Fremont Sanitation District

107 Berry Parkway
Cañon City, Colorado 81212

Request for Proposal

RFP 2024-02

Project Name:

UV Disinfection Replacement

Fremont Sanitation District
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RFP and Project Information:

https://www.fsd.co/planroom/

Release Date: August 13, 2024

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1 PROJECT OVERVIEW AND ORIENTATION

1.1 Purpose

Fremont Sanitation District is seeking proposals from qualified firms to install a new replacement UV Disinfectant System at its Rainbow Park Wastewater Treatment Plant (WWTP), located at 121 County Road 119, Florence, CO 81226 *(see Exhibit A, Vicinity Map).* The replacement UV Disinfection System proposed herein is to be installed into the existing Chlorine Contact Basin No. 2, *(see Exhibit B, Sheet C9)*, and shall serve as the WWTP's primary UV Disinfection mechanism once installed, activated, and brought online. Responder's Proposal shall include a complete all-inclusive Project Cost quote and detailed installation plan(s) to Fremont Sanitation District, outlining all materials, equipment, and labor, as necessary, to configure the retrofit installation of the new replacement UV Disinfectant System, (e.g., TrojanUVSigna™ or equivalent). This RFP document shall provide interested Responders with relevant operational, environmental, and functional requirements necessary to facilitate the preparation and delivery of a responsive Proposal to this RFP. Costs (and source) for subsequent (post-installation) training and technical support for FSD staff shall also be included in Vendor's Response. This project is funded by Fremont Sanitation District and an Energy and Mineral Impact Assistance Program Grant.

1.2 Abbreviation Introductions, Acronyms, and Definitions

a) Modifications to original RFP publication: (Addenda), (Addendum)
b) Mandatory pre-proposal site visit: (Conference)
c) Document stipulating construction requirements and Vendor compensation: (Agreement)
d) Fremont Sanitation District Board of Directors: (Board)
e) Fremont Sanitation District: (FSD), (Owner), (District), (Engineer), (Engineering)
f) Wastewater Treatment Plant: (WWTP), (Treatment Plant), (Plant)
g) Colorado Department of Public Health and Environmental: (CDPHE)
h) Water Quality Control Division: (WQCD)
i) Safety Data Sheets: (SDS)
j) Supervisory Control and Data Acquisition: (SCADA)
k) District or Vendor(s) engaging in a construction Agreement: (Party), (Parties)
l) Personal Protection Equipment: (PPE)
m) All-inclusive work related to this RFP: (Project), (Work)
n) Written response to this RFP: (Proposal)
o) Quality Control Plan: (QCP)
p) Request for Proposal: (RFP)
q) Ultraviolet Ultraviolet: (UV)
r) Ultraviolet or UV Transmittance: (UVT)
s) Entities responding to this RFP: (Vendor), (Vendors), (Contractor), (Contractors)
t) Bonding, Insurance, Documentation, etc. : (Vendor Requirements) *[ref Sections 5.5 & 5.6]*
u) Chlorine Contact Basin: (Channel), (Disinfection Basin)

1.3 Introduction

The Project site is within the Rainbow Park Wastewater Treatment Plant facility, located at 121 County Road 119, Florence, CO 81226 *(see Exhibit A, Vicinity Map)*. An older TrojanUV4000 system is currently serving as the primary UV Disinfectant system for the WWTP in "Chlorine Contact Basin No. 1" (No. 1) *(see Exhibit B, WWTP Engineering Drawings, Page C9, west side, north end WWTP)*. The WWTP has an additional (currently dormant and vacant), open-channel chlorine contact basin identified as "Chlorine Contact Basin No. 2" (No. 2) *(see Exhibit B, WWTP Engineering Drawings, Page C9, east side, north end of WWTP)*. This Chlorine Contact Basin No. 2 shall be the preferred site location for the new UV

Disinfection System proposed by this RFP. The existing TrojanUV 4000™ disinfection system currently in use *(in the west Chlorine Contact Basin No. 1)* shall remain in continuous operation during the installation and testing of the new UV Disinfection system proposed by this RFP. Once this new TrojanUVSigna™ system is installed, tested, and brought online, the older TrojanUV4000™ system shall be left intact and remain fully functional to become an alternative (secondary) backup to the new more efficient (primary) UV Disinfection System.

The District has done an extensive review of the TrojanUVSigna™ disinfection system and has determined that this UV System offers greater efficiency with a sizable decrease in power consumption in comparison to its existing UV disinfection system now in service. Albeit the TrojanUVSigna™ is the preferred replacement, the District would be open to any Vendor's Proposal of an equivalent alternative UV disinfection system, provided Vendor can reliably demonstrate in its Proposal that all minimum disinfection specifications called out in this RFP, and its attached Exhibits, have been met, and that the performance expectations of any proposed alternative UV Disinfection system are at least equal to or greater than the TrojanUVSigna™ system.

Exhibits attached to this RFP and included by reference are as follows:

Exhibit A: Vicinity Map of the Project's WWTP site east of Florence, CO

Exhibit B: WWTP's Documented Engineering Drawings

Exhibit C: TrojanUVSigma™ Disinfection System Drawings

Exhibit D: CDPHE WQCD In-Kind Acknowledgement Letter

Exhibit E: MCC – Chlorine Basin Schematic

Exhibit F: Motor Control Center (MCC Room) Electrical Diagram

Exhibit G: Scum Skimmer Schematic

Exhibit H: Sluice Gate 2 Schematic

Exhibit I: Fresno Sluice Gate

All RFP documents and Exhibits can be found at the District's website under "Projects" (see link below):

http://www.fsd.co/planroom/

1.4 Scope of Work

Utilizing the UV Disinfectant System Design Criteria table in this Section, Vendor shall submit a total all-inclusive Project cost covering the acquisition, mobilization, and complete retrofit installation of all UV disinfection system components, as well as all required design and engineering work, materials, electrical wiring, conduit, power supply panels, all (other) ancillary equipment and supplies, tools, labor, and supervision, to fully complete the installation (Scope of Work) in accordance with manufacturer's instructions and build specifications. The aforementioned items are for general reference only, and DO NOT necessarily represent a fully complete list of the Scope of Work items necessary to complete the task.

Scope of Work shall also include the connectivity necessary for UV system integration and testing with the WWTP's existing SCADA system and software replacement project to ensure reliable operation and functionality. Subsequent to installation and operational testing, the new UV System must report within the manufacturer's performance parameters and specifications for UVT percentage, E. coli disinfectant specifications, and energy consumption. The new UV System must adequately disinfect effluent volume up to and including a Peak Daily Instantaneous Flow of 14.2 MGD. Furthermore, the older existing TrojanUV4000™ system shall remain intact and operational throughout the installation of the new UV

System and shall remain operational afterward (as a secondary backup UV system) to be utilized as necessary.

In addition to the acquisition and installation cost(s) for this Project, all Vendor-supplied training and technical support costs and expenses for District and WWTP personnel should be identified, quoted, and included in Vendor's response to this RFP.

1.5 Participation

The District reserves the right to withdraw from entering into an Agreement for Construction Work for this Project with any prospective Vendor, without liability or obligation of any kind or amount from FSD.

FSD will retain an archival copy of the original RFP, complete with any related terms, conditions, Exhibits, and attachments, in its original form. Any unauthorized modification(s) by a Vendor to the original published RFP, or any subsequent Addenda, without the prior written consent of FSD, may result in disqualification of the Vendor's Proposal.

1.6 "District" Organization

Fremont Sanitation District is a Title 32 Special District, which is a political subdivision of the State of Colorado that functions as its own entity. It is governed by a seven-member Board of Directors, each of whom is elected to a four year term. Each Director is elected from and represents a specific geographic area, ensuring balanced representation by population across all seven Director Districts. The Board adopts annual budgets, sets customer wastewater rates, and determines the District's regulations and policies.

1.7 Schedule of Events

The following is a projected schedule of events that will apply to this RFP. This schedule is provisional and subject to change in accordance with the District's needs or unforeseen Project circumstances. Any changes to this schedule will be communicated by e-mail to all prospective Vendors of record.

- District release of RFP 2024-02: August 13, 2024
- Mandatory pre-proposal site visit (conference): August 28, 2024 (1:15 pm)
- Technical questions/inquiries due: September 5, 2024 (3:00 pm)
- District's Addenda response(s) due: September 12, 2024 (3:00 pm)
- **Vendor's Proposal submission due:** October 3, 2024 (3:00 pm)
- District Review Period and Selection
- FSD Board review & recommendation (Award): October 15, 2024
- Execution of Agreement & Notice to Proceed: October 22, 2024 (tentative)

2 PROPOSAL CONSIDERATIONS AND PREPARATION GUIDELINES

2.1 Vendor's Understanding of the RFP

In responding to this RFP, all Vendors accept full responsibility for a thorough and complete understanding of this RFP in its entirety, which may require Vendors to make inquiries of FSD, as well as other sources as necessary, to gain said understanding. FSD reserves the right to disqualify any Vendor whose Proposal demonstrates, in the sole opinion and discretion of the District, less than full understanding of the nature and requirements of this Project. This right extends to and includes cancellation of the Award of the Project,

if said Award has been made. Such disqualification and/or cancellation will be promptly communicated to the Vendor in writing, and shall be at no fault, cost, or liability to the District.

2.2 Mandatory Pre-Proposal Site Visit

A **MANDATORY** Pre-Proposal Site Visit (Conference) has been scheduled for **1:15 pm local time on Wednesday, August 28, 2024**. Attendees should plan to meet at the Rainbow Park Regional WWTP, 121 County Road 119, Florence, CO, at the scheduled time, for a brief Project introduction, followed by a tour of the Project site. Representatives of the District will be present to discuss the Project. Vendors intending to submit an RFP are **REQUIRED** to attend the Conference and **MUST** sign in with current contact information. Based on Vendor's contact information, the District will communicate and transmit Addenda, as necessary, in response to questions arising at or out of the Conference. Oral statements made by District representatives at the Conference, or any other time, may not be relied upon and will not be binding on the District. The failure of a Vendor or authorized representative to attend the Conference and properly sign in with contact information will render that Vendor ineligible to submit a Proposal. FSD shall keep a log of the Conference participants in attendance, as well as a record of the issues and concerns discussed.

2.3 Good Faith Statement

All information provided by the District in this RFP is offered in good faith and has been assembled with every effort to be as complete and up-to-date as possible. Certain elements of the Project are subject to change or modification as necessary, and FSD makes no warranties that this RFP is without error. FSD assumes no responsiblity or liability for the accuracy or use of the information contained in this RFP, or for any claims arising therefrom.

2.4 Proposal Submission, Communication(s), Inquiries, Questions

All RFP communications, to or from any source, automatically become public domain, and will be subject to public disclosure throughout the RFP and Proposal evaluation period. Written communications will prevail over verbal communications. No communication shall be binding on either Party unless confirmed in writing by a representative authorized to sign on behalf of each Party. All technical questions and requests for clarification affecting the preparation of Vendor's Response to this RFP shall be submitted to the District in writing or by email, and shall arrive no later than 3:00 pm local time on **September 5, 2024**. Furthermore, any requests for clarification related to this RFP, as well as discrepancies, errors, and/or omissions identified in this RFP by any Vendor, shall also be submitted to the District no later than said time and date. Vendors are encouraged to recommend enhancements to this RFP which serve both the Vendors' and the District's best interests. All communication should be directed to:

Toby Ormandy, Plant Superintendent
Fremont Sanitation District
107 Berry Parkway
Cañon City, CO 81212
(719)784-6336, Ext. 106 or Email: rfp@fsd.co

2.5 Addenda

Pursuant to Sections 1.3 and 2.4 (in general) the District shall respond to each question or request for clarification that requires an Addendum or Addenda. Addenda shall be delivered electronically via email to all Vendors who were in attendance at the Conference and properly signed-in at said Conference. All such questions or requests requiring an Addendum or Addenda must be received by FSD in writing or by email no later than 3:00 pm local time, **September 5, 2024**. The District will not respond to such questions received after that time, unless, in the opinion of the District, the question or concern relates to an unforeseen issue vital to the success of the Project. The District shall release all Addenda (if any) no later than 3:00 pm local time, on **September 12, 2024**, via email to Vendors of record, as well as posting(s) to

the District's Project web site at https://fsd.co/planroom, as per Sections 1.3 and 2.4, respectively, of this RFP.

2.6 Proposal Submission

Regardless of delivery method, all Proposals must be received by FSD at its Service Center, located at 107 Berry Parkway, Cañon City, CO 81212, by 3:00 pm local time, **October 3, 2024**. Proposals shall arrive in sealed envelopes and be clearly marked **UV Disinfection Replacement, RFP 2024-02**. Proposals may be hand-delivered, shipped via US Mail, FedEx, UPS, or other such commercial carrier service. **Faxed or emailed Proposal submittals will not be accepted.** Vendors shall submit 1 (one) copy of their Proposal, marked "Original," and 1 (one) copy marked "Copy". Each must be individually bound. Please address Proposal submissions to:

Toby Ormandy, Plant Superintendent
Fremont Sanitation District
107 Berry Parkway
Cañon City, CO 81212

2.7 Proposal Review and Evaluation (Criteria)

Responders to this RFP should each consider their respective Proposal an opportunity to demonstrate and document their interest, Industry knowledge, capability, and experience to procure and install a new Primary UV System that meets or exceeds the technical parameters and expectations as outlined, attached, or included by reference in this RFP document. District review and consideration of all Proposals received will focus on each of the elements of Section 4 of this RFP, titled "**Proposal Submittal Requirements**". Vendors are encouraged to be as complete and detailed as possible.

2.8 Proposal Selection

All responsible and responsive Proposal submissions will undergo extensive review and evaluation by the District. Any Vendor whose Proposal is clearly unrealistic or financially unworkable for this Project may be notified as such. Those Vendors whose Proposals appear more suited to the District's needs and more aligned with the Project's budgetary constraints will be separated into a finalist group. Final evaluation of each Proposal, by the District, may include further communication(s) with each respective Vendor until a final Vendor determination has been made. A draft Agreement for Construction Work will follow, based upon the discussions and negotiations with that successful Vendor. Once all interested Parties have reviewed and finalized the terms and conditions of the Agreement, the District Manger will present said Agreement to the District's Board for approval at the next District Board meeting. Upon approval by the Board, the Parties will execute the Agreement as approved. Once the documentation contained in Vendor Requirements *(Section 5.5)* and Insurance Requirements *(Section 5.6)* has been delivered to and accepted by the District, a Notice to Proceed will be issued. It should be noted that at any time prior to the execution of said Agreement, the District, at its sole discretion, reserves the right to suspend or terminate the Agreement process if, in the District's sole judgment, reasonable terms and conditions for an Agreement cannot be reached.

3 SPECIFICATIONS, INSTALLATION REQUIREMENTS, and STANDARDS

(Vendor shall reference ALL Exhibits attached to this RFP for Project details)

3.1 Design Criteria and Layout

This Project is based on the Contractor's procurement and installation of a TrojanUVSigna™ Disinfection System into the Plant's easterly Chlorine Contact Basin, which is currently dormant and isolated from the Plant's effluent flow. The design criteria and layout for said installation has been provided by the equipment manufacturer, and is attached hereto as Exhibit C. Alternative UV Disinfection systems may be proposed,

but any such deviation will require that Respondent submit comparable Engineer-designed criteria and layout information, specific to said alternative equipment and installation, and **MUST** adhere to the limitations and requirements for "In-Kind Replacement" as set forth in Exhibit D, Colorado Department of Public Health and Environmental (CDPHE) Water Quality Control Division (WQCD) Determination Letter.

It shall be the responsibility of the Contractor to verify all field and design dimensions and elevations provided, stated, or referenced in this RFP 2024-02, as well as those called out in Exhibit C (or any other Exhibits attached herein). Said responsibility shall extend to any subsequent Engineering design and/or support as may be required prior to or during installation, or as may be determined by the District, Trojan Technologies, the Contractor, and/or State CDPHE permitting requirements.

Information contained in Exhibit C is not to be considered a complete and exhaustive list of specifications and installation requirements for this Project. The District is seeking a contractor with previous experience in similar installations possessing the knowledge and resources necessary to complete this project.

3.2 Permitting

(1) ENVIRONMENTAL: The Colorado Department of Public Health and Environmental (CDPHE) Water Quality Control Division (WQCD) has issued a written determination and approval letter dated April 25, 2024, *(see Exhibit D)* wherein, CDPHE has made a determination that this Project, as proposed in this RFP 2024-02, qualifies and fits the criteria for "In-Kind Replacement" (In-Kind). In-Kind status for this Project should minimize if not eliminate Vendor's cost(s) of additional CDPHE Permit Applications, Permits, Amendments, Inspections, or changes to the design and installation requirements necessary for WQCD Permit compliance. However, it shall remain the responsibility of the Vendor (or Contactor) to furnish any reports or deliverables as may be required by CDPHE for In-Kind compliance, either during construction or subsequent to Project completion. Vendor shall furnish copies of any such deliverables to the District for its records.

(2) CIVIL, STRUCTURAL, ELECTRICAL, and/or MECHANICAL: The acquisition and associated costs of all (other) applicable State and Local Permit Applications, Permits, and Inspections, shall be the responsibility of the Contractor. Copies of all such Permits and Inspection Reports shall be submitted to the District upon Contractor's receipt of said Permits and Inspection Reports, or as may otherwise be required during the course of the Project.

3.3 UV Disinfection System: Equipment, Materials and Location

Equipment specifics, as listed below, outline a basic overview for Project installation. The following list of procurement items and materials is for general reference only, and **DOES NOT** necessarily represent a complete list of products or equipment requirements. *(see Exhibit B, Page C9, and Exhibit C)*

(1) Location: WWTP Chlorine Contact Basin No. 2, [easterly Channel at north end of WWTP]

(2) System: Trojan Technologies "TrojanUVSigna™" Disinfection System (or equivalent) [Exhibit C]

(3) Components: Power Distribution Center (PDC), System Control Center (SCC), Hydraulic System Center (HSC), effluent flow level sensors, (UV lamp) bank proximity sensors, conduits, cable conductors, ethernet / IP connectors, *(see Exhibit C for full list)*. Certain Components placed outdoors, or in the effluent flow, shall be made of or housed in Stainless Steel.

(4) Functional Requirements: Vendor shall furnish a fully installed UV Disinfection System, complete with support racks, water level detection systems, water elevation controlling weir, etc., as well as all other appurtenances and accessories as required, to bring the UV Disinfection System online, and pre-configured for connection(s) and seamless integration into the Plant's SCADA System.

(5) Design Criteria: Proposed UV system must meet or exceed design criteria specifics, as listed in the chart below:

UV DISINFECTANT SYSTEM DESIGN CRITERIA	
Peak Daily Inst. Flow:	**14.2 MGD**
UV Tansmittance (UVT):	**65%** *(minimum)*
Total Suspended Solids:	**30 mg/l (30 Day Average)**, grab sample
Disinfection Limit:	**200 E.coli per 100 ml**, *(30-day geometric mean of consecutive daily grab samples)*

3.4 Channel Modifications

(1) The Channel modification specifications for raising the Basin's concrete floor elevation are specific to the TrojanUVSigna™ System, and shall be constructed per dimensions and tolerances called out in Exhibit C. Any alternative UV Disinfection System proposed by Vendor **MUST** include Engineering-Design and effluent flow specifications specific to the alternative UV System being proposed.

(2) The newly modified concrete Channel (reduction baffle), integrated with concrete pad for the HSC, shall be constructed per dimensions and tolerances set forth in Exhibit C.

(3) The newly installed effluent level controlling weir shall be constructed per dimensions and tolerances specified in Exhibit C.

(4) All (staged) reinforcing steel must be covered and stored off the ground in a manner conducive to preventing contamination and rust. Prior to install, Contractor shall make every effort to ensure reinforcing bars are as clean and rust-free as possible. The proper cleaning and de-rusting of steel reinforcing prior to installation is an essential preparation and quality control step toward assurance of a reliable concrete bond. (see *Section 3.12).*

(5) Friction or mechanical-type anchor bolts with adjoining hardware must be of 316 Stainless Steel or coated with an anti-corrosion material to prevent rust or deterioration. Length of anchors must be consistent with manufacturer's installation instructions for proper embedment.

(6) A cable tray must be provided and supported for the protection of lamp cables and hydraulic hoses. This tray must be constructed of Aluminum or Stainless Steel. In addition, certain small sections of the Channel wall must be saw cut and removed to facilitate a cable raceway and shall be covered by removable grating *(see Exhibit C).*

(7) The District requires shielding and protection of all existing and new structures, finished materials, and equipment, from concrete splatter and physical damage during the Channel modification process and placement of new concrete and UV System hardware. Said protection(s) shall include installation procedures and logistical planning that will prevent disruptions or shutdowns of WWTP operations.

(8) Existing **Scum Skimmer** (**"SS-2"**) (with all appurtenances) is to be retired, removed, and replaced with a new (stainless steel) Scum Skimmer at a new location in the 2nd leg of the Chlorine Contact Basin No.2 Channel as part of the cost of this Project. See Exhibit B, Page C-17 for existing location of SS-2, and Exhibit G for new location of SS-2. SS-2 removal shall include concrete repair(s) as necessary to stabilize and restore the integrity of the Channel floor and walls at the removal location. A top-coating of epoxy (or suitable impervious waterproofing product) shall be applied to all affected surfaces and cold-joints created by said concrete repair(s). A fully-functional (new) Scum Skimmer, complete with all actuating devices and hardware, shall be installed into the 2nd leg of the Channel at an optimum functional elevation, dictated by the design-height of the new weir and the flow restriction(s) created by the new UV System. Prior to being brought into service, all exposed components of the new Scum Skimmer and piping subject to corrosion shall be painted or seal-coated to enhance corrosion resistance (stainless steel components exempt).

(9) **Sluice Gate** ("**SL-2"**) (54" wide by 54" tall) controls Chlorine Contact Basin No.2's influent flow. Extensive testing of SL-2 by the District's WWTP personnel has revealed SL-2 to be completely non-functional and unusable, and **MUST** therefore be removed and replaced *(see Exhibit B, Page C17, and Exhibit H)*. With respect to the District's prior experience in procuring effluent gate replacements, the District has been well-served by the design and performance of flow control slide gates manufactured by Fresno Valves and Castings, Inc. It is, therefore, in the best interest of the District that Contractor provides a replacement sluice gate manufactured by Fresno Valves and Castings, Inc. to maintain continuity and consistency with maintenance, parts interchangeability, and aesthetics. (*see Exhibit I)*. Contractor may propose an alternative source for such gate, provided the manufacturer's specifications and warranties meet or exceed those of Fresno Valves and Castings, Inc. However, the District, at its discretion, and without Change Order considerations to Vendor, reserves the right to reject any proposed alternative and require Vendor to sole-source SL-2 gate replacement from Fresno Valves and Castings, Inc. Additionally, should Clarifier No.2 be in service at the time, there is a minimum two-day lead time necessary to taking Clarifier No.2 offline prior to the start of any work on SL-2. Therefore, it is mandatory that Vendor's scheduling for the installation of its SL-2 replacement be coordinated with and pre-approved by the WWTP Superintendent (or his Operations/Maintenance staff) prior to Vendor's commencement of any such work on SL-2. Furthermore, SL-2 replacement **MUST** be completed prior to the release of any effluent flow into Channel (Basin) No.2. Once SL-2 work has begun, it shall be incumbent on Vendor to remain focused and expedient in its removal and replacement of SL-2 in as little time as possible, thereby reducing the chances of an illicit discharge of untreated effluent wastewater in the event of an unforeseeable breakdown or operational issues related to WWTP clarifier operations. Pursuant to this concern, Vendor shall provide a specific work schedule to be approved by FSD prior to commencement of any Sluice Gate work. The costs of procuring and installing the SL-2 replacement shall become part of the all-inclusive cost of this Project, but also isolated and identified as a line-item cost in the Project cost table found Section 4.7 of this RFP titled "Submittals (Pricing)".

(10) Three (3), eight-inch (8"), non-functional mud valves shall be removed and replaced with new and similar mud valves. Each replacement mud valve shall be of the non-rising stem type, and each respective actuator shaft shall be extended to existing operator located positions.

3.5 Electrical Work

(1) All wiring exposed to the elements must be enclosed in UV light and corrosion resistant conduit with moisture-proof fittings.

(2) All (new) UV System components and interconnections shall have localized disconnect features, as well as adequate power surge and overcurrent protection devices in place, as set forth and demonstrated in Exhibit C, Page S01.

(3) The new TrojanUVSigna System shall have its own dedicated PDC and PDC electrical run, powered from a new circuit breaker to be located in the MCC, Power Section 1-B. Due to the age of the existing electrical hardware and infrastructure of the MCC, it will be necessary for Contractor to have an electrical circuit breaker "bucket" fabricated to utilize said Power Section 1-B. See Exhibits E and F for MCC location diagram and MCC Electrical Power Section specifics.

(4) All ballasts for the new TrojanUVSigna shall be adequately grounded to safeguard against lightning strikes.

3.6 Integration and Connectivity with SCADA

(1) Vendor shall provide UV components and hardware necessary for successful integration with the WWTP's existing SCADA software system designed and installed by Browns Hill Engineering. Vendor shall coordinate with Browns Hill Engineering, as necessary, to ensure new UV Disinfection System connectivity with the existing SCADA. This SCADA's system specifics, as listed below,

describe in general the basic requirements for SCADA connectivity. They are listed here for reference only, and DO NOT necessarily represent a complete list of required components and specifications. (NOTE: Trojan shall provide as part of the system controls an adjustable delay to the flow signal fed to the UV PLC to accommodate for when lamps start to dim after a drop in flow.)

a) Existing SCADA System Specifics:

i. Software system: Ignition® SCADA by Inductive Automation®
ii. Website: https://inductiveautomation.com/ignition/
iii. Ignition® system is configured to handle digital, analog, or a combination of PLC systems.

(2) The WWTP utilizes an Allen-Bradley PLC rack located in the Motor Control Cabinet (MCC). Servers are located in the Operations Room and will require the following components or equipment:

a) Compact 5000™ I/O modules and EtherNet/IP Adapters

i. Using the 5069-IA16 Digital Input Modules
ii. Using the 5069-OA16 Digital Output Modules
iii. Using the 5069-IF8 Analog Input Modules
iv. Using the 5069-OF8 Analog Output Modules

(3) The District will contract solely with Browns Hill Engineering to create a SCADA communications page for linking the new UV disinfection system's control center to the WWTP's SCADA system. Pursuant to Paragraph 3.6 (1), the Vendor shall communicate and coordinate the District and Browns Hill Engineering, to whatever extents are necessary, to ensure seamless SCADA connectivity. The Vendor and Browns Hill Engineering shall meet with the District as often as necessary to coordinate and schedule work. All vendors shall conduct work without interfering or hindering the progress or completion of work being performed by other Vendors. Vendors shall cooperate with each other as directed. Additional compensation will not be allowed for foreseeable coordination as indicated in the Contract.

3.7 Channel Grating

Grating material(s) shall be constructed of Stainless Steel, Aluminum or Fiber Reinforced Plastic (FRP). Vendor's pricing in the Pricing Table, (Section 4.7), shall reflect the combination of open bar grate and solid flat grate style(s), as required and set forth in Exhibit C, Page SO3. Vendor's selection of grating material with which to cover the Channels should include consideration of the following list of issues or concerns:

a) Certified test data and structural calculations stamped by P.E.
b) Design Life Span
c) UV Resistance
d) Corrosion Resistance
e) All Loadings (e.g., Snow Load, Live Load, etc.)
f) Maintenance Requirements
g) Slip Resistant Finish
h) All solid flat grating shall prohibit UV disinfection light and sunlight penetration.

Vendor shall take particular note at the bottom of the Pricing Table, Section 4.7, an isolated line item option which is the cost to upgrade the portion specified as open bar grating material to solid flat grating material. This stand-alone cost shall be separate from the all-inclusive Project Cost, and shall NOT be included in Vendor's overall Project Cost Total. Vendor's Total Project Pricing shall adhere to the required grating specifications as set forth in Exhibit C. The District reserves the right to make an award with or without the consideration of this line item option, as the interests of the District may require.

3.8 Guardrail and Stairs

a) The east Channel's (new) guardrail system and stairs shall replicate (to the greatest extents possible) the appearance, strength, performance, and durability of the WWTP's existing guardrails and stairs located on west UV disinfection channel (see Section 3.12).

b) All anchors and mounting hardware for the new Channel's guardrails and stairs must be constructed of compatible metal(s) of the same strength, performance, durability, finish, and corrosion resistance.

3.9 Startup & Functionality and Performance Testing

The newly installed UV Disinfection System shall conform to all manufacturer's functional and disinfection performance requirements and specifications. Initial start-up and performance testing of the UV Disinfection system shall be conducted by person(s) specially trained or manufacturer-certified to evaluate said performance, specific to the particular UV System installed. Documentation of said performance and disinfection rates shall be furnished to the District upon completion of testing.

3.10 Continuous Operation of WWTP and Coordination with Staff

(1) Contractor's construction or installation activities shall not encumber or prevent access by the Owner to any WWTP areas or systems critical to the day-to-day operations or maintenance of the WWTP without the expressed written approval (in advance) of the WWTP Superintendent or Maintenance Supervisor. Approved parking, staging, and Work areas shall be identified by the District at its on-site Pre-Construction Conference (see Section 5.5, "Vendor Requirements / Responsibilities"). All work area boundaries, as well as restricted areas, shall be binding on the Vendor, its employees, and all sub-contractors involved in the Project.

(2) Contractor(s) shall protect and ensure continuous preservation and operation of the existing TrojanUV4000™ disinfection equipment and system during the new UV Disinfection System installation and testing.

(3) The WWTP may be involved in other maintenance or upgrade construction projects simultaneous to the UV System installation covered by this RFP. As such, it shall be incumbent on the Contractor to coordinate its UV System construction and testing activities with other active ongoing WWTP projects as necessary.

3.11 Cleanup

All Project-related debris removal and cleanup shall be done by the Contractor and/or any of its sub-contractors throughout the construction and installation period. Vendor shall be responsible for supplying dumpsters; removal and disposal of all trash and waste; and cleanup of working area at the end of each workday and to work with District's staff. Said cleanup shall include the removal of concrete spill or splatter in and around all Work areas. Vendor shall assure that work is not done, nor equipment parked (or staged), in areas outside of approved work boundaries. The Vendor shall clean areas wherein the construction equipment was placed and shall leave these areas in a condition acceptable to the District.

3.12 Documents by Reference

(1) Concrete Materials must consist of Portland Cement (ASTM C 150, Type II), and be purchased from a single manufacturer, unless otherwise approved by the District.

(2) Concrete Requirements for Quality Assurance must comply with the listed Codes and Standards

a. ACI 301 "Specifications for Structural Concrete for Building"

b. ACI 318 “Building Code requirements for Reinforced Concrete”
c. ACI 347 “Recommended Practice for Concrete Formwork”
d. “Manual of Standard Practice,” by the Concrete Reinforcing Steel Institute.

(3) Reinforcing Steel Bars – ASTM A 615, Grade 60, deformed must be used, unless otherwise approved by the District.

(4) Aluminum Pipe and Tubing Railings (Guardrail System) must conform to ASTM E 985 specifications. Guardrail system must be capable of withstanding a concentrated load of 200 lbf (890 N) in any one direction at any one point, or a uniform load of 50 lbf (730 N/m) per linear foot in a horizontal direction with a uniform load of 100lbf (1460N/m) per linear foot in a vertical direction.

4 PROPOSAL SUBMITTAL REQUIREMENTS

4.1 Submittals (Materials)

Vendor shall submit a full product title and description of UV Disinfection System proposed. If Vendor’s proposed UV Disinfection System is different than the preferred TrojanUVSigna, Vendor’s Response shall include at a minimum, the following product information and specifications:

(1) Manufacturer’s published performance specifications and UV disinfection rates for its UV System.

(2) Manufacturer’s Engineer-Design installation specifications specific to Chlorine Contact Basin No.2.

(3) Overall maintenance routines, maintenance costs, and longevity projections for said alternative.

In addition, Vendor’s Submittal shall include specific product information, as well as technical and/or performance specifications for the following Project components to be included or replaced:

(1) Mud Valves

(2) Sluice Gate 2 (SL-2)

(3) Scum Skimmer 2 (SS-2)

(4) Grating (as per Exhibit C)

(5) Guardrail and Stairs (to match or closely match existing)

(6) Grounding Rod(s) (or grounding mechanism(s) for ballasts

4.2 Submittals (Experience, Qualifications)

Vendor shall provide statements of qualifications and experience (or Certifications as necessary) for its UV System installers and electrical contractor(s), which will be utilized for this Project. Vendor shall also provide a minimum of three (3) industry-related references (with current contact information) for UV Disinfection System installations of a similar (or greater) size and scope. Vendor shall provide the name, contact information, and resume for the Vendor’s Project Manager assigned to this Project. Project Manager assigned to this Project must have a minimum of 3 (three) years of total experience with the technology proposed for this Project and must have demonstrated past competency and experience necessary to perform the scope of work contained in this RFP.

4.3 Submittals (Installation Schedule)

Responder shall submit an estimated Project schedule, to include a proposed time frame for:

(1) Equipment procurement,

(2) Commencement of UV System installation, and

(3) Anticipated date of bringing the new primary UV Disinfectant System online for testing and completion.

4.4 Submittals (Warranty)

Vendor agrees to certain product Warranties as specified in UV manufacturer's statements. In addition, Vendor agrees to the District's overall 2-year (two year) Project Warranty requirement which applies to the installation workmanship and functional reliability of the newly installed UV Disinfectant System and its connection components with the WWTP's SCADA System.

4.5 Submittals (Safety Plan)

Vendor shall submit a Safety Plan for this Project that outlines its overall safety program, as well as safety policies and protocols specific to this Project. It should include how personnel will be protected around open channels (e.g., fall restraint systems, railings, etc.) to reduce the chance of slips, trips, and falls. Said safety plan shall include (but not limited to) a description of emergency procedures to be implemented and in the event of a work zone accident or safety incident. Vendor agrees to perform all Work in compliance with OSHA standards (where or if applicable).

4.6 Submittals (Environmental Concerns)

Vendor shall submit statements addressing any environmental concerns typically associated with the installation and testing of UV Disinfectant Systems such as the one being proposed by this RFP. Mitigation or prevention plans respective to each concern should be described in detail and be included in Vendor's Proposal.

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4.7 Submittals (Pricing)

(Vendor **must** complete this page and submit with Proposal)

All Vendors submitting Proposals to the District for this UV Disinfection Project must complete and submit the following Project line-item cost breakdown as part of their Proposal. All prices submitted must be honored and valid for 90 (ninety) calendar days subsequent to the date Proposals are due.

DESCRIPTION	PRICE
UV System: [Design], Procure, Install, Start-up, Testing	$
Grating, (to include Guardrail and Stairs): Open Bar Grating Material and Solid Flat Grating Material where required [as per Exhibit C].	$
Scum Skimmer SS-2: Remove existing unit, Procure and Relocate new unit [see section 3.4 (8)].	$
Sluice Gate SL-2: Procure and Replace (54" wide by 54" tall); price shall include removal and disposal of existing Sluice Gate [see section 3.4 (9)].	$
Mud Valves: Procure and Install three (3) new 8" Mud Valves (Stainless Steel or Cast Iron); price shall include removal and disposal of existing Mud Valves [see section 3.4 (10)].	$
Training and Technical Support: (Specify) **Lump Sum** [or] _____**Hours**	$
TOTAL:	$
Line Item Option: Upgrade Open Bar Grating Material to Solid Flat Grating Material	$

The aggregate sum (TOTAL) in the table above should reflect Vendor's all-inclusive total cost of the Project as stated on the line below. **Do not include Line Item Option in the Project Total.** If the Project's total cost in the table above is not in agreement with the written figures below, the lesser of the two Project cost totals shall prevail and serve as the official Proposal cost quote for Vendor's Proposal.

_____ $_____

Project Total Cost (Words) (Figures)

_____

(Signature): Vendor or Authorized Representative

4.8 Submittals (Payment Schedule)

Vendor shall submit a proposed (or anticipated) payment schedule to the District. Retainage may be withheld from progress payments depending on the final agreed upon payment schedule. The District shall make the final payment to the Vendor within 30 (thirty) days following final completion and acceptance of the Work, without interest.

4.9 Addenda Receipt

(Vendor **must** complete and sign this page and submit with Proposal)

Fremont Sanitation District

107 Berry Parkway Cañon City, CO 81212-3900
(719) 269-9050 Fax - (719)276-7001
E-Mail: rfp@fsd.co
Website: www.fsd.co

ACKNOWLEDGMENT OF ADDENDA RECEIPT

The undersigned hereby acknowledges receipt and acceptance of the following Addenda to Fremont Sanitation District's Request for Proposal 2024-02, **UV Disinfection Replacement**.

Addendum No.	Addendum Date

Signature Date

Name of Company

4.10 Submittals (Vendor Certification)

All Vendors submitting Proposals to the District for this Project must complete and include the Vendor Certification page (Section 6 of this RFP) as part of their Proposal submission.

4.11 Submittals (Bid Bond)

Each Proposal shall be accompanied by a deposit equivalent to 5% of the Proposal amount in the form of a bid bond, certified check, or other negotiable instrument made payable to Owner. The vendor shall secure bonds hereunder from companies holding certificates of authority as acceptable pursuant to 31 CFR Part 223 and are authorized to do business in Colorado. This deposit will be returned to Vendors whose Proposal was **not** selected within 30 days after the Proposal due date. The deposit of the selected Vendor will be returned upon the execution of the Agreement for Construction Work.

5 TERMS & CONDITIONS

5.1 Vendor Costs

Fremont Sanitation District shall not be liable to any Vendor, entity, or person for any costs or expenses of any kind that may have been incurred by a Vendor or third party in connection with their response to this RFP.

5.2 Vendor Responses

All Vendor responses received will become the property of the District and will not be returned. All Vendor responses become public record upon opening by the District.

5.3 Governing Law

This Project and all Vendor Proposals shall be governed by all applicable federal, state, and local laws and regulations.

5.4 District Liability

Fremont Sanitation District shall not be liable to any Vendor, entity, or person for the use of any information contained in this RFP, or for any error or omission that may have been contained in or omitted from this RFP document, or subsequently provided as part of the RFP process. The District reserves the right, if it deems such action to be in its best interests, to reject any and all Responses or to waive any irregularities or informalities therein.

5.5 Vendor Requirements / Responsibilities

Should your Proposal be selected for this Project, your company shall attest, furnish, and be responsible for the following items as pre-conditions to executing a Construction Agreement:

(1) Acquire a Performance Bond and a Payment Bond, each of which shall be equivalent to 100% of the Proposal amount. The vendor shall secure bonds hereunder from companies holding certificates of authority as acceptable pursuant to 31 CFR Part 223 and are authorized to do business in Colorado.

(2) Acquire certain insurance(s) as stipulated in Section 5.6 of this RFP.

(3) The Vendor shall identify a Project Manager who shall be the point of contact for the Fremont Sanitation District.

(4) Provide all equipment, materials, and qualified personnel to successfully complete this Project in a timely and professional manner.

(5) Secure all federal, state, and local permits as necessary.

(6) Attest that all personnel relevant to the application of the proposed product have been trained, and are manufacturer-certified in the proper preparation, handling, and safe installation of all proposed materials.

(7) Attest that all appropriate personnel have undergone training and are manufacturer-certified installers (as necessary).

(8) Complete a "Vendor Packet," said packet to be supplied by FSD (available on website).

(9) Commit to and execute FSD's Agreement for Construction Work.

(10) Comply with Section 5.9 titled "Keep Jobs In Colorado Act" (HB 1292).

Subsequent to the execution of the Agreement for Construction Work (Item 9 above), the following additional Vendor Responsibilities shall apply:

(1) Vendor shall schedule and perform all installation between the hours of 6:30am to 5:00pm, Monday-Friday, unless otherwise approved by the District. Vendor shall coordinate schedule with District staff prior to the commencement of installation. The Vendor shall not perform installation operations on Saturdays, Sundays, or holidays designated by Fremont Sanitation District unless previously arranged and documented by written approval.

(2) Vendor shall have or obtain all necessary permits, licenses, certifications and insurance required before commencing the work. Vendor shall be responsible to pay all costs for permits, licenses, certifications, fees, inspections and insurance which may be required to perform the work required. All costs to apply and comply with associated permit(s) shall be included in the contract and shall not be paid for separately.

(3) Prior to commencement of work on this Project, Vendor shall coordinate with the District and schedule an on-site Pre-Construction Conference. Attendance by Vendor's Project Manager, key staff, and Vendor's subcontractor(s) shall be mandatory.

(4) The Vendor shall, at all times, employ sufficient labor and equipment to properly and efficiently perform the work. All workers shall have sufficient skill and experience to properly perform the work assigned them. All equipment, which is proposed to be used on the project, shall be of sufficient size and in such mechanical conditions as to meet the requirement of the project. If in the opinion of Fremont Sanitation District, employees and/or a certain type of equipment are not producing the work required by the contract, the Vendor shall discontinue the use of said employees and/or equipment, when notified in writing.

(5) The Vendor shall ascertain and ensure that its personnel and subcontracted personnel are equipped with and use all safety devices required to comply with Federal, State, and Local regulations, including but not limited to, the Occupational Safety and Health Administration (OSHA). The Vendor's project manager shall be responsive on a daily basis throughout the project. Fremont Sanitation District's Project Manager shall be the primary point of contact for the District; however, daily coordination and communications may occur between the Vendor and other appointed District staff. Substitutions for Vendor's Project Manager shall not be allowed unless authorized and specified in writing by the Fremont Sanitation District.

(6) The Vendor shall be required to maintain rigid control of all materials which must comply with the specifications as stated. All materials not conforming to the requirements of the specifications at the time they are used shall be considered unacceptable. Unacceptable work, whether the result of poor workmanship, use of unacceptable materials, or damage through carelessness or any other cause found to exist prior to the final acceptance of the project, shall be removed immediately by Vendor and replaced in an acceptable manner at no additional cost to the Fremont Sanitation

District. Upon failure, on the part of the Vendor, to comply with any order of the Fremont Sanitation District made under the provisions of this section, the Fremont Sanitation District shall have authority to cause unacceptable work to be remedied or removed and replaced, and unauthorized work to be removed, and to deduct the costs from any monies due or to become due to the Vendor.

5.6 Insurance Requirements

During the entire period of Project mobilization, construction, testing, and Project demobilization, the Vendor shall maintain, at its own expense, the following described insurance:

(1) Worker's Compensation insurance to cover obligations imposed by applicable law for any employee engaged in the performance of work under this Agreement, and Employer's Liability insurance with minimum limits of $500,000 (five hundred thousand dollars) each accident, $1,000,000 (one million dollars) disease – policy limit, and $1,000,000 (one million dollars) disease – each employee.

(2) Commercial General Liability insurance with minimum combined single limits of $1,000,000 (one million dollars) each occurrence and $2,000,000 (two million dollars) general aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations.

Vendor's certificate of insurance is a pre-condition to executing a Construction Agreement for the Project. Vendor's certificate of insurance shall name the District as an additional insured Party.

5.7 Tax Exemption on Materials

Owner is exempt from payment of sales and compensating use taxes of the State of Colorado and of cities and counties thereof on all materials to be incorporated into the Work.

(1) Owner shall furnish the required certificates of tax exemption to Vendor for use in the procurement of supplies and materials to be incorporated into the Work.

(2) Owner's exemption does not apply to construction tools, machinery, equipment or other property purchased or leased by Vendor, or to supplies or materials not incorporated into the Work.

5.8 Attachments and Exhibits

Prospective Vendors are reminded that Exhibits are attached to, included with, or are included by reference to this RFP document released by the District. All such RFP documents and Exhibits, as well as current "Vendor Packet," are available electronically via the District's internet web address link as set forth below and in Section 1.3 of this RFP document.

http://www.fsd.co/planroom

5.9 Keep Jobs in Colorado Act (HB 1292)

This section, Keep Jobs in Colorado Act (the "Act"), and the implementation of the Act, (the "Rules"), shall not apply to any project for which appropriation or expenditure of moneys may be reasonably expected not to exceed five hundred thousand dollars ($500,000) in the aggregate for any fiscal year. However, Vendor represents that it is familiar with the requirements of the Act and its Rules, and will fully comply with same in the event the Act becomes applicable to this Project.

Pursuant to the Keep Jobs in Colorado Act, C.R.S. 8-17-101 et seq., and the rules adopted by the Division of Labor of the Colorado Department of Labor and Employment implementing the Act, the Vendor shall employ Colorado labor to perform at least eighty percent (80%) of the work and shall obtain and maintain

the records required by the Act and the Rules. For purposes of this Section "Colorado labor" means any person who is a resident of the state of Colorado at the time of this Project, without discrimination as to race, color, creed, sex, sexual orientation, marital status, national origin, ancestry, age, or religion except when sex or age is a bona fide qualification. A resident of the state is a person who can provide a valid Colorado driver's license, a valid Colorado state-issued photo identification, or documentation that he or she has resided in Colorado for the last thirty (30) days.

5.10 Vendor Payment

Progress payments will be made to the Vendor for work completed and accepted by the District. Requests for progress payments shall be delivered to the District by the 5th day of the month following the month for which the progress payment is being requested. The Engineer will review the requests, clarify any discrepancies with the Vendor, and make a recommendation for payment amount to the District's Board of Directors at their regularly scheduled monthly Board Meeting. This meeting is normally held on the 3rd Tuesday of each month. Progress payments, less retainage (as applicable), will be made to the Vendor by check within 7 (seven) calendar days of approval of the request by the Board of Directors. A 5% (five percent) retainage of projected Project costs will be held by the District until the final payment for the Project is approved and paid. The retainage will be taken out of each progress payment made to Vendor (except from initial mobilization funding requested, if any) at a rate of 5% (five percent) of the calculated value of the completed work. If the total cost of the Project changes during the course of the Work, to a higher or lower value, the amount of retainage being held by the District will be modified to reflect this new cost figure. There will be no interest paid to the Vendor on retained funds. Advertisement for final payment shall be done in accordance with Colorado Revised Statutes. Final payment for all Work satisfactorily completed and payment of the retainage shall be subject to Engineer's acceptance of the Work.

5.11 Entire RFP

This RFP document, as well as all Exhibits, subsequent Addenda, and all items included by reference, constitute the entire RFP.

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6 VENDOR CERTIFICATION

(Vendor **must** complete and sign this page and submit with Proposal)

This certification attests to the Vendor's awareness and agreement with the content of this RFP and all accompanying time schedules and provisions contained herein.

The Vendor must ensure that this Vendor Certification is duly completed and correctly executed by an authorized representative of their company.

This fully-executed Vendor certification is hereby included as a document submittal and part of Vendor's Proposal in response to RFP 2024-02 issued by Fremont Sanitation District. The undersigned, as a duly authorized officer of the Vendor, hereby certifies that:

_____

(Vendor Name)

Agrees to be bound by the content of this RFP, and further agrees to comply with the terms, conditions, and provisions of this RFP and any Addenda thereto in the event of an award. Exceptions are to be noted as stated in the RFP. This Proposal shall remain in effect for a period of **90** (ninety) calendar days, starting on the Proposal submission due date.

The undersigned further certify that their firm (check one):

☐ IS
☐ IS NOT

Currently debarred, suspended, or proposed for debarment by any state or federal entity. The undersigned agree to notify the District of any change in this status, should one occur, until such time as an award has been made under this RFP.

Person[s] authorized to negotiate on behalf of this Vendor for purposes of this RFP are:

Name: _____ Title: _____
(PRINT)
Signature: _____ Date: _____

Name: _____ Title: _____
(PRINT)
Signature: _____ Date: _____

Signature of Authorized Officer:

Name: _____ Title: _____
(PRINT)
Signature: _____ Date: _____

Fremont Sanitation District

Exhibit A

RFP 2024-02

UV Disinfection Replacement
Rainbow Park WWTP

VICINITY MAP

Map Date: August, 2024

N
W E
S

to Cañon City

US 50

67

115

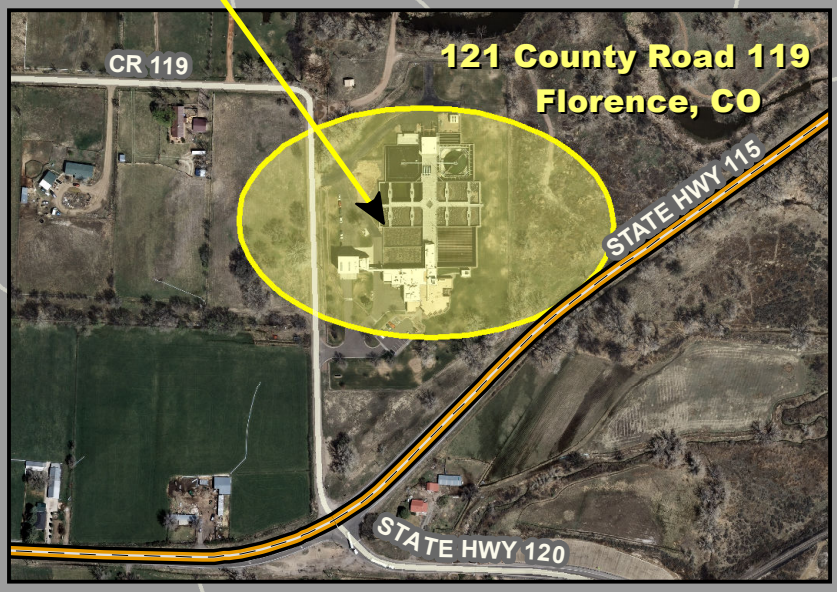
Penrose

to Pueblo

Arkansas River

Florence

Rainbow Park Regional Wastewater Treatment Plant



SET NO. 123

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

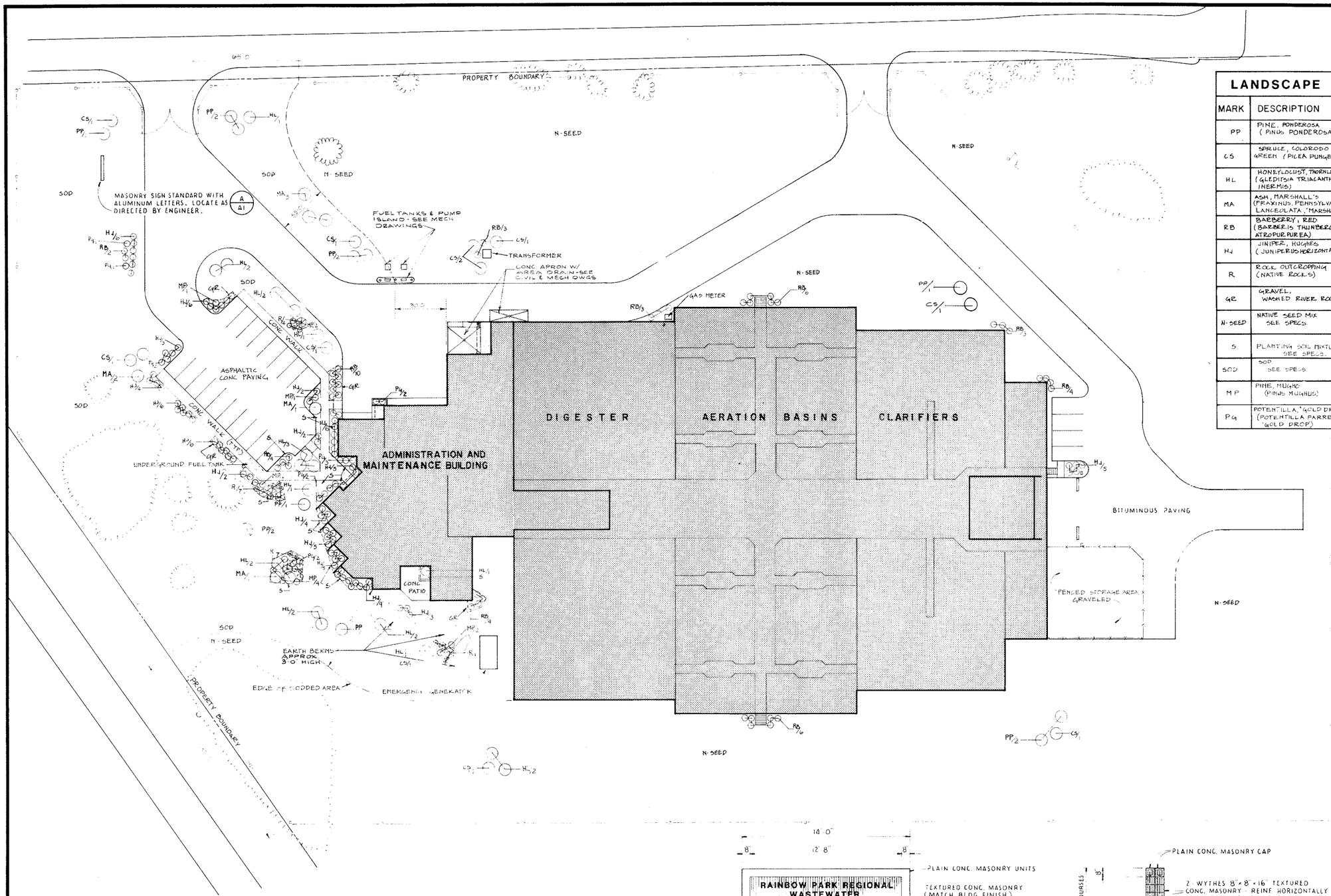
FOR

EASTERN FREMONT COUNTY METROPOLITAN SEWAGE DISPOSAL DISTRICT

DECEMBER, 1980

NOTE
THESE DRAWINGS ARE REDUCED TO ONE-HALF OF THE INDICATED SCALE

MGI consulting engineers

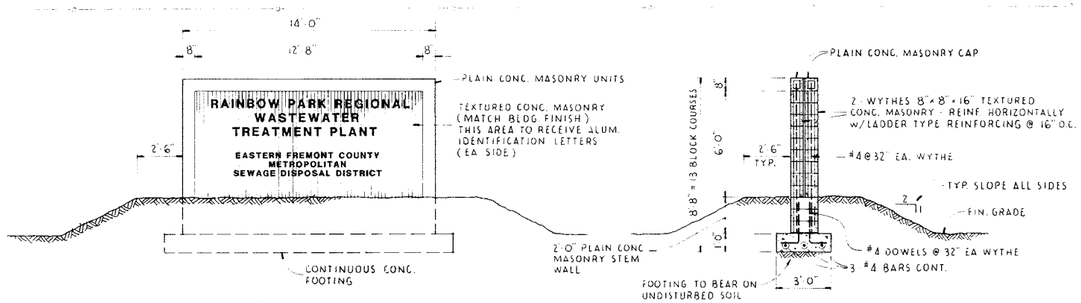


LANDSCAPE MATERIALS SCHEDULE

MARK	DESCRIPTION	SIZE	QUAN	REMARKS
PP	PINE, PONDEROSA (PINUS PONDEROSA)	8 TO 12'	12	
CS	SPRUCE, COLORODO GREEN (PICEA PUNGENS)	6' TO 9'	11	
HL	HONEYLOCUST, THORNLESS (GLEDITSIA TRIACANTHOS INERMIS)	12' TO 15'	19	
MA	ASH, MARSHALL'S (FRAXINUS PENNSYLVANIA LANCEOLATA 'MARSHALL')	12'-15'	6	
RB	BARBERRY, RED (BARBERIS THUNBERGI ATROPURPUREA)	5 GALS	45	SEE NOTE 5 BELOW
HJ	JINIPER, HUGHES (JUNIPERUS HORIZONTALIS)	5 GALS	73	SEE NOTE 5 BELOW
R	ROCK OUTCROPPING (NATIVE ROCKS)	2'Ø TO 6'Ø	22	MIX SIZE OF ROCKS WITHIN EACH GROUP
GR	GRAVEL, WASHED RIVER ROCK	(4" DEEP) 1½" TO ¾" Ø	——	PROVIDE 6 MILL BLACK POLY UNDER GRAVEL
N-SEED	NATIVE SEED MIX SEE SPECS.	——	——	SEE NOTE # 3 BELOW
S	PLANTING SOIL MIXTURE SEE SPECS.	6" DEEP (MIN)	——	
SOD	SOD SEE SPECS.	——	——	
MP	PINE, MUGHO (PINUS MUGHUS)	5 GALS	12	SPACING OF PLANTINGS AS RECOMMENDED BY SUPPLIER
PG	POTENTILLA, 'GOLD DROP' (POTENTILLA FARRERI 'GOLD DROP')	5 GALS	13	SPACING OF PLANTINGS AS RECOMMENDED BY SUPPLIER

NOTES:

1. EXISTING VEGITATION TO REMAIN. SEE SHEET C-5 FOR LOCATIONS OF TREES TO REMAIN.
2. TYPE OF VEGETATION / NUMBER OF TYPE
3. SEED ALL AREAS NOT DESIGNATED FOR SEEDING DISTURBED BY CONSTRUCTION, SEED ALL AREA OUTSIDE BOUNDARIES DISTURBED BY COMPLETION OF CONTRACT
4. PLANT ALL TREES (NOT SHRUBS) MORE THAN 10' AWAY FROM ANY AND ALL SPRINKLER SYSTEM LINES
5. SPACINGS OF PLANTINGS IN CLUSTERS AS RECOMMENDED BY SUPPLIER.



SIGN STANDARD (A / A1)

SCALE: ½" = 1'-0"

STATE OF COLORADO
L. BRUCE KEENAN
B-683
LICENSED ARCHITECT

REVISIONS
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____

DRAWN PPY DESIGNED PPY CHECKED LBK DATE DEC. 1980
SCALE 1"=30'-0" APPROVED LBK, TFU PROJECT NO. 1441-002

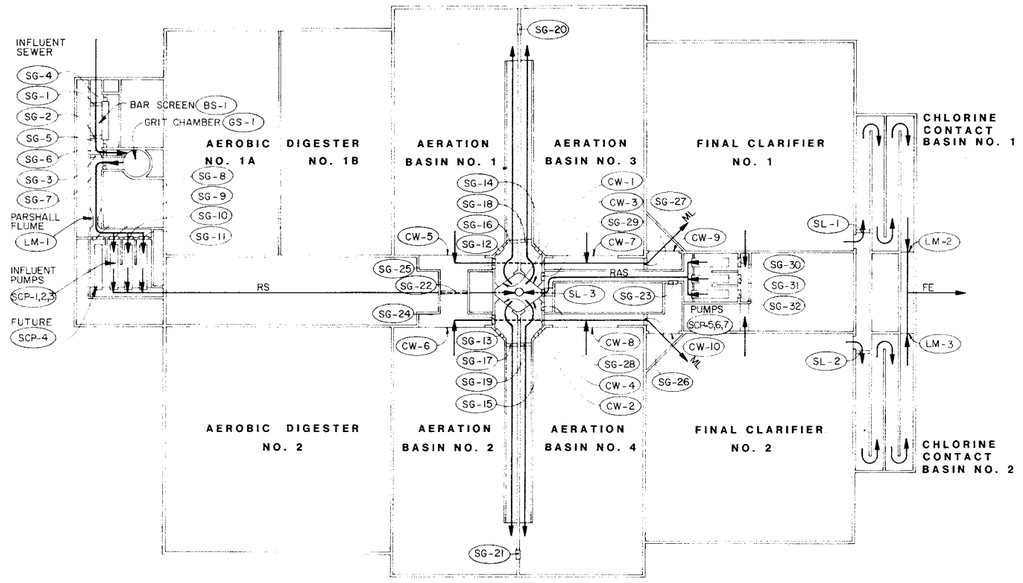
M&I consulting engineers
FORT COLLINS COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

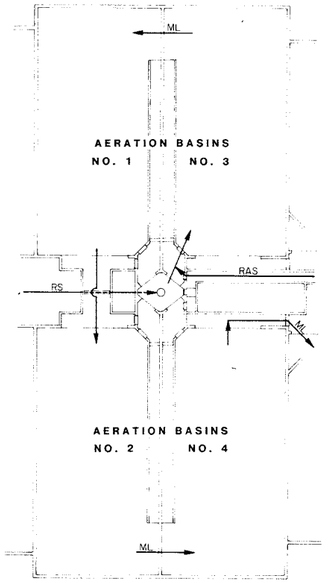
LANDSCAPING PLAN

SHEET 16 SHEETS

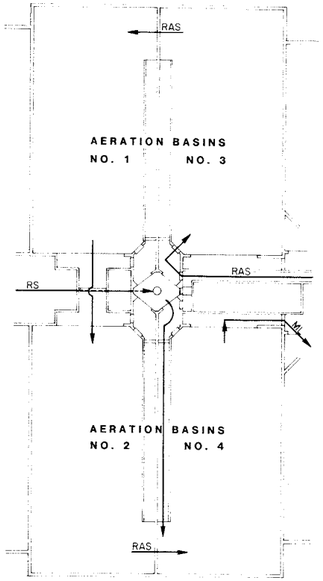
SHEET A1



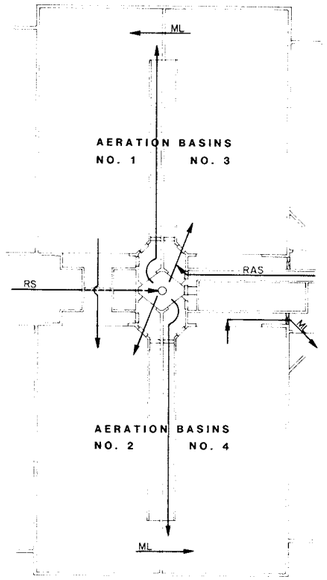
COMPLETE MIX MODE



PLUG FLOW MODE



CONTACT STABILIZATION MODE



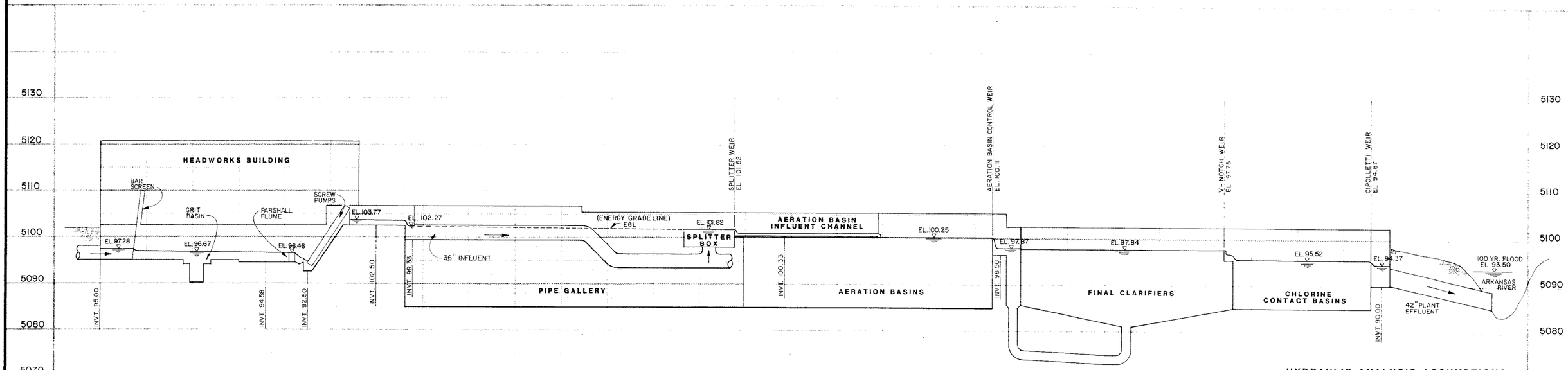
STEP LOADING MODE

LEGEND

RS – RAW SEWAGE
ML – MIXED LIQUOR
SE – SECONDARY EFFLUENT
FE – FINAL EFFLUENT
RAS – RETURN ACTIVATED SLUDGE

PLANT FLOW SCHEMATIC

NO SCALE



HYDRAULIC PROFILE

SCALE : 1"= 10' VERT.
NO SCALE HORIZ.

HYDRAULIC ANALYSIS ASSUMPTIONS

1. SEWAGE FLOW = PEAK FLOW = 10.2 MGD
2. RETURN SLUDGE FLOW = 0.33Q = 3.4 MGD
3. ALL UNITS IN SERVICE
4. COMPLETE MIX MODE

THOMAS F. ULLMAN REGISTERED PROFESSIONAL ENGINEER STATE OF COLORADO 12688

REVISIONS
BY DATE DESCR.
BY DATE DESCR.
BY DATE DESCR.

DRAWN SKA DESIGNED BAJ CHECKED BAJ DATE DEC., 1980
SCALE AS SHOWN APPROVED TFU PROJECT NO. 1441-002

M&I consulting engineers
FORT COLLINS, COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

FLOW SCHEMATIC & HYDRAULIC PROFILE

SHEET 34 SHEETS C3

N

4 C10

STAIR #1

STAIR #2

HEADWORKS

INFLUENT SCREW PUMPS

ADMINISTRATION & MAINTENANCE BLDG.

STAIR #3

STAIR #4

AEROBIC DIGESTER NO. 1A

AEROBIC DIGESTER NO. 1B

STAIR #7

AERATION BASINS NO. 1

AERATION BASINS NO. 3

FINAL CLARIFIER NO. 1

2 C10

RETURN SLUDGE SCREW PUMPS

STAIR #5

STAIR #6

CHLORINE CONTACT BASIN NO. 1

15'-6"

32'-0"

160'-2"

255'-2"

18'-4"

4'-8"

1 C10

AEROBIC DIGESTER NO. 2

AERATION BASINS NO. 2

AERATION BASINS NO. 4

FINAL CLARIFIER NO. 2

3 C10

CHLORINE CONTACT BASIN NO. 2

32'-0"

15'-6"

STAIR #8

101'-6"

114'-4"

93'-4"

27'-2"

336'-4"

THOMAS F. ULLMAN REGISTERED 12688 PROFESSIONAL ENGINEER STATE OF COLORADO

REVISIONS

BY____ DATE____ DESCR.____

BY____ DATE____ DESCR.____

BY____ DATE____ DESCR.____

DRAWN COPE·DCF DESIGNED BAJ TFU CHECKED BAJ DATE DEC., 1980

SCALE 1/16" = 1'-0" APPROVED TFU PROJECT NO. 1441·002

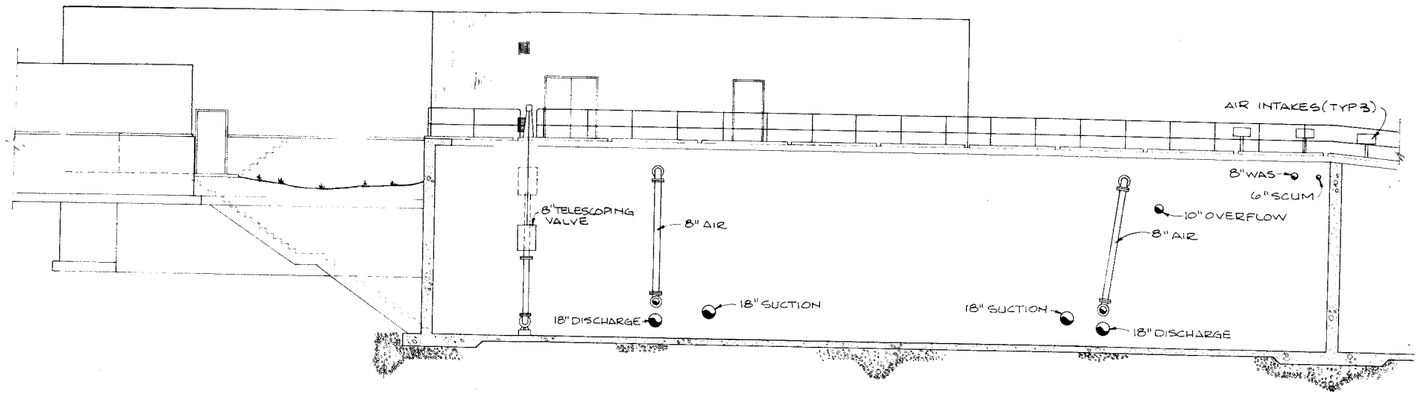
M&I consulting engineers FORT COLLINS COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

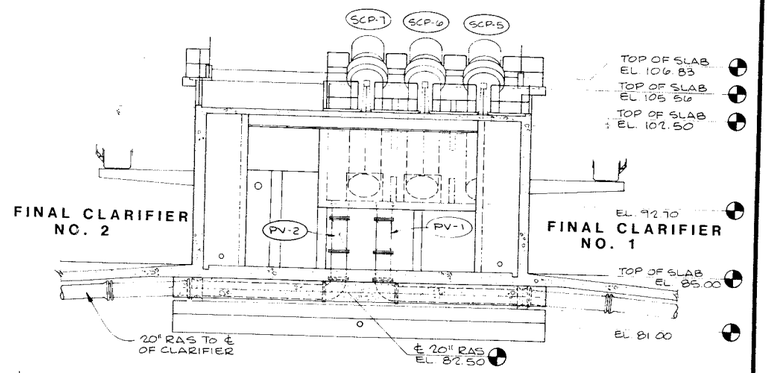
GENERAL FACILITIES PLAN

SHEET 34 SHEETS

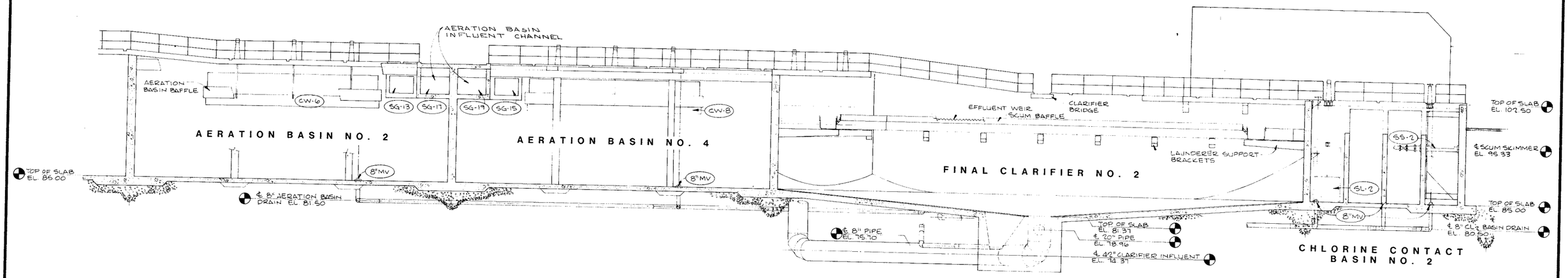
C9



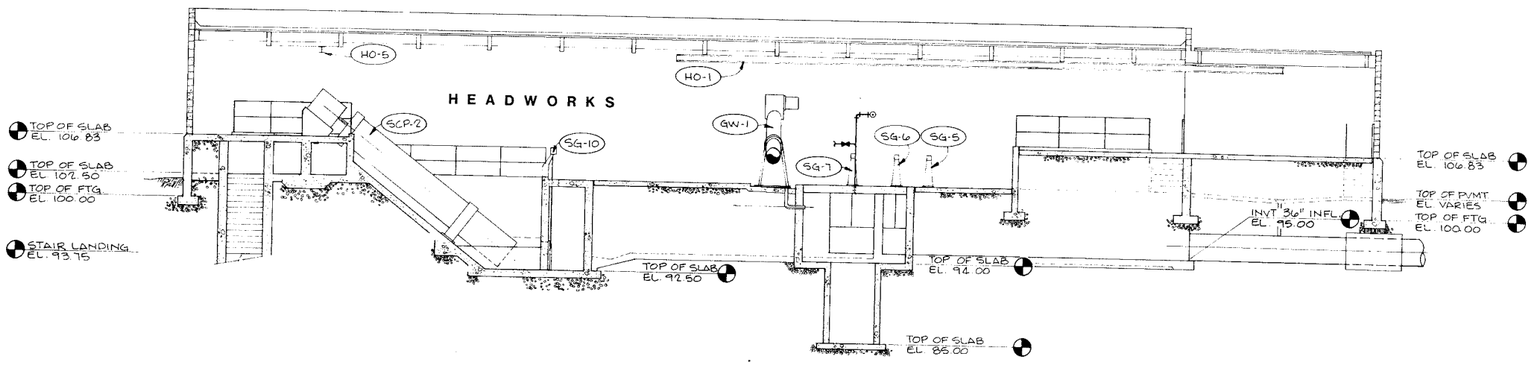
SECTION 1 / C9



SECTION 2 / C9



SECTION 3 / C9



SECTION 4 / C9

THOMAS F. ULLMANN REGISTERED PROFESSIONAL ENGINEER 12688 STATE OF COLORADO

REVISIONS
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____

DRAWN SKA DESIGNED TFU CHECKED BAJ DATE DEC., 1980
SCALE 1/8"=1'-0" APPROVED TFU PROJECT NO. 1441-002

M&I consulting engineers
FORT COLLINS, COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

GENERAL FACILITIES SECTIONS

34 SHEETS

SHEET C10

AERATION BASIN NO. 1

AERATION BASIN NO. 3

AERATION BASIN NO. 2

AERATION BASIN NO. 4

FINAL CLARIFIER NO. 1

FINAL CLARIFIER NO. 2

CHLORINE CONTACT BASIN NO. 1

SULFUR DIOXIDE STORAGE 208

ACCESS AREA 206

TOILET 209

CHLORINE STORAGE 210

STAIR NO 5

STAIR NO 6

TOP OF WALL EL 105.50

TOP OF WALL EL 106.83

TOP OF WALL EL 102.50

TOP OF WALL EL 97.00

POINT OF RIDGE EL 105.54

POINT OF RIDGE EL 105.62

POINT OF RIDGE EL 102.62

TOP OF SLAB EL 105.50

TOP OF SLAB EL 102.62

SLAB EL 102.50

4" CHAMFER TYP ALL EXTERIOR BASIN WALLS

70'-8" DIA SCUM BAFFLE

CLARIFIER WALKWAY & SUPPORT BY CLARIFIER MFR.

SCUM BAFFLE SUPPORTS (TYP)

FOR SECTIONS & ENLARGED PLAN OF THIS AREA SEE SHT C-21

SEE SHT C24 FOR ENLARGED PLAN

SEE SHT C30 FOR ENLARGED PLAN OF CHEMICAL STORAGE & NORTH ACCESS ROOMS

1. SEE SHT. C-26 & 27 FOR LOCATION OF PIPE SUPPORTS IN PIPE GALLERY ROOF.
2. SEE SHT. M-2, 3 & 4 FOR MECHANICAL EQUIPMENT AND PENETRATIONS.
3. SEE SHT. E-15, 16, 18 & 19 FOR ELECTRICAL EQUIPMENT AND PENETRATIONS.
4. BASINS ARE SYMMETRICAL AROUND PIPE GALLERY. ONLY WEST AERATION BASIN, CLARIFIER AND CHLORINE CONTACT BASIN IS SHOWN. CONSTRUCT EAST BASINS AND CLARIFIER OPPOSITE TO WEST BASINS. SEE C-9 FOR GENERAL PLAN.

KEY PLAN

REVISIONS
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____

DRAWN COPE DESIGNED BAJ CHECKED BAJ DATE DEC. 1980
SCALE 1/8"= 1'-0" APPROVED TFH PROJECT NO. 1441-002

M&I consulting engineers
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RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

AERATION BASIN, CLARIFIER & CL_2 OPERATING FLOOR PLAN

SHEET 34 SHEETS
C17

AERATION BASIN NO. 1

AERATION BASIN NO. 3

AERATION BASIN NO. 2

AERATION BASIN NO. 4

FINAL CLARIFIER NO. 1

FINAL CLARIFIER NO 2

CLORINE CONTACT BASIN NO. 1

AERATION BASIN INFLUENT CHANNEL INVT EL. 100.33

CT JT (WALL-5)

EXP JT (WALLS)

STEM GUIDE FOR 8" M.V BASIN DRAIN (TYP)

FOR SECTIONS & ENLARGED PLAN OF THIS AREA SEE SHT C-21

AERATION BASIN EFFLUENT CHANNEL INVT 96.50

CONTROL WEIR BAFFLE

AERATION BASIN EFFLUENT

CHANNEL INVT EL 97.75

EFFLUENT CHANNEL DRAIN (TYP 4)

RAS CHANNEL INVT EL 100.33

CENTER RAS SAMPLE TAP IN CHANNEL

36" ø INFLUENT

RAS CHANNEL

¢ 2½" CL₂ SOLUTION EL 104.25

CL₂ DIFFUSER

AERATION BASIN EFFLUENT CHANNEL INVT EL 96.50

42" CLARIFIER INFLUENT

INVT EL 92.70

LAUNDER INVT EL 95.50

SCUM BOX

DIRECTION OF ROTATION

4" DRAIN S (3)

CHANNEL INVT EL 95.50

24" x 30" RDCR

CLARIFIER SCUM PIT

¢ 6" SCUM EL 94.00

¢ 8" SCUM EL 93.25

TOP OF WALL EL 97.00

TYPICAL DIMENSIONS ALL 4 SIDES

¾" VENTS w/ BIRD SCREEN EL 101.25

¢ 12" SCUM SKIMMER EL 95.33

PLANT EFFLUENT CHANNEL INVT EL 90.00

42" RCP WALL CONNECTION

¢ 3" SAMPLE LINE EL 90.12

¢ 4" PLANT EFFLUENT EL 91.75

STEM GUIDES FOR 8" M.V (TYP)

TOP OF WALL EL 100.50

¢ 8" SCUM

SO₂ DIFFUSER

PLANT EFFLUENT

PIPE GALLERY

THOMAS F. ULLMAN REGISTERED 12688 STATE OF COLORADO

KEY PLAN

1. SEE SHT. C-26 & 27 FOR PIPING, EQUIPMENT, PIPE SUPPORTS, & PIPE PENETRATIONS IN PIPE GALLERY.
2. SEE SHT. M-2, 3 & 4 FOR MECHANICAL EQUIPMENT.
3. SEE SHT. E-15, 16, 18 & 19 FOR ELECTRICAL EQUIPMENT AND PENETRATIONS.
4. BASINS ARE SYMMETRICAL AROUND PIPE GALLERY. ONLY WEST AERATION BASIN, CLARIFIER AND CHLORINE CONTACT BASIN IS SHOWN. CONSTRUCT EAST BASINS AND CLARIFIER OPPOSITE TO WEST BASINS. SEE C-9 FOR GENERAL PLAN.

REVISIONS
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____

DRAWN COPE DESIGNED TFU CHECKED BAJ DATE DEC. 1980
SCALE ⅛"=1'-0" APPROVED TFU PROJECT NO. 1441-002

M&I consulting engineers FORT COLLINS COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

AERATION BASIN, CLARIFIER & CL_2 SECTIONAL PLAN AT EL. 101.00

34

SHEET C 18

AERATION BASIN NO. 1

AERATION BASIN NO. 3

FINAL CLARIFIER NO.1

CHLORINE CONTACT BASIN NO. 1

PIPE GALLERY 001

LAB 003

BLOWER ROOM 002

CT JT (WALL)

EXP JT (WALL)

CONST JT

CONST JT (WALL)

OUTLINE OF THICKENED SLAB

TYPICAL RECESS FOR MUD VALVE

PRESSURE RELIEF VALVES 4 EA BASIN (TYP)

PRESSURE RELIEF VALVES 2 EA CLARIFIER

GUIDE PLATE FOR CLARIFIER CORNER SWEEP TYP EA CORNER

CORNER FILLET (CONC) 45° TYP EA CORNER

TOP OF SLAB EL 85.00

TOP OF SLAB EL 81.37

PLAN OF HOPPER & PIPING

SLOPE 8" WAS FROM EL 75.70 TO EL 78.50

SLOPE CLARIFIER FLOOR 1:12

℄ 8" DRAIN EL 81.50

℄ 20" R.A.S EL 78.96

MECH COUPLING

℄ 42" CLARIFIER INFLUENT EL 74.31

℄ 42" ELBOW EL 76.88

MJ x MJ 90° ELB

℄ 8" WAS EL 78.50

℄ CLARIFIER

℄ 8" CL₂ BASIN DRAIN EL 80.50

℄ 20" R.A.S EL 82.50

℄ 8" DRAIN EL 80.50

FD #1 EL 84.54

FD #4 EL 80.25

GROUT EL 85.00

POINT OF RIDGE EL 85.12

℄ PIPE GALLERY

LIMITS OF NON STRUCTURAL SLAB

LIMITS OF THICKENED & REINFORCED SLAB

1'-6" NON STRUCTURAL SLAB

2'-0" NON STRUCTURAL SLAB

1. SEE SHT. C-26 & C-27 FOR PIPING & EQUIMENT TO BE LOCATED IN PIPE GALLERY.
2. SEE SHT C-12 FOR SCHEDULE OF PIPE PENETRATIONS.
3. BASINS ARE SYMMETRICAL AROUND PIPE GALLERY. ONLY WEST AERATION BASIN, CLARIFIER AND CHLORINE CONTACT BASIN IS SHOWN. CONSTRUCT EAST BASINS AND CLARIFIER OPPOSITE TO WEST BASINS. SEE C-9 FOR GENERAL PLAN.

KEY PLAN

THOMAS F. ULLMAN REGISTERED 12688 PROFESSIONAL ENGINEER STATE OF COLORADO

REVISIONS
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____
BY____ DATE____ DESCR.____

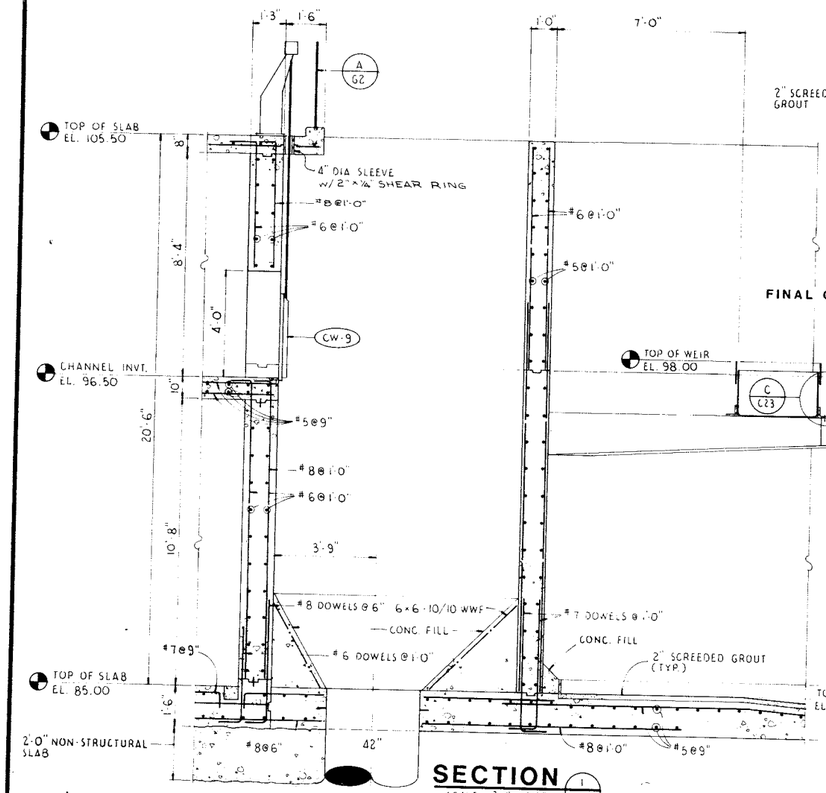
DRAWN COPE DESIGNED TFU BAT CHECKED BAT DATE DEC. 1980
SCALE 1/8"=1'-0" APPROVED TFU PROJECT NO. 1441.002

M&I consulting engineers FORT COLLINS COLORADO

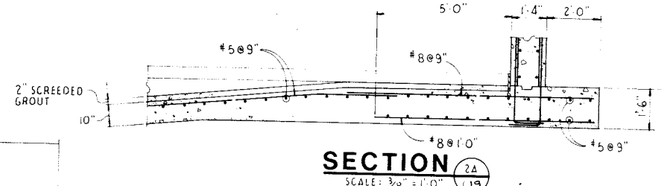
RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

AERATION BASIN, CLARIFIER & CL_2 SECTIONAL PLAN AT EL. 89.00

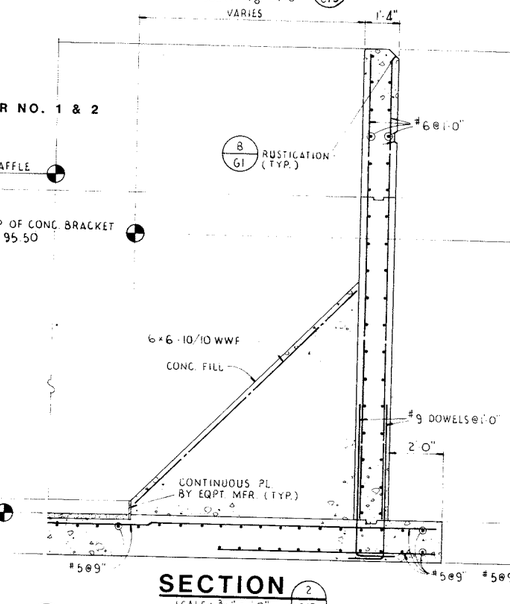
SHEET 34 C19



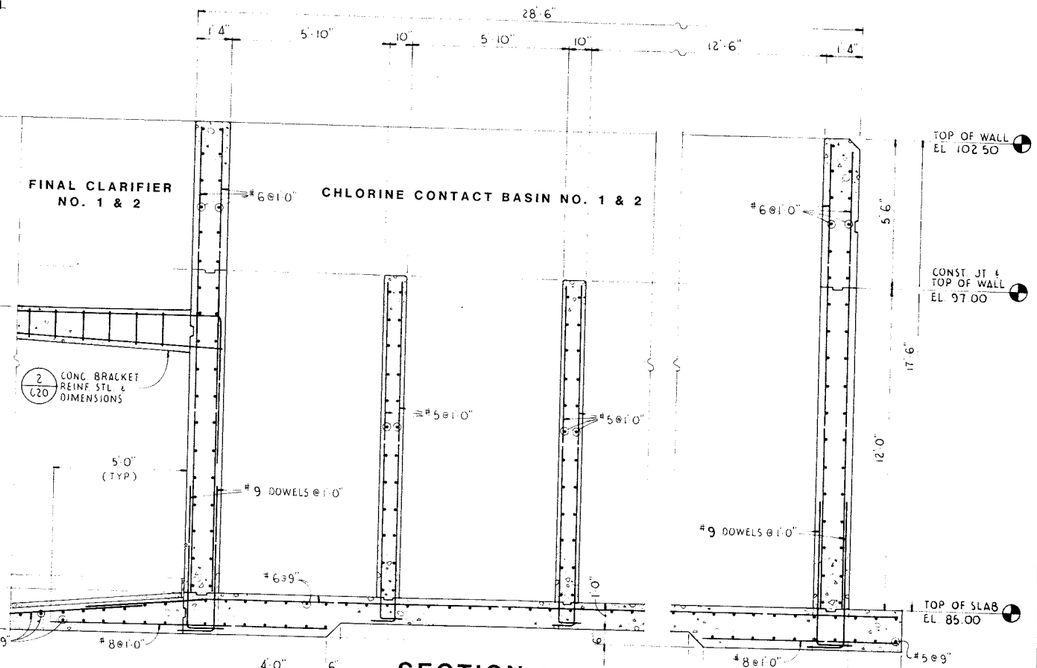
SECTION
SCALE: 3/8" = 1'-0" (1 C17 C18 C19)



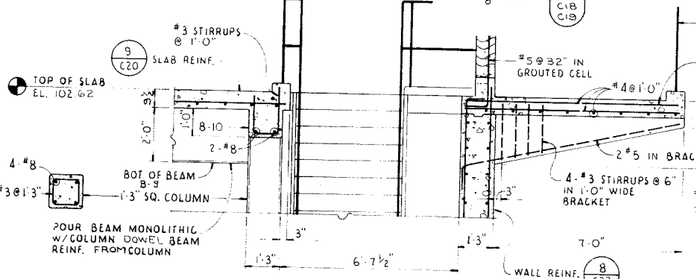
SECTION
SCALE: 3/8" = 1'-0" (2A C19)



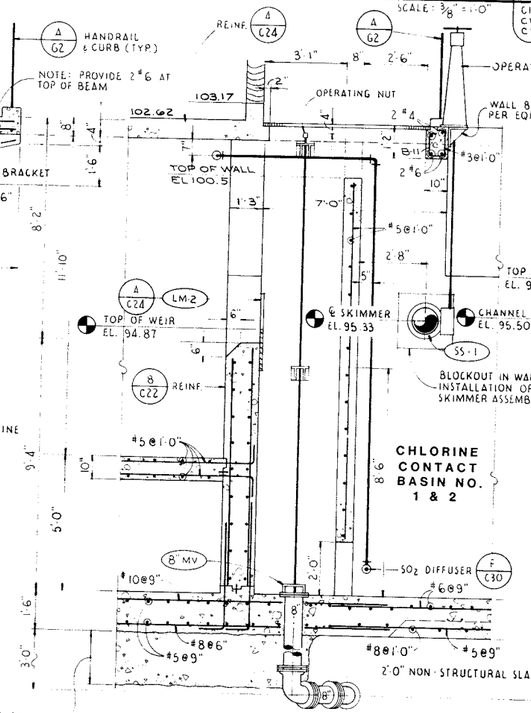
SECTION
SCALE: 3/8" = 1'-0" (2 C17 C18 C19)



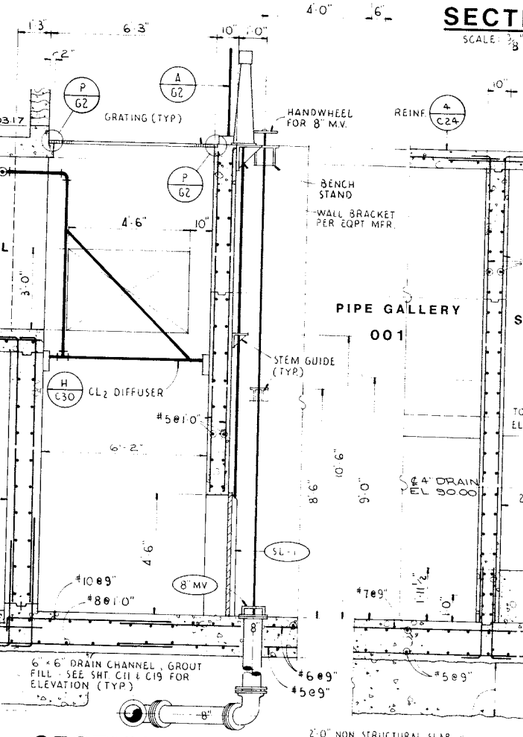
SECTION
SCALE: 3/8" = 1'-0" (3 C17 C18 C19)



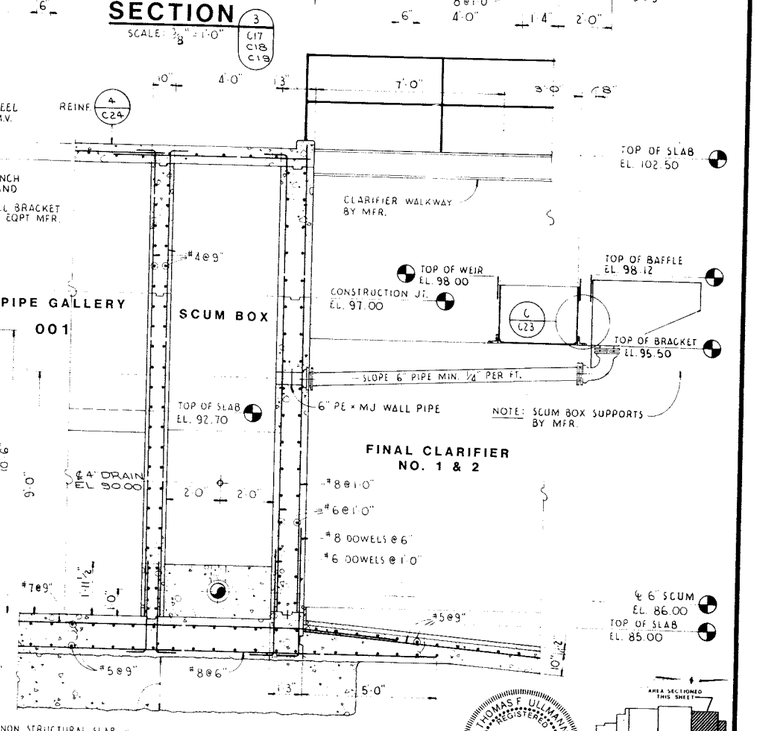
SECTION
SCALE: 3/8" = 1'-0" (4 C17)



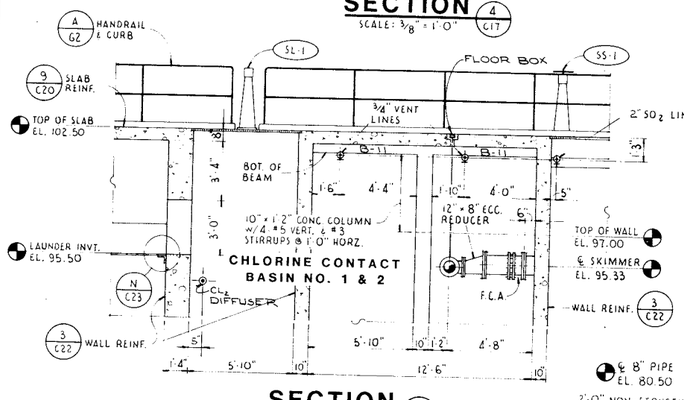
SECTION
SCALE: 3/8" = 1'-0" (6 C17 C18 C19)



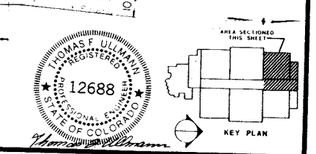
SECTION
SCALE: 3/8" = 1'-0" (7 C17 C18 C19)



SECTION
SCALE: 3/8" = 1'-0" (8 C17 C18 C19)



SECTION
SCALE: 1/4" = 1'-0" (5 C17 C18 C19)



THOMAS F. ULMAN REGISTERED 12688 STATE OF COLORADO ENGINEER

REVISIONS					
BY	DATE	DESCR.	DRAWN DCF	DESIGNED DSB	CHECKED BAJ DATE DEC. 1980
BY	DATE	DESCR.	SCALE AS SHOWN	APPROVED TFU	PROJECT NO. 1441-002
BY	DATE	DESCR.			

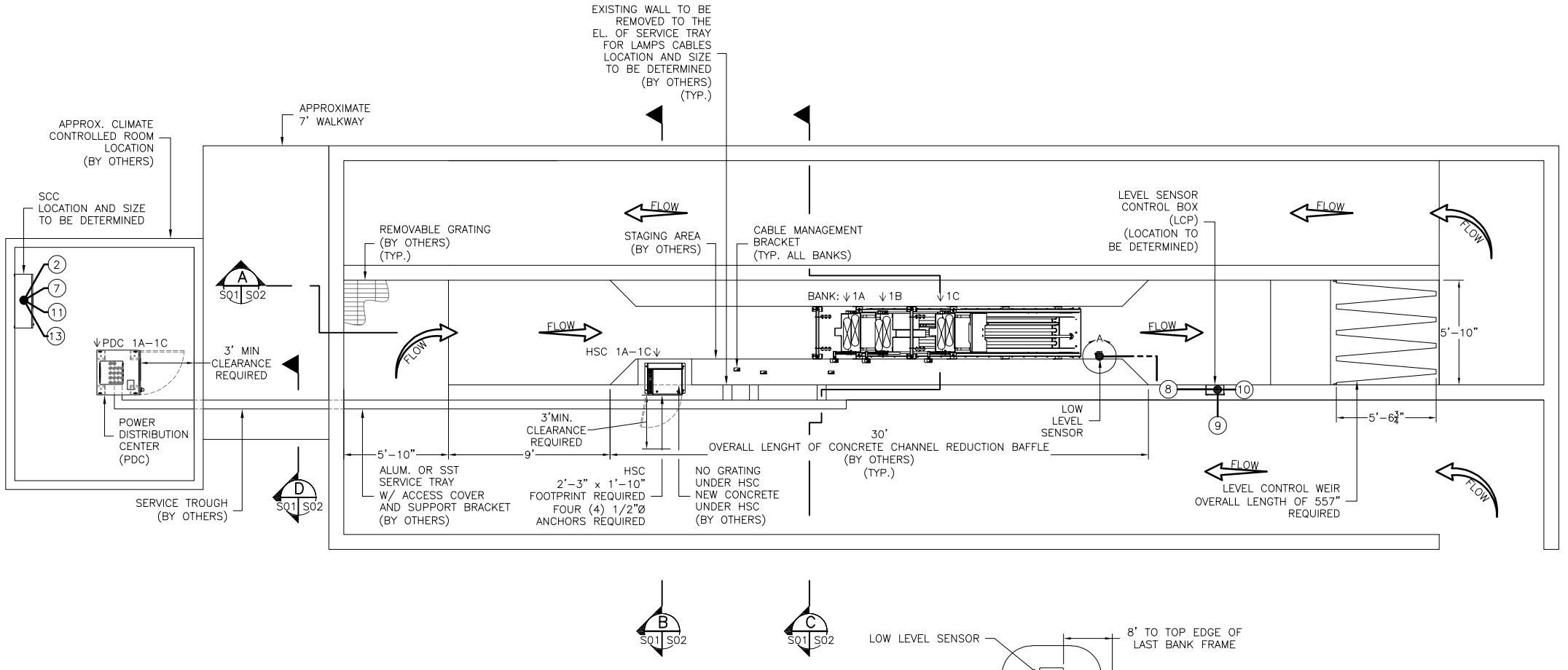
M&I consulting engineers
FORT COLLINS COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

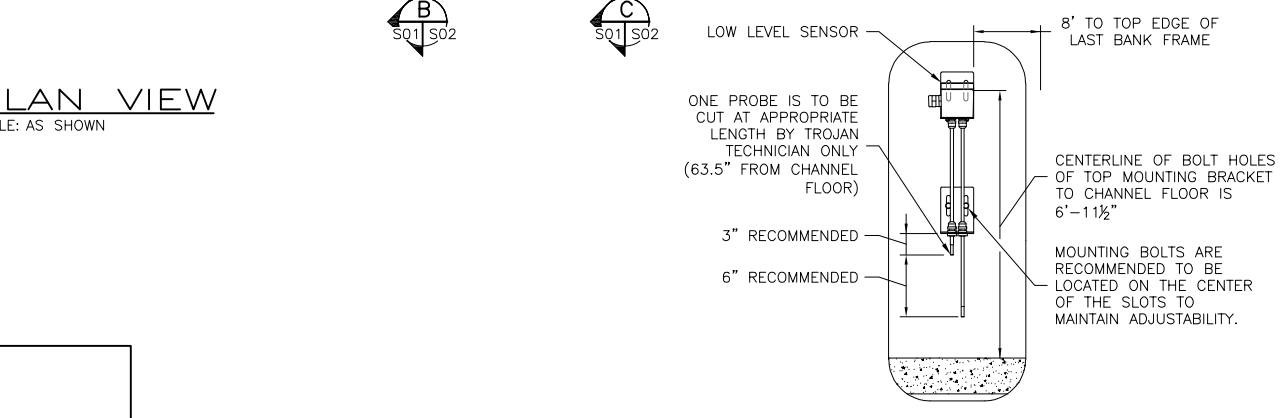
FINAL CLARIFIER STRUCTURAL SECTIONS

SHEET 34 SHEETS C22

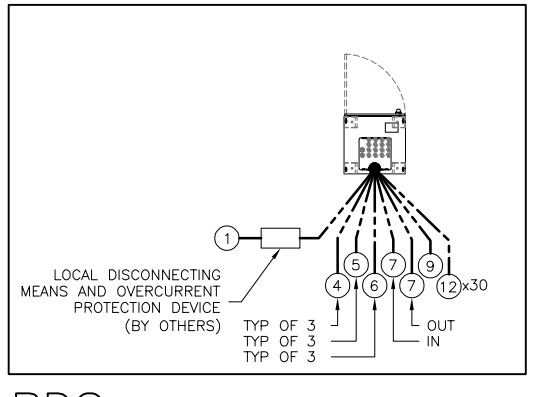
0480-05-1001 WA1



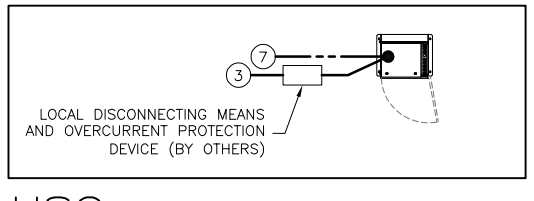
PLAN VIEW
SCALE: AS SHOWN



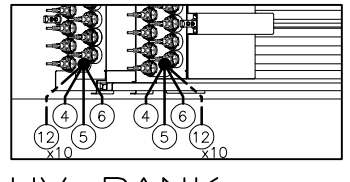
DETAIL A
SCALE:NOT TO SCALE



PDC INTERCONNECT DETAIL
SCALE:NOT TO SCALE



HSC INTERCONNECT DETAIL
SCALE:NOT TO SCALE



UV BANK INTERCONNECT DETAIL
SCALE:NOT TO SCALE
NOTE: TYPICAL FOR ALL UV BANKS. TROUGH NOT SHOWN FOR CLARITY.

TROJAN UVSIGNA™
EQUIPMENT INTERCONNECTIONS

No.	DESCRIPTION	FROM	TO
1	POWER DISTRIBUTION CENTER (PDC)* POWER SUPPLY 480Y/277V, 3 PHASE, 4 WIRE + GROUND 40 AMPS MAXIMUM CURRENT/PHASE 32.5 kVA/PDC POWER DRAW	DISTRIBUTION PANEL (DP) (BY OTHERS) (NOT SHOWN)	PDC(s) (TOP OF PANEL)
2	SYSTEM CONTROL CENTER (SCC)* POWER SUPPLY 120V, 1 PHASE, 2 WIRE + GROUND 1.8 kVA, 15 AMPS	DP (BY OTHERS) (NOT SHOWN)	SCC
3	HYDRAULIC SYSTEM CENTER (HSC)* POWER SUPPLY 480V, 3 PHASE, 3 WIRE + GROUND 2.5 kVA. 3 AMPS	DP (BY OTHERS) (NOT SHOWN)	HSC
4	BONDING CONDUCTOR (CABLE BY OTHERS) 8 AWG TYPE TWH STRANDED	PDC(s) (UNDERSIDE OF PANEL)	UV BANK(s)
5	UV INTENSITY 4–20mA ANALOG INPUT (SUPPLIED)	UV BANK(s)	PDC(s) (UNDERSIDE OF PANEL)
6	BANK IN PLACE PROXIMITY SENSOR 3 CONDUCTOR CABLES (SUPPLIED)	PROXIMITY SENSOR(s)	PDC(s) (UNDERSIDE OF PANEL)
7	MODBUS BELDEN 3106A OR EQUIVALENT	SCC	HSC(s) & PDC(s) (UNDERSIDE OF PANEL) (DAISY CHAINED)
8	DISCRETE LOW LEVEL SIGNAL 12 VDC – 2 CONDUCTORS	LOW LEVEL SENSOR	LEVEL SENSOR CONTROL BOX (LCP)
9	DISCRETE WATER LEVEL SIGNAL 2 CONDUCTORS	LEVEL SENSOR CONTROL BOX (LCP)	PDC(s) (UNDERSIDE OF PANEL)
10	LEVEL SENSOR CONTROL BOX (LCP)* POWER SUPPLY 120V, 1 PHASE, 2 WIRE + GROUND, 0.12 kVA	DP (BY OTHERS) (NOT SHOWN)	LEVEL SENSOR CONTROL BOX (LCP)
11	FLOW METER 4–20 mA, DC ANALOG INPUT (BY OTHERS)	FLOW METER PANEL (NOT SHOWN) (BY OTHERS)	SCC
12	LAMP CABLES (SUPPLIED BY TROJAN) (ROUTED BY OTHERS)	UV BANK	PDC (UNDERSIDE OF PANEL)
13	ETHERNET/IP COMMUNICATION	SCC	PLANT SCADA (BY OTHERS) (NOT SHOWN)

*** GROUND CONNECTION REQUIRED TO PLANT GRID (BY OTHERS).**

NOTES:
: DO NOT SLOPE CHANNEL FLOOR.
: CHANNEL WIDTH MUST BE KEPT WITHIN A TOLERANCE OF –/+1½" AT UV BANK FRAME AND –/+¼" FOR REST OF CHANNEL.
: ALL CHANNEL ELEVATIONS MUST BE KEPT WITHIN A TOLERANCE OF –/+¼" AGAINST A COMMON DATUM ELEVATION.
: ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES,
: SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY OTHERS.
: ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY.
: REMOVABLE GRATING SECTIONS SHALL BE EASILY REMOVED BY ONE PERSON. MAXIMUM WEIGHT OF THE SECTIONS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE JURISDICTION.
: CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
: EFFLUENT LEVELS SHOWN REFLECT HYDRAULICS ASSOCIATED WITH TROJAN EQUIPMENT ONLY. EFFLUENT LEVELS MAY BE ALTERED DUE TO CHANNEL DEBRIS OR GEOMETRY.
: HYDRAULIC HOSE ELEVATIONS NOT TO EXCEED 12" ABOVE HSC MOUNTING ELEVATION.
: INCLUDED CABLE LENGTH ALLOWS FOR 77.0' ROUTING (RISE + RUN) BETWEEN CABLE/HOSE MANAGEMENT BRACKET AND UNDERSIDE OF PDC. (46.0' ROUTING ASSUMED BASED ON THIS LAYOUT.)
: INCLUDED HOSE LENGTH ALLOWS FOR 16.0' ROUTING (RISE + RUN) BETWEEN CABLE/HOSE MANAGEMENT BRACKET AND HOSE CONNECTION ON THE HSC. (12.0' ROUTING ASSUMED BASED ON THIS LAYOUT.)
: SITE TO PROVIDE APPROVED (ENGINEERED) ANCHOR POINTS FOR PERSONNEL TO USE AS PART OF THEIR FALL RESTRAINT SYSTEM AROUND OPEN CHANNELS. THE ANCHOR POINTS MUST BE POSITIONED SO THAT THE PREFERRED RETRACTABLE LIFELINE OF 8 FEET IS OF SUFFICIENT LENGTH TO ACCESS THE WORK AT THE CHANNEL.
**** SOLID GRATING REQUIRED TO BLOCK ULTRAVIOLET (UV) LIGHT.**

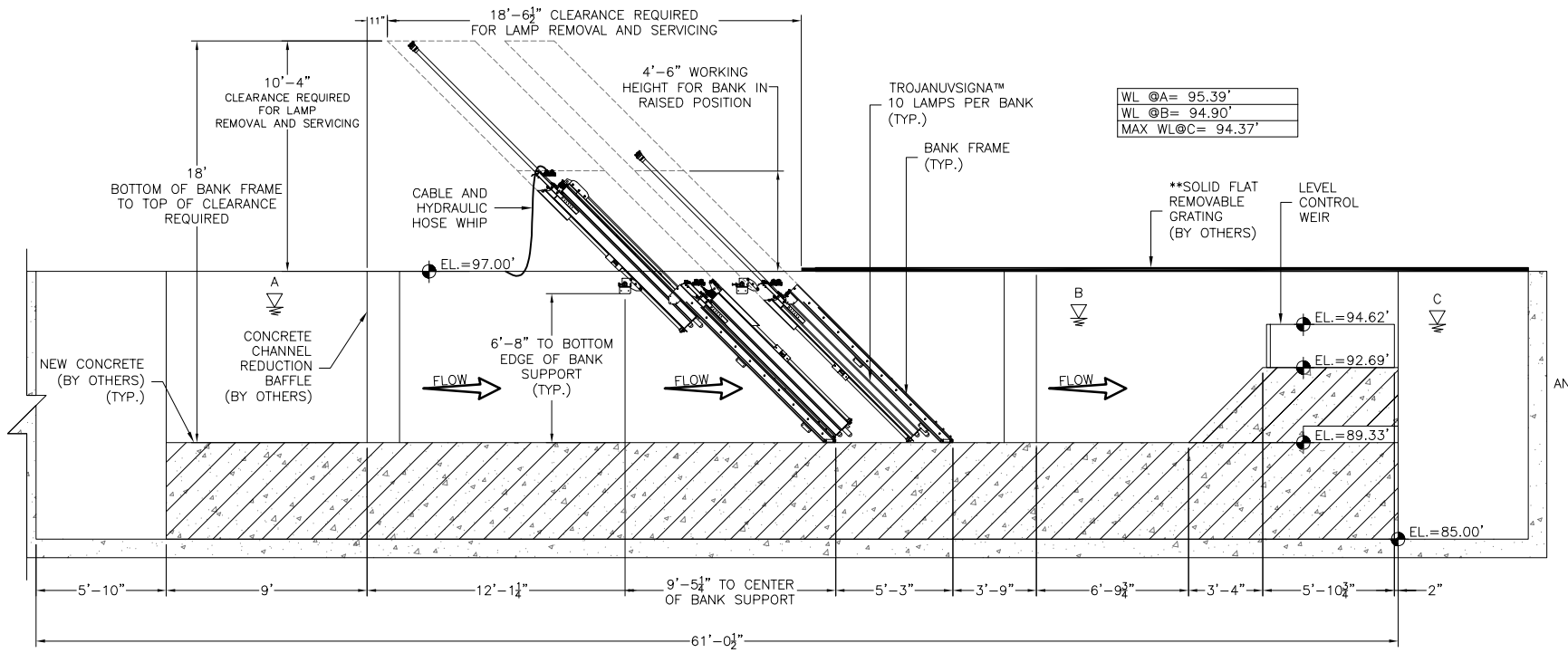
PRELIMINARY, NOT FOR CONSTRUCTION
VERIFY DIMENSIONS BEFORE COMMENCING CIVIL OR DESIGN WORK

DESIGN CRITERIA		
PEAK FLOW	14.20	MGD
U.V TRANSMITTANCE AT 253.7 nm	65	%
SUSPENDED SOLIDS	30	mg/L (30 DAY AVG.)
DISINFECTION STANDARD	126 E.COLI / 100ml (30 DAY GEO. MEAN)	

DESCRIPTION: LAYOUT, TROJANUVSIGNA FREMONT REPLACEMENT, CO

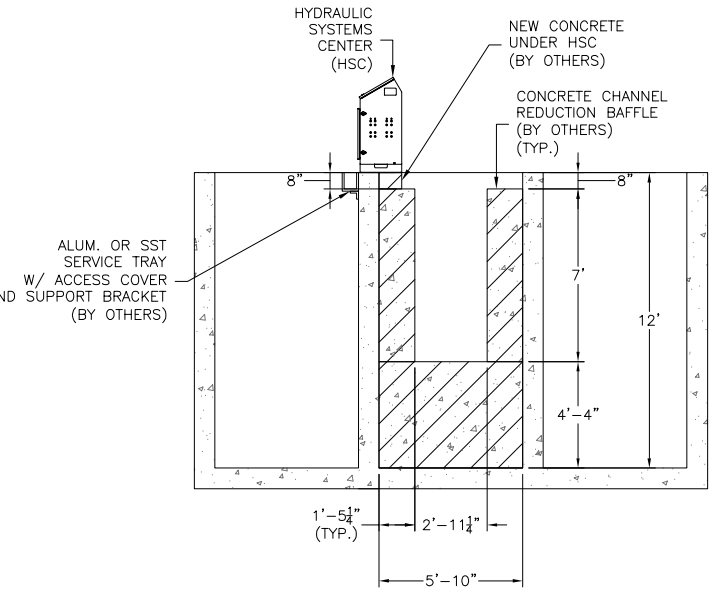
DRAWN BY : RP	DATE : 23DEC15
CHECKED BY : AB	DATE : 24JAN09
APPROVED BY : HM	DATE : 24JAN09
SCALE (11x17) : 1/8" = 1'–0"	LOG NUMBER : N/A

QUOTE NO. 212873
PROJECT NO. N/A
DWG NO. S01 REV. B



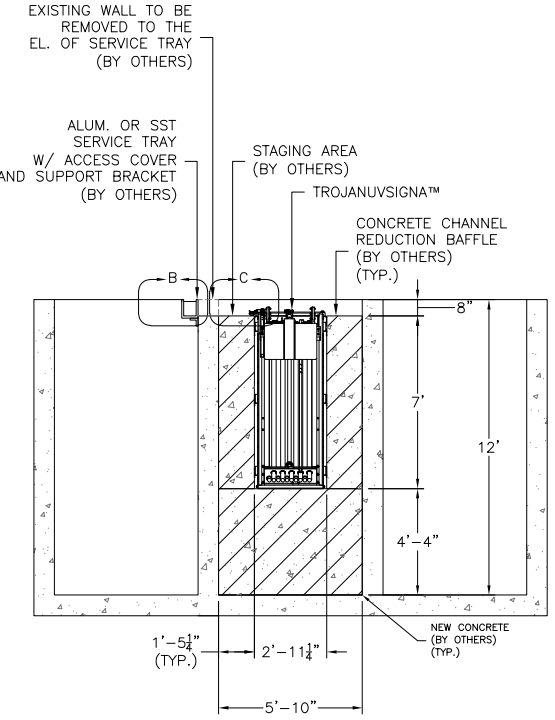
(A) SECTION

S01 | S02 SCALE: AS SHOWN
NOTE: HSC, PDC, SCC, LOW LEVEL SENSOR & CONTROL BOX & REMOVABLE GRATING (BY OTHERS) NOT SHOWN FOR CLARITY.



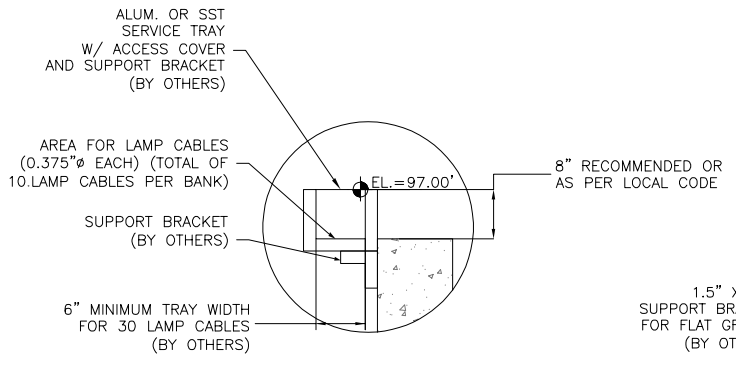
(B) SECTION

S01 | S02 SCALE: AS SHOWN
NOTE: REMOVABLE GRATING (BY OTHERS) NOT SHOWN FOR CLARITY.



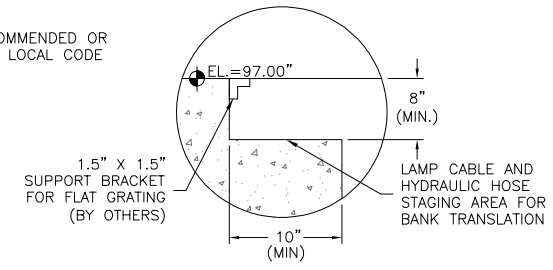
(C) SECTION

S01 | S02 SCALE: AS SHOWN
NOTE: REMOVABLE GRATING (BY OTHERS) NOT SHOWN FOR CLARITY.



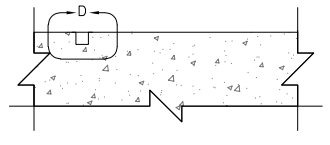
DETAIL B

SCALE: NOT TO SCALE
NOTE: REFER TO TROJAN TRAY CABLE INSTALLATION GUIDELINE DC000601-017 OR LOCAL CODE IF MORE RESTRICTIVE. ALUM. OR SST TRAY WIDTHS BASED ON SOLID STYLE GRATING.



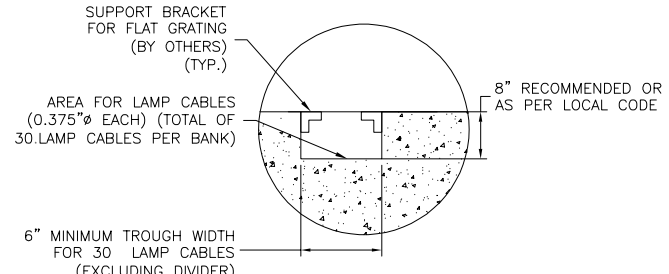
DETAIL C

SCALE: NOT TO SCALE



(D) SECTION

S01 | S02 SCALE: AS SHOWN
NOTE: SECTION TO ONLY SHOW TROUGH IN ASSUMED WALKWAY



DETAIL D

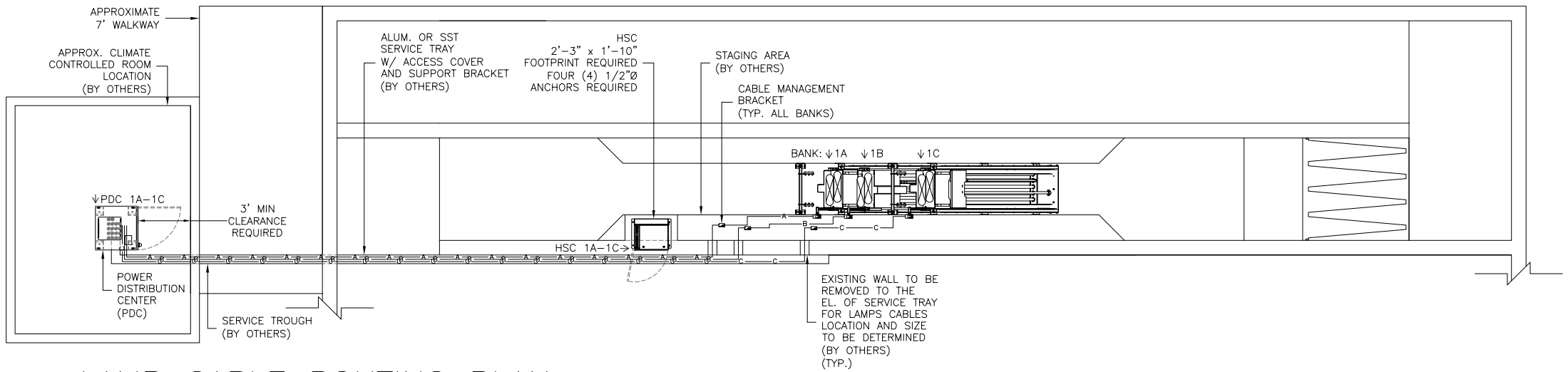
SCALE: NOT TO SCALE
NOTE: REFER TO TROJAN TROUGH CABLE INSTALLATION GUIDELINE DC000601-017 OR LOCAL CODE IF MORE RESTRICTIVE. TROUGH WIDTHS BASED ON SOLID STYLE GRATING.

NOTES:

: DO NOT SLOPE CHANNEL FLOOR.
: CHANNEL WIDTH MUST BE KEPT WITHIN A TOLERANCE OF −/+1½" AT UV BANK FRAME AND −/+¼" FOR REST OF CHANNEL.
: ALL CHANNEL ELEVATIONS MUST BE KEPT WITHIN A TOLERANCE OF −/+¼" AGAINST A COMMON DATUM ELEVATION.
: ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES,
: SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY OTHERS.
: ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY.
: REMOVABLE GRATING SECTIONS SHALL BE EASILY REMOVED BY ONE PERSON. MAXIMUM WEIGHT OF THE SECTIONS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE JURISDICTION.
: CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
: EFFLUENT LEVELS SHOWN REFLECT HYDRAULICS ASSOCIATED WITH TROJAN EQUIPMENT ONLY. EFFLUENT LEVELS MAY BE ALTERED DUE TO CHANNEL DEBRIS OR GEOMETRY.
: HYDRAULIC HOSE ELEVATIONS NOT TO EXCEED 12" ABOVE HSC MOUNTING ELEVATION.
: INCLUDED CABLE LENGTH ALLOWS FOR 77.0' ROUTING (RISE + RUN) BETWEEN CABLE/HOSE MANAGEMENT BRACKET AND UNDERSIDE OF PDC. (46.0' ROUTING ASSUMED BASED ON THIS LAYOUT.)
: INCLUDED HOSE LENGTH ALLOWS FOR 16.0' ROUTING (RISE + RUN) BETWEEN CABLE/HOSE MANAGEMENT BRACKET AND HOSE CONNECTION ON THE HSC. (12.0' ROUTING ASSUMED BASED ON THIS LAYOUT.)
: SITE TO PROVIDE APPROVED (ENGINEERED) ANCHOR POINTS FOR PERSONNEL TO USE AS PART OF THEIR FALL RESTRAINT SYSTEM AROUND OPEN CHANNELS. THE ANCHOR POINTS MUST BE POSITIONED SO THAT THE PREFERRED RETRACTABLE LIFELINE OF 8 FEET IS OF SUFFICIENT LENGTH TO ACCESS THE WORK AT THE CHANNEL.
** SOLID GRATING REQUIRED TO BLOCK ULTRAVIOLET (UV) LIGHT.

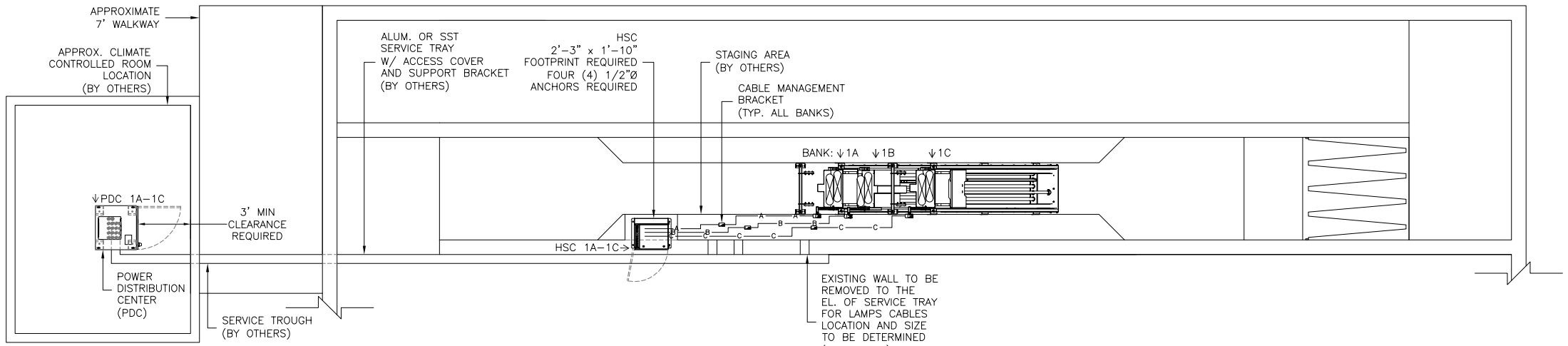
PRELIMINARY, NOT FOR CONSTRUCTION
VERIFY DIMENSIONS BEFORE COMMENCING CIVIL OR DESIGN WORK

DESCRIPTION: LAYOUT, TROJANUVSIGNA FREMONT REPLACEMENT, CO		QUOTE NO.	212873
DRAWN BY : RP	DATE : 23DEC15	PROJECT NO.	N/A
CHECKED BY : AB	DATE : 24JAN09	DWG NO.	S02
APPROVED BY : HM	DATE : 24JAN09	REV.	B
SCALE (11x17) : 1/8" = 1'-0"	LOG NUMBER : N/A		



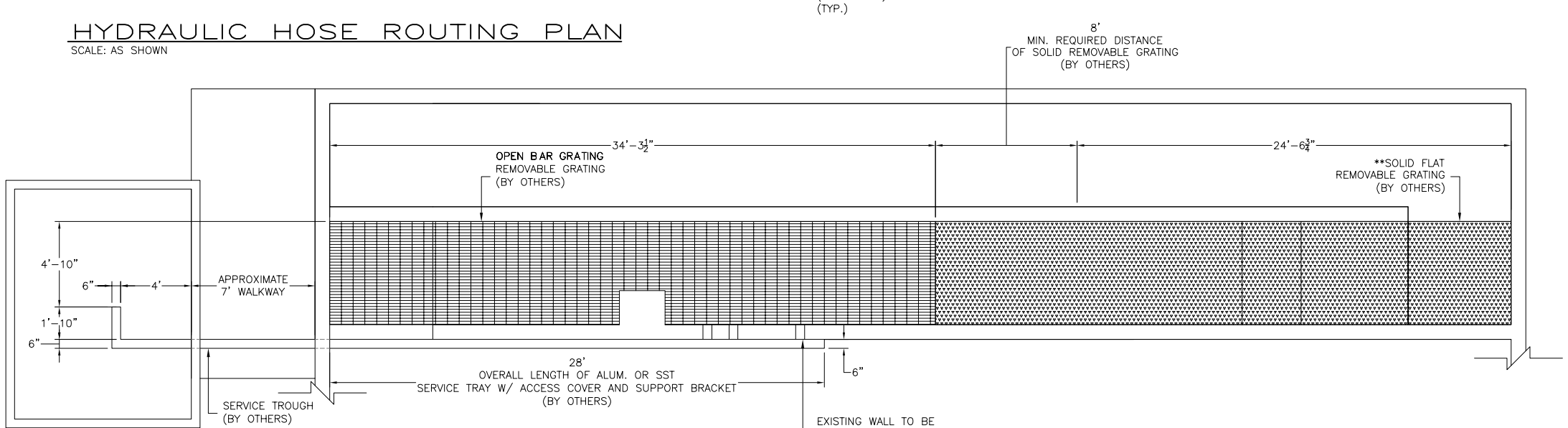
LAMP CABLE ROUTING PLAN

SCALE: AS SHOWN



HYDRAULIC HOSE ROUTING PLAN

SCALE: AS SHOWN



GRATING AND TROUGH PLAN VIEW

SCALE: AS SHOWN

NOTE: DESIGN OF GRATING SECTIONS SHOULD BE SIZED TO ALLOW FOR EASY REMOVAL BY SERVICE TECHNICIANS. SOLID GRATING MUST BE PROVIDED IN AREA INDICATED TO BLOCK UV LIGHT.

NOTES:

: DO NOT SLOPE CHANNEL FLOOR.
: CHANNEL WIDTH MUST BE KEPT WITHIN A TOLERANCE OF −/+1½" AT UV BANK FRAME AND −/+¼" FOR REST OF CHANNEL.
: ALL CHANNEL ELEVATIONS MUST BE KEPT WITHIN A TOLERANCE OF −/+¼" AGAINST A COMMON DATUM ELEVATION.
: ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES,
: SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY OTHERS.
: ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY.
: REMOVABLE GRATING SECTIONS SHALL BE EASILY REMOVED BY ONE PERSON. MAXIMUM WEIGHT OF THE SECTIONS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE JURISDICTION.
: CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
: EFFLUENT LEVELS SHOWN REFLECT HYDRAULICS ASSOCIATED WITH TROJAN EQUIPMENT ONLY. EFFLUENT LEVELS MAY BE ALTERED DUE TO CHANNEL DEBRIS OR GEOMETRY.
: HYDRAULIC HOSE ELEVATIONS NOT TO EXCEED 12" ABOVE HSC MOUNTING ELEVATION.
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PRELIMINARY, NOT FOR CONSTRUCTION

VERIFY DIMENSIONS BEFORE COMMENCING CIVIL OR DESIGN WORK

TROJANUV™
A TROJAN TECHNOLOGIES BUSINESS

DESCRIPTION: LAYOUT, TROJANUVSIGNA FREMONT REPLACEMENT, CO		QUOTE NO. 212873	
DRAWN BY : RP	DATE : 23DEC15	PROJECT NO. N/A	
CHECKED BY : AB	DATE : 24JAN09		
APPROVED BY : HM	DATE : 24JAN09	DWG NO. S03	REV. B
SCALE (11x17) : 1/8" = 1'-0"	LOG NUMBER : N/A		

COLORADO
Department of Public Health & Environment

April 25, 2024

Brian Rupp, District Manager
Fremont Sanitation District
107 Berry Parkway
Cañon City, CO 81212

Subject: In-Kind Replacement Acknowledgement
Regulation 22 Site Location Approval No. 3432
Fremont Sanitation District, Rainbow Park Regional Wastewater Treatment Plant, UV Disinfection Replacement
Colorado Discharge Permit System (CDPS) No. CO0039748
Fremont County
ES Project No. ES.24.SA.08406

Dear Brian Rupp:

The Water Quality Control Division (Division) has received and reviewed the February 21, 2024, written notice of in-kind replacement for the proposed Fremont Sanitation District, Rainbow Park Regional Wastewater Treatment Plant, UV Disinfection Replacement project that was submitted in accordance with the notification requirements of Water Quality Control Commission's ***Site Location and Design Regulations for Domestic Wastewater Treatment Works, 5 CCR 1002-22*** (Regulation 22), Section 22.12. Based upon the scope of the project as described in the written notice, the Division has determined that this project meets the definition of "in-kind replacement" as specified in Regulation 22, Section 22.2 (16), in accordance with the following:

1. The proposed in-kind replacement work is limited to:
   a. Replacement of the open channel horizontal UV system with a single UV reactor within the redundant disinfection channel (Trojan UVSigna2). Flow from the secondary clarifiers is transferred by gravity to the UV reactor.
      i. UV reactor consists of three banks in series and 10 inclined lamps per bank.
      ii. Design dose of the reactor with all three banks in operation at the peak hour flow rate of 14.2 MGD, UVT of 65%, 94% fouling factor, and 86% end of lamp life factor is 30.2 mJ/cm^2.
      iii. Submergence of the UV lamps controlled by a fixed weir located downstream of the UV reactor.
      iv. Alarm conditions include failure of a lamp, low UV intensity, loss of flow signal, and multiple lamp failure/outage in a reactor. All alarms will be displayed and logged on the programmable logic controller.
      v. Cleaning and maintenance of the UV system provided by a dual action cleaning system consisting of mechanical wiping and chemical cleaning solution within the quartz sleeve. Cleaning system is operated without removing equipment or disrupting disinfection.
      vi. The existing open channel horizontal UV system (Trojan UV4000) will be maintained in the parallel channel for additional redundancy, and will not be considered as an expansion to the design capacity of the process.

2. The proposed improvements must not be more extensive than those proposed in the written notification.

3. All conditions of the original site location application No. 3432 apply.

This acknowledgement does not relieve the applicant/owner from compliance with all local, state, and federal regulations prior to construction nor from responsibility for proper engineering, construction and operation of the treatment works.

The Engineering Section is interested in gaining feedback about your experience during the engineering review process. We would appreciate your time to complete a Quality-of-Service Survey regarding your experience during the engineering review process leading up to issuance of this decision letter. The Engineering Section will use your responses and comments to identify strengths, target areas for improvement, and evaluate process improvements to better serve your needs. Please take a moment to fill out our survey here.

If you should have any questions, please contact Paul Kim by phone at 303-692-3279 or by email at paul.kim@state.co.us.

Sincerely,

Tyson Ingels Digitally signed by Tyson Ingels
Date: 2024.04.25 13:47:07 -06'00'

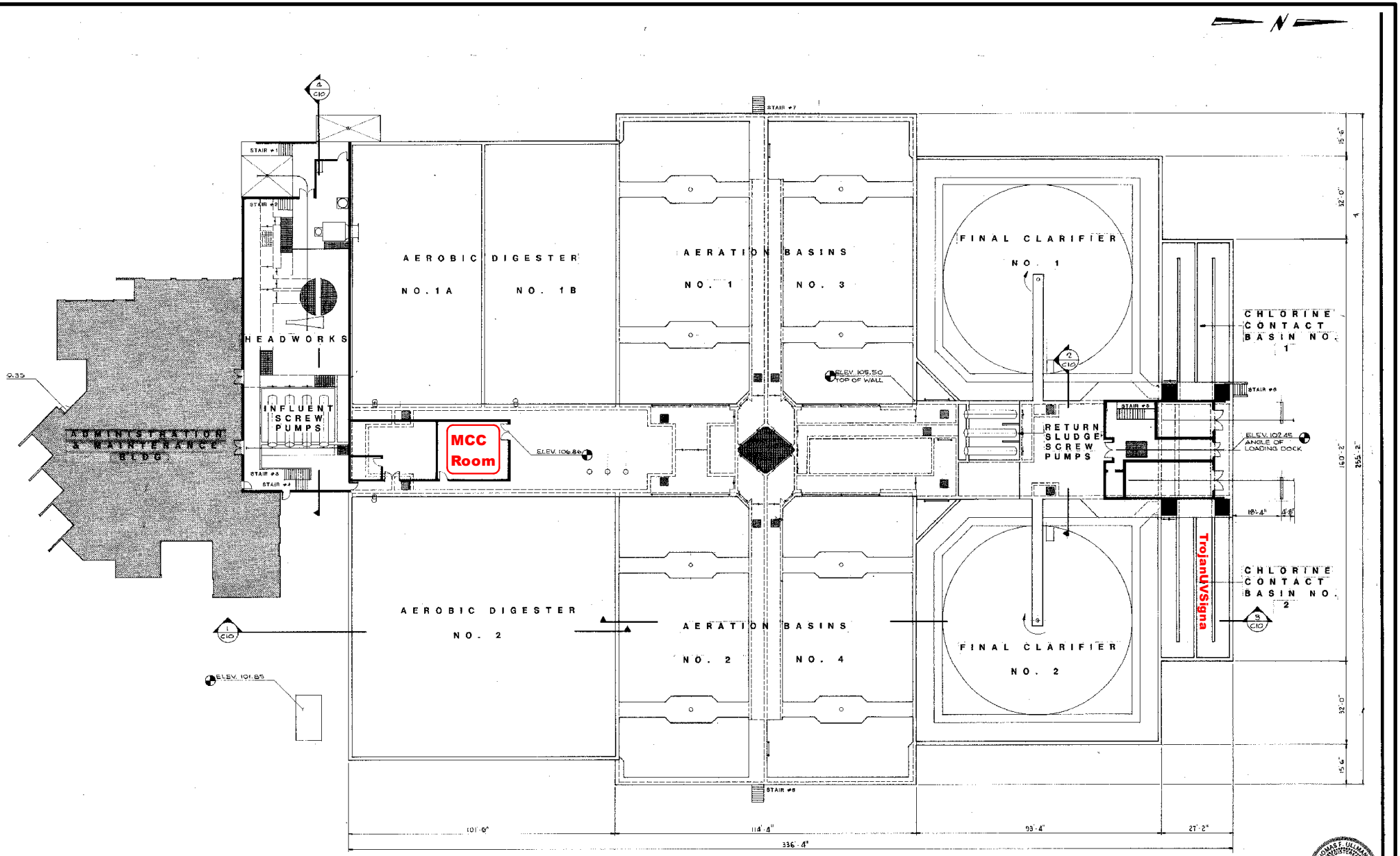
Tyson Ingels, P.E.
Engineering Section Manager
Water Quality Control Division
Colorado Department of Public Health and Environment

cc: Amy Jamison, Fremont County Environmental Health Dept
Michael Emming, WQCD Engineering Review Unit Manager

RFP 2024-02

EXHIBIT E

MCC - CHLORINE BASIN SCHEMATIC



REVISIONS
DESCR.
DESCR.
DESCR.

DRAWN COPE · DCP DESIGNED BAJ TFU CHECKED BAJ DATE DEC., 1980
SCALE 1/16" = 1'-0" APPROVED TFU PROJECT NO. 1441-002

MCI consulting engineers
FORT COLLINS COLORADO

RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT

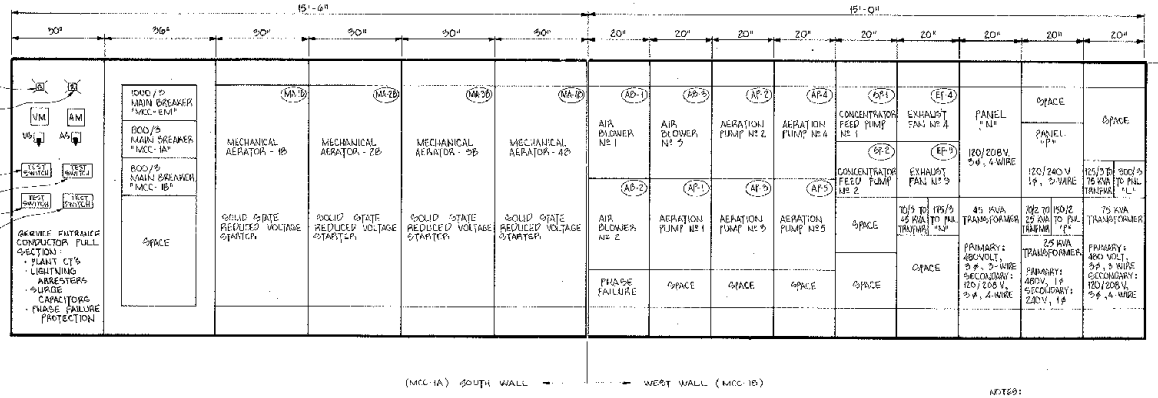
GENERAL FACILITIES PLAN

SHEET 34 SHEETS C9

RFP 2024-02

EXHIBIT F

MOTOR CONTROL CENTER (MCC)



(MCC-1A & 1B) NORMAL POWER SECTION MOTOR CONTROL CENTER – ELEVATION

SCALE: 1" = 20"

NOTES:

1. THESE ARE SUGGESTED ELEVATIONS.
2. PROVIDE 4" THICK CONCRETE PAD UNDER ALL MCC SECTIONS.
3. SEE PROCESS CONTROL SCHEDULE - SHEET E-8, AND MECHANICAL EQUIPMENT CAPACITOR SCHEDULE SHEET E-9 FOR CAPACITOR REQUIREMENTS.
4. ALL MCC SECTIONS ARE 20" DEEP
5. TIME DELAY RELAYS WITH EACH MOTOR STARTER, INTERLOCKING CONTROL WIRING WITH FIELD CONTROL PANELS, AND AUXILIARY CONTACTS FOR RUNNING TIME METERS AND GREEN INDICATING LIGHTS ARE TO BE PROVIDED PER PROCESS EQUIPMENT AND CONTROL SCHEDULE, MCC ELEVATION, CONTROL SCHEMATIC, & SPECIFICATIONS.
6. PROVIDE TIME DELAY RELAYS ON ALL MOTORS 10 H.P. AND LARGER.

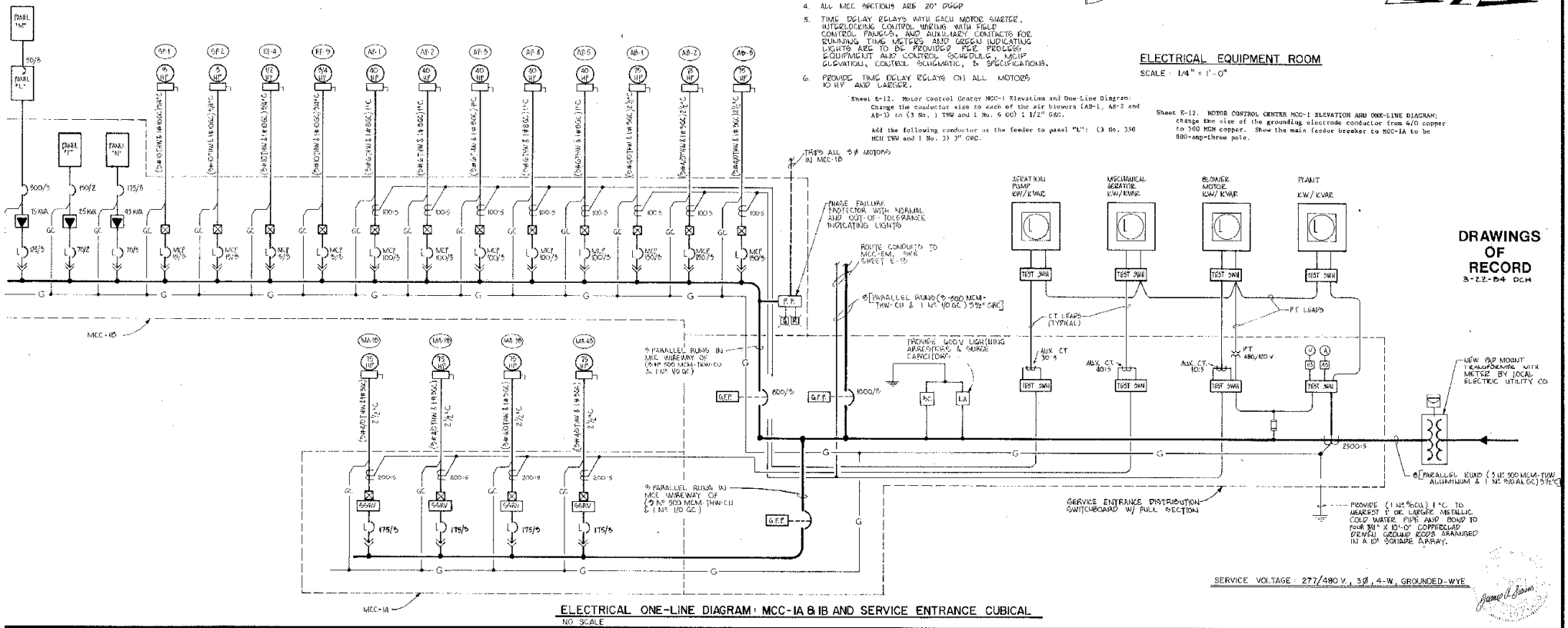
Sheet E-12. Motor Control Center MCC-1 Elevation and One-Line Diagram: Change the conductor size to each of the air blowers (AB-1, AB-2 and AB-3) to (3 No. 1 THW and 1 No. 6 GC) 1 1/2" GRC.

Add the following conductor to the feeder to panel "L": (3 No. 350 MCM THW and 1 No. 3) 3" GRC.

Sheet E-12. MOTOR CONTROL CENTER MCC-1 ELEVATION AND ONE-LINE DIAGRAM; change the size of the grounding electrode conductor from 4/0 copper to 500 MCM copper. Show the main feeder breaker to MCC-1A to be 800-amp-three pole.

ELECTRICAL EQUIPMENT ROOM

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



ELECTRICAL ONE-LINE DIAGRAM: MCC-1A & 1B AND SERVICE ENTRANCE CUBICAL

NO SCALE

DRAWINGS OF RECORD 3-22-84 DCH

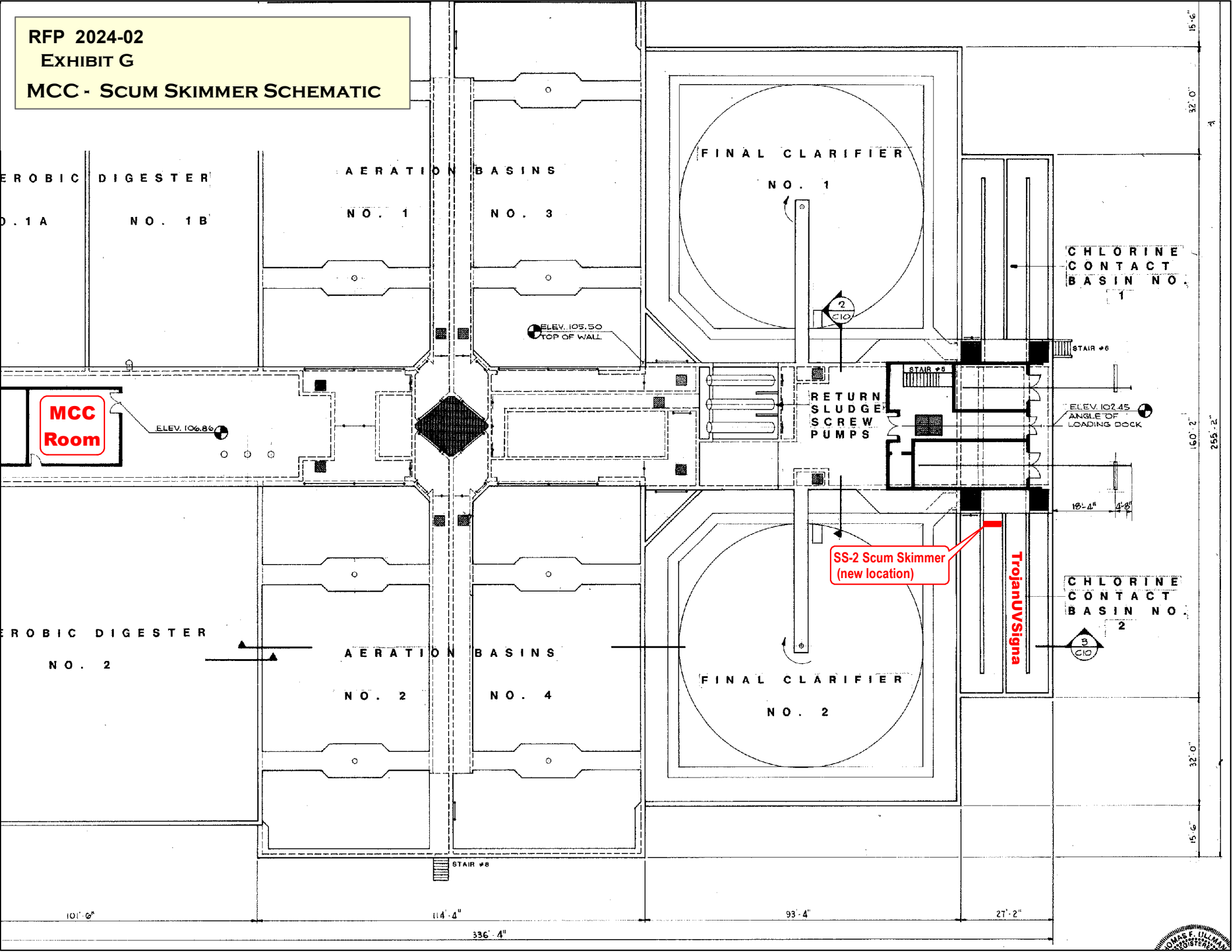
SERVICE VOLTAGE: 277/480 V., 3Ø, 4-W, GROUNDED-WYE

REVISIONS							
DESCR.	DRAWN GME	DESIGNED MHW	CHECKED WAS	DATE DEC. 1980	M&I consulting engineers FORT COLLINS, COLORADO	RAINBOW PARK REGIONAL WASTEWATER TREATMENT PLANT	MOTOR CONTROL CENTER MCC-1 ELEVATION AND ONE-LINE DIAGRAM
DESCR.	SCALE AS NOTED	APPROVED TFU	PROJECT NO 1441-003				SHEET 22 SHEETS E12
DESCR.							

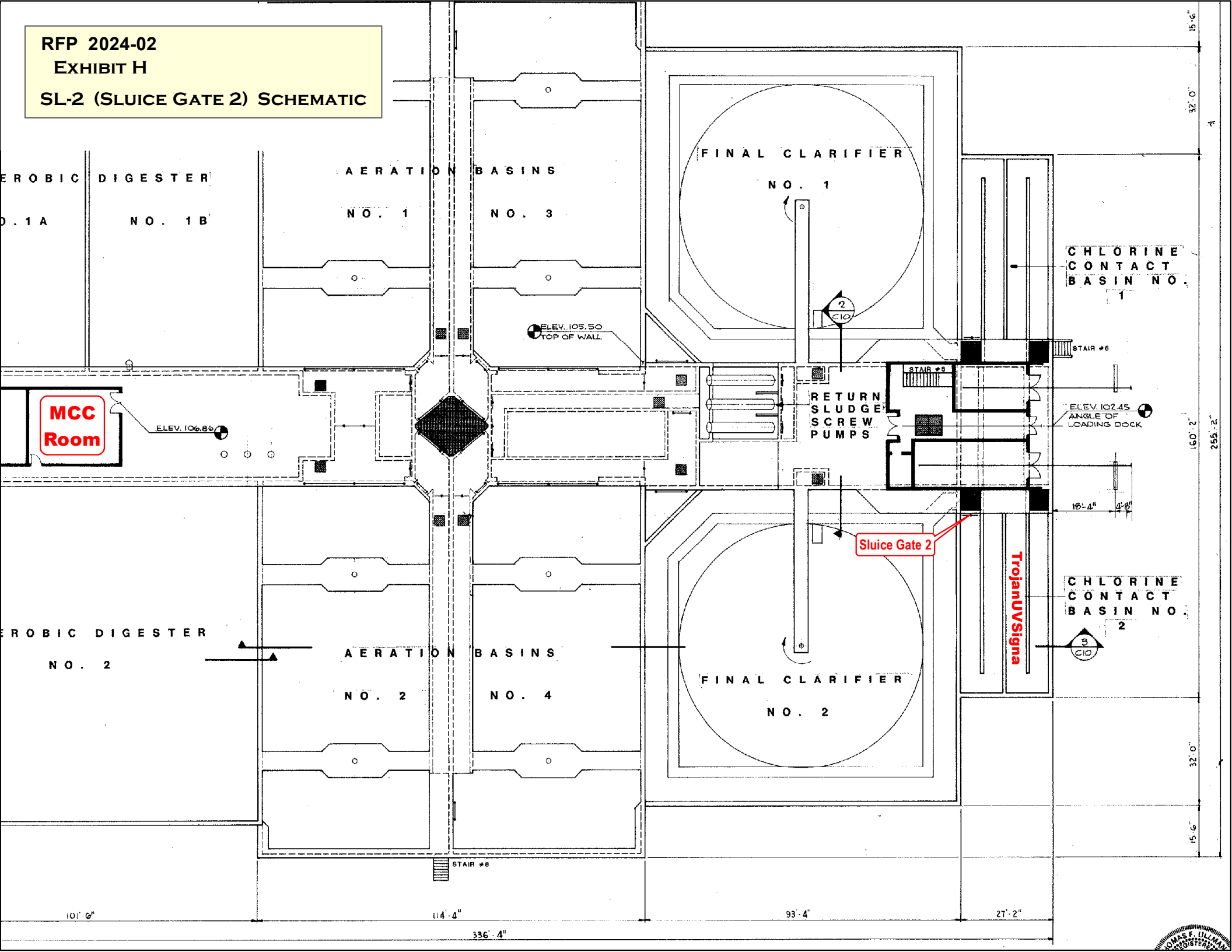
RFP 2024-02

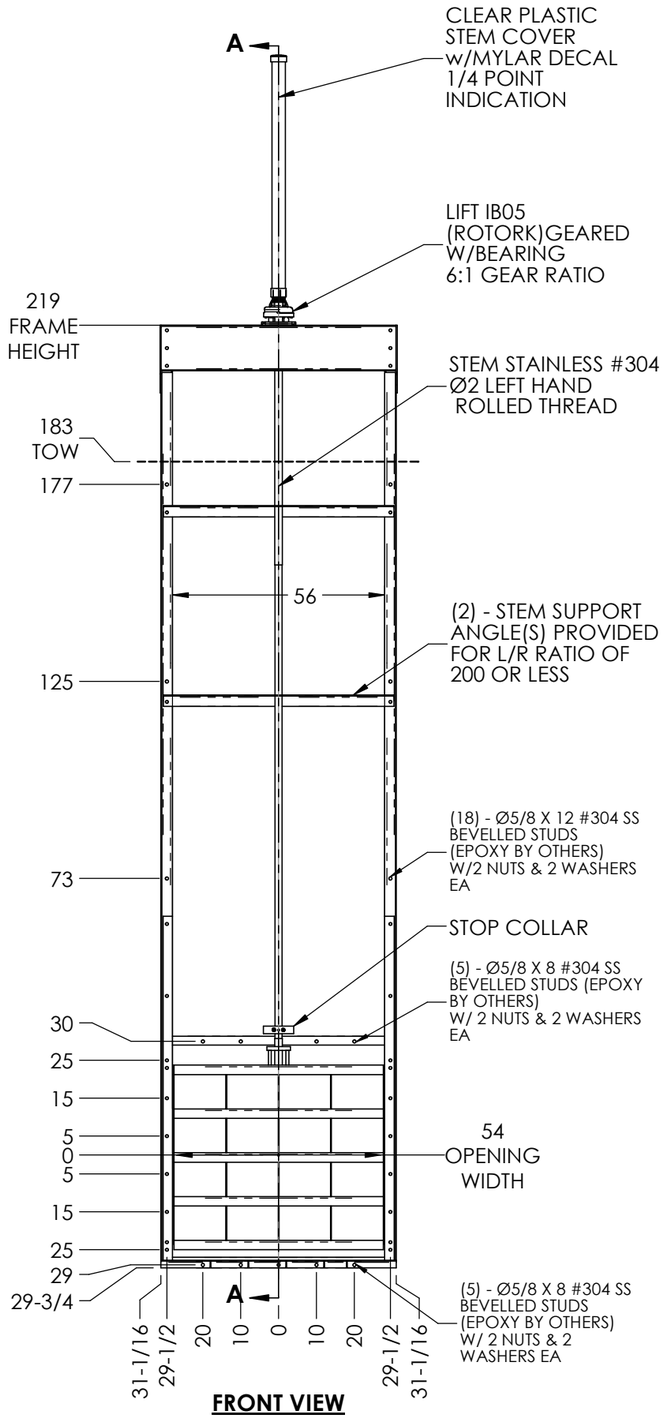
EXHIBIT G

MCC - SCUM SKIMMER SCHEMATIC

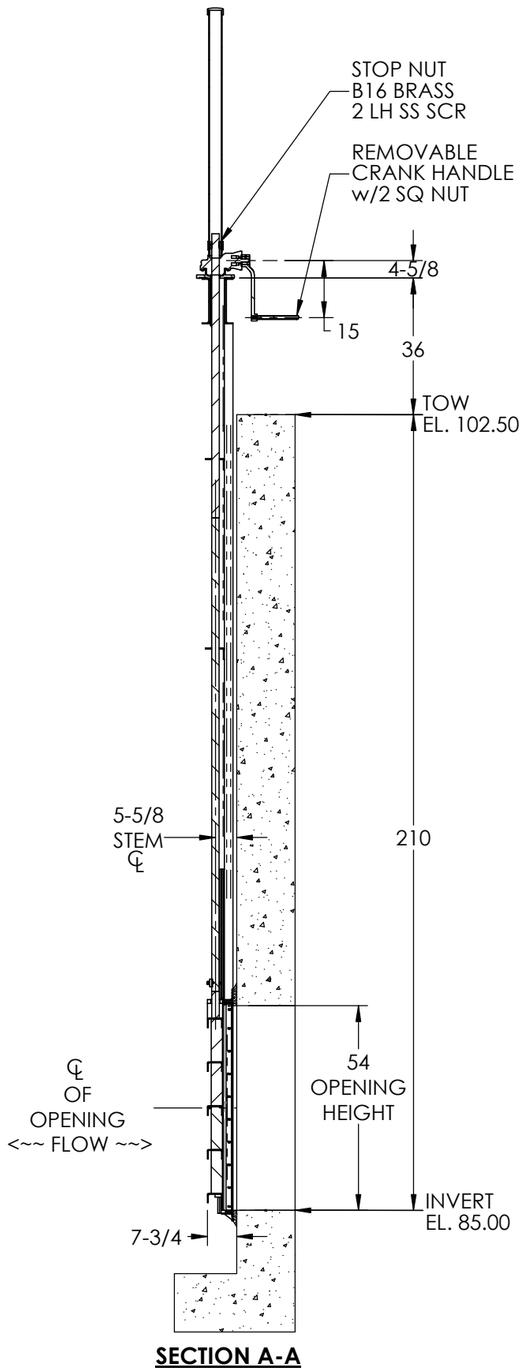


RFP 2024-02
EXHIBIT H
SL-2 (SLUICE GATE 2) SCHEMATIC

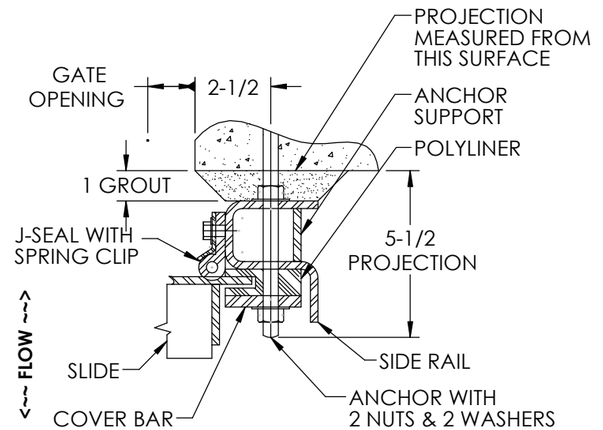




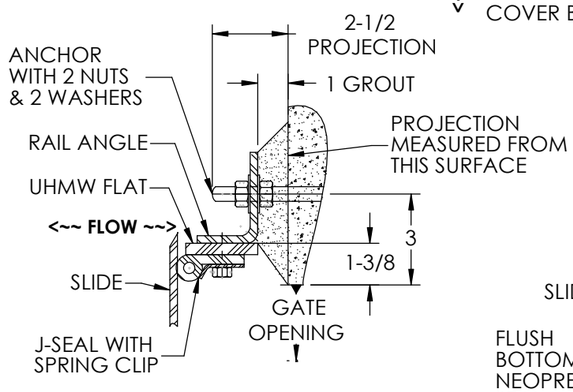
FRONT VIEW



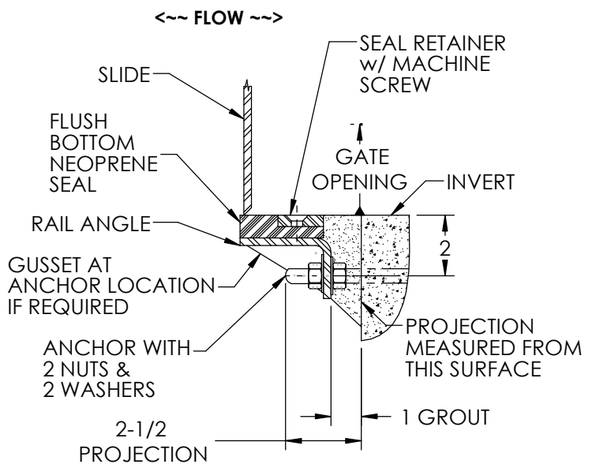
SECTION A-A



DETAIL (TYP)
SIDE RAIL MOUNTING



DETAIL (TYP)
TOP RAIL MOUNTING



DETAIL (TYP)
BOTTOM RAIL MOUNTING

NOTES:

1. REFERENCE:
   - FVC240425_084232_01_1
2. SEE MANUAL FOR INSTALLATION AND ADJUSTMENTS.
3. DESIGN HEAD:
   - SEATING : 20 FT
   - UNSEATING: 20 FT
4. TAG NUMBER:
   -
5. PROJECT INFORMATION:
   - Chlorine Contact Basin-Existing Rodney Hunt Gate
6. QUANTITY REQUIRED:
   - 1 EA

FVC# xxxxxx

PLEASE VERIFY MARKED (IF ANY) ELEVATIONS.

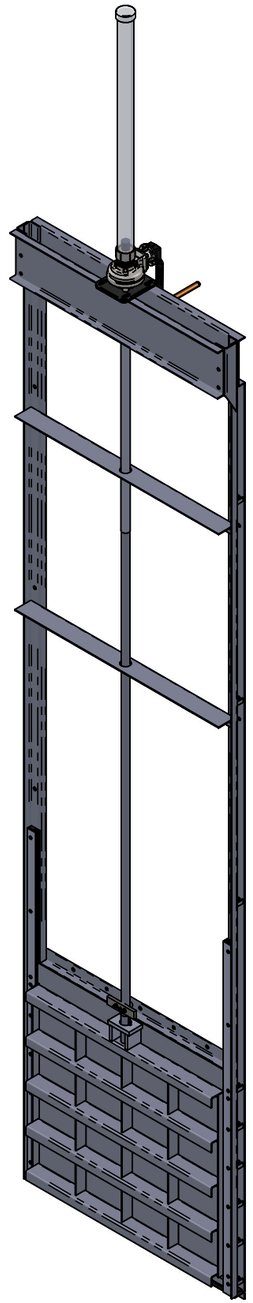
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FRESNO VALVES & CASTINGS INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF FRESNO VALVES & CASTINGS INC. IS PROHIBITED
TOLERANCE ARE: FRACTIONAL DIM ± 1/16" ANGULAR DIM ±0.50° CASTING DIM ±0.025" UPTO 6" ADD ±0.0025" / INCH OVER 6" MACHINE DIM ±0.100" X.X" MACHINE DIM ±0.010" X.XX" MACHINE DIM ±0.005" X.XXX" BENDS DIM ± 1/2° FAB DIM ±0.125" X.X" FAB DIM ±0.0625" X.XX" DEBURR ALL SHARP EDGES & CORNERS ON CASTINGS, MACH. PARTS, SHT. METAL PARTS	TITLE / DATE / NAME DRAWN 25APR24 SBS CHECKED APPRVD
MATERIAL : SEE SHEET 2	
TYPE : MANUFACTURED	

FRESNO VALVES AND CASTINGS, INC.
P.O. BOX 40, SELMA, CA 93662
PHONE (559) 834-2511, FAX (559) 834-2017

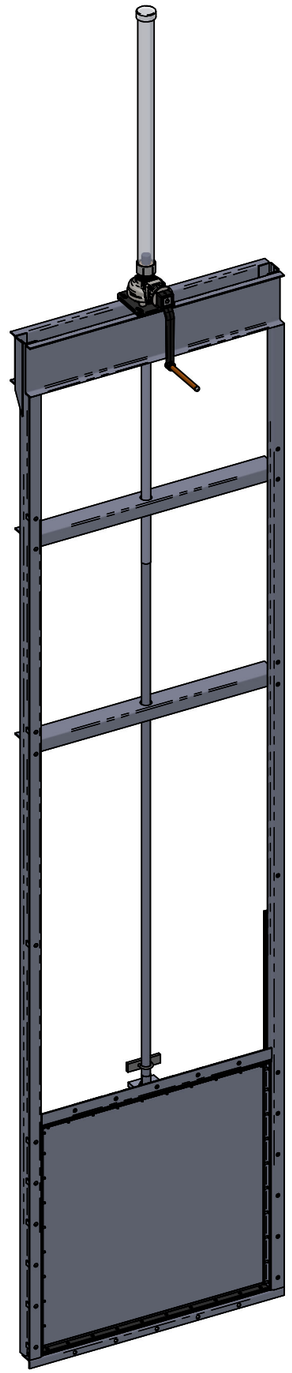
DIVISION: FRESNO VALVES

SERIES 8200 FABRICATED GATES
FABRICATED SLIDE GATE, #304 SS, 54" WIDE X 54" HIGH W/219" FRM,
SELF CONTAINED, RISING STEM, 3-SIDED J-SEAL,
INSTALLATION DRAWING

SCALE: NTS	WEIGHT: 1420 lbs	SHEET 1 OF 2
DRAWING NO.	FVC240425_084232_01_1	



FRONT ISOMETRIC VIEW



BACK ISOMETRIC VIEW

MATERIAL SPECIFICATIONS		
DESCRIPTION	**MATERIAL**	**ASTM SPECIFICATION**
FRAME, SLIDE PLATE AND REINFORCEMENTS	STAINLESS STEEL	STAINLESS STEEL (A276, Type 304)
SPRING CLIP (IF ANY)	STAINLESS STEEL	STAINLESS STEEL (A276, TYPE 304)
FASTENERS	STAINLESS STEEL	STAINLESS STEEL (A276, TYPE 304)
POLYLINER (IF ANY)	PLASTIC	POLYETHYLENE, ASTM D4020
SEALS (IF ANY)	RUBBER	NEOPRENE, ASTM D2000, GRADE IBE609
STEM	STAINLESS STEEL	STAINLESS STEEL (ASTM A276, TYPE 304)
STEM COVER (IF ANY)	CLEAR PLASTIC	CLEAR ACRYLIC BUTYRATE
LIFT NUT	BRONZE	MANGANESE BRONZE (ASTM B584, ALLOY 844)
STOP NUT (IF ANY)	RED BRASS	ASTM B16, ALLOY C360
HANDWHEEL/CRANK, PEDESTAL,WALL BRACKET, LIFT HOUSING	CAST IRON	ASTM A126, CLASS B

CLEANING SPECIFICATION
SOLVENT CLEAN

COATING SPECIFICATION
ALL CAST IRON PARTS TO BE PAINTED: 4 MIL MINIMUM GRAY TNEMEC ENDURA-SHIELD II SERIES 1074-1074U.
MAX LEAKAGE 0.1 GPM/FT SEATING AND 0.2 GPM/FT UNSEATING PERIMETER. (AWWA SPECIFICATION C513-05)

FVC# xxxxxx

REFERENCE: FVC240425_084232_01_1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCE ARE:
FRACTIONAL DIM ± 1/16"
ANGULAR DIM ±0.50°
CASTING DIM ±0.025" UPTO 6"
ADD ±0.0025" / INCH OVER 6"
MACHINE DIM ±0.100" X.X"
MACHINE DIM ±0.010" X.XX"
MACHINE DIM ±0.005" X.XXX"
BENDS DIM ± 1/2°
FAB DIM ±0.125" X.X"
FAB DIM ±0.0625" X.XX"

DEBURR ALL SHARP EDGES & CORNERS ON CASTINGS, MACH. PARTS, SHT. METAL PARTS

MATERIAL : SEE ABOVE

TYPE : MANUFACTURED

TITLE	DATE	NAME
DRAWN	25APR24	SBS
CHECKED		
APPRVD		

FRESNO VALVES AND CASTINGS, INC.
P.O. BOX 40, SELMA, CA 93662
PHONE (559) 834-2511, FAX (559) 834-2017

DIVISION: FRESNO VALVES

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FABRICATED SLIDE GATE, #304 SS, 54" WIDE X 54" HIGH W/219" FRM,
SELF CONTAINED, RISING STEM, 3-SIDED J-SEAL,
INSTALLATION DRAWING

SCALE: NTS | WEIGHT: 1420 lbs | SHEET 2 OF 2

DRAWING NO. FVC240425_084232_01_1