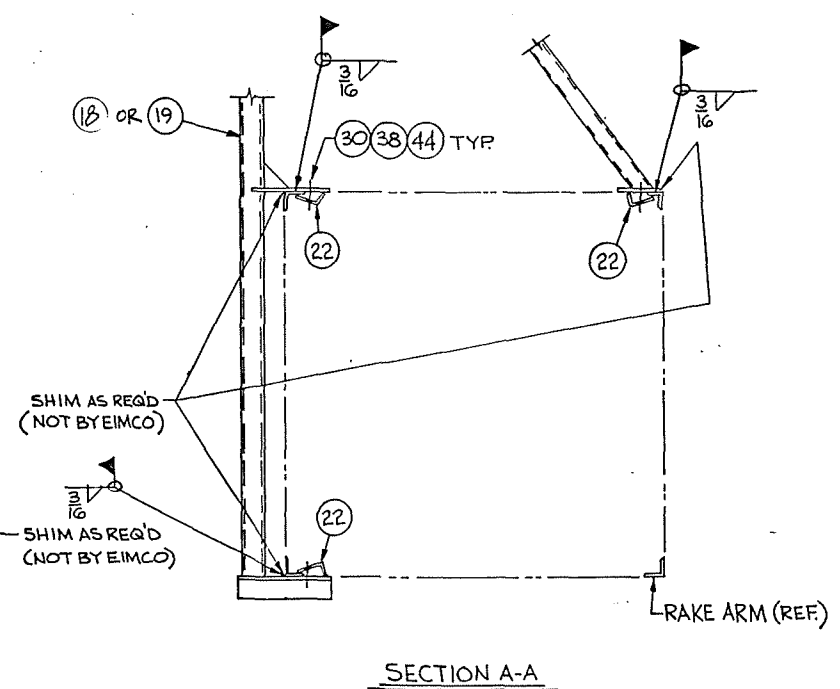
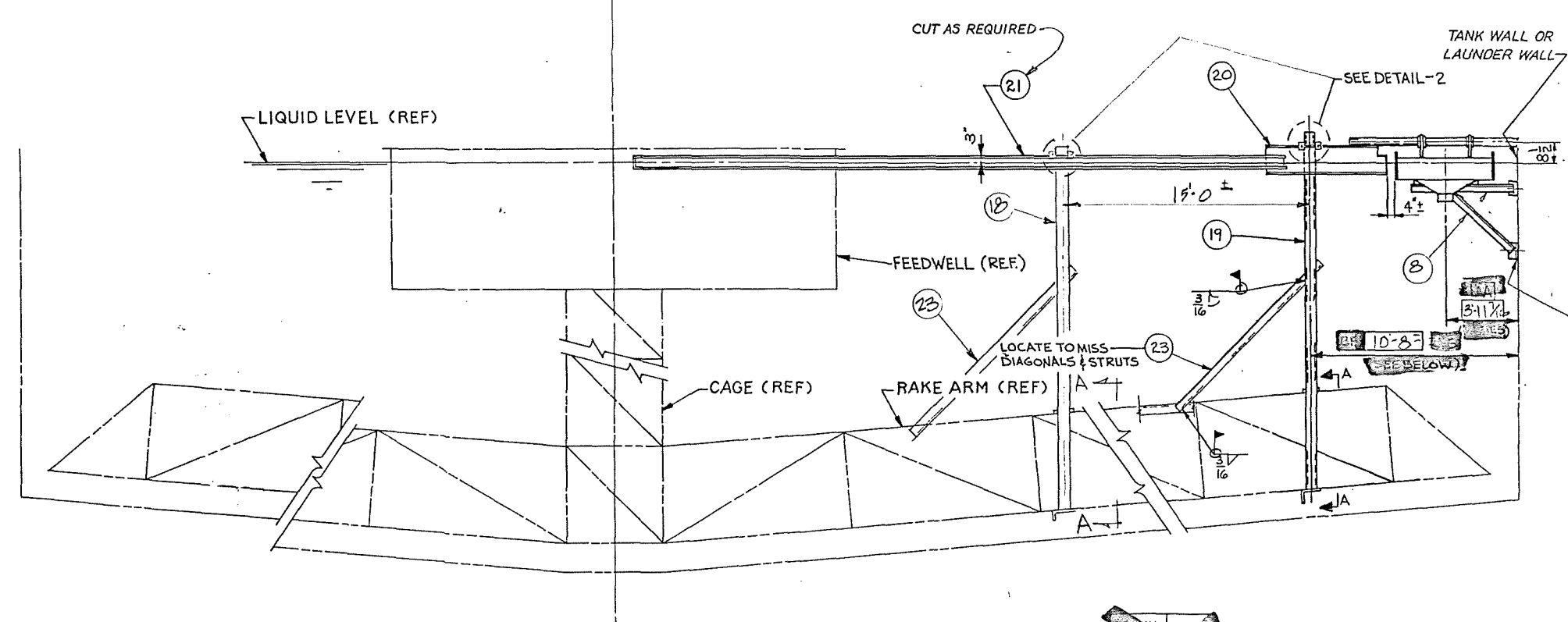
SEPIA FROM 14240		ENVIROTECH		EIMCO BSP DIVISION - ENVIROTECH CORPORATION - Salt Lake City, Utah	
DO NOT SCALE PRINTS		DATE 7-19-79		HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"	
DRAWN TWP		CHECKED HCN		DWG. NO. 23930D52	
APPR. TWP		DATE		REV.	
RAKE ARM ERECTION		C3 CLARIFIER		75'-0" DIA	
NOV 9 1979					



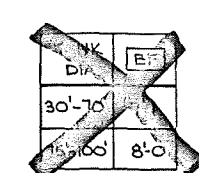
HIGH-STRENGTH (H.S.) BOLTS (ASTM A325)
 MUST BE USED WHERE SHOWN AND SPECIFIED.
 ASSEMBLY INSTRUCTIONS. TURN-OF-NUT METHOD.
 ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS, AND FOREIGN MATERIAL.
 ENOUGH BOLTS SHALL BE BROUGHT TO A "SNUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E., BROUGHT INTO FULL CONTACT WITH EACH OTHER. SNUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THE INITIAL TIGHTENING, BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SNUG TIGHTNESS.
 ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BELOW, WITH TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

Bolt Length: as measured from: underside of head to extreme end of point	Disposition of Other Faces of Bolted Parts	
	One face normal to bolt axis	Both faces: to bolt axis and other face sloped not more than 1:20 (bevel wash- er not used)
Up to and including 4 diameters	1/3 turn	1/2 turn
Over 4 diameters but not exceeding 8 diameters	1/2 turn	2/3 turn
		5/8 turn

NUT ROTATION IS ROTATION RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED.
 TOLERANCE ON ROTATION: 30° OVER OR UNDER.
 FOR OTHER THAN TURN-OF-NUT METHOD, FOLLOW PROCEDURES OUTLINED IN LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.



- NOTE:**
- ALL ITEMS SHOWN IN BUBBLES ARE IDENTIFIED ON PARTS LIST L23930 D54
 - AFTER FIELD WELDING - APPLY GALVANEX TO WELDED AREAS (NOT BY EIMCO)



SEPIA FROM 115020

ENVIROTECH	EIMCO BSP DIVISION - ENVIROTECH CORPORATION - Salt Lake City, Utah
This drawing and all information thereon is the property of Eimco BSP and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"	

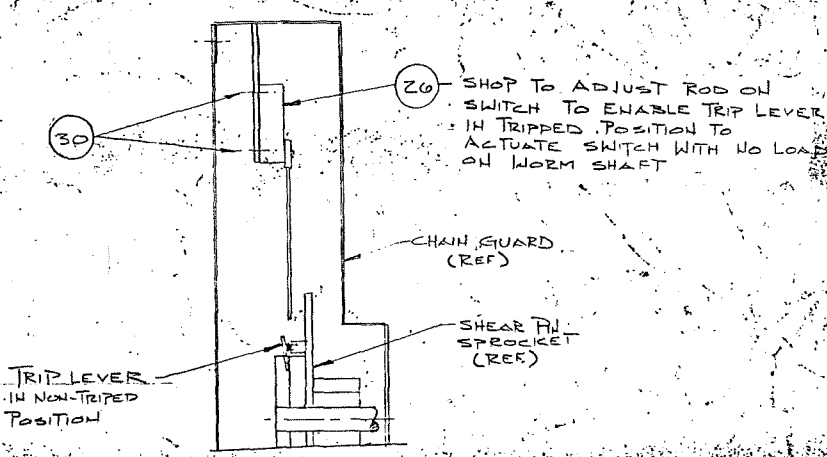
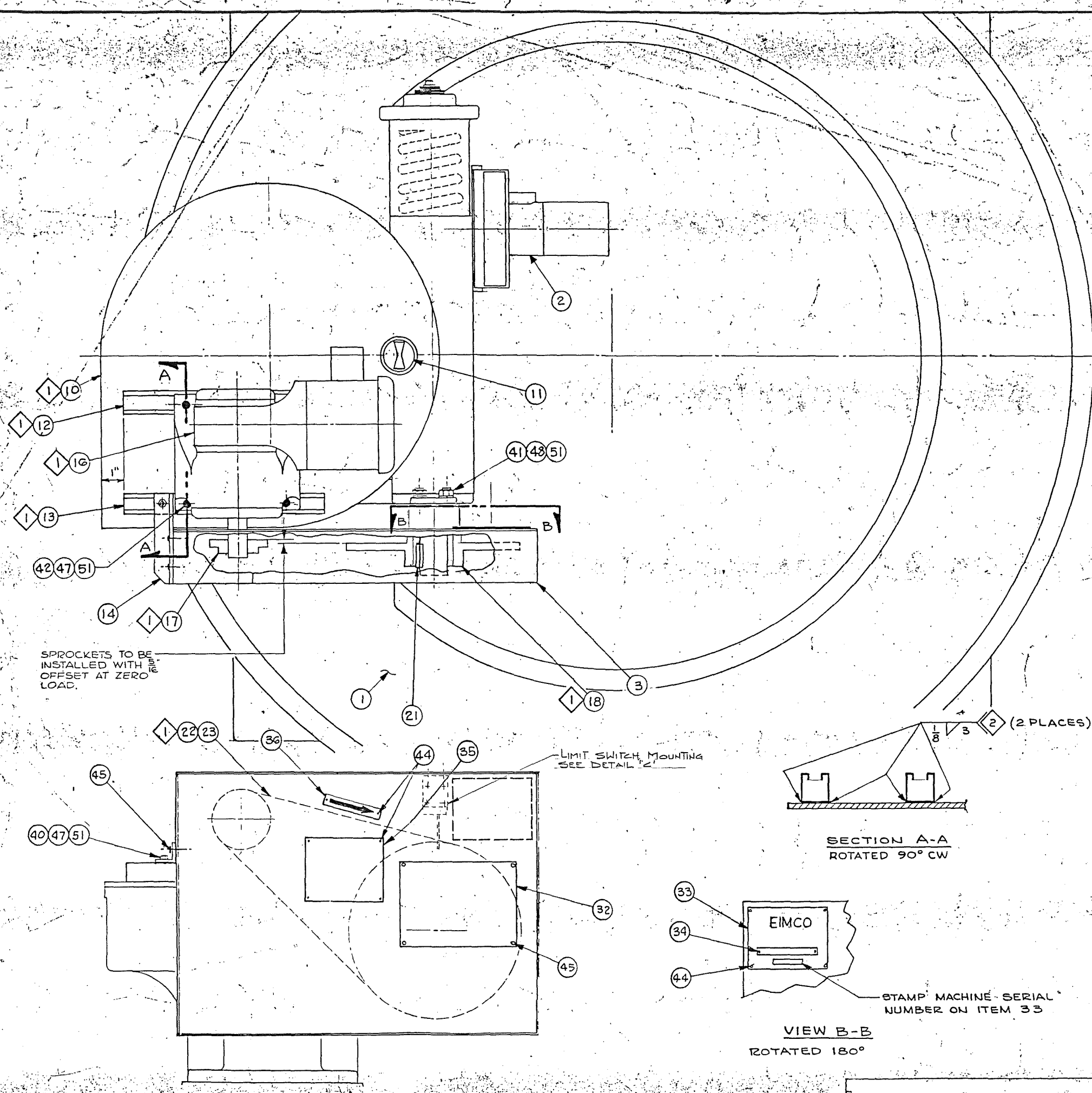
SKIMMING MECHANISM ERECTION

DATE	8-5-84
DRAWN	HCN
CHECKED	HCN
APPR.	HP

REV. NO. 2

DWG. NO. L23930 D54

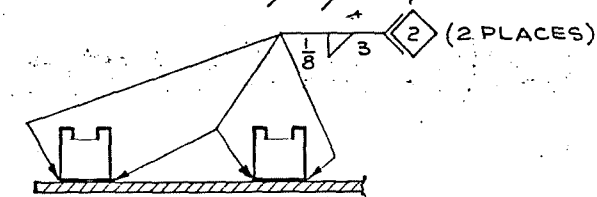
PIECE MARK	NO REQ'D	MATERIAL	DESCRIPTION/REMARKS	TOTAL WEIGHT
------------	----------	----------	---------------------	--------------



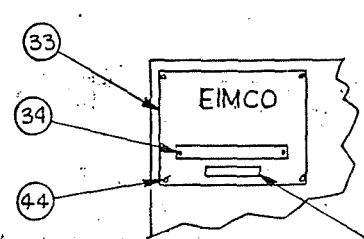
DETAIL C
(LIMIT SWITCH MTG)

SPROCKETS TO BE
INSTALLED WITH
OFFSET AT ZERO
LOAD.

LIMIT SWITCH MOUNTING
SEE DETAIL C



SECTION A-A
ROTATED 90° CW



VIEW B-B
ROTATED 180°

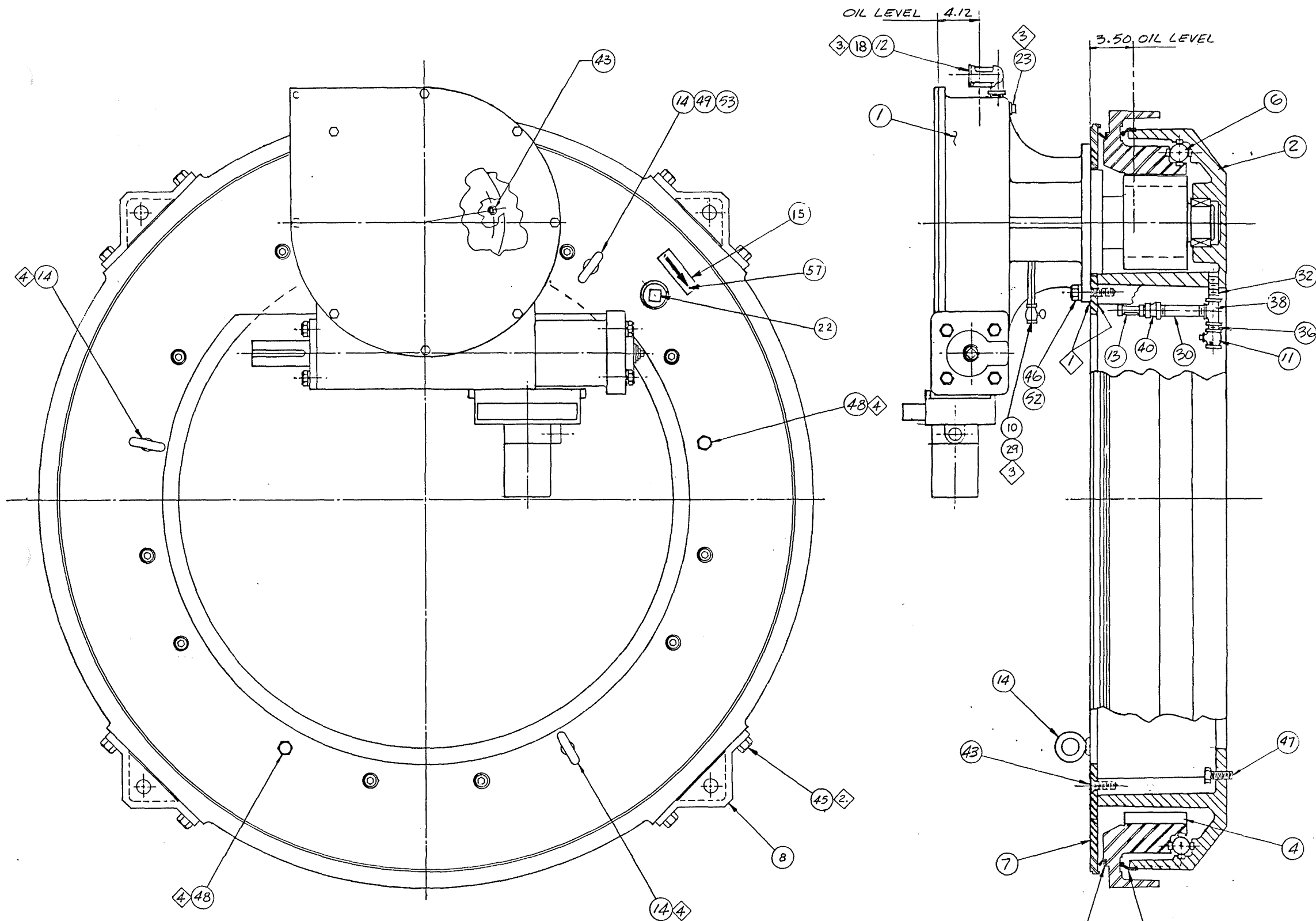
STAMP MACHINE SERIAL
NUMBER ON ITEM 33

- NOTES:
- 1 BOLT GEARMOTOR (16) TO MOUNTING CHANNELS (12) AND (13). POSITION ON COVER (10), INSTALL SPROCKETS (17) AND (18) AND CHAIN (22 & 23) ALIGN AS SHOWN AND WELD MOUNTING CHANNELS TO COVER PER SECTION A-A AND PLAN VIEW.
 - 2 THREE INCH LONG WELDS, CENTERED AT A POINT WHERE REDUCER FEET BOLT TO MOUNTING CHANNELS.

SEE PARTS LIST
FOR THIS ORDER

SEPIA FROM: 23404D31

ENVIROTECH	EIMCO PMD - ENVIROTECH CORPORATION - Salt Lake City, Utah
This drawing and all information thereon is the property of Eimco PMD and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.	
HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"	
MOTOR DRIVE PACKAGE COOL, COHT DRIVE	
DATE 10/5/57	DWG. NO. 23930D32
DRAWN TRS	REV.
CHECK'D GILBERT	
APPR. TRS	



BAG AND ATTACH TO DRIVE
UNIT THE FOLLOWING:
ITEM 25 (SPACER) (16) REQUIRED
ITEM 26 (SPACER) (16) REQUIRED

THESE SPACERS ARE TO BE FIELD
INSTALLED (QUANTITY AS REQ'D)
BETWEEN GEAR CORNER LUGS
AND DRIVE CAGE.

NOTES:

1. APPLY ULTRA BLUE RTV-SILICONE TO CONNECTIONS INDICATED TO OBTAIN A LIQUID TIGHT SEAL.
2. TORQUE CAPSCREWS, (45), TO 140 ± 10 FT.LBS (LUBRICATED.)
3. APPLY PIPE THREAD SEALANT TO ALL PIPE JOINTS.
4. THESE FASTENERS MAY BE REMOVED AT FIELD ERECTION AND REPLACED WITH STRUCTURAL FASTENERS FOR WALKWAY OR PLATFORM.
5. FOR INSTALLATION OF ITEM (16) SEE DRAWING NO. 48643.

PARTS LIST: L115709-1

C	
B	6623 10-5-89
A	6559 2-9-89
D/R	DATE
REVISION	



EIMCO Process Equipment Company - Salt Lake City, Utah

This drawing and all information herein is the property of Eimco PEC and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.

HOLD FRACTIONAL
MACHINED
DIMENSIONS
TO $\pm 1/32"$

NO SCALE POINTS
DATE 9-1-87
DRAWN JKM
CHECKED GEN
APPR. JKT

DRIVE ASSEMBLY
GOLT DRIVE
(BASIC)

DWG. NO. 115709 REV. B

REVISION BY CHECKED DATE

NOTES

1. INSTALL & ADJUST DRIVE CONTROL PER DRAWING NO. 115713.
2. NOTE CAREFULLY HOW REVERSE THRUST BEARING IS INSTALLED IN HOUSING TO TAKE REVERSE THRUST TOWARD BUSHING HOUSING. IMPROPER INSTALLATION WILL CAUSE BEARING FAILURE.
3. BUSHING HOUSING, ITEM (3), IS TO BE ASSEMBLED SO THAT THE CHAIN GUARD ATTACHMENT IS ON TOP, AS SHOWN.
4. APPLY ULTRA BLUE RTV-SILICONE TO CONNECTIONS INDICATED TO OBTAIN A LIQUID TIGHT SEAL.
5. BEFORE ATTACHING END CAP TO WORM GEAR HOUSING, THE FOLLOWING MUST BE DONE:
 - a) DRILL (4) .104 DIA. HOLES THRU ONE (1) WALL ONLY OF END CAP & ATTACH ITEM (24) USING ITEM (6).
 - b) REMOVE ALL BURRS, CHIPS, ETC FROM INSIDE THE END CAP.
6. BEARING, ITEM (39) TO BE A PRESS FIT ONTO SHAFT OF MAIN PINION, ITEM (10).
7. BEARINGS, ITEM (37) ARE TO BE A PRESS FIT ONTO SHAFT OF WORM & SHAFT, ITEM (1) AND A SLIP FIT INTO SLIDING BEARING HOUSING, ITEM (5).
8. APPLY THREAD SEALANT TO THREADS OF ITEMS (15), (16), AND (46), USED IN END CAP ITEM (2), PRIOR TO ASSEMBLY FOR LEAK PROOF JOINTS.

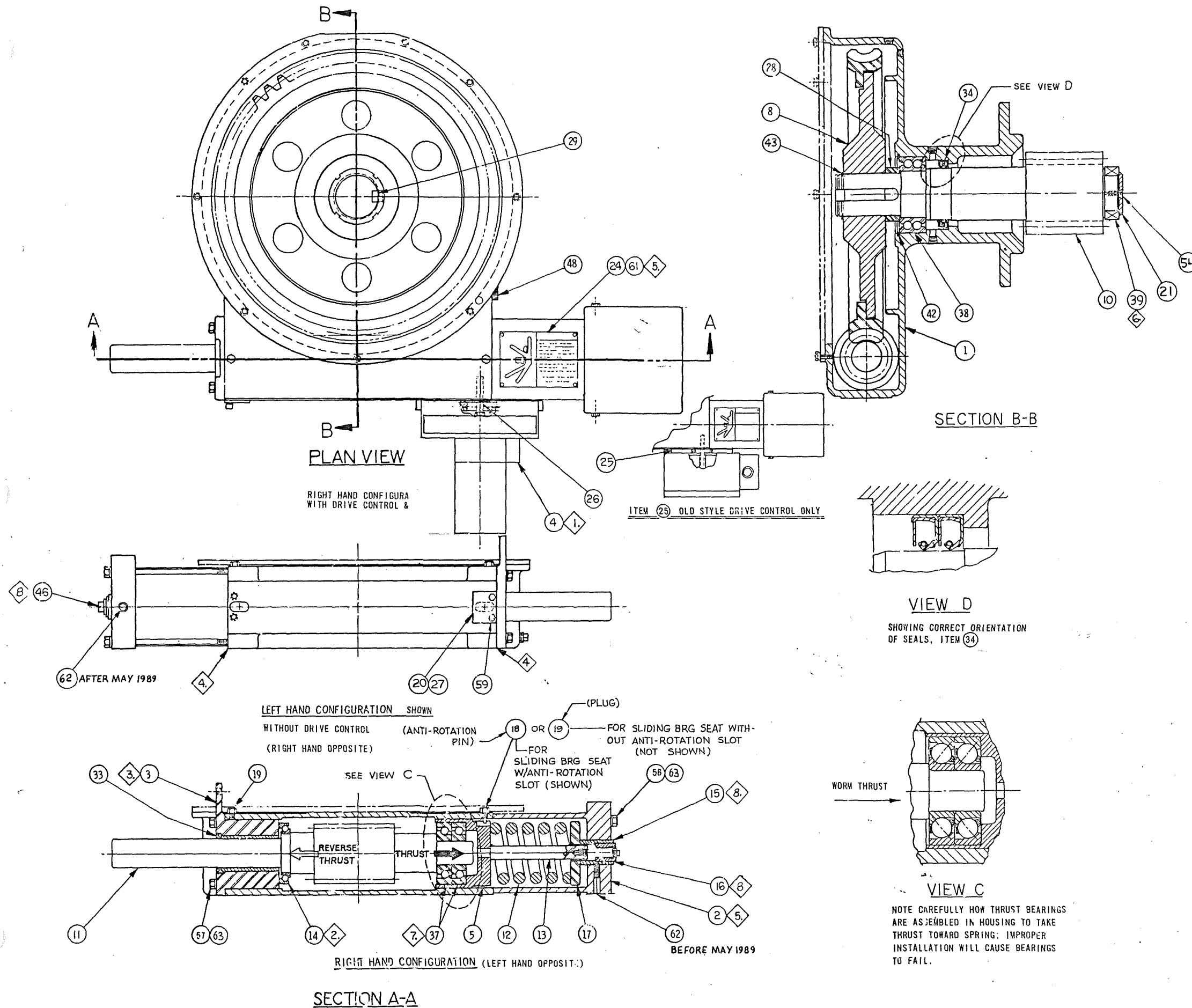
SELECTION TABLE			
DRIVE UNIT	DRIVE CONFIGURATION	PARTS LIST W/DRIVE CONTROL	PARTS LIST W/O DRIVE CONTROL
C40HT	RIGHT HAND	L115209-1	NOT REQD
C40HT	RIGHT HAND	L115209-2	NOT REQD
C60R	RIGHT HAND	L115209-3	NOT REQUIRED
C40LT	RIGHT HAND	L115209-4	NOT REQUIRED
C40LT & HT	RIGHT HAND	L115209-5	NOT REQUIRED
C60LT & HT	RIGHT HAND	L115209-6	NOT REQD

SEE D/R 6147
SEE D/R 6401

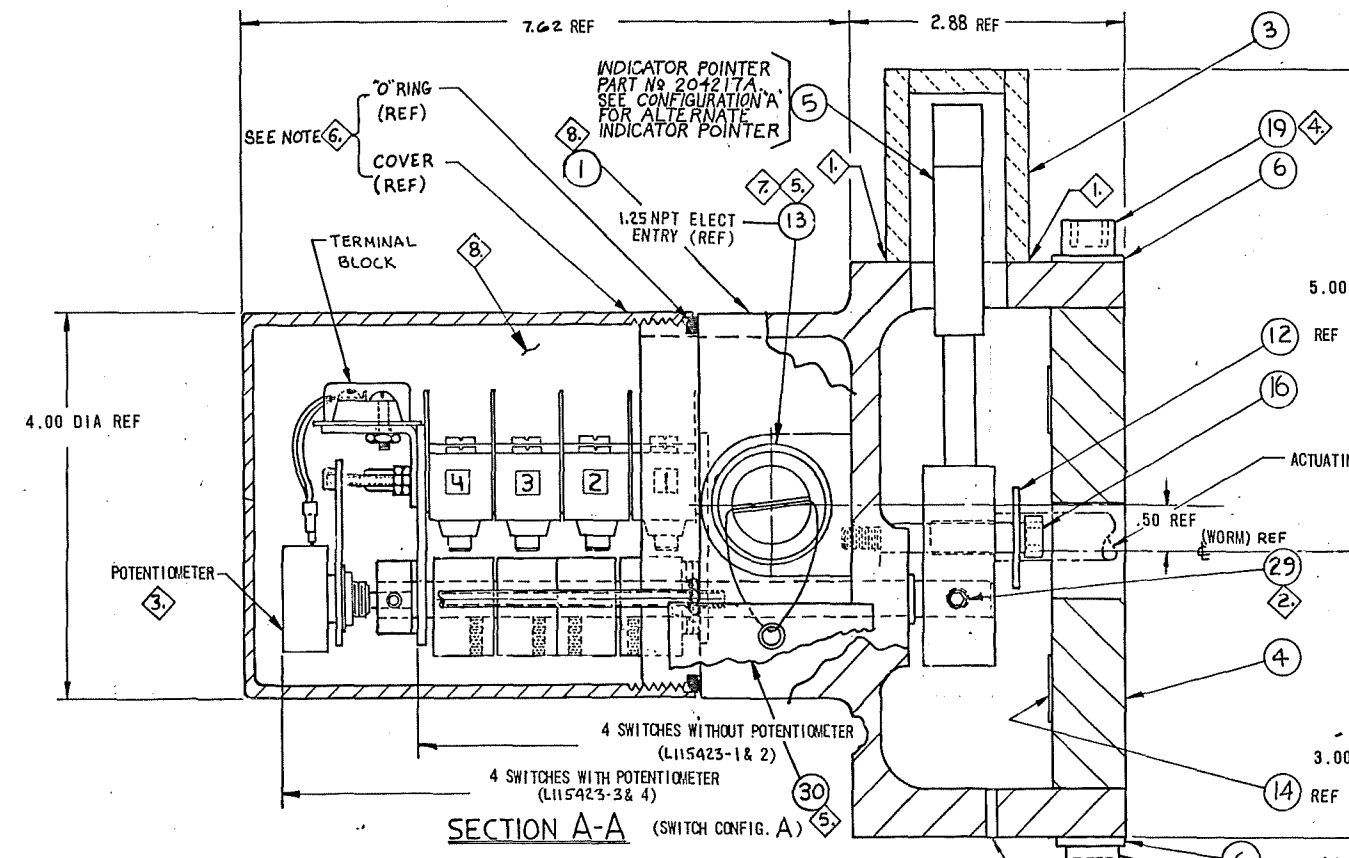
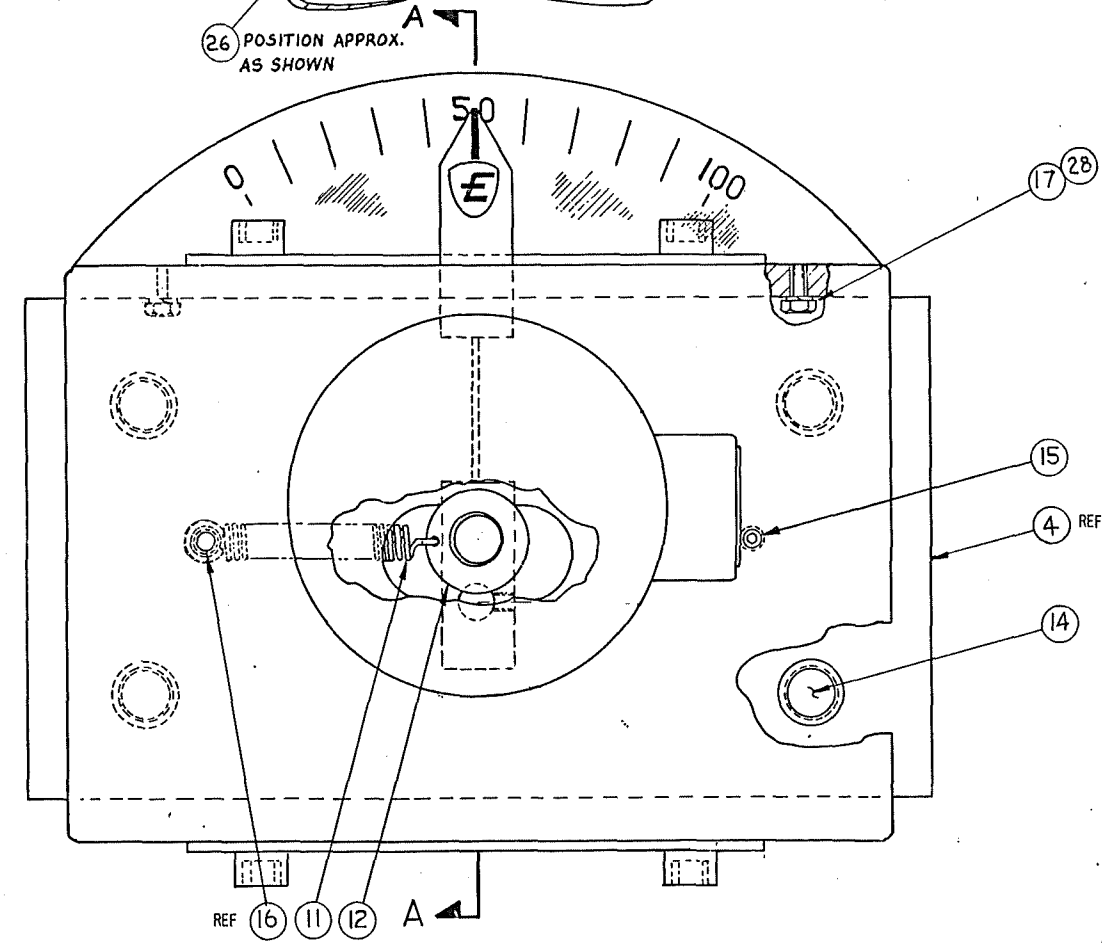
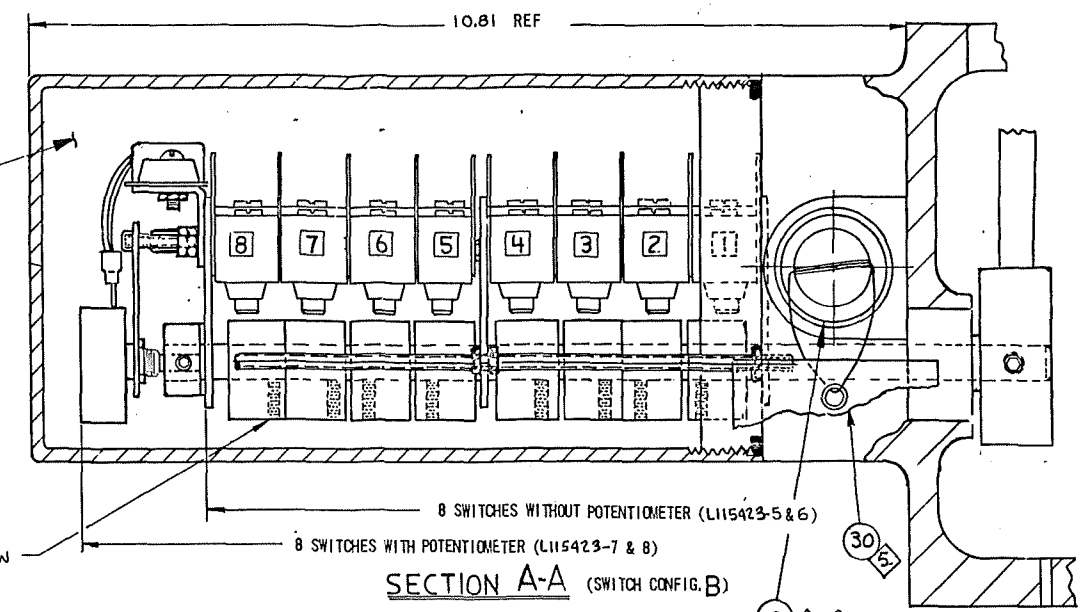
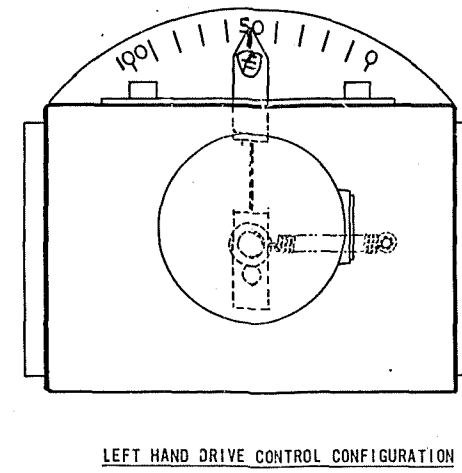
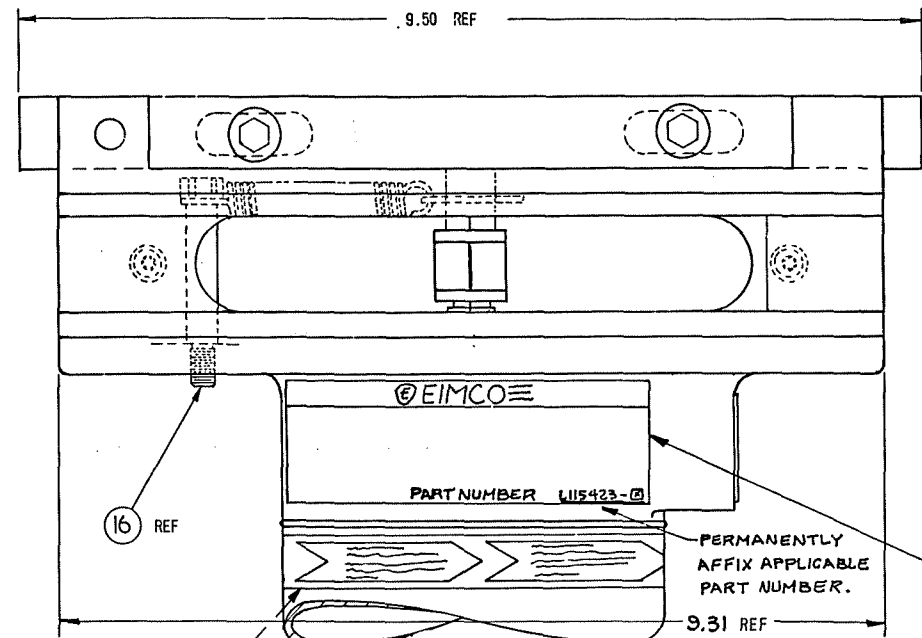
PARTS LIST: SEE SELECTION TABLE

ENVIROTECH		EIMCO PMD - ENVIROTECH CORPORATION - Salt Lake City, Utah.	
DATE 11-16-82		HOLD FRACTIONAL MACHINED DIMENSIONS TO ± 1/64"	
DRAWN C.W.J.		DWG. NO. 115209	
CHECKED JKM		REV. I	
APPR. GEN			

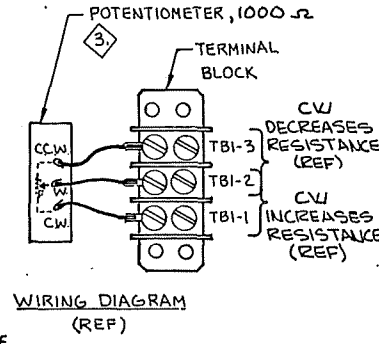
WORM GEAR ASSEMBLY



I	6593	5-5-89
H	6559	2-9-89
G	6401	5-1-87
F	6277	7-25-86
E	6147	5-16-85
D	6140	5-3-85
C	6113	2-22-85
B	6059	9-17-84
A	5835	2-17-83
	D/R	DATE



- NOTES:
1. SURFACE PREPARATION & PAINT PER DWG NO 88747.
 2. TORQUE TIGHTEN SETSCREW, ITEM 29 TO SECURE POINTER ITEM 5 TO SHAFT OF ROTARY SWITCH, ITEM 1
 3. ADJUST POTENTIOMETER FOR 500 OHMS AT ZERO PERCENT INDICATION FROM POINTER.
 4. APPLY ANTI-SEIZE COMPOUND TO THREADS OF ITEM 19 WHERE SPECIFIED.



PARTS LIST NO.	NO. SPOT SWITCH	DRIVE CONTROL CONFIGURATION	APPLICATION SWITCH CONFIG.
L115423-1	4 (W/O POTENTIOMETER)	RIGHT HAND	A
L115423-2	4 (W/O POTENTIOMETER)	LEFT HAND	A
L115423-3	4 (W/ POTENTIOMETER)	RIGHT HAND	A
L115423-4	4 (W/ POTENTIOMETER)	LEFT HAND	A
L115423-5	8 (W/O POTENTIOMETER)	RIGHT HAND	B
L115423-6	8 (W/O POTENTIOMETER)	LEFT HAND	B
L115423-7	8 (W/ POTENTIOMETER)	RIGHT HAND	B
L115423-8	8 (W/ POTENTIOMETER)	LEFT HAND	B

-D/O-

D/R NO. 6568

DATE 2-17-85

PARTS LIST: SEE SELECTION TABLE



EIMCO PMD - ENVIROTECH CORPORATION - Salt Lake City, Utah

This drawing and all information thereon is the property of Eimco PMD and is confidential and must not be made public or copied. This drawing is loaned subject to return upon demand and is not to be used directly or indirectly in any way detrimental to our interests.

HOLD FRACTIONAL MACHINED DIMENSIONS TO $\pm 1/16$ "

DRIVE CONTROL, ELECTRICAL ENCLOSURE IS WEATHER PROOF & EXPLOSION PROOF (NEMA 4X & 7)

DWG. NO. 115423

REV. H

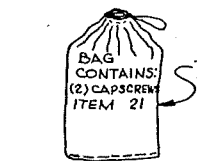
NOTES: (CON'T)

6 SPRAY INTERNAL METALLIC COMPONENTS WITH WD40. OVER SPRAY ONTO OTHER COMPONENTS ACCEPTABLE.

NOTES: (CON'T)

6 THE "O" RING IS TO KEEP WATER OUT OF THE SWITCH ASSEMBLY AREA. THEREFORE, THE COVER MUST BE TORQUE TIGHTENED SO THAT THE "O" RING BECOMES TIGHTLY COMPRESSED-

7 THE 1/4 NPT ENTRY MUST BE WATER TIGHT. THEREFORE, THE PIPE PLUG THREADS MUST BE TEFLON COATED, & THEN MUST BE TORQUE TIGHTENED SO THAT A POSITIVE SEAL OCCURS.



BAGGED ITEMS

BAGGED ITEMS ARE TO BE USED WHEN UNIT IS ATTACHED TO DRIVE UNIT.