ADDENDUM NO. 02

To: Prospective Bidders & Plan Holders

From: Craig A. Johnson, P.E.
Crist Engineers, Inc.

Date: July 17. 2025

Project: Package C – Wastewater Treatment Plant Improvements
Wynne, Arkansas

Bid Date: July 29, 2025

Bid Time: 2:00 PM

Location: Wynne Water Utilities
550 Falls Blvd, N.
Wynne, Arkansas 72396

The BIDDER shall properly acknowledge Addendum No. 02 as required in Article 3 of Document 004100 on the Bid Form as confirmation that the BIDDER has examined the following Addenda and the related changes to the Contract Documents. Lack of proper acknowledgement on the Bid Form may deem a bid non-responsive.

The Contract Documents dated June 2025, are hereby amended as follows:





Specifications

Division 00

Item 1 - Advertisement for Bids

a. Delete the following Paragraph on page two of the Advertisement in its entirety

"Successful Bidder must comply with the requirements of Arkansas Code Ann. 17-25-401-409 (1995) in accordance with the procedures established by the Contractors Liscencing Board (see applicable section of Supplemental General Conditions for the Revolving Loan Fund (RLF))."

Item 2 – Bidders Checklist

a. Add the following statement to the Bidders Checklist under the table of completed forms.
" DART information to be submitted upon request from the owner within 72 hours of the request."

Item 3 - Bid Form

a. See Revised Bid Form.

Item 4 - Agreement

a. Modify Item 8 in the Agreement as follows: Delete ~~"in addition to the RLF Supplemental General Conditions (00 73 10). If there is a conflict between these, then the RLF Supplemental General Conditions (Section 00 73 10) takes precedence."~~

Item 5 - Performance Bond

a. Modify the following Paragraph on the bottom of Page 3 of the Performance Bond. "Important Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) ~~and be in accordance with the RLF Supplemental General Conditions~~ and be authorized to transact business in the State of Arkansas.

Item 6 - Payment Bond

a. Modify the following Paragraph on the bottom of Page 3 of the Performance Bond. "Important Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) ~~and be in accordance with the RLF Supplemental General Conditions~~ and be authorized to transact business in the State of Arkansas.

Item 7 – Supplemental Conditions:

a. Delete Section SC-7.06.F in its entirety.

Division 01

Item 1 - 010000 – Basic Requirements

a. Replace 1.11.B with the following Rates

1. "$150.00/hr for Project Manager
2. $135.00/hr for Construction Observer"

Item 2 - 015000 – Temporary Facilities

a. Add Section 2.4 ENGINEER'S FIELD OFFICE.

"2.4 ENGINEER'S FIELD OFFICE

A. Contractor shall furnish one (1) security office unit for exclusive use of the engineer and its representative.

B Security Office Unit:

- Minimum Size: 20 feet long, 8 feet wide, 8 foot ceilings.
- Steel Frame, side panels and roof.
- Insulated double walls, floors, and roof.
- Desks: Three (3) 36-inch x 60-inch.
- 125- amp breaker panel
- 120 volt lighting and wall outlets
- Ceiling Lights
- Electric Heating and self contained AC unit.
- Windows (2): 36-inch x 48-inch screened horizontal sliders with security bars
- Steel exterior door with deadbolt locks
- Railed stairways and landings at entrance.
- Bathroom should be included.

C. Contractor shall supply provide, install, and maintain all utility connections to the office during construction, including but not limited to: water, electrical, and WIFI. Disposal of waste should be included.

D. Water service at the point of existing connection will be provided by the City of Wynne. From point of connection to the office will be provided by the Contractor.

E. Field office for the Engineer shall not be a part of the same trailer as the Contractor."

Item 3 – 017500 Equipment Testing and Startup

a. Add specification section 017500 Equipment Testing and Startup to the Bid Documents.

Division 02

Item 1 – Demolition and Modification

b. Modify the following paragraph 1.05 from "Disposal of Material from Salvageable material and equipment listed hereinafter shall become the property of the ~~Owner"~~ to "Disposal of Material from Salvageable material and equipment listed hereinafter shall become the property of the Contractor."

c. Delete 1.05 Sections 2,3, and 4, in their entirety.

Division 03

Item 1 – 031430 Precast Concrete Hollow-Core Slabs

a. See the added specification section 031430 "Precast Concrete Hollow-Core Slabs"

Division 07

Item 1 – 071314 – Vertical Wall Waterproofing

a. Add Section 071314 – "Vertical Wall Waterproofing" to the Bid Documents.

Division 09

Item 1- 099000 – Painting

a. Add the following section to "Paint Schedule"

7. DUCTILE IRON PIPE, FITTINGS, VALVES, ETC. (EXTERIOR EXPOSURE)

A. The coating system for ductile iron pipe, fittings, valves, etc for exterior exposure shall conform to the following:

1.	Surface Preparation:	SSPC-SP1 Solvent Cleaning and Abrasive Blast Clean
2.	First Coat:	Series N69 Hi-Build Epoxoline II (4.0 - 6.0 mils)
3.	Second Coat:	Series 73U Endura Shield (3.0 - 5.0 mils)
4.	Total Dry Film Thickness:	7.0 - 11.0 mils

8. DUCTILE IRON PIPE, FITTINGS, VALVES, ETC. (INTERIOR EXPOSURE)

A. The coating system for ductile iron pipe, fittings, valves, etc for interior exposure shall conform to the following:

1.	Surface Preparation:	SSPC-SP1 Solvent Cleaning and Abrasive Blast Clean
2.	First Coat:	Series N69 Hi-Build Epoxoline II (4.0 - 6.0 mils)
3.	Second Coat:	Series N69 Hi-Build Epoxoline II (4.0 - 6.0 mils)
4.	Total Dry Film Thickness:	8.0 - 12.0 mils

9. COLUMN SUPPORTED SPIRAL BLADE CLARIFIER

A. The coating system for the clarifier equipment.

1.	Surface Preparation:	SSPC-SP10 Commercial Blast Cleaning
2.	First Coat:	Series N140 PotaPox(4.0 - 6.0 mils)
3.	Second Coat:	Series N140 PotaPox(8.0 - 12.0 mils)
4.	Total Dry Film Thickness:	12.0 - 18.0 mils

Division 31

Item 1 – 312301 – Excavation Backfill and Compaction

a. Modify Part 2.1.B Granular Fill from, “Granular fill for structural backfill shall be free of asbestos, organic materials, clay balls, ~~and shall have the following gradation:~~ to “Granular fill for structural backfill shall be free of asbestos, organic materials, clay balls, with a maximum plasticity index (PI) of 4 and shall have the following gradation”

b. Delete Section 2.1.C in its entirety.

c. Add the following to Section 2.3.A “Select fill shall be an approved, low plasticity sandy clay (CL), clayey sand (SC), gravelly clay (CL) or clayey gravel (CG) with a liquid limit (LL) less than 40 and a plasticity index (PI) less than 18, **Sand (SP, SP-SM, or SW), or an approved alternate,** with a maximum rock size of 2 inches or and alternate accepted by the engineer.

Division 33

Item 1 - 331401 – Watertightness for Hydraulic Structure

a. Modify 1.1 Scope of Work as follows:

2. "Hydraulic Testing Schedule

- ***a.*** Headworks: Barscreen Channels and Grit Channels.
- ***b.*** Junction Box 300.
- ***c.*** UV Channels."

Item 2 – 331113 - Water Line Pipe and Fittings

a. Rename the spec section 331113 "Water Line Pipe and Fittings" to "Potable Water Line Pipe and Fittings."

Item 3 – 331216 – Wastewater Valves

a. Delete the Plug Valve, Air Release Valve, Check Valve, and Butterfly Valves for Air Services Tables on pages 11 and 12 in their entirety.

b. Modify Section 2.12 by deleting 2.12.A-2.12.F and replacing it with the following

"A. Acceptable Manufacturers

1. APCO ASU Series
2. D-26 NS Series
3. Or Equal

B. Air Vacuum Valve

1. Single Body with double orifice
2. Pressure rating shall not be less than 150 PSI
3. Designed for working and testing pressures identified in Sections 333400
4. 2 Inch (min) threaded FNPT connection with a minimum identified outlet size
5. Backflushing attachments, including ball or shut off valve shall be included.
6. Inlet shutoff valve shall be included
7. Provide mushroom cap.
8. 316 stainless steel body and cover
9. Float shall be stainless steel
10. Suitable for use on mixed liquor suspended solids concentrations of up to 1.5%
11. Minimum Sealing pressure of 2 PSI.

Item 4 – 331419 - Valves

a. Rename the spec section 331419 "Valves" to "Potable Water Valves."

Division 40

Item 1 – 400520 – Process Pipe and Fittings

a. Rename the spec section 400520 " Process Pipe and Fittings" to "Wastewater Pipe and Fittings."

Item 2 – 400558 -Fiberglass Reinforced Plastic Stop Logs

a. Delete this spec section in its entirety.

Item 3 – 407113 - Electromagnetic Flow Meters

a. Revise Section 1.2 to the following "The full pipe flow meter manufacturers shall be Krohne, Toshiba, Endress Hauser, ABB, or approved equal.

Division 43

Item 1 – 431136 – Rotary Vane Blowers

a. Section 1.05. Blower Performance Criteria: Modify number 6 Design Flow from ~~1121 cfm~~ to 1000 scfm.
b. Section 1.05 Blower Performance Criteria: Modify number 8 Design Discharge Pressure from ~~21.3 psig~~ to 20.6 psig.
c. Section 1.04 Quality Assurance: Modify Section A Number 1 as follows, " The package shall be Aerzen Generational 5 Delta Blower Model GM 35 S DN 150 **or Hoffman Defender Series**"

Item 2 – 432313.17 Horizontal Chopper Centrifugal Pumps

a. Delete Specification Section 432313.17 Horizontal Chopper Centrifugal Pumps in its entirety.

Item 3 – 432359 Screw Centrifugal Pumps

a. Add Specification Section 432359 Screw Centrifugal Pumps to the Bid Documents.

Division 46

Item 1 - 462139 – Above Ground Pump Station

a. Delete 1.3.C Certified Pump Performance Test in its entirety.

b. Delete 2.1.B Performance Criteria Table and replace with the following table.

Package Name	(Quantity) Package Details (Price)
Duplex Pump Control Panel*	NEMA 3R SS IEC contactor/overload/circuit breaker (1-PH only) Start circuit including capacitors, start relay, dropping resistor (1-PH only). Red LED cluster seal failure warning light, 22mm, for each pump. Flashing red high level alarm beacon. Test/Off/On switch for the high-level alarm circuit High level auxiliary dry contacts. Terminals for all field connections. UL 508A listing. Included:
*Or Approved Equal	

a. Delete 2.11.A-2.11.E in its entirety.

Item 2 – 463323 – Launder Covers

a. Add Section 463323 – "Launder Covers" to the Bid Documents.

Item 3 - 464123 – Submersible Mixers

a. Add the following item to 2.3 Manufacturers
"B. Wilo USA"

Item 4 – 464318 – Circular Spiral Clarifier Equipment

a. Modify Section 1.3 Supplier as Follow "The clarifier equipment specified in this section shall be WesTech, Amwell Walker, or Ovivo."

Plans

Item 1 – Revised Plan 00-G-01 - Index of Sheets

Item 2 – Revised Plan 00-G-02- General Notes and Contacts

Item 3 – Revised Plan 00-GI-09 FC - Scum Boxes and Valve Vaults

Item 4 – Revised Plan 50-X-01 Oxidation Ditches – Demolish Plan

Item 5 - Revised Plan 00-C-01 – Proposed Site Plan Key Map

Item 6 – Revised Plan 05-C-100 – Water Piping Plan

Item 7 – Revised Plan 05-C-101 - Yard Piping Plan

Item 8 – Revised Plan 70-S-501 - Details

Item 9 - Revised Plan 50-M-101 – Equipment and Improvement Plans

Item 10 – Revised Plan 70-M-101 – Pumps and Suction Piping Plan

Item 11 – Revised Plan H-1 – Mechanical Details

Appendices

Item 1 – Owner Procured Bid Documents

Item 2 – As Builts from Previous Projects

END ADDENDUM NO. 02

BID FORM

WYNNE WATER UTILITIES
WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Wynne Water Utilities
Mr. Blake Marotti
706 W. Martin Drive
Wynne, Arkansas 72396

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

2.02 The following equipment is Tax Exempt in accordance with GR-66.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum Date

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and confirms that the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

"coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

5.02 Bidder shall apply all applicable sales tax and fees.

BID SCHEDULE – BASE BID **Wynne Wastewater Treatment Improvements – Package C** **Wynne Water Utilities** **Wynne, Arkansas**		
Item No.	**Description**	**Lump Sum Bid Price**
1.	Insurance, Bonds, Mobilization, Demobilization: Price shall be for mobilization of the Contractor's forces and equipment necessary to execute the Work - not to exceed 7.5% of the overall total bid amount of which not more than 65% will be paid on the first payment application with the remainder 35% on the final pay application.	$_____
2.	Demolition of Structures: All work, equipment, materials, and other costs related to the demolition of above grade structures in accordance with the Drawings and Specifications, but excluding costs that are included in other line items on this Bid Form.	$_____
3.	Yard Piping: All work, equipment, materials and other costs related to the installation of all piping shown on the Drawings, to include all process piping, valves, connecting adapter, thrust blocking, mechanical sleeves, potable water lines, manholes, concrete, reinforcing, , connection to new potable water connection, yard valves, valve boxes, valve operators, yard hose bids, and all costs associated for complete connected working system in accordance with the Drawings and Specifications, but excluding costs that are included in other line items on this Bid Form.	$_____
4.	Site Grading/Earthwork: All work, equipment, materials, and other costs related to the drainage improvements to be performed in conjunction with the aggregate surface, hot mix asphalt concrete, and concrete pavement, including drainage pipe, trench drains, structural excavation and backfill, common excavation and backfill, bedding, compacted backfill, retaining wall, geotextile fabric, aggregates, ditch construction, site grading, site restoration, erosion and sediment control, but excluding costs that are included in other line-items of this Bid Form.	$_____

5.	Bar Screen Channels: All work related to the construction of the Bar Screen Channels, including installation of owner procured Mechanical Bar Screens and Washer Compactors, site concrete, concrete footings, floor slabs, concrete walls, drain piping, slide gates, piping, grating, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
6.	Archimedes Screw Pumps: All work, equipment, materials, and other costs related to the material and installation of the Archimedes 42-in screw pumps, including 42-in Archimedes screw pumps (2), grease pumps (2), control panels, slide gates, grout, grating, handrail, grating, piping, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
7.	Grit Removal Equipment: All work, equipment, materials, and other costs related to the material and installation of new grit channels, including earthwork, installation of owner procured grit removal equipment (2) and grit classifiers (2) and owner procured control panels. Installation of site concrete, concrete footings, floor slabs, concrete walls, elevated concrete, grit piping, water lines, control panels, slide gates, EMOs for slide gates, piping and valves, grout, misc. metals, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
8.	Junction Box 300 & Meter Vault: All work, equipment, materials, and other costs related to the material and installation of Junction Box 300 and Meter Box, including earthwork, submersible mixer and manufacturer supplied control panels, Flow Meter, site concrete, concrete footings, floor slabs, concrete walls, elevated concrete, piping and valves, hatches, grating, control panels, misc. metals, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
9.	Submersible Aspirating Aerator Equipment: All work, equipment, materials, and other costs related to the material to complete the work in the Oxidation Ditches, including but not limited to, installation of one (2) owner provided submersible aspiring aerators, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____

10.	Clarifiers: All work, equipment, materials, and other costs related to the material and installation of (2) two new clarifier mechanisms, including but not limited to, (2) two clarifier mechanisms and all supports equipment, control panels, launder covers, scum pumps, scum pump piping, concrete floor modifications, grout floor replacement, site concrete, concrete repair, floor slabs, concrete walls, grouting, pressure relief valves, piping and valves, grating, control panels, misc. metals, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
11.	RAS/WAS Pump Station: All work related to the construction of the RAS/WAS Pump Station Building including RAS/WAS/TWAS pumps and control panels, piping and valves, concrete footings, floor slabs, concrete walls, precast concrete, concrete supports, overhead crane, grating, sump pumps, primary and secondary framing, masonry, wall and roof panels, insulation, roll-up doors, plumbing, fixtures, gutters and downspouts, ceilings, floor coverings, doors, windows, HVAC, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
12.	Aerobic Digesters : All work, equipment, materials, and other costs related to the material, installation, and modification of the existing aerobic digesters, including but not limited to, aeration system, air piping, floating decenters, piping and valves, handrail, grouting, grating, DO Probes, misc. metals, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
13.	Blower Building and Equipment: All work related to the construction of the Blower Building, including but not limited to, Blowers and control panels, air piping to 5-ft outside the blower building pad, and valves, concrete footings, floor slabs, concrete supports, primary and secondary framing, masonry, roof panels, insulation, plumbing, gutters and downspouts, ceilings, floor coverings, doors, HVAC, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____

14.	UV Disinfection Building and Equipment: All work related to the construction of the UV Building and UV Channels, including but not limited to, earthwork, installation of owner procured UV disinfection equipment and control panels. Installation of concrete footings, floor slabs, concrete walls, pre cast concrete, piping and valves, slide gates, grating, steel plates, primary and secondary framing, masonry, roof panels, insulation, gutters and downspouts, ceilings, floor coverings, doors, windows, HVAC, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
15.	Post Aeration Basin: All work, equipment, materials, and other costs related to the material, installation, and modification of the existing post aeration basin, including but not limited to, earthwork, concrete footings, floor slabs, concrete walls, aerations system, air piping, piping and valves, handrail, grating, DO Probes, misc. metals, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
16.	Service Pump Station: All work, equipment, materials, and other costs related to the material, installation, and modification of the existing on site pump station and manufacturer supplied control panels, including but not limited to, earthwork, above ground pump station, piping and valves, misc. metals, and all necessary appurtenances necessary, to complete and operate a serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
17.	Land Application: All work, equipment, materials, and other costs related to the material and installation of the land application sprinkler system, including but not limited to, irrigation equipment, concrete bases, steel bollards, piping, valves, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____
18.	Electrical: Payment for Electrical shall be at the percentage lump sum of the completed work and shall include all work, equipment, materials, and other costs related to the installation of the electrical system for the complete operation of all components included in the Contract Documents including but not limited to variable frequency drives, switchgear, uninterruptable power supplies, cabling, conduits, pull boxes, motor control centers, interior lighting, exterior lighting, wiring, concrete for conduit encasement, and all appurtenances, incidentals, and miscellaneous equipment shown or specified in the Drawings and Contract Documents required for a complete and operating system, but excluding costs in other line-items of this Bid Form.	$_____

19.	Instrumentation and Controls: All work associated with Division 27, SCADA Controls, Instrumentation and Controls, Loop Diagrams, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form.	$_____	
20.	Miscellaneous Work: All other work, equipment, materials, tools, labor, incidentals, and other costs to accomplish all Work within the Scope of this Contract and not otherwise included in this Bid Form; however, the Lump Sum Amount for this Bid Form line-item shall not exceed ten (10) percent of the Total Lump Sum Bid Amount.	$_____	
21.	Trench and Excavation Safety: Trench or Excavation Safety Systems applicable to this Contract, per Act 291 of the 1993 Arkansas General Assembly (as amended), including shoring protection system for improvements and protection of existing facilities.	$_____	
22.	SWPPP Preparation and Application: All work to prepare, submit, and receive approval from Arkansas Department of the Energy and Environment regarding a SWPPP for the project site. Includes conformances for all requirements including inspections, application, and maintenance of appropriate erosion control devices, measuring rainfall, close-out and removal of devices at the conclusion of construction.	$_____	
23.	Additional Excavation: When excavation has reached required subgrade elevations, notify engineer, who will make an inspection of conditions. If engineer determines that bearing materials at required subgrade elevations are unsuitable, continue excavation until suitable bearing materials are encountered and replace excavated material as directed by engineer. Backfill will be per specification section 312301.	$_____/CY	$_____
24.	Material Testing Allowance: For all invoices for laboratory testing and other costs shall be submitted to the Engineer for payment approval. All testing shall be performed by a reputable material testing firm approved by the Owner. Frequency, location, and types of testing shall be directed by the Contract Documents or as by the Engineer. Any payment for retests performed at the option of the Contractor due to non-compliance shall be borne by the Contractor.	$60,000	
25.	Epoxy Injection Allowance: All existing structures scheduled for modification to be hydrostatically tested for water tightness. Any structures not passing the hydrostatic test will be injected.	$50,000	

TOTAL BASE BID FOR ITEMS 1 THROUGH 25

$_____

BID SCHEDULE – DEDUCTIVE ALTERNATES

Wynne Wastewater Treatment Improvements

Wynne Water Utilities

Wynne, Arkansas

Item No.	Description	Lump Sum Bid Price
DEDUCTIVE ALTERNATIVE A:		
A.	Land Application: All work, equipment, materials, and other costs related to the material and installation of the land application sprinkler system, including but not limited to, irrigation system, concrete bases, steel bollards, piping, valves, and all necessary appurtenances necessary, to complete and operable and serviceable installation as shown on the Drawings and required by the Specifications herein, except that equipment and installation shown in other items in the Bid Form, as shown on bid item 17.	$_____
	TOTAL BASE BID LESS DEDUCTIVE ALTERNATE A (BASE BID LESS DEDUCTIVE ALTERNATES A)	**$_____**
BASE BID LESS DEDUCTIVE ALTERNATE A **$_____**		

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete within **630 consecutive calendar days** after the date when the Contract Times commence to run as provided in contract documents and will be completed and ready for final payment in accordance with the Contract Documents within **660 consecutive calendar days** after the date when the Contract Times commence to run.

A. The contract time shall be demised in two periods as follows:

1. Construction Administration Period: Not more than 90 days from the Notice to Proceed

2. Construction Execution Period: Commence not later than 91 days from the Notice to Proceed until contract time expires.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 Attached bid documents shall be in accordance with Section 00 22 13 Bidder's Checklist; such items are attached hereto.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: *[Signature]* _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices: _____

_____

Telephone Number: _____

Contact Name and e-mail address: _____

_____

Bidder's License No.: _____

SECTION 017500

EQUIPMENT TESTING AND STARTUP

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide a competent field services technician of the manufacturers of all equipment furnished to supervise installation, adjustment, initial operation and testing, performance testing, final acceptance testing and startup of the equipment.

B. Perform specified equipment field performance tests, final acceptance tests and startup services.

1.2 RELATED WORK

A. Closeout Procedure is included in Section 017700.

B. Performance and acceptance testing and startup requirements are included in the respective sections of Divisions 22, 26, 27, 33, and 34.

1.3 SUBMITTALS

A. Submit name, address and resume of proposed field services technicians at least 30 days in advance of the need for such services.

B. Submit, in accordance with Section 013300, detailed testing procedures for shop tests, field performance tests and final acceptance tests as specified in the various equipment sections. Submittals shall include the following:

1. Test procedures shall be submitted at least 30 days in advance of the proposed test dates and shall include at least the following information:

a. Name of equipment to be tested, including reference to specifications section number and title
b. Testing schedule of proposed dates and times for testing
c. Summary of power, lighting, chemical, water, sludge, gas, etc, needs and identification of who will provide them
d. Outline specific assignment of the responsibilities of the Contractor and manufacturers' factory representatives or field service personnel
e. Detailed description of step-by-step testing requirements, with reference to appropriate standardized testing procedures and laboratory analyses by established technical organizations (e.g., ASTM, WPCF Standard Methods, etc)
f. Samples of forms to be used to collect and record test data and to present tabulated test results

2. Copies of test reports upon completion of specified shop, performance and acceptance tests. Test reports shall incorporate the information provided in the test procedures submittals and modified to reflect actual conduct of the tests and the following additional information:

a. Copy of all test data sheets and results of lab analyses
b. Summary comparison of specified test and performance requirements vs actual test results

c. Should actual test results fail to meet specified test and performance requirements, describe action to be taken prior to re-testing the equipment

3. Copies of the manufacturer's field service technician's report summarizing the results of his/her initial inspection, operation, adjustment and pre-tests. The report shall include detailed descriptions and tabulations of the points inspected, tests and adjustments made, quantitative results obtained, suggestions for precautions to be taken to ensure proper maintenance, and the equipment supplier's Certificate of Installation in the format specified herein.

1.4 REFERENCE STANDARDS

A. American Water Works Association (AWWA)

1. AWWA C561 – Standard for Fabricated Stainless Steel Slide Gates

B. American Society for Testing and Materials (ASTM)

1. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings
2. ASTM A249 – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
3. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes
4. ASTM B98 - Standard Specification for Copper-Silicon Alloy Rod, Bar and Shapes
5. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
6. ASTM F594 - Standard Specification for Stainless Steel Nuts

C. Water Pollution Control Federation (WPCF)

D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.5 QUALITY ASSURANCE

A. Field service technicians shall be competent and experienced in the proper installation, adjustment, operation, testing and startup of the equipment and systems being installed.

B. Manufacturers' sales and marketing personnel will not be accepted as field service technicians.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 PRELIMINARY REQUIREMENTS

A. After installation of the equipment has been completed and the equipment is presumably ready for operation, before it is operated by others, the manufacturer's field service technician shall inspect, operate, test and adjust the equipment. The inspection shall include at least the following points where applicable:

1. Soundness (without crack or otherwise damaged parts)
2. Completeness in all details, as specified and required
3. Correctness of setting, alignment and relative arrangement of various parts
4. Adequacy and correctness of packing, sealing and lubricants

B. The operation, testing and adjustment shall be as required to prove that the equipment has been left in proper condition for satisfactory operation under the conditions specified.

C. Upon completion of this work, the manufacturer's field service technician shall submit a signed report of the results of his/her inspection, operation, adjustments and tests.

3.2 WITNESS REQUIREMENTS

A. Shop tests or factory tests may be witnessed by the Owner and/or Owner's representatives, as required by the various equipment specifications.

B. Field performance and acceptance tests shall be performed in the presence of the Owner, the Owner's designed personnel and/or Owner's representatives.

3.3 STARTUP AND ACCEPTANCE OF THE PUMP STATION AND RELATED SYSTEMS

A. General Requirements

1. Successfully execute the step-by-step procedure of startup and performance demonstration specified herein.
2. The startup and performance demonstration shall be successfully executed prior to Substantial Completion and acceptance by the Owner of the treatment plant and its related systems.
3. All performance tests and inspections shall be scheduled at least 5 working days in advance or as otherwise specified with the Owner and the Engineer. All performance tests and inspections shall be conducted during the work week of Monday through Friday, unless otherwise specified.

B. Preparation for Startup

1. Upon completion of the pump station facilities and all its related systems, all channels and wetwells shall be flushed with water and hydraulically checked for leaks, cracks, and defects in accordance with Section 014000.
2. All mechanical and electrical equipment shall be checked to ensure that it is in good working order and properly connected. Preliminary run-ins of the various pumps, compressors, and other remaining equipment shall be made. All systems shall be cleaned and purged as required. All sumps, tanks, basins, chambers, pump wells and pipelines which are hydraulically checked shall be drained and returned to their original condition once the water testing is complete.
3. All instruments and controls shall be calibrated through their full range. All other adjustments required for proper operation of all instrumentation and control equipment shall be made.
4. Perform all other tasks needed for preparing and conditioning the wastewater treatment facilities for proper operation.
5. No testing or equipment operation shall take place until it has been verified by the Engineer that all specified safety equipment has been installed and is in good working order.
6. No testing or equipment operation shall take place until it has been verified by the Engineer that all lubricants, tools, maintenance equipment, spare parts and approved equipment operation and maintenance manuals have been furnished as specified.

C. Facilities Startup

1. Startup period shall not begin until all new pump station facilities and equipment have been tested as specified and are ready for operation. The Owner shall receive spare parts, safety equipment, tools and maintenance equipment, lubricants, approved operation and maintenance data and the specified operation and maintenance instruction prior to the startup with raw water. All valve tagging shall also be complete prior to this startup.
2. Demonstrate a seven consecutive 24-hour day period of successful operation of the facility as a prerequisite of Substantial Completion and Acceptance.
3. In the event of failure to demonstrate satisfactory performance of the facility on the first or any subsequent attempt, all necessary alterations, adjustments, repairs and replacements shall be made. When the facility is again ready for operation, it shall be brought on line and a new test shall be started. This procedure shall be repeated as often as necessary until the facility has operated continuously to the satisfaction of the Owner and Engineer, for the specified duration.
4. The Owner will furnish all operating personnel (other than vendor's or subcontractor's service personnel) needed to operate equipment during the final test period; however, said personnel will perform their duties under Contractor's direct supervision. Until performance tests are completed and units and systems are accepted by the Owner as substantially complete, the Contractor shall be fully responsible for the operation and maintenance of all new facilities.
5. The Owner will provide all necessary chemicals and electricity. However, the Contractor shall provide all necessary personnel of the various construction trades, i.e., electricians, plumbers, etc, and field service personnel of the major equipment suppliers on an 8 hour per day basis at the facilities and on a 24 hour per day basis locally during the startup period. Major equipment suppliers shall include, but not be limited to, the following:

    a. Instrumentation and Control Equipment
    b. Barscreens
    c. Grit Removal Equipment
    d. Oxidation Ditch Mixing Equipment
    e. Clarifiers
    f. UV Disinfection Equipment
    g. Blowers
    h. Generator ATS
    i. Load Bank
    j. All Pumping Equipment
    k. Mechanical Bar Screens and Screenings Conveyors/Compactors
    l. All Sluice Gates, Slide Gates, Valves, and other related hydraulic devices
    m. All Electrical Supply Equipment
    n. All HVAC Equipment

6. Do not, at any time, during startup allow the facility to be operated in a manner which subjects equipment to conditions that are more severe than the maximum allowable operating conditions for which the equipment was designed.
7. If the contractor requires any additional start up trips from equipment manufacturers will be paid for by the contractor.
8. All fuel for Generator Start Up will be supplied by the Owner.

END OF SECTION

EQUIPMENT SUPPLIER'S CERTIFICATE OF INSTALLATION

Owner _____

Project _____

Contract No.

EQUIPMENT SPECIFICATION SECTION

EQUIPMENT DESCRIPTION

I, _____ Authorized representative of
(Print Name)

_____
(Print Manufacturer's Name)

hereby CERTIFY that _____
(Print Equipment Name and Model with Serial No.)

_____

installed for the subject project has (have) been installed in a satisfactory manner, has (have) been tested and adjusted, and is (are) ready for final acceptance testing and operation on :

Date_____

Time_____

CERTIFIED BY: _____
(Signature of Manufacturer's Representative)

Date:_____

SECTION 034130

PRECAST CONCRETE HOLLOW-CORE SLABS

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Work Included: Furnish and install all precast concrete hollow core slabs, bearing pads.

B. and other items necessary to complete the work shown on Drawings and as specified.

C. herein, including all necessary prestressing and mild steel reinforcement and grouting

D. hollow core slab joints. Perform all required tests and inspections.

E. Related Work Specified Elsewhere:

F. Concrete reinforcement: Section 032000

G. Cast-in-place concrete: Section 033000

1.02 MEASUREMENT AND PAYMENT

A. No separate payment will be made for work performed under this Section. Include the cost for this work in the lump sum Base Bid.

1.03 SUBMITTALS

A. Concrete Mix Design: Submit to Owner's testing laboratory 2 copies of proposed mix designs, prepared in accordance with ACI 301, Chapter 4. Each proposed mix design shall be accompanied by a complete standard deviation analysis based on at least 30 consecutive strength tests or by 3 laboratory trial mixtures with confirmation tests.

B. Shop Drawings: Manufacturer shall submit shop drawings to Architect for review prior to fabrication, showing complete information for manufacture and installation of precast concrete units. Indicate setting plan, member dimensions, camber, cross-sections; location, size, and type of reinforcement; openings; and special reinforcement and lifting devices necessary for handling and erection. Each unit shall be identified by a standard mark to be listed in a schedule on manufacturer's erection plan and placed legibly on each piece at the time of manufacture. Show location and details of anchorage devices, if any, to be embedded in other construction and furnish templates, if required, for placement. Show sequence and method of installation. Shop drawings shall be prepared under supervision of, and sealed by, a Licensed Professional Engineer, licensed in the State of Arkansas.

C. Calculations: Manufacturer shall submit to Architect 3 copies of complete design calculations, prepared and sealed by a Licensed Professional Engineer, licensed in the State of Arkansas, for all units. Calculations shall indicate assumed loading, material strengths, stresses, size and location of reinforcement, cambers and deflections. Design precast units to support live and dead loads shown of Drawings, in addition to handling and erection stresses, In compliance with applicable codes and

governing authorities. Shop drawings submitted without corresponding calculations will be returned as an incomplete submittal. Manufacturer's standard load tables, if submitted, shall be sealed by a Licensed Professional Engineer. Calculations will be retained for Architect's record, and will not be approved or returned.

1.04 QUALIFICATIONS

A. Fabricator Qualifications: A minimum of 5 years successful experience in the fabrication of precast concrete units similar to units required for this project. Fabricator must have sufficient production capacity to produce required units without causing delay in work. Fabricator shall be an active member of Precast Concrete Institute and participate in its Plant Certification Program.

B. Erector Qualifications: Erector shall have a minimum of 5 years successful experience in erection of precast concrete units similar to units required for this project.

1.05 CODES AND STANDARDS

A. Latest adopted edition of all standards referenced in this Section shall apply, unless noted otherwise. In case of conflict between Contract Documents shall govern. In case of conflict between Contract Documents and Building Code, the more stringent shall govern.

B. Codes and Standards: Comply with provisions of the latest edition of the following codes, Specifications and standards, except as otherwise indicated:

1. ACI 301, "Specifications for Structural Concrete for Buildings."

2. ACI 311, "Recommended Practice for Concrete Inspection."

3. ACI 315, "Manual of Standard Practice for Detailing Reinforced Concrete Structures."

4. ACI 318, "Building Code Requirements for Reinforced Concrete."

5. ACI 304. "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete."

6. Concrete Reinforcing Steel Institute, "Manual of Standard Practice."

7. PCI MNL-116, "Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products."

1.06 PROPORTIONING AND DESIGN OF MIXES

A. Proportion mixes and submit appropriate mix designs, when requested. Show record of compressive tests, in accordance with requirements of Section 033000.

1.07 TESTING AND LABORATORY CONTROL BY MANUFACTURER

A. Cylinder Test: Conduct a compressive strength test in accordance with ASTM C 31 and

B. C 39. One set of cylinders shall be taken from each line cast in any one day, but not less than 1 such test for each 100 cubic yards poured. Compressive strength test shall consist of 5 specimen cylinders taken from concrete near point of deposit and cured under plant conditions. Test 2 cylinders at 7 days, 2 cylinders at 28 days, and retain 1 cylinder for further testing as may be required.

C. Slump Test: Slump shall conform to limits shown on approved mix designs.

D. Air Content: Determine, where applicable, for each set of compressive cylinders In accordance with ASTM C 173.

E. Aggregate Testing: Make periodic sampling and testing of stockpiled aggregates to assure quality, uniformity, and conformance to Specifications.

F. Concrete Temperature: Determine each time a set of compression cylinders is made and hourly when air temperature is 40º F. and below or 90º F. and above.

G. Inspection: Perform plant inspections of formwork and reinforcement placement prior to casting each member. Inspect all members after casting for conformance with contract documents and shop drawings.

H. Load Test: When there is evidence that strength of precast concrete units does not meet Specification requirements, the manufacturer shall replace units of suspect strength or, if acceptable to Architect, load test units in accordance with requirements of ACI 318, Chapter 20. Load tests shall be performed at manufacturer's plant.

1.08 TESTING AND INSPECTION BY OWNER'S TESTING LABORATORY

A. Refer to Section 01410.

1.09 DESIGN

A. Precast concrete manufacturer shall design members in accordance with criteria given on Drawings.

1.10 SUBSTITUTIONS

A. Drawings and Specifications are based on standard or modified precast concrete units, as established by PCI. Units of a size or configuration other than shown on Drawings may, if approved in writing by Architect prior to bid date, be submitted for consideration. Cost of any and all changes, as may be required on the project by acceptance of a substitute precast unit, shall be paid by Contractor. This also applies to cost of any required structural design changes as well as changes in labor and materials.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Concrete mix for hollow core slabs shall obtain a minimum 28-day compressive strength of 5000 psi.

B. Portland Cement: Non-staining, Type I or III, Portland Cement, conforming to ASTM C 150. Use only 1 brand of cement throughout work for each type of unit.

C. Lightweight Coarse Aggregate: Expanded shale or expanded clay conforming to ASTM C 330, if applicable.

D. Fine Aggregate: Clean, sharp, manufactured river sand conforming to ASTM C 33, washed and screened free of loam, clay, or other deleterious substances.

E. Water: Clean, fresh, free from oil, acid, organic matter, or other deleterious substances.

F. Admixtures: Produced by established, reputable manufacturers and used in strict compliance with manufacturer's recommendations. Do not use admixtures which have not been incorporated and tested in accepted mixes, unless otherwise authorized in writing by Architect.

G. Cement-dispersing, Water-reducing Admixture: Conforming to ASTM C 494, Type A, free of set-accelerating or set-retarding compounds, chlorides, fluorides, or nitrates.

H. Air-entraining Admixture: Conforming to ASTM C 260, In sufficient quantity to assure controlled entrainment of air in concrete, as specified or indicated on Drawings.

I. Calcium Chloride: Do not use calcium chloride or admixtures containing calcium chloride in concrete mix.

2.02 REINFORCEMENT

A. Deformed Bars: Conform to ASTM A 615, Grade 60.

B. Strand: Uncoated, 7 wire, 3/8" to ½" diameter, low-relaxation, 250 or 270 ksi strand, conforming to ASTM A 416 or A 416A. Strand supplier shall certify, in writing to precast plant that all strand meets or exceeds ACI requirements regarding bond and development as evidence by laboratory tests.

2.03 GROUT

A. Sand/Cement Grout: A mixture of 1 part Type I Portland Cement and 3 parts clean natural sand, conforming to ASTM C 33.

2.04 FORM MATERIALS

A. Standard extrusion casting beds of dimensions shown on Drawings and in such repair as to produce acceptable surfaces.

2.05 CURING COMPOUND

A. Conforming to ASTM C 309, with a water retention capacity not exceeding a loss of 0.055 gm/cm^2 when used at a coverage of 250 square feet per gallon and tested in accordance with ASTM C 156. Curing compound, if used, shall be conclusively demonstrated not to inhibit bonding qualities of toppings, paint, or other subsequent coating and shall be approved by Architect prior to use.

2.06 BEARING PADS

A. Bearing pads shall be continuous, 1/8" thick, 3" wide KOROLATH.

2.07 ACCESSORIES

A. Clips hangers and other accessories as required for proper installation of precast units and for support of subsequent construction.

PART 3 EXECUTION

3.01 MANUFACTURING REQUIREMENTS

A. Concrete Properties: Concrete strength, density and other properties shall be shown on approved mix design.

B. Admixtures: Use water-reducing admixtures, in strict compliance with manufacturer's directions. Admixtures to increase cement dispersion or provide increased workability for low–slump concrete, may be used at Contractor's option (subject to Architect's approval). When admixtures are used, a reduction in specified minimum cement content of concrete mixes will not be permitted. Use amounts of admixtures as recommended by admixtures manufacturer for climatic conditions prevailing at time of placing. Adjust quantities of admixtures as required to maintain quality control.

C. Casting: Hollow core slab units shall be machine extruded, maintaining required dimensions within specified tolerances.

D. Cold Weather Placing:

1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing action, or low temperatures in compliance with ACI 306 and as herein specified.

2. When air temperature has fallen or is expected to fall below 40º F., uniformly heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 50º F. and not more than 80º F.

3. Do not use frozen materials or materials containing ice or snow.

4. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in writing by Architect.

E. Hot Weather Placing:

1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

2. Cool ingredients before mixing to maintain concrete temperature, at time of placement, below 90 degrees F. Mixing water may be chilled, or chopped ice may be used to control concrete temperature provided water equivalent of the ice is calculated as part of total amount of mixing water.

3. Do not use retarding admixtures without written acceptance of Architect.

F. Finishing: Comply with Division III, of PCI MNL-116. Formed surfaces shall have standard plant finish. Small surface holes caused by air bubbles, normal form joint

marks, and minor chips and spalls will be tolerated, but no major or unsightly imperfections, honeycomb, or structural defects will be permitted.

G. Curing and Detensioning:

1. All precast units shall be moist cured until concrete has reached its design release strength as established by test cylinders.

2. Steam or pressure curing may be used to accelerate period of curing. Entire top surfaces shall be exposed to fully saturated humidity. Recording thermometers shall be located at approximately 50-0" intervals along pretensioning beds to maintain a continuous record of intervals along pretensioning beds to maintain a continuous record of curing temperature, which shall not exceed 190º F.

3. Total initial prestressing force shall be maintained between anchorages until concrete has reached an average compressive strength equal to calculated release strength, as determined by compressive cylinder tests made for each continuous pour. After required strength has been attained tension in the strands shall be gradually released to concrete and the strands cut off using a sequence and pattern to prevent shock or unbalanced loading.

H. Strength Deficiencies: Strength of precast concrete units will be considered potentially deficient if manufacturing processes fail to comply with any of the requirements which may affect strength of precast units, including the following conditions:

1. Failure to meet compressive strength test requirements.

2. Reinforcement, pretensioning, and detensioning of tendons of prestressed concrete not conforming to specified fabrication requirements.

3. Concrete curing and protection of precast units against extremes in temperature, not as specified.

I. Preparation for Other Trades: Do any cutting, notching, forming, and drilling of precast items required for installation of work of other trades (as shown on approved shop drawings).

J. Fabrication Tolerances:

1. Dimensional tolerances shall be as outlined in Division VI, of the PCI MNL-116. Differential camber between adjacent units shall not exceed ½" regardless of whether they are the same or different designs. Units which do not comply shall be repositioned or replaced. Shimming at bearings shall be done only when approved by Architect. In the event of a conflict between Specifications and PCI MNL-116, Specifications shall govern.

2. Precast units having any dimension smaller or greater than required and outside specified tolerance limits, will be rejected if appearance or function of structure is impaired or if adjacent construction is adversely affected. Repair or remove and replace rejected units as required to meet construction conditions.

3.02 INSTALLATION

A. Delivery, Storage, and Handling:

1. Deliver precast concrete units to project site in such quantities and at such times as will ensure continuity of installation. Store units at site to ensure against cracking, distortion, staining, or other physical damage and so that markings are visible. Lift and support units at designated lift points only.

2. Deliver anchorage items which are to be embedded in other construction before start of such work.

3. Provide setting diagrams, templates, instructions, and directions as required for installation.

B. Job Conditions: Before start of erection operations examine all parts of supporting structure and conditions under which precast concrete work is to be erected. Make note of conditions detrimental to proper and timely completion of work. Do not proceed with installation until unsatisfactory conditions have been corrected in an acceptable manner. Verify dimensions of supporting structures at project site and adjust final shop drawings to reflect actual field dimensions.

C. Erection:

1. Elements shall be erected by competent tradesmen and accurately set in positions assigned to them on approved Installation and/or erection Drawings and securely anchored in final position. All joints shall conform to approved drawings.

2. Erection procedures shall be determined by Contractor and shall represent the safest procedures, methods, and sequences possible, consistent with Drawings and Specifications.

3. Do not install units until concrete has reached its 28-day design strength. Do not install topping until units have cured a minimum of 28 days.

4. Install bearing pads, where indicated, as precast units are being erected. Set pads on level, uniform bearing surfaces and maintain in correct position until precast units are placed. Hold pads back 1” from face of ledge, unless otherwise shown.

5. Grout all joints between units parallel to their length, with 3500 psi sand/cement grout, prior to pouring concrete topping. Mix grout so finish is level with top surface of precast units. Tape or form underside of joints as required to contain grout and prevent see page over adjacent surfaces or other construction. Strike off flush on top. Remove and dispose of excess grout.

6. Shores or leveling devices for adjusting camber between adjacent units shall not be removed before grout key has cured 24 hours. Do not place construction loads on units until grout has cured 24 hours.

7. Perform cutting and fitting of precast units as required for passage of other projecting or adjacent work, but only as approved by manufacturer. Provide straight and clean cuts without breaking or spalling edges. Before cutting, all

openings shall be approved by Architect. Do not cut any reinforcing steel, unless acceptable to precast unit manufacturer and Architect. Reinforce edges of cut openings where required to maintain structural integrity of precast units.

8. Holes for mechanical openings shall be cut with a saw or core drilled, by experienced tradesmen, only in locations shown on approved shop drawings or as otherwise approved by Architect. Do not cut or damage prestressing strands.

9. Locate units on supporting construction to provide a minimum end bearing length of 2” on bearing pad, except as otherwise shown on Drawings.

10. Accessories: Install clips, hangers, and other accessories required for erection of precast units to support members and backup materials.

D. Conduct Inspections, perform testing, and make repairs or replace unsatisfactory precast units as required.

E. Damaged Material: Any cracked or broken items shall not be set, but shall be replaced with satisfactory work. Patching of minor defects, by skilled tradesmen, will be permitted but covering large defects or those which affect appearance or structural integrity of the member, will not be permitted. If approved by Architect, cracks shall be repaired by pressure-injecting epoxy grout.

Protection: Take proper precautions to prevent work of other trades over which, or against which, precast concrete work occurs.

F. Erection Tolerances: Install precast units within tolerance limits recommended in PCI Design Handbook, Third Edition, Section 8.3.

G. Scaffolding: Furnish scaffolding required for the installation of precast concrete items. Make same available to other trades required to execute work in conjunction with precast work. Scaffolding shall be constructed and erected in a safe and substantial manner, conforming to all governing ordinances.

END OF SECTION

SECTION 071314

VERTICAL WALL WATERPROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.

B. Application of rolled, self-adhering waterproofing membrane system.

C. Waterproofing for the RAS/WAS Pump Station.

1.2 REFERENCES

A. ASTM D 146-97 - Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Fabrics Used in Roofing and Waterproofing.

B. ASTM D 412-98a(2002)e1 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.

C. ASTM D 570-98 - Standard Test Method for Water Absorption of Plastics.

D. ASTM E 96-00e1 (Method B) - Standard Test Methods for Water Vapor Transmission of Materials.

E. ASTM E 154-99 - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

1.3 SUBMITTALS

A. Comply with Section 013300 - Submittal Procedures.

B. Submit manufacturer's product data and application instructions.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Store materials in a clean dry area in accordance with manufacturer's instructions.

C. Store adhesives and primers at temperatures of 40°F and above to facilitate handling.

D. Store membrane cartons on pallets.

E. Do not store at temperatures above 90°F for extended periods.

F. Keep away from sparks and flames.

G. Completely cover when stored outside. Protect from rain.

H. Protect materials during handling and application to prevent damage or contamination.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Product not intended for uses subject to abuse or permanent exposure to the elements.

B. Protect rolls from direct sunlight until ready for use.

C. Do not apply membrane when air or surface temperatures are below 40°F.

D. Do not apply to frozen concrete.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Rolled, Self-Adhering Waterproofing Membrane:

1. Polymeric waterproofing membrane protected by release paper on cross-laminated polyethylene carrier film with exposed polymeric membrane strips on both sides protected by pull-off release strips. Waterproofing membrane shall have the following characteristics:

a. Compliance: AREMA Specification Chapter 29 - Waterproofing.
b. Thickness:
   1) Carrier Film: 4 mils.
   2) Polymeric Membrane: 56 mils.

c. Tensile Strength, ASTM D 412, Die C:
   1) Carrier Film: 5,900 psi minimum.
   2) Polymeric Membrane: 590 psi minimum.

d. Elongation, ASTM D 412, Die C: Polymeric Membrane: 455 percent minimum.
e. Peel Adhesion:
   1) Dry: 7 to 11 pounds/inch width, minimum.
   2) Wet: 7 to 12 pounds/inch width, minimum.

f. Pliability, ASTM D 146:
   1) 180 Degree Bend: Unaffected.
   2) 1 Inch Mandrel at -25°F: Unaffected.

g. Water Vapor Permeance, ASTM E 96, Method B
h. Water Absorption, ASTM D 570: 0.1 percent, 72 hours maximum.
i. Resistance to Hydrostatic Head: Equivalent to 240 feet of water.
j. Puncture Resistance, ASTM E 154: 67 pounds.
k. Exposure to Fungi, Soil Test: Pass, 16 weeks.
l. Color:
   1) Carrier Film: White.
   2) Polymeric Membrane: Black.

2. Waterproofing membrane shall be MEL-ROL® Waterproofing Membrane from W.R. Meadows, Inc., or approved equal.

2.2 ACCESSORIES

A. Primer:

1. Temperatures Above 40°F: MEL-PRIME™ Water Base Primer by W.R. Meadows, Inc., or approved equal.
2. Temperatures Above 20°F: MEL-PRIME™ VOC Compliant Solvent Base Primer or Standard Solvent Base Primer by W.R. Meadows, Inc., or approved equal.

B. Flashing and Fillets: MEL-ROL® Liquid Membrane by W.R. Meadows, Inc., or approved equal.

C. Pointing Mastic: Pointing Mastic by W.R. Meadows, Inc., or approved equal.

D. Corner Tape: Detail Strip by W.R. Meadows, Inc., or approved equal.

E. Waterproofing Protection Course: ASTM D6506, Type-1 Protection Course by W.R. Meadows, Inc., or approved equal.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Protect adjacent surfaces not designated to receive waterproofing.

B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions.

C. Do not apply waterproofing to surfaces unacceptable to manufacturer.

D. Concrete surfaces must be clean, smooth and free of standing water.

E. Patch all holes and voids and smooth out any surface misalignments.

3.2 APPLICATION

A. Apply waterproofing membrane system in accordance with manufacturer's instructions.

B. Ensure accessory materials are compatible with membrane and approved by membrane manufacturer.

C. Prime surfaces to be covered in one working day with applicable primer. Re-prime uncovered surfaces next day.

D. Inspect membrane before covering and repair as necessary. Cover tears and inadequate overlaps with membrane. Seal edges of patches with pointing mastic.

3.3 PROTECTION

A. Protect membrane with immediate application of waterproofing protection course. Use pointing mastic as an adhesive.

B. Backfill immediately using care to avoid damaging waterproofing membrane system.

END OF SECTION

SECTION 432359

SCREW CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 SUMMARY

A. Contractor shall furnish and install three screw centrifugal pumps. The screw centrifugal pumps shall be complete with all equipment specified herein; factory assembled.

B. All system components shall be furnished by a single supplier (unitary source). The factory-built pump, motor, frame package system shall be of standard catalog design, totally warranted by the manufacturer.

C. The factory-built pump skid package shall be manufactured by Vaughan, Hidrostal or pre-approved equal. Pumps shall be as specified below.

D. Pre-Approval Requirements:

1. In order to be considered an equal, the supplier must provide a detailed submittal package to the Engineer that includes all information as defined in Section 1.3 of this Section, including any exceptions taken to these documents. The cost of any re-design necessary for allowance of equal equipment shall be the responsibility of the equipment supplier at no additional cost to the Engineer and/or Owner.

2. To allow the Engineer to make a determination that said supplier is an equal, all information must be received fifteen (15) days prior to the opening of BIDs

E. The pump controls, VFDs, et al. for the pumps shall be provided by others, as specified herein, on the plans and in the specifications.

F. Pump Names: 70PMP101, 70PMP102, 70PMP103

1.2 REFERENCES

A. All interconnecting electrical conduit, wiring, VFDs and components shall be provided by the Contractor, as specified, on the plans and in Division 26 of the specifications.

B. All interconnecting communications wiring and components shall be provided by the Contractor, as specified, on the plans and in Division 27 of the specifications.

C. Publications listed below form part of this specification to extent referenced in the text by basic designation only. Consult latest edition of publication unless otherwise noted.

1. American National Std. Institute (ANSI) / American Water Works Assoc. (AWWA)

a.	ANSI B16.1	Cast iron pipe flanges and flanged fittings.
b.	ANSI/AWWA C115/A21.51	Cast/ductile iron pipe with threaded flanges.

2. American Society for Testing and Materials (ASTM)

a.	ASTM A48	Gray Iron Castings.
b.	ASTM A126	Valves, Flanges, and Pipe Fittings.
c.	ASTM A307	Carbon Steel Bolts and Studs.
d.	ASTM A36	Structural Steel.

3. National Electric Code (NEC) / National Electrical Manufacturers Assoc. (NEMA)

a.	NEC	National Electric Code.
b.	NEC 701	National Electric Code article 701.
c.	NEMA Std MG1	Motors and Generators.

4. Miscellaneous References

a. Ten-State Standards Recommended Standards for Sewage Works.
b. Hydraulic Institute Std for Centrifugal, Rotary and Reciprocating Pumps.
c. ISO 9001 International Organization for Standardization.

1.3 SUBMITTALS

A. Submit in accordance with Section 013300.

B. Submittal shall include shop drawings and support data as follows: Catalog cuts sheets reflecting characteristics for major items of equipment, materials of construction, major dimensions, motor and drive data, pump characteristic curves showing the design duty point capacity (GPM), head (FT), net positive suction head required (NPSHr), and hydraulic brake horsepower (BHP) at speed operational set points of 60%, 70%, 80%, 90% and 100%. Electrical components used in the motor shall be fully described.

C. Shop drawings shall provide layout of mechanical equipment, equipment weight, anchor bolt locations for the pump skid.

1.4 MANUFACTURER'S WARRANTY:

A. The manufacturer's warranty shall at a minimum cover:

1. A period of **twelve (12) months** commencing upon successful start-up, after authorized Manufacturer's start-up or **eighteen (18) months** from the date of delivery, whichever comes first.
2. The warranty period shall be inviolate regardless of any component provided within the equipment.
3. The Equipment Supplier's warranty shall cover all equipment, components and systems provided in or by the Equipment Supplier, exclusive of those components supplied by and/or installed by others independent of the Equipment Supplier.
4. The warranty shall provide for the Manufacturer to bear the full cost of labor and materials for replacement and/or repair of faulty or defective components so there shall be no cost incurred by the Owner for this work during the warranty period.
5. The Manufacturer's warranty policy is amended only by the items considered consumable such as lubricants and other maintenance items consumed by usage.
6. No assumption of contingent liabilities for any component failure during Manufacturer's warranty is made.
7. The warranty pertains only where the equipment has been operated in strict accordance with the Manufacturer's instructions and requirements. Evidence of misuse or modification to the equipment voids the warranty.

PART 2 - PRODUCTS

2.1 PERFORMANCE CRITERIA

A. One pump shall be designed to continuously pump return activate sludge (RAS) produced from a municipal wastewater treatment plant of between 0.2 to 1.2 % solids.

B. Power supply to pump motor: 480volt, 3 phase, 60 Hz

C. Required single pump performance is as follows:

1.	Rated Flow Capacity:	1,500 USgpm
2.	Variable Speed Operational Range	60% to 100%
3.	Static Head Pressure:	4.88-ft
4.	Total Discharge Head Pressure	7.50-ft.
5.	Efficiency at BEP (Minimum)	65%
6.	NPSHr	12.0-ft.
7.	Power, rated (max.)	10 HP
8.	Motor Rated Power (min.)	10 HP
9.	Motor Service Factor	1.15
10.	Shutoff Head (max.)	16.0-ft/
11.	Flow Capacity at 0.7 BEP (min.)	625 gpm
12.	Flow Capacity at 1.2 BEP (min)	1,620 gpm

D. Approved Pump Manufacturer and Model

1. Vaughan 10D-500-FD
2. Hidrosal F10K-HD
3. Pre-Approved Equal

2.2 GENERAL DESCRIPTION

A. Each pump shall be of heavy duty, screw centrifugal, vertical dry-pit and all appurtenances as identified herein. Each pump shall be intended for services requiring reliable solids handling, gentle pumping action, high efficiency and low net-positive suction-head required (NPSHr).

2.3 CASING, BACKPLATE AND WEARPLATE

A. The pump casing shall be of volute design, spiraling outward to the ANSI CL 125 flanged centerline discharge. Back pull-out design shall incorporate adjusting sleeves for accurate adjustment of impeller-to-suction cone clearance and shall allow removal of pump components without requiring disconnection of casing from inlet or discharge piping. A pressure tap shall be included on or near the discharge flange. Casing and backplate shall be cast ductile iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. Backplate will include a replaceable Rockwell C60 steel wear plate with internal cutter groove to cut against the impeller hub insert cutter, for removing fiber and debris from behind the impeller.

2.4 INLET SUCTION CONE

A. The inlet suction cone shall be cast ductile iron with all water passages to be smooth, and free of blowholes and imperfections for good flow characteristics. The suction cone shall incorporate a spiral groove to channel trapped fiber into the casing that would otherwise bind between the impeller OD and the inlet cone ID. The impeller to suction clearance shall be externally adjustable without requiring pump or piping disassembly or special tools.

2.5 IMPELLER

A. Shall be open channel, screw-centrifugal type. The impeller shall be cast ductile iron and shall be dynamically balanced. The single-passage impeller shall combine the action of a positive displacement screw and a single-vane centrifugal impeller.

2.6 INSERT CUTTER

A. An insert cutter, limited to clearing of thick solids at the rear of the impeller shall be provided with the pump.

2.7 SHAFT

A. The pump shaft and impeller shall be supported by rolling element bearings. Shafting shall be heat treated steel

2.8 BEARINGS

A. Shall be grease lubricated or oil-bath lubricated with ISO 46 hydraulic oil or approved equivalent. Shaft thrust in both directions shall be taken up by tapered roller bearings mounted in an adjustable position thrust bearing cartridge to permit wearplate to impeller hub cutter adjustment. Roller bearings shall be provided for radial loads. Cylindrical or spherical roller bearings shall be rated with a minimum L10 bearing life of 100,000 hours at any acceptable operating point on the performance curve

2.9 BEARING HOUSING

A. Shall be cast ductile iron, machined with piloted bearing fits for concentricity of all components. Bearing housing shall have oil bath lubrication using grease lubricated or ISO 46 hydraulic oil (or approved equivalent) and shall include a side mounted oil reservoir. Viton double lip seals riding on chromed and ground stainless steel shaft sleeves are to provide sealing at each end of the bearing housing.

2.10 SEAL

A. The mechanical seal is to be manufactured and warranted by the pump manufacturer.

B. Mechanical Seal system specifically designed to require no seal flush: The mechanical seal shall be located immediately behind the impeller hub to eliminate the stuffing box and maximize the flushing available from the impeller pumpout vanes. The seal shall be cartridge-type mechanical seal with Viton O-rings and silicon carbide (or tungsten carbide) faces. This cartridge seal shall be pre-assembled and pre-tested so that no seal settings or adjustments are required from the installer. Any springs used to push the seal faces together must be shielded from the fluid to be pumped. The cartridge shall also include a 17-4PH, heat-treated seal sleeve and ductile iron seal housing.

2.11 SHAFT COUPLING

A. Bearing housing and motor stool design is to provide accurate, self-aligning mounting for a C-flanged electric motor. Pump and motor coupling shall be T.B. Woods Sureflex elastomeric type and shall be protected with guards meeting OSHA requirements.

2.12 MOTOR AND GEAR REDUCER

A. The pump manufacturer shall provide a complete assembled package that includes a 30 HP, TEFC or dry-pit submersible type, inverter ready, 1.15 service factor, severe duty, class F insulation, 3 phase, 60 Hertz, 460V, 1170 RPM motor c face flange mounted in the vertical position.

2.13 ELASTOMERS

A. All elastomers shall be EPDM or Buna-N rubber unless otherwise approved.

2.14 FRAME

A. All items shall be assembled with a carbon steel base with lifting lugs.

2.15 PEDESTAL BASE

A. Each pump shall be provided an manufactured steel base plate specifically designed to accommodate the support of the pump and motor assembly that rigidly aligns with suction piping.

B. Pedestal Base shall be manufactured of 3/8-in. uniform thickness steel plate (min.) prepared and painted in accordance with the same coating as that of the pump assembly.

C. Pedestal base supports shall be bolted to the pump assembly with SS316 bolts, nuts, and washers so that the pump and motor assembly can be easily disconnected from the pedestal base and oriented in a manner to accept the suction and discharge orientation as required by the plan documents.

D. The pump base shall accommodate the manfactureres recommended anchorage assembly to the concrete pump base with the ability to receive grout.

E. The pump base shall have lifting lugs capable of withstanding the pump and motor assembly weight with a factor of safety of 2x that of the assembly wet weight. Lug shall be positioned to provide ease of rigging and placement for installation.

2.16 EXTERIOR COATINGS

A. All exterior coatings on all components shall be a two-part epoxy specifically meant for wastewater treatment plant service.

B. Touchup coating system (primer and paint) shall be provided to the Contractor to repair any damages to the coating caused by field installation.

2.17 NAME PLATE

A. All nameplates shall be 316L stainless steel and shall be attached to the pump giving the manufacturer’s model and serial number, rated capacity, head, speed and all pertinent data.

2.18 CONTROL SWITCHES

A. A high pump temperature (thermal switch) protection circuit shall be included on the pump motor to protect the pump from excessive temperature (thermal switch) (including seal kits) and shall be provided by the pump manufacturer. Each switch shall be 120V/60Hz/1P rated for a maximum of 5A and capable of communicating to a remote I/O or PLC. Conduit and communications wiring, remote I/O or PLC shall be by others.

B. A high pump torque/ overload switch protection circuit shall be included on the pump motor to protect the pump from excessive torque or overload (torque/ overload switch) (including seal kits) and shall be provided by the pump manufacturer. Each switch shall be 120V/60Hz/1P rated for a maximum of 5A and capable of communicating to a remote I/O or PLC. Conduit and communications wiring, remote I/O or PLC shall be by others.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Contractor shall off-load equipment using equipment of sufficient size and design to prevent injury or damage. The manufacturer shall provide written instruction for proper handling. Immediately after off-loading, contractor shall inspect complete skid and appurtenances for shipping damage or missing parts. Validate all pump serial numbers and parts lists with shipping documentation.

1. The contractor shall only lift pumps from designated lifting locations and in a manner approved by the manufacturer.
2. The Contractor shall verify that all motor/ pump housing bolts are secure prior to moving the equipment.

B. The Contractor shall install all pumps in accordance with the manufacturer's provided installation instructions.

C. Check motor and control data plates for compatibility to site voltage. Install and test the pump station ground prior to connecting line voltage to station control panel.

D. The Contractor shall check rotation of all pumps prior to placement of the pump in service.

E. The Contractor shall properly align the equipment inlet and outlet piping and install all valves in accordance with the plans.

F. All piping and valve supports shall be the responsibility of the Contractor.

G. All housekeeping pads shall be the responsibility of the Contractor.

H. The Contractor shall provide all proper wiring from the VFDs to the pump as well as all wiring from the pumps and associated apparatuses to the remote I/O and correspondingly to the PLC.

I. The Contractor shall touch up all coatings damaged during installation in a manner approved by the manufacturer.

3.2 FIELD QUALITY CONTROL

A. The Contractor shall provide the services of a factory trained representative for a period of one day on-site to perform initial testing and preoperative check-out, start-up of the pump skid, and to instruct the Owner's operating personnel in the operation and maintenance of the equipment. If the manufacturer's representative is not able to completely perform all tests and instructions to operating personnel due to operational problems with the pump station or equipment, then the Contractor and manufacturer shall provide services of the factory trained representative for additional time at no additional cost to the Owner.

3.3 OPERATIONAL TEST

A. Prior to acceptance by Owner, an operational test of all pumps, and control systems shall be conducted to determine if the installed equipment meets the purpose and intent of the specifications. Tests shall demonstrate that all equipment is electrically, mechanically, structurally, and otherwise acceptable, in optimum working condition and conforms to the specifications.

B. Observe and record operation of pumps, suction and discharge gauge readings, ampere draw, pump controls, and liquid level monitoring. Check calibration of all instrumentation equipment, test manual control devices, and automatic control systems.

C. Field tests performed by the Contractor and the manufacturer's representative shall demonstrate that each pumping unit has not been damaged by transportation or installation, has been properly installed, has no mechanical defect, is in proper alignment, has been properly connected, is free of overheating of any parts, is free of all objectionable vibration and noise, and is free of overloading of any parts.

D. The Contractor and factory trained representative shall perform field tests in the presence of the Owner's onsite resident project representative (RPR) to ensure the pump achieves the desired flows for each pumping unit. The in-situ flow rate and discharge pressure for each pump shall be recorded by the RPR and submitted to the Engineer. A electromagnetic flow meter as prescribed on the plans and specifications shall be used to determine the flow rate. A pressure transmitter described in the plans and specifications shall be used to determine the discharge pressure.

E. Pumps that do not achieve the flow rates in the approved submittal (as provided and in accordance with Section 013300) will not be accepted by the Owner.

3.4 OPERATIONS AND MAINTENANCE MANUAL (O&M)

A. It shall be the responsibility of the manufacturer to supply three (3) hard copies and one (1) electronic copy of the operations and maintenance manual thirty (30) days prior to the start of the scheduled training. The electronic copy shall be in an Adobe Acrobat™ .pdf format that contains an index that can be searched by the user. At a minimum, the completed O&M document shall contain detailed information on the following sections:

1. Submittal Documentation

    a. Installation instructions
    b. Equipment list
    c. Site specific drawings
    d. Points of contact

2. Process design criteria

    a. Normal operating parameters and scenarios
    b. Failure scenarios and emergency shut down procedures
    c. Safety

        1) MSDS
        2) Hazard Communications
        3) Mechanical Hazards
        4) Electrical Hazards
        5) Water Hazards

    d. Maintenance Requirements
    e. Maintenance Records
    f. Maintenance Schedules
    g. Maintenance Checklists
    h. Spare Parts List with all Required Contact Information

B. Upon completion of successful start-up, the manufacturer shall provide training by a minimum of one (1) qualified person for a minimum of 4 total hours (1/2 day). Qualified training personnel must have primary knowledge of the operation and maintenance of the process, with a minimum of 3 years primary experience with the equipment with similar design conditions. A schedule of training dates shall be submitted to the Owner a minimum of thirty-five (35) days prior to execution of such training days. At a minimum, the training shall also contain elements of verbal, visual and hands-on operations/ maintenance demonstration. The training representative should provide handout documentation for reinforcement of all hands-on operation. The training representative shall also provide a sheet for all trainees to sign in and sign out. Copies of the sign in and sign out sheets shall be provided to the Resident Project Representative. Due to the operation times of wastewater treatment facilities, training sessions may be required to be conducted in the evening, night, or early morning. Additionally, training sessions may need to be split sessions to accommodate for the continuous operation of the existing treatment facilities. The Owner shall respond to the manufacturer thirty (30) days prior to the execution of such training days and if necessary, re-scheduled training dates at no additional cost to the Owner. Three (3) hard copies and one (1) electronic copy of the operations and maintenance manual and one (1) hard copy of the training agenda must be submitted thirty (30) days prior to the start of the scheduled training.

END OF SECTION

SECTION 464318

NEFCO LAUNDER COVER

The NEFCO Launder Cover is designed to inhibit the growth of algae on the launder troughs and weirs of the clarifier tank by minimizing incident sunlight on these surfaces. In addition, the Cover is intended to contain odors and keep leaves and other airborne debris from entering the launder.

PART 1 - GENERAL

1.1 SUBMITTALS

A. Shop Drawings

1. Manufacturer's catalog information, descriptive literature, specifications and identification of materials of construction, including resins and glass fiber content and layout for FRP constructions.
2. Detailed drawings showing equipment fabrication, dimensions, method of attachment including number, locations and size of fasteners and weights of fabrications.
3. Manufacturer's recommended Cover dimensions, mounting configuration and location for each application.

B. Quality Control Submittals

1. Manufacturer's Certificate of Compliance.
2. Special shipping, storage and protection and handling instructions.
3. Manufacturer's written/printed installation instructions.
4. Must be manufactured in the U.S.A.
5. A list of ten installations of comparable size in operation for at least ten years.
6. Certify that the cover meets local building code specifications for wind load, including uplift and deflection.
7. Certified test reports of the physical and mechanical properties of the product. Each panel shall have the following minimum physical properties:

Property	Test	Value
Tensile Strength	ASTM D-638	18,900 psi
Flexural Strength	ASTM D-790	24,200 psi
Flexural Modulus	ASTM D-790	1.07×10^6 psi
Barcol Hardness	ASTM D-2853	45
Notched Izod	ASTM D-256	10 ft-lbs/in
Water Absorption	ASTM D-570	0.1%

1.2 WARRANTY

A. Manufacturer shall expressly warrant the Launder Cover System to be free of defects in materials and workmanship for a period of one year from the date of installation, exclusive of misuse, negligence or accident on the part of the installation contractors or owner.

1.3 COORDINATION

A. Manufacturer shall coordinate the Launder Cover design and installation requirements with the clarifier mechanism, scum box and launder effluent channel configurations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Materials, equipment and components in this section shall be the products of:

1. NEFCO, Incorporated, 8895 North Military Trail, Bldg. C, Suite 100, Palm Beach Gardens, FL 33410 (561-775-9303)

2.2 DESIGN

A. The Launder Cover shall consist of a system of molded fiberglass panels that are attached together to form a continuous cover over the launder trough, weir and scum baffle within the treatment tank. The Cover shall be designed and manufactured to inhibit incident sunlight from striking the surfaces of the launder and weir. Each Cover section shall be molded of UV-protected fiberglass and shall be opaque to sunlight. Individual sections shall be a minimum of four feet in length and curved to follow the curvature of the tank. The Cover shall extend over the trough and weir as far as possible and may extend to a point immediately inside the scum baffle so long as the Cover does not interfere with the sweep arm. The Cover shall be designed such that adjacent panels fit together properly and the completed Cover, when installed, forms a rigid structure and has a well-engineered and professional appearance.

B. Provision shall be made to support the Cover in such a manner that the panels are held securely in place, with the panels hinged to provide access to the launder and weir for inspection and maintenance. Neither the Cover nor the means used to support it shall interfere with effluent flow over the weir or within the trough. Cover supports shall not impede personnel from entering and traversing the launder. Cover supports that cantilever from the outer effluent launder wall without support at the weir wall are unacceptable.

C. Launder cover panels shall have a curved or arched shape over the width of the launder trough with sufficient radius to strengthen the panel and minimize possible deflections against snow loads.

D. The Cover shall be designed to open away from the operator and toward the center of the tank, or back toward the operator and outside of the tank. Each Cover segment shall consist of a fixed Mounting Section and two (2) Cover Sections, each connected to the Mounting Section by a continuous stainless steel hinge. The Mounting Section shall provide a rigid mount for the Cover Sections and ensure the proper fixed spacing between them.

1. If the Cover opens toward the center of the tank, the Mounting Section is fastened to the weir wall with FRP and/or stainless steel brackets, and extends inward to a point just inboard the scum baffle. The hinged Cover Sections extend outward toward the outer launder wall and swing open to allow inspection and maintenance of the launder and weir. The hinge point of the Cover is strategically positioned to maximize visibility of the launder and weir when the Cover is open. In the closed position, the Cover Sections rest on an FRP support flange attached to the outer launder wall.
2. If the Cover opens toward the outside of the tank, the Mounting Section is fastened directly to the outer launder wall and extends a minimal distance into the effluent channel. The Cover Sections extend inward toward the center of the tank and swing open for inspection and maintenance of the launder and weir. In the closed position the Cover Sections rest on stainless steel brackets mounted to the weir wall.

E. The hinged Cover sections can be designed to open in one of three configurations as described below:

1. This “A/B” design allows alternate panels to open independent of every other panel. Alternate panels have an integral tab at both sides that rests on the adjacent panel and covers the seams between panels. The panels adjacent to a middle panel must be opened before the middle panel opens.
2. This “Zipper” design is used where access to the launder is limited. Every panel has a tab at one side only that covers the seam with the adjacent panel. From any access point, every panel can be opened in sequential order and closed by reversing the order.
3. This “B/B” design allows every panel to open independently. Each cover panel has integrally molded, 2” downward flanges along each side of the panel, leaving a small space between closed panels. This space can be filled by a suitable gasket attached to the flange on one side of each panel.

F. Provision shall be made to secure the Cover in the closed position for safety and security. If the Cover opens toward the center of the tank, this is accomplished by means of an easily operated, spring-loaded latch mechanism that secures the hinged Cover Sections. If the Cover opens toward the outside of the tank, the Cover can be secured in the closed position by spring-loaded latch mechanism that secures to the brackets. Handles or lift rings may also be required for some panels. A means of limiting the travel of the hinged Cover sections, in the form of a molded resting tab on the mounting section, may also be provided to protect against damage. A locking pin can be provided if required to help lock the cover panel in the open position. Covers with inspection hatches or cleanout doors are unacceptable.

G. Where the circumference of the trough is interrupted by a bridge-support or another obstacle, a fixed panel(s) shall be installed over the trough beneath the support such that the surface of the Cover is continuous around the entire tank. Alternatively, vertical panels may be installed on both sides of the bridge supports to block out sunlight.

H. The Cover system shall be designed to withstand common wind and snow loads but the entire Cover shall not be intended as a “walk-on” Cover designed to support the weight of plant personnel. Adequate stiffeners shall be integral to each panel, but panels reinforced with balsa or foamcores are not acceptable except where a single or double length reinforced walk-on section is used for safe entry to the launder.

2.3 MATERIALS

A. Each Cover panel shall be molded of fiberglass, reinforced plastics. The resins and fiberglass reinforcing materials shall be consistent with the environmental conditions and structural requirements of the application.

B. The resin shall be an industrial quality, isophthalic polyester resin with UV suppression additives, Corezyn COR75-AQ-010, or equivalent. The resin shall be pigmented to ensure that the resulting part is opaque. The glass reinforcement shall be chopped strand roving, 357-211 PLN CTC, or equivalent, with a minimum 1/2-inch strand length. Additional reinforcement in the form of stiffening ribs shall be added when necessary. The glass content of the finished laminate shall be not less than 30% by weight. The nominal thickness of each panel shall be 1/4 inch. The laminate shall consist of a 20 mil outer layer of marinequality white gelcoat, followed by chopped strand roving. The laminations shall be dense and free of voids, dry spots, cracks or crazes. All factory-trimmed edges shall be sanded and sealed. The finished laminate shall have a smooth, even appearance.

C. Fasteners, handles, hinge and latches shall be stainless steel. The weir wall mounting brackets shall be stainless steel, FRP or a combination of the two. The latch/handle shall be a spring-loaded mechanism with a positive detent positioned to indicate the closed/locked position of the handle. The latch is activated by pressing down on the spring-loaded handle and turning it. The magnetic latch is disengaged by pulling upward on the cover, ring or other fixture with sufficient force to overcome the force of the magnet.

D. The stainless-steel locking pin shall be secured to the mounting section molded resting tab. The locking pin is used to lock the cover in the open position while operators walk throughout the obstruction free launder.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The Cover sections shall be mounted to the weir wall on stainless steel or FRP brackets. The free end of each Cover panel shall be supported at the outer tank wall by an FRP support flange that attaches to the entire periphery of the tank.

B. The installation contractor shall install the Cover in accordance with the contract drawings, manufacturing drawings and manufacturer's recommendations. Field cutting of panels shall be allowed to complete the structure and accommodate in-tank obstructions. All cut ends shall be dressed as per the manufacturer's recommendations.

C. All of the fasteners and brackets required for the installation shall be Stainless Steel and shall be supplied by the Cover manufacturer. The support flange and weir wall brackets are installed using 3/8" x 3-3/4" expansion anchors with flat washers, lock washers and hex nuts.

END OF SECTION

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E7	HEADWORKS MIXER & POST AERATION BASIN PLAN
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E9	RAS-WAS PUMPS BUILDING I & C PLAN
E10	RAS-WAS PUMPS BUILDING CONDUIT ROUTING PLAN
E11	RAS-WAS PUMPS BUILDING FACILITY PLAN
E12	BLOWERS BUILDING I & C PLAN
E13	BLOWERS BUILDING CONDUIT ROUTING PLAN
E14	BLOWERS BUILDING FACILITY PLAN
E15	AEROBIC DIBESTOR PLAN
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H-2	MECHANICAL DETAILS AND SCHEDULES
P-1	PLUMBING PLAN

REV. NO.	DATE	DRWN	CHKD	REMARKS
2	07/2025	KEG	CAJ	ADDENDUM NO. 2

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS NO. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 13720 — CRAIG A. JOHNSON — 7/7/25

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE (0 — 1" — 1" = 1")

DESIGNED: MLU
DRAFTED: MAB
CHECKED: CAJ
DATE: JUN 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

INDEX OF SHEETS-1

JOB NO. 23016

SHEET NO. 00-G-01

P:\2023 Projects\23016 - Wynne WWTP Emergency Response\06 - CADD\WWTP IMPROVEMENTS\02 - Civil\GENERAL NOTES & CONTACTS.dwg 7/10/2025 3:48 PM

UPON ITS DISCOVERY.

GENERAL CONSTRUCTION NOTES - SITE WORK

1. SURVEY CONTROL POINTS ARE SHOWN ON THE DRAWINGS. ALL CONTROL POINTS AND LAND MONUMENTS LOCATED WITHIN AND ADJACENT TO THE CONSTRUCTION AREA SHALL BE PROTECTED DURING ALL PHASES OF CONSTRUCTION. ANY DISTURBED MONUMENTATION SHALL BE RE-ESTABLISHED BY A PROFESSIONAL LAND SURVEYOR. THE COST OF RE-ESTABLISHING THE MONUMENTATION SHALL BE BORNE BY THE CONTRACTOR.
2. RIM AND INVERT ELEVATIONS ON EXISTING MANHOLES AND DRAINAGE STRUCTURES ARE INCLUDED FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL NOT USE THESE ELEVATIONS AS BENCHMARKS UNDER ANY CIRCUMSTANCES. PRIOR TO CONSTRUCTION INVOLVING THESE STRUCTURES, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM ALL EXISTING ELEVATIONS.
3. TREES THAT DO NOT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED. CARE SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED ARE PROTECTED FROM CONSTRUCTION OPERATIONS. CONSTRUCTION EQUIPMENT SHALL NOT WORK WITHIN THE DRIP LINE OF TREES TO BE PROTECTED. REMOVED TREES ARE TO BE DISPOSED OF AS APPROVED BY THE OWNER, SEE GENERAL NOTES.
4. CRUSHER SCREENINGS (CRUSHER DUST) MAY NOT BE USED AS SELECT FILL IN EMBANKMENT.
5. THE CONTRACTOR SHALL MAINTAIN POSITIVE SITE DRAINAGE AT ALL TIMES.
6. THE GROUND SURFACE DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE GRADED TO DRAIN AWAY FROM THE DISTURBANCE. ALL ROCK AND DEBRIS (2" DIAMETER AND LARGER) SHALL BE REMOVED AND DISPOSED OF OFF THE JOB SITE.
7. ALL DISTURBED AREAS SHALL BE RESTORED WITH A 4-INCH (4") LAYER OF TOPSOIL AND SOLID SOD OR SEED, FERTILIZER, AND MULCH AS SPECIFIED. AREAS TO RECEIVE SOLID SOD ARE DESIGNATED ON THE DRAWINGS. ALL OTHER AREAS WILL BE SEEDED.
8. WHERE IT IS NECESSARY TO CUT EXISTING ASPHALT OR CONCRETE PAVEMENT FOR TRENCHING, PAVEMENT REPAIR OR MATCHING NEW CONSTRUCTION, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT TO PROVIDE A STRAIGHT EDGE, AND SMOOTH TRANSITION.
9. THE CONTRACTOR SHALL DE-WATER STRUCTURAL AND TRENCH EXCAVATION IN ACCORDANCE WITH THE SPECIFICATIONS.
10. THE CONTRACTOR SHALL, BY REPAIR OR REPLACEMENT, RETURN TO EQUAL OR BETTER CONDITION ALL PAVEMENT, FENCES, LAWNS, UTILITIES, AND OTHER ITEMS DAMAGED BY THIS CONSTRUCTION ACTIVITY OR OPERATIONS.

11. There are an estimated 18 light pole basin to be demolished

12. All structural walls to be demolished, walls will be cut 2' below the surface and filled with sand. If the structure could hold water, the floor of the structure is to have holes cut in the floor.

TESTING SHALL INCLUDE HYDROSTATIC TESTING AS REQUIRED IN THE SPECIFICATIONS.

7. THE CONTRACTOR SHALL MAINTAIN ALL ADJACENT WATER LINES IN SERVICE DURING CONSTRUCTION, EXCEPT AS ALLOWED BY THE OWNER AND THE ENGINEER. IN ALL CASES, THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, PIPE SUPPORT, AND/OR TRENCH BOXES TO MAINTAIN THE INTEGRITY OF THE EXISTING PIPING.
8. ALL SITE PIPING THAT CONNECTS TO STRUCTURES SHALL INCLUDE A DOUBLE FLEXIBLE PIPE CONNECTION TO ACCOMMODATE DIFFERENTIAL SETTLING OF THE STRUCTURE. CONCRETE ENCASED PIPES UNDER STRUCTURES SHALL BE TERMINATED OUTSIDE THE STRUCTURE WITH A DOUBLE FLEXIBLE CONNECTION. THE DOUBLE FLEXIBLE CONNECTION SHALL BE A MJ X MJ SLEEVE JOINT OR DOUBLE MJ BELL, NO MORE THAN 24 INCHES APART.
9. MAINTAIN TEN (10) FEET HORIZONTAL DISTANCE BETWEEN WATER MAIN AND STORM DRAIN OR SANITARY SEWER MAIN, AS A MINIMUM. SHALL FULLY COMPLY WITH THE ARKANSAS RULES PERTAINING TO PUBLIC WATER SYSTEMS SECTION XIV PART A.
10. STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS AND BOTH PIPES SHALL BE DUCTILE IRON (DI). WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER A WATER MAIN, THE CRITERIA FOR MINIMUM SEPARATION BETWEEN LINES AND JOINTS IN THE ABOVE SHALL BE REQUIRED AND BOTH PIPES SHALL BE DUCTILE IRON IRRESPECTIVE OF SEPARATION. DUCTILE IRON IS NOT REQUIRED FOR STORM SEWERS. SHALL FULLY COMPLY WITH THE ARKANSAS RULES PERTAINING TO PUBLIC WATER SYSTEMS SECTION XIV PART A.

CONTACTS

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WYNNE WATER UTILITIES
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FACILITY LOCATION
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545 BOWDEN ST.
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ARKANSAS ONE CALL
800-482-8998 OR 811

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BROWN ENGINEERS
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FIRE MARSHAL

STATE FIRE MARSHAL'S OFFICE
BUILDING 9501
CAMP JOSEPH T. ROBINSON
NORTH LITTLE ROCK, AR 72199
501-683-6700

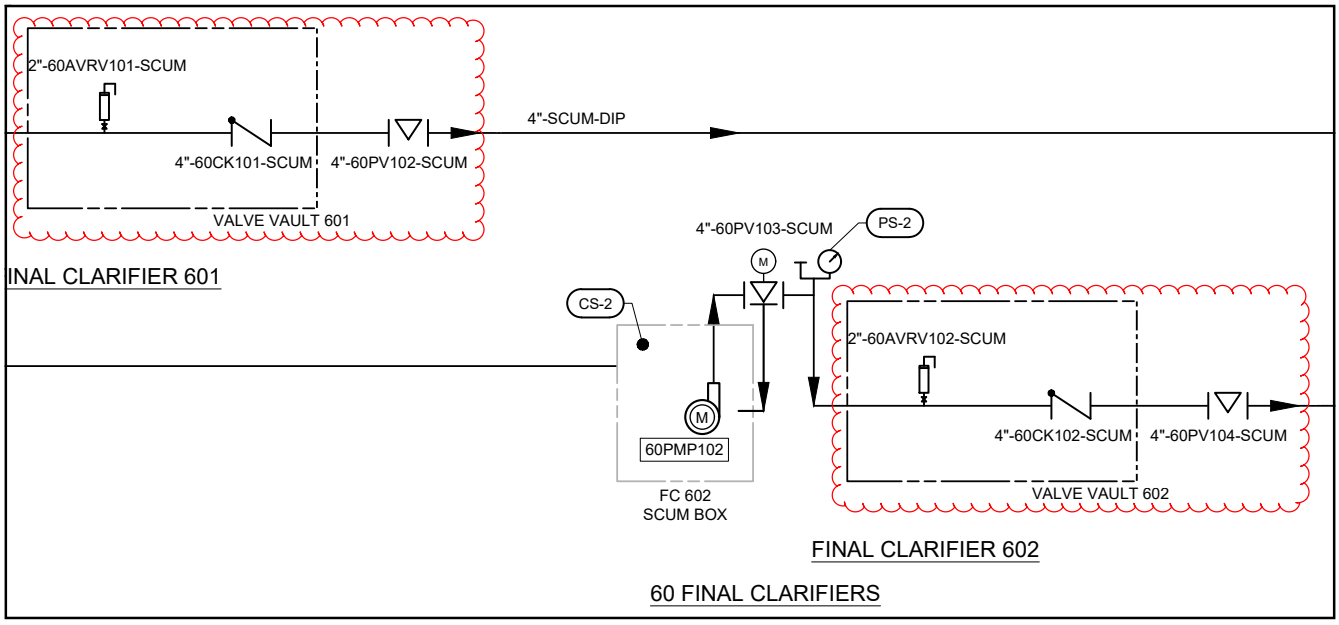
SIGNED: MLU AFTED: MAB ECKED: CAJ E: JUN 2025	**CRIST ENGINEERS, INC.** **CONSULTING ENGINEERS** 1 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72211 TELEPHONE: (501) 664-1552 FAX: (501) 664-8579 WWW.CRISTENGINEERS.COM	WYNNE, ARKANSAS WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT BID SET GENERAL NOTES & CONTACTS	JOB NO. 23016 SHEET NO. 00-G-02

0 1"

1" = 1"

CRIST ENGINEERS, INC. CONSULTING ENGINEERS 1 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72211 TELEPHONE : (501) 664-1552 WWW.CRISTENGINEERS.COM			
WYNNE, ARKANSAS WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT --			
DESIGNED: CAJ DRAFTED: MAB CHECKED: CAJ	CRIST JOB NO. 23016 SCALE: NOT TO SCALE	DATE 7/17/25	ADD. NO. 2 REF SHEET 00-G-02

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CONSULTING ENGINEERS
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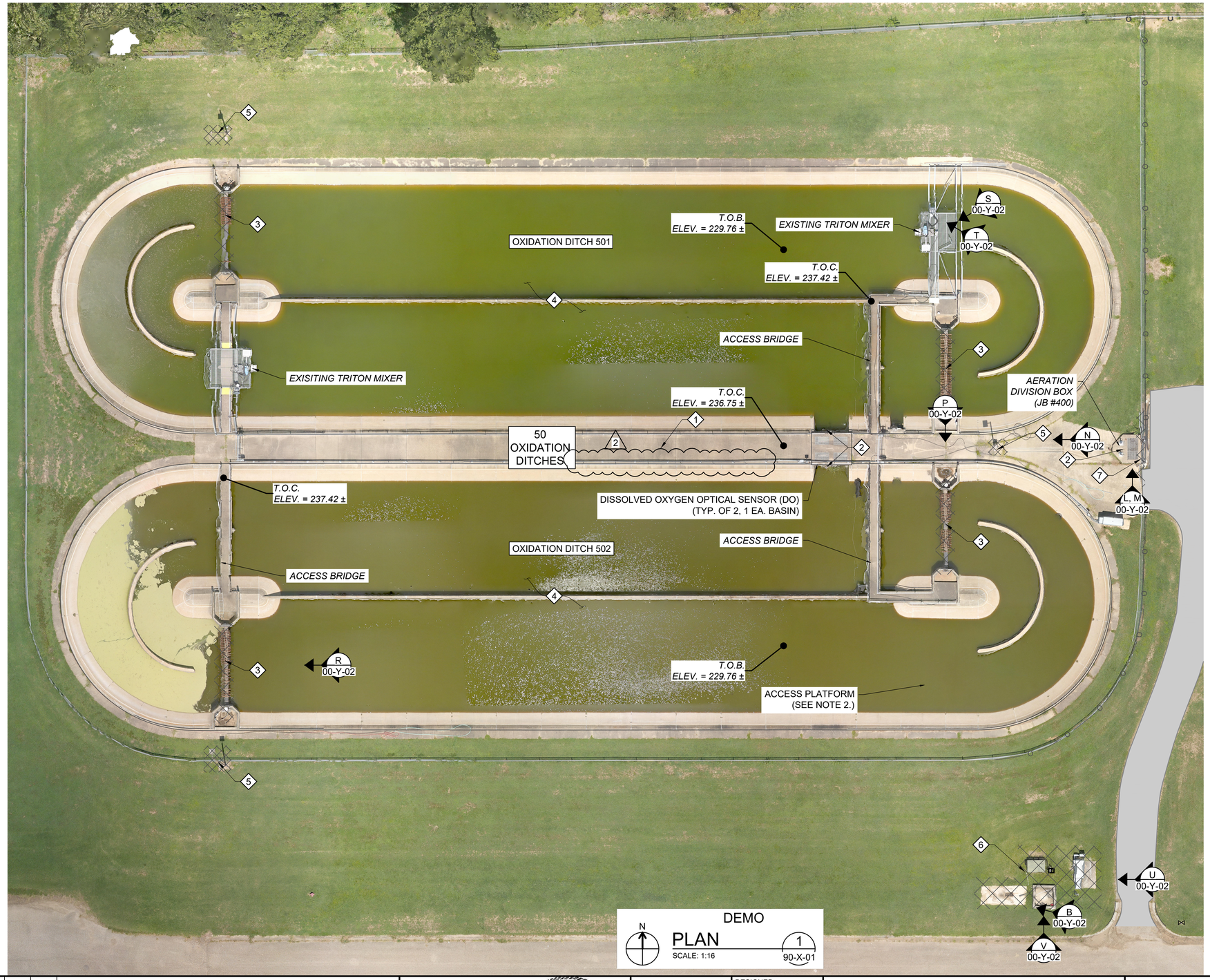
WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT
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DESIGNED: CAJ	CRIST JOB NO. 23016	DATE 7/17/25	ADD. NO. 2
DRAFTED: MAB	SCALE: NOT TO SCALE		REF SHEET 00-GI-09
CHECKED: CAJ			

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P:\2023 Projects\23016 - Wynne WWTP Emergency Response\06 - CADD\WWTP IMPROVEMENTS\05 - Mechanical\50 - AERATION BASIN PLANS & SECTIONS.dwg 7/14/2025 2:23 PM



DEMOLITION NOTES (#):

1. CONTRACTOR SHALL REMOVE AND REPLACE 40 L.F.± OF DAMAGED CONDUIT.
2. CONTRACTOR SHALL REMOVE AND REPLACE GATES AND OPERATORS.
3. REMOVE BRUSH ROTOR AERATOR AND DRIVE ASSEMBLY EQUIPMENT.
4. FULLY DRAIN BASINS AND INSPECT FOR DAMAGE.
5. REMOVE EXISTING LIGHT POLES.
6. REMOVE EXISTING ELECTRICAL EQUIPMENT AND CONCRETE STRUCTURES.
7. REMOVE AND REPLACE FENCING AND GATE AS REQUIRED.

REV. NO.	DATE	DRWN	CHKD	REMARKS
CAJ	07/2025	KEG	CAJ	ADDENDUM NO. 2

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10729 — CRAIG JOHNSON — 7/7/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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DRAFTED: KEG
CHECKED: CAJ
DATE: JUN 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

OXIDATION DITCHES - DEMOLITION PLAN

JOB NO. 23016

SHEET NO. 50-X-01

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KEY	
NO.	STRUCTURE
10	BAR SCREEN STRUCTURE
20	SCREW PUMPS
30	GRIT REMOVAL
40	STORAGE BASIN (EQ)
50	OXIDATION DITCHES
60	PRIMARY CLARIFIERS
70	RAW / WAS PUMPS BUILDING
75	GRAVITY THICKENERS
80	AEROBIC DIGESTERS

KEY	
NO.	STRUCTURE
90	BLOWERS BUILDING
95	SERVICE PUMPS STATION
100	UV STRUCTURE
110	ELECTRICAL BUILDING
120	POST AERATION
125	FLOW MEASURING WIER
140	MAINTNEANCE BUILDING
150	ADMINISTRATION BUILDING

ITEM NOTES	
MARKER	DESCRITION
1	PROPANE TANK
2	GENERATOR
3	ASPHALT OVERLAY

CONTRACT C
LAYDOWN AREA

NOT IN THIS CONTRACT

NOT IN THIS CONTRACT

NOT IN THIS CONTRACT

PLANT
ENTERANCE

BOWDEN ST. S

TBM #1

TBM #2

PARKING

FUTURE CLARIFIER
LOCATION

FUTURE SPLITTER BOX
LOCATION

CONTRACT C
LAYDOWN AREA

CONTRACT A
LAYDOWN AREA

CONTRACT B
LAYDOWN AREA

PLAN
SCALE: 1" = 30'

N

0 30'
1" = 30'
THIS LINE MEASURES 1"
WHEN PLOTTED FULL SIZE

REV. NO.	DATE	DRWN	CHKD	REMARKS
2	07/2025	KEG	CAJ	ADDENDUM NO. 2

CERTIFICATE OF AUTHORIZATION
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
No. 91
ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 10220
CRAIG A. JOHNSON
7/17/25

DESIGNED: MLU
DRAFTED: MAB
CHECKED: CAJ
DATE: JUN 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

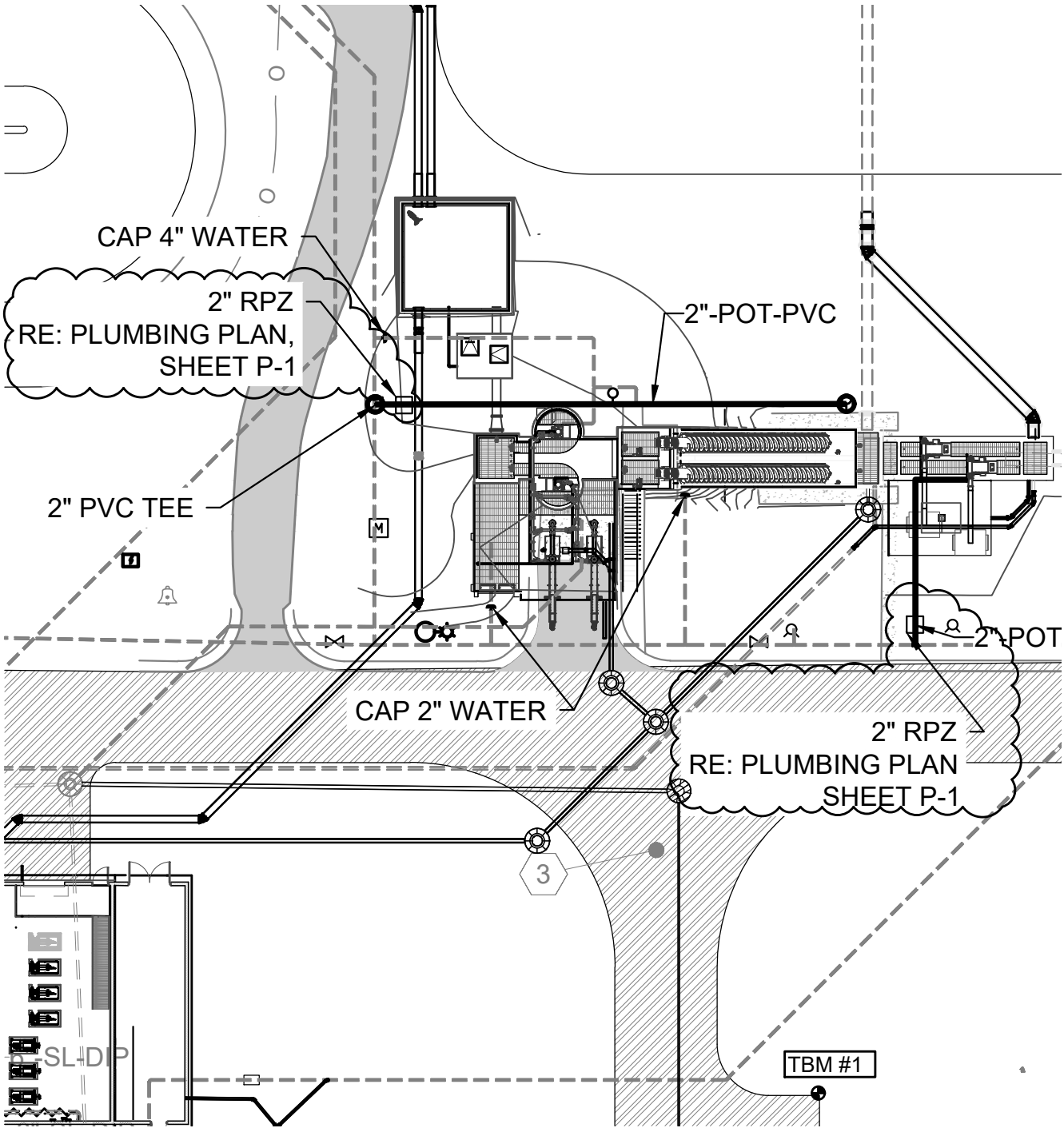
BID SET

PROPOSED SITE PLAN KEY MAP

JOB NO. 23016

SHEET NO. 00-C-01

P:\2023 Projects\23016 - Wynne WWTP Emergency Response\06 - CADD\WWTP IMPROVEMENTS\02 - Civil\23016 - Existing WWTP Site.dwg 7/14/2025 2:26 PM



PLAN

SCALE: 1" = 30'

N

0 1"

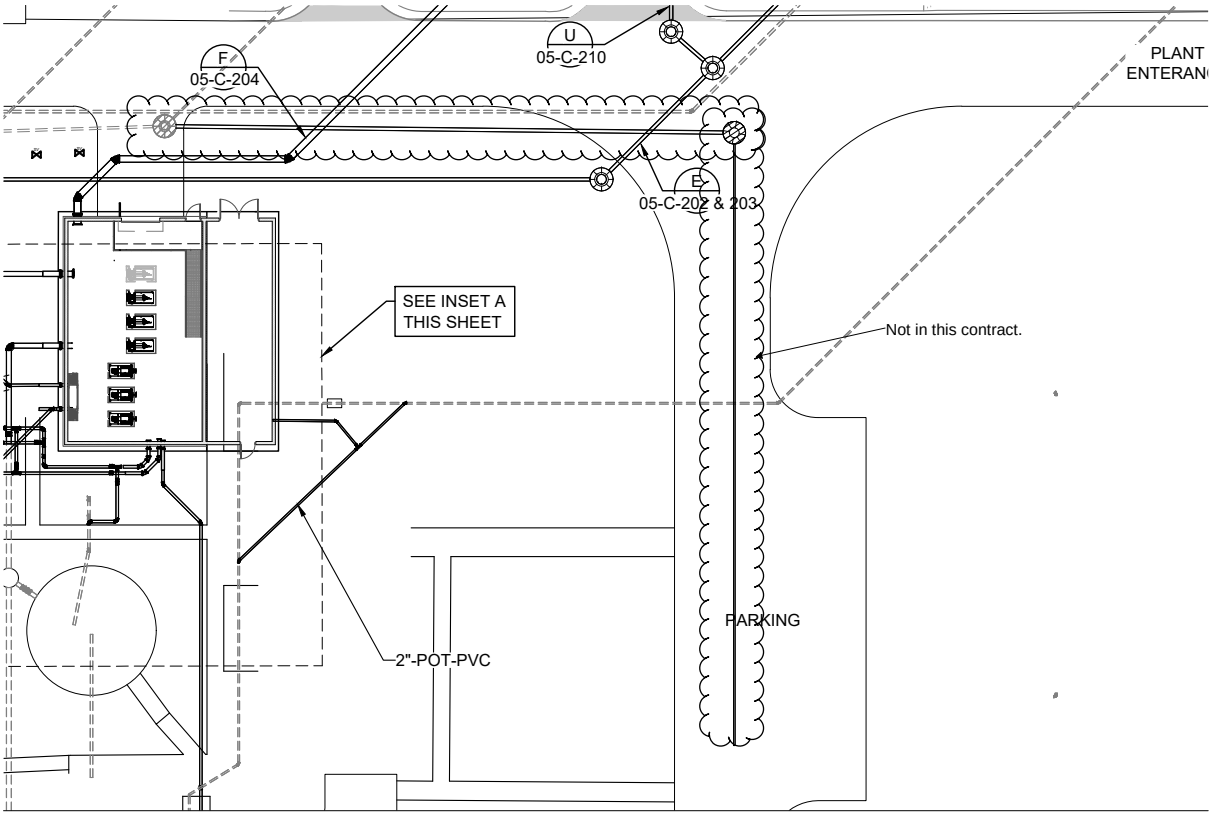
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CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT
WATER PIPING PLAN

DESIGNED: CAJ	JOB NO. 23016	DATE 07/2025	ADD. NO. 2
DRAFTED: KEG	SCALE: NOT TO SCALE		REF SHEET 05-C-100
CHECKED: CAJ			



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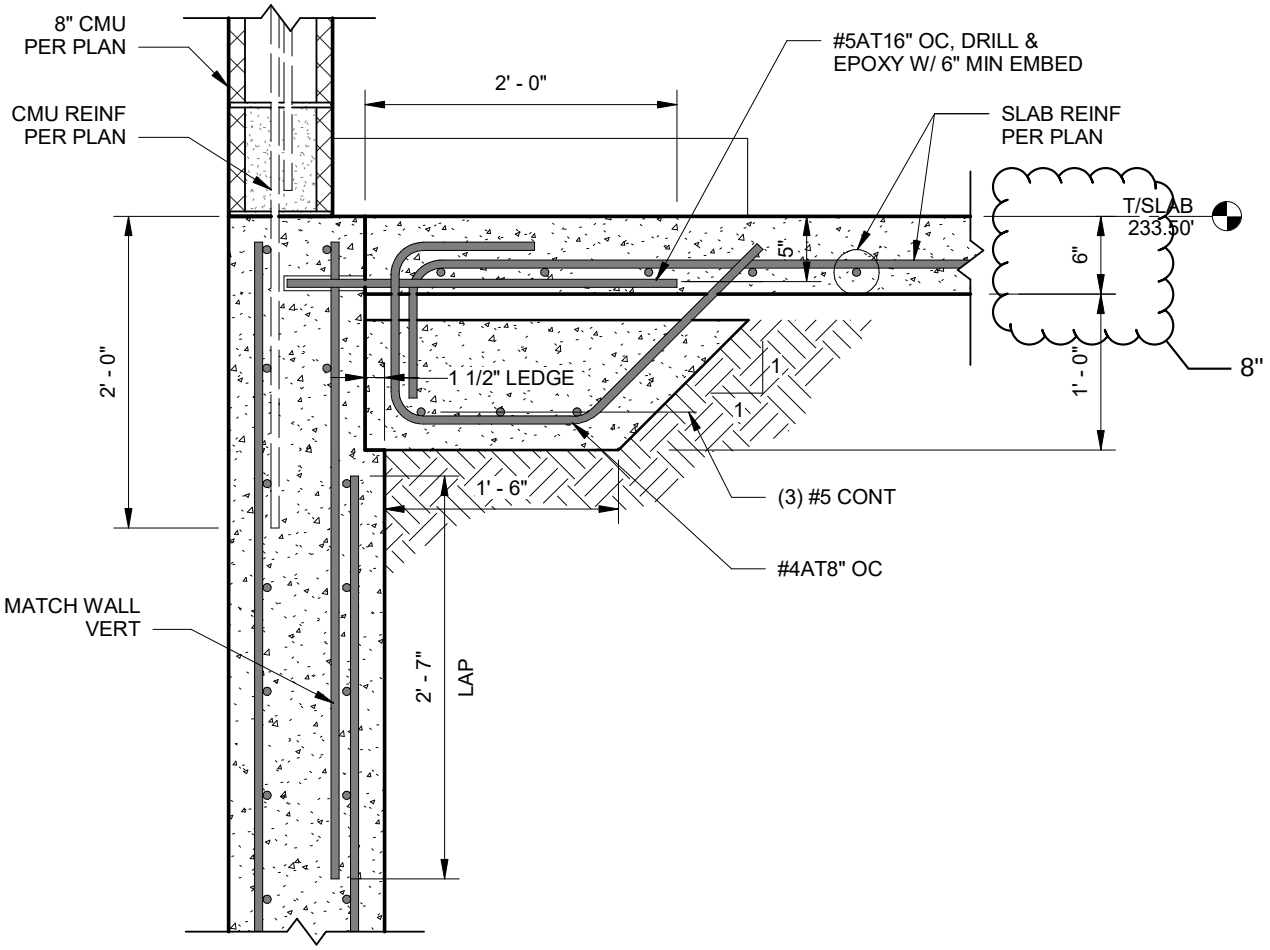
WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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DESIGNED: CAJ	CRIST JOB NO. 23016	DATE 7/17/25	ADD. NO. 2
DRAFTED: MAB	SCALE: NOT TO SCALE		REF SHEET 05-C-101
CHECKED: CAJ			

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DETAIL C

1" = 1'-0"

70-S-501

0 1"

1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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DESIGNED: CAJ	CRIST JOB NO. 23016	DATE 7/17/25	ADD. NO. 2
DRAFTED: MAB	SCALE: NOT TO SCALE		REF SHEET 70-S-501
CHECKED: CAJ			

CONSTRUCTION NOTES ⟨#⟩:

1. REPLACE LOWER BEARING ASSEMBLIES ON EXISTING MIXING UNITS PER SPECIFICATION SECTION 465116.
2. ~~ACCESS PLATFORMS AND SUPPORTS PROVIDED BY OTHERS.~~
3. REPLACE INOPERABLE SLIDE GATES AND ACTUATORS.
4. REPLACE ALL DAMAGED GUARDRAIL AND INSTALL NEW GUARDRAIL WERE APPLICABLE.
5. OWNER PROCURED / CONTRACTOR INSTALLED.
   RE: SPECIFICATION SECTION 465116.

2. Access Platforms and Supports provided by owner, Installed by the Contractor.

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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DESIGNED: CAJ	CRIST JOB NO. 23016	DATE 7/17/25	ADD. NO. 2
DRAFTED: MAB	SCALE: NOT TO SCALE		REF SHEET 50-M-101
CHECKED: CAJ			

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KEYNOTES: DENOTED BY SYMBOL ◇X◇

1. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION.
2. ~~CROSS OVER STAIRS AND PLATFORM.~~
3. CONCRETE PIPE SUPPORT (RE: D / 00-MZ-04).
4. METAL PIPE SUPPORT, (RE: STRUCTURAL DETAILS).
5. FUTURE EQUIPMENT (NOT IN THIS CONTRACT)
6. SUMP (RE: B/70-M-501)

2. Cross Over Stairs and Platforms to be alternating stair by Laypeyre Stair

0 1"

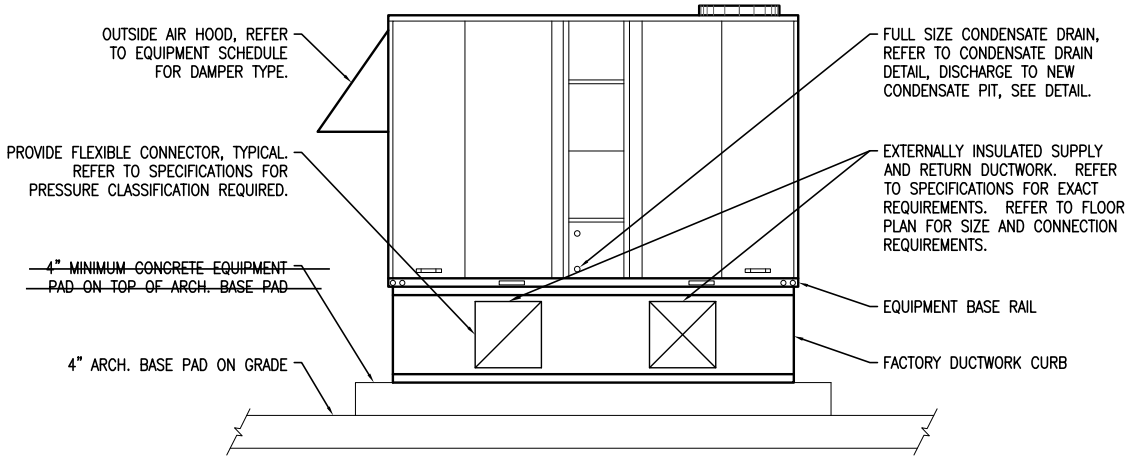
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DESIGNED: CAJ	CRIST JOB NO. 23016	DATE 7/17/25	ADD. NO. 2
DRAFTED: MAB	SCALE: NOT TO SCALE		REF SHEET 70-M-101
CHECKED: CAJ			

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4 TYPICAL GROUND-MOUNTED PACKAGED AIR HANDLING UNIT DETAIL

SCALE: NONE

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WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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DESIGNED: CAJ	CRIST JOB NO. 23016	DATE 7/17/25	ADD. NO. 2
DRAFTED: MAB	SCALE: NOT TO SCALE		REF SHEET H-1 Detail 4
CHECKED: CAJ			

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ATTENTION BIDDERS

The owner procured bid documents are provided to Bidders for the Wynne Wastewater Treatment Plant Improvements project as supplemental information only and not considered to be a part of the contract documents. The owner procured bid documents that were specifically prepared for the Wynne Water Utility under separate contract from the Engineer of Record. The interpretation of the owner procured bid documents' information, recommendations, findings, conclusions, or other information provided herein is at the sole discretion of the Bidder.

PROCUREMENT CONTRACT
AND
SPECIFICATION DOCUMENTS

Wynne Water Utilities

Mechanical Bar Screen and Washer Compactor
Owner Procurement

Wynne Water Utilities

WYNNE, ARKANSAS

May 2025

Crist Job No. 23016







CRIST ENGINEERS, INC.

www.cristengineers.com

1 Executive Center Court
Little Rock, Arkansas 72211

Telephone: 501.664.1552
Fax: 501.664.8579

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MECHANICAL BAR SCREEN AND WASHER COMPACTOR OWNER PROCUREMENT
WYNNE WATER UTILITIES

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002113	Instructions to Bidders (P-200)	7
004100	Bid Form (P-400)	6
005100	Notice of Award (C-510)	1
005213	Agreement Between Owner-Contractor (P-520)	7
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WYNNE WATER UTILITIES

WYNNE EMERGENCY RESPONSE - WASTEWATER IMPROVMENTS
MECHANICAL BAR SCREEN AND WASHER COMPACTOR
OWNER PROCUREMENT

WYNNE WATER UTILITIES

Sealed Bids for **Wynne Water Utilities – Mechanical Bar Screen and Washer Compactor - Owner Procurement** will be received by Wynne Water Utilities, at the office of Wynne Water Utilities, 550 Falls Blvd, Wynne, AR 72396 until **2:00PM Central Standard Time, May 27, 2025**, at which time the Bids received will be publicly opened and read. The Project generally consists of material procurement of two mechanical wastewater bar screens with associated washer compactors.

Bids may be delivered by any means available **except** electronically (fax or email). Fax/email bids will not be considered. It is the bidder's responsibility to see that their bid is at the designated location by the time stated above. Those not received by that time will not be considered. Wynne Water Utilities reserves the right to reject any or all bids, to waive any formalities and to, in the opinion of Wynne Water Utilities, accept the bid that is in Wynne Water Utilities best interest.

A pre-bid conference will not be held.

Per request, on-site inspection of existing equipment can be scheduled by contacting Wynne Water Utilities at 870-238-2751

Bids will be received for a single Contract. Bids shall be on a unit price basis as indicated on the Bid Form. The Issuing Office for the Bidding Documents is:

Crist Engineers, Inc.
205 Executive Court
Little Rock, AR 72205
501-664-1552
www.cristengineers.com

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 9:00 a.m. and 4:00 p.m. The Contract Documents may also be examined at the following:

Dodge Reports
www.construction.com

Printed copies of the Bidding Documents may be obtained from the Issuing Office, during the hours indicated above, upon payment of $50.00 for each set. Documents may be purchased online at www.cristengineers.com. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

This publication was paid for by Wynne Water Utilities. The amount to be paid for this publication is $0.00

Owner**:** **Wynne Water Utilities**
By: **Blake Marotti**
Title: **General Manager**

PUBLISH DATES:

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACTS

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INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACT

ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below.

A. *Issuing Office*—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2—PROCUREMENT BIDDING DOCUMENTS

2.01 Bidder may obtain complete sets of the Procurement Bidding Documents, in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid, from the Issuing Office. The deposit will be refunded to each document holder of record who returns a complete set of Procurement Bidding Documents in good condition within 30 days after opening of Bids. Bidders must obtain a complete set of the Procurement Contract Documents as listed in the Procurement Agreement.

2.02 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.

2.03 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

2.04 ELECTRONIC MEDIA OF PLANS AND SPECIFICATIONS

Engineer will provide a digital version (PDF) of the bidding documents for your convenience and use in the preparation of the Bid. Engineer makes no representation as to the compatibility of these files with your hardware or your software. Data contained on these electronic files is part of Engineer's instruments of service and shall not be used by the Bidder or anyone receiving this data through or from the Bidder for any purpose other than as a convenience in the preparation of the Bid. Any other use or reuse by the Bidder or others will be at the Bidder's sole risk and without liability or legal exposure to Engineer. The Bidder agrees upon execution and submission of the Bid Form to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against Crist Engineers, Inc. (CEI), its officers, directors, employees, agents or subconsultants which may arise out of or in connection with your use of the electronic files. These electronic files will not be considered as contract documents. Hard copies distributed to the prospective bidder govern. Significant differences may exist between these electronic files and corresponding hard copy contract documents. Engineer makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by Engineers and electronic files, the signed hard copy contract documents shall govern. You are responsible for determining if any conflict exists. By the Bidder's use of these electronic files, the Bidder is not relieved of the duty to fully comply with the contract documents. Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, Engineer reserves the right to remove all indicia of its ownership and/or involvement from each

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electronic display. Under no circumstances shall delivery of the digital electronic files for use by the Bidder be deemed a sale by CEI and CEI makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall CEI be liable for any loss or profit or any consequential damages.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4—SITE VISIT; PRE-BID CONFERENCE

4.01 Buyer recommends that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

4.02 A pre-bid conference will not be held for this procurement.

4.03 Interpretations or clarifications considered necessary by Engineer in response to questions will be issued by Addenda delivered to all parties recorded by Engineer as having received the Procurement Bidding Documents. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.

ARTICLE 5—INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer in writing.

5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral

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statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid, and will not be binding or legally effective.

5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 6—RESERVED

ARTICLE 7—PROCUREMENT CONTRACT TIMES

7.01 See applicable provisions in the Procurement Agreement.

ARTICLE 8—LIQUIDATED DAMAGES

8.01 Any provisions for liquidated damages, such as those for Seller's failure to attain a specified Milestone such as the delivery of the Goods, are set forth in the Procurement Agreement.

ARTICLE 9—CONFIDENTIALITY OF BID INFORMATION

9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.

9.02 Bidder shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.

9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.

9.04 Buyer's obligations with respect to confidential information are nullified by the following exceptions:

A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;

B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal;

C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;

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D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or

E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.

9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

ARTICLE 10—"OR-EQUAL" ITEMS

10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without exception or consideration of possible "or-equal" items. Whenever it is specified or described in the Procurement Bidding Documents that an "or-equal" item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contact. The procedure for submittal of any such application by Seller and consideration by Engineer is set forth in the General Conditions and may be supplemented in the Procurement Specifications. Should a manufacturer or specified equipment be provided that is not listed in the specification and/or exception(s) provided at the time of bid, the Buyer has full right without recourse from the Bidder to reject the bid.

ARTICLE 11—PREPARATION OF BID

11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.

11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words "No Bid" may be entered.

11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.

11.04 Bidder shall:

A. Sign the Bid Form as indicated in the Bid Form.

B. Include evidence of authority to sign.

C. Provide information on the individual to be contacted for any communications regarding the Bid.

D. Provide evidence of the Bidder's authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

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11.05 The responsibilities of each Bidder submitting a Bid are described in the Bidder's representations and certifications set forth in Article 6 of the Bid Form.

ARTICLE 12—BASIS OF BID; COMPARISON OF BIDS

12.01 *Unit Prices*

A. Bidder shall enter the unit price Bid for each unit price line item on the Bid Form and enter the product of the unit price times the estimated quantity for that line item. Bidder shall enter the total of products of unit price and estimated quantity for each unit price line item in the space provided to the total on the Bid Form.

B. The apparent low Bid will be determined on the basis of the total of products of unit price and estimated quantity for each unit price line item.

C. Discrepancies between the indicated figures and the arithmetically correct sum will be resolved in favor of the arithmetically correct sum.

ARTICLE 13—SUBMITTAL OF BID

13.01 Bidder shall refer to the **advertisement** for specific identification of the date, time, and place where Bids are to be submitted.

13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of Article 4 of the Bid Form.

13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Wynne Water Utilities, 550 Falls Blvd, Wynne AR 72396.

ARTICLE 14—MODIFICATION OR WITHDRAWAL OF BID

14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

14.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 15—OPENING OF BIDS

15.01 Bids will be publicly opened at the time and place indicated in the advertisement or invitation to bid and read aloud, unless obviously non-responsive. An abstract of the amounts of the Base

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Bids and Alternate Bids, if any, will be made available to Bidders after Bids have been opened and reviewed by the Buyer.

ARTICLE 16—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

16.01 All Bids will remain subject to acceptance for the period stated in the Bid Form, but Buyer may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 17—EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT

17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.

17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.

17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.

17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

ARTICLE 18—BONDS AND INSURANCE

18.01 Article 5 of the General Conditions and Article 5 of the Supplementary Conditions set forth Buyer's requirements as to insurance. When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by acceptable evidence of insurance.

ARTICLE 19—SIGNING OF PROCUREMENT AGREEMENT

19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and insurance documentation required to be delivered by the Procurement Contract Documents to Buyer. Within 10 days thereafter, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together with printed and electronic copies of the Procurement Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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DOCUMENT 004100

BID FORM FOR PROCUREMENT CONTRACT

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BID FORM FOR PROCUREMENT CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—BUYER AND BIDDER

1.01 This Bid is submitted to:

Wynne Water Utilities
550 Falls Blvd
Wynne AR, 72396

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Procurement Contract with Buyer in the form included in the Procurement Bidding Documents, and to furnish the Goods and Special Services as specified or indicated in the Procurement Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Procurement Bidding Documents.

ARTICLE 2—BASIS OF BID

2.01 Unit Price Bids

A. Bidder will furnish the Goods and Special Services including all accessories required for installation in accordance with the Procurement Contract Documents for the following Unit Price(s):

BID SCHEDULE – Mechanical Bar Screens and Washer Compactors - Owner Procurement

Wynne Water Utilities, Arkansas

Item No.	Description	QTY	Unit	Unit Price	Bid Price
1	Mechanical Bar Screen	2	EA	$	$
2	Washer Compactors	2	EA	$	$

TOTAL BID PRICE:

$679,000.00 _____ **Dollars**

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SCHEDULE OF PROCUREMENT TIMES

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	196	Contractor to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	7	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	270	

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ARTICLE 3—TIME OF COMPLETION

3.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule of Procurement Contract Times set forth in Article 2 of the Procurement Agreement.

3.02 Bidder accepts the provisions of the Procurement Agreement as to liquidated damages.

ARTICLE 4—ATTACHMENTS TO THIS BID

4.01 The following documents are attached to and made a condition of this Bid:

A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.

ARTICLE 5—BIDDER'S ACKNOWLEDGMENTS

5.01 Bidder accepts all terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period that Bidder may agree to in writing upon request of Buyer.

5.02 Bidder has examined and carefully studied the Procurement Bidding Documents, the related data identified in the Procurement Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents that:

1. Bidder has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Bidder's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Bidder has carefully studied, considered, and correlated the information known to Bidder with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

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5. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bidding Requirements, that without exception the Bid (including all Bid prices) is premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

8. Any exceptions noted to the bid is subject to rejection of the bid.

6.02 *Bidder's Certifications*

A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Paragraph 6.02.A.4:

a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

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This Bid is offered by:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Date: _____

(date signed)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

(If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

(individual's signature)

Title: _____

(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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DOCUMENT 005100

NOTICE OF AWARD

Date of Issuance:	Owner's Contract No.:
Owner: **Wynne Water Utilities**	
Engineer: **Crist Engineers, Inc.**	Engineer's Project No.: **23016**
Project: **Wynne Emergency Response**	Contract Name: **Owner Procurement of Mechanical Bar Screen and Washer Compactor**
Bidder:	Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Wynne Water Utilities: Owner Procurement of Mechanical Bar Screen and Washer Compactors

The Contract Price of the awarded Contract is: $_____

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s).
3. Other conditions precedent (if any): None

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner**:** **Wynne Water Utilities**

_____ Authorized Signature

By: _____ Title:_____

Copy: **Crist Engineers, Inc.**

DOCUMENT 005213
AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

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AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

This Procurement Agreement is by and between **Wynne Water Utilities** ("Buyer") and _____ _____ ("Seller").

Terms used in this Procurement Agreement have the meanings stated in the General Conditions of the Procurement Contract and the Supplementary Conditions of the Procurement Contract.

Buyer and Seller hereby agree as follows:

ARTICLE 1—PROCUREMENT CONTRACT

1.01 *Goods and Special Services*

A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: **Mechanical Bar Screen and Washer Compactors – Owner Procurement**

1.02 *The Project*

A. The Project, of which the Goods and Special Services are a part, is generally described as follows: **Wynne Emergency Response - Mechanical Bar Screen and Washer Compactors – Owner Procurement**

1.03 *Engineer*

A. Buyer has retained **Crist Engineers, Inc.** ("Engineer"), to prepare Procurement Contract Documents and act as Buyer's representative. Engineer assumes all duties and responsibilities and has the rights and authority assigned to Engineer in the Procurement Contract Documents in connection with Seller's furnishing of Goods and Special Services.

1.04 *Point of Destination*

A. The Point of Destination is designated as: **Wynne Wastewater Plant, 53 Cross 619 Rd, Wynne, AR 72396**

ARTICLE 2—PROCUREMENT CONTRACT TIMES

2.01 *Time of the Essence*

A. All time limits for Milestones, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Procurement Contract Documents, are of the essence of the Procurement Contract.

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2.02 Schedule of Procurement Times

A. The schedule of procurement times is established on the Bid Form.

2.03 *Shop Drawings and Material Submittals*

A. *Material Submittals*: Seller shall submit all Shop Drawings and Material Submittals required by the Procurement Contract Documents to Engineer for its review and approval.

B. *Engineer's Review*: It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Material Submittals and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within **14** days after Seller's submittal of such Shop Drawings and Material Submittals, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

2.04 *Liquidated Damages*

A. Buyer and Seller recognize that time is of the essence as stated in Paragraph 2.01, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified on the Bid Form, plus any extensions thereof allowed in accordance with this Procurement Contract. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the delivery requirements specified on the Bid Form. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer **$750** for each day that expires after the time specified on the Bid Form for delivery of acceptable Goods.

ARTICLE 3—PROCUREMENT CONTRACT PRICE

3.01 *Procurement Contract Price and Total Price—Based on Attached Bid*

A. For furnishing the Goods and Special Services in accordance with the Procurement Contract Documents, Buyer shall pay Seller the prices stated in Seller's Bid, attached hereto as an exhibit, subject to final adjustments for Unit Price Goods and Special Services.

ARTICLE 4—PAYMENT PROCEDURES

4.01 *Submittal and Processing of Applications for Payment*

A. Seller shall submit Applications for Payment in accordance with Article 13 of the General Conditions and the following paragraphs. Engineer and Buyer will process such Applications for Payment in accordance with said Article 13.

4.02 *Progress Payments; Final Payment*

A. Seller may submit an Application for Payment requesting the stated percentage of Procurement Contract Price upon attainment of each of the following Payment Line Items:

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Payment Line Item (Lump Sum)	Percentage of Lump Sum
1. Placement of Order	5
2. Submittal of Engineering Drawings	20
3. Time of Shipment	70
4. Start Up and Testing, Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	5
5. Total Procurement Contract Price (Lump Sum)	100

B. Buyer shall pay Seller the amount owed under an Application for Payment within 30 days after Engineer's presentation to Buyer of the Application for Payment and Engineer's recommendation.

4.03 *Interest*

A. All amounts not paid when due will bear interest as the rate of **1%** percent per annum.

ARTICLE 5—ASSIGNMENT OF PROCUREMENT CONTRACT

5.01 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

5.02 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

ARTICLE 6—PROCUREMENT CONTRACT DOCUMENTS

6.01 *List of Procurement Contract Documents*

A. The Procurement Contract Documents consist of the following:

1. This Procurement Agreement. (pages 1 to 7, inclusive).
2. General Conditions of the Procurement Contract. (pages 1 to 37, inclusive).
3. Supplementary Conditions of the Procurement Contract. (pages 1 to 5, inclusive).
4. Procurement Specifications as listed in the Procurement Specifications table of contents.
5. Supplemental Procurement Drawings (not attached but incorporated by reference):

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6. Addenda (numbers ____ to ___ inclusive).

7. Exhibits to this Procurement Agreement (enumerated as follows):

   a. Contractor's Bid (pages 1 to 6, inclusive).

8. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:

   a. Notice to Proceed;

   b. Change Orders;

B. The documents listed in Paragraph 6.01.A are attached to this Procurement Agreement (except as expressly noted otherwise above).

C. There are no Procurement Contract Documents other than those listed above.

D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of the Procurement General Conditions.

ARTICLE 7—SELLER'S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Seller's Representations*

A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:

1. Seller has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement

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Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

7.02 *Seller's Certifications*

A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Procurement Contract. For the purposes of this Paragraph 7.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement Contract to the detriment of Buyer, (b) to establish bid or contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Procurement Contract.

ARTICLE 8—RESERVED

ARTICLE 9—MUTUAL WAIVER

9.01 *Mutual Waiver of Consequential Damages*

A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph 9.01.A will be binding upon the Contractor/Assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) liquidated damages, (c) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property of others, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.

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IN WITNESS WHEREOF, Buyer and Seller have signed this Procurement Agreement. Counterparts have been delivered to Buyer and Seller.

The Effective Date of the Procurement Contract is _____.

Buyer	Seller
Wynne Water Utilities	
(typed or printed name of organization)	*(typed or printed name of organization)*
By: _____	By: _____
(individual's signature)	*(individual's signature)*
Date: _____	Date: _____
(date signed)	*(date signed)*
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
	(If Seller is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
(individual's signature)	*(individual's signature)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address for giving notices:	Address for giving notices:
Designated Representative:	Designated Representative:
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address:	Address:
Wynne Water Utilities	
550 Falls Blvd	
Wynne, AR 72396	
Phone: _____	Phone: _____
Email: _____	Email: _____
(If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	

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DOCUMENT 005500

NOTICE TO PROCEED

Owner:	**Wynne Water Utilities**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Crist Engineers, Inc.**	Engineer's Project No.:	**23016**
Project:	**Wynne Emergency Response**	Contract Name:	**Owner Procurement of Mechanical Bar Screen and Washer Compactor**
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, _____]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is 210 consecutive calendar days, and the number of days to achieve readiness for final payment is 240 consecutive calendar days.

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner**:** **Wynne Water Utilities**

_____
Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: **Crist Engineers, Inc.**

DOCUMENT 007250

STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

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ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Whenever used in the Procurement Bidding Requirements or Procurement Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated, which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.

2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.

3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.

4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.

5. *Buyer*—The individual or entity purchasing the Goods and Special Services.

6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.

7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.

9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.

10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.

11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

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12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.

14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.

15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.

16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.

19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.

20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.

21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.

22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).

23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.

24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.

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25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.

26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.

28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.

29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.

30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.

31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.

32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.

33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer's review of the Submittals.

34. *Seller*—The individual or entity furnishing the Goods and Special Services.

35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.

36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.

37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals

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may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.

39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.

40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.

B. *Intent of Certain Terms or Adjectives*

1. The Procurement Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.

2. The word "non-conforming" when modifying the words "Goods and Special Services," "Goods," or "Special Services," refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:

a. do not conform to or comply with the requirements of the Procurement Contract Documents;

b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or

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c. in the case of Special Services, have not been completed.

3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.

4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

5. The word "furnish," when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.

C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.

D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer.

B. Performance and Payment Bonds will not be required for this procurement contract.

C. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.

D. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

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2.03 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

2.04 *Preliminary Schedules*

A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:

1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.

a. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the Submittals, tests, and deliveries to completion within the specified Milestones of the Procurement Contract Times.

b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.

c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.

2. a preliminary schedule of Submittals.

B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

2.05 *Preliminary Conference*

A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.

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B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

A. The Procurement Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.

C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.

D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.

F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.

B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

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3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents*: If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.

2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

B. *Resolving Discrepancies*: Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement Contract Documents); or

2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Procurement Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.

1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.

B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the

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Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.

C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

A. Seller and its subcontractors and suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

4.02 *Continuing Performance*

A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.

B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.

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1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.

2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.

B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.

C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. inspection delays by governmental authorities, and custom delays;

4. international shipping delays;

5. acts or failures to act of third-party entities; and

6. acts of war or terrorism.

D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions*: Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:

1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.

2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.

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3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.

E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5— INSURANCE

5.01 *Insurance*

A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.

B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided will not be construed as a waiver of Seller's obligation to maintain such insurance.

C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.

D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.

E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

5.02 *Surety or Insurance Companies*

A. All insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

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ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.

B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.

C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.

D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.

B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.

C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.

2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.

D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

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6.03 *Buyer's Infringement*

A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.

B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.

C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.

2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER'S RESPONSIBILITIES

7.01 *Performance of Obligations*

A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.

B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.

C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.

B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must be:

1. new, and of good quality;

2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and

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3. shop-assembled to the greatest extent practicable.

7.03 *Laws and Regulations*

A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.

B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.

1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or equal" item.

2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.

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B. *Engineer's Evaluation*: Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.

C. *Special Guarantee*: Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."

D. *Data*: Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 *Taxes*

A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Supplementary Conditions.

7.06 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Seller shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.

3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

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1. *Shop Drawings*

    a. Seller shall submit the number of copies required in the Procurement Specifications.

    b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.

2. *Samples*

    a. Seller shall submit the number of Samples required in the Procurement Specifications.

    b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.

3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.

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6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.

8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Seller shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.

3. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. *Submittals Other than Shop Drawings and Samples*

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:

   a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.

   d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

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7.07 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.

B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling, and all other costs associated with shipment and delivery.

8.02 *Delivery*

A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.

B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.

C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.

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D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.

E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.

F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.

B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER'S RIGHTS

9.01 *Seller's Warranties and Guarantees*

A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.

B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.

C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;

2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;

3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or

4. normal wear and tear under normal usage.

D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:

1. observations by Buyer, Engineer, or Project Owner;

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2. recommendation by Engineer or payment by Buyer of any progress or final payment;

3. use of the Goods by Buyer or Project Owner;

4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;

5. the end of the correction period established in Paragraph 9.04;

6. the issuance of a notice of acceptance;

7. any inspection, test or approval by others; or

8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.

E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.

3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.

4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.

5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.

6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.

7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

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B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.

2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.

2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.

3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Procurement Contract Times, remove and replace the rejected Goods.

2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.

3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. *Buyer's Rejection of Non-Conforming Special Services*

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1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.

2. Seller shall promptly provide conforming Special Services acceptable to Buyer.

3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

D. *Remedying Non-Conforming Goods*: If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

E. *Buyer's Acceptance of Non-Conforming Goods*: Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods.

F. *Seller Obligations*: Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations will include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

G. *Buyer's Rejection of Conforming Goods*: If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

9.04 *Correction Period*

A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.

B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.

B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.

C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

10.02 *Duties and Responsibilities; Authority; Limitations*

A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.

B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.

C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.

D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.

E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.

F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

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ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.

B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Buyer and Seller shall execute appropriate Change Orders covering:

1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;

2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;

3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.

B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.

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B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.

B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided herein.

11.05 *Buyer-Authorized Changes in the Goods and Special Services*

A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion. Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

11.06 *Buyer's Contingency Allowance*

A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.

B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.

C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.

D. The Procurement Agreement, Article 5, addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

11.07 *Unauthorized Changes in the Goods and Special Services*

A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

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11.08 *Change of Procurement Contract Price*

A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Procurement Contract Price will be determined as follows:

1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;

2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or

3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15%.

11.09 *Change of Procurement Contract Times*

A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.

B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.

C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.

D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

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F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.

G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.

H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.

I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.

J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.

K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.

B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith.

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The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.

C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:

1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or

3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.

B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.

C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.

D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

A. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;

b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and

c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or

b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.

4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or

b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or

c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or

d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or

e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:

a. the Goods and Services are non-conforming, requiring correction or replacement;

b. the Procurement Contract Price has been reduced by Change Orders;

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c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or

d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.

13.04 *Suspension of or Reduction in Payment*

A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and

2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.

3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;

c. Seller has failed to provide and maintain insurance;

d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

e. the Goods and Special Services are non-conforming, requiring correction or replacement;

f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;

g. the Procurement Contract Price has been reduced by Change Orders;

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h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;

i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or

j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.

B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.

B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.

C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.

D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.

E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.

F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.

G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

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13.06 *Waiver of Claims*

A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.

B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

ARTICLE 14—CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will not constitute a breach of contract by Buyer. Upon cancellation:

1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.

2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Procurement Contract Price of such Goods.

14.02 *Suspension of Performance by Buyer*

A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

14.03 *Suspension of Performance by Seller*

A. Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:

1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Procurement Contract; and

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

14.04 *Breach and Termination*

A. *Buyer's Breach*

1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.

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2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.

B. In the case of any conflict between the express terms of this Procurement Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Procurement Contract will apply.

15.03 *Computation of Time*

A. When any period of time is referred to in the Procurement Contract by number of days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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15.04 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

15.05 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Procurement Contract, as well as all continuing obligations indicated in the Procurement Contract, will survive final payment, completion, and acceptance of the Goods and Special Services or termination or completion of the Procurement Contract or of the services of Seller.

15.06 *Entire Agreement*

A. Buyer and Seller agree that this Procurement Contract is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Procurement Contract may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

15.07 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

15.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

15.09 *Successors and Assigns*

A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract.

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DOCUMENT 007350

SUPPLEMENTARY CONDITIONS OF THE PROCUREMENT CONTRACT

These Supplementary Conditions amend or supplement EJCDC® P-700, Standard General Conditions of the Procurement Contract (2019). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Buyer shall furnish to Seller **5** printed copies of the Procurement Contract Documents (including one fully signed counterpart of the Procurement Agreement), and **one copy** in electronic portable document format (PDF).

ARTICLE 5 – BONDS AND INSURANCE

5.01 Insurance

SC-5.01 Add the following new paragraphs immediately after Paragraph 5.01.E:

A. Seller shall purchase and maintain such liability and other insurance as is appropriate for the furnishing of Goods and Special Services and as will provide protection from claims set forth below which may arise out of or result from Seller’s furnishing of the Goods or Special Services and Seller’s other obligations under the Procurement Contract Documents, whether the furnishing of Goods and Special Services or other obligations are to be performed by Seller, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to furnish the Goods and Special Services, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Seller’s employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller’s employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (b) by any other person for any other reason;

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5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this Paragraph 5.01 to be purchased and maintained must:

1. with respect to insurance required by Paragraphs SC-5.01.F.3 through SC-5.01.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, their consultants, and all of whom must be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds must provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Seller's indemnity obligations under Paragraph 7.07;

5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;

6. remain in effect at least until final payment and at all times thereafter when Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 9.03 and 9.04; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter).

C. The limits of liability for the insurance required by Paragraph SC-5.02.F must provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs SC-5.02.F.1 and F.2:

Workers' Compensation and Related Policies	Establish Policy Limits
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory

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Workers' Compensation and Related Policies	Establish Policy Limits
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	**$500,000**
Bodily injury by disease—aggregate	**$500,000**
Employer's Liability	
Each accident	**$500,000**
Each employee	**$500,000**
Policy limit	**$500,000**
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	**$500,000**

2. Seller's General Liability under Paragraphs SC-5.02.F.3 through F.6 which must include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Seller:

Commercial General Liability	Policy limits of not less than
General Aggregate	**$2,000,000**
Products—Completed Operations Aggregate	**$1,000,000**
Personal and Advertising Injury	**$1,000,000**
Bodily Injury and Property Damage—Each Occurrence	**$1,000,000**

3. Automobile Liability under Paragraph SC-5.02.F.6:

Automobile Liability	Policy limits of not less than
Bodily Injury	
Each Person	**$1,000,000**
Each Accident	**$1,000,000**
Property Damage	
Each Accident	**$1,000,000**

4. Professional Liability (if the Special Services include professional services):

Seller's Professional Liability	Policy limits of not less than
Each Claim	**$0**
Annual Aggregate	**$0**

D. Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance

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requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.

ARTICLE 7— SELLER'S RESPONSIBILTY

7.02 Taxes

B. Buyer is exempt from payment of sales and compensating use taxes of the State of **Arkansas** and of cities and counties thereof on all materials and equipment to be incorporated into the Project facilities.

1. Buyer will furnish the required certificates of tax exemption to Seller with respect to materials and equipment to be incorporated into the Project facilities.

2. Buyer's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Seller, or to supplies or materials not incorporated into the Project facilities.

3. The Procurement Contract Price does not include the cost of sales or compensating use taxes to the extent such are exempted by this paragraph.

ARTICLE 9 – BUYERS RIGHTS

SC-9.05 Add the following new paragraph after Paragraph 9.04:

9.05 Limitation of Seller's Liability

A. Buyer and Seller agree that the total liability of Seller to Buyer for claims, costs, losses, and damages arising from this Procurement Contract will be limited to the amount established in the Procurement Agreement as the Procurement Contract Price.

ARITCLE 12 – CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

SC-12.03 Add the following new paragraph immediately after Paragraph 12.02:

12.03 Arbitration

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-12.03). This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Procurement Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 12, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority

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to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Procurement Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Procurement Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Procurement Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party of the right to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Procurement Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Procurement Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Buyer or Seller, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Procurement Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

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SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1.3 RELATED SECTIONS

A. None.

1.4 SUBMITTALS

A. Submit product data as specified herein, including standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, catalog cuts, standard wiring diagrams, printed performance curves and operational range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing and printed product warranties, as applicable to the work.

Resubmittals will be handled in the same manner as first submittals. On resubmittals the Manufacturer shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Manufacturer shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

Submittals shall include the following:

1. Certified shop and erection drawings showing all important details of construction, dimensions, and anchor bolt locations.
2. Descriptive literature, bulletins and/or catalogs of the equipment.
3. Data on the characteristics and performance of the pumps. Data shall include guaranteed and certified performance curves, based on actual shop tests of units to be delivered, which show that they meet the specified requirements for head, capacity, efficiency, NPSH required (based on tests similar units), and horsepower. Curves shall be submitted on 8-1/2-in by 11-in sheets. Curves for variable speed pumps shall be provided with at least five frequency curves: 40 Hz, 45 Hz, 50 Hz, 55 Hz and 60 Hz. The curves shall be plotted demonstrating frequency and operating rpm from maximum rpm to minimum rpm for each type of pump with subsequent pumps operating parallel through the minimum and maximum flow requirements.
4. The total weight of the equipment including weight of the single largest item.
5. A complete total bill of materials for all equipment.

6. A list of the manufacturer's recommended spare parts with the manufacturer's current price for each item. Include gaskets, packing, etc, on the list. List the bearings by the bearing manufacturer's numbers only.
7. A statement indicating bearing life.
8. Complete description of surface preparation and shop prime painting.
9. Submittal of motor data for acceptance shall be in accordance with Division 26 and shall include complete nameplate data and test characteristics in accordance with the latest version of NEMA Standard MG1-12. In addition, the following data for the motors shall be provided:

    a. Efficiency at 1/2, 3/4, and full load.
    b. Power factor at 1/2, 3/4, and full load.
    c. Motor outline drawings, dimensions, and weight.
    d. Descriptive bulletins, including full description of insulation system.
    e. Bearing design data and L-10 bearing life.
    f. Special features (i.e., space heaters, temperature detectors, etc.).
    g. Power factor correction capacitor rating and type.
    h. Insulation information.
    i. Locked Rotor Amperes at rated voltage and NEMA starting code letter.
    j. Temperature rise.
    k. Service factor.

B. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Manufacturer's review and approval markings and action taken by Engineer.
3. Include the following information on label for processing and recording action taken:

    a. Project name,
    b. Date,
    c. Name and address of Engineer,
    d. Name and address of Manufacturer,
    e. Name and address of subcontractor,
    f. Unique identifier, including revision number,
    g. Number and title of appropriate Specification Section,
    h. Drawing number and detail references, as appropriate,
    i. Other necessary identification.

C. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than the Manufacturer.

1.5 SUBMITTAL PROCEDURES

A. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows:

1. Initial Review: Allow twenty (20) days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Manufacturer when a submittal being processed must be delayed for coordination.
2. Time for review shall commence on Engineers receipt of submittal.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data is not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operating and maintenance manuals.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
4. Number of Copies: Submit four (4) minimum black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit five (5) prints where prints are required for operation and maintenance manuals. Engineer will retain three (3) prints; remainder will be returned. Mark up and retain one (1) returned print as a Project Record.

2.2 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

B. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

D. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

E. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

F. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

PART 3 - EXECUTION

3.1 MANUFACTURER'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Manufacturer's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Manufacturer's approval stamp and will return them without action.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Engineer will review each submittal and will not return it or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 016000

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions and contract documents.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

D. Pipe for potable water to be transported with exposed ends tarped or otherwise closed to prevent accumulation of airborne contaminates during transport.

1.2 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer’s instructions, with seals and labels intact and legible.

B. Store sensitive products in weather tight, climate-controlled enclosures.

C. For exterior storage of fabricated products, place on sloped supports, above ground.

D. Provide off-site storage and protection when site does not permit on-site storage or protection.

E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.

F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

I. Install 48” tall PVC orange mesh barrier fence around stored materials.

1.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article. Where terms such as “or equal,” Aor equivalent” are used in this Contract, they shall be taken to mean Aor approved equivalent.” Proposed equivalents shall be offered as substitutions.

1.4 SUBSTITUTIONS

A. Engineer will consider requests for substitutions only within 90 days after date established in Notice to Proceed.

1. Substitutions may be considered when a product becomes unavailable through no fault of the Materialman.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request constitutes a representation that the Manufacturer:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

1. Submit copies of Request for Substitution for consideration. Number of copies as specified in Section 013300. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
3. The Engineer will notify Manufacturer in writing of decision to accept or reject request.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Conditions: Engineer will consider Materialman’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect the Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one materialman, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all materialmen involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Engineer will consider Materialman's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 017516

STARTING OF SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Starting Equipment Systems.

B. Demonstration and Instructions.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING EQUIPMENT SYSTEMS

A. Coordinate schedule for start-up of various equipment. System startup will take place by installation Contractor during the construction phase of the Headworks Screen Replacement, Sherwood, Arkansas.

B. Notify Engineer and Owner fifteen (15) working days prior to start-up of each item.

C. Verify that each piece of equipment has been checked for proper lubrication, drive rotation, belt tension, control sequence, or for other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment in operation.

1. Authorized Representative shall be factory trained.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

I. Owner will make available to the manufacturer pressure recording devices and flow meter data from the SCADA system.

J. The manufacturer shall provide a qualified technician to attend start up services with the Engineer and Owner and record pressure and flow meter reading to create an in-service pump performance curve.

3.2 DEMONSTRATION AND INSTRUCTIONS

A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment during equipment start-up services.

C. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

D. As a minimum, provide the amount of time required for instruction on each item of equipment and system that is specified in individual sections.

E. Authorized Representative shall be a full-time employee of the manufacturer or, if acceptable to the Engineer, a third party who is routinely engaged by the Manufacturer to provide start-up services.

END OF SECTION

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Warranties.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
3. Complete startup testing of systems.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify installation Contractor of items, either on installation Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify installation Contractor of construction that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit an electronic copy and three (3) hard copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by installation Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Engineer.
d. Name of Equipment Manufacturer (as applicable).
e. Name of installation Contractor.
f. Page number.

1.6 PROJECT RECORD DOCUMENTS

A. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

B. Record Product Data: Submit an electronic copy and one (1) hard copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Final Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of installation Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.3 SUBMITTALS

A. Initial Submittal: Submit an electronic copy of each manual prior to requesting payment for equipment that requires operation and maintenance manuals.

1. Include a complete operation and maintenance directory.
2. Engineer will return an electronic copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one (1) hard copy of each manual in final form at least 15 days before final inspection. Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Engineer's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Engineer's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.
4. Tabbed Dividers.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of installation Contractor.
6. Name, address, and telephone number of equipment Manufacturer.
7. Name and address of Engineer.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MATERIAL

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Manufacturer is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Wiring diagrams, with Manufacturer applied identification system.
6. Control diagrams, with Manufacturer applied identification system.
7. Piped system diagrams.
8. Precautions against improper use.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Required sequences for electric or electronic systems.
8. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MATERIAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

G. Operation and Maintenance Data

1. Copies of an operating and maintenance manual for the pump shall be furnished to the Engineer. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc, that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

2. Bid prices for equipment shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the Owner's operating personnel in operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the Engineer. A technical representative, from the respective pump manufacturer who has complete knowledge of proper operation and maintenance shall be provided for 1 day to instruct representatives of the Owner and the Engineer on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and test run as provided in Sections 017516 and 333219 as applicable. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

C. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

D. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 462123

MECHANICALLY CLEANED FINE BAR SCREENS - 304 SSTL

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes the furnishing of a front-cleaning, front-return link driven mechanically cleaned bar screen assembly and any auxiliary equipment or accessories to be installed in the location as indicated on the drawings and as specified herein.

Number of units: 2

Equipment designation: Full Penetration, Fine Screen,

Equipment location: Outdoors

B. All equipment supplied under this section shall be furnished by or through a single Screening System Supplier who shall coordinate with the Contractor, the design, fabrication, delivery, installation and testing of the screening components. The Screening System Supplier shall have the sole responsibility for the coordination and performance of all components of the screenings system with the performance and design criteria specified herein.

C. The Contractor shall be responsible to coordinate all details of the screening equipment with other related parts of the Work, including verification that all structures, piping, wiring, and equipment components are compatible. The Contractor shall be responsible for all structural and other alterations in the Work required to accommodate the equipment differing in dimensions or other characteristics from that contemplated in the Contract Drawings or Specifications.

D. CONTROL PANEL CONSISTING OF PLC, VFDS, STARTERS, FIBER PATCH PANELS, FIBER MEDIA CONVERTORS, AND ALL OTHER NECESSARY COMPONENTS FOR A FULLY FUNCTIONAL SYSTEM AND AS REQUIRED BY MANUFACTURER APPROVED SUBMITTALS.

1.2 RELATED SECTIONS

A. The following list of related sections is provided for the convenience of the Contractor and is for reference only to support commonly referenced sections that are in-general applicable to all equipment supplied. (For complete list of sections see specification index.)

1. All sections of Division 1 including but not limited to Submittal Procedures, Shop Drawings, Product Data and Samples, Operating and maintenance information, Protection of Materials and Equipment, Installation, Testing, and Commissioning, Instruction of Operations and Maintenance Personnel, and Spare Parts Maintenance Manuals.
2. Section 099000-Painting

1.3 REFERENCE STANDARDS

A. American National Standards Institute (ANSI)
B. American Society for Testing and Materials (ASTM)
C. American Welding Society (AWS)
D. American Institute of Steel Construction (AISC)
E. American Bearing Manufacturers Association (ABMA)
F. American Gear Manufacturers Association (AGMA)
G. National Electrical Manufacturers Association (NEMA)
H. Underwriters Laboratory (UL)

1.4 SUBMITTALS

A. The equipment manufacturer shall submit the following items:

1. (6) Sets of General Arrangement drawings that illustrate the layout of the equipment, equipment weight, principal dimensions with related verifications required for installation including anchorage locations. Other related data including descriptive literature, Electrical Control Drawings, Catalog Cut Sheets for individual components and Drive Motor Data.

2. A list of recommended Spare Parts including any Special Tools required for routine maintenance of the equipment is provided in Section 2.5.

3. (6) Sets of O & M Manuals including As-Built Drawings of the Mechanically Cleaned Bar Screen Arrangement, Controls and Accessories shall be provided in digital format after equipment ship for inclusion in the Close-Out Submittal process.

4. For sites that have (3) ft or greater head differential, equipment manufacturer shall provide Structural Certification from licensed Civil engineer.

1.5 QUALITY ASSURANCE

A. The Mechanically Cleaned Bar Screens shall be fully assembled and shop tested at the manufacturing facility prior to shipment. Shop testing shall include a minimum of 4 hours of run time. The contractor, the engineer, the owner or the owner's designated representative reserves the right to witness the shop test. A minimum three (3) week notice shall be provided prior to the test to allow for travel coordination.

B. To assure quality and performance: All equipment furnished under this Section and related sections shall be of a single manufacturer who has been regularly engaged in the design and manufacture of the equipment and demonstrates, to the satisfaction of the Engineer. The screen manufacturer shall have at least 50 installations of link driven mechanically cleaned bar screen equipment that has been in successful operation, at similar installations, for at least ten (10) years. Upon request, the manufacturer shall provide a reference of such installation sites along with the relevant contact information.

C. The equipment furnished shall be fabricated, assembled, installed and placed in proper operation condition in full conformity with approved drawings, specifications, engineering data, and/or recommendations furnished by the equipment manufacturer.

D. The screenings system shall have operations, origin of manufactured, and aftersales service and support in the United States of America. The equipment manufacturer shall have in-place a dedicated quality control / quality assurance program that conforms to the International Organization for Standardization (ISO)-9001:2015.

1.6 WARRANTY

A. Manufacturer shall provide a written one year standard warranty from the date of use of the mechanically cleaned bar screen equipment to guarantee that there shall be no defects in material or workmanship in any item supplied.

B. Manufacturer shall warrant for the period of 5 years all rotating parts of the Mechanically Cleaned Bar Screen including the gear motor, bearing, drive head, and the link system including the links, castings, pins and retaining rings. Manufacturer warrants that these components shall be replaced if damaged or defective in the normal use of the equipment.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

Screens shall be manufactured by Duperon Corporation, 1200 Leon Scott Court, Saginaw, Michigan, TF 800.383.8479. The screens shall be the FlexRake® Model, Full Penetration Fine Screens FR IQ, or approved equal.

ENGINEER'S PRE-APPROVAL OF ALTERNATE EQUIPMENT

A. Manufacturers of deductive alternate equipment shall submit a pre-approval submittal package to engineer at least fourteen (14) business days prior to the bid date. Only approved deductive alternates listed by addendum will be acceptable. Deductive alternate manufacturers shall submit the following information and supporting documentation:

1. Any Contractor submitting an "approved equal" piece of equipment for approval shall bear all costs for structural, mechanical and electrical review by the Engineer. Any redesign and additional construction costs shall also be the responsibility of the Contractor.

2. Equipment Manufacturers awarded engineers pre-approval to bid will submit a Performance Bond with their bid underwritten by a bonding agent for a period of five years. Equipment and/or components failing within this period due to deficiency in design, workmanship, or material shall be replaced at no cost to the Owner and said replacement shall be guaranteed for five (5) years' continuous service from date of new equipment installation or repair.

3. A complete set of drawings with dimensions specific to this project showing the individual barscreens, their interface with other ancillary equipment, specifications, catalog cut sheets, and detailed descriptive material. Drawings shall show all relevant details of each unit. This information shall identify all technical and performance requirements stipulated on the drawings and in the specification. If the proposed equipment does not meet these specifications, any deviation from the specification must be expressly noted. All deviations shall be listed on a single document. Detailed installation drawings illustrating how the proposed screen fits in the channel and how it will mate to ancillary equipment. The drawings shall include dimensioned plan, elevational, and sectional views of each individual system as well as the overall installation.

2 Hydraulic performance data showing the relationship of head loss versus the full range of downstream liquid depths for the maximum, average and minimum flows. Data

based upon equipment other than the type specified will not be accepted.

3 Complete electrical and controls submittals including control schematics, PLC programming logic, detailed cut sheets on electrical components to include a P&ID.

4 Motor characteristics and performance information. Vendor data shall be furnished to confirm the torque and thrust rating of the drive.

5 Complete reference list of all current and active installations of same and similar equipment including contact names and phone numbers, showing at least fifteen (15) installations of the same type and size as specified.

6 Complete bill of materials for all equipment, showing dimensions and materials of construction of all components.

7 Information on equipment field erection requirements including total weight of assembled components and weight of each sub-assembly.

9. List of recommended spare parts.

10. A complete O&M manual including the maintenance schedule and showing the required maintenance, frequency of maintenance, lubricants and other items required at each regular preventative maintenance period, including all buy-out items.

11. The preapproval submittal shall be signed and sealed by a registered professional engineer in the State of Arkansas.

2.2 BASIS OF DESIGN

A. The mechanically cleaned bar screen shall have a head sprocket only, with no sprockets, bearings, idlers, or similar drive components under water to trap the chain. Equipment featuring reciprocating rake arms or lower bearings/sprockets/tracks below the water is not acceptable.

B. The mechanically cleaned bar screen shall clean the entire barscreen a minimum of every 7.1 seconds at high speed.

C. The flow ability of the screen area, specifically, shall be defined as follows: A composite number representing the specific flow- ability of a screen area composed of the bars' Hydraulic Headloss Coefficient Shape Factor, the bar width and the clear opening of the screen field per formula below.

$$(\text{Coefficient Shape Factor}) \times \left(\frac{\text{Bar Width}}{\text{Clear Opening}}\right) = \left(\frac{0.190}{\text{Clear Opening}}\right)$$

D. The mechanically cleaned bar screen shall be designed to run continuously (24/7), without operator.

E. The equipment shall have multiple scrapers on the bar screen at one time cleaning continuously from bottom to top, the entire width of the bar screen. The drive output shaft rotation shall be constant and in one direction in order to reduce maintenance and increase product life. Units which have single raking arms or that require cycle times shall

not be allowed. Cleaning mechanisms that utilize shock absorbers, springs or other dampening or hydraulic actuations are unacceptable.

F. The link system shall have jam evasion capability by flexing around and collecting large objects such as a 2 X 4, bowling ball, grease balls and surges of solids at peak loading times without overloading and shutting down the unit. The link system shall be such that it bends in one direction only which allows it to become its own lower sprocket and frame and shall have a 1,000 pound lifting capacity.

G. Designs employing the use of endless moving media or cables and hydraulic cylinders to remove debris from the channel and units utilizing proximity or limit switches for reverse cycles are not acceptable.

H. Equipment utilizing a greater than 1 HP motor or two or more motors to complete a screen cleaning cycle is not acceptable.

I. The design shall be such to ensure that all maintenance can be accomplished at the operating floor level or above. No part of the drive system including sprockets shall be located below the water surface at maximum design flow.

J. Screen and Washer Compactor manufacturer must design, fabricate, test and be located within the United States, as well as adhere to the American Steel Act.

K. Design Conditions:

Site Installation Information:	
Channel Width:	2'-6"
Channel Height:	16'-4"
(upstream clearance) Channel Depth:	16'-4"
Bar Opening Size:	1/4"
Angle of Installation:	10 degrees from vertical
Average Flow:	1.50 MGD
Average Water Level:	1.00 ft*
Maximum Flow:	8 MGD
Maximum Water Level:	3.00 ft*
Maximum Head Differential:	1.00 ft
Equipment Location:	Outdoors
Outdoor Installation:	
Installation Area (Envelope) Classification:	Class I Div II
Collection and Conveyance	
Conveyor:	*Provide*

L. Design Components.

Equipment Tag	Name	Existing/Proposed
10BS101	Mechanical Bar Screen #1	Proposed
10BS102	Mechanical Bar Screen #2	Proposed

2.3 COMPONENTS

A. Bar screen assembly: Bar screen assembly shall be of stainless steel and designed to withstand 1 foot head differential unless noted otherwise in Section 2.2 J Design Conditions. Unless noted otherwise materials of construction shall be 304 Stainless Steel. A stainless-steel channel bottom plate shall be an integral part of the bar screen assembly to fully engage scrapers in the bar screen at the base of the unit and assure that the raking mechanism reaches the bottom of the screen to prevent debris accumulation. The Bar screen assembly shall be shipped in one piece.

1. **Screen Bars**: Bars shall be 316L stainless steel and be tear-shaped with a Hydraulic Coefficient shape factor of 0.76 and the minimum dimensions of 0.25 inch x 0.75 inch x 0.13 inch. Bars shall be individually replaceable without welding. Screen bars shall have a 24" diameter curve at the base of the screen to allow for increased flowable area.

2. **Side Fabrication**: The screen framework shall be 304 stainless steel bent plate with minimum of 3/16 inch cross section. Horizontal members shall be of stainless-steel bent plate or stainless-steel pipe. Support members and frame shall adequately support the bar screen based on site specific requirements.

3. **Dead Plate:** Dead plate shall be 0.25 inch thick 304 stainless steel. The dead plate shall be flat and true; span the entire width of the unit; and transition from bar screen to discharge point.

4. **Discharge Chute:** The discharge chute shall be 0.25 inch 304 stainless steel. The discharge chute shall be designed to allow debris to be transferred from discharge point into the debris containment.

5. **Link Slides:** Link slide assembly shall be provided per manufacturer standard design and shall be constructed of UV Stable UHMW PE and 304 stainless steel supports and components.

B. Return Guide/Closeouts: Return guide/Closeouts shall be 304 stainless steel and shall ensure proper alignment of scrapers as they enter the bar screen and assure that there is no space wider than the clear opening between bars to prevent passage of larger solids than allowed through the screen.

C. Debris Blade: A 304 stainless steel and UV Stable UHMW-PE debris blade assembly, which does not require a separate drive, shall be installed to assist in removing debris from the scraper on the mechanically cleaned bar screen unit as recommended by the manufacturer. Hydraulic, shock, or spring controlled debris blade mechanisms are not acceptable.

D. Screen Enclosure: A 14ga. #4 brushed satin finish 304 SSTL Enclosure shall be installed to cover the screen above the operating deck level. Front Enclosure shall have removable panels for access to equipment. Removable panels shall be 16ga. 304 SSTL and shall be provided with a lift off option for "no tool required" access.. The top of the Front enclosure shall include a knock out for a customer site option to install a 6-inch diameter pipe stub. (The option of connecting to the site's exhaust system, to provide a positive air exchange from interior of enclosure, by Others.)

For multi-deck applications, 14ga. #4 brushed satin finish 304 SSTL side shields will also be provided.

1. Front Enclosure Design:

Fabrication:
○ ***SSTL removable panels***

E. Link System: The link system shall be passivated stainless steel castings and have a minimum ultimate strength of 60,000 lbs with a minimum cross section of 1.5 inches and weighing a minimum of 5 lbs each. Parts must meet ASTM A380 specification for surface finish. Link bearing shall be SAE 841 Bronze type for unlimited life. All wear shall happen between the pin and bearing surface.

1. 304 stainless steel system includes 302 stainless steel retaining rings and 304 stainless steel pins.

Scrapers: Scrapers shall be spaced 24 inches apart. To provide long product life the scraper shall move at no greater than 34 inches per minute at normal operating speed of .71 rpm allowing for approximately 1.41 debris discharges per minute Thru Bar Scrapers**:**

Thru Bar Scrapers shall be minimum .25 inch thick x 4.2 inches x screen width 2205 Super Duplex stainless steel.

F. Drive Head: The Drive Head shall be located at the top of the mechanically cleaned bar screen.

1. Drive Unit: Each mechanically cleaned bar screen unit shall operate independently and shall have its own drive unit and driven components.

a. Drive Sprockets shall be 304SSTL. Drive shaft shall be 304SSTL.

b. Gearbox shall be shaft-mounted, right angle type and include spiral bevel gearing. The output shaft speed shall be controlled by a vector type inverter or per rake manufacturer's recommendation. It shall have at least a 1.39 or greater service factor based on machine torque requirements. The gearbox shall not be vented to the outside atmosphere. The gearbox shall be grease filled. Oil filled gearboxes are not allowed.

c. The motor shall be AC induction type, inverter duty, 3 phase/480 volt and mounted to the gear reducer. The motor shall be 1 hp, designed for 1800 RPMs base speed and rated for Class I, Groups C & D, Class II Groups F & G environments. The motor shall have an EPNV enclosure, NEMA design B with a 56C frame size. Service factor shall be 1.0 or greater, Class F insulation and be optimized for IGBT type inverters. The motor must be UL listed and designed for continuous operation.

d. Motor shall have built in, normally closed, thermostat to protect from overheating that is to be field wired to corresponding terminal in control panel for redundant (ambient) overload protection.

e. All drive head components shall be of components available in the United States.

2. Bearing: Bearing shall be self lubricating engineered Thordon or Vesconite bearing and shall have a 24/7/365 L10 life of 20 years when in compliance with stated O&M recommendations. Non-sealed bearings are not acceptable.

3. Speed Reducer: Speed reducer shall be a double-reduction, cycloidal style and shall comply with all applicable AGMA standards. The speed reducer shall be capable of a 6/1 speed range with variable output speeds between 0.69 to 4.13 output RPMs (in high flow conditions). The speed reducer shall produce an output torque of 11,000 in.lb. and have a gear ratio of 424:1.

G. Standard Coating: All non-stainless bar screen components shall be coated in strict accordance with the paint manufacturer's specification. Surface Preparation shall be done in accordance with SSPC-SP-10 Near White. The three-part coating system shall be manufactured by Tnemec as follows: Prime Coat Series 90-97 Tnemec Zinc at 2.5-3.5 mils DFT, Intermediate Coat Series 27 F.C. Typoxy at 3.0-5.0 mils DFT, and Top Coat Series 1095U Endura-Shield at 2.0-3.0 mils DFT. Standard color is 11SF Safety Blue. Material shall meet all state and federal VOC and other regulatory requirements.

2.4 ELECTRICAL, CONTROLS, INSTRUMENTATION

A. General: Controls for each rake shall be in enclosures provided by the bar screen

manufacturer. The bar screen manufacturer shall be responsible for proper sizing and function of the controls at 480V, unless specified otherwise.

1. Main control panels require shading from the sun and shall be operated within a temperature range between 35°F and 104°F. Sunshields, visors or other structures needed to provide shade are by others. (If the controls will experience temperatures outside this range, then special climate provisions are available.)

2. Controls shall be designed to accept incoming power supply per plans/specs and shall include a step-down transformer as needed to achieve 120V.

3. Control Panel(s) shall be constructed to meet the appropriate NEMA classification requirements and will include a main, lockable disconnect. The panel will be constructed by a UL certified control panel build facility and will be supported by the appropriate UL labeling.

4. Controls shall be tested prior to shipment to owner. The rake manufacturer shall verify all overload settings in the rake controller to ensure proper overload and speed settings required for the application are properly programmed.

5. Control panel(s) shall be wired complete with a minimum of #16 MTW wire in the appropriate colors for the circuits being supplied. 120VAC control shall be red, grounded AC neutral shall be white, DC control shall be blue, DC neutral shall be blue with a white tracer, equipment ground shall be green and all incoming and outgoing external power source wires shall be a yellow configuration. All AC power wiring shall be a minimum of #12 Black. All wires shall be labeled at both ends with heat-shrink wire markers. Internal panel wiring shall be contained in non-flammable, covered wire way.

6. All panel(s) and panel mounted devices shall be labeled with engraved I.D. markers that reference back to the system schematics. Tags shall be white with black core, engraved as required.

7. All field wiring and power cables between the bar screen Main Control Panel and the Local Push Button Station shall be provided by others under the Electrical Section. VFD rated motor cable (Belden #29502 or equal) is recommended for all motors. Motor cables shall be less than 80 ft unless otherwise specified.

B. Components:

1. Main Control Panel

a. Enclosure(s) shall be NEMA 4X 304 SSTL for outdoor installations.

b. Enclosure shall not be located in an explosive environment.

c. Main Control Panel shall be designed with a SCCR rating of 18KA at 480VAC minimum and labeled as such, unless otherwise specified.

d. All terminals utilized in the main panel shall be 600V rated terminals and 20% spare terminal space shall be provided for any potential future revisions.

e. The Main Control Panel shall include at a minimum the following
- Main fusible disconnect with lockable operator, unless otherwise

specified.

- Physical or virtual Hand/Off/Auto (HOA) Selector and Push/pull E-Stop button.
- Elapsed run-time meter
- Indication for "Power On", "Forward" and necessary faults.

f. Relay Based Controls shall included the following:

- Variable Frequency Drive (VFD)
- Electronic torque control
- Hard contact SCADA Interlock(s)
- Adjustable on/off cycle timers

2. Local Control Push Button Station

a. Enclosure shall be NEMA 7/9 rated for Classified area installation. Local push button station must be local to the equipment to maintain requirements of local safety codes as determined by the Engineer.

b. Local station shall be mounted within 10 feet or as close to the equipment as safely possible and be field wired by the electrical subcontractor to the corresponding terminal inputs in the main control panel.

c. The remote pushbutton station shall include Forward, Jog Reverse and E-Stop buttons.

3. Instrumentation: Each raking assembly shall have a separate level system that shall be installed and field wired by others per the manufacturer's instructions. Note that the HydroRanger can be installed in the control panel or remotely and wired to the control panel.

a. Two Level/Two Speed Control: When the lower level switch trips, the rake runs. When the upper level switch trips the rake runs at high speed. When the level switch returns to the normal position, an off-delay timer is initiated to prevent intermittent equipment starting/stopping. Cycle timing logic shall also be included that shall function in parallel with the level control for optimal rake run time.

- (2) Mechanical Float Switches including 50 ft long cabling

4. Dead plate heat pad: Required in applications where freezing temperatures are probable. Power requirements for the Dead Plate heaters are 120VAC. Installation of the field wiring supplied by others. Pads shall be fiberglass reinforced silicone rubber suitable for use on metal surfaces. Pads shall have a minimum power density of 2.5 W/in² and a dielectric strength greater than 2000 volts. Pads shall have a high-limit thermostat designed to keep the pad below NEC article 500 T-rating. Pads shall be moisture, chemical and radiation resistant.

a. Class I Division II area heat pads and thermostats

C. Controls Design Conditions:

Incoming Power: (Voltage/Phase)	3Phase/480VAC/60Hz
Enclosures:	Same for Multiple
Installation location:	Outdoors

Approx. distance between main panel and equipment motor	*50'*
Climate controlled location:	No
Outdoor location (must be shaded):	*By Others*
Thermostat, air conditioner and heater	Provided by bar screen manufacturer
Transducer/Float cable length (50 ft standard):	*50'*

2.5 SPECIALTY TOOLS, SPARE PARTS AND LUBRICATION

A. Manufacturer shall provide any specialty tools and recommend spare parts required for maintaining the equipment as follows:

1. Snap/Retaining Rings (10)
2. Link Clevis Pins (4)
3. Scraper Bolts (4)
4. Scraper Nuts (4)
5. Snap Ring Tool (1)
6. Never Seez, 1 oz. tube (1)

2.6 Process Description

A. The raw influent wastewater enters the plant from the influent lines from the west. Wastewater enters a common influent box on the upstream side of the new headworks. The flow is then split into two new headworks channels. Each new channel will contain isolation gates, new mechanical bar screens, upstream differential pressure sensors, back up float switches, emergency floats, and effluent gates. The flow will go though the channels and until it reaches the primary screw pumps.

B. Automatic Mode:

1. The bar screens, (10BS101, 10BS201) are both rated for 8 MGD. Only one bar screen will operate at one time. The operator will decide when each bar screen will operate. The bar screens will operate continuously at a frequency recommended by the manufacturer. The level of the channels which will be measured by the differential pressure sensor (SPIT-1, SPIT-2) and frequency will adjust as the level of the flow changes in the channels. There will be backup floats (FS-2, FS-3) in each channel, that will be there for redundancy to the differential pressure sensors. There will also be a high-level float (FS-1) in the common influent box on the upstream side of the new channels that will alarm the operators if the level in the influent vault gets too high.

C. Interlocks

1. Hard Interlocks

a. There are not hard interlocks associated with this control strategy

2. Soft Interlocks

b. The washer compactors and the bars screens will have a soft interlock programmed into the PLC. If 10BS101 or the associated washer compactor does not start, then neither piece of equipment shall be in operation. 10BS201 will also have a soft interlock with its associated bar screen.

PART 3 – EXECUTION

3.1 SHIPMENT

Shipment of all equipment shall be coordinated to allow the screen shipment as one complete integrated assembly unless otherwise specified by the customer, contractor, or engineer.

3.2 INSTALLATION (INCLUDED IN SEPARATE CONTRACT)

A. Equipment shall be installed in strict conformance with the manufacturer's installation instructions, as submitted with Shop Drawings, Operation and Maintenance Manuals and/or any pre-installation checklists. Installation shall utilize standard torque values and be installed secure in position and neat in appearance. Installation shall include any site preparation tasks as required by the engineer or manufacturer; such as unloading, touch-up painting, etc. and any other installation tasks and materials such as wiring, conduit, controls stands as determined by the customer and/or specified by the manufacturer.

B. **Anchor Bolts:** Anchor bolts and nuts shall be 304 stainless steel and furnished for each item of equipment by the CONTRACTOR.

1. Anchor bolt template drawings shall be included in the submittal to permit verification of the location structural elements, new or existing in the concrete.

2. Anchor bolt sizes, quantity and requirements will be indicated on the submittal drawings. Quantity is site specific but typically each Barscreen assembly requires (8) to (12) 1/2" dia. x 4 1/2" Lg. embed HILTI KWIK bolt TZ for Mechanical Screen anchorage and typically (8) to (12) 3/8" dia. x 3 3/8" Lg. embed HILTI KWIK bolt TZ anchor bolts for the Return Guide/Closeouts anchorage.

3.3 TESTING

A. After completion of installation, CONTRACTOR shall provide for testing and shall be performed in strict conformance with the manufacturer's start up instructions. Testing of the bar screen shall demonstrate that the equipment is fully operational by picking up and depositing materials into specified containment.

B. Field certification shall include inspection of the following:

1. Verify equipment is properly aligned and anchored per the installation instruction and drawings. Assure the bar screen unit is square, flat and unobstructed with required clearances maintained.

2. Assure controls and instrumentation work in all modes.

3. Check equipment for proper operation of debris blade, scrapers, etc as well as completion of the Start-Up requirements in the installation guide.

3.4 ONSITE TECHNICAL ASSISTANCE

A. Manufacturer shall provide services to include Installation Certification, and shall include (1) day for Start-Up and (1) day for Training. Manufacturer shall be given minimum 14 days notification prior to the need for such services. To ensure the best outcome for the

Owner and Contractor, the Contractor shall provide certification for completion of the PRE-COMMISSIONING CHECKLIST.

END OF SECTION

SECTION 462173

WASHER COMPACTOR

PART 1 – GENERAL

1.1 SUMMARY

A. SCOPE OF WORK

Duperon Corporation shall furnish an interleaving, dual auger washer compactor assembly as shown on the drawings and as specified herein. A single unit shall provide washing and compacting action on wastewater screenings. The equipment shall be manufactured by Duperon Corporation, 1200 Leon Scott Court, Saginaw, Michigan, 48601, (800) 383-8479, in accordance with this section.

B. RELATED WORK

1. Bar Screen
2. Conveyor
3. Receptacle

C. QUALITY ASSURANCE

1. All equipment supplied under this section shall be of a single manufacturer and demonstrate, to the satisfaction of the Engineer, that the quality is equal to equipment made by those manufacturers specifically named herein.

2. The equipment furnished shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with approved drawings, specifications, engineering data, and/or recommendations furnished by the equipment manufacturer.

1.2 RELATED SECTIONS

A. The following list of related sections is provided for the convenience of the Contractor and is for reference only to support commonly referenced sections that are in-general applicable to all equipment supplied. (For complete list of sections see specification index.)

1. All sections of Division 1 including but not limited to Submittal Procedures, Shop Drawings, Product Data and Samples, Operating and maintenance information, Protection of Materials and Equipment, Installation, Testing, and Commissioning, Instruction of Operations and Maintenance Personnel, and Spare Parts Maintenance Manuals.
2. Section 099000-Painting

1.3 REFERENCE STANDARDS

A. American National Standards Institute (ANSI)
B. American Society for Testing and Materials (ASTM)
C. American Welding Society (AWS)
D. American Institute of Steel Construction (AISC)
E. American Bearing Manufacturers Association (ABMA)
F. American Gear Manufacturers Association (AGMA)
G. National Electrical Manufacturers Association (NEMA)
H. Underwriters Laboratory (UL)

1.4 SUBMITTALS

A. The equipment manufacturer shall submit the following items:

1. (4) Sets of Shop Drawings, including: Main Layout Drawings, List of Equipment Specifications, and Recommendations furnished by the Equipment Manufacturer.

2. (4) Sets As-Built Drawings of Washer Compactor Structure, Controls, and Accessories (as applicable).

3. List of Spare Parts and Special Tools (as applicable).

4. (4) Sets O&M Manuals (including As-Built Drawings) to be provided after equipment ships for inclusion in the close-out Submittal process.

1.5 QUALITY ASSURANCE

A. The Washer Compactor shall be fully assembled and shop tested at the manufacturing facility prior to shipment. Shop testing shall include a minimum of 4 hours of run time.

B. To assure quality and performance: All equipment furnished under this Section and related sections shall be of a single manufacturer who has been regularly engaged in the design and manufacture of the equipment and demonstrates, to the satisfaction of the Engineer, that the quality is equal to equipment made by those manufacturers specifically named herein. And the Washer Compactor manufacturer shall have at least 25 installations of the specified model of Washer Compactor equipment that has been in successful operation, at similar installations, for at least five (5) years. Upon request, the manufacturer shall provide a reference of such installation sites along with the relevant contact information.

Possible consideration may be given to manufacturers with less installation experience but only upon submission and approval of dimensional and installation drawings and O & M Manuals. Additionally, a complete product development plan with dates indicating all applicable alpha and beta testing shall be provided for review and acceptance.

Approval of any manufacturer that does not meet the installation experienced defined herein shall be contingent upon submission and approval of the previously defined information. Additionally, such manufacturers shall be required to provide a performance bond issued in favor of the owner, covering the full amount of the manufacturer's offering and for the entire warranty period of the project.

C. The equipment furnished shall be fabricated, assembled, installed and placed in proper operation condition in full conformity with approved drawings, specifications, engineering data, and/or recommendations furnished by the equipment manufacturer.

D. The equipment manufacturer shall have in-place a dedicated quality control / quality assurance program that conforms to the International Organization for Standardization (ISO)-9001:2015.

1.6 WARRANTY

A. Manufacturer shall provide a written one year standard warranty from the date of use of the Washer Compactor equipment to guarantee that there shall be no defects in material or workmanship in any item supplied.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Washer Compactors shall be as manufactured by Duperon Corporation, 1200 Leon Scott Court, Saginaw, Michigan, TF 800.383.8479.

ENGINEER'S PRE-APPROVAL OF DEDUCTIVE ALTERNATE EQUIPMENT

B. Manufacturers of deductive alternate equipment shall submit a pre-approval submittal package to engineer at least fourteen (14) business days prior to the bid date. Only approved deductive alternates listed by addendum will be acceptable. Deductive alternate manufacturers shall submit the following information and supporting documentation:

1. Any Contractor submitting an "approved equal" piece of equipment for approval shall bear all costs for structural, mechanical and electrical review by the Engineer. Any redesign and additional construction costs shall also be the responsibility of the Contractor.

2. Equipment Manufacturers awarded engineers pre-approval to bid will submit a Performance Bond with their bid underwritten by a bonding agent for a period of five years. Equipment and/or components failing within this period due to deficiency in design, workmanship, or material shall be replaced at no cost to the Owner and said replacement shall be guaranteed for five (5) years' continuous service from date of new equipment installation or repair.

3. A complete set of drawings with dimensions specific to this project showing the individual barscreens, their interface with other ancillary equipment, specifications, catalog cut sheets, and detailed descriptive material. Drawings shall show all relevant details of each unit. This information shall identify all technical and performance requirements stipulated on the drawings and in the specification. If the proposed equipment does not meet these specifications, any deviation from the specification must be expressly noted. All deviations shall be listed on a single document. Detailed installation drawings illustrating how the proposed screen fits in the channel and how it will mate to ancillary equipment. The drawings shall include dimensioned plan, elevational, and sectional views of each individual system as well as the overall installation.

2 Hydraulic performance data showing the relationship of head loss versus the full range of downstream liquid depths for the maximum, average and minimum flows. Data based upon equipment other than the type specified will not be accepted.

3 Complete electrical and controls submittals including control schematics, PLC programming logic, detailed cut sheets on electrical components to include a P&ID.

4 Motor characteristics and performance information. Vendor data shall be furnished to confirm the torque and thrust rating of the drive.

5 Complete reference list of all current and active installations of same and similar equipment including contact names and phone numbers, showing at least fifteen (15) installations of the same type and size as specified.

6 Complete bill of materials for all equipment, showing dimensions and materials of construction of all components.

7 Information on equipment field erection requirements including total weight of assembled components and weight of each sub-assembly.

9. List of recommended spare parts.

10. A complete O&M manual including the maintenance schedule and showing the required maintenance, frequency of maintenance, lubricants and other items required at each regular preventative maintenance period, including all buy-out items.

11. The preapproval submittal shall be signed and sealed by a registered professional engineer in the State of Arkansas.

2.2 BASIS OF DESIGN

A. Compacting Action: The Washer Compactor shall have dual augers to provide positive displacement action. Augers shall be oriented on top of each other and rotate in opposing directions. Augers shall be intermeshed, with one left-hand and one right-hand lead. Augers shall be designed with a limited float on top of a strainer to allow for the accommodation of irregular debris.

B. Washing Action: The Washer Compactor shall have a wash water manifold integrated into the main housing. Two ports inside the unit shall emit a medium pressure stream. Wash water shall run continuously when the Washer Compactor is in motion. Continuous operation (non-batching) equipment is required; filling- and batching-type equipment shall not be accepted.

C. Operation: The Washer Compactor shall be continuous run, not requiring an operator. The Washer Compactor shall be equipped with a self-regulating, active pressure zone designed to accept non-standard wastewater debris in its original form, including but not limited to: rocks; broken concrete; and metal (such as bolts or short pipe) up to 4 inches long. The Washer Compactor shall have the ability to process multiple pieces of clothing, variable volumes of debris, and unprocessed septage or grease. The Washer Compactor shall move at a normal operating speed of 0.5 to 2.2 RPM and shall have the ability to run intermittently to sync with upstream equipment.

D. Materials:

1. **Fabrications:** All welded fabrications shall be made from stainless steel. All welded connections and welding procedures shall comply with AWS “Structural Welding Code – Sheet Steel” D1.3/D1.6.

2. **Select Parts:** Select power transmission parts to be made from cast iron; however, shall conform to standard coating as follows.

3. **Standard Coating:**

    a. Motor gearbox shall be coated in strict accordance with the paint manufacturer’s specification. Surface preparation shall be done in accordance with SSPC-SP-10 near White. The three-part coating system shall be manufactured by Tnemec as follows: Prime Coat Series 90-97 Tnemec Zinc at 2.5-3.5 mils DFT; Intermediate Coat Series F.C.Typoxy at 3.0-5.0 mils DFT; and Top Coat Series 1095 Endura-Shield at 2.0-3.0 mils DFT. Standard color is 11SF Safety Blue. Material shall meet all State and Federal VOC and other regulatory requirements.

b. Alternatives: Any alternate product must provide certified test reports when submitting products other than those specified herein. Test reports shall indicate the test method, system, and requirements for those products being submitted and shall meet or exceed the test criteria and performance values of the coatings specified herein.

4. **Non-Metal:** Parts not covered in the specifications above shall be manufactured from UHMW polyethylene.

E. Design Conditions:

Washer Compactor WC3.D3.5 Data Sheet	
Peak Capacity:	30 cu.ft./hr (approx. 15 minutes)
Average Capacity (Continuous):	6.5 cu.ft./hr
Wastewater Application (¼" barscreen):	Up to 15 MGD
Water: Typical	• Utilizes filtered effluent or municipal water • Consumes 3-10 GPM • Requires 40-60 PSI • ½ inch NPT supply (female threads) • 3 inch NPT drain (male threads)
Materials of Construction:	• 304 SSTL • 17-4 Spur Gears • Delrin (or equivalent) thrust and plane bearings • UHMW Auger Supports
Strainer:	• Perforated Screen
Hopper Height (Deck to Hopper):	To be determined
Hopper Length (WC3.D3.5 Unit):	To be determined
Below Freezing Temperatures: Heat tracing on body, transition and discharge chutes (installation and power by Duperon)	Yes
Performance Data (Typical Wastewater Debris)	
Dry Solids:	30%-60%
Mass/Weight Reduction:	60%-70%
Volume Reduction:	70%-80%
Odor/Fecal:	Significantly decreases odor/fecal
Motor/Drive	
Motor Size:	1 HP
Motor Paint:	Duperon® Standard Tnemec Coating
Motor Service Factor (Minimum):	1.0
Output Speed:	2.2 RPM
Speed Reducer Ratio/Output:	809:1
Speed Reducer Paint:	Duperon® Standard Tnemec Coating
Site Power	
Phase/Voltage:	240/480 volt
Controls	
	• NEMA 4X SSTL enclosure • Main Disconnect • Emergency Stop • HOA (Auto is discreet "Run" input)

	• Fwd/Jog Reverse/E-Stop Push Button Station • "Run" and "In Auto" discrete outputs • Explosion-Proof station (local standard)
Mounting:	• Wall • Pedestal (by others)
Project Management	
Submittal Quantity:	2 – 4
O&M Manual Quantity:	2 – 4
Warranty Period:	1 year
Shipping	
	• Main unit • Chute(s) • Accessories (heat blanket, custom hopper, bagging system, manual divertor chute)

F. Desing Components

Equipment Tag	Name	Existing/Proposed
10WC101	Washer Compactor #1	Proposed
10WC102	Washer Compactor #2	Proposed

2.3 COMPONENTS

A. Main Housing: The main housing of the Washer Compactor shall be constructed of stainless steel (material options contained in table) with a minimum thickness of 11 gauge. Support and flange connections shall be 3/8 inch.

B. Hopper: The hopper of the Washer Compactor shall be constructed of stainless steel (material options contained in table) with a minimum thickness of 11 gauge.

C. Augers: The augers shall be of stainless steel (material options contained in table) with 8 inch diameter flights, 3/8 inch thick, with 4 inch flight pitch. The augers shall be coupled to a transmission at the drive end and be supported at the compaction end with UHMW plane bearings. This arrangement shall allow for the accommodation of irregular debris. The auger shaft shall be 2 inch stainless steel schedule 40 pipe with 2 inch solid stainless steel stub shaft.

D. Compaction Housing: The compaction housing of the Washer Compactor shall be ¼ inch stainless steel (material options contained in table) and shall house a spring and gate assembly to provide the resistance for compaction. The compaction housing shall contain the auger supports.

E. Discharge Chute: The discharge chute of the Washer Compactor shall be constructed of stainless steel (material options contained in table) with a minimum thickness of 14

gauge. Support and flange connections shall be 1/4 inch. The discharge chute shall be tapered outward toward the discharge end.

F. Water Supply: The water supply shall connect at a single point with a ½ inch NPT female connector. A NEMA 7/9 Explosion proof solenoid valve is provided to limit the wash water flow to only when the washer compactor is running. Ball valves shall be provided to distribute flow to the washing and trough sprayer connections.

G. Strainer: A strainer shall be located beneath the lower auger to filter the washed solids. The strainer shall be removable via drain trough and pressed against the lower auger with spring pressure. The strainer shall be self-cleaning through continuous, even contact with the lower auger. Strainers requiring auger-mounted brushes will not be accepted.

H. Drain Trough: A removable pan shall be provided beneath the main housing to collect washwater. Washwater shall be drained through a 3 inch NPT male drain port. The pan shall be a minimum of 11 gauge stainless steel (material options contained in table).

I. Drive Assembly:

1. Each Washer Compactor unit shall operate independently, with its own drive unit and driven components. The gearbox shall not be vented to the outside atmosphere.

2. The gearbox shall be grease lubricated and designed for 5 years (or 20,000 hours of operation) between recommended clean and re-grease services. The gearbox shall be right angle type, and shall incorporate cycloidal and spiral bevel gearing with a total ratio of 809:1. The gear reducer output shaft speed shall be 0.5 RPM minimum to 2.2 RPM maximum and controlled by a vector-type inverter (or greater service factor) based on unit torque requirements. It shall be shaft-mounted utilizing the keyless Taper-Grip® bushing.

3. The motor shall be mounted to the gear reducer by utilizing a quill, C-Face mounting style. The motor shall be AC induction type, 1 HP, 3/60/230/460 volt, explosion-proof, inverter-duty model.

4. The drive assembly shall incorporate the Duperon® standard coating system.

J. Auger Transmission:

1. The Drive Assembly shall be coupled to a dual gear transmission, which drives the augers in a counter-rotation.

2. The spur gears are contained in a stainless steel housing and supported by Delrin (or equivalent) plane bearing.

3. Grease fittings shall be located outside of the transmission housing to provide lubrication to the gears.

K. Speed Reducer: The Speed Reducer shall have a maximum output of 2.2 RPM, 809:1 reduction ratio with 18,900 in-lb. of output torque.

L. Thrust Bearings: Thrust Bearings shall be Delrin (or equivalent), self-lubricating, and be capable of withstanding a minimum of 2000 lb. of thrust load (each auger) at 2.2 RPM for life of machine.

M. Screw Supports: Screw supports shall be UHWM plane type, self-lubricating, and fastened into place using stainless steel fasteners.

2.4 ELECTRICAL, CONTROLS, INSTRUMENTATION

A. General: Controls the washer compactor shall be in enclosures provided by the washer compactor manufacturer. The washer compactor manufacturer shall be responsible for proper sizing and function of the controls at 480V, unless specified otherwise. **Note that the washer compactor controls can be integrated into the main control panel of the bar screen if provided by the same manufacturer.**

1. Main control panels require shading from the sun and shall be operated within a temperature range between 35°F and 104°F. Sunshields, visors or other structures needed to provide shade are by others. (If the controls will experience temperatures outside this range, then special climate provisions are available.)

2. Controls shall be designed to accept incoming power supply per plans/specs and shall include a step-down transformer as needed to achieve 120V.

3. Control Panel(s) shall be constructed to meet the appropriate NEMA classification requirements and will include a main, lockable disconnect. The panel will be constructed by a UL certified control panel build facility and will be supported by the appropriate UL labeling.

4. Controls shall be tested prior to shipment to owner. The washer compactor manufacturer shall verify all overload settings in the motor controller to insure proper overload and speed settings required for the application are properly programmed.

5. rammed.

6. Control panel(s) shall be wired complete with a minimum of #16 MTW wire in the appropriate colors for the circuits being supplied. 120VAC control shall be red, grounded AC neutral shall be white, DC control shall be blue, DC neutral shall be blue with a white tracer, equipment ground shall be green and all incoming and outgoing external power source wires shall be a yellow configuration. All AC power wiring shall be a minimum of #12 Black. All wires shall be labeled at both ends with heat-shrink wire markers. Internal panel wiring shall be contained in non-flammable, covered wire way.

7. wire markers. Internal panel wiring shall be contained in non-flammable, covered wire way.

8. kers. Internal panel wiring shall be contained in non-flammable, covered wire way.

9. All panel(s) and panel mounted devices shall be labeled with engraved I.D. markers that reference back to the system schematics. Tags shall be white with black core, engraved as required.

10. All field wiring and power cables between the washer compactor Main Control Panel and the Local Push Button Station shall be provided by others under the Electrical Section. VFD rated motor cable (Belden #29502 or equal) is recommended for all motors. Motor cables shall be less than 80 ft unless otherwise specified.

B. Components:

1. **Main Control Panel**

    a. Enclosure(s) can be NEMA 4X 304 SSTL for indoor/outdoor installations.

    b. Enclosure shall not be located in a Classified area.

    c. Main Control Panel shall be designed with a SCCR rating of 18KA at 480VAC minimum and labeled as such, unless otherwise specified.

    d. All terminals utilized in the main panel shall be 600V rated terminals and 20% spare terminal space shall be provided for any potential future revisions.

    e. The Main Control Panel shall include at a minimum the following
        - Main fusible disconnect with lockable operator, unless otherwise specified.
        - Physical or virtual Hand/Off/Auto (HOA) Selector and Push/pull E-Stop button.
        - Elapsed run-time meter
        - Indication for "Power On", "Forward" and necessary faults
        - Fused connection for the washwater solenoid.

    g. PLC Based Controls shall include the following:
        - Programmable Logic Controller (PLC)
        - Variable Frequency Drive (VFD)
        - HMI programmable functions as required
        - SCADA Interlocking via Hard Contact and/or Ethernet Communications Protocols as required.

2. **Local Control Push Button Station**

    a. Enclosure shall be NEMA 7/9 rated for unclassified installation. Local push button station must be local to the equipment to maintain requirements of local safety codes as determined by the Engineer.

    b. Local station shall be mounted within 10 feet or as close to the equipment as safely possible and be field wired by the electrical subcontractor to the corresponding terminal inputs in the main control panel.

    c. The remote pushbutton station shall include Forward, Jog Reverse and E-Stop buttons.

3. **Sequence of Operations:**

    a. The Washer Compactor controls shall enable the push button station installed near the Washer Compactor when in “Hand” mode and utilize an input signal from a remote source when in “Auto” mode. Upon receiving a disruption of “remote source” signal in “Auto” mode, the Washer Compactor shall utilize an off-delay timer to allow debris to finish depositing. The washwater solenoid is energized any time that the washer compactor is running.

b. The Duperon® Speed Controller fault shall be cleared by turning off the Washer Compactor, then waiting approximately three minutes (or time designated per current UL standards) and then turning the HOA back to the desired setting. A motor overtemp fault shall clear automatically when the motor cools to a temperature within the normal operating range.

4. Miscellaneous:

a. The following shall be provided by the electrical contractor and are not part of the Washer Compactor manufacturer scope of supply:

a. Mounting stands

b. Mounting hardware

c. Field wiring and conduit

i. VFD-rated motor cable (Belden #29502 or equal) recommended for all motors.

ii. Motor cables shall be less than 80 ft. long unless specified otherwise.

d. Junction boxes

e. Installation

b. Field wiring shall include (but not be limited to) the following connections as applicable:

a. All incoming power supply to the main control panel.

b. All required grounding of the motor and controls.

c. Motor to the main control panel.

d. VFD-rated motor cable (Belden #29502 or equal) recommended for all motors.

e. Motor cables shall be 80 ft. long unless specified otherwise.

f. Motor thermostat to the terminal inputs in the control panel.

g. Washwater solenoid wiring

h. Input and output signal wiring for remote start/stop as required by plans/specs.

c. Remote station contacts to the corresponding terminal inputs in the main control panel.

2.5 SPECIALTY TOOLS, SPARE PARTS AND LUBRICATION

A. Duperon does not typically recommend the purchase of additional spare parts, though

some customers prefer to have them on hand.

B. Plane Bearing Kit includes:

1.	Side Auger Supports	(2)	
2.	Upper/Lower Auger Supports	(2)	
3.	FHSCS: ¼-20 x 1.00 LG		(24)
4.	Washer: ¼ Flat SAE	(24)	
5.	Nut: ¼-20 Nylock	(24)	
6.	Grease Tube (14oz.)	(1)	
7.	Anti-Seize Lubricant (1oz.)	(1)	

C. Heat Trace and Blanket Kit Required in applications where freezing temperatures are possible. Power requirements for the Heat Trace and Blanket Kit are 120VAC/1000 watts and components are suitable for Class I, Division 1 areas. Installation of the Heat Trace and Blanket kit, related wiring and power supplied by Duperon. The Heat Trace and Blanket Kit includes:

1.	Removable heat blanket, weatherproof construction	(1)
2.	100 ft. of Heat Trace cable, self-regulating, 12 AWG buss, 10 watts/ft	(1)
3.	NEMA 4X Thermostat with remote probe for temperature detection	(1)
4.	Junction box for explosion-proof termination of heat trace	(1)

2.6 Process Description

A. During normal flow conditions, the washing press shall be operated in a forward and reverse sequence via a programmable logic controller (PLC). The screenings will be transported into the washing zone where the screw shall stop rotation. Wash water will then be injected through the hollow shaft screw and into the screenings. The screw will then reverse, bring the screenings out of the washing zone and stop rotation to allow the washing zone to be flushed. The screw then once again operates in the forward direction and repeats the washing sequence. This adjustable washing process shall be repeated a minimum of six (6) times to ensure thorough cleaning of the screenings material.

B. During peak loading conditions, the washing process shall automatically switch to operate in the forward direction to handle the larger amount of screenings with only short intervals of reversing to ensure that material does not accumulate on the shaft of the screw.

C. With the HAND-OFF-AUTO selector switch in the HAND position, the washing press shall run as dictated by the FORWARD-OFF-REVERSE selector switch. In the AUTO position, the washing press shall be automatically started based on the from the PLC.

D. Control logic shall be included to provide overload protection in case of screw blockage that would stall rotation. If a blockage were encountered, the controls would stop the mechanism, reverse direction to dislodge the blockage, and then reverse to the alternate screw direction. Once the blockage is dislodged, the operating sequence continues as normal. If the blockage is not dislodged after three (3) reversals, the press will stop operation and an alarm signal will be generated.

E. Interlocks

1. Hard Interlocks

a. There are no hard-wired interlocks associated with this control strategy.

2. Soft Interlocks

a. The washer compactor (10WC101) and its associated bar screen (10BS101) will have a soft interlock programmed into the PLC between the two pieces of equipment.

PART 3 – EXECUTION

3.1 SHIPMENT

Shipment of all equipment shall be coordinated to allow the Washer Compactor shipment as one complete integrated assembly unless otherwise specified by the customer, contractor, or engineer.

3.2 INSTALLATION (INCLUDED IN SEPARATE CONTRACT)

A. Equipment shall be installed in strict conformance with the manufacturer's installation instructions, as submitted with Shop Drawings, Operation and Maintenance Manuals and/or any pre-installation checklists. Installation shall utilize standard torque values and be installed secure in position and neat in appearance. Installation shall include any site preparation tasks as required by the engineer or manufacturer; such as unloading, touch-up painting, etc. and any other installation tasks and materials such as wiring, conduit, controls stands as determined by the customer and/or specified by the manufacturer. All plumbing shall be completed on site by a qualified individual in accordance with all local and national plumbing regulations.

B. **Anchors:** Anchors and nuts shall be 316 stainless steel and furnished for each item of equipment by the CONTRACTOR.

1. Anchors template drawings shall be included in the submittal to permit verification of the location structural elements, new or existing in the concrete.

2. Anchors sizes, quantity and requirements will be indicated on the submittal drawings. Quantity is site specific but typically each Washer Compactor assembly requires (4) 1/2" dia. x 4 1/2" Lg. embed HILTI HAS RODS w/ RE-500v3 Adhesive system anchors.

3.3 TESTING

A. After completion of installation, CONTRACTOR shall provide for testing and shall be performed in strict conformance with the manufacturer's start up instructions. Testing of the Washer Compactor shall demonstrate that the equipment is fully operational and that the equipment will wash, compact, and deposit materials not to exceed 4 inches.

B. Field certification shall include inspection of the following:

1. Verify Washer Compactor is properly leveled and anchored per the installation instructions and site drawings.

2. Assure controls and instrumentation work in all modes.

3. Assure proper auger rotation.

4. Check to assure all Start-Up requirements are completed per the Installation Guide.

3.4 ONSITE TECHNICAL ASSISTANCE

A. Manufacturer shall provide services to include Installation Certification, and shall include (1) day for Start-Up and (1) day for Training. Manufacturer shall be given minimum 14 days notification prior to the need for such services. To assure the best outcome for the Owner and Contractor, the Contractor shall provide certification for completion of the PRE-COMMISSIONING CHECKLIST. Duperon reserves the right to combine the start-up and training time for the Duperon® Washer Compactor with that of other Duperon® equipment, such as the Duperon® FlexRake®.

APPENDIX A

SUPPLEMENTAL DRAWINGS

Wynne Emergency Response Project C – Wastewater Treatment Plant Improvements

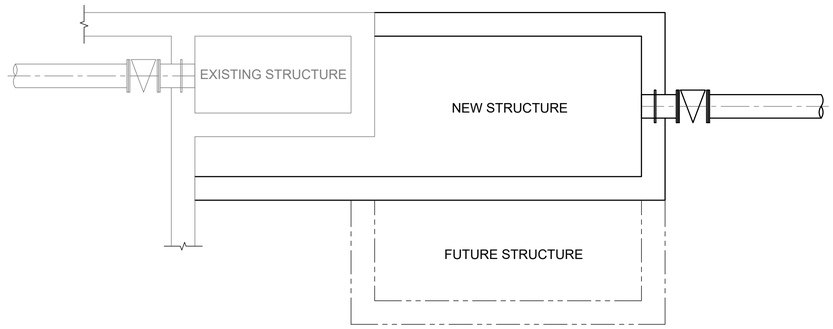
Headworks Drawing

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GENERAL EXISTING, NEW AND FUTURE LEGEND

SYMBOL	DESCRIPTION
	EXISTING PIPE, STRUCTURE, PAVEMENT, OR OTHER ITEMS TO BE DEMOLISHED.
	EXISTING PIPE, STRUCTURE, OR OTHER ITEMS TO BE ABANDONED.
	EXISTING
	NEW
	FUTURE
N	NORTH ARROW

EXISTING, NEW, AND FUTURE LINE WEIGHT REPRESENTATION



SHEET IDENTIFICATION SYSTEM

10 - H - 101
- 10 — DENOTES PROCESS STRUCTURE (AS REQUIRED)
- 101 — SEQUENTIAL SHEET NUMBER
- H — DISCIPLINE DESIGNATORS

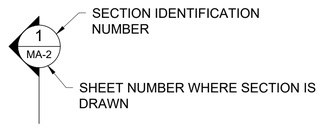
G - GENERAL	A - ARCHITECTURAL
C - CIVIL	S - STRUCTURAL
X - DEMOLITION	M - PROCESS MECHANICAL
I - INSTRUMENTATION & CONTROL	H - MECHANICAL
	P - PLUMBING
F - FIRE & LIFE SAFETY	E - ELECTRICAL
B - GEOTECHNICAL	Y - PHOTOS
L - LANDSCAPE	T - TELECOMMUNICATIONS

SHEET NUMBER LEGEND

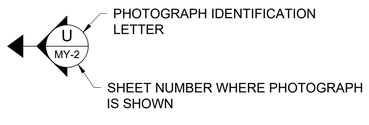
CIVIL DISCIPLINE	ALL OTHER DISCIPLINES
100 - SITE PLANS	100 - PLAN VIEWS
200 - GRADING & PAVING	200 - ELEVATIONS
300 - PIPING & PROFILES	300 - SECTIONS

ALL DISCIPLINES
- 400 - LARGE SCALE VIEWS
- 500 - DETAILS
- 600 - DIAGRAM OR SCHED.
- 900 - ISOMETRICS

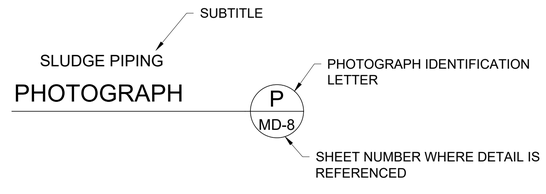
SECTION AND DETAIL DESIGNATION



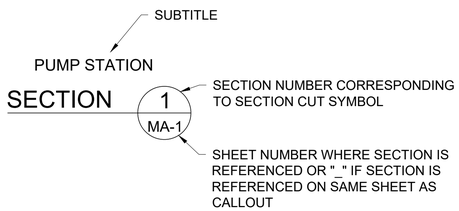
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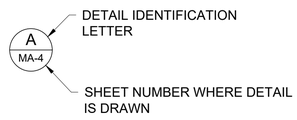
PHOTOGRAPH CALL-OUT SYMBOL



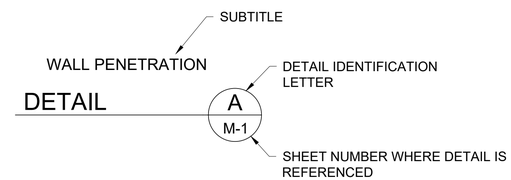
TITLE FOR PHOTOGRAPHS



TITLE FOR SECTION



DETAIL CALLOUT SYMBOL



TITLE FOR DETAILS

STANDARD ABBREVIATIONS

AC	AIR COMPRESSOR
AV	ANGLE VALVE
AVRV	AIR/VACUUM RELEASE VALVE
BLW	BLOWER
BA	BALL VALVE
BCK	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BPRV	BACK PRESSURE REGULATING VALVE
CDH	CONDENSATE HEATER
CK	CHECK VALVE
CG	CONTROL GATE
CO	CLEANOUT
COM	COMPRESSOR
CP	CONTROL PANEL
CRA	CHLORINE RESIDUAL ANALYZER
CS	CAPACITANCE SWITCH
DAP	DAMPER
DF	DIFFUSER
DO	DISSOLVED OXYGEN PROBE
DP	DRAIN PUMP
EF	EXHAUST FAN
EMO	ELECTRIC MOTOR OPERATOR
FAN	FAN
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN
FE	FLOW ELEMENT
FH	FIRE HYDRANT
FI	FLOW INSTRUMENT
FIL	FILTER
FIT	FLOW INDICATING TRANSMITTER
FS	FLOAT SWITCH
GL	GLOBE VALVE
GV	GATE VALVE
HS	HOSE STATION
HSC	HYDRAULIC SYSTEM CENTER
HST	HOIST
HTR	HEATER
HWT	HOT WATER TANK
KG	KNIFE GATE VALVE
JB	JUNCTION BOX
LCP	LEVEL CONTROL PANEL
LLS	LOW LEVEL SENSOR
LE	LEVEL ELEMENT
LIT	LEVEL INSTRUMENT TRANSMITTER
LCV	LEVEL CONTROL VALVE
LOU	LOUVER
LS	LEVEL SWITCH
LSM	LEAK SENSOR MONITOR
MFM	MAGNETIC FLOW METER
MH	MANHOLE
MIX	MIXER
MST	MOISTURE SENSOR TRANSMITTER
MP	METERING PUMP
MV	MUDVALVE
OIT	OPERATOR INTERFACE TERMINAL
PCV	PRESSURE CONTROL VALVE
PDC	POWER DISTRIBUTION CENTER
PG	PRESSURE GAUGE
PDI	PRESSURE DIFFERENTIAL INDICATOR
PIS	PRESSURE INDICATING SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PIN	PINCH VALVE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMP	PUMP
PNL	PANEL
PRS	PROXIMITY SENSOR
PRV	PRESSURE RELIEF VALVE
PS	PRESSURE SWITCH
PV	PLUG VALVE
PWSPT	PLANT WATER SYSTEM PRESSURE TANK
PWSP	PLANT WATER SYSTEM PUMP
REA	RESIDUAL ANALYZER
RIO	REMOTE I/O
SAM	SAMPLER
SC	SIGNAL CONVERTER
SG	SLUICE GATE
SOL	SOLENOID VALVE
SP	SUMP PUMP
SPIT	SUBMERSIBLE PRESSURE INDICATION TRANSMITTER
SRV	SURGE VALVE
SSCP	SECONDARY SCUM PUMP
STR	STRAINER
TLV	TELESCOPING VALVE
TNK	TANK
UFM	ULTRASONIC FLOW METER
UH	UNIT HEATER
UIS	UV INTENSITY SENSOR
W	WEIR
WS	WATER SURFACE

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/11/25

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE (0 — 1" — 1" = 1")

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

GENERAL LEGEND

JOB NO. 23016

SHEET NO. 00-G-03

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COORDINATE TABLE ABBREVIATION

ABBREVIATION	DEFINITION
ABAN	ABANDONED
AC	ASPHALTIC CONCRETE OR ASPHALT
AI	AREA INLET
ALT	ALTERNATE
APPROX	APPROXIMATE
AR	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AV	AIR VACUUM RELIEF
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGINNING OF CURVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BLVD	BOULEVARD
BM	BENCHMARK
BOC	BACK OF CURB
BO	BLOW OFF
C	CIVIL
,	CENTERLINE
OSHA	OCCUPATIONAL SAFETY & HEALTH ASSOC.
CB	CATCH BASIN
CL	CLASS
COMB	COMBINATION
CONC	CONCRETE
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
CP	CONTROL POINT
CPLG	COUPLING
D, DIA	DIAMETER
DET	DETAIL
DIP	DUCTILE IRON PIPE
DNSTM	DOWNSTREAM
DWG	DRAWING
E	EAST, EASTERLY, EASTING
EA	EACH
EF	EACH FACE
EG	EXISTING GRADE
ELEC	ELECTRIC, ELECTRICAL
EL, ELEV	ELEVATION
EOC	EDGE OF CONCRETE
EOG	EDGE OF GRAVEL
EOP, EP	EDGE OF PAVEMENT
EXIST	EXISTING
EW	EACH WAY
FC	FENCE CORNER
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FLEX	FLEXIBLE
FLG	FLANGE
FS	FINISHED SURFACE
FT	FEET, FOOT
G	GAS
GA	GAUGE
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HGL	HYDRAULIC GRADE LINE
H	HORIZONTAL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERSECTION
INV	INVERT
JB	JUNCTION BOX
L	LENGTH/LEFT
LB	POUND
LF	LINEAR FEET
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH, NORTHERLY, NORTHING
NAD83	NORTH AMERICAN DATUM 1983
NAVD29	NORTH AMERICAN VERTICAL DATUM 1929
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
O/C	ON CENTER
OFF	OFFSET
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	POLYETHYLENE
PH	POT HOLE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
R/RT	RIGHT
R&R	REMOVE AND RECONSTRUCT
REF	REFERENCE
REQ'D	REQUIRED
REST'D	RESTRAINED
RJ	RESTRAINED JOINT
RO	ROTATED
S	SLOPE OR SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SPPWG	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SQ	SQUARE
SS	STAINLESS STEEL, SANITARY SEWER
ST	STREET
STD	STANDARD
STA	STATION
STL	STEEL
T&B	TOP AND BOTTOM
TEL	TELEPHONE
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TYP	TYPICAL
UNK	UNKNOWN
UPSTM	UPSTREAM
US/USA	UNITED STATES / UNITED STATES OF AMERICA, UNDERGROUND SERVICE ALERT
USC&GS	UNITED STATES COAST & GEODETIC SURVEY
UTIL	UTILITY
V	VERTICAL
W	WATER / WEST / WIDE
W/	WITH
WATCH	WORK AREA TRAFFIC CONTROL HANDBOOK
WM	WATER MAIN / WATER METER
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTR	WATER
WV	WATER VALVE
	DIAMETER
@	AT
Δ	DELTA

BOUNDARY AND MARKER SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
x x	x x	WIRE FENCE
		WOOD FENCE
		CHAIN LINK FENCE
		GUARD RAIL
		STONE WALL
		STONE RETAINING WALL
		PROPERTY LINE
		EASEMENT LINE
		RIGHT OF WAY (ROW)
IP	IP	IRON PIPE BOUNDARY MARKER
IR	IR	IRON ROD BOUNDARY MARKER
MON	MON	CONCRETE MONUMENT BOUNDARY MARKER
SB	SB	STONE MONUMENT BOUNDARY MARKER
		PRODUCTION WELL
		MONITORING WELL
		TURNING POINT
		TRIANGULATION POINT
B-7	B-7	BORING
S-1	S-1	SOUNDING
		BENCHMARK

UNDERGROUND/OVERHEAD UTILITY SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
12" SS	12" SS	SANITARY SEWER AND MANHOLE
12" SD CB	12" SD CB	STORM DRAIN, MANHOLE AND CATCH BASIN
JB	JB	JUNCTION BOX
DI	DI	DRAIN INLET
GI	GI	GRATE INLET
		FIRE LINE W/FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)
FM FM FM	FM FM FM	FORCE MAIN
20" RAS - DI	20" RAS - DI	PROCESS PIPELINE CALLOUT
		PIPE MATERIAL (OPTIONAL) ABBREVIATED PROCESS LINE DESC. PIPE DIAMETER
UE UE UE	UE UE UE	UNDERGROUND ELECTRICAL CABLE/DUCT
E E E	E E E	OVERHEAD ELECTRIC
UT UT UT	UT UT UT	UNDERGROUND TELEPHONE
T T T	T T T	OVERHEAD TELEPHONE
S	S	SIGNAL LINE
UC UC	UC UC	UNDERGROUND CATV
TV TV TV	TV TV TV	OVERHEAD CATV
YH	YH	LIGHT POLE
LP	LP	LIGHT POLE
PP	PP	POWER POLE
GW	GW	GUY WIRE
TP	TM	TELEPHONE RISER
GR	GR	GAS REGULATOR
M	M	WATER METER
WMB	WMB	WATER METER BOX
G	GM	GAS METER
EV	EV	ELECTRIC VAULT
		HOSE BIBB (SINGLE OUTLET)

NOTE:
1. ELEVATIONS MAY BE SHOWN AS REQUIRED.

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
B & M C & O	B & M C & O	RAILROAD TRACKS
		DOUBLE TRACK RAILROAD
		UNIMPROVED DIRT ROAD OR GRAVELED ROADWAY
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY, SIZE & TYPE
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY W/ CURB, SIZE AND TYPE
		TUNNEL
		BRIDGE

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
		BOX CULVERT
2-36" RCP	2-36" RCP	CULVERT, PIPE SIZE AND TYPE
		SIGNS
		CONCRETE
		GRAVEL PAVEMENT
		ASPHALT PAVEMENT

SURFACE ELEVATION SYMBOLS

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
84	84	DEPRESSION CONTOUR
84	84	INTERMEDIATE CONTOUR LINE AND ELEVATION DESIGNATION
85	85	INDEX CONTOUR LINE AND ELEVATION DESIGNATION
365.7	365.7	SPOT ELEVATION
		EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10040 — CRAIG A. ATKINSON — 2/4/25

0 1" — 1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

CIVIL LEGEND & ABBREVIATIONS

JOB NO. 23016

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PIPING SYMBOLS

DOUBLE LINE SYMBOL	SINGLE LINE SYMBOL	FEATURE
		WELDED JOINT
SEE NOTE 2		FLANGED JOINT SIMPLIFIED REPRESENTATION.
		FLANGED JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT SIMPLIFIED REPRESENTATION.
		MECHANICAL JOINT COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED SIMPLIFIED REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT RESTRAINED, SIMPLIFIED REPRESENTATION
		BALL JOINT
		DIRECTION OF FLOW
		PLAIN END X PLAIN END PIPE COUPLING
		PLAIN END X PLAIN END PIPE COUPLING RESTRAINED
		FLANGED X PLAIN END PIPE COUPLING
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
(F) Or (R)		COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID
		FLANGE GUARD
		FLANGE FILLER
		UNION
		QUICK CONNECT COUPLING
		HOSE COUPLING

LINE VALVE STATUS

- NORMALLY OPEN (ALL VALVES EXCEPT BUTTERFLY)
- NORMALLY CLOSED (ALL VALVES EXCEPT BUTTERFLY)
- BUTTERFLY VALVE NO - NORMALLY OPEN (SHOWN) NC - NORMALLY CLOSED

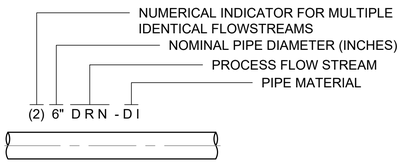
VALVE & FITTING SYMBOLS

SYMBOL	FEATURE
	DIAGHRAM VALVE
	UNCLASSIFIED. TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL
C	VALVE WITH HOSE END
	GATE VALVE
	3 WAY GATE VALVE
K	KNIFE GATE VALVE
	NEEDLE VALVE
	GLOBE VALVE
	BALL VALVE
	PINCH VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	3-WAY PLUG VALVE
	CHECK VALVE, GENERAL SYMBOL
	BALL CHECK VALVE
	DOUBLE DOOR CHECK VALVE
	ANGLE VALVE
S	SOLENOID VALVE
	ANTI-SIPHON VALVE
	BACK PRESSURE VALVE
	PRESSURE RELIEF VALVE
	REGULATING VALVE
	MUD VALVE
FD	FLOOR DRAIN
	OPEN EQUIPMENT DRAIN
ESEW	EMERGENCY SHOWER/EYEWASH
	ECCENTRIC REDUCER OR REDUCING BUSHING
	CONCENTRIC REDUCER OR REDUCING BUSHING
	Y-STRAINER
	CALIBRATION CYLINDER
ARV	COMBINATION AIR / VACUUM VALVE
M	MOTOR OPERATOR
M	MOTOR OPERATOR (W/ VFD)
E	ELECTRIC OPERATOR
	ROTAMETER
	FLEXIBLE HOSE
	PRESSURE GAUGE WITH TRANSMITTING SWITCH

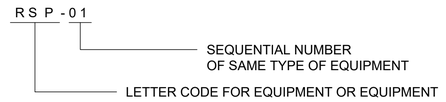
PIPE AND FITTING SYMBOL NOTES

1. SIMPLIFIED JOINT SYMBOL IS USED FOR ALL SINGE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
2. BOTH SIMPLIFIED AND COMPLEX JOINT REPRESENTATIONS MAY BE SHOWN ON THE DRAWINGS.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS.

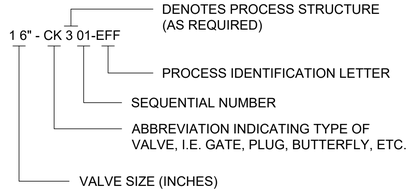
PIPE IDENTIFICATION SYSTEM



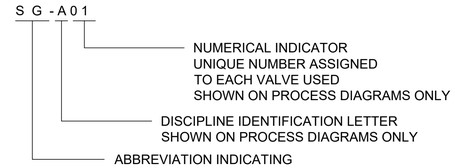
EQUIPMENT OR PROCESS IDENTIFICATION SYSTEM



VALVE TAG



GATE IDENTIFICATION SYSTEM



NOTE:
REFER TO GATE SCHEDULE IN SPECIFICATIONS FOR GATE SIZE (WIDTH & HEIGHT)

GENERAL NOTES

1. ALL VALVES 4" AND LARGER SHALL RECEIVE A TAG NUMBER. ALL OTHER SMALLER VALVES WILL BE IDENTIFIED BY THEIR SIZE AND DESIGNATION (ABBREVIATION) ONLY.
2. EQUIPMENT SHOWN ON THE PLANS SHALL BE GIVEN TAG NUMBERS AS SHOWN ON PROCESS DRAWINGS, UNLESS NOTED OTHERWISE.

PIPE MATERIAL

ABC ALU	ASBESTOS CEMENT ALUMINUM
B	BRASS
CI CPVC	CAST IRON CHLORINATED POLYVINYL CHLORIDE
CSP CU	CORRUGATED STEEL PIPE COPPER
DIP DIGL	DUCTILE IRON DUCTILE IRON - GLASS LINED
FRP	FIBER REINFORCED PLASTIC
GS	GALVANIZED CARBON STEEL
HDP	HIGH DENSITY POLYETHYLENE
MHS	METAL HOSE
PP PPE PVC PVDF	POLYPROPYLENE POLISHING POND EFFLUENT POLYVINYL CHLORIDE POLYVINYLIDENE FLUORIDE
RC RCC	REINFORCED CONCRETE REINFORCED CONCRETE CYLINDER
RH	RUBBER HOSE
STL SS	STEEL STAINLESS STEEL
TUB	TUBING
VC	VITRIFIED CLAY
PE	POLYETHYLENE

PROCESS FLOW STREAM

ADF	AVERAGE DAILY FLOW
BW	BACKWASH
DRN/DN DEC	DRAIN DECANT
EFF	EFFLUENT
FM	FORCE MAIN (SEWER)
GRT	GRIT
INF	INFLUENT
MDF MLSS	MAXIMUM DAILY FLOW MIXED LIQUOR SUSPENDED SOLIDS
NaHSO3	SODIUM BISULFITE
PAA PW	PERACETIC ACID POTABLE WATER
RS RAS RSL	RAW SEWAGE RETURN ACTIVATED SLUDGE RAW SLUDGE
SBS SCS SD SMP SS	SODIUM BISULFITE SOLUTION SCREENINGS SOLIDS STORM DRAIN SAMPLE POINT SANITARY SEWER
TW TWAS	TEPID WATER THICKENED WASTE ACTIVATED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE

GATE SYMBOLS

PLAN	FEATURE
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)
	STOP PLATE (SP)
	SHEAR GATE (SHG)
	FLAP GATE
	BYPASS GATE (BG)

SECTION (OPERATOR ONLY)	
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)

REV. NO.	DATE	DRWN	CHKD	REMARKS

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THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PIPING & PROCESS LEGEND AND ABBREVIATIONS

JOB NO. 23016

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PLANT INFORMATION & DESIGN PARAMETERS

PARAMETER	VALUE	UNIT
AVERAGE DAY FLOW RATE	1.65	MGD
DAILY MAXIMUM MONTHLY FLOW RATE	2.76	MGD
7 DAY AVERAGE FLOW RATE	2.76	MGD
PEAK HOURLY FLOW RATE	8	MGD
AVERAGE DAY CBOD CONCENTRATION	200	MG/L
AVERAGE DAY TSS CONCENTRATION	200	MG/L
AVERAGE DAY TKN CONCENTRATION	35.6	MG/L
AVERAGE DAY NH3-N	24.9	MG/L
AVERAGE DAY T-P CONCENTRATION	5.5	MG/L
AVERAGE DAY CBOD LOAD	4603.7	LB/DAY
AVERAGE DAY TSS LOAD	4603.7	MG/L
AVERAGE DAY NH3-N LOAD	573.2	LB/DAY
TOTAL ALKALINITY	225	MG/L
pH	6.57	-
MAX. 7 DAY AVERAGE TEMPERATURE	28	°C
AVERAGE DAY TEMPERATURE	20	°C
MIN. 7 DAY AVERAGE TEMPERATURE	12.5	°C

MECHANICAL BAR SCREENS

QUANTITY:	TWO (2)
NAME:	10-SCR-01, 10-SCR-02
TYPE:	MECHANICAL

PARAMETER	VALUE	UNIT
CAPACITY, (EA.)	8	MGD
TOTAL RATED CAPACITY	16	MGD
BAR SPACING	0.25	IN
ANGLE	10	DEGREES
DUAL CHANNELS	YES	-
CHANNEL DEPTH	16.33	FT
CHANNEL WIDTH	2.5	FT
VELOCITY AT AVERAGE DAY FLOW RATE	>1.25	MGD
VELOCITY AT RATED FLOW	<3	MGD
DESIGN BLINDING FACTOR	25	%
POWER	1.5	HP
TOTAL POWER	3	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V
WASHER COMPACTOR		
QUANTITY	2	
POWER	1	HP
TOTAL POWER	2	HP

PRIMARY SCREW PUMPS

QUANTITY:	TWO (2)
NAME:	20-SCR-01, 20-SCR-02
TYPE:	SCREW

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	2800	GPM
VFD	YES	-
FLOW MEASUREMENT	NO	-
POWER	25	HP
TOTAL POWER	50	HP
PHASE	3	-
VOLTAGE	460	V

GENERATOR

QUANTITY:	ONE (1)
NAME:	GENERATOR
TYPE:	SELF ENCLOSED, DIESEL ENGINE

PARAMETER	VALUE	UNIT
SIZE	1,250	KW
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	180	V
ATS RATING		AMPS

OXIDATION DITCH - (AERATION BASIN)

QUANTITY:	FOUR (4)
NAME:	50AER101, 50AER102, 50AER201, 50AER202
TYPE:	MIXER / AERATOR

PARAMETER	VALUE	UNIT
PROCESS SELECTION	TRADITIONAL OXIDATION DITCH	-
PRE TREATMENT	NO	-
DESIGN FLOW RATE (AVERAGE DAY/ 7 DAY)	1.65/2.76	MGD
HRT (AVG./7-DAY)	24.14/14.43	HRS
SRT	31	DAYS
ORGANIC LOADING (AVG./7-DAY)	12.4/20.74	LBS cBOD/DAY/1000FT
F/M	.09 to .1	LBS cBOD/ DAY/ LBS MLVSS
MLVSS (AVG./7-DAY)	2,150/3,325	MG/L
CHANNEL WIDTH (EA.)	40	FT
CHANNEL LENGTH (EA.)	464	FT
SIDE WATER DEPTH (EA.)	6	FT
FREEBOARD (EA)	1	FT
TOTAL VOLUME	1.66	MG
TARGET DISSOLVED OXYGEN (RESIDUAL)	>2	mg/L
AERATION TYPE	AERATOR / MIXER	-
AERATOR / MIXER	60/10	HP
TOTAL POWER EACH	70	HP
TOTAL POWER	280	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V
MAX. OXYGEN TRANSFER RATE (EA.)	2.31	LBS O2/HR
TOTAL AERATION	648.8	LBS O2/HR
MIXING/ AERATION SEPARATE	YES	-
MIXING VELOCITY	>2	FT/S
VFD	YES	-
RESIDUAL DISSOLVED OXYGEN PROBES	YES	-

GRIT REMOVAL

QUANTITY:	TWO (2)
NAME:	30PMP101, 30PMP201
TYPE:	VORTEX

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	4	MGD
TOTAL RATED CAPACITY	8	MGD
PARTICLE SIZE	>140	MICRONS
PARTICLE REMOVAL	95	%
GRIT PUMPS, NO.	2	
GRIT PUMP FLOW, EA.	250	GPM
GRIT CONCENTRATORS, NO.	2	
GRIT CONCENTRATORS PERFORMANCE	5% RESIDUAL ORGANIC MATERIAL RETAINED	
GRIT DEWATERING CONVEYORS	2	
POWER	10	HP
TOTAL POWER	20	HP
POWER FOR CONVEYOR	1	HP
TOTAL POWER FOR CONVEYORS	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SERVICE PUMP STATION

QUANTITY:	ONE (1)
NAME:	95PMP101
TYPE:	DUPLEX, HORIZONTAL, SELF-PRIMING

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	200	GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
NO. OF PUMPS	2	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V

FINAL CLARIFIERS

QUANTITY:	TWO (2)
NAME:	60CLF101, 60CLF201
TYPE:	CIRCULAR

PARAMETER	VALUE	UNIT
DIAMETER	61	FT
WATER DEPTH	11.95	FT
SURFACE AREA	2,922	FT²
TOTAL SURFACE AREA	5,845	FT²
WEIR LENGTH	192	FT
TOTAL WEIR LENGTH	384	FT
FREEBOARD	3.3	FT
SCUM REMOVAL	YES	-
SLUDGE WITHDRAW	YES, SUCTION	-
CHANNEL VELOCITY	>1	-
OVERFLOW RATE (AVG./7-DAY)	282/472	FT
SOLIDS LOADING RATE (AVG./7-DAY)	16/36	GPD/ FT²
WEIR LOADING (AVG./7-DAY)	4,305/8,538	PPD/ FT²
OVERFLOW RATE (5.84 MGD)	1,000	GDP/FT
WEIR LOADING (8 MGD)	20,873	PPD/ FT
POWER	1	HP
TOTAL POWER	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

RAS PUMPS

QUANTITY:	THREE (3)
NAMES:	70-RAS-01, 70-RAS-02, 70-RAS-03
TYPE:	END SUCTION SOLIDS HANDLING, HORIZONTAL

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	3000	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM101
POWER (EA.)	10	HP
TOTAL POWER	30	HP
PHASE	3	-
FREQUENCEY	60	HZ
VOLTAGE	460	V

WAS/TWAS PUMPS

QUANTITY:	THREE (3)
NAME:	70PMP201, 70PMP202, 70PMP203
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	180	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM201, 70MFM202
POWER (EA.)	15	HP
TOTAL POWER	45	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SCUM PUMPS

QUANTITY:	TWO (2) DUTY, ONE (1) SPARE - THREE (3) TOTAL
NAME:	60PMP101, 60PMP201
TYPE:	RECIRCULATING SUBMERSIBLE CHOPPER

PARAMETER	VALUE	UNIT
CAPACITY (EA.)		GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

PROCESS BLOWERS

QUANTITY:	FOUR (4)
NAME:	90BLW101, 90BLW102, 90BLW103, 90BLW104
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
TOTAL FIRM CAPACITY (EA.)	1,000 @ 4.72 psig	SCFM
ALPHA F/BETA	-	-
POWER (EA.)	50	HP
TOTAL POWER	200	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	2-POLE, 208/-230/460	V

UV DISINFECTION

QUANTITY:	ONE (1)
NAME:	100UV101
TYPE:	OPEN CHANNEL, INCLINED-ARRAY
CHANNEL (REFER TO TROJAN LAYOUT-DRAWING FOR COMPLETE DETAILS)	
NUMBER OF CHANNELS	ONE (1)
APPROXIMATE CHANNEL-LENGTH REQUIRED	35.6 FT
CHANNEL WIDTH AT UV BANKS	2.9 FT
CHANNEL DEPTH RECOMMENDED	7.8 FT
UV-BANKS	
NUMBER OF BANKS PER CHANNEL	3 (2-DUTY, 1-REDUNDANT)
NUMBER OF LAMPS PER BANK	10 EA.
TOTAL NUMBER OF UV LAMPS	30 (INCLUDING 10-REDUNDANT LAMPS)
MAXIMUM DUTY LAMP POWER DRAW	33 Kw
UV BANK HADLOSS AT PEAK FLOW	2.2 IN
UV-PANEL	
POWER DISTRIBUTION CENTER QUANTITY	1
HYDRAULIC SYSTEM CENTER QUANTITY	1
SYSTEM CONTROL CENTER QUANTITY	1
ANCILLARY EQUIPMENT	
LEVEL CONTROLLER QUANTITY AND TYPE	1-FIXED WEIR
INTEGRAL BANK WALLS	INCLUDED
OTHER EQUIPMENT	10%-LAMPS, 10%-SLEEVES, 5%-LAMP DRIVERS, 20-WIPER SEALS

ELECTRICAL REQUIREMENTS

1. EACH POWER DISTRIBUTION CENTER REQUIRES AND ELECTRICAL SUPPLY OF ONE-(1) 480/277V, 60 Hz, 33.8kVA
   ONE (1)-480/277V, 60Hz, 33.8kVA
2. ELECTRICAL SUPPLY FOR HYTDRAULIC SYSTEM CENTER WILL BE (1) 480V, 60 Hz, 2.5 kVA
3. ELECTRICAL SUPPLY FOR SYSTEM CONTROL CENTER WILL BE (1) 120V, 60Hz, 1.8kVA
4. ELECTRICAL DISCONNECTS ARE NOT INCLUDED. REFER TO LOCAL ELECTRICAL CODES

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CERTIFICATE OF AUTHORIZATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 12020 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

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DESIGNED:	MLU
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DATE:	FEB 2025

CRIST ENGINEERS, INC.
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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

DESIGN INFORMATION

JOB NO. 23016

SHEET NO. 00-G-06

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AERATION BASIN-501

50-AERATION BASINS

AERATION BASIN-502

JUNCTION BOX NO. 400

40-STORAGE BASIN

05-C-201 INF TO WWTP

JUNCTION BOX NO. 300

30-GRIT REMOVAL

20-PRIMARY SCREW PUMPS

10-BAR SCREENS

MH #7

MH #4

MH #5

MH #8

140-MAINTENANCE BUILDING (SEPARATE CONTRACT)

SEPARATE CONTRACT

130 PUMP STATION

90-BLOWER BUILDING

AEROBIC DIGESTER-501

AEROBIC DIGESTER-502

80-AEROBIC DIGESTERS

70-RAS / WAS PUMP BUILDING

150- ADMINISTRATION BUILDING

SEPARATE CONTRACT

75-GRAVITY THICKENER (ABANDONED)

05-C-103 TWAS TO LAND APP

CLARIFIER-601

JUNCTION BOX NO. 500

CLARIFIER-602

125-WEIR & OUTFLOW CHAMBER

05-C-102 EFF TO OUTFALL

100-UV STRUCTURE

MH #4

120-POST AERATION BASIN

LEGEND

AIR	LOW PRESSURE AIR
DEC	DECANT
MLSS	MIXED LIQOUR SUSPENDED SOLIDS
EFF	EFFLUNET
INF	INFLUENT SANITARY SEWER
PD	PROCESS DRAIN
RS	RAW SEWAGE
RAS	RETURN ACTIVATED SLUDGE
SCUM	SCUM WASTE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
WAS	WASTE ACTIVATED SLUDGE

ITEM NO. ◇#	DESCRIPTION
1	30" INF-DIP
2	24" RS - DIP
3	16" RAS - DIP
4	12" RAS - DIP
5	12" WAS - DIP
6	4" PD-PVC
7	6" WAS - DIP
8	6" TWAS - DIP
9	4" SCUM - DIP
10	24" EFF - DIP
11	6" DEC - DIP
12	12" AIR - SS
13	10" AIR - SS
14	8" AIR - SS
15	6" AIR - SS
16	24" MLSS - DIP
17	EXISTING DRN - DIP (SIZE VARIES)

PROCESS FLOW SCHEMATIC

N.T.S.

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROCESS FLOW SCHEMATIC

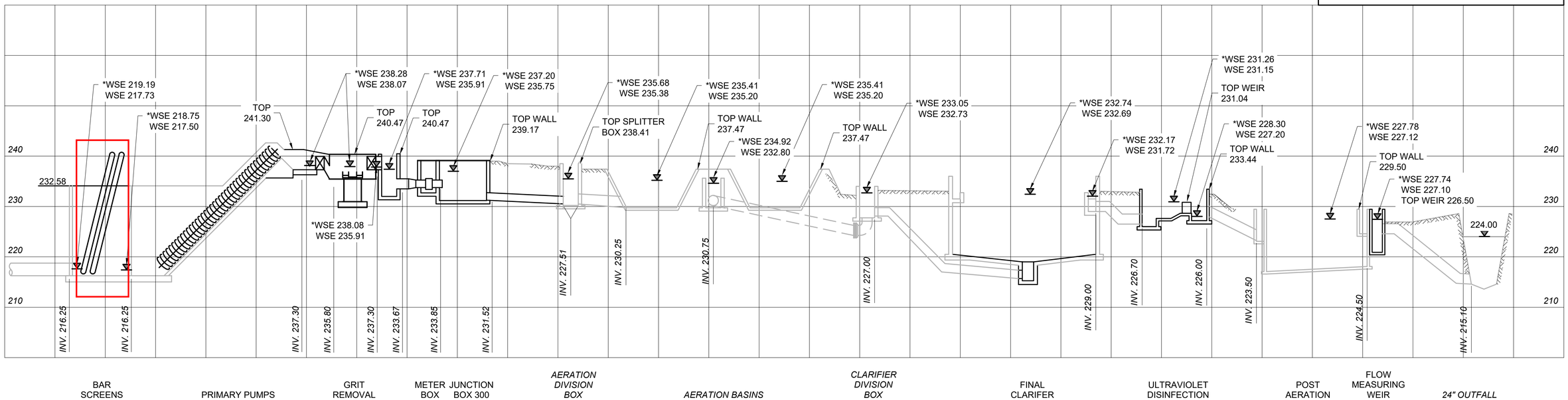
JOB NO. 23016

SHEET NO. 00-G-08

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NOTES :
1. HYDRAULIC GRADELINE ELEVATIONS SHOWN ARE FOR AVERAGE FLOW CONDITIONS AT 2.76 MGD
2. MAX ELEVATIONS SHOWN ARE FOR MAXIMUM HYDRAULIC CONDITIONS AT 8.00 MGD

*WSE = MAX PEAK = 8 MGD
WSE = AVERAGE DAY = 2.76 MGD



REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 19020 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROPOSED HYDRAULIC PROFILE

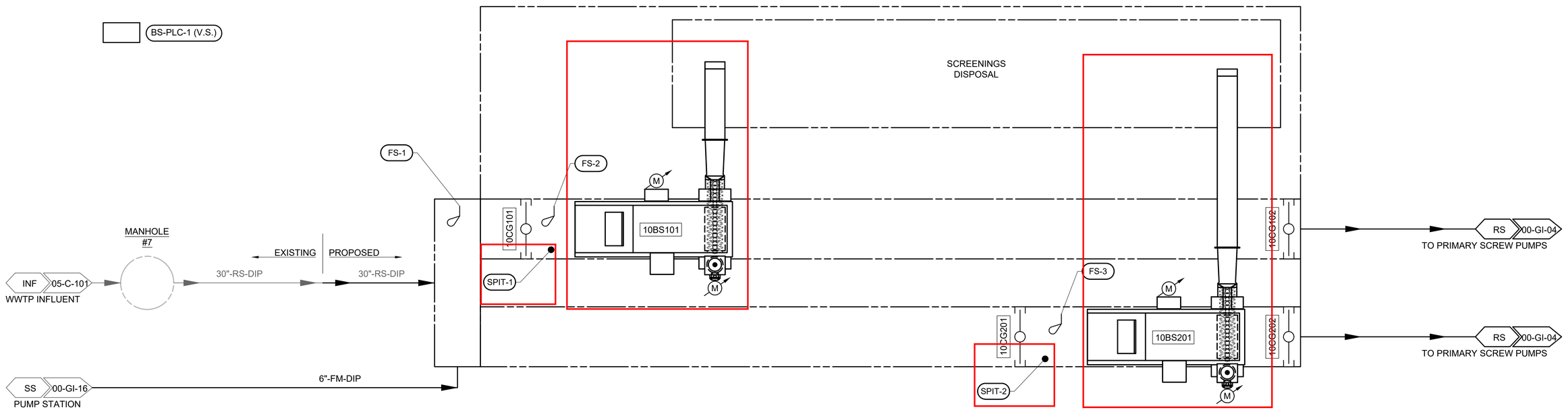
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10 BAR SCREENS

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. — CONSULTING ENGINEERS — No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 10'
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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

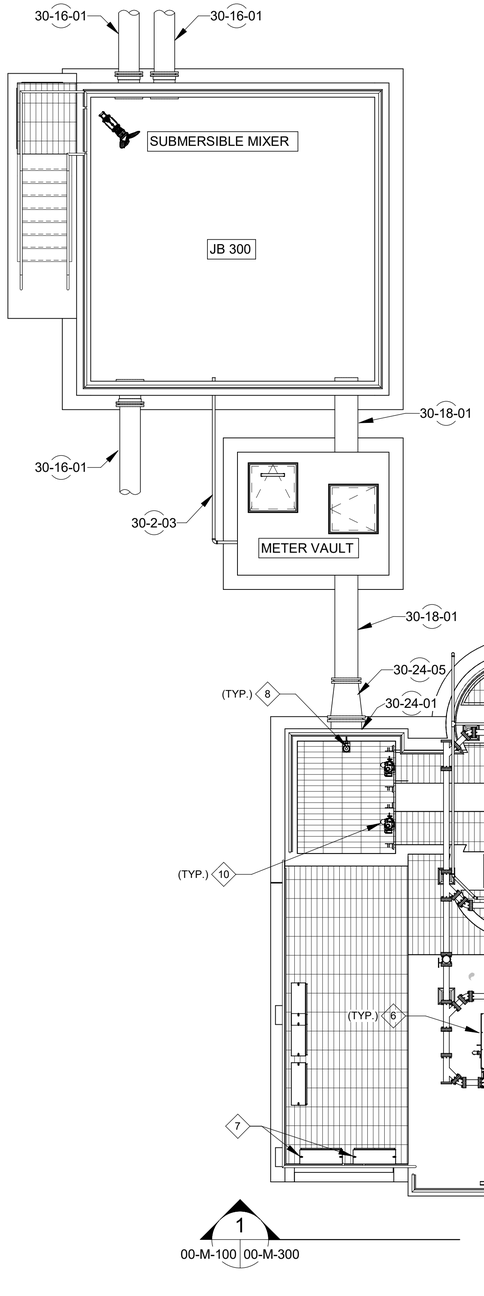
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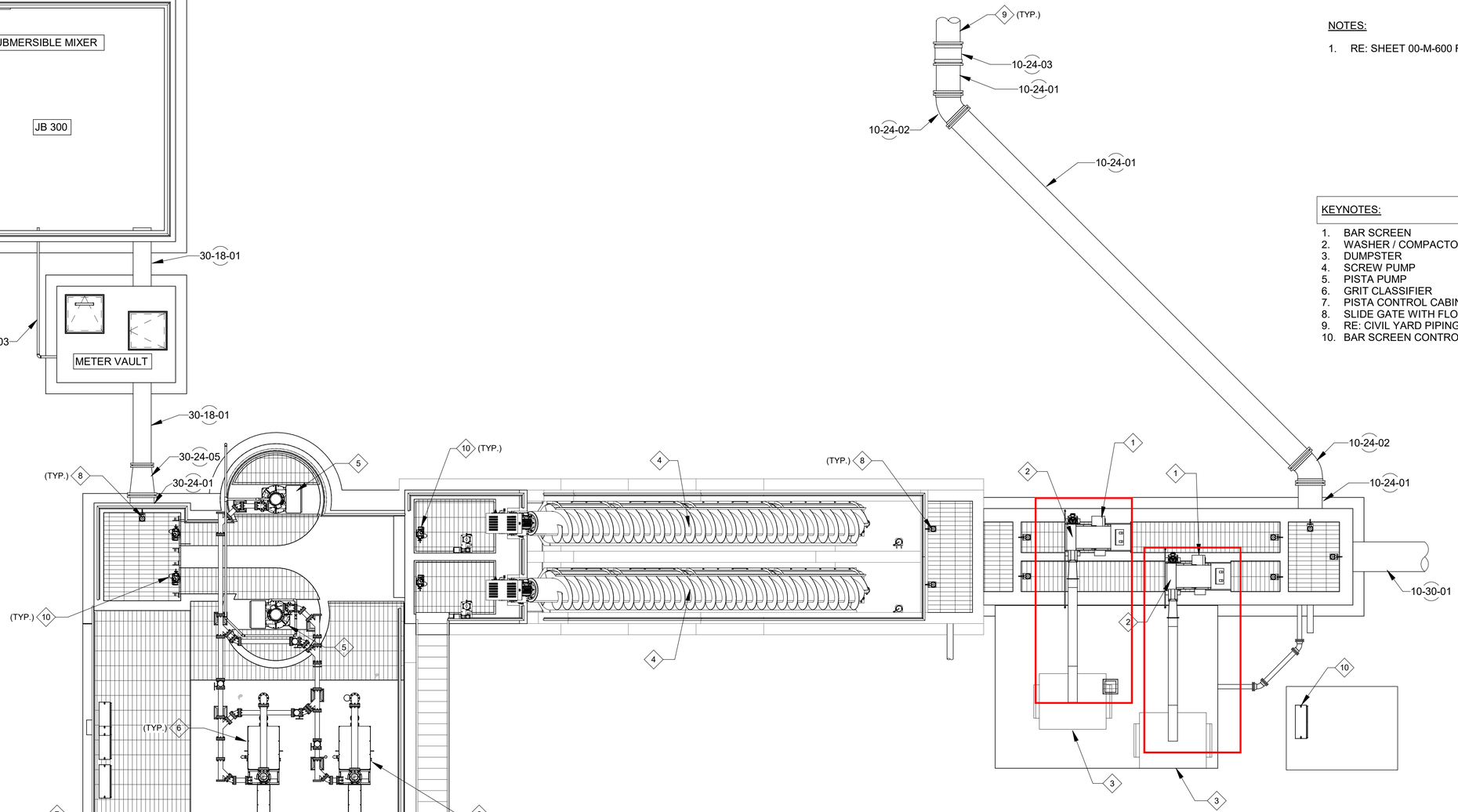
P&ID - BAR SCREENS

JOB NO. 23016

SHEET NO. 00-GI-03

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NOTES:

1. RE: SHEET 00-M-600 FOR HEADWORKS SCHEDULES

KEYNOTES: DENOTED BY SYMBOL ◇X

1. BAR SCREEN
2. WASHER / COMPACTOR
3. DUMPSTER
4. SCREW PUMP
5. PISTA PUMP
6. GRIT CLASSIFIER
7. PISTA CONTROL CABINET
8. SLIDE GATE WITH FLOORSTAND OPERATOR
9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET

1 / 00-M-100 | 00-M-300

1 / 00-M-100 | 00-M-300

1 HEADWORKS PLAN

1 / 00-M-100 SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CORPORATE REGISTRATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS
OVERALL PLAN

JOB NO: 23016

SHEET NO: 00-M-100

Autodesk Docs://23016 - Wynne WWTP/23016 - 10-D-HEADWORKS MECHANICAL.rvt

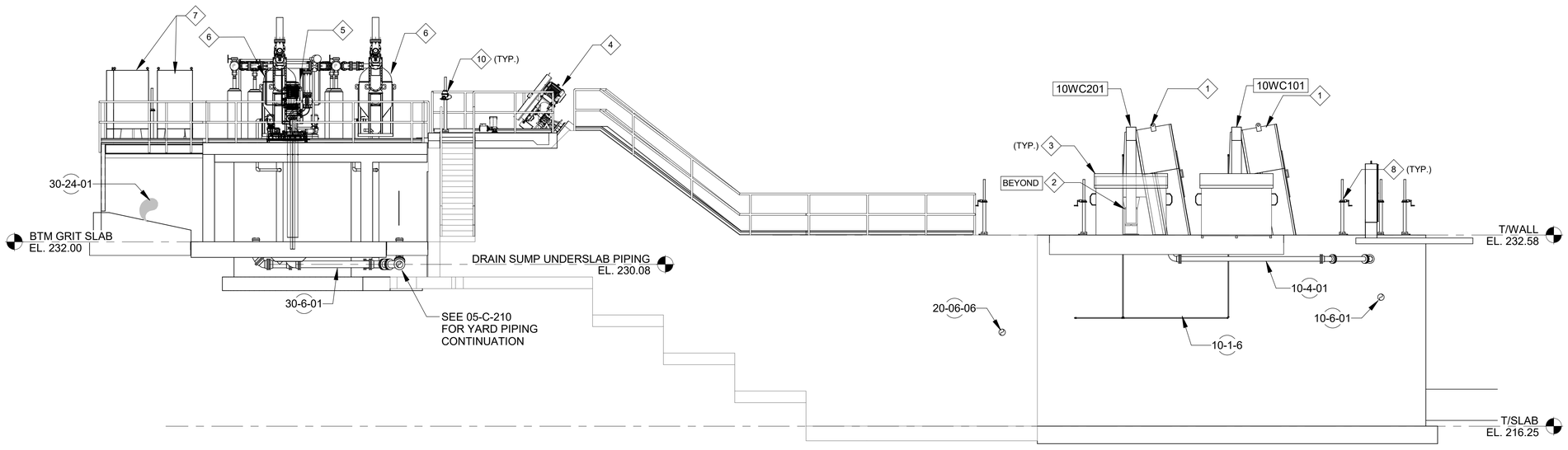
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NOTES:

1. RE: SHEET 00-M-600 FOR HEADWORKS SCHEDULES

KEYNOTES: DENOTED BY SYMBOL ◇X

1. BAR SCREEN
2. WASHER / COMPACTOR
3. DUMPSTER
4. SCREW PUMP
5. PISTA PUMP
6. GRIT CLASSIFIER
7. PISTA CONTROL CABINET
8. SLIDE GATE WITH FLOORSTAND OPERATOR
9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET



1 HEADWORKS SECTION

00-M-100 | 00-M-300 SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS CORPORATE REGISTRATION No. 91 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER CRAIG A. JOHNSON No. 10920 2/7/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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HEADWORKS
OVERALL SECTION

JOB NO: 23016

SHEET NO: 00-M-300

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10-PIPING MATERIAL SCHEDULE

MARK	QTY	SIZE (IN.)	CONNECTION	DESRIPTION	COMMENTS
10-1-6	13	1/2	SOC	PVC PIPE SCH. 40	
10-4-01	4	4	PE x PE	DI PIPE AWWA C150	
10-4-02	1	4	MJ x MJ	DI 90° BEND AWWA C153	
10-4-03	9	4	FLG x FLG	DI 45° BEND AWWA C153	
10-6-01	1	6	BELL & SPIGOT	DI PIPE AWWA C150	
10-24-01	3	24	PE x PE	DI PIPE AWWA C150	
10-24-02	2	24	MJ x MJ	DI 45° BEND AWWA C153	
10-30-01	1	30	PE x PE	DI PIPE AWWA C150	

10-PROCESS MECHANICAL EQUIPMENT SCHEDULE

MARK	QTY	DESRIPTION	MOTOR	PHASE	VOLTAGE	COMMENTS
10BS101	1	MECHANICAL BAR SCREEN	1.5 HP	3	480	8 MGD CAPACITY
10BS201	1	MECHANICAL BAR SCREEN	1.5 HP	3	480	8 MGD CAPACITY
10WC101	1	WASHER COMPACTOR	2 HP	3	480	2" WASH WATER CONN
10WC201	1	WASHER COMPACTOR	2 HP	3	480	2" WASH WATER CONN

30-PIPING MATERIAL SCHEDULE

MARK	QTY	SIZE (IN.)	CONNECTION	DESRIPTION	COMMENTS
30-2-01	26	2	WLD x WLD	SS 304 PIPING & FITTINGS	PROVIDE HEAT TRACE PER SPECIFICATION
30-4-01	22	4	FLG x FLG	DI PIPE AWWA C150 GLASS LINED	
30-4-02	8	4	FLG x FLG	DI 45° BEND AWWA C153 GLASS LINED	
30-4-03	8	4	FLG x FLG x FLG	DI WYE AWWA C153 GLASS LINED	
30-4-04	2	4	FLG x FLG	DI 90° BEND AWWA C153 GLASS LINED	
30-6-01	9	6	FLG x FLG	DI PIPE AWWA C150	
30-6-02	2	6	FLG x FLG	DI 90° BEND AWWA C153	
30-6-03	2	6	FLG x FLG x FLG	DI WYE AWWA C153	
30-16-01	3	16	PE x PE	DI PIPE AWWA C150	
30-16-04	2	16	FLG x MJ	DI THRUST COLLAR AWWA C116	
30-18-01	2	18	FLG x PE	DI PIPE AWWA C150	
30PV101	1	4	FLG x FLG	PLUG VALVE	
30PV102	1	4	FLG x FLG	PLUG VALVE	
30PV103	1	4	FLG x FLG	PLUG VALVE	
30PV104	1	4	FLG x FLG	PLUG VALVE	

30-PROCESS MECHANICAL EQUIPMENT SCHEDULE

MARK	QTY	DESRIPTION	MOTOR	PHASE	VOLTAGE	COMMENTS
30GRT101	1	GRIT CLASSIFIER	2 HP	3	460	
30GRT201	1	GRIT CLASSIFIER	2 HP	3	460	
30MAG01	1	MAGNETIC FLOW METER	N/A	1	120	FIT 4011
30MIX101	1	SUBMERSIBLE MIXER	5 HP	3	480	MTR 4041
30PMP101	1	GRIT PUMP & PINCH VALVE	10 HP	3	460	250 GPM
30PMP201	1	GRIT PUMP & PINCH VALVE	10 HP	3	460	250 GPM
30SP101	1	SINGLE SEAL AUTOMATIC DEWATERING PUMP	1/2 HP	1	120	STANDARD RECEPTICAL PLUG IN

20-PROCESS MECHANICAL EQUIPMENT SCHEDULE

MARK	QTY	Description	MOTOR	PHASE	VOLTAGE	COMMENTS
20PMP101	1	PRIMARY SCREW PUMP	25 HP	3	480	2,800 GPM W/ VFD
20PMP201	1	PRIMARY SCREW PUMP	25 HP	3	480	2,800 GPM W/ VFD

00-HEADWORKS GATE SCHEDULE

MARK	QTY	SIZE (IN.)	CONNECTION	ACCTUATOR	DESCRIPTION	COMMENTS
10CG001	1	36" x 36"	WALL MOUNT	MANUAL STEM W/ CRANK	36" x 36" WALL MOUNTED SLIDE GATE	BAR SCREEN INLET BOX
10CG002	1	36" x 30"	WALL MOUNT	MANUAL STEM W/ CRANK	30" x 30" WALL MOUNTED SLIDE GATE	BAR SCREEN INLET BOX
10CG101	1	18" x 30"	WALL MOUNT	MANUAL STEM W/ CRANK	18" x 30" WALL MOUNTED SLIDE GATE	BAR SCREEN GATE
10CG102	1	18" x 30"	WALL MOUNT	MANUAL STEM W/ CRANK	18" x 30" WALL MOUNTED SLIDE GATE	BAR SCREEN GATE
10CG201	1	18" x 30"	WALL MOUNT	MANUAL STEM W/ CRANK	18" x 30" WALL MOUNTED SLIDE GATE	BAR SCREEN GATE
10CG202	1	18" x 30"	WALL MOUNT	MANUAL STEM W/ CRANK	18" x 30" WALL MOUNTED SLIDE GATE	BAR SCREEN GATE
20CG101	1	24" x 60"	WALL MOUNT	MANUAL STEM W/ CRANK	24" x 60" WALL MOUNTED SLIDE GATE	SCREW PUMP GATE
20CG102	1	24" x 60"	WALL MOUNT	MANUAL STEM W/ CRANK	24" x 60" WALL MOUNTED SLIDE GATE	SCREW PUMP GATE
20CG201	1	24" x 24"	WALL MOUNT	ELECTRIC MOTOR OPERATED	24" x 24" WALL MOUNTED SLIDE GATE	GRIT CHAMBER GATE
20CG202	1	24" x 24"	WALL MOUNT	ELECTRIC MOTOR OPERATED	24" x 24" WALL MOUNTED SLIDE GATE	GRIT CHAMBER GATE
30CG101	1	30" x 36"	WALL MOUNT	ELECTRIC MOTOR OPERATED	33" x 33" WALL MOUNTED SLIDE GATE	GRIT CHAMBER GATE
30CG201	1	30" x 36"	WALL MOUNT	ELECTRIC MOTOR OPERATED	33" x 33" WALL MOUNTED SLIDE GATE	GRIT CHAMBER GATE
30CG301	1	24" x 24"	WALL MOUNT	MANUAL STEM W/ CRANK	24" x 24" WALL MOUNTED SLIDE GATE	JUNCTION BOX GATE

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CORPORATE REGISTRATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 21772 — CRAIG A. JOHNSON

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS

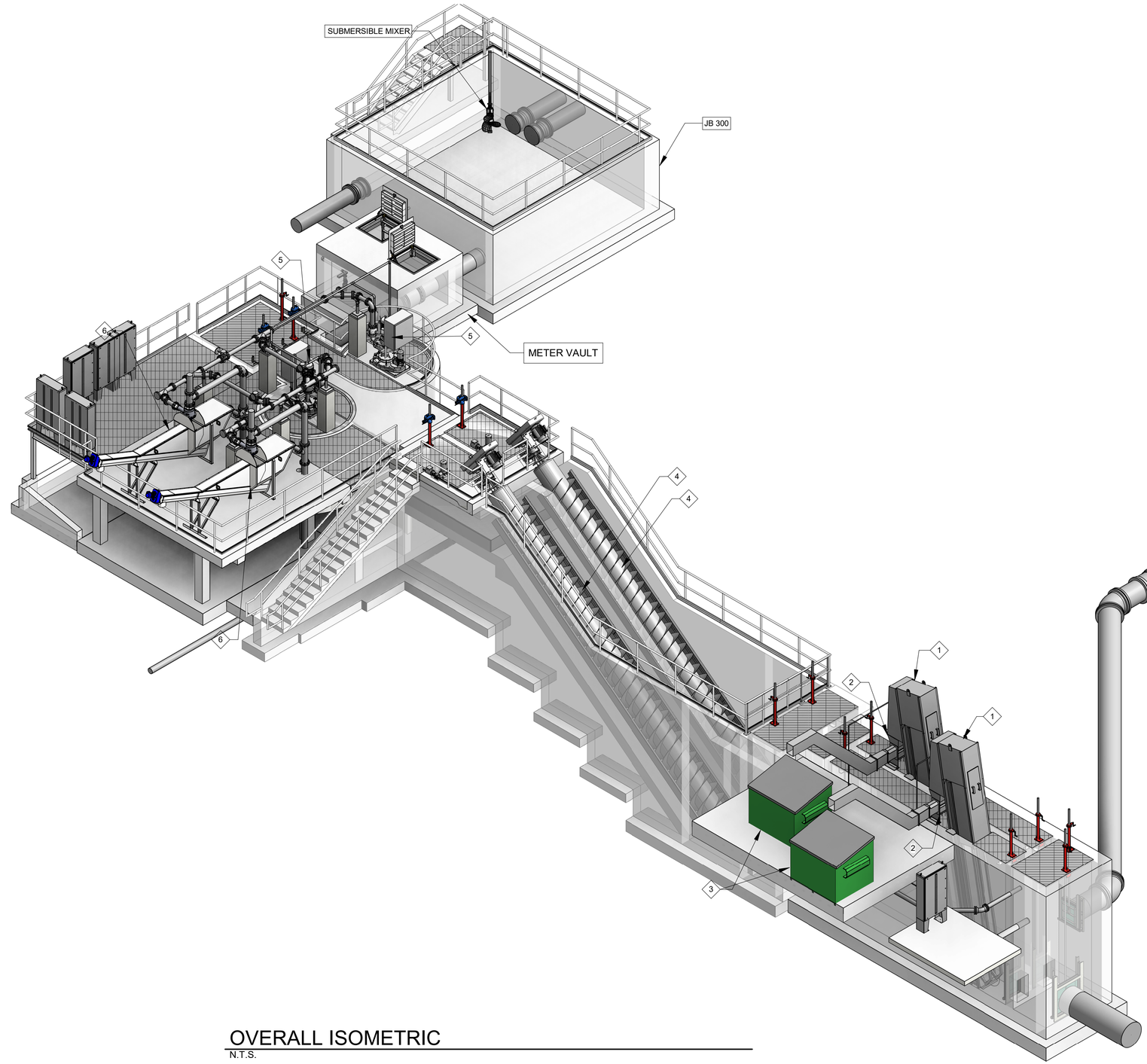
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JOB NO: 23016

SHEET NO: 00-M-600

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NOTES:

1. RE: SHEET 00-M-600 FOR HEADWORKS SCHEDULES

KEYNOTES: DENOTED BY SYMBOL (X)

1. BAR SCREEN
2. WASHER / COMPACTOR
3. DUMPSTER
4. SCREW PUMP
5. PISTA PUMP
6. GRIT CLASSIFIER
7. PISTA CONTROL CABINET
8. SLIDE GATE WITH FLOORSTAND OPERATOR
9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET

OVERALL ISOMETRIC

N.T.S.

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS CORPORATE REGISTRATION No. 91 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 10220 CRAIG A. JOHNSON 2/4/25

0 1" 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MAB
DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS

HEADWORKS ISOMETRIC

JOB NO: 23016

SHEET NO: 00-M-900

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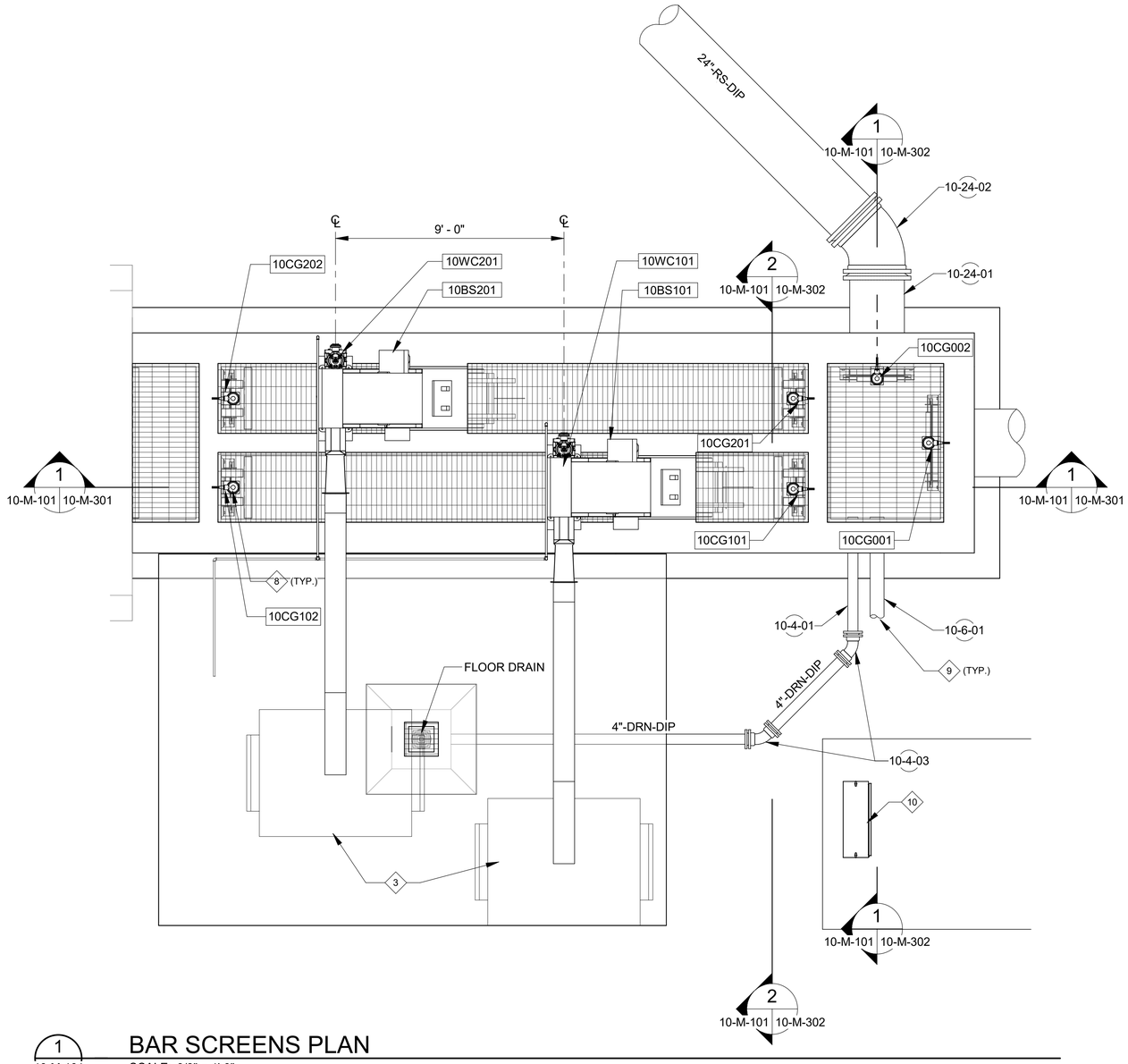
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9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET



1 / 10-M-101 BAR SCREENS PLAN

SCALE: 3/8" = 1'-0"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS
BAR SCREENS PLAN

JOB NO: 23016

SHEET NO: 10-M-101

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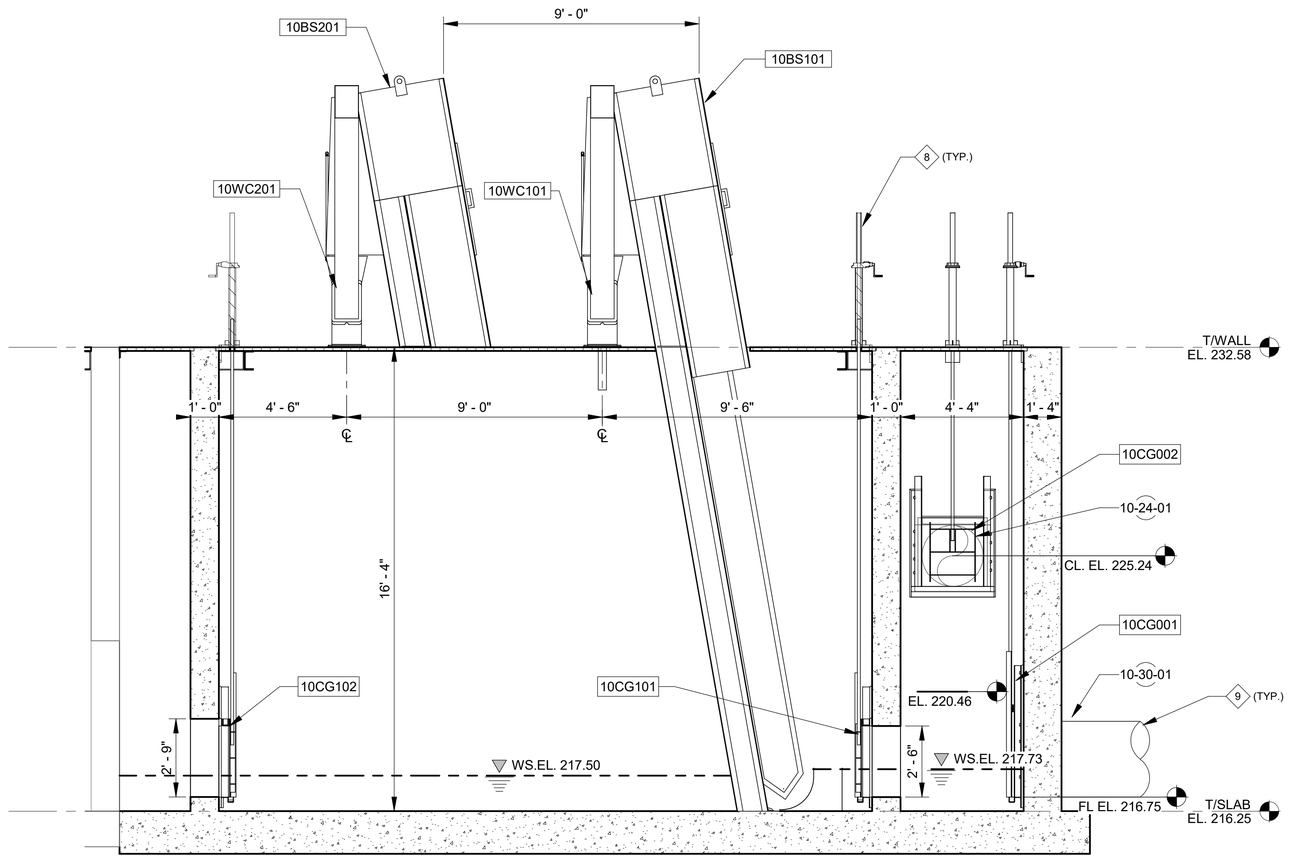
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10. BAR SCREEN CONTROL CABINET



1 / 10-M-101 | 10-M-301

BAR SCREEN SECTION

SCALE: 3/8" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CORPORATE REGISTRATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

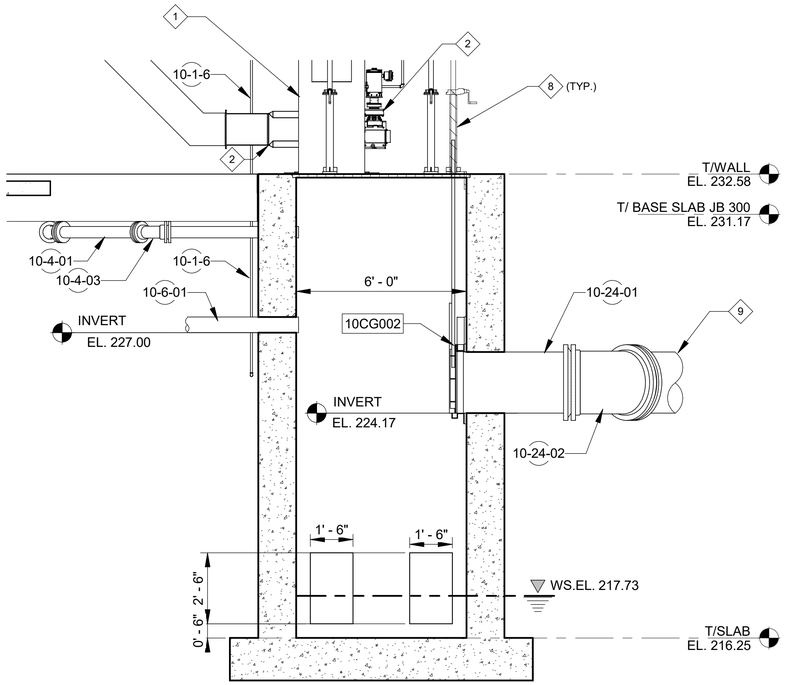
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BAR SCREEN SECTION

JOB NO: 23016

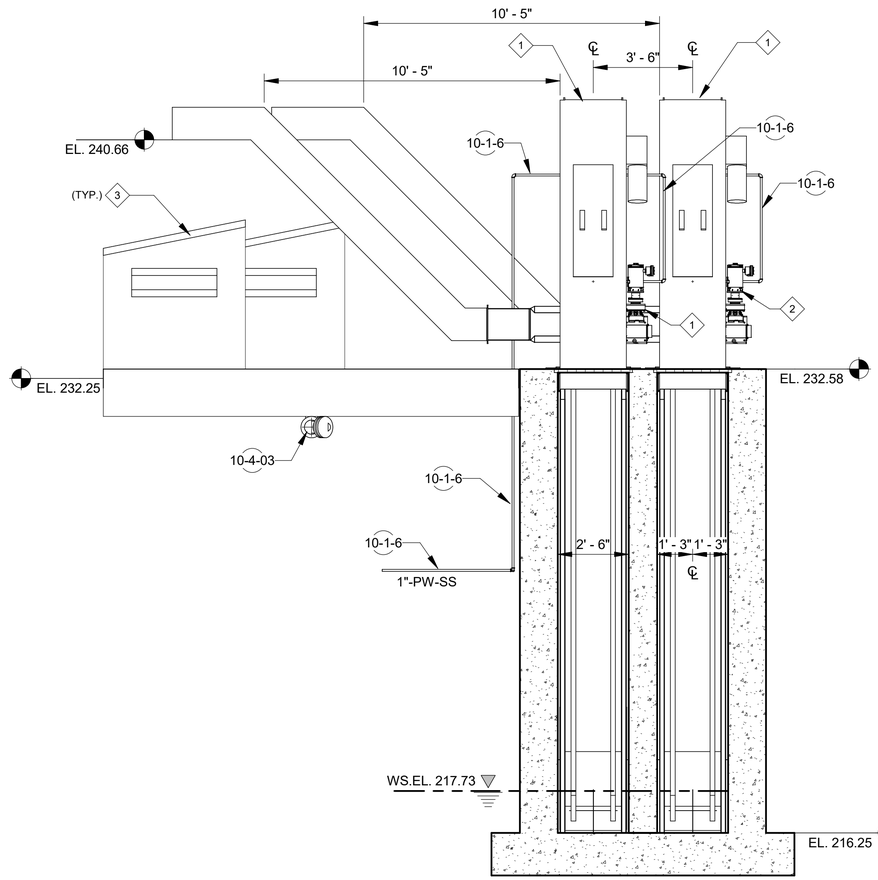
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1 SECTION - INFLUENT JUNCTION BOX
10-M-101 | 10-M-302 SCALE: 3/8" = 1'-0"



2 BAR SCREENS SECTION - 2
10-M-101 | 10-M-302 SCALE: 3/8" = 1'-0"

NOTES:

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KEYNOTES: DENOTED BY SYMBOL (X)

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REV. NO.	DATE	DRWN	CHKD	REMARKS

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WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS
WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT
BID SET
HEADWORKS
BAR SCREEN SECTIONS

JOB NO: 23016
SHEET NO: 10-M-302

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PROCUREMENT CONTRACT
AND
SPECIFICATION DOCUMENTS

Wynne Water Utilities

Vortex Grit Equipment and Grit Classifiers - Owner Procurement

Wynne Water Utilities

WYNNE, ARKANSAS

May 2025

Crist Job No. 23016







CRIST ENGINEERS, INC.

www.cristengineers.com

1 Executive Center Court
Little Rock, Arkansas 72211

Telephone: 501.664.1552
Fax: 501.664.8579

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VORTEX GRIT EQUIPMENT AND GRIT CLASSIFIERS - OWNER PROCUREMENT
WYNNE WATER UTILITIES

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ADVERTISEMENT FOR BIDS

WYNNE WATER UTILITIES

WYNNE EMERGENCY RESPONSE - WASTEWATER IMPROVMENTS
VORTEX GRIT REMOVAL EQUIPMENT AND GRIT CLASSIFIERS
OWNER PROCUREMENT

Sealed Bids for **Wynne Water Utilities – Vortex Grit Equipment and Grit Classifiers - Owner Procurement** will be received by Wynne Water Utilities, at the office of Wynne Water Utilities, 550 Falls Blvd, Wynne, AR 72396 until **2:00PM Central Standard Time, May 27, 2023**, at which time the Bids received will be publicly opened and read. The Project generally consists of materials procurement of two Vortex Grit Equipment Units and associated Grit Classifiers.

Bids may be delivered by any means available **except** electronically (fax or email). Fax/email bids will not be considered. It is the bidder's responsibility to see that their bid is at the designated location by the time stated above. Those not received by that time will not be considered. Wynne Water Utilities reserves the right to reject any or all bids, to waive any formalities and to, in the opinion of Wynne Water Utilities, accept the bid that is in Wynne Water Utilities best interest.

A pre-bid conference will not be held.

Per request, on-site inspection of existing equipment can be scheduled by contacting Wynne Water Utilities 870-238-2751

Bids will be received for a single Contract. Bids shall be on a unit price basis as indicated on the Bid Form. The Issuing Office for the Bidding Documents is:

Crist Engineers, Inc.
1 Executive Center Court
Little Rock, AR 72211
501-664-1552
www.cristengineers.com

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 9:00 a.m. and 4:00 p.m. The Contract Documents may also be examined at the following:

Dodge Reports
www.construction.com

Electronic copies of the Bidding Documents may be obtained online from the Issuing Office upon payment of $25.00 for each set at www.cristengineers.com. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

This publication was paid for by Wynne Water Utilities. The amount to be paid for this publication is $367.38.

Owner**:** **Wynne Water Utilities**
By: **Blake Marotti**
Title: **General Manager**

Publish Dates:
May 11, 2025
May 18, 2025

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACTS

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INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACT

ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below.

A. *Issuing Office*—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2—PROCUREMENT BIDDING DOCUMENTS

2.01 Bidder may obtain complete sets of the Procurement Bidding Documents, in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid, from the Issuing Office. The deposit will be refunded to each document holder of record who returns a complete set of Procurement Bidding Documents in good condition within 30 days after opening of Bids. Bidders must obtain a complete set of the Procurement Contract Documents as listed in the Procurement Agreement.

2.02 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.

2.03 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

2.04 ELECTRONIC MEDIA OF PLANS AND SPECIFICATIONS

Engineer will provide a digital version (PDF) of the bidding documents for your convenience and use in the preparation of the Bid. Engineer makes no representation as to the compatibility of these files with your hardware or your software. Data contained on these electronic files is part of Engineer's instruments of service and shall not be used by the Bidder or anyone receiving this data through or from the Bidder for any purpose other than as a convenience in the preparation of the Bid. Any other use or reuse by the Bidder or others will be at the Bidder's sole risk and without liability or legal exposure to Engineer. The Bidder agrees upon execution and submission of the Bid Form to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against Crist Engineers, Inc. (CEI), its officers, directors, employees, agents or subconsultants which may arise out of or in connection with your use of the electronic files. These electronic files will not be considered as contract documents. Hard copies distributed to the prospective bidder govern. Significant differences may exist between these electronic files and corresponding hard copy contract documents. Engineer makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by Engineers and electronic files, the signed hard copy contract documents shall govern. You are responsible for determining if any conflict exists. By the Bidder's use of these electronic files, the Bidder is not relieved of the duty to fully comply with the contract documents. Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, Engineer reserves the right to remove all indicia of its ownership and/or involvement from each

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ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4—SITE VISIT; PRE-BID CONFERENCE

4.01 Buyer recommends that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

4.02 A pre-bid conference will not be held for this procurement.

4.03 Interpretations or clarifications considered necessary by Engineer in response to questions will be issued by Addenda delivered to all parties recorded by Engineer as having received the Procurement Bidding Documents. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.

ARTICLE 5—INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer in writing.

5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral

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statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid, and will not be binding or legally effective.

5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 6—RESERVED

ARTICLE 7—PROCUREMENT CONTRACT TIMES

7.01 See applicable provisions in the Procurement Agreement.

ARTICLE 8—LIQUIDATED DAMAGES

8.01 Any provisions for liquidated damages, such as those for Seller's failure to attain a specified Milestone such as the delivery of the Goods, are set forth in the Procurement Agreement.

ARTICLE 9—CONFIDENTIALITY OF BID INFORMATION

9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.

9.02 Bidder shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.

9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.

9.04 Buyer's obligations with respect to confidential information are nullified by the following exceptions:

A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;

B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal;

C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;

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D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or

E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.

9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

ARTICLE 10—"OR-EQUAL" ITEMS

10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without exception or consideration of possible "or-equal" items. Whenever it is specified or described in the Procurement Bidding Documents that an "or-equal" item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contact. The procedure for submittal of any such application by Seller and consideration by Engineer is set forth in the General Conditions and may be supplemented in the Procurement Specifications. Should a manufacturer or specified equipment be provided that is not listed in the specification and/or exception(s) provided at the time of bid, the Buyer has full right without recourse from the Bidder to reject the bid.

ARTICLE 11—PREPARATION OF BID

11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.

11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words "No Bid" may be entered.

11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.

11.04 Bidder shall:

A. Sign the Bid Form as indicated in the Bid Form.

B. Include evidence of authority to sign.

C. Provide information on the individual to be contacted for any communications regarding the Bid.

D. Provide evidence of the Bidder's authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

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11.05 The responsibilities of each Bidder submitting a Bid are described in the Bidder's representations and certifications set forth in Article 6 of the Bid Form.

ARTICLE 12—BASIS OF BID; COMPARISON OF BIDS

12.01 *Unit Prices*

A. Bidder shall enter the unit price Bid for each unit price line item on the Bid Form and enter the product of the unit price times the estimated quantity for that line item. Bidder shall enter the total of products of unit price and estimated quantity for each unit price line item in the space provided to the total on the Bid Form.

B. The apparent low Bid will be determined on the basis of the total of products of unit price and estimated quantity for each unit price line item.

C. Discrepancies between the indicated figures and the arithmetically correct sum will be resolved in favor of the arithmetically correct sum.

ARTICLE 13—SUBMITTAL OF BID

13.01 Bidder shall refer to the **advertisement** for specific identification of the date, time, and place where Bids are to be submitted.

13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of Article 4 of the Bid Form.

13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Wynne Water Utilities, 550 Falls Blvd, Wynne AR 72396.

ARTICLE 14—MODIFICATION OR WITHDRAWAL OF BID

14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

14.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 15—OPENING OF BIDS

15.01 Bids will be publicly opened at the time and place indicated in the advertisement or invitation to bid and read aloud, unless obviously non-responsive. An abstract of the amounts of the Base

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Bids and Alternate Bids, if any, will be made available to Bidders after Bids have been opened and reviewed by the Buyer.

ARTICLE 16—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

16.01 All Bids will remain subject to acceptance for the period stated in the Bid Form, but Buyer may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 17—EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT

17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.

17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.

17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.

17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

ARTICLE 18—BONDS AND INSURANCE

18.01 Article 5 of the General Conditions and Article 5 of the Supplementary Conditions set forth Buyer's requirements as to insurance. When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by acceptable evidence of insurance.

ARTICLE 19—SIGNING OF PROCUREMENT AGREEMENT

19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and insurance documentation required to be delivered by the Procurement Contract Documents to Buyer. Within 10 days thereafter, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together with printed and electronic copies of the Procurement Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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DOCUMENT 004100

BID FORM FOR PROCUREMENT CONTRACT

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BID FORM FOR PROCUREMENT CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—BUYER AND BIDDER

1.01 This Bid is submitted to:

Wynne Water Utilities
550 Falls Blvd
Wynne AR, 72396

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Procurement Contract with Buyer in the form included in the Procurement Bidding Documents, and to furnish the Goods and Special Services as specified or indicated in the Procurement Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Procurement Bidding Documents.

ARTICLE 2—BASIS OF BID

2.01 Unit Price Bids

A. Bidder will furnish the Goods and Special Services including all accessories required for installation in accordance with the Procurement Contract Documents for the following Unit Price(s):

BID SCHEDULE – Vortex Grit Equipment and Grit Classifiers - Owner Procurement

Wynne Water Utilities, Arkansas

Item No.	Description	QTY	Unit	Unit Price	Bid Price
1	Vortex Grit Equipment and Grit Classifiers	2	EA	$	$

TOTAL BID PRICE:

$690,671.00 **Dollars**

EJCDC® P-400, Bid Form for Procurement Contract.
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SCHEDULE OF PROCUREMENT TIMES

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	252	Contractor to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	7	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	326	

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ARTICLE 3—TIME OF COMPLETION

3.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule of Procurement Contract Times set forth in Article 2 of the Procurement Agreement.

3.02 Bidder accepts the provisions of the Procurement Agreement as to liquidated damages.

ARTICLE 4—ATTACHMENTS TO THIS BID

4.01 The following documents are attached to and made a condition of this Bid:

A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.

ARTICLE 5—BIDDER'S ACKNOWLEDGMENTS

5.01 Bidder accepts all terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period that Bidder may agree to in writing upon request of Buyer.

5.02 Bidder has examined and carefully studied the Procurement Bidding Documents, the related data identified in the Procurement Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents that:

1. Bidder has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Bidder's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Bidder has carefully studied, considered, and correlated the information known to Bidder with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

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5. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bidding Requirements, that without exception the Bid (including all Bid prices) is premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

8. Any exceptions noted to the bid is subject to rejection of the bid.

6.02 *Bidder's Certifications*

A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Paragraph 6.02.A.4:

a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

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This Bid is offered by:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Date: _____

(date signed)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

(If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

(individual's signature)

Title: _____

(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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DOCUMENT 005100

NOTICE OF AWARD

Date of Issuance:	Owner's Contract No.:
Owner: **Wynne Water Utilities**	
Engineer: **Crist Engineers, Inc.**	Engineer's Project No.: **23016**
Project: **Wynne Emergency Response**	Contract Name: **Owner Procurement of Vortex Grit Equipment and Grit Classifiers**
Bidder:	Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Wynne Water Utilities: Owner Procurement of Vortex Grit Equipment and Grit Classifiers

The Contract Price of the awarded Contract is: $_____

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s).
3. Other conditions precedent (if any): None

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner**:** **Wynne Water Utilities**

_____ Authorized Signature

By: _____ Title:_____

Copy: **Crist Engineers, Inc.**

DOCUMENT 005213
AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

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AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

This Procurement Agreement is by and between **Wynne Water Utilities** ("Buyer") and _____ _____ ("Seller").

Terms used in this Procurement Agreement have the meanings stated in the General Conditions of the Procurement Contract and the Supplementary Conditions of the Procurement Contract.

Buyer and Seller hereby agree as follows:

ARTICLE 1—PROCUREMENT CONTRACT

1.01 *Goods and Special Services*

A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: **Vortex Grit Equipment and Grit Classifiers – Owner Procurement**

1.02 *The Project*

A. The Project, of which the Goods and Special Services are a part, is generally described as follows: **Wynne Emergency Response - Vortex Grit Equipment and Grit Classifiers – Owner Procurement**

1.03 *Engineer*

A. Buyer has retained **Crist Engineers, Inc.** ("Engineer"), to prepare Procurement Contract Documents and act as Buyer's representative. Engineer assumes all duties and responsibilities and has the rights and authority assigned to Engineer in the Procurement Contract Documents in connection with Seller's furnishing of Goods and Special Services.

1.04 *Point of Destination*

A. The Point of Destination is designated as: **Wynne Wastewater Plant, 53 Cross 619 Rd, Wynne AR 72396**

ARTICLE 2—PROCUREMENT CONTRACT TIMES

2.01 *Time of the Essence*

A. All time limits for Milestones, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Procurement Contract Documents, are of the essence of the Procurement Contract.

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2.02 Schedule of Procurement Times

A. The schedule of procurement times is established on the Bid Form.

2.03 *Shop Drawings and Material Submittals*

A. *Material Submittals*: Seller shall submit all Shop Drawings and Material Submittals required by the Procurement Contract Documents to Engineer for its review and approval.

B. *Engineer's Review*: It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Material Submittals and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within **14** days after Seller's submittal of such Shop Drawings and Material Submittals, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

2.04 *Liquidated Damages*

A. Buyer and Seller recognize that time is of the essence as stated in Paragraph 2.01, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified on the Bid Form, plus any extensions thereof allowed in accordance with this Procurement Contract. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the delivery requirements specified on the Bid Form. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer **$750** for each day that expires after the time specified on the Bid Form for delivery of acceptable Goods.

ARTICLE 3—PROCUREMENT CONTRACT PRICE

3.01 *Procurement Contract Price and Total Price—Based on Attached Bid*

A. For furnishing the Goods and Special Services in accordance with the Procurement Contract Documents, Buyer shall pay Seller the prices stated in Seller's Bid, attached hereto as an exhibit, subject to final adjustments for Unit Price Goods and Special Services.

ARTICLE 4—PAYMENT PROCEDURES

4.01 *Submittal and Processing of Applications for Payment*

A. Seller shall submit Applications for Payment in accordance with Article 13 of the General Conditions and the following paragraphs. Engineer and Buyer will process such Applications for Payment in accordance with said Article 13.

4.02 *Progress Payments; Final Payment*

A. Seller may submit an Application for Payment requesting the stated percentage of Procurement Contract Price upon attainment of each of the following Payment Line Items:

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Payment Line Item (Lump Sum)	Percentage of Lump Sum
1. Placement of Order	5
2. Submittal of Engineering Drawings	10
3. Approval of Engineering Drawings	20
4. Time of Shipment	60
5. Start Up and Testing, Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	5
6. Total Procurement Contract Price (Lump Sum)	100

B. Buyer shall pay Seller the amount owed under an Application for Payment within 30 days after Engineer's presentation to Buyer of the Application for Payment and Engineer's recommendation.

4.03 *Interest*

A. All amounts not paid when due will bear interest as the rate of **10%** percent per annum.

ARTICLE 5—ASSIGNMENT OF PROCUREMENT CONTRACT

5.01 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

5.02 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

ARTICLE 6—PROCUREMENT CONTRACT DOCUMENTS

6.01 *List of Procurement Contract Documents*

A. The Procurement Contract Documents consist of the following:

1. This Procurement Agreement. (pages 1 to 7, inclusive).
2. General Conditions of the Procurement Contract. (pages 1 to 37, inclusive).
3. Supplementary Conditions of the Procurement Contract. (pages 1 to 5, inclusive).
4. Procurement Specifications as listed in the Procurement Specifications table of contents.

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5. Supplemental Procurement Drawings (not attached but incorporated by reference):

6. Addenda (numbers ____ to ___ inclusive).

7. Exhibits to this Procurement Agreement (enumerated as follows):

    a. Contractor's Bid (pages 1 to 6, inclusive).

8. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:

    a. Notice to Proceed;

    b. Change Orders;

B. The documents listed in Paragraph 6.01.A are attached to this Procurement Agreement (except as expressly noted otherwise above).

C. There are no Procurement Contract Documents other than those listed above.

D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of the Procurement General Conditions.

ARTICLE 7—SELLER'S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Seller's Representations*

A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:

1. Seller has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

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7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

7.02 *Seller's Certifications*

A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Procurement Contract. For the purposes of this Paragraph 7.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement Contract to the detriment of Buyer, (b) to establish bid or contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Procurement Contract.

ARTICLE 8—RESERVED

ARTICLE 9—MUTUAL WAIVER

9.01 *Mutual Waiver of Consequential Damages*

A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph 9.01.A will be binding upon the Contractor/Assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) liquidated damages, (c) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property of others, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.

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IN WITNESS WHEREOF, Buyer and Seller have signed this Procurement Agreement. Counterparts have been delivered to Buyer and Seller.

The Effective Date of the Procurement Contract is _____.

Buyer	Seller
Wynne Water Utilities	
(typed or printed name of organization)	*(typed or printed name of organization)*
By: _____	By: _____
(individual's signature)	*(individual's signature)*
Date: _____	Date: _____
(date signed)	*(date signed)*
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
	(If Seller is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
(individual's signature)	*(individual's signature)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address for giving notices:	Address for giving notices:
Designated Representative:	Designated Representative:
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address:	Address:
Wynne Water Utilities	
550 Falls Blvd	
Wynne, AR 72396	
Phone: _____	Phone: _____
Email: _____	Email: _____
(If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	

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DOCUMENT 005500

NOTICE TO PROCEED

Owner:	**Wynne Water Utilities**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Crist Engineers, Inc.**	Engineer's Project No.:	**23016**
Project:	**Wynne Emergency Response**	Contract Name:	**Owner Procurement of Vortex Grit Equipment and Grit Classifiers**
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, _____]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is 210 consecutive calendar days, and the number of days to achieve readiness for final payment is 240 consecutive calendar days.

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner**:** **Wynne Water Utilities**

_____
Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: **Crist Engineers, Inc.**

DOCUMENT 007250

STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

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ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Whenever used in the Procurement Bidding Requirements or Procurement Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated, which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.

2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.

3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.

4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.

5. *Buyer*—The individual or entity purchasing the Goods and Special Services.

6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.

7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.

9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.

10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.

11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

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12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.

14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.

15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.

16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.

19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.

20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.

21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.

22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).

23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.

24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.

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25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.

26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.

28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.

29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.

30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.

31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.

32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.

33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer's review of the Submittals.

34. *Seller*—The individual or entity furnishing the Goods and Special Services.

35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.

36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.

37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals

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may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.

39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.

40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.

B. *Intent of Certain Terms or Adjectives*

1. The Procurement Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.

2. The word "non-conforming" when modifying the words "Goods and Special Services," "Goods," or "Special Services," refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:

a. do not conform to or comply with the requirements of the Procurement Contract Documents;

b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or

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c. in the case of Special Services, have not been completed.

3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.

4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

5. The word "furnish," when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.

C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.

D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer.

B. Performance and Payment Bonds will not be required for this procurement contract.

C. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.

D. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

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2.03 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

2.04 *Preliminary Schedules*

A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:

1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.

a. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the Submittals, tests, and deliveries to completion within the specified Milestones of the Procurement Contract Times.

b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.

c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.

2. a preliminary schedule of Submittals.

B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

2.05 *Preliminary Conference*

A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.

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B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

A. The Procurement Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.

C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.

D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.

F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.

B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

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3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents*: If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.

2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

B. *Resolving Discrepancies*: Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement Contract Documents); or

2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Procurement Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.

1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.

B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the

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Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.

C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

A. Seller and its subcontractors and suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

4.02 *Continuing Performance*

A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.

B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.

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1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.

2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.

B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.

C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. inspection delays by governmental authorities, and custom delays;

4. international shipping delays;

5. acts or failures to act of third-party entities; and

6. acts of war or terrorism.

D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions*: Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:

1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.

2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.

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3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.

E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5— INSURANCE

5.01 *Insurance*

A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.

B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided will not be construed as a waiver of Seller's obligation to maintain such insurance.

C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.

D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.

E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

5.02 *Surety or Insurance Companies*

A. All insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

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ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.

B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.

C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.

D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.

B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.

C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.

2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.

D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

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6.03 *Buyer's Infringement*

A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.

B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.

C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.

2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER'S RESPONSIBILITIES

7.01 *Performance of Obligations*

A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.

B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.

C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.

B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must be:

1. new, and of good quality;

2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and

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3. shop-assembled to the greatest extent practicable.

7.03 *Laws and Regulations*

A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.

B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.

1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or equal" item.

2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.

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B. *Engineer's Evaluation*: Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.

C. *Special Guarantee*: Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."

D. *Data*: Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 *Taxes*

A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Supplementary Conditions.

7.06 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Seller shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.

3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

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1. *Shop Drawings*

    a. Seller shall submit the number of copies required in the Procurement Specifications.

    b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.

2. *Samples*

    a. Seller shall submit the number of Samples required in the Procurement Specifications.

    b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.

3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.

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6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.

8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Seller shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.

3. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. *Submittals Other than Shop Drawings and Samples*

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:

   a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.

   d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

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7.07 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.

B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling, and all other costs associated with shipment and delivery.

8.02 *Delivery*

A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.

B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.

C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.

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D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.

E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.

F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.

B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER'S RIGHTS

9.01 *Seller's Warranties and Guarantees*

A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.

B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.

C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;

2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;

3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or

4. normal wear and tear under normal usage.

D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:

1. observations by Buyer, Engineer, or Project Owner;

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2. recommendation by Engineer or payment by Buyer of any progress or final payment;

3. use of the Goods by Buyer or Project Owner;

4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;

5. the end of the correction period established in Paragraph 9.04;

6. the issuance of a notice of acceptance;

7. any inspection, test or approval by others; or

8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.

E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.

3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.

4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.

5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.

6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.

7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

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B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.

2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.

2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.

3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Procurement Contract Times, remove and replace the rejected Goods.

2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.

3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. *Buyer's Rejection of Non-Conforming Special Services*

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1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.

2. Seller shall promptly provide conforming Special Services acceptable to Buyer.

3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

D. *Remedying Non-Conforming Goods*: If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

E. *Buyer's Acceptance of Non-Conforming Goods*: Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods.

F. *Seller Obligations*: Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations will include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

G. *Buyer's Rejection of Conforming Goods*: If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

9.04 *Correction Period*

A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.

B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.

B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.

C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

10.02 *Duties and Responsibilities; Authority; Limitations*

A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.

B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.

C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.

D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.

E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.

F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

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ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.

B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Buyer and Seller shall execute appropriate Change Orders covering:

1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;

2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;

3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.

B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.

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B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.

B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided herein.

11.05 *Buyer-Authorized Changes in the Goods and Special Services*

A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion. Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

11.06 *Buyer's Contingency Allowance*

A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.

B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.

C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.

D. The Procurement Agreement, Article 5, addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

11.07 *Unauthorized Changes in the Goods and Special Services*

A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

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11.08 *Change of Procurement Contract Price*

A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Procurement Contract Price will be determined as follows:

1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;

2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or

3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15%.

11.09 *Change of Procurement Contract Times*

A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.

B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.

C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.

D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

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F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.

G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.

H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.

I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.

J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.

K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.

B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith.

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The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.

C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:

1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or

3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.

B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.

C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.

D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

A. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;

b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and

c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or

b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.

4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or

b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or

c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or

d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or

e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:

a. the Goods and Services are non-conforming, requiring correction or replacement;

b. the Procurement Contract Price has been reduced by Change Orders;

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c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or

d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.

13.04 *Suspension of or Reduction in Payment*

A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and

2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.

3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;

c. Seller has failed to provide and maintain insurance;

d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

e. the Goods and Special Services are non-conforming, requiring correction or replacement;

f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;

g. the Procurement Contract Price has been reduced by Change Orders;

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h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;

i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or

j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.

B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.

B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.

C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.

D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.

E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.

F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.

G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

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13.06 *Waiver of Claims*

A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.

B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

ARTICLE 14—CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will not constitute a breach of contract by Buyer. Upon cancellation:

1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.

2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Procurement Contract Price of such Goods.

14.02 *Suspension of Performance by Buyer*

A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

14.03 *Suspension of Performance by Seller*

A. Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:

1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Procurement Contract; and

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

14.04 *Breach and Termination*

A. *Buyer's Breach*

1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.

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2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.

B. In the case of any conflict between the express terms of this Procurement Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Procurement Contract will apply.

15.03 *Computation of Time*

A. When any period of time is referred to in the Procurement Contract by number of days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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15.04 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

15.05 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Procurement Contract, as well as all continuing obligations indicated in the Procurement Contract, will survive final payment, completion, and acceptance of the Goods and Special Services or termination or completion of the Procurement Contract or of the services of Seller.

15.06 *Entire Agreement*

A. Buyer and Seller agree that this Procurement Contract is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Procurement Contract may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

15.07 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

15.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

15.09 *Successors and Assigns*

A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract.

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DOCUMENT 007350

SUPPLEMENTARY CONDITIONS OF THE PROCUREMENT CONTRACT

These Supplementary Conditions amend or supplement EJCDC® P-700, Standard General Conditions of the Procurement Contract (2019). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Buyer shall furnish to Seller **5** printed copies of the Procurement Contract Documents (including one fully signed counterpart of the Procurement Agreement), and **one copy** in electronic portable document format (PDF).

ARTICLE 5 – BONDS AND INSURANCE

5.01 Insurance

SC-5.01 Add the following new paragraphs immediately after Paragraph 5.01.E:

A. Seller shall purchase and maintain such liability and other insurance as is appropriate for the furnishing of Goods and Special Services and as will provide protection from claims set forth below which may arise out of or result from Seller’s furnishing of the Goods or Special Services and Seller’s other obligations under the Procurement Contract Documents, whether the furnishing of Goods and Special Services or other obligations are to be performed by Seller, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to furnish the Goods and Special Services, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Seller’s employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller’s employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (b) by any other person for any other reason;

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5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this Paragraph 5.01 to be purchased and maintained must:

1. with respect to insurance required by Paragraphs SC-5.01.F.3 through SC-5.01.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, their consultants, and all of whom must be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds must provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Seller's indemnity obligations under Paragraph 7.07;

5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;

6. remain in effect at least until final payment and at all times thereafter when Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 9.03 and 9.04; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter).

C. The limits of liability for the insurance required by Paragraph SC-5.02.F must provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs SC-5.02.F.1 and F.2:

Workers' Compensation and Related Policies	Establish Policy Limits
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory

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Workers' Compensation and Related Policies	Establish Policy Limits
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	**$500,000**
Bodily injury by disease—aggregate	**$500,000**
Employer's Liability	
Each accident	**$500,000**
Each employee	**$500,000**
Policy limit	**$500,000**
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	**$500,000**

2. Seller's General Liability under Paragraphs SC-5.02.F.3 through F.6 which must include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Seller:

Commercial General Liability	Policy limits of not less than
General Aggregate	**$2,000,000**
Products—Completed Operations Aggregate	**$1,000,000**
Personal and Advertising Injury	**$1,000,000**
Bodily Injury and Property Damage—Each Occurrence	**$1,000,000**

3. Automobile Liability under Paragraph SC-5.02.F.6:

Automobile Liability	Policy limits of not less than
Bodily Injury	
Each Person	**$1,000,000**
Each Accident	**$1,000,000**
Property Damage	
Each Accident	**$1,000,000**

4. Professional Liability (if the Special Services include professional services):

Seller's Professional Liability	Policy limits of not less than
Each Claim	**$0**
Annual Aggregate	**$0**

D. Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance

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requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.

ARTICLE 7— SELLER'S RESPONSIBILTY

7.02 Taxes

B. Buyer is exempt from payment of sales and compensating use taxes of the State of **Arkansas** and of cities and counties thereof on all materials and equipment to be incorporated into the Project facilities.

1. Buyer will furnish the required certificates of tax exemption to Seller with respect to materials and equipment to be incorporated into the Project facilities.

2. Buyer's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Seller, or to supplies or materials not incorporated into the Project facilities.

3. The Procurement Contract Price does not include the cost of sales or compensating use taxes to the extent such are exempted by this paragraph.

ARTICLE 9 – BUYERS RIGHTS

SC-9.05 Add the following new paragraph after Paragraph 9.04:

9.05 Limitation of Seller's Liability

A. Buyer and Seller agree that the total liability of Seller to Buyer for claims, costs, losses, and damages arising from this Procurement Contract will be limited to the amount established in the Procurement Agreement as the Procurement Contract Price.

ARITCLE 12 – CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

SC-12.03 Add the following new paragraph immediately after Paragraph 12.02:

12.03 Arbitration

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-12.03). This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Procurement Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 12, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority

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to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Procurement Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Procurement Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Procurement Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party of the right to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Procurement Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Procurement Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Buyer or Seller, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Procurement Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

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SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1.3 RELATED SECTIONS

A. None.

1.4 SUBMITTALS

A. Submit product data as specified herein, including standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, catalog cuts, standard wiring diagrams, printed performance curves and operational range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing and printed product warranties, as applicable to the work.

Resubmittals will be handled in the same manner as first submittals. On resubmittals the Manufacturer shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Manufacturer shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

Submittals shall include the following:

1. Certified shop and erection drawings showing all important details of construction, dimensions, and anchor bolt locations.
2. Descriptive literature, bulletins and/or catalogs of the equipment.
3. Data on the characteristics and performance of the pumps. Data shall include guaranteed and certified performance curves, based on actual shop tests of units to be delivered, which show that they meet the specified requirements for head, capacity, efficiency, NPSH required (based on tests similar units), and horsepower. Curves shall be submitted on 8-1/2-in by 11-in sheets. Curves for variable speed pumps shall be provided with at least five frequency curves: 40 Hz, 45 Hz, 50 Hz, 55 Hz and 60 Hz. The curves shall be plotted demonstrating frequency and operating rpm from maximum rpm to minimum rpm for each type of pump with subsequent pumps operating parallel through the minimum and maximum flow requirements.
4. The total weight of the equipment including weight of the single largest item.
5. A complete total bill of materials for all equipment.

6. A list of the manufacturer's recommended spare parts with the manufacturer's current price for each item. Include gaskets, packing, etc, on the list. List the bearings by the bearing manufacturer's numbers only.
7. A statement indicating bearing life.
8. Complete description of surface preparation and shop prime painting.
9. Submittal of motor data for acceptance shall be in accordance with Division 26 and shall include complete nameplate data and test characteristics in accordance with the latest version of NEMA Standard MG1-12. In addition, the following data for the motors shall be provided:

    a. Efficiency at 1/2, 3/4, and full load.
    b. Power factor at 1/2, 3/4, and full load.
    c. Motor outline drawings, dimensions, and weight.
    d. Descriptive bulletins, including full description of insulation system.
    e. Bearing design data and L-10 bearing life.
    f. Special features (i.e., space heaters, temperature detectors, etc.).
    g. Power factor correction capacitor rating and type.
    h. Insulation information.
    i. Locked Rotor Amperes at rated voltage and NEMA starting code letter.
    j. Temperature rise.
    k. Service factor.

B. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Manufacturer's review and approval markings and action taken by Engineer.
3. Include the following information on label for processing and recording action taken:

    a. Project name,
    b. Date,
    c. Name and address of Engineer,
    d. Name and address of Manufacturer,
    e. Name and address of subcontractor,
    f. Unique identifier, including revision number,
    g. Number and title of appropriate Specification Section,
    h. Drawing number and detail references, as appropriate,
    i. Other necessary identification.

C. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than the Manufacturer.

1.5 SUBMITTAL PROCEDURES

A. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows:

1. Initial Review: Allow twenty (20) days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Manufacturer when a submittal being processed must be delayed for coordination.
2. Time for review shall commence on Engineers receipt of submittal.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data is not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operating and maintenance manuals.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
4. Number of Copies: Submit four (4) minimum black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit five (5) prints where prints are required for operation and maintenance manuals. Engineer will retain three (3) prints; remainder will be returned. Mark up and retain one (1) returned print as a Project Record.

2.2 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

B. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

D. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

E. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

F. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

PART 3 - EXECUTION

3.1 MANUFACTURER'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Manufacturer's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Manufacturer's approval stamp and will return them without action.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Engineer will review each submittal and will not return it or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 016000

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions and contract documents.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

D. Pipe for potable water to be transported with exposed ends tarped or otherwise closed to prevent accumulation of airborne contaminates during transport.

1.2 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer’s instructions, with seals and labels intact and legible.

B. Store sensitive products in weather tight, climate-controlled enclosures.

C. For exterior storage of fabricated products, place on sloped supports, above ground.

D. Provide off-site storage and protection when site does not permit on-site storage or protection.

E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.

F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

I. Install 48” tall PVC orange mesh barrier fence around stored materials.

1.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article. Where terms such as “or equal,” Aor equivalent” are used in this Contract, they shall be taken to mean Aor approved equivalent.” Proposed equivalents shall be offered as substitutions.

1.4 SUBSTITUTIONS

A. Engineer will consider requests for substitutions only within 90 days after date established in Notice to Proceed.

1. Substitutions may be considered when a product becomes unavailable through no fault of the Materialman.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request constitutes a representation that the Manufacturer:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

1. Submit copies of Request for Substitution for consideration. Number of copies as specified in Section 013300. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
3. The Engineer will notify Manufacturer in writing of decision to accept or reject request.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Conditions: Engineer will consider Materialman’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect the Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one materialman, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all materialmen involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Engineer will consider Materialman's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 017516

STARTING OF SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Starting Equipment Systems.

B. Demonstration and Instructions.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING EQUIPMENT SYSTEMS

A. Coordinate schedule for start-up of various equipment. System startup will take place by installation Contractor during the construction phase of the Headworks Screen Replacement, Sherwood, Arkansas.

B. Notify Engineer and Owner fifteen (15) working days prior to start-up of each item.

C. Verify that each piece of equipment has been checked for proper lubrication, drive rotation, belt tension, control sequence, or for other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment in operation.

1. Authorized Representative shall be factory trained.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

I. Owner will make available to the manufacturer pressure recording devices and flow meter data from the SCADA system.

J. The manufacturer shall provide a qualified technician to attend start up services with the Engineer and Owner and record pressure and flow meter reading to create an in-service pump performance curve.

3.2 DEMONSTRATION AND INSTRUCTIONS

A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment during equipment start-up services.

C. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

D. As a minimum, provide the amount of time required for instruction on each item of equipment and system that is specified in individual sections.

E. Authorized Representative shall be a full-time employee of the manufacturer or, if acceptable to the Engineer, a third party who is routinely engaged by the Manufacturer to provide start-up services.

END OF SECTION

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Warranties.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
3. Complete startup testing of systems.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify installation Contractor of items, either on installation Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify installation Contractor of construction that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit an electronic copy and three (3) hard copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by installation Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Engineer.
d. Name of Equipment Manufacturer (as applicable).
e. Name of installation Contractor.
f. Page number.

1.6 PROJECT RECORD DOCUMENTS

A. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

B. Record Product Data: Submit an electronic copy and one (1) hard copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Final Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of installation Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.3 SUBMITTALS

A. Initial Submittal: Submit an electronic copy of each manual prior to requesting payment for equipment that requires operation and maintenance manuals.

1. Include a complete operation and maintenance directory.
2. Engineer will return an electronic copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one (1) hard copy of each manual in final form at least 15 days before final inspection. Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Engineer's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Engineer's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.
4. Tabbed Dividers.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of installation Contractor.
6. Name, address, and telephone number of equipment Manufacturer.
7. Name and address of Engineer.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MATERIAL

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Manufacturer is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Wiring diagrams, with Manufacturer applied identification system.
6. Control diagrams, with Manufacturer applied identification system.
7. Piped system diagrams.
8. Precautions against improper use.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Required sequences for electric or electronic systems.
8. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MATERIAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

G. Operation and Maintenance Data

1. Copies of an operating and maintenance manual for the pump shall be furnished to the Engineer. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc, that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

2. Bid prices for equipment shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the Owner's operating personnel in operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the Engineer. A technical representative, from the respective pump manufacturer who has complete knowledge of proper operation and maintenance shall be provided for 1 day to instruct representatives of the Owner and the Engineer on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and test run as provided in Sections 017516 and 333219 as applicable. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

C. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

D. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 462323

VORTEX GRIT REMOVAL EQUIPMENT

PART 1 – GENERAL

1.1 WORK INCLUDED

A. This section covers the work necessary to furnish and install, complete, all necessary equipment and appurtenances for the new grit chamber equipment, including paddle apparatus, drive, fluidizer vanes, grit well cover plate, flow control baffles, grit pump, grit concentrator, screw classifier, and controls. To ensure compatibility and complete system integration, all pieces of equipment for the grit removal system (e.g. grit chamber, grit pump, grit classifier,) shall be manufactured by the same company. Components from multiple manufacturers will not be acceptable AND A CONTROL PANEL CONSISTING OF PLC, VFDS, STARTERS, FIBER PATCH PANELS, FIBER MEDIA CONVERTORS, AND ALL OTHER NECESSARY COMPONENTS FOR A FULLY FUNCTIONAL SYSTEM AND AS REQUIRED BY MANUFACTURER APPROVED SUBMITTALS.

1.2 REFERENCES

A. Reference Standards: Comply as a minimum with applicable provisions and recommendations of the following:

1. NEC, National Electric Code.
2. NEMA, Standards of National Electrical Manufacturers Association.
3. IEEE, Institute of Electrical and Electronic Engineers.
4. AFBMA, Anti-Friction Bearing Manufacturers Association.
5. ANSI, American National Standards Institute.
6. SSPC, Steel Structures Painting Council.
7. ASTM, American Society for Testing and Materials.

1.3 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 013300.

B. Submit a list of not less than five (5) installations where equipment of the type and approximate size specified herein has been in successful operation for at least five (5) years.

C. Five (5) grit removal efficiency tests shall be provided from installations where similar equipment by the Manufacturer is currently in similar service. Each grit removal efficiency test shall meet the removal efficiency in 2.3C. To ensure compatibility and complete system integration, all pieces of equipment for the grit removal system (e.g. grit chamber, grit pump, grit classifier,) shall be manufactured by the same company. Components from multiple manufacturers will not be acceptable.

D. Submit locations of the nearest permanent service headquarters or designated authorized service provider.

E. Submit descriptive literature, including a cross-sectional view of each chamber, which indicates materials of construction, weights, principal dimensions and other important details.

F. Submit operation and maintenance data under provisions of Section 017823.

G. Record Drawings: Submit record drawing under provisions of Section 017839.

H. Grit system manufacturer shall provide Computation Fluid Dynamics (CFD) modeling to verify the grit chamber removal characteristics and flow regime. Data on the CFD through generic simulation results of a similar chamber diameter shall be provided with the submittal and prior to approval.

I. Grit system manufacturer shall provide calculations and supporting information to demonstrate sizing of the grit chamber based on particle size, peak flow, and chamber diameter. Units sized on Surface Overflow Rate (SOR) shall not be allowed. Details to be provided with submittal and prior to approval.

1.4 QUALITY ASSURANCE

A. All materials used shall be new, of high grade and of properties best suited to the Work required.

B. Manufacturer's Qualifications:

1. Grit chamber equipment provided under this Section shall submit a list of not less than five (5) installations where equipment of the same removal efficiencies as specified herein has been in successful operation for at least five (5) years.

2. Five (5) grit removal efficiency tests shall be provided from installations where similar equipment by the Manufacturer is currently in similar service. Each grit removal efficiency test shall meet the removal efficiency in 2.3.C. A Manufacturer that does not have test data that is acceptable to the Engineer shall not be considered as an approved equal.

C. Coordination Responsibility:

1. In order to ensure equipment compatibility one (1) manufacturer shall be responsible for providing all grit removal equipment, including pump, classifier and controls.

2. Contractor shall retain overall responsibility for equipment coordination, installation, testing and operation.

D. Manufacturer shall have operational grit chamber with minimum 2 MGD capacity at their facility and upon request from the engineer, the operational unit may be witnessed by the engineer and/or representative of their choice. Hands on demonstration and training with operational grit chamber shall be completed prior to delivery.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver equipment to site under provisions of Section 016000.

B. Store and protect equipment under provisions of Section 016000.

C. Store all equipment off the ground in enclosed shelter.

1.6 GUARANTEE

A. Manufacturer shall furnish to the owner a written warranty against workmanship and material for 1 year under normal use and service. Warranty shall be in printed form and previously published as the manufacturers' Standard Warranty for similar units.

B. Manufacturer shall have operational grit chamber with minimum 2 MGD capacity at their facility and upon request from the engineer, the operational unit may be witnessed by the engineer

and/or representative of their choice. Hands on demonstration and training with operational grit chamber shall be completed prior to delivery.

C. Vortex Chamber Field Performance Tests. The equipment manufacturer shall submit grit removal test results from a recent comparable installation. Tested facilities shall be of similar size and type as this installation. Procedures shall follow the below protocol:

1. Testing of the grit removal equipment shall be performed as field tests. Prior to equipment acceptance, performance tests shall be conducted on one grit removal unit to demonstrate that the equipment meets specified grit removal requirements.
2. Personnel in charge of the tests shall be competent, authorized representatives of the equipment manufacturer who are familiar with operation of the equipment furnished and who have previous satisfactory experience in conducting tests of the type specified. Qualified personnel shall perform the tests, record the data, make the required calculations, and prepare a report on the results.
3. Representatives of Engineer will observe the tests and collect a copy of the recorded data. The information collected will be used as a basis for determining acceptability of the manufacturer's results.
4. Contractor shall provide all support facilities and equipment required to properly conduct the tests.
5. The data to be determined shall include but shall not be limited to:

    a. Size classification (post putrescible burn weight) of the grit in the influent to the grit removal unit.
    b. Size classification (post putrescible burn weight) of the grit in the effluent from the grit removal unit.
    c. Percent removal of all grit 140-mesh (105 µm) and larger.
    d. Additional data as necessary to determine compliance with the specifications.

6. In order to properly determine the percent of grit removal, samples shall be taken concurrently from both the influent and effluent of the grit removal unit at the test points recommended by Engineer. There shall not be less than 6 samples locations for influent and effluent. These sampling points shall be equidistant to each other across the width of the bottom of the flume.
7. Each sample point must be sufficient to capture a minimum of 500 grams (approx. 1 cup) combined influent post-burn, at all six (6) locations along the bottom of the channel. The time span for the sample runs may range from 15 minutes to over 1 hour. Run times are determined from a pre-test sample which has been field-burned and calculated to determine required sample run times to achieve a minimum of 500 grams post burn sample size per influent test. The sample shall be burned according to the Section 2540E found in the 22nd Edition of Standard Methods for Examination of Water and Wastewater. The purpose of the pre-test sample field-burn is to determine the approximate organic content of the sample. Organic content can differ significantly per site.
8. Because grit is normally present in sewage only to the level of five or six parts per million, sampling techniques must be accurate to establish these levels of grit. For purposes of this test, grit shall be defined as any inorganic mineral matter with a specific gravity of 2.65 (U.S. EPA, 1987).
9. During the performance tests, flow through the grit removal chamber shall be monitored with an ultrasonic velocity meter. The sampler inlet velocity [ft/s] shall be maintained every hour within +/- 10 percent of the plant flow. The sampler velocity shall be determined by the overflow weir.
10. The initial observation of tests will be at Owner's expense. All costs of subsequent visits by Engineer to witness or observe additional tests necessary because of failure of the initial tests or inability to conduct the initial tests will be deducted from monies due Contractor.

11. Test Procedures.
    a) 1 inch diameter aluminum sample pipe shall be installed at each test point and clamped in position. The sample pipe shall be threaded at the discharge end and connected to a pump via 1 inch tubing. The discharge of the the pump shall be The discharge tubin from the pump shall be clamped to the container so the discharge does not sweep the bottom of the container. The container shall be a minimum of 20 gallons [76 L] and located where the overflow can drain.

    b) The flow shall be opened to allow liquid to discharge into the container according to the pretest time interval. If the grit sample is too small or too large, the time interval shall be adjusted. After all the point have been sampled, the siphon hose shall be removed from the container. The container shall be tilted and the liquid contents poured out slowly to ensure that the settled grit will not be disturbed on the bottom. One to two inches of liquid shall be left in the bottom of the container, covering the accumulated grit.

    c) The liquid, grit and organics remaining in the container shall be poured through an 5 mesh sieve [0.157”] held over a 10 or 12 quart [9-11 L] bucket. The minimum 20 gallon [76 L] container shall be rinsed thoroughly and the additional liquid shall be poured through the 5 mesh sieve [0.157”]. The residue on the 5 mesh sieve [0.157”] shall be worked with a plastic pot scraper and plant effluent water to ensure the grit passes through the sieve. The residue retained on the 5 mesh [0.157”] sieve shall be discarded.

    d) The grit shall be dried and weighed according to the Section 2540B found in the 22nd Edition of Standard Methods for Examination of Water and Wastewater. However, the entire sample shall be dried and not limited to 200 grams.

    e) The grit shall be burned to ash all organic material and weighed according to the Section 2540E found in the 22nd Edition of Standard Methods for Examination of Water and Wastewater. However, the entire sample shall be dried and not limited to 200 grams.

    f) The post putrescible burn grit samples shall be poured through 50-mesh [300 µm], 70-mesh[210 µm], 100-mesh [150 µm], 140 mesh [105 µm] sieve. The sieve shall be vibrated against the hand and tilted back and forth to allow the grit to properly pass through the sieve. The contents on the 50-mesh [300 µm], 70-mesh[210 µm], 100-mesh [150 µm], 140 mesh [105 µm]140 mesh [105 µm] sieve shall be weighed.

12. Test Results. From the sieve analysis data collected on the samples taken concurrently at the influent and effluent of the grit removal unit, the removal efficiencies as stated above are for inlet-to-outlet removal efficiency by percentage, based on the material retained in the sieve. This means that the figure for 50-mesh (300-microns) removal is based on all material retained on a 50-mesh (300-microns) sieve, comparing the influent to the effluent. The 70-mesh (210-microns) removal figure is all material passing a 50-mesh (300-microns) but retained on 70-mesh (210-microns), comparing the influent and the effluent. The 100-mesh (150-microns) removal figure represents all material passing the 50 to 70 mesh (300 to 210 microns) screens, but being retained on the 100-mesh (150- microns) screen, comparing influent to effluent.

PART 2 - PRODUCTS

2.1 GENERAL

A. Furnish and install the vortex grit removal equipment and appurtenances in accordance with these specifications and as shown on the Drawings.

2.2 MANUFACTURER

A. Smith & Loveless, Inc.

2.3 OPERATIONAL CHARACTERISTICS

A. Design each grit chamber for following hydraulic conditions.

1. Minimum Flow: 0.4 MGD.
2. Maximum Flow While Maintaining Below Removal Efficiency: 4.0 MGD
3. Maxiumum Hydraulic Flow: 4.0 MGD

B. Construct suitable for extremely humid installation, and splash resistant.

C. Limit headloss through grit chamber to 11.6 in. or less at 20.0 MGD

D. Grit removal from screened raw wastewater.

Grit Size	% Removed (by Weight)
Down to 140-mesh particle size	95

E. Wearing parts readily accessible for inspection, repairs, and replacement.

F. Replacement parts easily duplicated and attainable.

G. No moving parts subject to wear or stoppage below water surface.

H. No bends or elbows on underwater or inaccessible grit piping.

I. Provide drives, lubrication, and support equipment bearings accessible from operating floor level.

J. No loss of grit removal efficiency for flows with inlet velocity less than 3.5 ft/s.

K. Provide inlet ramp to enhance coanda effect and direct grit downward to separation chamber.

L. Grit removal system to fit in grit tank shown on Drawings.
1. Inlet and outlet to be separated by flow control baffle and chamber travel path to be 360°.
2. Storage hopper to have 60° sloped bottom with a maximum diameter of 5’-0” and a minimum depth of 6’-8”.

2.4 Design Components.

Equipment Tag	Name	Existing/Proposed
30PMP101	Propeller Drive Unit	Proposed
30PMP201	Propeller Drive Unit	Proposed
30GP101	Grit Pump	Proposed
30GP201	Grit Pump	Proposed
30CL101	Classifier	Proposed
30CL201	Classifier	Proposed

2.5 GRIT CHAMBER EQUIPMENT

A. Paddles

1. Adjustable grit scouring intensity.
2. Four blades.
3. Material: 316 stainless steel.

B. Propeller Drive Tube:

1. Driven by large, totally enclosed spur gear and turntable bearing.
2. Dia: 10-3/4 in. minimum.
3. Material: 316 stainless steel.

C. Grit Fluidizer

1. Bolted to propeller drive tube.
2. Within 6" of pump suction inlet.
3. Helical configuration.

D. Propeller Drive Unit (Gear Motor and Gear Head):

1. Motor:
   a. Helical gear type.
   b. 1.5hp, 230/460 v, 3-ph, 60 Hz. explosion proof
   c. Steel housing and frame.
   d. Service Factor: 2.0 or greater on reducer, 1.15 on motor.
   e. Motors shall be by Baldor or U.S. Electrical Motors, Division of Emerson Electric Co.; unless otherwise specifically specified or approved equal. Motors shall be manufactured in the USA.

2. Gears:
   a. Alloy steel, heat treated, and hardened.
   b. Teeth: Hobbed and flame hardened.
   c. Helical Gears: Oil lubricated.
   d. Spur Tooth Bull Gear: Large, driven by pinion mounted on output shaft of helical gear motor, enclosed in heavy cast iron case.
   e. Spur Gear Pinion: Cut from heat-treated steel.
   f. Bull Gear: Rotate with minimum 21-in. diameter turntable bearing.
   g. Service Factor for Pinion and Bull Gear: 5 or greater at standard operating speeds.

3. Bull Gear Box:
   a. Specifically designed for this service.
   b. Provide opening for propeller drive table.
   c. Seal with air bell at bottom opening around drive tube.
   d. Provide bolted flanged connection at top for grit pump suction.

4. General Requirements:
   a. Maximum Drive Output Speed: 21 rpm.
   b. Suitable for continuous (24 hrs/day year round) service.
   c. Bearings shall have minimum B-10 bearing life of 50,000 hrs., except 21” diameter turntable bearing which shall have minimum B-10 life of 20 years.

E. Grit well cover plates

1. Maximum 3" opening between cover plate and propeller drive tube.
2. Two-piece with lifting loops.
3. Stationary, not part of rotating assembly.
4. Material: 316 stainless steel.

F. Flow Control Baffle:

1. Integral flow control baffle for both the inlet and outlet of the main chamber.
2. Material: 316 stainless steel.
3. Fabricate to dimensions as shown on Drawings.
4. No additional downstream flow control device shall be required to keep inlet channel velocity between 1.6 ft/s and 3.5 ft/s from 2.0 to 20.0 MGD, respectively.
5. It shall be designed to direct the inlet flow into the chamber in a manner ensuring the proper vortex flow and to prevent short-circuiting.
6. It shall direct the flow out of the unit, and to act as a “slice weir” to control the water level in the main chamber and in the inlet channel.

G. Vortex Grit Chamber:

1. Shall be manufactured by vortex grit chamber manufacturer.
2. Material: 316 stainless steel with minimum thickens of 1/4".
3. Shall ship in two major pieces for assembly in the field.
4. Fabricate to dimensions as shown on Drawings.

2.6 GRIT PUMP (250 GPM)

A. Pump:

1. Centrifugal, vertical configuration.
2. Close-coupled.
3. Recessed Ni-Hard impeller.
4. Construction: Ni-hard especially designed for use of mechanical seals and vacuum priming.
5. Size: 4” suction, 4” discharge.
6. Capable of passing 4” sphere.
7. Capacity: 250 GPM at 32.5 ft. TDH.
8. One piece motor adapter/backhead.

B. Motor:

1. 10.5 HP, 1760 RPM, 230/460 Volt, 3 phase, 60 hertz explosion-proof
2. Minimum 1-7/8" shaft diameter.
3. Solid stainless steel shaft through mechanical seal.
4. 6" maximum lower bearing to impeller distance.
5. Class F insulation, Class B temperature rise, 1.15, unless explosion-proof or VFD duty then 1.0 service factor.
6. Motors shall be by Baldor or U.S. Electrical Motors, Division of Emerson Electric Co.; unless otherwise specifically specified or approved equal. Motors shall be manufactured in the USA.

C. Lifting Stanchion

1. A stanchion with lifting arm shall be provided to lift the Grit Pump for disassembly.
2. The lifting arm shall have a hook over the center of the motor to support a hoist provided

by the Owner. Installation shall be as detailed in the contract drawings.

3. The lifter shall be designed for a 1,000 lbs. (454 kg) lifting load.

2.7 CENTRIFUGAL GRIT CONCENTRATOR (250 GPM)

A. Mount grit concentrator on grit dewatering screw as recommended by manufacturer.

B. Size, capacity, and range of operation shall be compatible with total grit removal system as described herein.

C. Operates on the constant rate vortex principle.

D. Purpose: Remove water and organics from mixture of grit, water, and organics (pumped by grit pump) prior to grit dewatering screw, thereby minimizing hydraulic load.

E. Flow Pattern:

1. Pumped flow enters tangentially through side.
2. Grit and small volume of water exit out bottom into hopper of dewatering screw.
3. Organic material and rest of water exit out top to drain.
4. Minimum 93% removal of influent water and 95% removal influent organics.
5. Less than 5% putrescible material in recovered grit from underflow.

F. The grit concentrator shall consist of two major pieces. The top section and bottom section.

G. Top Section Material: Minimum thickness of 1/2" Ni-Hard high nickel iron. Minimum thickness of 3/4" Ni-Hard high nickel iron in high wear areas. Unit shall be coated with minimum 6 mil dry film thickness epoxy resin.

H. Bottom Section Material: Minimum thickness of 3/4" Ni-Hard high nickel iron. Unit shall be coated with minimum 6 mil dry film thickness epoxy resin.

I. No moving parts; operates totally on hydraulic principles.

2.8 DEWATERING SCREW GRIT CONVEYOR (for 250 GPM)

A. General:

1. Provide inlet hopper to receive mixture of grit and water, sufficiently large to allow grit to settle out of water.
2. Provide 4” overflow in inlet hopper.
3. Provide unit as freestanding with support legs to hold conveyor at approximately 22° angle from horizontal.
4. Drive screw conveyor with gear motor mounted on discharge end.

B. Construction:

1. Screw:
   a. Diameter: 9 in.
   b. Length: 15 ft.
   c. Material: 316 stainless steel.

2. Screw Bearings:
   a. Outlet End: Anti-friction type.
   b. Inlet End: Greaseable bronze bushing.

3. Screw Trough:
    a. Material: 316 stainless steel
    b. Open 3/16” steel formed, U-shaped.
    c. Provide 2” diameter drain at inlet end.
    d. Provide 8” outlet.
    e. Provide 5'-1/4" of clearance between centerline of support legs and centerline of discharge.

4. Inlet Hopper:
    a. Material: 316 stainless steel.
    b. Overflow: Full-length, double-sided outlet weir trough with 4-in. flange.
    c. Slope three sides of hopper at least 50 degrees to horizontal.
    d. Projected Surface Area: 15.1 sq. ft.
    e. Parallel plates to improve retention of fine grit.

5. Drive:
    a. Provide belt driven shaft mounted helical gear reducer.
    b. Mount on plate bolted to flanges of screw trough at discharge end.

6. Motor:
    a. 1 hp, 230/460 v, 3-ph, 60 Hz. TEFC
    b. Motors shall be by Baldor or U.S. Electrical Motors, Division of Emerson Electric Co.; unless otherwise specifically specified or approved equal. Motors shall be manufactured in the USA.

7. Cover:
    a. Material: 316 stainless steel
    b. Expanded steel flattened mesh cover over hopper and trough openings.
    c. Style designation: No. 13-15.
    d. Opening under concentrator not covered to allow incoming flow to enter unit.

8. Automatic Spring Loaded Lubricator:
    a. Unit relies on the movement of the bushing to pull grease from the refillable reservoir to the bushing surface.
    b. The reservoir and base shall be constructed of clear polycarbonate, which allows for visual inspection.
    c. The thread size is 1/8” NPT.
    d. Capacity: 6 oz. (178 cc).
    e. Size: 3” (75 mm) diameter x 6” (150 mm) tall.
    f. Operating Temperature Range: -10°F (-23°C) to 250°F (121°C).

2.9 VACUUM PRIMING PANEL

A. Panel

1. NEMA 4.
2. Remotely mounted in nonclassified area.

B. Panel Mounted Devices

1. Vacuum Pump:
    a. Corrosion resistant internal components.

b. Sized to prime pump and piping in less than 60 seconds.

2. Air Compressor:
   a. Oil-less

C. Priming System

1. Consists of vacuum pump, vacuum control solenoid valve, prime level sensing probe, and float operated check valve.

2. Positive lubrication of mechanical seal.

3. Minimum passageway equivalent to 2-1/2" opening.

4. Prime from low-pressure area of pump.

D. Pinch Valve

1. On pump discharge line.
2. In vertical piping.
3. 4" diameter.
4. Pneumatically controlled.

2.10 FLUSH WATER SYSTEM

1. Provide all solenoid valves and operators for flush water system.
2. Flushing will take place prior and after each operation.

2.11 SHOP PAINTING

A. Surface Preparation

1. All structural steel surfaces shot blasted with steel grit.
2. Weld splatter and surface roughness removed by grinding.
3. Comply with SSPC-SP6 specifications.

B. Coating - Grit Mechanism

1. Single, 3 mil DFT primer - shop applied.

C. Coating - Concentrator and Conveyor

1. Single, 6 mil DFT, **VERSAPOX®** epoxy resin.

2.12 ELECTRICAL CONTROLS FOR AUTOMATIC OPERATION

A. Two control panels; one for each Vortex Grit Equipment System Each panel will control respective gates, received 4-20mA flow signal, and high float contact.

B. Panel

1. NEMA 4X.
2. All components within the control panel shall be UL listed or recognized, and the complete grit system control panel itself shall be labeled as a UL 508A General Use Industrial Control Panel.

3. To facilitate wire tracing and servicing, the control wiring shall be run in enclosed wireways, with removable covers, rather than tied up in bundles.
4. Control relays up to 6-amp capacity shall be the modular, plug-in type, with integral LED indicating lights to show activation. Larger control relays shall be enclosed to be “finger safe”.
5. A duplex GFI protected convenience outlet shall be provided in the panel for operation of 120-volt AC devices.

C. Circuit Breakers

1. Thermal magnetic air circuit breakers shall be provided for branch disconnect service and short-circuit protection of all auxiliary circuits
2. Thermal magnetic circuit breakers with lockout capability shall be provided for each drive and pump motor, matched to the motor inrush current.

D. Starters

1. Magnetic across-the-line starters with 24-volt coils and solid-state overload protection for each phase shall be provided for each motor to give positive protection against phase unbalance, thermal overload, phase loss and ground fault.
2. To provide the fastest trip speed and for ground fault protection, only solid-state overload protection will be used, and motor starters using heater coils will not be acceptable.
3. Each single-phase auxiliary motor shall be equipped with an over-current protection device in addition to the branch circuit breaker, or shall be impedance protected.
4. Include for following motors:
   a. Paddle drive.
   b. Grit pump.
   c. Screw conveyor.
5. If required, individual NEMA 7 Hand-Off-Automatic selector switches shall be provided for the pump and dewatering device drives.

E. Control Devices

1. An On Off selector switch shall be provided to operate the propeller drive motor starter.
2. To control the operation of the grit removal and dewatering system, and monitor the control, environmental and alarm functions, a specially preprogrammed, dedicated microprocessor-based control system shall be provided.
3. The PLC shall be an Allen Bradley MicroLogix 1400.
4. The controller shall interface with the panel display unit, motor starters, accessories and alarm functions through digital and analog input and output ports as required.
5. The digital controls shall operate on 24 volts or less, to eliminate shock hazard.
6. The 24-volt DC power supply shall be overload protected to be “crowbar safe” and will return to operation when a short is removed.
7. Program integrity shall be maintained by battery-backed RAM.
8. A surge suppressor with power filter shall be provided for the control circuits.
9. A NEMA 4X rated display unit shall be mounted through the front of the panel to provide operator input to and visual output from the microprocessor controller.
10. This interface shall be a 7” wide screen graphic interface with DSTN 65K-color Liquid Crystal Display with backlighting and resistive-type touch screen, for data input and programming.
11. The display shall have a “sleep” feature to prolong screen life.
12. A minimum of 11 (eleven) menu screens shall be available for display and management of paddle drive, grit pump and grit screw conveyor (optional) functions including, but not limited to:

F. Menu Screens screens shall be available for display and management of grit system control

functions listed below:

1. Display Functions:
   a. Graphical motor running indication
   b. General alarm indication
   c. Individual alarm indicators for each alarm function (with time and date)
   d. Paddle drive run time
   e. Grit pump run time
   f. Grit screw conveyor run time
   g. Alarm silencing
   h. Date & time indication with set time functionality
   i. I/O status for trouble shooting
   j. Schedule maintenance items
   k. “Help” screens
2. Field Programming Functions:
   a. Select English or Spanish language display mode
   b. Grit removal schedule or return to default settings
   c. Grit pump run time or return to default settings
   d. Silence audible alarm
   e. Reset running time meters
   f. Set date/time

G. Thermostat

1. A thermostat and back up thermostat will be supplied by the manufacture, and will monitor the temperature. When the outside temperature is 36° Fahrenheit or less, both grit pumps and classifiers will operate continuously.

2.12 Process Description

A. The Vortex Grit Removal Equipment will receive flow from the primary screw pumps into a common influent box. The flow can enter one or both channels. Each grit chamber is rated for 4MGD. The flow will go through the girt chambers and exit through a common effluent box.

B. Automatic Mode:

1. The owner shall have the ability to designate a primary grit vortex unit and a secondary grit vortex unit. This capability shall be repeatable for the grit classifier units. Each vortex unit (30PMP101 and 30PMP201) and classifier (30CL101 and 30CL201) unit shall be capable of operating at the capacities, powers, and turndown values specified and as indicated in the specifications. Each channel will have a slide gate (30CG 101 and 30CG201) with an EMO (EMO-1 and EMO-2) that will operate based on flow. The flow will be determined at Meter Vault 301 with 30MFM101. At 0-4 MGD one gate will open and one GRT and one CL will operate. When the flow reaches 4-8 MGD both gates will open and both GRT and CL will operate. Each control panel shall receive 4-20mA flow signal and high level float contact. There will be a high-level float (FS-1) in the influent common box which will act as an alarm. A PLC shall incorporate the operating schemes is as follows:

Scheme 1. Operate GRT-01 and CL-01 (0-4 MGD). GRT-02 and CL-02 will not be operable.

Scheme 2. Operate GRT-01 and CL-02 (0-4 MGD). GRT-02 and CL-01 will not be operable.

Scheme 3. Operate GRT-02 and CL-01 (0-4 MGD). GRT-01 and CL-02 will not be operable.

Scheme 4. Operate GRT-02 and CL-02 (0-4 MGD). GRT-01 and CL-01 will not be operable.

Scheme 6. Operate GRT-01, GRT-02 and CL-01, and CL-02 operable
(4-8 MGD).

Scheme 7. Operate GRT-01, GRT-02 and CL-01 (4-8 MGD).
CL-02 will not be operable.

Scheme 8. Operate GRT-01, GRT-02 and CL-02 (4-8 MGD).
CL-01 will not be operable.

PART 3 - EXECUTION

3.1 INSTALLATION (BY SEPARATE CONTRACT)

A. Installation of the grit equipment shall be in complete accordance with the manufacturer's instructions and recommendations, and the reviewed shop drawings.

1. Prior to start up, file a certificate of proper installation in accordance with Section 017500 “Equipment Testing and Startup”.

3.2 INITIAL START-UP AND TRAINING

A. The Materialman shall provide the services of a factory-employed service technician or his certified, qualified and trained designate who shall adequately inspect the installation, test the equipment furnished under this Contract and instruct the Owner’s operating personnel in its maintenance and operation. Factory personnel are required. Manufacturer’s representatives are not deemed acceptable to provide the start-up service. The services of the technician shall be provided as follows:

1. Two (2) separate trips, each of two 8-hour consecutive days, exclusive of travel, to inspect and certify the installation prior to startup and instruct Owner's personnel in proper operation and maintenance of the equipment.

2. Start-up service and training for the bar screen can be combined with the service for the washing press if the same company provides both pieces of equipment.

B. Upon completion of the equipment startup and commissioning, the manufacturer shall provide the complete programming and control logic used in the operation of the equipment. This includes, but is not limited to, user-defined parameters and software necessary for ongoing operation, maintenance, and future modifications. The programming must be delivered in a fully editable format and shall become the property of the equipment owner.

3.3 WARRANTY

A. The Manufacturer shall warrant that the supplied equipment shall be free from defects in material and workmanship and that it will replace or repair, F.O.B. its factory, any part or parts, which examination shall show to have failed under normal use and service by the user within eighteen (18) months following initial shipment to twelve (12) months following operation start up, whichever occurs first.

END OF SECTION

APPENDIX A

SUPPLEMENTAL DRAWINGS

Wynne Emergency Response Project C – Wastewater Treatment Plant Improvements

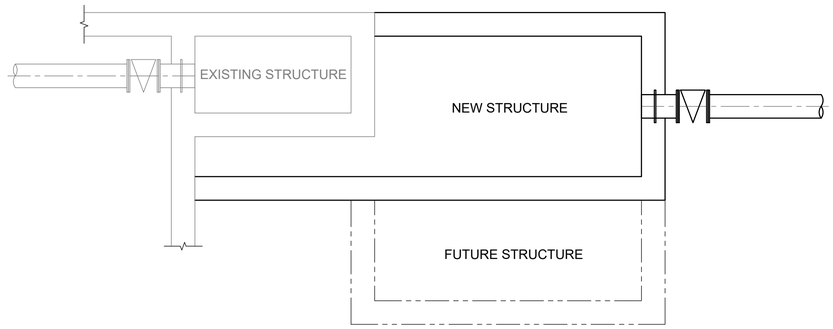
Headworks Drawing

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GENERAL EXISTING, NEW AND FUTURE LEGEND

SYMBOL	DESCRIPTION
	EXISTING PIPE, STRUCTURE, PAVEMENT, OR OTHER ITEMS TO BE DEMOLISHED.
	EXISTING PIPE, STRUCTURE, OR OTHER ITEMS TO BE ABANDONED.
	EXISTING
	NEW
	FUTURE
N	NORTH ARROW

EXISTING, NEW, AND FUTURE LINE WEIGHT REPRESENTATION



SHEET IDENTIFICATION SYSTEM

10 - H - 101
- 10 — DENOTES PROCESS STRUCTURE (AS REQUIRED)
- 101 — SEQUENTIAL SHEET NUMBER
- H — DISCIPLINE DESIGNATORS

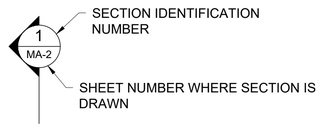
G - GENERAL	A - ARCHITECTURAL
C - CIVIL	S - STRUCTURAL
X - DEMOLITION	M - PROCESS MECHANICAL
I - INSTRUMENTATION & CONTROL	H - MECHANICAL
	P - PLUMBING
F - FIRE & LIFE SAFETY	E - ELECTRICAL
B - GEOTECHNICAL	Y - PHOTOS
L - LANDSCAPE	T - TELECOMMUNICATIONS

SHEET NUMBER LEGEND

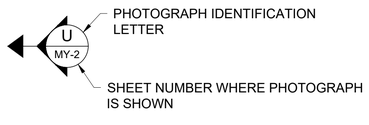
CIVIL DISCIPLINE	ALL OTHER DISCIPLINES
100 - SITE PLANS	100 - PLAN VIEWS
200 - GRADING & PAVING	200 - ELEVATIONS
300 - PIPING & PROFILES	300 - SECTIONS

ALL DISCIPLINES
- 400 - LARGE SCALE VIEWS
- 500 - DETAILS
- 600 - DIAGRAM OR SCHED.
- 900 - ISOMETRICS

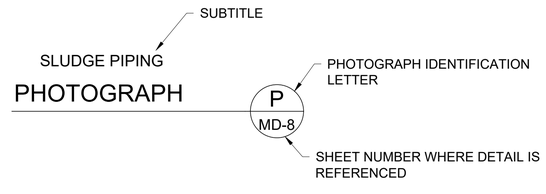
SECTION AND DETAIL DESIGNATION



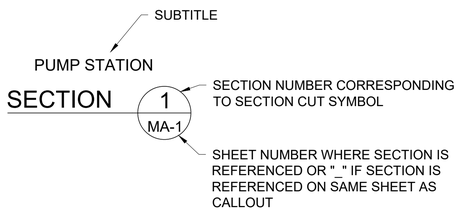
SECTION CUT SYMBOL



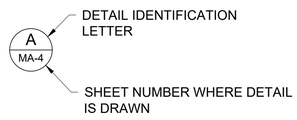
PHOTOGRAPH CALL-OUT SYMBOL



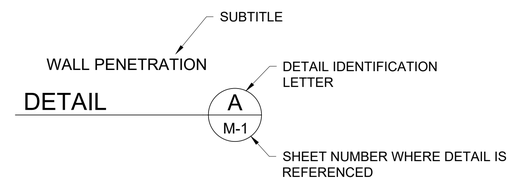
TITLE FOR PHOTOGRAPHS



TITLE FOR SECTION



DETAIL CALLOUT SYMBOL



TITLE FOR DETAILS

STANDARD ABBREVIATIONS

AC	AIR COMPRESSOR
AV	ANGLE VALVE
AVRV	AIR/VACUUM RELEASE VALVE
BLW	BLOWER
BA	BALL VALVE
BCK	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BPRV	BACK PRESSURE REGULATING VALVE
CDH	CONDENSATE HEATER
CK	CHECK VALVE
CG	CONTROL GATE
CO	CLEANOUT
COM	COMPRESSOR
CP	CONTROL PANEL
CRA	CHLORINE RESIDUAL ANALYZER
CS	CAPACITANCE SWITCH
DAP	DAMPER
DF	DIFFUSER
DO	DISSOLVED OXYGEN PROBE
DP	DRAIN PUMP
EF	EXHAUST FAN
EMO	ELECTRIC MOTOR OPERATOR
FAN	FAN
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN
FE	FLOW ELEMENT
FH	FIRE HYDRANT
FI	FLOW INSTRUMENT
FIL	FILTER
FIT	FLOW INDICATING TRANSMITTER
FS	FLOAT SWITCH
GL	GLOBE VALVE
GV	GATE VALVE
HS	HOSE STATION
HSC	HYDRAULIC SYSTEM CENTER
HST	HOIST
HTR	HEATER
HWT	HOT WATER TANK
KG	KNIFE GATE VALVE
JB	JUNCTION BOX
LCP	LEVEL CONTROL PANEL
LLS	LOW LEVEL SENSOR
LE	LEVEL ELEMENT
LIT	LEVEL INSTRUMENT TRANSMITTER
LCV	LEVEL CONTROL VALVE
LOU	LOUVER
LS	LEVEL SWITCH
LSM	LEAK SENSOR MONITOR
MFM	MAGNETIC FLOW METER
MH	MANHOLE
MIX	MIXER
MST	MOISTURE SENSOR TRANSMITTER
MP	METERING PUMP
MV	MUDVALVE
OIT	OPERATOR INTERFACE TERMINAL
PCV	PRESSURE CONTROL VALVE
PDC	POWER DISTRIBUTION CENTER
PG	PRESSURE GAUGE
PDI	PRESSURE DIFFERENTIAL INDICATOR
PIS	PRESSURE INDICATING SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PIN	PINCH VALVE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMP	PUMP
PNL	PANEL
PRS	PROXIMITY SENSOR
PRV	PRESSURE RELIEF VALVE
PS	PRESSURE SWITCH
PV	PLUG VALVE
PWSPT	PLANT WATER SYSTEM PRESSURE TANK
PWSP	PLANT WATER SYSTEM PUMP
REA	RESIDUAL ANALYZER
RIO	REMOTE I/O
SAM	SAMPLER
SC	SIGNAL CONVERTER
SG	SLUICE GATE
SOL	SOLENOID VALVE
SP	SUMP PUMP
SPIT	SUBMERSIBLE PRESSURE INDICATION TRANSMITTER
SRV	SURGE VALVE
SSCP	SECONDARY SCUM PUMP
STR	STRAINER
TLV	TELESCOPING VALVE
TNK	TANK
UFM	ULTRASONIC FLOW METER
UH	UNIT HEATER
UIS	UV INTENSITY SENSOR
W	WEIR
WS	WATER SURFACE

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/11/25

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE (0 — 1" — 1" = 1")

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DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

GENERAL LEGEND

JOB NO. 23016

SHEET NO. 00-G-03

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COORDINATE TABLE ABBREVIATION

ABBREVIATION	DEFINITION
ABAN	ABANDONED
AC	ASPHALTIC CONCRETE OR ASPHALT
AI	AREA INLET
ALT	ALTERNATE
APPROX	APPROXIMATE
AR	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AV	AIR VACUUM RELIEF
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGINNING OF CURVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BLVD	BOULEVARD
BM	BENCHMARK
BOC	BACK OF CURB
BO	BLOW OFF
C	CIVIL
,	CENTERLINE
OSHA	OCCUPATIONAL SAFETY & HEALTH ASSOC.
CB	CATCH BASIN
CL	CLASS
COMB	COMBINATION
CONC	CONCRETE
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
CP	CONTROL POINT
CPLG	COUPLING
D, DIA	DIAMETER
DET	DETAIL
DIP	DUCTILE IRON PIPE
DNSTM	DOWNSTREAM
DWG	DRAWING
E	EAST, EASTERLY, EASTING
EA	EACH
EF	EACH FACE
EG	EXISTING GRADE
ELEC	ELECTRIC, ELECTRICAL
EL, ELEV	ELEVATION
EOC	EDGE OF CONCRETE
EOG	EDGE OF GRAVEL
EOP, EP	EDGE OF PAVEMENT
EXIST	EXISTING
EW	EACH WAY
FC	FENCE CORNER
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FLEX	FLEXIBLE
FLG	FLANGE
FS	FINISHED SURFACE
FT	FEET, FOOT
G	GAS
GA	GAUGE
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HGL	HYDRAULIC GRADE LINE
H	HORIZONTAL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERSECTION
INV	INVERT
JB	JUNCTION BOX
L	LENGTH/LEFT
LB	POUND
LF	LINEAR FEET
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH, NORTHERLY, NORTHING
NAD83	NORTH AMERICAN DATUM 1983
NAVD29	NORTH AMERICAN VERTICAL DATUM 1929
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
O/C	ON CENTER
OFF	OFFSET
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	POLYETHYLENE
PH	POT HOLE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
R/RT	RIGHT
R&R	REMOVE AND RECONSTRUCT
REF	REFERENCE
REQ'D	REQUIRED
REST'D	RESTRAINED
RJ	RESTRAINED JOINT
RO	ROTATED
S	SLOPE OR SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SPPWG	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SQ	SQUARE
SS	STAINLESS STEEL, SANITARY SEWER
ST	STREET
STD	STANDARD
STA	STATION
STL	STEEL
T&B	TOP AND BOTTOM
TEL	TELEPHONE
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TYP	TYPICAL
UNK	UNKNOWN
UPSTM	UPSTREAM
US/USA	UNITED STATES / UNITED STATES OF AMERICA, UNDERGROUND SERVICE ALERT
USC&GS	UNITED STATES COAST & GEODETIC SURVEY
UTIL	UTILITY
V	VERTICAL
W	WATER / WEST / WIDE
W/	WITH
WATCH	WORK AREA TRAFFIC CONTROL HANDBOOK
WM	WATER MAIN / WATER METER
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTR	WATER
WV	WATER VALVE
	DIAMETER
@	AT
Δ	DELTA

BOUNDARY AND MARKER SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
x x	x x	WIRE FENCE
		WOOD FENCE
		CHAIN LINK FENCE
		GUARD RAIL
		STONE WALL
		STONE RETAINING WALL
		PROPERTY LINE
		EASEMENT LINE
		RIGHT OF WAY (ROW)
IP	IP	IRON PIPE BOUNDARY MARKER
IR	IR	IRON ROD BOUNDARY MARKER
MON	MON	CONCRETE MONUMENT BOUNDARY MARKER
SB	SB	STONE MONUMENT BOUNDARY MARKER
		PRODUCTION WELL
		MONITORING WELL
		TURNING POINT
		TRIANGULATION POINT
B-7	B-7	BORING
S-1	S-1	SOUNDING
		BENCHMARK

UNDERGROUND/OVERHEAD UTILITY SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
12" SS	12" SS	SANITARY SEWER AND MANHOLE
12" SD CB	12" SD CB	STORM DRAIN, MANHOLE AND CATCH BASIN
JB	JB	JUNCTION BOX
DI	DI	DRAIN INLET
GI	GI	GRATE INLET
		FIRE LINE W/FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)
FM FM FM	FM FM FM	FORCE MAIN
20" RAS - DI	20" RAS - DI	PROCESS PIPELINE CALLOUT
		PIPE MATERIAL (OPTIONAL) ABBREVIATED PROCESS LINE DESC. PIPE DIAMETER
UE UE UE	UE UE UE	UNDERGROUND ELECTRICAL CABLE/DUCT
E E E	E E E	OVERHEAD ELECTRIC
UT UT UT	UT UT UT	UNDERGROUND TELEPHONE
T T T	T T T	OVERHEAD TELEPHONE
S	S	SIGNAL LINE
UC UC	UC UC	UNDERGROUND CATV
TV TV TV	TV TV TV	OVERHEAD CATV
YH	YH	LIGHT POLE
LP	LP	LIGHT POLE
PP	PP	POWER POLE
GW	GW	GUY WIRE
TP	TM	TELEPHONE RISER
GR	GR	GAS REGULATOR
M	M	WATER METER
WMB	WMB	WATER METER BOX
G	GM	GAS METER
EV	EV	ELECTRIC VAULT
		HOSE BIBB (SINGLE OUTLET)

NOTE:
1. ELEVATIONS MAY BE SHOWN AS REQUIRED.

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
B & M C & O	B & M C & O	RAILROAD TRACKS
		DOUBLE TRACK RAILROAD
		UNIMPROVED DIRT ROAD OR GRAVELED ROADWAY
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY, SIZE & TYPE
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY W/ CURB, SIZE AND TYPE
		TUNNEL
		BRIDGE

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
		BOX CULVERT
2-36" RCP	2-36" RCP	CULVERT, PIPE SIZE AND TYPE
		SIGNS
		CONCRETE
		GRAVEL PAVEMENT
		ASPHALT PAVEMENT

SURFACE ELEVATION SYMBOLS

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
84	84	DEPRESSION CONTOUR
84	84	INTERMEDIATE CONTOUR LINE AND ELEVATION DESIGNATION
85	85	INDEX CONTOUR LINE AND ELEVATION DESIGNATION
365.7	365.7	SPOT ELEVATION
		EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)

REV. NO.	DATE	DRWN	CHKD	REMARKS

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STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10040 — CRAIG A. ATKINSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

CIVIL LEGEND & ABBREVIATIONS

JOB NO. 23016

SHEET NO. 00-G-04

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PIPING SYMBOLS

DOUBLE LINE SYMBOL	SINGLE LINE SYMBOL	FEATURE
		WELDED JOINT
SEE NOTE 2		FLANGED JOINT SIMPLIFIED REPRESENTATION.
		FLANGED JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT SIMPLIFIED REPRESENTATION.
		MECHANICAL JOINT COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED SIMPLIFIED REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT RESTRAINED, SIMPLIFIED REPRESENTATION
		BALL JOINT
		DIRECTION OF FLOW
		PLAIN END X PLAIN END PIPE COUPLING
		PLAIN END X PLAIN END PIPE COUPLING RESTRAINED
		FLANGED X PLAIN END PIPE COUPLING
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
(F) Or (R)		COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID
		FLANGE GUARD
		FLANGE FILLER
		UNION
		QUICK CONNECT COUPLING
		HOSE COUPLING

LINE VALVE STATUS

- NORMALLY OPEN (ALL VALVES EXCEPT BUTTERFLY)
- NORMALLY CLOSED (ALL VALVES EXCEPT BUTTERFLY)
- BUTTERFLY VALVE NO - NORMALLY OPEN (SHOWN) NC - NORMALLY CLOSED

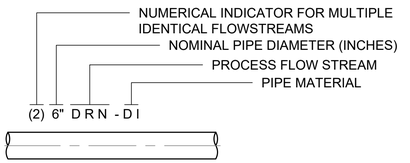
VALVE & FITTING SYMBOLS

SYMBOL	FEATURE
	DIAGHRAM VALVE
	UNCLASSIFIED. TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL
C	VALVE WITH HOSE END
	GATE VALVE
	3 WAY GATE VALVE
K	KNIFE GATE VALVE
	NEEDLE VALVE
	GLOBE VALVE
	BALL VALVE
	PINCH VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	3-WAY PLUG VALVE
	CHECK VALVE, GENERAL SYMBOL
	BALL CHECK VALVE
	DOUBLE DOOR CHECK VALVE
	ANGLE VALVE
S	SOLENOID VALVE
	ANTI-SIPHON VALVE
	BACK PRESSURE VALVE
	PRESSURE RELIEF VALVE
	REGULATING VALVE
	MUD VALVE
FD	FLOOR DRAIN
	OPEN EQUIPMENT DRAIN
ESEW	EMERGENCY SHOWER/EYEWASH
	ECCENTRIC REDUCER OR REDUCING BUSHING
	CONCENTRIC REDUCER OR REDUCING BUSHING
	Y-STRAINER
	CALIBRATION CYLINDER
ARV	COMBINATION AIR / VACUUM VALVE
M	MOTOR OPERATOR
M	MOTOR OPERATOR (W/ VFD)
E	ELECTRIC OPERATOR
	ROTAMETER
	FLEXIBLE HOSE
	PRESSURE GAUGE WITH TRANSMITTING SWITCH

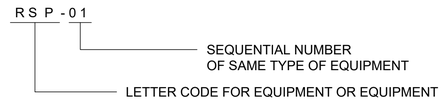
PIPE AND FITTING SYMBOL NOTES

1. SIMPLIFIED JOINT SYMBOL IS USED FOR ALL SINGE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
2. BOTH SIMPLIFIED AND COMPLEX JOINT REPRESENTATIONS MAY BE SHOWN ON THE DRAWINGS.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS.

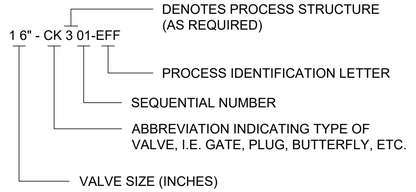
PIPE IDENTIFICATION SYSTEM



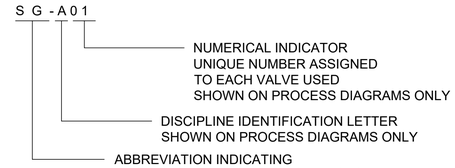
EQUIPMENT OR PROCESS IDENTIFICATION SYSTEM



VALVE TAG



GATE IDENTIFICATION SYSTEM



NOTE:
REFER TO GATE SCHEDULE IN SPECIFICATIONS FOR GATE SIZE (WIDTH & HEIGHT)

GENERAL NOTES

1. ALL VALVES 4" AND LARGER SHALL RECEIVE A TAG NUMBER. ALL OTHER SMALLER VALVES WILL BE IDENTIFIED BY THEIR SIZE AND DESIGNATION (ABBREVIATION) ONLY.
2. EQUIPMENT SHOWN ON THE PLANS SHALL BE GIVEN TAG NUMBERS AS SHOWN ON PROCESS DRAWINGS, UNLESS NOTED OTHERWISE.

PIPE MATERIAL

ABC ALU	ASBESTOS CEMENT ALUMINUM
B	BRASS
CI CPVC	CAST IRON CHLORINATED POLYVINYL CHLORIDE
CSP CU	CORRUGATED STEEL PIPE COPPER
DIP DIGL	DUCTILE IRON DUCTILE IRON - GLASS LINED
FRP	FIBER REINFORCED PLASTIC
GS	GALVANIZED CARBON STEEL
HDP	HIGH DENSITY POLYETHYLENE
MHS	METAL HOSE
PP PPE PVC PVDF	POLYPROPYLENE POLISHING POND EFFLUENT POLYVINYL CHLORIDE POLYVINYLIDENE FLUORIDE
RC RCC	REINFORCED CONCRETE REINFORCED CONCRETE CYLINDER
RH	RUBBER HOSE
STL SS	STEEL STAINLESS STEEL
TUB	TUBING
VC	VITRIFIED CLAY
PE	POLYETHYLENE

PROCESS FLOW STREAM

ADF	AVERAGE DAILY FLOW
BW	BACKWASH
DRN/DN DEC	DRAIN DECANT
EFF	EFFLUENT
FM	FORCE MAIN (SEWER)
GRT	GRIT
INF	INFLUENT
MDF MLSS	MAXIMUM DAILY FLOW MIXED LIQUOR SUSPENDED SOLIDS
NaHSO3	SODIUM BISULFITE
PAA PW	PERACETIC ACID POTABLE WATER
RS RAS RSL	RAW SEWAGE RETURN ACTIVATED SLUDGE RAW SLUDGE
SBS SCS SD SMP SS	SODIUM BISULFITE SOLUTION SCREENINGS SOLIDS STORM DRAIN SAMPLE POINT SANITARY SEWER
TW TWAS	TEPID WATER THICKENED WASTE ACTIVATED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE

GATE SYMBOLS

PLAN	FEATURE
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)
	STOP PLATE (SP)
	SHEAR GATE (SHG)
	FLAP GATE
	BYPASS GATE (BG)

SECTION (OPERATOR ONLY)	
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MLU
DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PIPING & PROCESS LEGEND AND ABBREVIATIONS

JOB NO. 23016

SHEET NO. 00-G-05

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PLANT INFORMATION & DESIGN PARAMETERS

PARAMETER	VALUE	UNIT
AVERAGE DAY FLOW RATE	1.65	MGD
DAILY MAXIMUM MONTHLY FLOW RATE	2.76	MGD
7 DAY AVERAGE FLOW RATE	2.76	MGD
PEAK HOURLY FLOW RATE	8	MGD
AVERAGE DAY CBOD CONCENTRATION	200	MG/L
AVERAGE DAY TSS CONCENTRATION	200	MG/L
AVERAGE DAY TKN CONCENTRATION	35.6	MG/L
AVERAGE DAY NH3-N	24.9	MG/L
AVERAGE DAY T-P CONCENTRATION	5.5	MG/L
AVERAGE DAY CBOD LOAD	4603.7	LB/DAY
AVERAGE DAY TSS LOAD	4603.7	MG/L
AVERAGE DAY NH3-N LOAD	573.2	LB/DAY
TOTAL ALKALINITY	225	MG/L
pH	6.57	-
MAX. 7 DAY AVERAGE TEMPERATURE	28	°C
AVERAGE DAY TEMPERATURE	20	°C
MIN. 7 DAY AVERAGE TEMPERATURE	12.5	°C

MECHANICAL BAR SCREENS

QUANTITY:	TWO (2)
NAME:	10-SCR-01, 10-SCR-02
TYPE:	MECHANICAL

PARAMETER	VALUE	UNIT
CAPACITY, (EA.)	8	MGD
TOTAL RATED CAPACITY	16	MGD
BAR SPACING	0.25	IN
ANGLE	10	DEGREES
DUAL CHANNELS	YES	-
CHANNEL DEPTH	16.33	FT
CHANNEL WIDTH	2.5	FT
VELOCITY AT AVERAGE DAY FLOW RATE	>1.25	MGD
VELOCITY AT RATED FLOW	<3	MGD
DESIGN BLINDING FACTOR	25	%
POWER	1.5	HP
TOTAL POWER	3	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V
WASHER COMPACTOR		
QUANTITY	2	
POWER	1	HP
TOTAL POWER	2	HP

PRIMARY SCREW PUMPS

QUANTITY:	TWO (2)
NAME:	20-SCR-01, 20-SCR-02
TYPE:	SCREW

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	2800	GPM
VFD	YES	-
FLOW MEASUREMENT	NO	-
POWER	25	HP
TOTAL POWER	50	HP
PHASE	3	-
VOLTAGE	460	V

GENERATOR

QUANTITY:	ONE (1)
NAME:	GENERATOR
TYPE:	SELF ENCLOSED, DIESEL ENGINE

PARAMETER	VALUE	UNIT
SIZE	1,250	KW
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	180	V
ATS RATING		AMPS

OXIDATION DITCH - (AERATION BASIN)

QUANTITY:	FOUR (4)
NAME:	50AER101, 50AER102, 50AER201, 50AER202
TYPE:	MIXER / AERATOR

PARAMETER	VALUE	UNIT
PROCESS SELECTION	TRADITIONAL OXIDATION DITCH	-
PRE TREATMENT	NO	-
DESIGN FLOW RATE (AVERAGE DAY/ 7 DAY)	1.65/2.76	MGD
HRT (AVG./7-DAY)	24.14/14.43	HRS
SRT	31	DAYS
ORGANIC LOADING (AVG./7-DAY)	12.4/20.74	LBS cBOD/DAY/1000FT
F/M	.09 to .1	LBS cBOD/ DAY/ LBS MLVSS
MLVSS (AVG./7-DAY)	2,150/3,325	MG/L
CHANNEL WIDTH (EA.)	40	FT
CHANNEL LENGTH (EA.)	464	FT
SIDE WATER DEPTH (EA.)	6	FT
FREEBOARD (EA)	1	FT
TOTAL VOLUME	1.66	MG
TARGET DISSOLVED OXYGEN (RESIDUAL)	>2	mg/L
AERATION TYPE	AERATOR / MIXER	-
AERATOR / MIXER	60/10	HP
TOTAL POWER EACH	70	HP
TOTAL POWER	280	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V
MAX. OXYGEN TRANSFER RATE (EA.)	2.31	LBS O2/HR
TOTAL AERATION	648.8	LBS O2/HR
MIXING/ AERATION SEPARATE	YES	-
MIXING VELOCITY	>2	FT/S
VFD	YES	-
RESIDUAL DISSOLVED OXYGEN PROBES	YES	-

GRIT REMOVAL

QUANTITY:	TWO (2)
NAME:	30PMP101, 30PMP201
TYPE:	VORTEX

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	4	MGD
TOTAL RATED CAPACITY	8	MGD
PARTICLE SIZE	>140	MICRONS
PARTICLE REMOVAL	95	%
GRIT PUMPS, NO.	2	
GRIT PUMP FLOW, EA.	250	GPM
GRIT CONCENTRATORS, NO.	2	
GRIT CONCENTRATORS PERFORMANCE	5% RESIDUAL ORGANIC MATERIAL RETAINED	
GRIT DEWATERING CONVEYORS	2	
POWER	10	HP
TOTAL POWER	20	HP
POWER FOR CONVEYOR	1	HP
TOTAL POWER FOR CONVEYORS	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SERVICE PUMP STATION

QUANTITY:	ONE (1)
NAME:	95PMP101
TYPE:	DUPLEX, HORIZONTAL, SELF-PRIMING

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	200	GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
NO. OF PUMPS	2	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V

FINAL CLARIFIERS

QUANTITY:	TWO (2)
NAME:	60CLF101, 60CLF201
TYPE:	CIRCULAR

PARAMETER	VALUE	UNIT
DIAMETER	61	FT
WATER DEPTH	11.95	FT
SURFACE AREA	2,922	FT²
TOTAL SURFACE AREA	5,845	FT²
WEIR LENGTH	192	FT
TOTAL WEIR LENGTH	384	FT
FREEBOARD	3.3	FT
SCUM REMOVAL	YES	-
SLUDGE WITHDRAW	YES, SUCTION	-
CHANNEL VELOCITY	>1	-
OVERFLOW RATE (AVG./7-DAY)	282/472	FT
SOLIDS LOADING RATE (AVG./7-DAY)	16/36	GPD/ FT²
WEIR LOADING (AVG./7-DAY)	4,305/8,538	PPD/ FT²
OVERFLOW RATE (5.84 MGD)	1,000	GDP/FT
WEIR LOADING (8 MGD)	20,873	PPD/ FT
POWER	1	HP
TOTAL POWER	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

RAS PUMPS

QUANTITY:	THREE (3)
NAMES:	70-RAS-01, 70-RAS-02, 70-RAS-03
TYPE:	END SUCTION SOLIDS HANDLING, HORIZONTAL

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	3000	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM101
POWER (EA.)	10	HP
TOTAL POWER	30	HP
PHASE	3	-
FREQUENCEY	60	HZ
VOLTAGE	460	V

WAS/TWAS PUMPS

QUANTITY:	THREE (3)
NAME:	70PMP201, 70PMP202, 70PMP203
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	180	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM201, 70MFM202
POWER (EA.)	15	HP
TOTAL POWER	45	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SCUM PUMPS

QUANTITY:	TWO (2) DUTY, ONE (1) SPARE - THREE (3) TOTAL
NAME:	60PMP101, 60PMP201
TYPE:	RECIRCULATING SUBMERSIBLE CHOPPER

PARAMETER	VALUE	UNIT
CAPACITY (EA.)		GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

PROCESS BLOWERS

QUANTITY:	FOUR (4)
NAME:	90BLW101, 90BLW102, 90BLW103, 90BLW104
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
TOTAL FIRM CAPACITY (EA.)	1,000 @ 4.72 psig	SCFM
ALPHA F/BETA	-	-
POWER (EA.)	50	HP
TOTAL POWER	200	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	2-POLE, 208/-230/460	V

UV DISINFECTION

QUANTITY:	ONE (1)
NAME:	100UV101
TYPE:	OPEN CHANNEL, INCLINED-ARRAY
CHANNEL (REFER TO TROJAN LAYOUT-DRAWING FOR COMPLETE DETAILS)	
NUMBER OF CHANNELS	ONE (1)
APPROXIMATE CHANNEL-LENGTH REQUIRED	35.6 FT
CHANNEL WIDTH AT UV BANKS	2.9 FT
CHANNEL DEPTH RECOMMENDED	7.8 FT
UV-BANKS	
NUMBER OF BANKS PER CHANNEL	3 (2-DUTY, 1-REDUNDANT)
NUMBER OF LAMPS PER BANK	10 EA.
TOTAL NUMBER OF UV LAMPS	30 (INCLUDING 10-REDUNDANT LAMPS)
MAXIMUM DUTY LAMP POWER DRAW	33 Kw
UV BANK HADLOSS AT PEAK FLOW	2.2 IN
UV-PANEL	
POWER DISTRIBUTION CENTER QUANTITY	1
HYDRAULIC SYSTEM CENTER QUANTITY	1
SYSTEM CONTROL CENTER QUANTITY	1
ANCILLARY EQUIPMENT	
LEVEL CONTROLLER QUANTITY AND TYPE	1-FIXED WEIR
INTEGRAL BANK WALLS	INCLUDED
OTHER EQUIPMENT	10%-LAMPS, 10%-SLEEVES, 5%-LAMP DRIVERS, 20-WIPER SEALS

ELECTRICAL REQUIREMENTS

1. EACH POWER DISTRIBUTION CENTER REQUIRES AND ELECTRICAL SUPPLY OF ONE-(1) 480/277V, 60 Hz, 33.8kVA
   ONE (1)-480/277V, 60Hz, 33.8kVA
2. ELECTRICAL SUPPLY FOR HYTDRAULIC SYSTEM CENTER WILL BE (1) 480V, 60 Hz, 2.5 kVA
3. ELECTRICAL SUPPLY FOR SYSTEM CONTROL CENTER WILL BE (1) 120V, 60Hz, 1.8kVA
4. ELECTRICAL DISCONNECTS ARE NOT INCLUDED. REFER TO LOCAL ELECTRICAL CODES

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CERTIFICATE OF AUTHORIZATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 12020 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MLU
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CHECKED:	CAJ
DATE:	FEB 2025

CRIST ENGINEERS, INC.
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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

DESIGN INFORMATION

JOB NO. 23016

SHEET NO. 00-G-06

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AERATION BASIN-501

50-AERATION BASINS

AERATION BASIN-502

JUNCTION BOX NO. 400

40-STORAGE BASIN

05-C-201 INF TO WWTP

JUNCTION BOX NO. 300

30-GRIT REMOVAL

20-PRIMARY SCREW PUMPS

10-BAR SCREENS

MH #7

MH #4

MH #5

MH #8

140-MAINTENANCE BUILDING (SEPARATE CONTRACT)

SEPARATE CONTRACT

130 PUMP STATION

90-BLOWER BUILDING

AEROBIC DIGESTER-501

AEROBIC DIGESTER-502

80-AEROBIC DIGESTERS

70-RAS / WAS PUMP BUILDING

150- ADMINISTRATION BUILDING

SEPARATE CONTRACT

75-GRAVITY THICKENER (ABANDONED)

05-C-103 TWAS TO LAND APP

CLARIFIER-601

JUNCTION BOX NO. 500

CLARIFIER-602

125-WEIR & OUTFLOW CHAMBER

05-C-102 EFF TO OUTFALL

100-UV STRUCTURE

120-POST AERATION BASIN

MH #4

PROCESS FLOW SCHEMATIC

N.T.S.

LEGEND

AIR	LOW PRESSURE AIR
DEC	DECANT
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
EFF	EFFLUNET
INF	INFLUENT SANITARY SEWER
PD	PROCESS DRAIN
RS	RAW SEWAGE
RAS	RETURN ACTIVATED SLUDGE
SCUM	SCUM WASTE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
WAS	WASTE ACTIVATED SLUDGE

ITEM NO. ◇#	DESCRIPTION
1	30" INF-DIP
2	24" RS - DIP
3	16" RAS - DIP
4	12" RAS - DIP
5	12" WAS - DIP
6	4" PD-PVC
7	6" WAS - DIP
8	6" TWAS - DIP
9	4" SCUM - DIP
10	24" EFF - DIP
11	6" DEC - DIP
12	12" AIR - SS
13	10" AIR - SS
14	8" AIR - SS
15	6" AIR - SS
16	24" MLSS - DIP
17	EXISTING DRN - DIP (SIZE VARIES)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROCESS FLOW SCHEMATIC

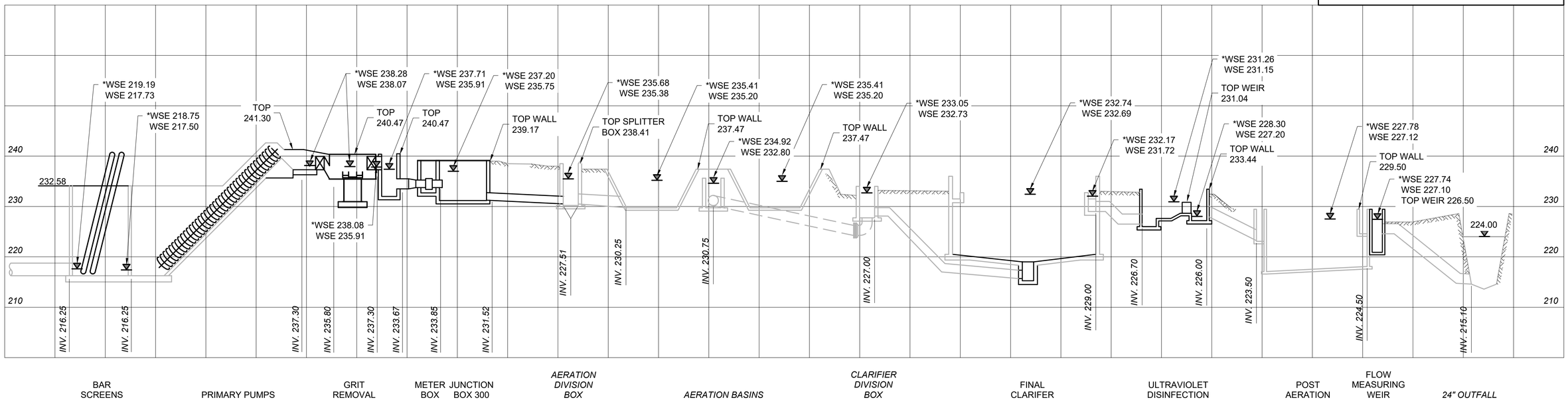
JOB NO. 23016

SHEET NO. 00-G-08

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NOTES :
1. HYDRAULIC GRADELINE ELEVATIONS SHOWN ARE FOR AVERAGE FLOW CONDITIONS AT 2.76 MGD
2. MAX ELEVATIONS SHOWN ARE FOR MAXIMUM HYDRAULIC CONDITIONS AT 8.00 MGD

*WSE = MAX PEAK = 8 MGD
WSE = AVERAGE DAY = 2.76 MGD



REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 19020 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROPOSED HYDRAULIC PROFILE

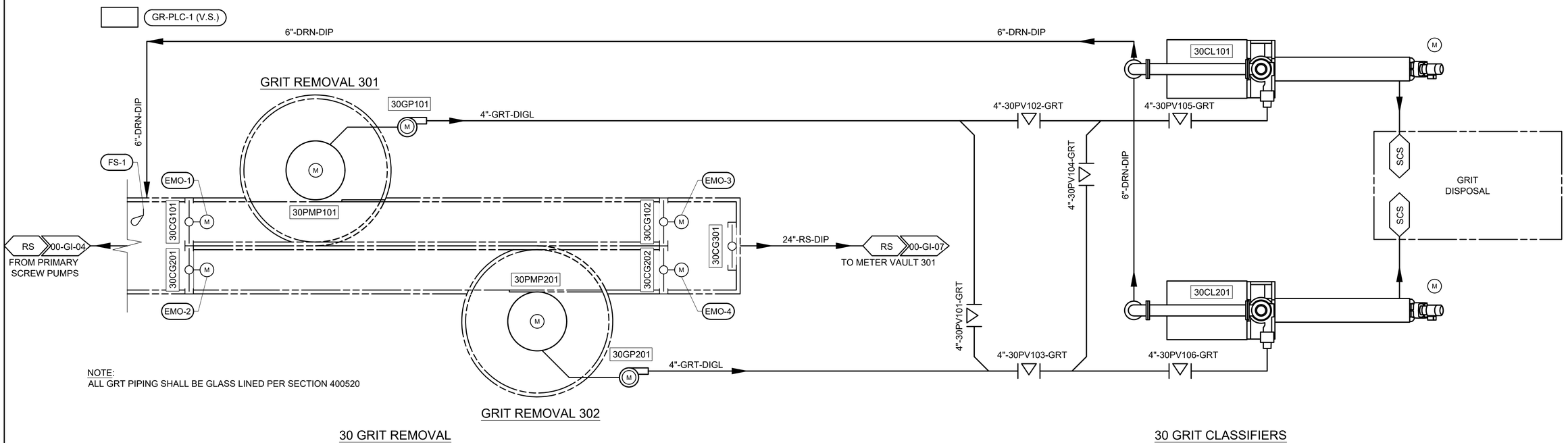
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REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. — CONSULTING ENGINEERS — No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/11/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

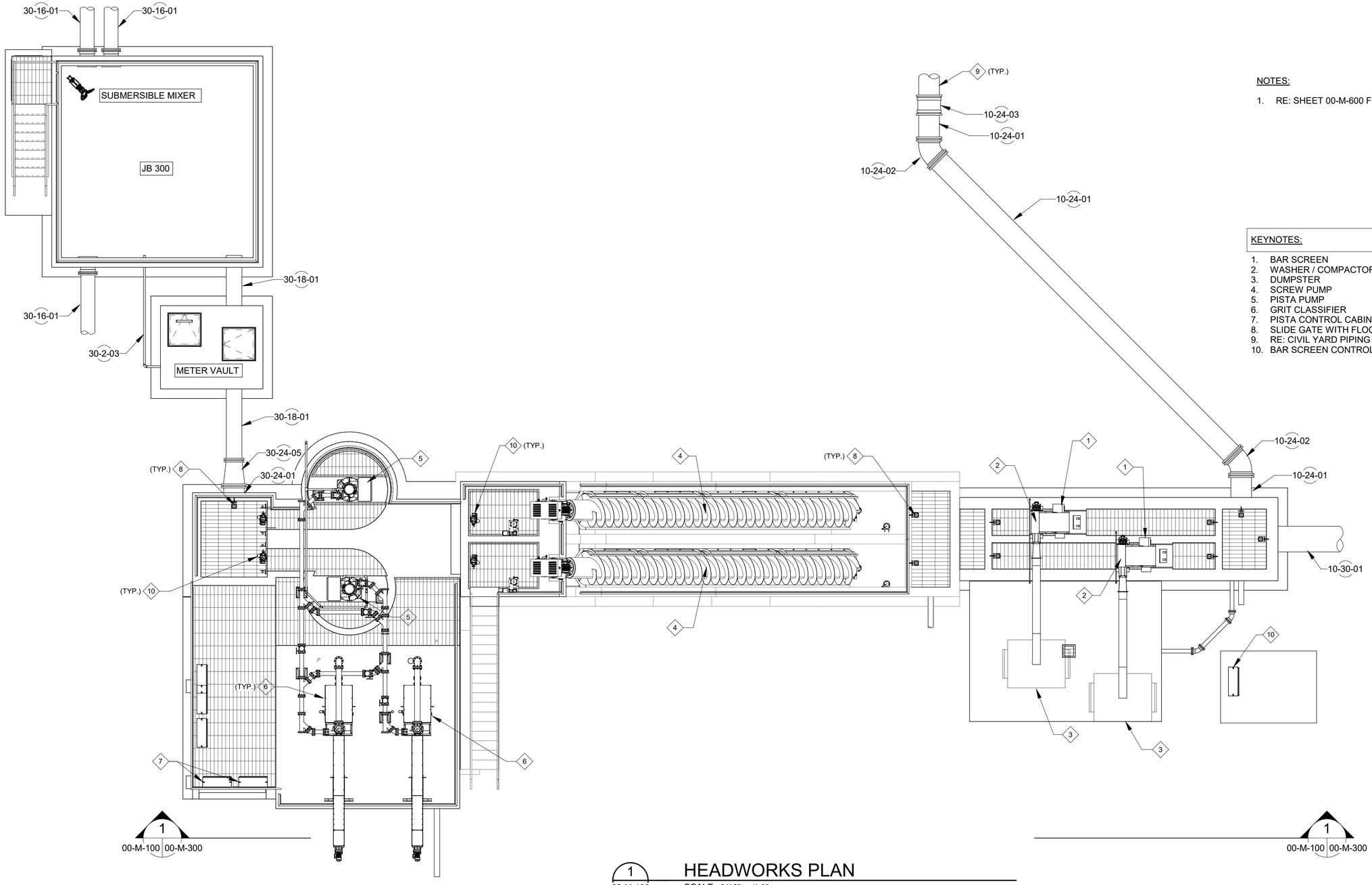
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P&ID - GRIT REMOVAL AND CLASSIFIER

JOB NO. 23016

SHEET NO. 00-GI-05

2/7/2025 11:08:37 AM



NOTES:

1. RE: SHEET 00-M-600 FOR HEADWORKS SCHEDULES

KEYNOTES: DENOTED BY SYMBOL (X)

1. BAR SCREEN
2. WASHER / COMPACTOR
3. DUMPSTER
4. SCREW PUMP
5. PISTA PUMP
6. GRIT CLASSIFIER
7. PISTA CONTROL CABINET
8. SLIDE GATE WITH FLOORSTAND OPERATOR
9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET

1
00-M-100

HEADWORKS PLAN

SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CORPORATE REGISTRATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS
OVERALL PLAN

JOB NO: 23016

SHEET NO: 00-M-100

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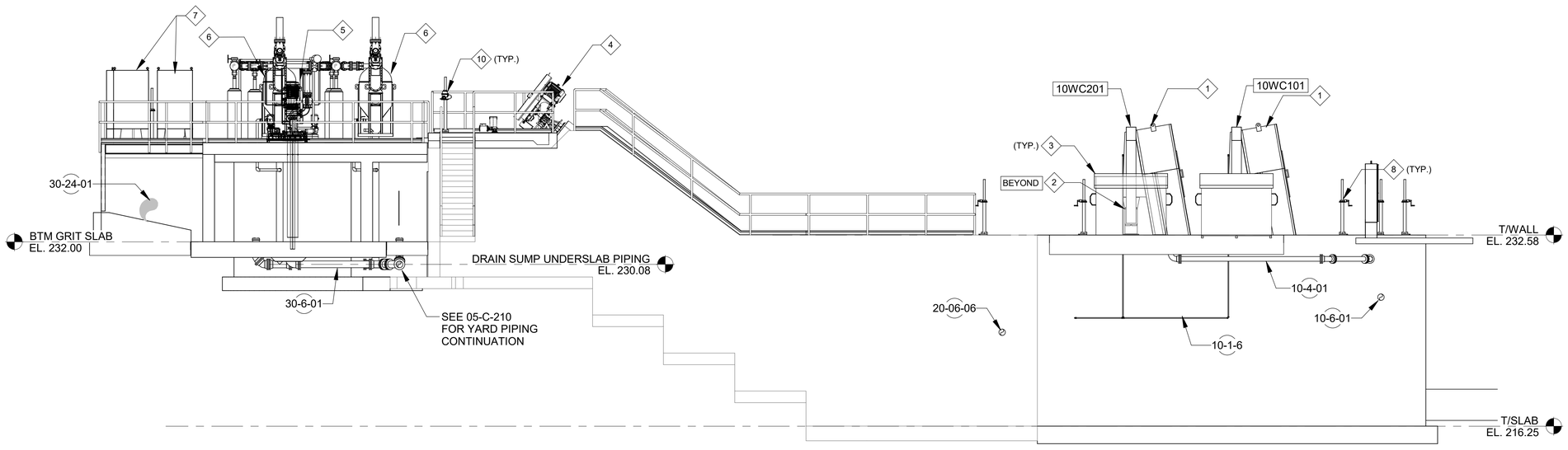
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NOTES:

1. RE: SHEET 00-M-600 FOR HEADWORKS SCHEDULES

KEYNOTES: DENOTED BY SYMBOL ◇X

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2. WASHER / COMPACTOR
3. DUMPSTER
4. SCREW PUMP
5. PISTA PUMP
6. GRIT CLASSIFIER
7. PISTA CONTROL CABINET
8. SLIDE GATE WITH FLOORSTAND OPERATOR
9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET



1 HEADWORKS SECTION

00-M-100 | 00-M-300 SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS CORPORATE REGISTRATION No. 91 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER CRAIG A. JOHNSON No. 10920 2/7/25

0 1" 1" = 1"

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CHECKED: CAJ
DATE: FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

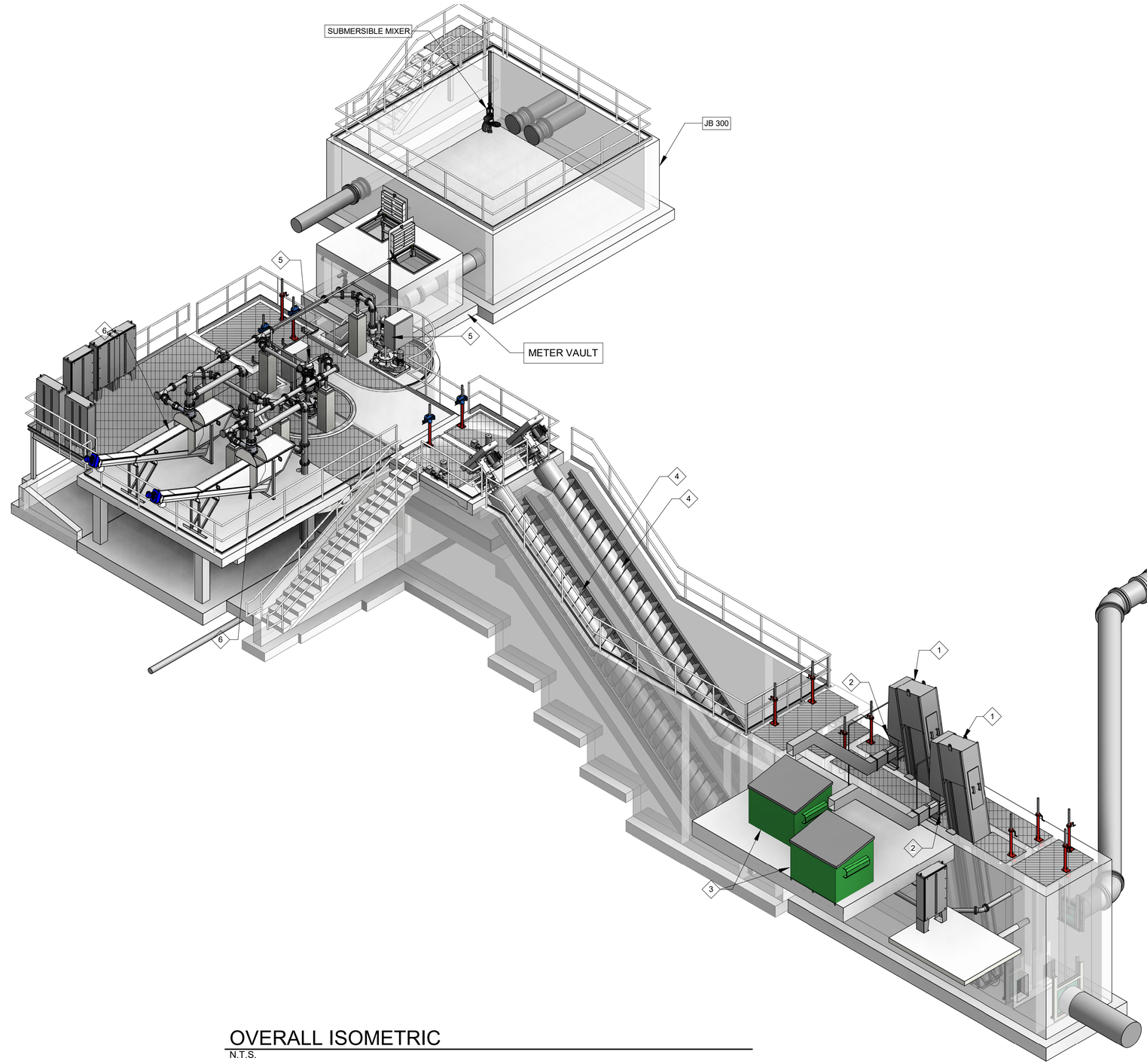
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SHEET NO: 00-M-300

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8. SLIDE GATE WITH FLOORSTAND OPERATOR
9. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
10. BAR SCREEN CONTROL CABINET

OVERALL ISOMETRIC

N.T.S.

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS CORPORATE REGISTRATION No. 91 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 10220 CRAIG A. JOHNSON 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS

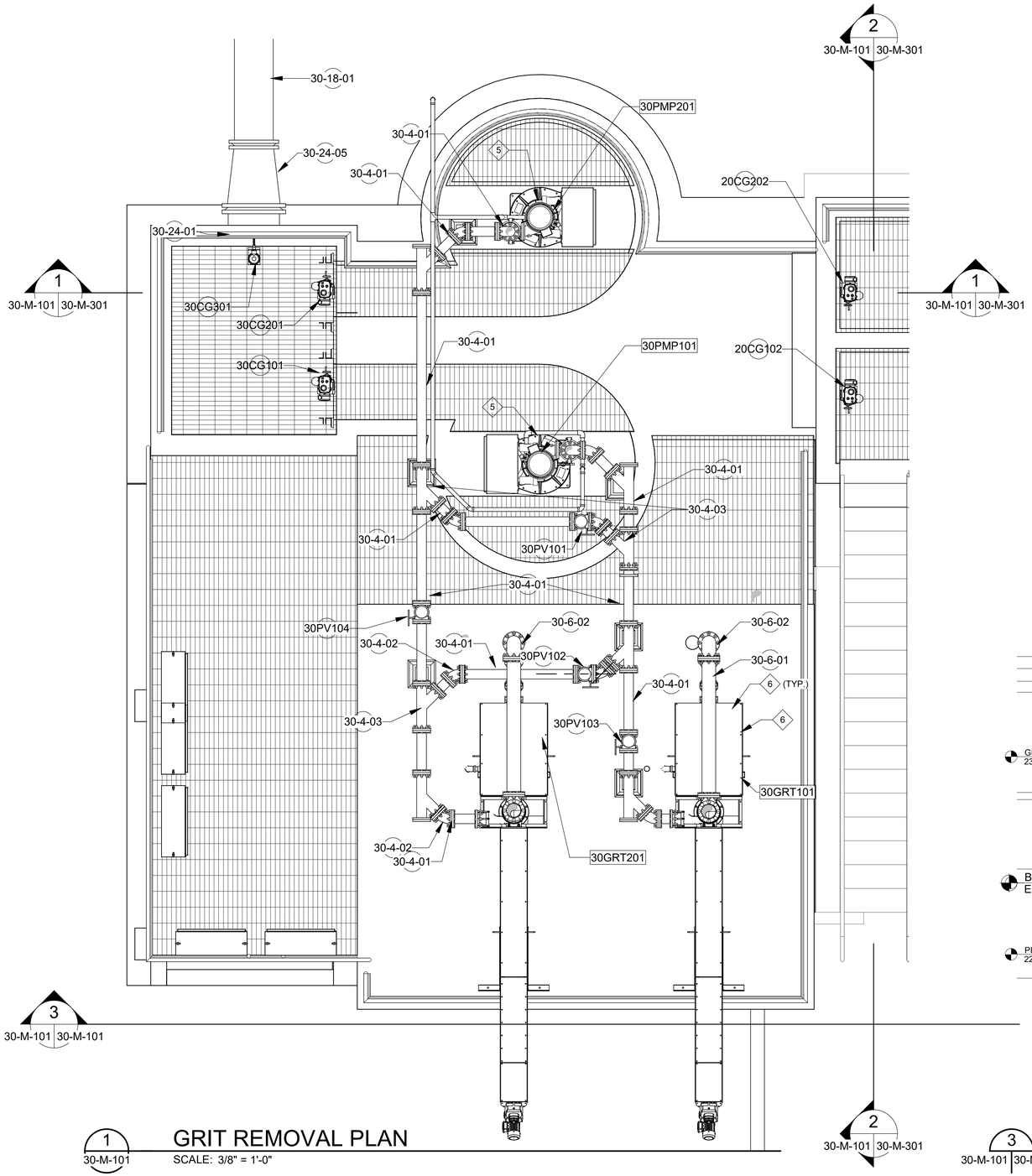
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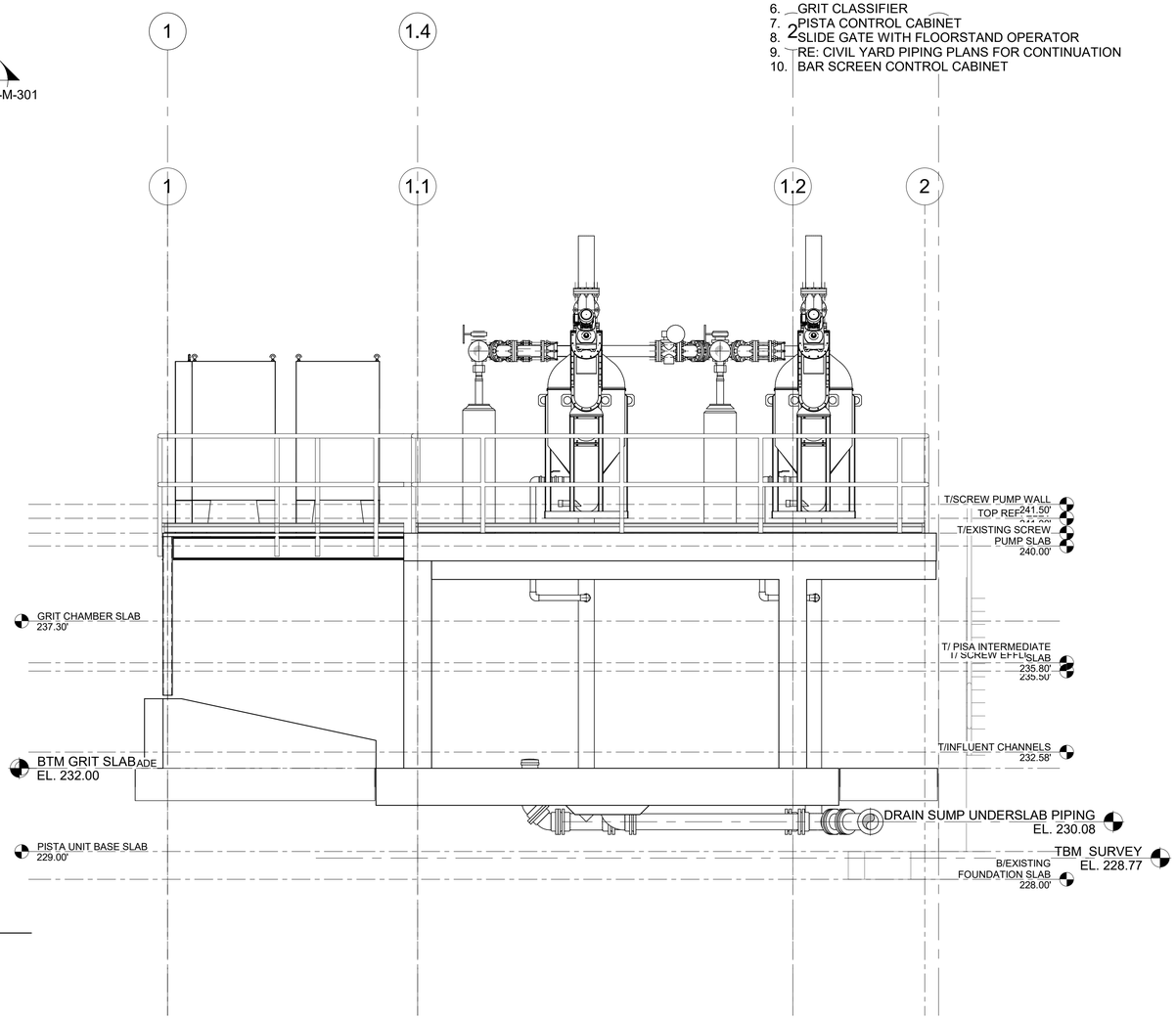
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1 30-M-101 — GRIT REMOVAL PLAN
SCALE: 3/8" = 1'-0"

2 30-M-101 | 30-M-301

3 30-M-101 | 30-M-101 — GRIT REMOVAL SECTION - 3
SCALE: 3/8" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CORPORATE REGISTRATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 17020 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS
WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT
BID SET
HEAD WORKS
GRIT REMOVAL PLAN

JOB NO: 23016
SHEET NO: 30-M-101

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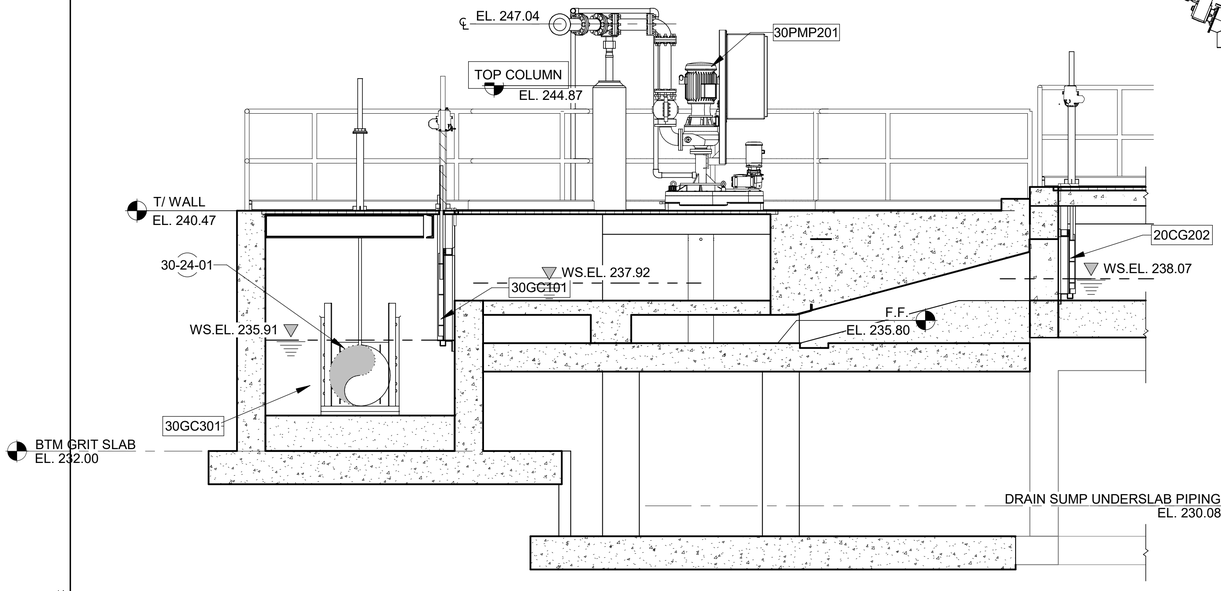
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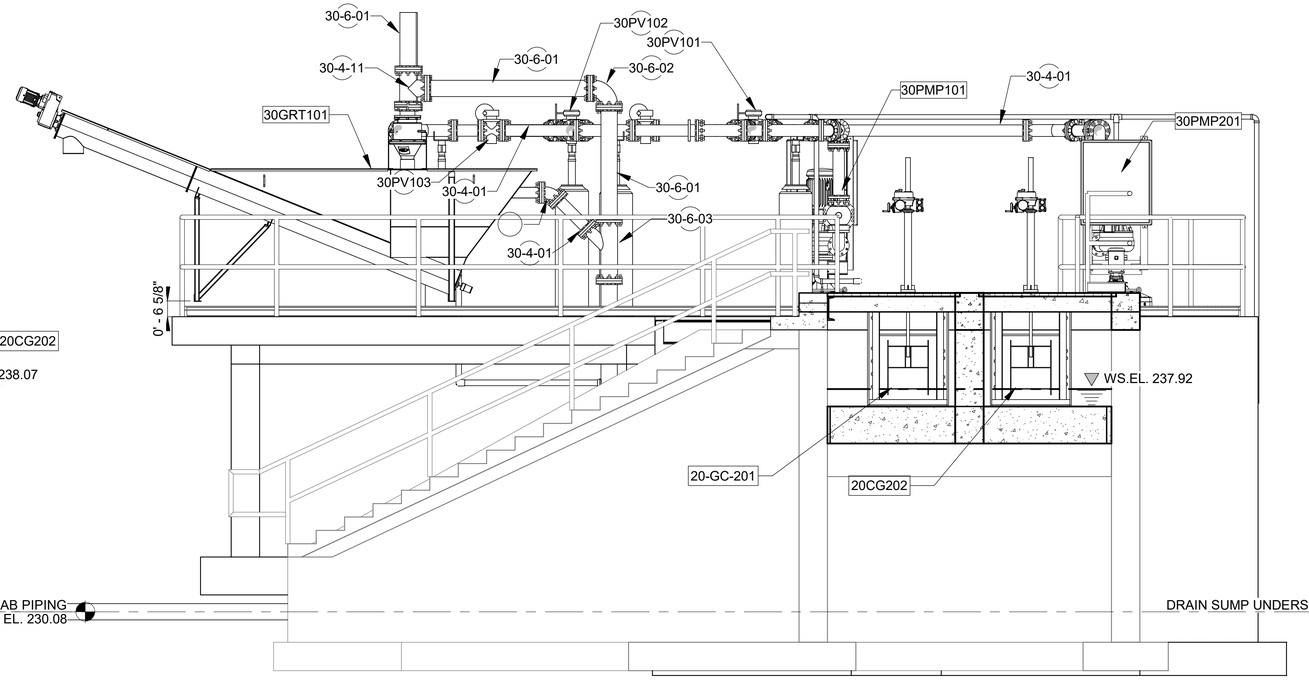
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1 / 30-M-101 | 30-M-301 GRIT REMOVAL SECTION - 1

SCALE: 3/8" = 1'-0"



2 / 30-M-101 | 30-M-301 GRIT REMOVAL SECTION - 2

SCALE: 3/8" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CORPORATE REGISTRATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 19720 — CRAIG A. JOHNSON — 2/7/25

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WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

HEADWORKS
GRIT REMOVAL SECTIONS

JOB NO: 23016

SHEET NO: 30-M-301

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PROCUREMENT CONTRACT
AND
SPECIFICATION DOCUMENTS

Wynne Water Utilities

Submersible Aspirating Aerator Equipment Owner Procurement

Wynne Water Utilities

WYNNE, ARKANSAS

May 2025

Crist Job No. 23016







CRIST ENGINEERS, INC.

www.cristengineers.com

1 Executive Center Court
Little Rock, Arkansas 72211

Telephone: 501.664.1552
Fax: 501.664.8579

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SUBMERSIBLE ASPIRATING AERATOR EQUIPMENT - OWNER PROCUREMENT
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002113	Instructions to Bidders (P-200)	7
004100	Bid Form (P-400)	6
005100	Notice of Award (C-510)	1
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WYNNE WATER UTILITIES

WYNNE EMERGENCY RESPONSE - WASTEWATER IMPROVMENTS
SUBMERSIBLE ASPIRATING AERATOR EQUIPMENT
OWNER PROCUREMENT

WYNNE WATER UTILITIES

Sealed Bids for **Wynne Water Utilities – Submersible Aspirating Aerator Equipment - Owner Procurement** will be received by Wynne Water Utilities, at the office of Wynne Water Utilities, 550 Falls Blvd, Wynne, AR 72396 until **2:00PM Central Standard Time, May 27, 2025**, at which time the Bids received will be publicly opened and read. The Project generally consists of materials procurement of two submersible aspirating aerator units.

Bids may be delivered by any means available **except** electronically (fax or email). Fax/email bids will not be considered. It is the bidder's responsibility to see that their bid is at the designated location by the time stated above. Those not received by that time will not be considered. Wynne Water Utilities reserves the right to reject any or all bids, to waive any formalities and to, in the opinion of Wynne Water Utilities, accept the bid that is in Wynne Water Utilities best interest.

A pre-bid conference will not be held.

Per request, on-site inspection of existing equipment can be scheduled by contacting Wynne Water Utilities at 870-238-2751

Bids will be received for a single Contract. Bids shall be on a unit price basis as indicated on the Bid Form. The Issuing Office for the Bidding Documents is:

Crist Engineers, Inc.
205 Executive Court
Little Rock, AR 72205
501-664-1552
www.cristengineers.com

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 9:00 a.m. and 4:00 p.m. The Contract Documents may also be examined at the following:

Dodge Reports
www.construction.com

Printed copies of the Bidding Documents may be obtained from the Issuing Office, during the hours indicated above, upon payment of $50.00 for each set. Documents may be purchased online at www.cristengineers.com. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

This publication was paid for by Wynne Water Utilities. The amount to be paid for this publication is $0.00

Owner**:** **Wynne Water Utilities**
By: **Blake Marotti**
Title: **General Manager**

PUBLISH DATES:

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACTS

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INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACT

ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below.

A. *Issuing Office*—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2—PROCUREMENT BIDDING DOCUMENTS

2.01 Bidder may obtain complete sets of the Procurement Bidding Documents, in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid, from the Issuing Office. The deposit will be refunded to each document holder of record who returns a complete set of Procurement Bidding Documents in good condition within 30 days after opening of Bids. Bidders must obtain a complete set of the Procurement Contract Documents as listed in the Procurement Agreement.

2.02 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.

2.03 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

2.04 ELECTRONIC MEDIA OF PLANS AND SPECIFICATIONS

Engineer will provide a digital version (PDF) of the bidding documents for your convenience and use in the preparation of the Bid. Engineer makes no representation as to the compatibility of these files with your hardware or your software. Data contained on these electronic files is part of Engineer's instruments of service and shall not be used by the Bidder or anyone receiving this data through or from the Bidder for any purpose other than as a convenience in the preparation of the Bid. Any other use or reuse by the Bidder or others will be at the Bidder's sole risk and without liability or legal exposure to Engineer. The Bidder agrees upon execution and submission of the Bid Form to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against Crist Engineers, Inc. (CEI), its officers, directors, employees, agents or subconsultants which may arise out of or in connection with your use of the electronic files. These electronic files will not be considered as contract documents. Hard copies distributed to the prospective bidder govern. Significant differences may exist between these electronic files and corresponding hard copy contract documents. Engineer makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by Engineers and electronic files, the signed hard copy contract documents shall govern. You are responsible for determining if any conflict exists. By the Bidder's use of these electronic files, the Bidder is not relieved of the duty to fully comply with the contract documents. Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, Engineer reserves the right to remove all indicia of its ownership and/or involvement from each

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ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4—SITE VISIT; PRE-BID CONFERENCE

4.01 Buyer recommends that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

4.02 A pre-bid conference will not be held for this procurement.

4.03 Interpretations or clarifications considered necessary by Engineer in response to questions will be issued by Addenda delivered to all parties recorded by Engineer as having received the Procurement Bidding Documents. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.

ARTICLE 5—INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer in writing.

5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral

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statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid, and will not be binding or legally effective.

5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 6—RESERVED

ARTICLE 7—PROCUREMENT CONTRACT TIMES

7.01 See applicable provisions in the Procurement Agreement.

ARTICLE 8—LIQUIDATED DAMAGES

8.01 Any provisions for liquidated damages, such as those for Seller's failure to attain a specified Milestone such as the delivery of the Goods, are set forth in the Procurement Agreement.

ARTICLE 9—CONFIDENTIALITY OF BID INFORMATION

9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.

9.02 Bidder shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.

9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.

9.04 Buyer's obligations with respect to confidential information are nullified by the following exceptions:

A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;

B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal;

C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;

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D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or

E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.

9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

ARTICLE 10—"OR-EQUAL" ITEMS

10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without exception or consideration of possible "or-equal" items. Whenever it is specified or described in the Procurement Bidding Documents that an "or-equal" item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contact. The procedure for submittal of any such application by Seller and consideration by Engineer is set forth in the General Conditions and may be supplemented in the Procurement Specifications. Should a manufacturer or specified equipment be provided that is not listed in the specification and/or exception(s) provided at the time of bid, the Buyer has full right without recourse from the Bidder to reject the bid.

ARTICLE 11—PREPARATION OF BID

11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.

11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words "No Bid" may be entered.

11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.

11.04 Bidder shall:

A. Sign the Bid Form as indicated in the Bid Form.

B. Include evidence of authority to sign.

C. Provide information on the individual to be contacted for any communications regarding the Bid.

D. Provide evidence of the Bidder's authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

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11.05 The responsibilities of each Bidder submitting a Bid are described in the Bidder's representations and certifications set forth in Article 6 of the Bid Form.

ARTICLE 12—BASIS OF BID; COMPARISON OF BIDS

12.01 *Unit Prices*

A. Bidder shall enter the unit price Bid for each unit price line item on the Bid Form and enter the product of the unit price times the estimated quantity for that line item. Bidder shall enter the total of products of unit price and estimated quantity for each unit price line item in the space provided to the total on the Bid Form.

B. The apparent low Bid will be determined on the basis of the total of products of unit price and estimated quantity for each unit price line item.

C. Discrepancies between the indicated figures and the arithmetically correct sum will be resolved in favor of the arithmetically correct sum.

ARTICLE 13—SUBMITTAL OF BID

13.01 Bidder shall refer to the **advertisement** for specific identification of the date, time, and place where Bids are to be submitted.

13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of Article 4 of the Bid Form.

13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Wynne Water Utilities, 550 Falls Blvd, Wynne AR 72396.

ARTICLE 14—MODIFICATION OR WITHDRAWAL OF BID

14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

14.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 15—OPENING OF BIDS

15.01 Bids will be publicly opened at the time and place indicated in the advertisement or invitation to bid and read aloud, unless obviously non-responsive. An abstract of the amounts of the Base

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Bids and Alternate Bids, if any, will be made available to Bidders after Bids have been opened and reviewed by the Buyer.

ARTICLE 16—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

16.01 All Bids will remain subject to acceptance for the period stated in the Bid Form, but Buyer may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 17—EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT

17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.

17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.

17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.

17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

ARTICLE 18—BONDS AND INSURANCE

18.01 Article 5 of the General Conditions and Article 5 of the Supplementary Conditions set forth Buyer's requirements as to insurance. When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by acceptable evidence of insurance.

ARTICLE 19—SIGNING OF PROCUREMENT AGREEMENT

19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and insurance documentation required to be delivered by the Procurement Contract Documents to Buyer. Within 10 days thereafter, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together with printed and electronic copies of the Procurement Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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DOCUMENT 004100

BID FORM FOR PROCUREMENT CONTRACT

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BID FORM FOR PROCUREMENT CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—BUYER AND BIDDER

1.01 This Bid is submitted to:

Wynne Water Utilities
550 Falls Blvd
Wynne AR, 72396

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Procurement Contract with Buyer in the form included in the Procurement Bidding Documents, and to furnish the Goods and Special Services as specified or indicated in the Procurement Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Procurement Bidding Documents.

ARTICLE 2—BASIS OF BID

2.01 Unit Price Bids

A. Bidder will furnish the Goods and Special Services including all accessories required for installation in accordance with the Procurement Contract Documents for the following Unit Price(s):

BID SCHEDULE – Submersible Aspirating Aerator Equipment - Owner Procurement

Wynne Water Utilities, Arkansas

Item No.	Description	QTY	Unit	Unit Price	Bid Price
1	Submersible Aspirating Aerator Equipment	2	EA	$	$

TOTAL BID PRICE:

$130,000.00 **Dollars**

EJCDC® P-400, Bid Form for Procurement Contract.
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SCHEDULE OF PROCUREMENT TIMES

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	196	Contractor to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	7	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	270	

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ARTICLE 3—TIME OF COMPLETION

3.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule of Procurement Contract Times set forth in Article 2 of the Procurement Agreement.

3.02 Bidder accepts the provisions of the Procurement Agreement as to liquidated damages.

ARTICLE 4—ATTACHMENTS TO THIS BID

4.01 The following documents are attached to and made a condition of this Bid:

A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.

ARTICLE 5—BIDDER'S ACKNOWLEDGMENTS

5.01 Bidder accepts all terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period that Bidder may agree to in writing upon request of Buyer.

5.02 Bidder has examined and carefully studied the Procurement Bidding Documents, the related data identified in the Procurement Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents that:

1. Bidder has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Bidder's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Bidder has carefully studied, considered, and correlated the information known to Bidder with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

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5. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bidding Requirements, that without exception the Bid (including all Bid prices) is premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

8. Any exceptions noted on the bid is subject to rejection of the bid.

6.02 *Bidder's Certifications*

A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Paragraph 6.02.A.4:

a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

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This Bid is offered by:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Date: _____

(date signed)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

(If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

(individual's signature)

Title: _____

(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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DOCUMENT 005100

NOTICE OF AWARD

Date of Issuance:

Owner's Contract No.:

Owner: **Wynne Water Utilities**

Engineer: **Crist Engineers, Inc.**

Engineer's Project No.: **23016**

Project: **Wynne Emergency Response**

Contract Name: **Owner Procurement of Submersible Aspirating Aerator Equipment**

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Wynne Water Utilities: Owner Procurement of Submersible Aspirating Aerator Equipment

The Contract Price of the awarded Contract is: $_____

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s).
3. Other conditions precedent (if any): None

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner**:** **Wynne Water Utilities**

_____ Authorized Signature

By: _____ Title:_____

Copy: **Crist Engineers, Inc.**

AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

This Procurement Agreement is by and between **Wynne Water Utilities** ("Buyer") and _____ _____ ("Seller").

Terms used in this Procurement Agreement have the meanings stated in the General Conditions of the Procurement Contract and the Supplementary Conditions of the Procurement Contract.

Buyer and Seller hereby agree as follows:

ARTICLE 1—PROCUREMENT CONTRACT

1.01 *Goods and Special Services*

A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: **Submersible Aspirating Aerator Equipment – Owner Procurement**

1.02 *The Project*

A. The Project, of which the Goods and Special Services are a part, is generally described as follows: **Wynne Emergency Response - Submersible Aspirating Aerator Equipment – Owner Procurement**

1.03 *Engineer*

A. Buyer has retained **Crist Engineers, Inc.** ("Engineer"), to prepare Procurement Contract Documents and act as Buyer's representative. Engineer assumes all duties and responsibilities and has the rights and authority assigned to Engineer in the Procurement Contract Documents in connection with Seller's furnishing of Goods and Special Services.

1.04 *Point of Destination*

A. The Point of Destination is designated as: **Wynne Wastewater Plant, 53 Cross 619 Rd, Wynne AR 72396.**

ARTICLE 2—PROCUREMENT CONTRACT TIMES

2.01 *Time of the Essence*

A. All time limits for Milestones, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Procurement Contract Documents, are of the essence of the Procurement Contract.

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2.02 Schedule of Procurement Times

A. The schedule of procurement times is established on the Bid Form.

2.03 *Shop Drawings and Material Submittals*

A. *Material Submittals*: Seller shall submit all Shop Drawings and Material Submittals required by the Procurement Contract Documents to Engineer for its review and approval.

B. *Engineer's Review*: It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Material Submittals and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within **14** days after Seller's submittal of such Shop Drawings and Material Submittals, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

2.04 *Liquidated Damages*

A. Buyer and Seller recognize that time is of the essence as stated in Paragraph 2.01, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified on the Bid Form, plus any extensions thereof allowed in accordance with this Procurement Contract. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the delivery requirements specified on the Bid Form. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer **$750** for each day that expires after the time specified on the Bid Form for delivery of acceptable Goods.

ARTICLE 3—PROCUREMENT CONTRACT PRICE

3.01 *Procurement Contract Price and Total Price—$130,000.00*

A. For furnishing the Goods and Special Services in accordance with the Procurement Contract Documents, Buyer shall pay Seller the prices stated in Seller's Bid, attached hereto as an exhibit, subject to final adjustments for Unit Price Goods and Special Services.

B. The contract Price is BABAA Compliant.

ARTICLE 4—PAYMENT PROCEDURES

4.01 *Submittal and Processing of Applications for Payment*

A. Seller shall submit Applications for Payment in accordance with Article 13 of the General Conditions and the following paragraphs. Engineer and Buyer will process such Applications for Payment in accordance with said Article 13.

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4.02 *Progress Payments; Final Payment*

A. Seller may submit an Application for Payment requesting the stated percentage of Procurement Contract Price upon attainment of each of the following Payment Line Items:

Payment Line Item (Lump Sum)	Percentage of Lump Sum
1. Placement of Order	10
2. Approval of Engineering Drawings	15
3. Time of Shipment	60
4. Start Up and Testing, Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	10
5. Final Payment: Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	5
6. Total Procurement Contract Price (Lump Sum)	100

B. Buyer shall pay Seller the amount owed under an Application for Payment within 30 days after Engineer's presentation to Buyer of the Application for Payment and Engineer's recommendation.

4.03 *Interest*

A. All amounts not paid when due will bear interest as the rate of **1%** percent per annum.

ARTICLE 5—ASSIGNMENT OF PROCUREMENT CONTRACT

5.01 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

5.02 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

ARTICLE 6—PROCUREMENT CONTRACT DOCUMENTS

6.01 *List of Procurement Contract Documents*

A. The Procurement Contract Documents consist of the following:

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1. This Procurement Agreement. (pages 1 to 7, inclusive).
2. General Conditions of the Procurement Contract. (pages 1 to 37, inclusive).
3. Supplementary Conditions of the Procurement Contract. (pages 1 to 5, inclusive).
4. Procurement Specifications as listed in the Procurement Specifications table of contents.
5. Supplemental Procurement Drawings (not attached but incorporated by reference):
6. Addenda (numbers ____ to ___ inclusive).
7. Exhibits to this Procurement Agreement (enumerated as follows):
    a. Contractor's Bid (pages 1 to 6, inclusive).
8. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:
    a. Notice to Proceed;
    b. Change Orders;

B. The documents listed in Paragraph 6.01.A are attached to this Procurement Agreement (except as expressly noted otherwise above).

C. There are no Procurement Contract Documents other than those listed above.

D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of the Procurement General Conditions.

ARTICLE 7—SELLER'S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Seller's Representations*

A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:

1. Seller has examined and carefully studied the Procurement Contract Documents.
2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.
3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.
4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

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5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

7.02 *Seller's Certifications*

A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Procurement Contract. For the purposes of this Paragraph 7.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement Contract to the detriment of Buyer, (b) to establish bid or contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Procurement Contract.

ARTICLE 8—RESERVED

ARTICLE 9—MUTUAL WAIVER

9.01 *Mutual Waiver of Consequential Damages*

A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph 9.01.A will be binding upon the Contractor/Assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) liquidated damages, (c) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the

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tangible property of others, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.

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IN WITNESS WHEREOF, Buyer and Seller have signed this Procurement Agreement. Counterparts have been delivered to Buyer and Seller.

The Effective Date of the Procurement Contract is _____.

Buyer	Seller
Wynne Water Utilities	
(typed or printed name of organization)	*(typed or printed name of organization)*
By:	By:
(individual's signature)	*(individual's signature)*
Date:	Date:
(date signed)	*(date signed)*
Name:	Name:
(typed or printed)	*(typed or printed)*
Title:	Title:
(typed or printed)	*(typed or printed)*
	(If Seller is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:	Attest:
(individual's signature)	*(individual's signature)*
Title:	Title:
(typed or printed)	*(typed or printed)*
Address for giving notices:	Address for giving notices:
Designated Representative:	Designated Representative:
Name:	Name:
(typed or printed)	*(typed or printed)*
Title:	Title:
(typed or printed)	*(typed or printed)*
Address:	Address:
Wynne Water Utilities	
550 Falls Blvd	
Wynne, AR 72396	
Phone:	Phone:
Email:	Email:
(If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	

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DOCUMENT 005500

NOTICE TO PROCEED

Owner:	**Wynne Water Utilities**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Crist Engineers, Inc.**	Engineer's Project No.:	**23016**
Project:	**Wynne Emergency Response**	Contract Name:	**Owner Procurement of Submersible Aspirating Aerator Equipment**
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, _____]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is 210 consecutive calendar days, and the number of days to achieve readiness for final payment is 240 consecutive calendar days.

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner**:** **Wynne Water Utilities**

_____
Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: **Crist Engineers, Inc.**

DOCUMENT 007250

STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

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ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Whenever used in the Procurement Bidding Requirements or Procurement Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated, which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.

2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.

3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.

4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.

5. *Buyer*—The individual or entity purchasing the Goods and Special Services.

6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.

7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.

9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.

10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.

11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

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12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.

14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.

15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.

16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.

19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.

20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.

21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.

22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).

23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.

24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.

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25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.

26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.

28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.

29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.

30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.

31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.

32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.

33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer's review of the Submittals.

34. *Seller*—The individual or entity furnishing the Goods and Special Services.

35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.

36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.

37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals

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may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.

39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.

40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.

B. *Intent of Certain Terms or Adjectives*

1. The Procurement Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.

2. The word "non-conforming" when modifying the words "Goods and Special Services," "Goods," or "Special Services," refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:

a. do not conform to or comply with the requirements of the Procurement Contract Documents;

b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or

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c. in the case of Special Services, have not been completed.

3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.

4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

5. The word "furnish," when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.

C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.

D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer.

B. Performance and Payment Bonds will not be required for this procurement contract.

C. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.

D. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

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2.03 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

2.04 *Preliminary Schedules*

A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:

1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.

a. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the Submittals, tests, and deliveries to completion within the specified Milestones of the Procurement Contract Times.

b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.

c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.

2. a preliminary schedule of Submittals.

B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

2.05 *Preliminary Conference*

A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.

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B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

A. The Procurement Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.

C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.

D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.

F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.

B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

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3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents*: If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.

2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

B. *Resolving Discrepancies*: Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement Contract Documents); or

2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Procurement Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.

1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.

B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the

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Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.

C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

A. Seller and its subcontractors and suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

4.02 *Continuing Performance*

A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.

B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.

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1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.

2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.

B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.

C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. inspection delays by governmental authorities, and custom delays;

4. international shipping delays;

5. acts or failures to act of third-party entities; and

6. acts of war or terrorism.

D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions*: Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:

1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.

2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.

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3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.

E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5— INSURANCE

5.01 *Insurance*

A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.

B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided will not be construed as a waiver of Seller's obligation to maintain such insurance.

C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.

D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.

E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

5.02 *Surety or Insurance Companies*

A. All insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

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ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.

B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.

C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.

D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.

B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.

C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.

2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.

D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

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6.03 *Buyer's Infringement*

A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.

B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.

C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.

2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER'S RESPONSIBILITIES

7.01 *Performance of Obligations*

A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.

B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.

C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.

B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must be:

1. new, and of good quality;

2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and

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3. shop-assembled to the greatest extent practicable.

7.03 *Laws and Regulations*

A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.

B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.

1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or equal" item.

2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.

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B. *Engineer's Evaluation*: Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.

C. *Special Guarantee*: Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."

D. *Data*: Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 *Taxes*

A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Supplementary Conditions.

7.06 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Seller shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.

3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

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1. *Shop Drawings*

    a. Seller shall submit the number of copies required in the Procurement Specifications.

    b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.

2. *Samples*

    a. Seller shall submit the number of Samples required in the Procurement Specifications.

    b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.

3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.

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6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.

8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Seller shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.

3. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. *Submittals Other than Shop Drawings and Samples*

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:

   a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.

   d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

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7.07 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.

B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling, and all other costs associated with shipment and delivery.

8.02 *Delivery*

A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.

B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.

C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.

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D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.

E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.

F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.

B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER'S RIGHTS

9.01 *Seller's Warranties and Guarantees*

A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.

B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.

C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;

2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;

3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or

4. normal wear and tear under normal usage.

D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:

1. observations by Buyer, Engineer, or Project Owner;

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2. recommendation by Engineer or payment by Buyer of any progress or final payment;

3. use of the Goods by Buyer or Project Owner;

4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;

5. the end of the correction period established in Paragraph 9.04;

6. the issuance of a notice of acceptance;

7. any inspection, test or approval by others; or

8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.

E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.

3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.

4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.

5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.

6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.

7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

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B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.

2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.

2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.

3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Procurement Contract Times, remove and replace the rejected Goods.

2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.

3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. *Buyer's Rejection of Non-Conforming Special Services*

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1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.

2. Seller shall promptly provide conforming Special Services acceptable to Buyer.

3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

D. *Remedying Non-Conforming Goods*: If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

E. *Buyer's Acceptance of Non-Conforming Goods*: Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods.

F. *Seller Obligations*: Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations will include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

G. *Buyer's Rejection of Conforming Goods*: If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

9.04 *Correction Period*

A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.

B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.

B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.

C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

10.02 *Duties and Responsibilities; Authority; Limitations*

A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.

B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.

C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.

D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.

E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.

F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

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ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.

B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Buyer and Seller shall execute appropriate Change Orders covering:

1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;

2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;

3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.

B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.

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B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.

B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided herein.

11.05 *Buyer-Authorized Changes in the Goods and Special Services*

A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion. Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

11.06 *Buyer's Contingency Allowance*

A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.

B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.

C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.

D. The Procurement Agreement, Article 5, addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

11.07 *Unauthorized Changes in the Goods and Special Services*

A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

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11.08 *Change of Procurement Contract Price*

A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Procurement Contract Price will be determined as follows:

1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;

2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or

3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15%.

11.09 *Change of Procurement Contract Times*

A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.

B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.

C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.

D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

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F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.

G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.

H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.

I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.

J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.

K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.

B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith.

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The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.

C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:

1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or

3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.

B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.

C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.

D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

A. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;

b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and

c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or

b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.

4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or

b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or

c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or

d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or

e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:

a. the Goods and Services are non-conforming, requiring correction or replacement;

b. the Procurement Contract Price has been reduced by Change Orders;

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c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or

d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.

13.04 *Suspension of or Reduction in Payment*

A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and

2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.

3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;

c. Seller has failed to provide and maintain insurance;

d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

e. the Goods and Special Services are non-conforming, requiring correction or replacement;

f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;

g. the Procurement Contract Price has been reduced by Change Orders;

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h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;

i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or

j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.

B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.

B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.

C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.

D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.

E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.

F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.

G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

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13.06 *Waiver of Claims*

A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.

B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

ARTICLE 14—CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will not constitute a breach of contract by Buyer. Upon cancellation:

1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.

2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Procurement Contract Price of such Goods.

14.02 *Suspension of Performance by Buyer*

A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

14.03 *Suspension of Performance by Seller*

A. Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:

1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Procurement Contract; and

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

14.04 *Breach and Termination*

A. *Buyer's Breach*

1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.

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2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.

B. In the case of any conflict between the express terms of this Procurement Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Procurement Contract will apply.

15.03 *Computation of Time*

A. When any period of time is referred to in the Procurement Contract by number of days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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15.04 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

15.05 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Procurement Contract, as well as all continuing obligations indicated in the Procurement Contract, will survive final payment, completion, and acceptance of the Goods and Special Services or termination or completion of the Procurement Contract or of the services of Seller.

15.06 *Entire Agreement*

A. Buyer and Seller agree that this Procurement Contract is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Procurement Contract may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

15.07 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

15.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

15.09 *Successors and Assigns*

A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract.

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DOCUMENT 007350

SUPPLEMENTARY CONDITIONS OF THE PROCUREMENT CONTRACT

These Supplementary Conditions amend or supplement EJCDC® P-700, Standard General Conditions of the Procurement Contract (2019). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Buyer shall furnish to Seller **5** printed copies of the Procurement Contract Documents (including one fully signed counterpart of the Procurement Agreement), and **one copy** in electronic portable document format (PDF).

ARTICLE 5 – BONDS AND INSURANCE

5.01 Insurance

SC-5.01 Add the following new paragraphs immediately after Paragraph 5.01.E:

A. Seller shall purchase and maintain such liability and other insurance as is appropriate for the furnishing of Goods and Special Services and as will provide protection from claims set forth below which may arise out of or result from Seller’s furnishing of the Goods or Special Services and Seller’s other obligations under the Procurement Contract Documents, whether the furnishing of Goods and Special Services or other obligations are to be performed by Seller, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to furnish the Goods and Special Services, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Seller’s employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller’s employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (b) by any other person for any other reason;

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5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this Paragraph 5.01 to be purchased and maintained must:

1. with respect to insurance required by Paragraphs SC-5.01.F.3 through SC-5.01.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, their consultants, and all of whom must be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds must provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Seller's indemnity obligations under Paragraph 7.07;

5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;

6. remain in effect at least until final payment and at all times thereafter when Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 9.03 and 9.04; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter).

C. The limits of liability for the insurance required by Paragraph SC-5.02.F must provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs SC-5.02.F.1 and F.2:

Workers' Compensation and Related Policies	Establish Policy Limits
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory

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Workers' Compensation and Related Policies	Establish Policy Limits
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	**$500,000**
Bodily injury by disease—aggregate	**$500,000**
Employer's Liability	
Each accident	**$500,000**
Each employee	**$500,000**
Policy limit	**$500,000**
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	**$500,000**

2. Seller's General Liability under Paragraphs SC-5.02.F.3 through F.6 which must include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Seller:

Commercial General Liability	Policy limits of not less than
General Aggregate	**$2,000,000**
Products—Completed Operations Aggregate	**$1,000,000**
Personal and Advertising Injury	**$1,000,000**
Bodily Injury and Property Damage—Each Occurrence	**$1,000,000**

3. Automobile Liability under Paragraph SC-5.02.F.6:

Automobile Liability	Policy limits of not less than
Bodily Injury	
Each Person	**$1,000,000**
Each Accident	**$1,000,000**
Property Damage	
Each Accident	**$1,000,000**

4. Professional Liability (if the Special Services include professional services):

Seller's Professional Liability	Policy limits of not less than
Each Claim	**$0**
Annual Aggregate	**$0**

D. Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance

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requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.

ARTICLE 7— SELLER'S RESPONSIBILTY

7.02 Taxes

B. Buyer is exempt from payment of sales and compensating use taxes of the State of **Arkansas** and of cities and counties thereof on all materials and equipment to be incorporated into the Project facilities.

1. Buyer will furnish the required certificates of tax exemption to Seller with respect to materials and equipment to be incorporated into the Project facilities.

2. Buyer's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Seller, or to supplies or materials not incorporated into the Project facilities.

3. The Procurement Contract Price does not include the cost of sales or compensating use taxes to the extent such are exempted by this paragraph.

ARTICLE 9 – BUYERS RIGHTS

SC-9.05 Add the following new paragraph after Paragraph 9.04:

9.05 Limitation of Seller's Liability

A. Buyer and Seller agree that the total liability of Seller to Buyer for claims, costs, losses, and damages arising from this Procurement Contract will be limited to the amount established in the Procurement Agreement as the Procurement Contract Price.

ARITCLE 12 – CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

SC-12.03 Add the following new paragraph immediately after Paragraph 12.02:

12.03 Arbitration

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-12.03). This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Procurement Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 12, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority

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to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Procurement Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Procurement Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Procurement Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party of the right to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Procurement Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Procurement Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Buyer or Seller, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Procurement Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

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SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1.3 RELATED SECTIONS

A. None.

1.4 SUBMITTALS

A. Submit product data as specified herein, including standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, catalog cuts, standard wiring diagrams, printed performance curves and operational range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing and printed product warranties, as applicable to the work.

Resubmittals will be handled in the same manner as first submittals. On resubmittals the Manufacturer shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Manufacturer shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

Submittals shall include the following:

1. Certified shop and erection drawings showing all important details of construction, dimensions, and anchor bolt locations.
2. Descriptive literature, bulletins and/or catalogs of the equipment.
3. Data on the characteristics and performance of the pumps. Data shall include guaranteed and certified performance curves, based on actual shop tests of units to be delivered, which show that they meet the specified requirements for head, capacity, efficiency, NPSH required (based on tests similar units), and horsepower. Curves shall be submitted on 8-1/2-in by 11-in sheets. Curves for variable speed pumps shall be provided with at least five frequency curves: 40 Hz, 45 Hz, 50 Hz, 55 Hz and 60 Hz. The curves shall be plotted demonstrating frequency and operating rpm from maximum rpm to minimum rpm for each type of pump with subsequent pumps operating parallel through the minimum and maximum flow requirements.
4. The total weight of the equipment including weight of the single largest item.
5. A complete total bill of materials for all equipment.

6. A list of the manufacturer's recommended spare parts with the manufacturer's current price for each item. Include gaskets, packing, etc, on the list. List the bearings by the bearing manufacturer's numbers only.
7. A statement indicating bearing life.
8. Complete description of surface preparation and shop prime painting.
9. Submittal of motor data for acceptance shall be in accordance with Division 26 and shall include complete nameplate data and test characteristics in accordance with the latest version of NEMA Standard MG1-12. In addition, the following data for the motors shall be provided:

    a. Efficiency at 1/2, 3/4, and full load.
    b. Power factor at 1/2, 3/4, and full load.
    c. Motor outline drawings, dimensions, and weight.
    d. Descriptive bulletins, including full description of insulation system.
    e. Bearing design data and L-10 bearing life.
    f. Special features (i.e., space heaters, temperature detectors, etc.).
    g. Power factor correction capacitor rating and type.
    h. Insulation information.
    i. Locked Rotor Amperes at rated voltage and NEMA starting code letter.
    j. Temperature rise.
    k. Service factor.

B. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Manufacturer's review and approval markings and action taken by Engineer.
3. Include the following information on label for processing and recording action taken:

    a. Project name,
    b. Date,
    c. Name and address of Engineer,
    d. Name and address of Manufacturer,
    e. Name and address of subcontractor,
    f. Unique identifier, including revision number,
    g. Number and title of appropriate Specification Section,
    h. Drawing number and detail references, as appropriate,
    i. Other necessary identification.

C. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than the Manufacturer.

1.5 SUBMITTAL PROCEDURES

A. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows:

1. Initial Review: Allow twenty (20) days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Manufacturer when a submittal being processed must be delayed for coordination.
2. Time for review shall commence on Engineers receipt of submittal.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data is not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operating and maintenance manuals.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
4. Number of Copies: Submit four (4) minimum black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit five (5) prints where prints are required for operation and maintenance manuals. Engineer will retain three (3) prints; remainder will be returned. Mark up and retain one (1) returned print as a Project Record.

2.2 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

B. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

D. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

E. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

F. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

PART 3 - EXECUTION

3.1 MANUFACTURER'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Manufacturer's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Manufacturer's approval stamp and will return them without action.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Engineer will review each submittal and will not return it or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 016000

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions and contract documents.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

D. Pipe for potable water to be transported with exposed ends tarped or otherwise closed to prevent accumulation of airborne contaminates during transport.

1.2 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer’s instructions, with seals and labels intact and legible.

B. Store sensitive products in weather tight, climate-controlled enclosures.

C. For exterior storage of fabricated products, place on sloped supports, above ground.

D. Provide off-site storage and protection when site does not permit on-site storage or protection.

E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.

F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

I. Install 48” tall PVC orange mesh barrier fence around stored materials.

1.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article. Where terms such as “or equal,” Aor equivalent” are used in this Contract, they shall be taken to mean Aor approved equivalent.” Proposed equivalents shall be offered as substitutions.

1.4 SUBSTITUTIONS

A. Engineer will consider requests for substitutions only within 90 days after date established in Notice to Proceed.

1. Substitutions may be considered when a product becomes unavailable through no fault of the Materialman.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request constitutes a representation that the Manufacturer:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

1. Submit copies of Request for Substitution for consideration. Number of copies as specified in Section 013300. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
3. The Engineer will notify Manufacturer in writing of decision to accept or reject request.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Conditions: Engineer will consider Materialman’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect the Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one materialman, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all materialmen involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Engineer will consider Materialman's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 017516

STARTING OF SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Starting Equipment Systems.

B. Demonstration and Instructions.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING EQUIPMENT SYSTEMS

A. Coordinate schedule for start-up of various equipment. System startup will take place by installation Contractor during the construction phase of the Headworks Screen Replacement, Sherwood, Arkansas.

B. Notify Engineer and Owner fifteen (15) working days prior to start-up of each item.

C. Verify that each piece of equipment has been checked for proper lubrication, drive rotation, belt tension, control sequence, or for other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment in operation.

1. Authorized Representative shall be factory trained.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

I. Owner will make available to the manufacturer pressure recording devices and flow meter data from the SCADA system.

J. The manufacturer shall provide a qualified technician to attend start up services with the Engineer and Owner and record pressure and flow meter reading to create an in-service pump performance curve.

3.2 DEMONSTRATION AND INSTRUCTIONS

A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment during equipment start-up services.

C. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

D. As a minimum, provide the amount of time required for instruction on each item of equipment and system that is specified in individual sections.

E. Authorized Representative shall be a full-time employee of the manufacturer or, if acceptable to the Engineer, a third party who is routinely engaged by the Manufacturer to provide start-up services.

END OF SECTION

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Warranties.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
3. Complete startup testing of systems.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify installation Contractor of items, either on installation Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify installation Contractor of construction that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit an electronic copy and three (3) hard copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by installation Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Engineer.
d. Name of Equipment Manufacturer (as applicable).
e. Name of installation Contractor.
f. Page number.

1.6 PROJECT RECORD DOCUMENTS

A. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

B. Record Product Data: Submit an electronic copy and one (1) hard copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Final Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of installation Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.3 SUBMITTALS

A. Initial Submittal: Submit an electronic copy of each manual prior to requesting payment for equipment that requires operation and maintenance manuals.

1. Include a complete operation and maintenance directory.
2. Engineer will return an electronic copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one (1) hard copy of each manual in final form at least 15 days before final inspection. Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Engineer's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Engineer's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.
4. Tabbed Dividers.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of installation Contractor.
6. Name, address, and telephone number of equipment Manufacturer.
7. Name and address of Engineer.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MATERIAL

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Manufacturer is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Wiring diagrams, with Manufacturer applied identification system.
6. Control diagrams, with Manufacturer applied identification system.
7. Piped system diagrams.
8. Precautions against improper use.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Required sequences for electric or electronic systems.
8. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MATERIAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

G. Operation and Maintenance Data

1. Copies of an operating and maintenance manual for the pump shall be furnished to the Engineer. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc, that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

2. Bid prices for equipment shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the Owner's operating personnel in operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the Engineer. A technical representative, from the respective pump manufacturer who has complete knowledge of proper operation and maintenance shall be provided for 1 day to instruct representatives of the Owner and the Engineer on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and test run as provided in Sections 017516 and 333219 as applicable. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

C. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

D. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 465116

SUBMERSIBLE ASPIRATING AERATOR EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. SCOPE OF WORK

1. This specification defines an electric motor-driven propeller-type, horizontal, direct drive aerator. The AIRE-O_2® Triton 2.0 induces the flow of water below the surface, and provides flow-linkage mixing in multiple unit arrangements.
2. New Triton Units (2) will be connected to the existing control panel.
3. Lower bearing shall be replaced in the two existing units.
4. Contractor is responsible for providing extra lower bearings for each existing units (2).
5. Blower hoses shall be replaced on all existing (2) Triton units.
6. Start up of the existing (2) Triton Units.

B. SYSTEM DESCRIPTION

1. The aerator shall consist of an electric motor drive above the water surface. The motor is connected to a shaft within a protective housing positioned at a field adjustable angle of 45, degrees downward into the water. Aerators with submersible motors are not acceptable. Aerators without a field adjustable mounting are not acceptable.
2. The shaft shall be connected to and drive a propeller beneath the water surface. The propeller shall thrust water to induce mixing. Solid shafts are not acceptable.
3. Units which self aspirate, including Blower Assisted Aspirators are not acceptable.

C. EQUIPMENT DESIGN

1. The equipment must deliver the following oxygen transfer rate per a 3rd party certified test, within the last seven (7) years, that conforms to ASCE Standard Guidelines for In-Process Oxygen Transfer Testing [ASCE-18-96]:
    a. Triton 2.0 60HP 60Hz with 15HP Blower: **179.4 lbs O_2/hr**

1.2 QUALITY ASSURANCE

A. Equipment manufacturers shall submit the following four (4) weeks (minimum) prior to the bid the following information to the engineer:

1. Materials of construction for the aeration equipment to be provided.
2. Complete installation list showing at least ten (10) installations operating in the state of Arkansas at least five (5) years under the conditions specified above.
3. Controls description showing how the system will react to changes in flow and load.
4. Design calculations showing process performance, including all design factors.
5. Complete list of exceptions to be taken.

6. All required spare parts, special equipment, and electrical components required to meet the specifications.

B. STANDARDS

1. All materials and equipment listed in this section shall be the standard equipment provided by the equipment manufacturer.

2. The equipment manufacturer shall maintain an inventory of spare parts for the equipment provided and shall be able to ship expendable parts to the job site within two (2) man-days of receiving notice to ship.

1.3 DELIVERY, STORAGE, AND HANDLING

A. The AIRE-O_2® Triton 2.0 shall arrive at the installation site fully assembled and ready for attachment to the flotation or support equipment. Support equipment to be owner provided and assembled by others. The unloading of the system components shall be the responsibility of the contractor.

B. Equipment shall be kept in their original containers or provided with equivalent protection and stored in a warehouse free from extreme temperatures, humidity, and corrosive atmospheres.

C. Units with couplings that can become misaligned during shipment are not acceptable.

1.4 GUARANTEE

A. The equipment supplier shall warrant the aeration and mixing equipment against defects in manufacturing and materials for period not less than three (3) years from date of delivery.

PART 2 PRODUCT

Equipment Tag	Name	Existing/Proposed
50MIX101	Mixer	Existing
50MIX102	Mixer	Existing
50BLW101	Blower	Existing
50BLW102	Blower	Existing
50MIX201	Mixer	Proposed
50MIX202	Mixer	Proposed
50BLW201	Blower	Proposed
50BLW201	Blower	Proposed
AB-PLC-1	Control Panel	Existing

2.1 MANUFACTURER

A. The equipment shall be manufactured by Newterra Aire-O_2®,

Newterra Corporation, Inc.
1215 Chaska Creek Blvd Ste 400
Chaska, MN 55318 USA
(952) 448-6789
www.newterra.com

B. Any alternate equipment Manufacturer shall be engineer pre-approved at least four (4) weeks prior to the bid date.

C. Alternate equipment Manufacturers shall have a minimum of ten (10) installations in the state of Arknsas of the same equipment model and design in a similar application for a period of five (5) years. A reference list shall be provided with names, telephone numbers, and addresses of the qualified installations.

D. Pre-approved equipment Manufacturers not meeting the requirement in 2.1C are invited to bid, provided they furnish a Performance Bond underwritten by a bonding agent acceptable to the Owner for a period of five (5) years. Equipment and/or components failing within this period due to deficiency in design, workmanship, or material shall be replaced at no cost to the Owner.

2.2 AIRE-O_2® TRITON 2.0 COMPONENTS:

A. AERATOR DRIVE MOTOR

a. The motors shall deliver 60 horsepower at 900 RPM nominal and shall be rated for 460 volts, 60 Hz cycle, and 3 phase service. Motors shall be specifically designed for operating at an angle. Aerators that operate at greater than 900 RPM are not acceptable.

b. The motor shall be totally enclosed, fan cooled.

c. The motor shall, in all cases, equal or exceed current NEMA specifications.

d. The motor windings shall be non-hygroscopic.

e. Insulation shall equal or exceed NEMA Class F with Class B temperature rise.

f. Complete internal rotating assembly and stator winding shall be epoxy coated to maximize corrosion protection of electrical components.

g. The motor must be supplied with premium insulation for extended life in harsh environments.

h. A service factor of 1.15 shall be furnished.

i. A condensate drain shall be located at the lowest point in the lower end-bell housing.

j. A stainless steel nameplate shall be provided with each motor and shall be securely fastened thereto. Information shall include voltage, speed, phase, insulation class, amperage, service factor, wiring diagram, and motor serial number.

k. The motor shaft shall be balanced to within 1 mil to be measured on any part of the motor frame including the C-face.

l. The motor terminal box shall be firmly bolted to the motor frame at four points. The terminal box shall be sized to meet the NEMA standards.

m. The terminal box shall be drilled and tapped to receive one compression watertight fitting to accommodate the appropriate electrical service cables.

n. The motor must use thrust bearings. Conrad-type bearings are not acceptable.

B. BLOWER

1. The equipment shall include a high efficiency regenerative blower sized to provide sufficient airflow to yield the rated oxygen transfer capacity. Each blower includes the following features:
    a. Maintenance free

    b. Aluminum alloy construction

    c. Inlet and outlet sound attenuating silencers to minimize noise

    d. Inlet filters with epoxy-coated wire mesh media rated for 70 microns or better.

    e. CE compliant – Declaration of Conformity on file

    f. The blowers shall be tropicalized for corrosion resistance and deliver 15 horsepower maximum rated for 460 volts, 60 Hz cycle, and 3 phase service. Blower motors shall be wired separately.

C. MOUNTING FLANGE

1. The mounting flange shall be stainless steel and shall permit removal of the aeator mechanism leaving the motor in place. The mounting flange will allow the mixer/aerator to be rotated out of the water for inspection, maintenance or storage.

D. SHAFT/UNIVERSAL JOINT COUPLING

1. The shaft shall be stainless steel full-welded to a carbon steel universal joint coupling. The shaft must be hollow to promote maximum airflow and oxygen transfer. Units with solid shafts are not acceptable. The shaft shall be dynamically balanced.

2. The universal joint coupling shall include standard grease fitting for maintenance lubrication. Units that utilize flexible couplings to attach to the shaft of the motor are not acceptable.

3. The shaft shall be stabilized by replaceable water lubricated bearing located within one inch from the propeller hub. The area of the shaft supported by the bearing shall be fitted with a replaceable hardened non-metallic sleeve.

4. Units supplied with couplings that require alignment are not acceptable.

5. Any shafts requiring factory replacement to validate warranty requirements are not acceptable

E. HOUSING

1. The housing shall be stainless steel and flanged for mounting to the aerator. The housing shall form a guard around the hollow shaft and support a field replaceable, water-lubricated bearing press-fitted into the housing lower end. Water lubrication holes shall penetrate the housing in the area surrounding the bearing.

F. BEARING

1. The aerator shall be supplied with a field replaceable water lubricated lower support bearing. The bearing shall be constructed of an appropriate material for the application inside a fiber backing. The bearing shall be press-fitted into the housing to allow ease of replacement.

2. Units utilizing a cantilever design without a lower support bearing or regreaseable tapered roller bearings are not acceptable.

3. Bearings requiring factory replacement to validate warranty requirements are not acceptable.

G. SLEEVE

1. The replaceable sleeve shall be the only moving part in contact with the bearing and shall spin with the shaft as one unit. The sleeve shall be solid and homogeneous.

H. PROPELLERS

1. An optimized PowerMix™, 2-blade, stainless steel propreller with anti-fouling characteristics shall be provided.

2. The propeller shall be specifically designed to maximize oxygen transfer and mixing characteristics. The entire flow of air shall pass through the propeller shaft via the hollow drive shaft along the axis of the propeller hub.

3. Aluminum and 3-blade, standard marine type propellers, which are not designed to be anti-fouling are not acceptable.

4. The propeller design shall be tested in clean water and shown to draw a minimum of 85% of the recommended full motor amperage load at nameplate voltage and power factor.

5. The propeller shall be designed to allow easy removal and replacement in the field.

I. SATURN RING DIFFUSER

1. The Aerator shall be equipped with a stainless steel Saturn Ring diffuser, smaller than the mixing propeller, consisting of two concentric rings of differing diameters fixed to the diffuser body. The rings shall be specially designed to maximize oxygen transfer and to prevent self-aspiration when the regenerative blower is turned off to accomplish anoxic mixing.

2. The entire flow of forced air shall exit through the Saturn Ring diffuser opening.

3. Units without a Saturn Ring diffuser are not acceptable.

J. VORTEX SHIELD

1) A vortex shield shall be furnished with each mounting assembly to eliminate the formation of vortices, and prevent cavitation damage to the propeller during operation. Units without vortex shields are not acceptable.

K. UNIVERSAL MOUNT

1. The mount assemblies shall be constructed of Stainless Steel members to prevent corrosion. An Aluminum or Galvanized Steel structure is not acceptable

2. Mount assemblies shall allow the aerator at multiple angles in both the horizontal and vertical directions. The angle of operation shall be fully adjustable by the operator. The aeration equipment shall be able to slide up the assembly for maintenance. A static or fixed mount is not acceptable.

3. The operating depth of the aerator shall be fully adjustable through adjustment of the mount.

4. The mount shall allow the operator to remove the equipment from operation in the basin without the use of a maintenance platform or leaning over the basin to protect the operators' safety.

M. ELECTRICAL SERVICE CABLE

1. Cable shall be approved for severe environments, suitable for underwater service and one continuous length.

2. The cable shall be jacketed, flexible stranded cable with individually wrapped conductors rated SEOOW or equal.

2.3 Process Description

A. Flow will enter the oxidation ditches from Junction Box 300. The flow will enter either the north or south oxidation ditches where it will flow throught the ditches and exit through the effluent weir, then flow to the clairifer.

B. Automatic Mode

1. There is no automatic mode for the mixers on the submersible aspirating aerator equipment. The blowers associated with each mixer will be set to the manufacuters recommended frequency and will adjust their speeds based on the DO probes in each oxidation ditch.

PART 3 EXECUTION

3.1 LOCATION, SUPPORT, AND MOORING

A. The manufacturer shall provide recommendations on aerator placement, installation and operation.

3.2 FIELD SERVICES

A. The aerator Manufacturer, through its factory trained field service technician shall provide service to verify the proper installation and supervise the start-up of the aerators. Operation and maintenance instructions shall be given to the Engineer/Owner through the use of illustrated material within the manual.

3.3 SERVICING

A. Aerator mounting assemblies shall be designed so the aerator may be rotated completely out of the water to allow servicing without removing the aerator from the mount.

END OF SECTION

APPENDIX A

SUPPLEMENTAL DRAWINGS

Wynne Emergency Response Project C – Wastewater Treatment Plant Improvements

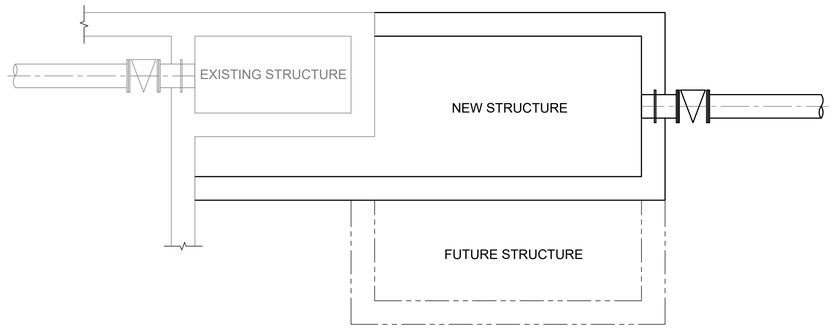
Oxidation Ditch Drawings

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GENERAL EXISTING, NEW AND FUTURE LEGEND

SYMBOL	DESCRIPTION
	EXISTING PIPE, STRUCTURE, PAVEMENT, OR OTHER ITEMS TO BE DEMOLISHED.
	EXISTING PIPE, STRUCTURE, OR OTHER ITEMS TO BE ABANDONED.
	EXISTING
	NEW
	FUTURE
N	NORTH ARROW

EXISTING, NEW, AND FUTURE LINE WEIGHT REPRESENTATION



SHEET IDENTIFICATION SYSTEM

10 - H - 101
- 10 — DENOTES PROCESS STRUCTURE (AS REQUIRED)
- 101 — SEQUENTIAL SHEET NUMBER
- H — DISCIPLINE DESIGNATORS

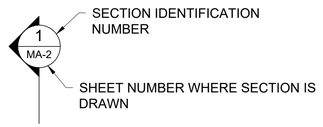
G - GENERAL	A - ARCHITECTURAL
C - CIVIL	S - STRUCTURAL
X - DEMOLITION	M - PROCESS MECHANICAL
I - INSTRUMENTATION & CONTROL	H - MECHANICAL
	P - PLUMBING
F - FIRE & LIFE SAFETY	E - ELECTRICAL
B - GEOTECHNICAL	Y - PHOTOS
L - LANDSCAPE	T - TELECOMMUNICATIONS

SHEET NUMBER LEGEND

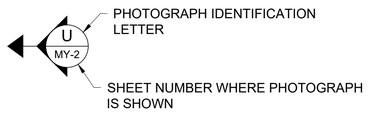
CIVIL DISCIPLINE	ALL OTHER DISCIPLINES
100 - SITE PLANS	100 - PLAN VIEWS
200 - GRADING & PAVING	200 - ELEVATIONS
300 - PIPING & PROFILES	300 - SECTIONS

ALL DISCIPLINES
- 400 - LARGE SCALE VIEWS
- 500 - DETAILS
- 600 - DIAGRAM OR SCHED.
- 900 - ISOMETRICS

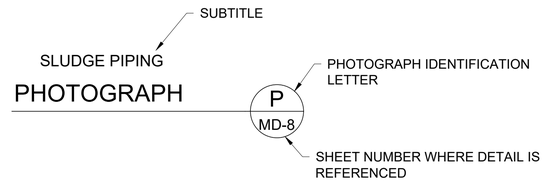
SECTION AND DETAIL DESIGNATION



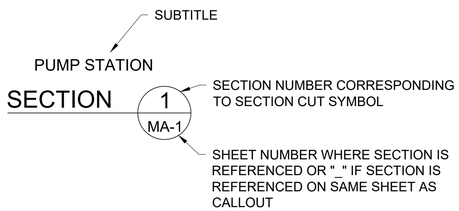
SECTION CUT SYMBOL



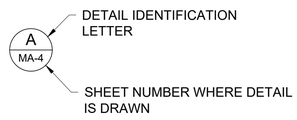
PHOTOGRAPH CALL-OUT SYMBOL



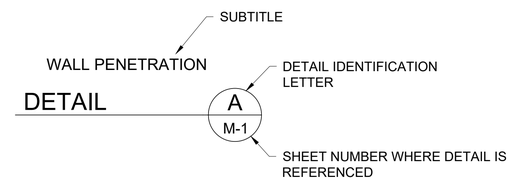
TITLE FOR PHOTOGRAPHS



TITLE FOR SECTION



DETAIL CALLOUT SYMBOL



TITLE FOR DETAILS

STANDARD ABBREVIATIONS

AC	AIR COMPRESSOR
AV	ANGLE VALVE
AVRV	AIR/VACUUM RELEASE VALVE
BLW	BLOWER
BA	BALL VALVE
BCK	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BPRV	BACK PRESSURE REGULATING VALVE
CDH	CONDENSATE HEATER
CK	CHECK VALVE
CG	CONTROL GATE
CO	CLEANOUT
COM	COMPRESSOR
CP	CONTROL PANEL
CRA	CHLORINE RESIDUAL ANALYZER
CS	CAPACITANCE SWITCH
DAP	DAMPER
DF	DIFFUSER
DO	DISSOLVED OXYGEN PROBE
DP	DRAIN PUMP
EF	EXHAUST FAN
EMO	ELECTRIC MOTOR OPERATOR
FAN	FAN
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN
FE	FLOW ELEMENT
FH	FIRE HYDRANT
FI	FLOW INSTRUMENT
FIL	FILTER
FIT	FLOW INDICATING TRANSMITTER
FS	FLOAT SWITCH
GL	GLOBE VALVE
GV	GATE VALVE
HS	HOSE STATION
HSC	HYDRAULIC SYSTEM CENTER
HST	HOIST
HTR	HEATER
HWT	HOT WATER TANK
KG	KNIFE GATE VALVE
JB	JUNCTION BOX
LCP	LEVEL CONTROL PANEL
LLS	LOW LEVEL SENSOR
LE	LEVEL ELEMENT
LIT	LEVEL INSTRUMENT TRANSMITTER
LCV	LEVEL CONTROL VALVE
LOU	LOUVER
LS	LEVEL SWITCH
LSM	LEAK SENSOR MONITOR
MFM	MAGNETIC FLOW METER
MH	MANHOLE
MIX	MIXER
MST	MOISTURE SENSOR TRANSMITTER
MP	METERING PUMP
MV	MUDVALVE
OIT	OPERATOR INTERFACE TERMINAL
PCV	PRESSURE CONTROL VALVE
PDC	POWER DISTRIBUTION CENTER
PG	PRESSURE GAUGE
PDI	PRESSURE DIFFERENTIAL INDICATOR
PIS	PRESSURE INDICATING SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PIN	PINCH VALVE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMP	PUMP
PNL	PANEL
PRS	PROXIMITY SENSOR
PRV	PRESSURE RELIEF VALVE
PS	PRESSURE SWITCH
PV	PLUG VALVE
PWSPT	PLANT WATER SYSTEM PRESSURE TANK
PWSP	PLANT WATER SYSTEM PUMP
REA	RESIDUAL ANALYZER
RIO	REMOTE I/O
SAM	SAMPLER
SC	SIGNAL CONVERTER
SG	SLUICE GATE
SOL	SOLENOID VALVE
SP	SUMP PUMP
SPIT	SUBMERSIBLE PRESSURE INDICATION TRANSMITTER
SRV	SURGE VALVE
SSCP	SECONDARY SCUM PUMP
STR	STRAINER
TLV	TELESCOPING VALVE
TNK	TANK
UFM	ULTRASONIC FLOW METER
UH	UNIT HEATER
UIS	UV INTENSITY SENSOR
W	WEIR
WS	WATER SURFACE

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/11/25

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE (0 — 1" — 1" = 1")

DESIGNED:	MLU
DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

GENERAL LEGEND

JOB NO. 23016

SHEET NO. 00-G-03

p:\2023 projects\23016 - wynne wwtp emergency response\06 - cadd\wwtp improvements\02 - Civil\DESIGN INFORMATION.dwg 2/5/2025 3:49 PM

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COORDINATE TABLE ABBREVIATION

ABBREVIATION	DEFINITION
ABAN	ABANDONED
AC	ASPHALTIC CONCRETE OR ASPHALT
AI	AREA INLET
ALT	ALTERNATE
APPROX	APPROXIMATE
AR	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AV	AIR VACUUM RELIEF
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGINNING OF CURVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BLVD	BOULEVARD
BM	BENCHMARK
BOC	BACK OF CURB
BO	BLOW OFF
C	CIVIL
,	CENTERLINE
OSHA	OCCUPATIONAL SAFETY & HEALTH ASSOC.
CB	CATCH BASIN
CL	CLASS
COMB	COMBINATION
CONC	CONCRETE
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
CP	CONTROL POINT
CPLG	COUPLING
D, DIA	DIAMETER
DET	DETAIL
DIP	DUCTILE IRON PIPE
DNSTM	DOWNSTREAM
DWG	DRAWING
E	EAST, EASTERLY, EASTING
EA	EACH
EF	EACH FACE
EG	EXISTING GRADE
ELEC	ELECTRIC, ELECTRICAL
EL, ELEV	ELEVATION
EOC	EDGE OF CONCRETE
EOG	EDGE OF GRAVEL
EOP, EP	EDGE OF PAVEMENT
EXIST	EXISTING
EW	EACH WAY
FC	FENCE CORNER
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FLEX	FLEXIBLE
FLG	FLANGE
FS	FINISHED SURFACE
FT	FEET, FOOT
G	GAS
GA	GAUGE
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HGL	HYDRAULIC GRADE LINE
H	HORIZONTAL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERSECTION
INV	INVERT
JB	JUNCTION BOX
L	LENGTH/LEFT
LB	POUND
LF	LINEAR FEET
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH, NORTHERLY, NORTHING
NAD83	NORTH AMERICAN DATUM 1983
NAVD29	NORTH AMERICAN VERTICAL DATUM 1929
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
O/C	ON CENTER
OFF	OFFSET
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	POLYETHYLENE
PH	POT HOLE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
R/RT	RIGHT
R&R	REMOVE AND RECONSTRUCT
REF	REFERENCE
REQ'D	REQUIRED
REST'D	RESTRAINED
RJ	RESTRAINED JOINT
RO	ROTATED
S	SLOPE OR SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SPPWG	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SQ	SQUARE
SS	STAINLESS STEEL, SANITARY SEWER
ST	STREET
STD	STANDARD
STA	STATION
STL	STEEL
T&B	TOP AND BOTTOM
TEL	TELEPHONE
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TYP	TYPICAL
UNK	UNKNOWN
UPSTM	UPSTREAM
US/USA	UNITED STATES / UNITED STATES OF AMERICA, UNDERGROUND SERVICE ALERT
USC&GS	UNITED STATES COAST & GEODETIC SURVEY
UTIL	UTILITY
V	VERTICAL
W	WATER / WEST / WIDE
W/	WITH
WATCH	WORK AREA TRAFFIC CONTROL HANDBOOK
WM	WATER MAIN / WATER METER
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTR	WATER
WV	WATER VALVE
	DIAMETER
@	AT
Δ	DELTA

BOUNDARY AND MARKER SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
x x	x x	WIRE FENCE
		WOOD FENCE
		CHAIN LINK FENCE
		GUARD RAIL
		STONE WALL
		STONE RETAINING WALL
		PROPERTY LINE
		EASEMENT LINE
		RIGHT OF WAY (ROW)
IP	IP	IRON PIPE BOUNDARY MARKER
IR	IR	IRON ROD BOUNDARY MARKER
MON	MON	CONCRETE MONUMENT BOUNDARY MARKER
SB	SB	STONE MONUMENT BOUNDARY MARKER
		PRODUCTION WELL
		MONITORING WELL
		TURNING POINT
		TRIANGULATION POINT
B-7	B-7	BORING
S-1	S-1	SOUNDING
		BENCHMARK

UNDERGROUND/OVERHEAD UTILITY SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
12" SS	12" SS	SANITARY SEWER AND MANHOLE
12" SD CB	12" SD CB	STORM DRAIN, MANHOLE AND CATCH BASIN
JB	JB	JUNCTION BOX
DI	DI	DRAIN INLET
GI	GI	GRATE INLET
		FIRE LINE W/FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)
FM FM FM	FM FM FM	FORCE MAIN
20" RAS - DI	20" RAS - DI	PROCESS PIPELINE CALLOUT
		PIPE MATERIAL (OPTIONAL) ABBREVIATED PROCESS LINE DESC. PIPE DIAMETER
UE UE UE	UE UE UE	UNDERGROUND ELECTRICAL CABLE/DUCT
E E E	E E E	OVERHEAD ELECTRIC
UT UT UT	UT UT UT	UNDERGROUND TELEPHONE
T T T	T T T	OVERHEAD TELEPHONE
S	S	SIGNAL LINE
UC UC	UC UC	UNDERGROUND CATV
TV TV TV	TV TV TV	OVERHEAD CATV
YH	YH	LIGHT POLE
LP	LP	LIGHT POLE
PP	PP	POWER POLE
GW	GW	GUY WIRE
TP	TM	TELEPHONE RISER
GR	GR	GAS REGULATOR
M	M	WATER METER
WMB	WMB	WATER METER BOX
G	GM	GAS METER
EV	EV	ELECTRIC VAULT
		HOSE BIBB (SINGLE OUTLET)

NOTE:
1. ELEVATIONS MAY BE SHOWN AS REQUIRED.

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
B & M C & O	B & M C & O	RAILROAD TRACKS
		DOUBLE TRACK RAILROAD
		UNIMPROVED DIRT ROAD OR GRAVELED ROADWAY
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY, SIZE & TYPE
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY W/ CURB, SIZE AND TYPE
		TUNNEL
		BRIDGE

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
		BOX CULVERT
2-36" RCP	2-36" RCP	CULVERT, PIPE SIZE AND TYPE
		SIGNS
		CONCRETE
		GRAVEL PAVEMENT
		ASPHALT PAVEMENT

SURFACE ELEVATION SYMBOLS

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
84	84	DEPRESSION CONTOUR
84	84	INTERMEDIATE CONTOUR LINE AND ELEVATION DESIGNATION
85	85	INDEX CONTOUR LINE AND ELEVATION DESIGNATION
365.7	365.7	SPOT ELEVATION
		EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10040 — CRAIG A. ATKINSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED: MLU
DRAFTED: MAB
CHECKED: CAJ
DATE: FEB 2025

CRIST ENGINEERS, INC.
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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

CIVIL LEGEND & ABBREVIATIONS

JOB NO. 23016

SHEET NO. 00-G-04

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PIPING SYMBOLS

DOUBLE LINE SYMBOL	SINGLE LINE SYMBOL	FEATURE
		WELDED JOINT
SEE NOTE 2		FLANGED JOINT SIMPLIFIED REPRESENTATION.
		FLANGED JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT SIMPLIFIED REPRESENTATION.
		MECHANICAL JOINT COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED SIMPLIFIED REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT RESTRAINED, SIMPLIFIED REPRESENTATION
		BALL JOINT
		DIRECTION OF FLOW
		PLAIN END X PLAIN END PIPE COUPLING
		PLAIN END X PLAIN END PIPE COUPLING RESTRAINED
		FLANGED X PLAIN END PIPE COUPLING
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
(F) Or (R)		COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID
		FLANGE GUARD
		FLANGE FILLER
		UNION
		QUICK CONNECT COUPLING
		HOSE COUPLING

LINE VALVE STATUS

- NORMALLY OPEN (ALL VALVES EXCEPT BUTTERFLY)
- NORMALLY CLOSED (ALL VALVES EXCEPT BUTTERFLY)
- BUTTERFLY VALVE NO - NORMALLY OPEN (SHOWN) NC - NORMALLY CLOSED

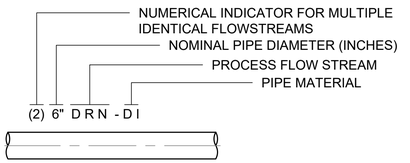
VALVE & FITTING SYMBOLS

SYMBOL	FEATURE
	DIAGHRAM VALVE
	UNCLASSIFIED. TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL
C	VALVE WITH HOSE END
	GATE VALVE
	3 WAY GATE VALVE
K	KNIFE GATE VALVE
	NEEDLE VALVE
	GLOBE VALVE
	BALL VALVE
	PINCH VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	3-WAY PLUG VALVE
	CHECK VALVE, GENERAL SYMBOL
	BALL CHECK VALVE
	DOUBLE DOOR CHECK VALVE
	ANGLE VALVE
S	SOLENOID VALVE
	ANTI-SIPHON VALVE
	BACK PRESSURE VALVE
	PRESSURE RELIEF VALVE
	REGULATING VALVE
	MUD VALVE
FD	FLOOR DRAIN
	OPEN EQUIPMENT DRAIN
ESEW	EMERGENCY SHOWER/EYEWASH
	ECCENTRIC REDUCER OR REDUCING BUSHING
	CONCENTRIC REDUCER OR REDUCING BUSHING
	Y-STRAINER
	CALIBRATION CYLINDER
ARV	COMBINATION AIR / VACUUM VALVE
M	MOTOR OPERATOR
M	MOTOR OPERATOR (W/ VFD)
E	ELECTRIC OPERATOR
	ROTAMETER
	FLEXIBLE HOSE
	PRESSURE GAUGE WITH TRANSMITTING SWITCH

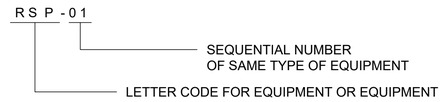
PIPE AND FITTING SYMBOL NOTES

1. SIMPLIFIED JOINT SYMBOL IS USED FOR ALL SINGE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
2. BOTH SIMPLIFIED AND COMPLEX JOINT REPRESENTATIONS MAY BE SHOWN ON THE DRAWINGS.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS.

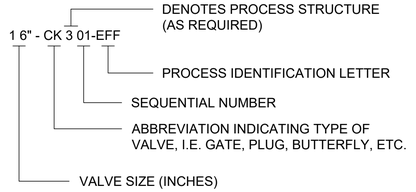
PIPE IDENTIFICATION SYSTEM



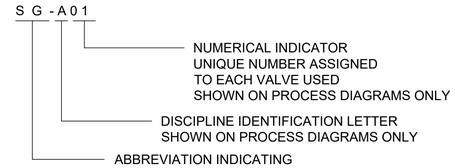
EQUIPMENT OR PROCESS IDENTIFICATION SYSTEM



VALVE TAG



GATE IDENTIFICATION SYSTEM



NOTE:
REFER TO GATE SCHEDULE IN SPECIFICATIONS FOR GATE SIZE (WIDTH & HEIGHT)

GENERAL NOTES

1. ALL VALVES 4" AND LARGER SHALL RECEIVE A TAG NUMBER. ALL OTHER SMALLER VALVES WILL BE IDENTIFIED BY THEIR SIZE AND DESIGNATION (ABBREVIATION) ONLY.
2. EQUIPMENT SHOWN ON THE PLANS SHALL BE GIVEN TAG NUMBERS AS SHOWN ON PROCESS DRAWINGS, UNLESS NOTED OTHERWISE.

PIPE MATERIAL

ABC ALU	ASBESTOS CEMENT ALUMINUM
B	BRASS
CI CPVC	CAST IRON CHLORINATED POLYVINYL CHLORIDE
CSP CU	CORRUGATED STEEL PIPE COPPER
DIP DIGL	DUCTILE IRON DUCTILE IRON - GLASS LINED
FRP	FIBER REINFORCED PLASTIC
GS	GALVANIZED CARBON STEEL
HDP	HIGH DENSITY POLYETHYLENE
MHS	METAL HOSE
PP PPE PVC PVDF	POLYPROPYLENE POLISHING POND EFFLUENT POLYVINYL CHLORIDE POLYVINYLIDENE FLUORIDE
RC RCC	REINFORCED CONCRETE REINFORCED CONCRETE CYLINDER
RH	RUBBER HOSE
STL SS	STEEL STAINLESS STEEL
TUB	TUBING
VC	VITRIFIED CLAY
PE	POLYETHYLENE

PROCESS FLOW STREAM

ADF	AVERAGE DAILY FLOW
BW	BACKWASH
DRN/DN DEC	DRAIN DECANT
EFF	EFFLUENT
FM	FORCE MAIN (SEWER)
GRT	GRIT
INF	INFLUENT
MDF MLSS	MAXIMUM DAILY FLOW MIXED LIQUOR SUSPENDED SOLIDS
NaHSO3	SODIUM BISULFITE
PAA PW	PERACETIC ACID POTABLE WATER
RS RAS RSL	RAW SEWAGE RETURN ACTIVATED SLUDGE RAW SLUDGE
SBS SCS SD SMP SS	SODIUM BISULFITE SOLUTION SCREENINGS SOLIDS STORM DRAIN SAMPLE POINT SANITARY SEWER
TW TWAS	TEPID WATER THICKENED WASTE ACTIVATED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE

GATE SYMBOLS

PLAN	FEATURE
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)
	STOP PLATE (SP)
	SHEAR GATE (SHG)
	FLAP GATE
	BYPASS GATE (BG)

SECTION (OPERATOR ONLY)	
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MLU
DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PIPING & PROCESS LEGEND AND ABBREVIATIONS

JOB NO. 23016

SHEET NO. 00-G-05

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PLANT INFORMATION & DESIGN PARAMETERS

PARAMETER	VALUE	UNIT
AVERAGE DAY FLOW RATE	1.65	MGD
DAILY MAXIMUM MONTHLY FLOW RATE	2.76	MGD
7 DAY AVERAGE FLOW RATE	2.76	MGD
PEAK HOURLY FLOW RATE	8	MGD
AVERAGE DAY CBOD CONCENTRATION	200	MG/L
AVERAGE DAY TSS CONCENTRATION	200	MG/L
AVERAGE DAY TKN CONCENTRATION	35.6	MG/L
AVERAGE DAY NH3-N	24.9	MG/L
AVERAGE DAY T-P CONCENTRATION	5.5	MG/L
AVERAGE DAY CBOD LOAD	4603.7	LB/DAY
AVERAGE DAY TSS LOAD	4603.7	MG/L
AVERAGE DAY NH3-N LOAD	573.2	LB/DAY
TOTAL ALKALINITY	225	MG/L
pH	6.57	-
MAX. 7 DAY AVERAGE TEMPERATURE	28	°C
AVERAGE DAY TEMPERATURE	20	°C
MIN. 7 DAY AVERAGE TEMPERATURE	12.5	°C

MECHANICAL BAR SCREENS

QUANTITY:	TWO (2)
NAME:	10-SCR-01, 10-SCR-02
TYPE:	MECHANICAL

PARAMETER	VALUE	UNIT
CAPACITY, (EA.)	8	MGD
TOTAL RATED CAPACITY	16	MGD
BAR SPACING	0.25	IN
ANGLE	10	DEGREES
DUAL CHANNELS	YES	-
CHANNEL DEPTH	16.33	FT
CHANNEL WIDTH	2.5	FT
VELOCITY AT AVERAGE DAY FLOW RATE	>1.25	MGD
VELOCITY AT RATED FLOW	<3	MGD
DESIGN BLINDING FACTOR	25	%
POWER	1.5	HP
TOTAL POWER	3	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V
WASHER COMPACTOR		
QUANTITY	2	
POWER	1	HP
TOTAL POWER	2	HP

PRIMARY SCREW PUMPS

QUANTITY:	TWO (2)
NAME:	20-SCR-01, 20-SCR-02
TYPE:	SCREW

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	2800	GPM
VFD	YES	-
FLOW MEASUREMENT	NO	-
POWER	25	HP
TOTAL POWER	50	HP
PHASE	3	-
VOLTAGE	460	V

GENERATOR

QUANTITY:	ONE (1)
NAME:	GENERATOR
TYPE:	SELF ENCLOSED, DIESEL ENGINE

PARAMETER	VALUE	UNIT
SIZE	1,250	KW
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	180	V
ATS RATING		AMPS

OXIDATION DITCH - (AERATION BASIN)

QUANTITY:	FOUR (4)
NAME:	50AER101, 50AER102, 50AER201, 50AER202
TYPE:	MIXER / AERATOR

PARAMETER	VALUE	UNIT
PROCESS SELECTION	TRADITIONAL OXIDATION DITCH	-
PRE TREATMENT	NO	-
DESIGN FLOW RATE (AVERAGE DAY/ 7 DAY)	1.65/2.76	MGD
HRT (AVG./7-DAY)	24.14/14.43	HRS
SRT	31	DAYS
ORGANIC LOADING (AVG./7-DAY)	12.4/20.74	LBS cBOD/DAY/1000FT
F/M	.09 to .1	LBS cBOD/ DAY/ LBS MLVSS
MLVSS (AVG./7-DAY)	2,150/3,325	MG/L
CHANNEL WIDTH (EA.)	40	FT
CHANNEL LENGTH (EA.)	464	FT
SIDE WATER DEPTH (EA.)	6	FT
FREEBOARD (EA)	1	FT
TOTAL VOLUME	1.66	MG
TARGET DISSOLVED OXYGEN (RESIDUAL)	>2	mg/L
AERATION TYPE	AERATOR / MIXER	-
AERATOR / MIXER	60/10	HP
TOTAL POWER EACH	70	HP
TOTAL POWER	280	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V
MAX. OXYGEN TRANSFER RATE (EA.)	2.31	LBS O2/HR
TOTAL AERATION	648.8	LBS O2/HR
MIXING/ AERATION SEPARATE	YES	-
MIXING VELOCITY	>2	FT/S
VFD	YES	-
RESIDUAL DISSOLVED OXYGEN PROBES	YES	-

GRIT REMOVAL

QUANTITY:	TWO (2)
NAME:	30PMP101, 30PMP201
TYPE:	VORTEX

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	4	MGD
TOTAL RATED CAPACITY	8	MGD
PARTICLE SIZE	>140	MICRONS
PARTICLE REMOVAL	95	%
GRIT PUMPS, NO.	2	
GRIT PUMP FLOW, EA.	250	GPM
GRIT CONCENTRATORS, NO.	2	
GRIT CONCENTRATORS PERFORMANCE	5% RESIDUAL ORGANIC MATERIAL RETAINED	
GRIT DEWATERING CONVEYORS	2	
POWER	10	HP
TOTAL POWER	20	HP
POWER FOR CONVEYOR	1	HP
TOTAL POWER FOR CONVEYORS	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SERVICE PUMP STATION

QUANTITY:	ONE (1)
NAME:	95PMP101
TYPE:	DUPLEX, HORIZONTAL, SELF-PRIMING

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	200	GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
NO. OF PUMPS	2	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V

FINAL CLARIFIERS

QUANTITY:	TWO (2)
NAME:	60CLF101, 60CLF201
TYPE:	CIRCULAR

PARAMETER	VALUE	UNIT
DIAMETER	61	FT
WATER DEPTH	11.95	FT
SURFACE AREA	2,922	FT²
TOTAL SURFACE AREA	5,845	FT²
WEIR LENGTH	192	FT
TOTAL WEIR LENGTH	384	FT
FREEBOARD	3.3	FT
SCUM REMOVAL	YES	-
SLUDGE WITHDRAW	YES, SUCTION	-
CHANNEL VELOCITY	>1	-
OVERFLOW RATE (AVG./7-DAY)	282/472	FT
SOLIDS LOADING RATE (AVG./7-DAY)	16/36	GPD/ FT²
WEIR LOADING (AVG./7-DAY)	4,305/8,538	PPD/ FT²
OVERFLOW RATE (5.84 MGD)	1,000	GDP/FT
WEIR LOADING (8 MGD)	20,873	PPD/ FT
POWER	1	HP
TOTAL POWER	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

RAS PUMPS

QUANTITY:	THREE (3)
NAMES:	70-RAS-01, 70-RAS-02, 70-RAS-03
TYPE:	END SUCTION SOLIDS HANDLING, HORIZONTAL

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	3000	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM101
POWER (EA.)	10	HP
TOTAL POWER	30	HP
PHASE	3	-
FREQUENCEY	60	HZ
VOLTAGE	460	V

WAS/TWAS PUMPS

QUANTITY:	THREE (3)
NAME:	70PMP201, 70PMP202, 70PMP203
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	180	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM201, 70MFM202
POWER (EA.)	15	HP
TOTAL POWER	45	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SCUM PUMPS

QUANTITY:	TWO (2) DUTY, ONE (1) SPARE - THREE (3) TOTAL
NAME:	60PMP101, 60PMP201
TYPE:	RECIRCULATING SUBMERSIBLE CHOPPER

PARAMETER	VALUE	UNIT
CAPACITY (EA.)		GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

PROCESS BLOWERS

QUANTITY:	FOUR (4)
NAME:	90BLW101, 90BLW102, 90BLW103, 90BLW104
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
TOTAL FIRM CAPACITY (EA.)	1,000 @ 4.72 psig	SCFM
ALPHA F/BETA	-	-
POWER (EA.)	50	HP
TOTAL POWER	200	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	2-POLE, 208/-230/460	V

UV DISINFECTION

QUANTITY:	ONE (1)
NAME:	100UV101
TYPE:	OPEN CHANNEL, INCLINED-ARRAY
CHANNEL (REFER TO TROJAN LAYOUT-DRAWING FOR COMPLETE DETAILS)	
NUMBER OF CHANNELS	ONE (1)
APPROXIMATE CHANNEL-LENGTH REQUIRED	35.6 FT
CHANNEL WIDTH AT UV BANKS	2.9 FT
CHANNEL DEPTH RECOMMENDED	7.8 FT
UV-BANKS	
NUMBER OF BANKS PER CHANNEL	3 (2-DUTY, 1-REDUNDANT)
NUMBER OF LAMPS PER BANK	10 EA.
TOTAL NUMBER OF UV LAMPS	30 (INCLUDING 10-REDUNDANT LAMPS)
MAXIMUM DUTY LAMP POWER DRAW	33 Kw
UV BANK HADLOSS AT PEAK FLOW	2.2 IN
UV-PANEL	
POWER DISTRIBUTION CENTER QUANTITY	1
HYDRAULIC SYSTEM CENTER QUANTITY	1
SYSTEM CONTROL CENTER QUANTITY	1
ANCILLARY EQUIPMENT	
LEVEL CONTROLLER QUANTITY AND TYPE	1-FIXED WEIR
INTEGRAL BANK WALLS	INCLUDED
OTHER EQUIPMENT	10%-LAMPS, 10%-SLEEVES, 5%-LAMP DRIVERS, 20-WIPER SEALS

ELECTRICAL REQUIREMENTS

1. EACH POWER DISTRIBUTION CENTER REQUIRES AND ELECTRICAL SUPPLY OF ONE-(1) 480/277V, 60 Hz, 33.8kVA
   ONE (1)-480/277V, 60Hz, 33.8kVA
2. ELECTRICAL SUPPLY FOR HYTDRAULIC SYSTEM CENTER WILL BE (1) 480V, 60 Hz, 2.5 kVA
3. ELECTRICAL SUPPLY FOR SYSTEM CONTROL CENTER WILL BE (1) 120V, 60Hz, 1.8kVA
4. ELECTRICAL DISCONNECTS ARE NOT INCLUDED. REFER TO LOCAL ELECTRICAL CODES

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CERTIFICATE OF AUTHORIZATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 12020 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MLU
DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

DESIGN INFORMATION

JOB NO. 23016

SHEET NO. 00-G-06

p:\2023 projects\23016 - wynne wwtp emergency response\06 - cadd\wwtp improvements\02 - Civil\DESIGN INFORMATION.dwg 2/5/2025 3:49 PM

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AERATION BASIN-501

50-AERATION BASINS

AERATION BASIN-502

JUNCTION BOX NO. 400

40-STORAGE BASIN

05-C-201 INF TO WWTP

JUNCTION BOX NO. 300

30-GRIT REMOVAL

20-PRIMARY SCREW PUMPS

10-BAR SCREENS

MH #7

MH #4

MH #5

MH #8

140-MAINTENANCE BUILDING (SEPARATE CONTRACT)

SEPARATE CONTRACT

130 PUMP STATION

90-BLOWER BUILDING

AEROBIC DIGESTER-501

AEROBIC DIGESTER-502

80-AEROBIC DIGESTERS

70-RAS / WAS PUMP BUILDING

150- ADMINISTRATION BUILDING

SEPARATE CONTRACT

75-GRAVITY THICKENER (ABANDONED)

05-C-103 TWAS TO LAND APP

CLARIFIER-601

JUNCTION BOX NO. 500

CLARIFIER-602

125-WEIR & OUTFLOW CHAMBER

05-C-102 EFF TO OUTFALL

100-UV STRUCTURE

120-POST AERATION BASIN

MH #4

PROCESS FLOW SCHEMATIC

N.T.S.

LEGEND

AIR	LOW PRESSURE AIR
DEC	DECANT
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
EFF	EFFLUNET
INF	INFLUENT SANITARY SEWER
PD	PROCESS DRAIN
RS	RAW SEWAGE
RAS	RETURN ACTIVATED SLUDGE
SCUM	SCUM WASTE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
WAS	WASTE ACTIVATED SLUDGE

ITEM NO. ◇#	DESCRIPTION
1	30" INF-DIP
2	24" RS - DIP
3	16" RAS - DIP
4	12" RAS - DIP
5	12" WAS - DIP
6	4" PD-PVC
7	6" WAS - DIP
8	6" TWAS - DIP
9	4" SCUM - DIP
10	24" EFF - DIP
11	6" DEC - DIP
12	12" AIR - SS
13	10" AIR - SS
14	8" AIR - SS
15	6" AIR - SS
16	24" MLSS - DIP
17	EXISTING DRN - DIP (SIZE VARIES)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED: MLU
DRAFTED: MAB
CHECKED: CAJ
DATE: FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROCESS FLOW SCHEMATIC

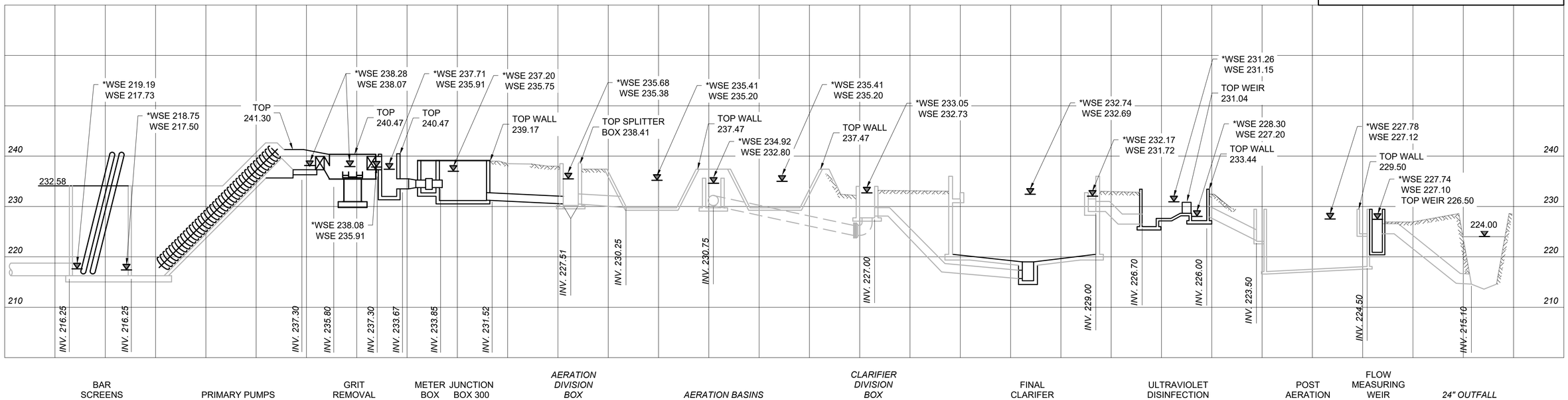
JOB NO. 23016

SHEET NO. 00-G-08

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NOTES :
1. HYDRAULIC GRADELINE ELEVATIONS SHOWN ARE FOR AVERAGE FLOW CONDITIONS AT 2.76 MGD
2. MAX ELEVATIONS SHOWN ARE FOR MAXIMUM HYDRAULIC CONDITIONS AT 8.00 MGD

*WSE = MAX PEAK = 8 MGD
WSE = AVERAGE DAY = 2.76 MGD



REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 19020 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

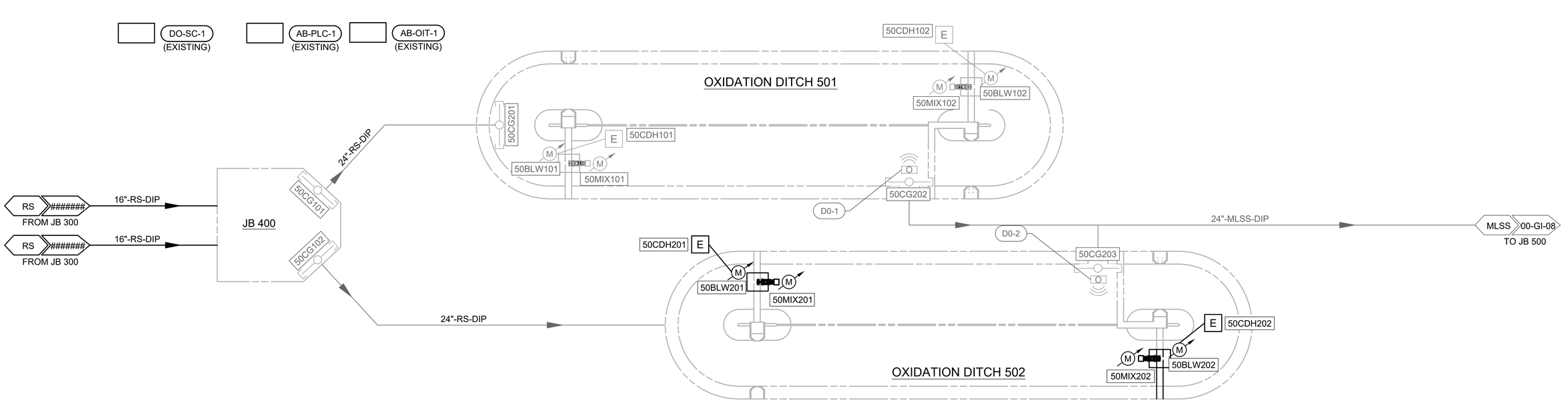
PROPOSED HYDRAULIC PROFILE

JOB NO. 23016

SHEET NO. 00-G-09

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50 OXIDATION DITCHES

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 CERTIFICATE OF AUTHORIZATION ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12020 CRAIG A. JOHNSON 2/11/25

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CHECKED: CAJ
DATE: FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

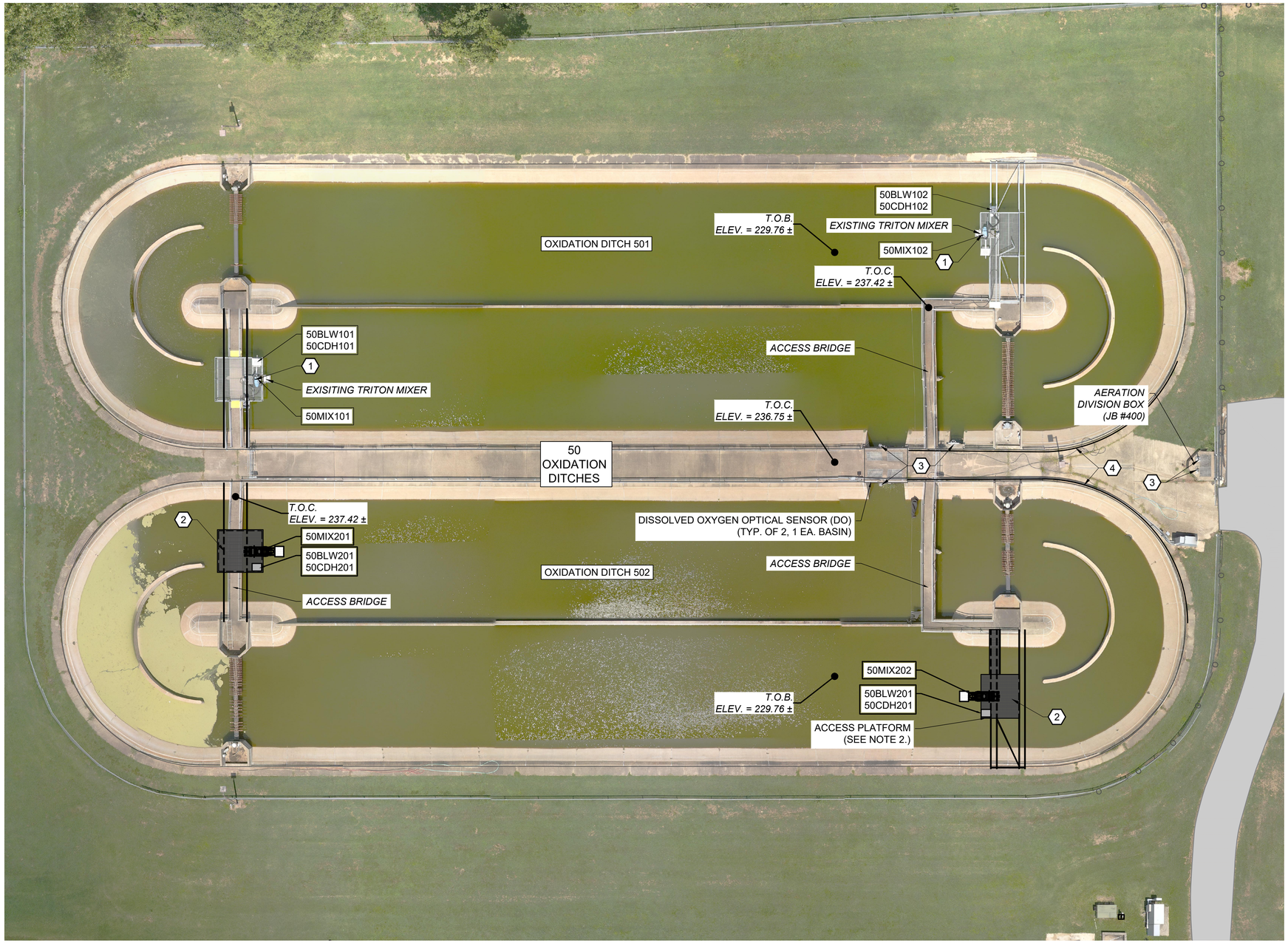
P&ID - OXIDATION DITCHES

JOB NO. 23016

SHEET NO. 00-GI-07

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PROPOSED

N

PLAN

SCALE: 1:16

1
30-X-01

CONSTRUCTION NOTES (#):

1. REPLACE BEARINGS AND..... . RE: SPECIFICATION SECTION 465116.
2. ACCESS PLATFORMS AND SUPPORTS PROVIDED BY OTHERS.
3. REPLACE INOPERABLE SLIDE GATES AND ACTUATORS.
4. REPLACE ALL DAMAGED GUARDRAIL AND INSTALL NEW GUARDRAIL WERE APPLICABLE.

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10020 — CRAIG A. JOHNSON — 2/4/25

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DRAFTED: KEG
CHECKED: CAJ
DATE: FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

OXIDATION DITCHES
EQUIPMENT AND IMPROVEMENTS PLAN

JOB NO. 23016

SHEET NO. 50-M-101

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PROCUREMENT CONTRACT
AND
SPECIFICATION DOCUMENTS

Wynne Water Utilities

UV Disinfection Equipment - Owner Procurement

Wynne Water Utilities

WYNNE, ARKANSAS

May 2025

Crist Job No. 23016







CRIST ENGINEERS, INC.

www.cristengineers.com

1 Executive Center Court
Little Rock, Arkansas 72211

Telephone: 501.664.1552
Fax: 501.664.8579

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UV DISINFECTION EQUIPMENT - OWNER PROCUREMENT
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004100	Bid Form (P-400)	6
005100	Notice of Award (C-510)	1
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APPENDIX

A. SUPPLEMENTAL DRAWINGS – Wynne Wastewater – UV Mechanical Plans

ADVERTISEMENT FOR BIDS

WYNNE WATER UTILITIES

WYNNE EMERGENCY RESPONSE - WASTEWATER IMPROVMENTS
UV DISINFECTION EQUIPMENT
OWNER PROCUREMENT

Sealed Bids for **Wynne Water Utilities – UV Disinfection Equipment - Owner Procurement** will be received by Wynne Water Utilities, at the office of Wynne Water Utilities, 550 Falls Blvd, Wynne, AR 72396 until **2:00PM Central Standard Time, May 27, 2025**, at which time the Bids received will be publicly opened and read. The Project generally consists of materials procurement of one UV Disinfection Unit.

Bids may be delivered by any means available **except** electronically (fax or email). Fax/email bids will not be considered. It is the bidder's responsibility to see that their bid is at the designated location by the time stated above. Those not received by that time will not be considered. Wynne Water Utilities reserves the right to reject any or all bids, to waive any formalities and to, in the opinion of Wynne Water Utilities, accept the bid that is in Wynne Water Utilities best interest.

A pre-bid conference will not be held.

Per request, on-site inspection of existing equipment can be scheduled by contacting Wynne Water Utilities at 870-238-2751.

Bids will be received for a single Contract. Bids shall be on a unit price basis as indicated on the Bid Form. The Issuing Office for the Bidding Documents is:

Crist Engineers, Inc.
1 Executive Center Court
Little Rock, AR 72211
501-664-1552
www.cristengineers.com

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 9:00 a.m. and 4:00 p.m. The Contract Documents may also be examined at the following:

Dodge Reports
www.construction.com

Electronic copies of the Bidding Documents may be obtained online from the Issuing Office upon payment of $25.00 for each set at www.cristengineers.com. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

This publication was paid for by Wynne Water Utilities. The amount to be paid for this publication is $351.68.

Owner**:** **Wynne Water Utilities**
By: **Blake Marotti**
Title: **General Manager**

Publish Dates:
May 11, 2025
May 18, 2025

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACTS

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INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACT

ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below.

A. *Issuing Office*—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2—PROCUREMENT BIDDING DOCUMENTS

2.01 Bidder may obtain complete sets of the Procurement Bidding Documents, in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid, from the Issuing Office. The deposit will be refunded to each document holder of record who returns a complete set of Procurement Bidding Documents in good condition within 30 days after opening of Bids. Bidders must obtain a complete set of the Procurement Contract Documents as listed in the Procurement Agreement.

2.02 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.

2.03 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

2.04 ELECTRONIC MEDIA OF PLANS AND SPECIFICATIONS

Engineer will provide a digital version (PDF) of the bidding documents for your convenience and use in the preparation of the Bid. Engineer makes no representation as to the compatibility of these files with your hardware or your software. Data contained on these electronic files is part of Engineer's instruments of service and shall not be used by the Bidder or anyone receiving this data through or from the Bidder for any purpose other than as a convenience in the preparation of the Bid. Any other use or reuse by the Bidder or others will be at the Bidder's sole risk and without liability or legal exposure to Engineer. The Bidder agrees upon execution and submission of the Bid Form to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against Crist Engineers, Inc. (CEI), its officers, directors, employees, agents or subconsultants which may arise out of or in connection with your use of the electronic files. These electronic files will not be considered as contract documents. Hard copies distributed to the prospective bidder govern. Significant differences may exist between these electronic files and corresponding hard copy contract documents. Engineer makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by Engineers and electronic files, the signed hard copy contract documents shall govern. You are responsible for determining if any conflict exists. By the Bidder's use of these electronic files, the Bidder is not relieved of the duty to fully comply with the contract documents. Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, Engineer reserves the right to remove all indicia of its ownership and/or involvement from each

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electronic display. Under no circumstances shall delivery of the digital electronic files for use by the Bidder be deemed a sale by CEI and CEI makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall CEI be liable for any loss or profit or any consequential damages.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4—SITE VISIT; PRE-BID CONFERENCE

4.01 Buyer recommends that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

4.02 A pre-bid conference will not be held for this procurement.

4.03 Interpretations or clarifications considered necessary by Engineer in response to questions will be issued by Addenda delivered to all parties recorded by Engineer as having received the Procurement Bidding Documents. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.

ARTICLE 5—INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer in writing.

5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral

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statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid, and will not be binding or legally effective.

5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 6—RESERVED

ARTICLE 7—PROCUREMENT CONTRACT TIMES

7.01 See applicable provisions in the Procurement Agreement.

ARTICLE 8—LIQUIDATED DAMAGES

8.01 Any provisions for liquidated damages, such as those for Seller's failure to attain a specified Milestone such as the delivery of the Goods, are set forth in the Procurement Agreement.

ARTICLE 9—CONFIDENTIALITY OF BID INFORMATION

9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.

9.02 Bidder shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.

9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.

9.04 Buyer's obligations with respect to confidential information are nullified by the following exceptions:

A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;

B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal;

C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;

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D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or

E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.

9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

ARTICLE 10—"OR-EQUAL" ITEMS

10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without exception or consideration of possible "or-equal" items. Whenever it is specified or described in the Procurement Bidding Documents that an "or-equal" item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contact. The procedure for submittal of any such application by Seller and consideration by Engineer is set forth in the General Conditions and may be supplemented in the Procurement Specifications. Should a manufacturer or specified equipment be provided that is not listed in the specification and/or exception(s) provided at the time of bid, the Buyer has full right without recourse from the Bidder to reject the bid.

ARTICLE 11—PREPARATION OF BID

11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.

11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words "No Bid" may be entered.

11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.

11.04 Bidder shall:

A. Sign the Bid Form as indicated in the Bid Form.

B. Include evidence of authority to sign.

C. Provide information on the individual to be contacted for any communications regarding the Bid.

D. Provide evidence of the Bidder's authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

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11.05 The responsibilities of each Bidder submitting a Bid are described in the Bidder's representations and certifications set forth in Article 6 of the Bid Form.

ARTICLE 12—BASIS OF BID; COMPARISON OF BIDS

12.01 *Unit Prices*

A. Bidder shall enter the unit price Bid for each unit price line item on the Bid Form and enter the product of the unit price times the estimated quantity for that line item. Bidder shall enter the total of products of unit price and estimated quantity for each unit price line item in the space provided to the total on the Bid Form.

B. The apparent low Bid will be determined on the basis of the total of products of unit price and estimated quantity for each unit price line item.

C. Discrepancies between the indicated figures and the arithmetically correct sum will be resolved in favor of the arithmetically correct sum.

ARTICLE 13—SUBMITTAL OF BID

13.01 Bidder shall refer to the **advertisement** for specific identification of the date, time, and place where Bids are to be submitted.

13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of Article 4 of the Bid Form.

13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Wynne Water Utilities, 550 Falls Blvd, Wynne AR 72396.

ARTICLE 14—MODIFICATION OR WITHDRAWAL OF BID

14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

14.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 15—OPENING OF BIDS

15.01 Bids will be publicly opened at the time and place indicated in the advertisement or invitation to bid and read aloud, unless obviously non-responsive. An abstract of the amounts of the Base

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Bids and Alternate Bids, if any, will be made available to Bidders after Bids have been opened and reviewed by the Buyer.

ARTICLE 16—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

16.01 All Bids will remain subject to acceptance for the period stated in the Bid Form, but Buyer may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 17—EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT

17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.

17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.

17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.

17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

ARTICLE 18—BONDS AND INSURANCE

18.01 Article 5 of the General Conditions and Article 5 of the Supplementary Conditions set forth Buyer's requirements as to insurance. When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by acceptable evidence of insurance.

ARTICLE 19—SIGNING OF PROCUREMENT AGREEMENT

19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and insurance documentation required to be delivered by the Procurement Contract Documents to Buyer. Within 10 days thereafter, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together with printed and electronic copies of the Procurement Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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DOCUMENT 004100

BID FORM FOR PROCUREMENT CONTRACT

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BID FORM FOR PROCUREMENT CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—BUYER AND BIDDER

1.01 This Bid is submitted to:

Wynne Water Utilities
550 Falls Blvd
Wynne AR, 72396

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Procurement Contract with Buyer in the form included in the Procurement Bidding Documents, and to furnish the Goods and Special Services as specified or indicated in the Procurement Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Procurement Bidding Documents.

ARTICLE 2—BASIS OF BID

2.01 Unit Price Bids

A. Bidder will furnish the Goods and Special Services including all accessories required for installation in accordance with the Procurement Contract Documents for the following Unit Price(s):

BID SCHEDULE – UV Disinfection - Owner Procurement

Wynne Water Utilities, Arkansas

Item No.	Description	QTY	Unit	Unit Price	Bid Price
1	UV Disinfection Equipment	1	EA	$	$

TOTAL BID PRICE:

$472,575.00 **Dollars**

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SCHEDULE OF PROCUREMENT TIMES

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	196	Buyer to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	7	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	270	

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ARTICLE 3—TIME OF COMPLETION

3.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule of Procurement Contract Times set forth in Article 2 of the Procurement Agreement.

3.02 Bidder accepts the provisions of the Procurement Agreement as to liquidated damages.

ARTICLE 4—ATTACHMENTS TO THIS BID

4.01 The following documents are attached to and made a condition of this Bid:

A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.

ARTICLE 5—BIDDER'S ACKNOWLEDGMENTS

5.01 Bidder accepts all terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period that Bidder may agree to in writing upon request of Buyer.

5.02 Bidder has examined and carefully studied the Procurement Bidding Documents, the related data identified in the Procurement Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents that:

1. Bidder has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Bidder's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Bidder has carefully studied, considered, and correlated the information known to Bidder with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

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5. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bidding Requirements, that without exception the Bid (including all Bid prices) is premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

8. Any exceptions noted to the bid is subject to rejection of the bid.

6.02 *Bidder's Certifications*

A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Paragraph 6.02.A.4:

a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

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This Bid is offered by:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Date: _____

(date signed)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

(If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

(individual's signature)

Title: _____

(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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DOCUMENT 005100

NOTICE OF AWARD

Date of Issuance:	Owner's Contract No.:
Owner: **Wynne Water Utilities**	
Engineer: **Crist Engineers, Inc.**	Engineer's Project No.: **23016**
Project: **Wynne Emergency Response**	Contract Name: **Owner Procurement of UV Disinfection Equipment**
Bidder:	Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Wynne Water Utilities: Owner Procurement of UV Disinfection Equipment

The Contract Price of the awarded Contract is: $_____

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s).
3. Other conditions precedent (if any): None

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner**:** **Wynne Water Utilities**

_____ Authorized Signature

By: _____ Title:_____

Copy: **Crist Engineers, Inc.**

DOCUMENT 005213
AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

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AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

This Procurement Agreement is by and between **Wynne Water Utilities** ("Buyer") and _____ _____ ("Seller").

Terms used in this Procurement Agreement have the meanings stated in the General Conditions of the Procurement Contract and the Supplementary Conditions of the Procurement Contract.

Buyer and Seller hereby agree as follows:

ARTICLE 1—PROCUREMENT CONTRACT

1.01 *Goods and Special Services*

A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: **UV Disinfection Equipment – Owner Procurement**

1.02 *The Project*

A. The Project, of which the Goods and Special Services are a part, is generally described as follows: **Wynne Emergency Response – UV Disinfection Equipment – Owner Procurement**

1.03 *Engineer*

A. Buyer has retained **Crist Engineers, Inc.** ("Engineer"), to prepare Procurement Contract Documents and act as Buyer's representative. Engineer assumes all duties and responsibilities and has the rights and authority assigned to Engineer in the Procurement Contract Documents in connection with Seller's furnishing of Goods and Special Services.

1.04 *Point of Destination*

A. The Point of Destination is designated as: **Wynne Wastewater Plant, 53 Cross 619 Rd, Wynne , AR 72396.**

ARTICLE 2—PROCUREMENT CONTRACT TIMES

2.01 *Time of the Essence*

A. All time limits for Milestones, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Procurement Contract Documents, are of the essence of the Procurement Contract.

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2.02 Schedule of Procurement Times

A. The schedule of procurement times is established on the Bid Form.

2.03 *Shop Drawings and Material Submittals*

A. *Material Submittals*: Seller shall submit all Shop Drawings and Material Submittals required by the Procurement Contract Documents to Engineer for its review and approval.

B. *Engineer's Review*: It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Material Submittals and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within **14** days after Seller's submittal of such Shop Drawings and Material Submittals, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

2.04 *Liquidated Damages*

A. Buyer and Seller recognize that time is of the essence as stated in Paragraph 2.01, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified on the Bid Form, plus any extensions thereof allowed in accordance with this Procurement Contract. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the delivery requirements specified on the Bid Form. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer **$750** for each day that expires after the time specified on the Bid Form for delivery of acceptable Goods.

2.05 Contract Times

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	224	Contractor to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	14	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	305	

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ARTICLE 3—PROCUREMENT CONTRACT PRICE

3.01 *Procurement Contract Price and Total Price—Based on Attached Bid*

A. For furnishing the Goods and Special Services in accordance with the Procurement Contract Documents, Buyer shall pay Seller the prices stated in Seller's Bid, attached hereto as an exhibit, subject to final adjustments for Unit Price Goods and Special Services.

ARTICLE 4—PAYMENT PROCEDURES

4.01 *Submittal and Processing of Applications for Payment*

A. Seller shall submit Applications for Payment in accordance with Article 13 of the General Conditions and the following paragraphs. Engineer and Buyer will process such Applications for Payment in accordance with said Article 13.

4.02 *Progress Payments; Final Payment*

A. Seller may submit an Application for Payment requesting the stated percentage of Procurement Contract Price upon attainment of each of the following Payment Line Items:

Payment Line Item (Lump Sum)	Percentage of Lump Sum
1. Placement of Order	15
2. Approval of Engineering Drawings	20
3. Time of Shipment	60
4. Start Up and Testing, Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	5
5. Total Procurement Contract Price (Lump Sum)	100

B. Buyer shall pay Seller the amount owed under an Application for Payment within 30 days after Engineer's presentation to Buyer of the Application for Payment and Engineer's recommendation.

4.03 *Interest*

A. All amounts not paid when due will bear interest as the rate of **1%** percent per annum.

ARTICLE 5—ASSIGNMENT OF PROCUREMENT CONTRACT

5.01 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no

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assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

5.02 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

ARTICLE 6—PROCUREMENT CONTRACT DOCUMENTS

6.01 *List of Procurement Contract Documents*

A. The Procurement Contract Documents consist of the following:

1. This Procurement Agreement. (pages 1 to 7, inclusive).
2. General Conditions of the Procurement Contract. (pages 1 to 37, inclusive).
3. Supplementary Conditions of the Procurement Contract. (pages 1 to 5, inclusive).
4. Procurement Specifications as listed in the Procurement Specifications table of contents.
5. Supplemental Procurement Drawings (not attached but incorporated by reference):
6. Addenda (numbers ____ to ___ inclusive).
7. Exhibits to this Procurement Agreement (enumerated as follows):
    a. Contractor's Bid (pages 1 to 6, inclusive).
8. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:
    a. Notice to Proceed;
    b. Change Orders;

B. The documents listed in Paragraph 6.01.A are attached to this Procurement Agreement (except as expressly noted otherwise above).

C. There are no Procurement Contract Documents other than those listed above.

D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of the Procurement General Conditions.

ARTICLE 7—SELLER'S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Seller's Representations*

A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:

1. Seller has examined and carefully studied the Procurement Contract Documents.
2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any observable local or site conditions may affect the delivery, cost, progress,

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or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

7.02 *Seller's Certifications*

A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Procurement Contract. For the purposes of this Paragraph 7.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement Contract to the detriment of Buyer, (b) to establish bid or contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Procurement Contract.

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ARTICLE 8—RESERVED

ARTICLE 9—MUTUAL WAIVER

9.01 *Mutual Waiver of Consequential Damages*

A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph 9.01.A will be binding upon the Contractor/Assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) liquidated damages, (c) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property of others, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.

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IN WITNESS WHEREOF, Buyer and Seller have signed this Procurement Agreement. Counterparts have been delivered to Buyer and Seller.

The Effective Date of the Procurement Contract is _____.

Buyer	Seller
Wynne Water Utilities	
(typed or printed name of organization)	*(typed or printed name of organization)*
By:	By:
(individual's signature)	*(individual's signature)*
Date:	Date:
(date signed)	*(date signed)*
Name:	Name:
(typed or printed)	*(typed or printed)*
Title:	Title:
(typed or printed)	*(typed or printed)*
	(If Seller is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:	Attest:
(individual's signature)	*(individual's signature)*
Title:	Title:
(typed or printed)	*(typed or printed)*
Address for giving notices:	Address for giving notices:
Designated Representative:	Designated Representative:
Name:	Name:
(typed or printed)	*(typed or printed)*
Title:	Title:
(typed or printed)	*(typed or printed)*
Address:	Address:
Wynne Water Utilities	
550 Falls Blvd	
Wynne, AR 72396	
Phone:	Phone:
Email:	Email:
(If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	

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NOTICE TO PROCEED

Owner:	**Wynne Water Utilities**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Crist Engineers, Inc.**	Engineer's Project No.:	**23016**
Project:	**Wynne Emergency Response**	Contract Name:	**Owner Procurement of UV Disinfection Equipment**
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, _____]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is 210 consecutive calendar days, and the number of days to achieve readiness for final payment is 240 consecutive calendar days.

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner**:** **Wynne Water Utilities**

_____
Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: **Crist Engineers, Inc.**

DOCUMENT 007250

STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

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ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Whenever used in the Procurement Bidding Requirements or Procurement Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated, which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.

2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.

3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.

4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.

5. *Buyer*—The individual or entity purchasing the Goods and Special Services.

6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.

7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.

9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.

10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.

11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

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12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.

14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.

15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.

16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.

19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.

20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.

21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.

22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).

23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.

24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.

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25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.

26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.

28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.

29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.

30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.

31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.

32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.

33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer's review of the Submittals.

34. *Seller*—The individual or entity furnishing the Goods and Special Services.

35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.

36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.

37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals

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may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.

39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.

40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.

B. *Intent of Certain Terms or Adjectives*

1. The Procurement Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.

2. The word "non-conforming" when modifying the words "Goods and Special Services," "Goods," or "Special Services," refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:

a. do not conform to or comply with the requirements of the Procurement Contract Documents;

b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or

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c. in the case of Special Services, have not been completed.

3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.

4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

5. The word "furnish," when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.

C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.

D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer.

B. Performance and Payment Bonds will not be required for this procurement contract.

C. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.

D. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

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2.03 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

2.04 *Preliminary Schedules*

A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:

1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.

a. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the Submittals, tests, and deliveries to completion within the specified Milestones of the Procurement Contract Times.

b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.

c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.

2. a preliminary schedule of Submittals.

B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

2.05 *Preliminary Conference*

A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.

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B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

A. The Procurement Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.

C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.

D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.

F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.

B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

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3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents*: If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.

2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

B. *Resolving Discrepancies*: Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement Contract Documents); or

2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Procurement Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.

1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.

B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the

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Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.

C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

A. Seller and its subcontractors and suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

4.02 *Continuing Performance*

A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.

B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.

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1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.

2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.

B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.

C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. inspection delays by governmental authorities, and custom delays;

4. international shipping delays;

5. acts or failures to act of third-party entities; and

6. acts of war or terrorism.

D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions*: Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:

1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.

2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.

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3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.

E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5— INSURANCE

5.01 *Insurance*

A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.

B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided will not be construed as a waiver of Seller's obligation to maintain such insurance.

C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.

D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.

E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

5.02 *Surety or Insurance Companies*

A. All insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

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ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.

B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.

C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.

D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.

B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.

C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.

2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.

D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

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6.03 *Buyer's Infringement*

A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.

B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.

C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.

2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER'S RESPONSIBILITIES

7.01 *Performance of Obligations*

A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.

B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.

C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.

B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must be:

1. new, and of good quality;

2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and

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3. shop-assembled to the greatest extent practicable.

7.03 *Laws and Regulations*

A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.

B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.

1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or equal" item.

2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.

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B. *Engineer's Evaluation*: Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.

C. *Special Guarantee*: Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."

D. *Data*: Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 *Taxes*

A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Supplementary Conditions.

7.06 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Seller shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.

3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

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1. *Shop Drawings*

    a. Seller shall submit the number of copies required in the Procurement Specifications.

    b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.

2. *Samples*

    a. Seller shall submit the number of Samples required in the Procurement Specifications.

    b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.

3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.

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6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.

8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Seller shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.

3. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. *Submittals Other than Shop Drawings and Samples*

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:

   a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.

   d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

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7.07 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.

B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling, and all other costs associated with shipment and delivery.

8.02 *Delivery*

A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.

B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.

C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.

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D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.

E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.

F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.

B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER'S RIGHTS

9.01 *Seller's Warranties and Guarantees*

A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.

B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.

C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;

2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;

3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or

4. normal wear and tear under normal usage.

D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:

1. observations by Buyer, Engineer, or Project Owner;

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2. recommendation by Engineer or payment by Buyer of any progress or final payment;

3. use of the Goods by Buyer or Project Owner;

4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;

5. the end of the correction period established in Paragraph 9.04;

6. the issuance of a notice of acceptance;

7. any inspection, test or approval by others; or

8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.

E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.

3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.

4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.

5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.

6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.

7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

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B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.

2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.

2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.

3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Procurement Contract Times, remove and replace the rejected Goods.

2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.

3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. *Buyer's Rejection of Non-Conforming Special Services*

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1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.

2. Seller shall promptly provide conforming Special Services acceptable to Buyer.

3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

D. *Remedying Non-Conforming Goods*: If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

E. *Buyer's Acceptance of Non-Conforming Goods*: Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods.

F. *Seller Obligations*: Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations will include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

G. *Buyer's Rejection of Conforming Goods*: If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

9.04 *Correction Period*

A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.

B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.

B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.

C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

10.02 *Duties and Responsibilities; Authority; Limitations*

A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.

B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.

C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.

D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.

E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.

F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

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ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.

B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Buyer and Seller shall execute appropriate Change Orders covering:

1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;

2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;

3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.

B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.

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B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.

B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided herein.

11.05 *Buyer-Authorized Changes in the Goods and Special Services*

A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion. Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

11.06 *Buyer's Contingency Allowance*

A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.

B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.

C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.

D. The Procurement Agreement, Article 5, addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

11.07 *Unauthorized Changes in the Goods and Special Services*

A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

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11.08 *Change of Procurement Contract Price*

A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Procurement Contract Price will be determined as follows:

1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;

2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or

3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15%.

11.09 *Change of Procurement Contract Times*

A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.

B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.

C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.

D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

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F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.

G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.

H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.

I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.

J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.

K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.

B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith.

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The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.

C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:

1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or

3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.

B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.

C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.

D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

A. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;

b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and

c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or

b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.

4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or

b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or

c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or

d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or

e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:

a. the Goods and Services are non-conforming, requiring correction or replacement;

b. the Procurement Contract Price has been reduced by Change Orders;

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c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or

d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.

13.04 *Suspension of or Reduction in Payment*

A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and

2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.

3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;

c. Seller has failed to provide and maintain insurance;

d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

e. the Goods and Special Services are non-conforming, requiring correction or replacement;

f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;

g. the Procurement Contract Price has been reduced by Change Orders;

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h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;

i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or

j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.

B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.

B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.

C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.

D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.

E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.

F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.

G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

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13.06 *Waiver of Claims*

A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.

B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

ARTICLE 14—CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will not constitute a breach of contract by Buyer. Upon cancellation:

1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.

2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Procurement Contract Price of such Goods.

14.02 *Suspension of Performance by Buyer*

A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

14.03 *Suspension of Performance by Seller*

A. Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:

1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Procurement Contract; and

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

14.04 *Breach and Termination*

A. *Buyer's Breach*

1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.

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2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.

B. In the case of any conflict between the express terms of this Procurement Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Procurement Contract will apply.

15.03 *Computation of Time*

A. When any period of time is referred to in the Procurement Contract by number of days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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15.04 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

15.05 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Procurement Contract, as well as all continuing obligations indicated in the Procurement Contract, will survive final payment, completion, and acceptance of the Goods and Special Services or termination or completion of the Procurement Contract or of the services of Seller.

15.06 *Entire Agreement*

A. Buyer and Seller agree that this Procurement Contract is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Procurement Contract may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

15.07 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

15.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

15.09 *Successors and Assigns*

A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract.

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DOCUMENT 007350

SUPPLEMENTARY CONDITIONS OF THE PROCUREMENT CONTRACT

These Supplementary Conditions amend or supplement EJCDC® P-700, Standard General Conditions of the Procurement Contract (2019). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Buyer shall furnish to Seller **5** printed copies of the Procurement Contract Documents (including one fully signed counterpart of the Procurement Agreement), and **one copy** in electronic portable document format (PDF).

ARTICLE 5 – BONDS AND INSURANCE

5.01 Insurance

SC-5.01 Add the following new paragraphs immediately after Paragraph 5.01.E:

A. Seller shall purchase and maintain such liability and other insurance as is appropriate for the furnishing of Goods and Special Services and as will provide protection from claims set forth below which may arise out of or result from Seller’s furnishing of the Goods or Special Services and Seller’s other obligations under the Procurement Contract Documents, whether the furnishing of Goods and Special Services or other obligations are to be performed by Seller, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to furnish the Goods and Special Services, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Seller’s employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller’s employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (b) by any other person for any other reason;

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5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this Paragraph 5.01 to be purchased and maintained must:

1. with respect to insurance required by Paragraphs SC-5.01.F.3 through SC-5.01.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, their consultants, and all of whom must be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds must provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Seller's indemnity obligations under Paragraph 7.07;

5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;

6. remain in effect at least until final payment and at all times thereafter when Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 9.03 and 9.04; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter).

C. The limits of liability for the insurance required by Paragraph SC-5.02.F must provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs SC-5.02.F.1 and F.2:

Workers' Compensation and Related Policies	Establish Policy Limits
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory

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Workers' Compensation and Related Policies	Establish Policy Limits
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	**$500,000**
Bodily injury by disease—aggregate	**$500,000**
Employer's Liability	
Each accident	**$500,000**
Each employee	**$500,000**
Policy limit	**$500,000**
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	**$500,000**

2. Seller's General Liability under Paragraphs SC-5.02.F.3 through F.6 which must include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Seller:

Commercial General Liability	Policy limits of not less than
General Aggregate	**$2,000,000**
Products—Completed Operations Aggregate	**$1,000,000**
Personal and Advertising Injury	**$1,000,000**
Bodily Injury and Property Damage—Each Occurrence	**$1,000,000**

3. Automobile Liability under Paragraph SC-5.02.F.6:

Automobile Liability	Policy limits of not less than
Bodily Injury	
Each Person	**$1,000,000**
Each Accident	**$1,000,000**
Property Damage	
Each Accident	**$1,000,000**

4. Professional Liability (if the Special Services include professional services):

Seller's Professional Liability	Policy limits of not less than
Each Claim	**$0**
Annual Aggregate	**$0**

D. Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance

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requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.

ARTICLE 7— SELLER'S RESPONSIBILTY

7.02 Taxes

B. Buyer is exempt from payment of sales and compensating use taxes of the State of **Arkansas** and of cities and counties thereof on all materials and equipment to be incorporated into the Project facilities.

1. Buyer will furnish the required certificates of tax exemption to Seller with respect to materials and equipment to be incorporated into the Project facilities.

2. Buyer's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Seller, or to supplies or materials not incorporated into the Project facilities.

3. The Procurement Contract Price does not include the cost of sales or compensating use taxes to the extent such are exempted by this paragraph.

ARTICLE 9 – BUYERS RIGHTS

SC-9.05 Add the following new paragraph after Paragraph 9.04:

9.05 Limitation of Seller's Liability

A. Buyer and Seller agree that the total liability of Seller to Buyer for claims, costs, losses, and damages arising from this Procurement Contract will be limited to the amount established in the Procurement Agreement as the Procurement Contract Price.

ARITCLE 12 – CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

SC-12.03 Add the following new paragraph immediately after Paragraph 12.02:

12.03 Arbitration

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-12.03). This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Procurement Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 12, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority

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to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Procurement Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Procurement Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Procurement Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party of the right to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Procurement Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Procurement Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Buyer or Seller, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Procurement Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

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SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1.3 RELATED SECTIONS

A. None.

1.4 SUBMITTALS

A. Submit product data as specified herein, including standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, catalog cuts, standard wiring diagrams, printed performance curves and operational range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing and printed product warranties, as applicable to the work.

Resubmittals will be handled in the same manner as first submittals. On resubmittals the Manufacturer shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Manufacturer shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

Submittals shall include the following:

1. Certified shop and erection drawings showing all important details of construction, dimensions, and anchor bolt locations.
2. Descriptive literature, bulletins and/or catalogs of the equipment.
3. Data on the characteristics and performance of the pumps. Data shall include guaranteed and certified performance curves, based on actual shop tests of units to be delivered, which show that they meet the specified requirements for head, capacity, efficiency, NPSH required (based on tests similar units), and horsepower. Curves shall be submitted on 8-1/2-in by 11-in sheets. Curves for variable speed pumps shall be provided with at least five frequency curves: 40 Hz, 45 Hz, 50 Hz, 55 Hz and 60 Hz. The curves shall be plotted demonstrating frequency and operating rpm from maximum rpm to minimum rpm for each type of pump with subsequent pumps operating parallel through the minimum and maximum flow requirements.
4. The total weight of the equipment including weight of the single largest item.
5. A complete total bill of materials for all equipment.

6. A list of the manufacturer's recommended spare parts with the manufacturer's current price for each item. Include gaskets, packing, etc, on the list. List the bearings by the bearing manufacturer's numbers only.
7. A statement indicating bearing life.
8. Complete description of surface preparation and shop prime painting.
9. Submittal of motor data for acceptance shall be in accordance with Division 26 and shall include complete nameplate data and test characteristics in accordance with the latest version of NEMA Standard MG1-12. In addition, the following data for the motors shall be provided:

    a. Efficiency at 1/2, 3/4, and full load.
    b. Power factor at 1/2, 3/4, and full load.
    c. Motor outline drawings, dimensions, and weight.
    d. Descriptive bulletins, including full description of insulation system.
    e. Bearing design data and L-10 bearing life.
    f. Special features (i.e., space heaters, temperature detectors, etc.).
    g. Power factor correction capacitor rating and type.
    h. Insulation information.
    i. Locked Rotor Amperes at rated voltage and NEMA starting code letter.
    j. Temperature rise.
    k. Service factor.

B. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Manufacturer's review and approval markings and action taken by Engineer.
3. Include the following information on label for processing and recording action taken:

    a. Project name,
    b. Date,
    c. Name and address of Engineer,
    d. Name and address of Manufacturer,
    e. Name and address of subcontractor,
    f. Unique identifier, including revision number,
    g. Number and title of appropriate Specification Section,
    h. Drawing number and detail references, as appropriate,
    i. Other necessary identification.

C. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than the Manufacturer.

1.5 SUBMITTAL PROCEDURES

A. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows:

1. Initial Review: Allow twenty (20) days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Manufacturer when a submittal being processed must be delayed for coordination.
2. Time for review shall commence on Engineers receipt of submittal.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data is not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operating and maintenance manuals.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
4. Number of Copies: Submit four (4) minimum black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit five (5) prints where prints are required for operation and maintenance manuals. Engineer will retain three (3) prints; remainder will be returned. Mark up and retain one (1) returned print as a Project Record.

2.2 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

B. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

D. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

E. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

F. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

PART 3 - EXECUTION

3.1 MANUFACTURER'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Manufacturer's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Manufacturer's approval stamp and will return them without action.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Engineer will review each submittal and will not return it or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 016000

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions and contract documents.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

D. Pipe for potable water to be transported with exposed ends tarped or otherwise closed to prevent accumulation of airborne contaminates during transport.

1.2 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer’s instructions, with seals and labels intact and legible.

B. Store sensitive products in weather tight, climate-controlled enclosures.

C. For exterior storage of fabricated products, place on sloped supports, above ground.

D. Provide off-site storage and protection when site does not permit on-site storage or protection.

E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.

F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

I. Install 48” tall PVC orange mesh barrier fence around stored materials.

1.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article. Where terms such as “or equal,” Aor equivalent” are used in this Contract, they shall be taken to mean Aor approved equivalent.” Proposed equivalents shall be offered as substitutions.

1.4 SUBSTITUTIONS

A. Engineer will consider requests for substitutions only within 90 days after date established in Notice to Proceed.

1. Substitutions may be considered when a product becomes unavailable through no fault of the Materialman.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request constitutes a representation that the Manufacturer:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

1. Submit copies of Request for Substitution for consideration. Number of copies as specified in Section 013300. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
3. The Engineer will notify Manufacturer in writing of decision to accept or reject request.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Conditions: Engineer will consider Materialman’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect the Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one materialman, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all materialmen involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Engineer will consider Materialman's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 017516

STARTING OF SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Starting Equipment Systems.

B. Demonstration and Instructions.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING EQUIPMENT SYSTEMS

A. Coordinate schedule for start-up of various equipment. System startup will take place by installation Contractor during the construction phase of the Headworks Screen Replacement, Sherwood, Arkansas.

B. Notify Engineer and Owner fifteen (15) working days prior to start-up of each item.

C. Verify that each piece of equipment has been checked for proper lubrication, drive rotation, belt tension, control sequence, or for other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment in operation.

1. Authorized Representative shall be factory trained.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

I. Owner will make available to the manufacturer pressure recording devices and flow meter data from the SCADA system.

J. The manufacturer shall provide a qualified technician to attend start up services with the Engineer and Owner and record pressure and flow meter reading to create an in-service pump performance curve.

3.2 DEMONSTRATION AND INSTRUCTIONS

A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment during equipment start-up services.

C. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

D. As a minimum, provide the amount of time required for instruction on each item of equipment and system that is specified in individual sections.

E. Authorized Representative shall be a full-time employee of the manufacturer or, if acceptable to the Engineer, a third party who is routinely engaged by the Manufacturer to provide start-up services.

END OF SECTION

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Warranties.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
3. Complete startup testing of systems.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify installation Contractor of items, either on installation Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify installation Contractor of construction that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit an electronic copy and three (3) hard copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by installation Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Engineer.
d. Name of Equipment Manufacturer (as applicable).
e. Name of installation Contractor.
f. Page number.

1.6 PROJECT RECORD DOCUMENTS

A. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

B. Record Product Data: Submit an electronic copy and one (1) hard copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Final Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of installation Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.3 SUBMITTALS

A. Initial Submittal: Submit an electronic copy of each manual prior to requesting payment for equipment that requires operation and maintenance manuals.

1. Include a complete operation and maintenance directory.
2. Engineer will return an electronic copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one (1) hard copy of each manual in final form at least 15 days before final inspection. Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Engineer's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Engineer's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.
4. Tabbed Dividers.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of installation Contractor.
6. Name, address, and telephone number of equipment Manufacturer.
7. Name and address of Engineer.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MATERIAL

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Manufacturer is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Wiring diagrams, with Manufacturer applied identification system.
6. Control diagrams, with Manufacturer applied identification system.
7. Piped system diagrams.
8. Precautions against improper use.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Required sequences for electric or electronic systems.
8. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MATERIAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

G. Operation and Maintenance Data

1. Copies of an operating and maintenance manual for the pump shall be furnished to the Engineer. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc, that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

2. Bid prices for equipment shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the Owner's operating personnel in operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the Engineer. A technical representative, from the respective pump manufacturer who has complete knowledge of proper operation and maintenance shall be provided for 1 day to instruct representatives of the Owner and the Engineer on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and test run as provided in Sections 017516 and 333219 as applicable. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

C. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

D. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 466663

ULTRAVIOLET DISINFECTION EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. Furnish all labor, materials, equipment and appurtenances required to provide an open channel, gravity flow, and low pressure high intensity ultraviolet lamp (UV) disinfection system complete with an automatic chemical/mechanical cleaning system and variable output lamp drivers. The UV system shall be complete and operational with all control equipment and accessories as shown and specified herein. This system will be capable of disinfecting effluent to meet the water quality standards listed in this section.
2. The ultraviolet disinfection system will be purchased from Trojan Technologies by the Contractor. The system to be installed by the Contractor and tested and commissioned by Trojan Technologies, as specified in this section. The Owner will consider alternates if all requirements of this specification are met without exception including Pre-qualification Requirements in section 1.2 Quality Assurance.

1.2 QUALITY ASSURANCE

A. Pre-qualification Requirements: Any alternate UV manufacturer that is not named or listed as approved equal must submit the following 15 days prior to bid to be considered for approval:

1. The manufacturer will be regularly engaged in the design, manufacture and servicing of UV systems for municipal wastewater disinfection. Manufacturer to submit evidence of a proven track record with at least five hundred (500) operating UV installations at municipal wastewater treatment plants over a design flow of 10 MGD (1577 m^3/hr).
2. The manufacturer will provide documentation of previous experience with municipal UV disinfection systems in wastewater applications with variable output electronic drivers and automatic cleaning systems.
3. For evaluation, the manufacturer will submit a reactor (bioassay) validation report and calculation justifying the sizing for the proposed reactor, without exception. The bioassay will have been completed by an independent third party and have followed applicable sections and protocols described in the NWRI Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse 2012) and 2006 USEPA Ultraviolet Disinfection Guidance Manual (UVDGM). The bioassay must demonstrate that the proposed UV system design and number of lamps will deliver the specified Reduction Equivalent Dose (RED) based on the water quality and operating conditions specified herein.
4. Independent certification of the lamp aging factor must be submitted if values other than the specified default values are being proposed. The lamp aging (or end-of-lamp-life) factor must be determined using the protocol described in the NWRI Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse (, 2012).
5. Independent certification of the fouling factor shall only be accepted if performed on the UV lamp and quartz sleeve combination equal to that being proposed by the UV manufacturer. The fouling factor must be conducted on municipal wastewater effluent using the protocol described in the NWRI Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse (, 2012).

6. Documentation of UV manufacturer's service capabilities including location and experience.
7. Sample of lifetime disinfection performance guarantee including scope and duration of guarantee.
8. Pre-qualification submittals from manufacturers will include a complete and detailed proposal of equipment offered, including the number of lamps proposed, bioassay calculation and a detailed description of all exceptions taken to the specification.
9. All UV manufacturers will be required to pre-qualify, unless the manufacturer is the base bid manufacturer.

B. Design Criteria:

1. Provide equipment that will disinfect effluent with the following characteristics:

   a. Current Peak Flow: 8 MGD
   b. Total Suspended Solids: 20 mg/L, 30 Day Average grab samples
   c. Effluent Temperature Range: 33 to 85 °F (1 to 30 °C)
   d. Ultraviolet Transmittance @ 253.7 nm: 65%, minimum
   e. Effluent standards to be achieved: 200 Fecal Coliform/100 ml based on a 30 day Geometric Mean of daily samples for the effluent standard as specified in a) through d). Effluent standards will be guaranteed regardless of influent count to UV system.

2. The UV system is to be installed in 1 open channel(s) having the following dimensions (not including the water level controller):

   a. Length: 35.6 ft
   b. Width: 2.9 ft
   c. Depth: 7.8 ft

3. The minimum effluent depth will be 63.5 inches..
4. System configuration:

   a. The UV system must fit within the UV channel(s) as stated without modification.
   b. The UV system configuration will be as follows:

      1) Number of Channels: 1
      2) Number of Banks per Channel: 3 (2 Duty + 1 Redundant)
      3) Lamps per Bank: 10
      4) Total Number of Lamps in the UV System: 30
      5) Number of System Control Centers: 1
      6) Number of UV Sensors: 1 per bank
      7) Number of Power Distribution Centers: 1
      8) Number of Level Controllers: 1

C. Performance Requirements:

1. Provide a UV disinfection system complete with UV Banks and lifting mechanism, System Control Center, Power Distribution Centers, and Water Level Controller(s) as shown on the contract drawings and as herein specified.
2. The ultraviolet disinfection system will produce an effluent conforming to the following discharge permit: 200 Fecal Coliform/100 ml, based on a 30 day Geometric Mean. .Grab samples will be taken in accordance with the Microbiology Sampling Techniques found in *Standard Methods for the Examination of Water and Wastewater, 21st Ed*.

3. The UV system will be designed to deliver a minimum MS2 RED of 30 mJ/cm^2 at peak flow, in effluent with a UV Transmission of 65% at end of lamp life (EOLL) after reductions for quartz sleeve fouling with one (1) bank out of service. The basis for evaluating the RED will be the independent third party bioassay, without exception. Bioassay validation methodology to follow applicable protocols described in NWRI *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse* (2012) and 2006 USEPA UVDGM.
4. The RED will be adjusted using an end of lamp life factor of 0.5 to compensate for lamp output reduction over the time period corresponding to the manufacturer's lamp warranty. The use of a higher lamp aging factor will be considered only upon review and approval of independent third party verified data that has been collected and analysed in accordance with protocols described in the NWRI *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse* (May 2003, 2012).
5. The RED will be adjusted using a quartz sleeve fouling factor of 0.8 to compensate for quartz sleeve transmission reduction due to wastewater effluent fouling. The use of a higher quartz sleeve fouling factor will be considered only upon review and approval of independently verified data that has been collected and analysed in accordance with protocols described in the NWRI *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse* (2012). The data recorded for the determination of the validated fouling factor must be obtained by testing in secondary wastewater effluent utilizing the same lamp, quartz sleeve and cleaning system proposed by the UV manufacturer.
6. Independent validation for use of higher factors (lamp aging and sleeve fouling) must be submitted to the Engineer for consideration a minimum of fifteen (15) days prior to bid. The independent validation shall have oversight by a qualified registered professional engineer with knowledge and experience in testing and evaluation of UV systems as defined in the EPA UVDGM (Appendix C, Section C.3.3)
7. The system will be designed for complete outdoor installation.

1.3 SUBMITTALS

A. Submit for review, shop drawings showing the following:

1. Complete description in sufficient detail to permit an item comparison with the specification.
2. Dimensions and installation requirements.
3. Descriptive information including catalogue cuts and manufacturers' specifications for major components.
4. Electrical schematics and layouts.
5. Hydraulic calculations demonstrating compliance with the required hydraulic characteristics.
6. Independent bioassay validation and dosage calculations demonstrating compliance with the specified RED requirements.
7. Lifetime disinfection performance guarantee provided with no limit on inlet coliform concentration.

1.4 WARRANTEES

A. Equipment:

1. The equipment furnished under this section will be free of defects in material and workmanship, including damages that may be incurred during shipping for a period of 12 months from date of start-up or 18 months after shipment, whichever comes first.

B. UV Lamps:

1. The UV lamps will be warranted for a minimum of 18,000 hours when operated in automatic mode, prorated after 9,000 hours. On/off cycles are limited to an average of twelve (12) per day accumulated over the guaranteed life of the lamp.

C. Lamp Drivers:

1. Lamp drivers will be warranted for 10 years, prorated after 1 year.

D. UV Intensity Sensors:

1. UV Intensity Sensors will be warranted for 5 years, prorated after 1 year.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The physical layout of the system shown on the contract drawings and the equipment specified herein are based on the TrojanUVSigna™, as manufactured by Trojan Technologies, London, Ontario, Canada.

B. If other equipment is proposed, the Contractor will demonstrate to the Engineer and the Owner that all requirements of materials, performance, and workmanship have been met or exceeded by the equipment proposed. Contractors proposing alternate manufacturers will be responsible for all costs associated with system evaluation and redesign including all electrical, mechanical and civil aspects of the installation.

2.2 DESIGN, CONSTRUCTION AND MATERIALS

Equipment Tag	Name	Existing/Proposed
UV-SCC-1	System Control Center	Proposed
UV-HSC-1	Hydraulic System Center	Proposed
UV-PDC-1	Power Distribution Center	Proposed
LLS-1	Low Level Sensor	Proposed
UIS-1	UV Intensity Sensor	Proposed
UIS-2	UV Intensity Sensor	Proposed
UV-OIT-1	Operation Interface Terminal	Proposed

A. General:

1. All UV Bank metal components in contact with effluent will be Type 316 stainless steel.
2. All wiring exposed to UV light will be Teflon™ coated.

B. Lamp Array Configuration:

1. The lamp array configuration will be in a staggered inclined arrangement.
2. The system will be designed for complete submersion of the UV lamps under all flow conditions including both electrodes and the full length of the lamp arc.
3. To maximize performance and ensure safety, bank light locks will be used in each bank to prevent potential short circuiting over the top of the lamps.
4. For any UV inclined system that does not contain UV bank light locks to prevent short circuiting, the system shall be supplied with 1 additional UV bank to compensate for short-circuiting over the top of the lamps.

C. UV Bank:

1. Each UV bank will consist of UV lamps, quartz sleeves and an automatic chemical/mechanical cleaning system mounted in a Type 316 stainless steel frame.
2. Each lamp will be enclosed in its individual quartz sleeve, one end of which will be closed and the other end sealed by a lamp end seal. To be considered as an alternate, lamp quartz sleeves that are open at both ends will be supplied with twice the amount of specified spare seals and lamps.
3. The closed end of the quartz sleeve will be held in place by a retaining O-ring. The quartz sleeve will not come in contact with any steel in the frame.
4. Each UV bank will contain a pre-formed Type 316 stainless steel wall on each side to prevent possible short-circuiting at the side walls of the reactor.
5. Each UV bank will contain light locks at the top of the bank to prevent short circuiting over the top of the lamps and maximize disinfection efficiency.
6. Each UV bank will be rated Type 6P. UV banks that are not Type 6P rated are not acceptable.
7. To minimize maintenance, equipment must be provided by the UV manufacturer to enable lifting a complete bank of lamps from the channel at once for inspection and/or servicing.

D. UV Lamps:

1. Lamps will be high intensity low pressure amalgam design. Lamps that are not amalgam will not be allowed.
2. The filament shall be significantly rugged to withstand shock and vibration.
3. Electrical connections for the lamp will consist of four (4) pins at one end of the lamp only. Lamp wiring shall be Teflon insulated stranded wire.
4. Lamps without maintenance coating or that do not have four (4) pins are considered instant-start and are not acceptable due to reduced reliability and increased maintenance and operating costs.
5. Lamps will be rated to produce zero levels of ozone.
6. The lamp shall withstand an average of four (4) on/off cycles per day without reducing lamp life, warranty or causing any damage to the lamp.
7. Lamps will be operated by electronic lamp drivers with variable output capabilities ranging from 30% to 100% of nominal power. The lamp assembly shall incorporate active filament heating to maintain a minimum lamp efficiency of 35% across varying water temperatures and between the minimum and maximum stated lamp power levels.

E. Lamp Plugs:

1. Each lamp plug will be accessible from the top of the UV bank to facilitate lamp removal without moving the UV banks or any other components.
2. Each lamp plug shall have provisions for a light emitting diode (LED) visual indicator that indicates on/off status for each lamp.
3. An integral safety interlock in the lamp plug will prevent removal of energized lamps.
4. The lamp plug shall be rated Type 6P.

F. Lamp Drivers:

1. Each lamp driver will independently power two (2) UV lamps. Failure of one lamp will not affect operation of the other lamp.
2. The lamp driver will have a power factor correction circuit to ensure minimum 99% power factor and less than 5% total harmonic distortion (THD) current at the maximum power level and nominal input voltage.
3. The lamp driver electrical efficiency will be minimum 95% at the maximum power level.

4. The lamp driver will be programmed-start type utilizing filament preheat followed by a high voltage pulse to ignite the lamp.
5. During lamp operation, variable filament heating current shall be provided according to a predetermined curve to maintain optimum filament temperature and amalgam temperature to ensure maximum lamp life and maintain a minimum lamp efficiency of 35% across varying water temperatures and between the minimum and maximum stated lamp power levels.
6. A ground fault in the output circuit shall be detected and communicated as a warning to the external controls system while the corresponding lamp operates undisturbed.
7. The communication protocol shall be Modbus implemented on an RS485 electrical interface.
8. Local visual diagnostic will be provided with LEDs for lamp driver status, lamp status (on, idle, preheat, fault), power and communication status.
9. For reliability and to facilitate trouble shooting, at a minimum, the following external indicators (protections, status, warnings and alarms) shall be provided: lamp status, driver status, ground fault, and communication time-out.
10. The lamp driver shall be UL, CE, and RoHS compliant.

G. Quartz Sleeves:

1. Quartz sleeves will be clear fused quartz circular tubing containing 99.9% silicon dioxide.
2. Sleeves will have minimum UV transmittance at 254nm of 87% (2.5mm wall thickness).
3. Sleeves will be open at one end only and domed at the other end.

H. Cleaning System:

1. An automatic in-situ cleaning system will be provided to clean the quartz sleeves using both chemical and mechanical methods. Wiping sequence will be automatically initiated with capability for manual override.
2. The cleaning system shall also incorporate an integrated debris removal device to clear the quartz sleeves of any large solids or debris to maximize the life of the chemical/mechanical cleaning system.
3. The wiper on the cleaning system shall be parked out of the effluent when not in use.
4. Cleaning systems that utilize a screw drive, or park the wiper in the effluent while not in use shall not be acceptable due to collection of debris in and around the wetted parts of the wiper.
5. The cleaning system will be fully operational while UV lamps and modules are submerged in the effluent channel and energized.
6. To minimize maintenance, UV System will be designed such that cleaning solution replacement can be performed while the UV Bank and lamps are in place and operational in the channel.
7. Cleaning sequence frequency will be field adjustable to enable optimization with effluent characteristics.
8. Cleaning system operation will be remote auto (default) or remote manual.
9. The cleaning system will be provided with the required solutions necessary for initial equipment testing and for equipment start-up.
10. 10.The wipers shall travel the full length of the UV lamp arc. Designs in which the wipers only travel part way along the sleeves will not be acceptable.
11. 11.The UV intensity sensor shall be cleaned utilizing the same chemical/mechanical cleaning method as that of the lamp quartz sleeves. UV intensity sensors that only utilize a mechanical means shall not be acceptable.

12. To be considered as alternate, systems that use only mechanical wiping must have the ability to periodically be cleaned out of channel using a chemical bath. Out of channel cleaning will include lifting slings, removable banks, cleaning tanks, agitation system and air compressors, as required. The UV manufacturer will be responsible for supplying all equipment including any equipment not specifically listed required to perform out of channel chemical cleaning. Contactor will be responsible for installation.

I. I. Serpentine Weir

1. 1. General Design

a. a. Configuration: A weir arranged in a serpentine pattern to create a controlled non- turbulent flow
b. b. Material: 304

J. Light Locks

1. Light locks, two (2) per bank, will be provided to force effluent through the UV treatment zone maximizing disinfection performance.
2. The entire length of the lamp arc will remain submerged to maximize UV dose delivered to the effluent and to prevent any UV exposure above the water free surface.

K. Electrical:

1. All applicable electrical components will be UL-listed to ensure safety standards are met.
2. Each UV lamp within a bank will be powered from a Power Distribution Center.
3. UV Manufacturer to supply all cabling between lamps and drivers.
4. Each electronic lamp driver will power two lamps.
5. Power factor will not be less than 99% leading or lagging.
6. Electrical supply to each Power Distribution Center will be 480/277V 60Hz, 3 Phase, 4 Wire + Ground, 32.5 kVA.
7. Electrical supply to the Hydraulic System Center will be 480V 60Hz, 3 Phase, 3 Wire + Ground, 2.5 kVA
8. Electrical supply to the low water level sensor box will be from 120V, 1 Phase, 2 Wire + GND.
9. Electrical supply to the System Control Center will be 120V 60Hz, 1 Phase, 2 Wire + Ground, 1.8 kVA

L. Power Distribution Center (PDC):

1. The configuration of Power Distribution Centers shall be 30 lamps per PDC.
2. PDC enclosure material will be 304 Stainless Steel – Type 12X (IP66).
3. All internal components will be sealed from the environment.
4. All Power Distribution Centers to be UL approved or equivalent.
5. An internal heater will be provided in the PDC to prevent condensation when the external temperature drops below the dew point.
6. Each PDC shall be able to electrically isolate each bank of lamp drivers and safely replace a lamp driver without de-energizing any other operating banks.

M. Hydraulic System Center:

1. The Hydraulic System Center (HSC) houses the components required to operate the automatic cleaning system and bank Automatic Raising Mechanism (ARM).
2. HSC enclosure material will be 304 Stainless Steel (Type 4X, IP 66) (Type 4X).

3. The HSC will contain hydraulic power unit complete with pump, fluid reservoir, manifolds, valves and filter.

N. Control and Instrumentation:

1. System Control Center (SCC):

a. The monitoring, operation and control of the TrojanUVSigna is managed at the System Control Center (SCC) by a CompactLogix with a SCC HMI Beijer -12" (Outdoor 4X Rated) HMI screen.
b. If the SCC is installed outdoors, the operator interface shall be positioned out of or away from direct sunlight and shall include a sunshade. The operator interface screen will be designed for a rugged outdoor environment capable of operating at ambient temperatures between -30 Deg C and +70 Deg C with a high brightness display (minimum 1000 Nit). HMI screen shall be certified for outdoor use (UL50E Type 4X Outdoor)
c. Alarms will be provided to indicate to plant operators that maintenance attention is required or to indicate an extreme alarm condition in which the disinfection performance may be jeopardized. The alarms will include, but not be limited to:

1) Individual Lamp Failure
2) Multiple Lamp Failure
3) Low UV Intensity
4) Bank Communication Alarm

d. The 100 most recent alarms will be recorded in an alarm history register and will be displayed when prompted.
e. Mode of operation for UV Banks can be manual, automatic or remote.
f. Elapsed time of each bank will be recorded and displayed on the display screen when prompted.

2. Low Water Level Sensor:

a. The UV Manufacturer will provide one (1) low water level sensor for each UV channel.
b. During all modes of system operation (manual, automatic and remote), the water level sensor will ensure that lamps extinguish automatically if the water level in the channel drops below an acceptable level.

3. UV Intensity Sensors:

a. A UV sensor will continuously monitor the UV intensity produced within each UV Bank.
b. The sensors will measure only the germicidal portion of light emitted by the lamps.
c. The UV sensor shall be factory-calibrated to US National Institute for Standards and Technology (NIST). Sensors requiring field-calibration are not acceptable.
d. The sensor shall be digitally calibrated to ensure calibration accuracy.
e. To ensure continuous disinfection, the sensor shall be accessible without shutting down the system, lifting a bank/module or removing lamps.
f. Sensors will be designed to provide UV intensity data for dose monitoring and control functions. Dose pacing program will enable use of measured UV intensity along with flow rate and UVT to determine the delivered dose during operation.

g. Sensors will be designed such that reference sensor readings can be taken without interrupting disinfection and without removing UV lamps, banks/modules or sleeves.

4. Dose-Pacing:

a. A dose-pacing system will be supplied to modulate the lamp UV output in relationship to a 4-20 mA DC signal from an effluent flow meter (supplied and installed by Others) and UV intensity sensor(s).
b. The system to be dose-paced such that as the flow and effluent quality change, the design UV dose is delivered while conserving power.
c. The dose-pacing system will allow the operator to vary the design dose setting. Logic and time delays will be provided to regulate UV Bank ON/OFF cycling.

5. UV Bank Lifting Device:

a. The lifting device for UV Banks will be supplied by the UV Manufacturer.
b. An Automatic Raising Mechanism (ARM) will be designed and supplied to facilitate lifting a UV bank from the channel without use of ancillary equipment.
c. The ARM will be integrated into the UV Bank for simple and seamless operation.
d. The UV Bank will be raised from the channel for easier access and maintenance.
e. The ARM design will provide access to components without having to break electrical connections thus reducing wear on connectors.

O. Spare Parts:

1. The following spare parts and safety equipment will be supplied.

a. 10% UV Lamps
b. 10% Quartz Sleeves
c. 5% Lamp Drivers
d. Lamp Wiper Seals equivalent to 1 Bank
e. 1 Operators Kit that includes UV-resistant face shield, gloves and cleaning solution.

1) To be considered as an alternate, systems that require more lamps than specified, the UV manufacturer will provide spares in the amount equal to the quantities listed plus an additional quantity equal to the percentage of lamps required over and above the number of lamps specified.

P. Digital Support System:

1. A digital support system will provide UV Manufacturer's Technical Assistance Center with instant access to the UV system to quickly diagnose and resolve UV System Issues.

2. The digital support system shall be a free service to streamline technical support requests.

3. The digital support system will utilize a secure and ecrypted connection, external to the SCADA network, and configured in the UV System Control Center. Actual data connection (cellular, or ethernet) should be provided by others.

2.3 Process Description

A. Flow will enter the UV Dissinfection Structure from the Clarifier Eflfuent boxes. Each clarifier has a 24” Effleunt Line that connects to the UV Structure. Each line can be isolated by closing the influent gates (100CG101, and 100CG102) in the UV Structure. The flow will enter the structure go thought the UV Bulbs and to the effluent box.

B. Automatic Mode

1. There is no automatic control of the UV Dissinfection Equipment. Manual operations of the equipment will be performed locally.

PART 3 - EXECUTION

3.1 INSTALLATION (INCLUDED BY SEPARTATE CONTRACT)

A. In accordance with contract drawings, manufacturers' shop drawings, instructions and installation checklist. Contractor Installation Checklist to be completed and returned at least two (2) weeks prior to date requested for commissioning. Photographs illustrating site readiness are required. The Contractor assumes all responsibility for the installation readiness of the UV system.

B. All labor, materials and test apparatus necessary for completing the installation shall be furnished by the Contractor at no additional cost to the Manufacturer.

3.2 MANUFACTURER'S SERVICES

A. Installation assistance only provided if in scope.

B. Start-up and field testing: As outlined in the project scope document,

1. Start-up and Field Services will only be scheduled upon written request. Contractor shall notify Trojan of schedule requirements at least ten (10) working days in advance. Upon arrival to commission the equipment, if the Trojan’s Certified Service Technician determines the Contractor work is not complete and the start-up cannot be completed in the allotted time. A return visit will be scheduled at the Contractors expense. Contractor will issue a change order or purchase order for the return trip and additional time required.

C. Operator Training: As outlined in the project scope document.

1. Contractor responsible to schedule the training during the commissioning time allocated. If trainees are not available a return visit will be scheduled at the Contractors expense.

D. Warranty Service: As outlined in the warranty agreement.

END OF SECTION

APPENDIX A

SUPPLEMENTAL DRAWINGS

Wynne Emergency Response Project C – Wastewater Treatment Plant Improvements

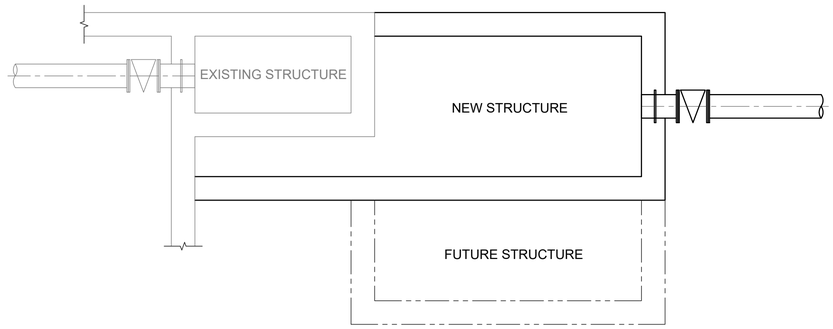
UV Channel Drawings

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GENERAL EXISTING, NEW AND FUTURE LEGEND

SYMBOL	DESCRIPTION
	EXISTING PIPE, STRUCTURE, PAVEMENT, OR OTHER ITEMS TO BE DEMOLISHED.
	EXISTING PIPE, STRUCTURE, OR OTHER ITEMS TO BE ABANDONED.
	EXISTING
	NEW
	FUTURE
N	NORTH ARROW

EXISTING, NEW, AND FUTURE LINE WEIGHT REPRESENTATION



SHEET IDENTIFICATION SYSTEM

10 - H - 101
- 10 — DENOTES PROCESS STRUCTURE (AS REQUIRED)
- 101 — SEQUENTIAL SHEET NUMBER
- H — DISCIPLINE DESIGNATORS

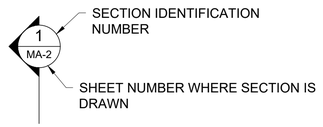
G - GENERAL	A - ARCHITECTURAL
C - CIVIL	S - STRUCTURAL
X - DEMOLITION	M - PROCESS MECHANICAL
I - INSTRUMENTATION & CONTROL	H - MECHANICAL
	P - PLUMBING
F - FIRE & LIFE SAFETY	E - ELECTRICAL
B - GEOTECHNICAL	Y - PHOTOS
L - LANDSCAPE	T - TELECOMMUNICATIONS

SHEET NUMBER LEGEND

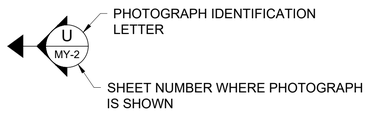
CIVIL DISCIPLINE	ALL OTHER DISCIPLINES
100 - SITE PLANS	100 - PLAN VIEWS
200 - GRADING & PAVING	200 - ELEVATIONS
300 - PIPING & PROFILES	300 - SECTIONS

ALL DISCIPLINES
- 400 - LARGE SCALE VIEWS
- 500 - DETAILS
- 600 - DIAGRAM OR SCHED.
- 900 - ISOMETRICS

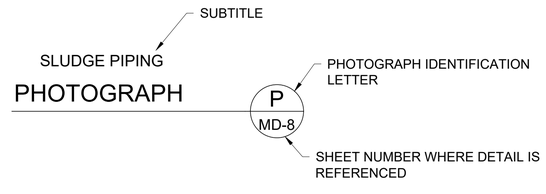
SECTION AND DETAIL DESIGNATION



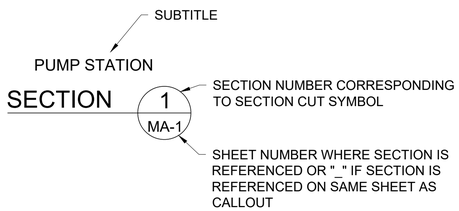
SECTION CUT SYMBOL



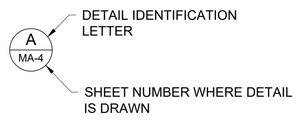
PHOTOGRAPH CALL-OUT SYMBOL



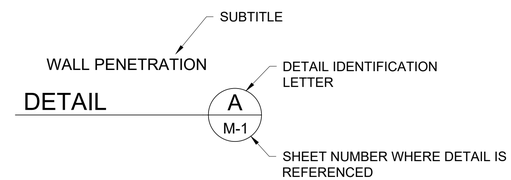
TITLE FOR PHOTOGRAPHS



TITLE FOR SECTION



DETAIL CALLOUT SYMBOL



TITLE FOR DETAILS

STANDARD ABBREVIATIONS

AC	AIR COMPRESSOR
AV	ANGLE VALVE
AVRV	AIR/VACUUM RELEASE VALVE
BLW	BLOWER
BA	BALL VALVE
BCK	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BPRV	BACK PRESSURE REGULATING VALVE
CDH	CONDENSATE HEATER
CK	CHECK VALVE
CG	CONTROL GATE
CO	CLEANOUT
COM	COMPRESSOR
CP	CONTROL PANEL
CRA	CHLORINE RESIDUAL ANALYZER
CS	CAPACITANCE SWITCH
DAP	DAMPER
DF	DIFFUSER
DO	DISSOLVED OXYGEN PROBE
DP	DRAIN PUMP
EF	EXHAUST FAN
EMO	ELECTRIC MOTOR OPERATOR
FAN	FAN
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN
FE	FLOW ELEMENT
FH	FIRE HYDRANT
FI	FLOW INSTRUMENT
FIL	FILTER
FIT	FLOW INDICATING TRANSMITTER
FS	FLOAT SWITCH
GL	GLOBE VALVE
GV	GATE VALVE
HS	HOSE STATION
HSC	HYDRAULIC SYSTEM CENTER
HST	HOIST
HTR	HEATER
HWT	HOT WATER TANK
KG	KNIFE GATE VALVE
JB	JUNCTION BOX
LCP	LEVEL CONTROL PANEL
LLS	LOW LEVEL SENSOR
LE	LEVEL ELEMENT
LIT	LEVEL INSTRUMENT TRANSMITTER
LCV	LEVEL CONTROL VALVE
LOU	LOUVER
LS	LEVEL SWITCH
LSM	LEAK SENSOR MONITOR
MFM	MAGNETIC FLOW METER
MH	MANHOLE
MIX	MIXER
MST	MOISTURE SENSOR TRANSMITTER
MP	METERING PUMP
MV	MUDVALVE
OIT	OPERATOR INTERFACE TERMINAL
PCV	PRESSURE CONTROL VALVE
PDC	POWER DISTRIBUTION CENTER
PG	PRESSURE GAUGE
PDI	PRESSURE DIFFERENTIAL INDICATOR
PIS	PRESSURE INDICATING SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PIN	PINCH VALVE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMP	PUMP
PNL	PANEL
PRS	PROXIMITY SENSOR
PRV	PRESSURE RELIEF VALVE
PS	PRESSURE SWITCH
PV	PLUG VALVE
PWSPT	PLANT WATER SYSTEM PRESSURE TANK
PWSP	PLANT WATER SYSTEM PUMP
REA	RESIDUAL ANALYZER
RIO	REMOTE I/O
SAM	SAMPLER
SC	SIGNAL CONVERTER
SG	SLUICE GATE
SOL	SOLENOID VALVE
SP	SUMP PUMP
SPIT	SUBMERSIBLE PRESSURE INDICATION TRANSMITTER
SRV	SURGE VALVE
SSCP	SECONDARY SCUM PUMP
STR	STRAINER
TLV	TELESCOPING VALVE
TNK	TANK
UFM	ULTRASONIC FLOW METER
UH	UNIT HEATER
UIS	UV INTENSITY SENSOR
W	WEIR
WS	WATER SURFACE

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/11/25

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE (0 — 1" — 1" = 1")

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CHECKED:	CAJ
DATE:	FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

GENERAL LEGEND

JOB NO. 23016

SHEET NO. 00-G-03

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COORDINATE TABLE ABBREVIATION

ABBREVIATION	DEFINITION
ABAN	ABANDONED
AC	ASPHALTIC CONCRETE OR ASPHALT
AI	AREA INLET
ALT	ALTERNATE
APPROX	APPROXIMATE
AR	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AV	AIR VACUUM RELIEF
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGINNING OF CURVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BLVD	BOULEVARD
BM	BENCHMARK
BOC	BACK OF CURB
BO	BLOW OFF
C	CIVIL
,	CENTERLINE
OSHA	OCCUPATIONAL SAFETY & HEALTH ASSOC.
CB	CATCH BASIN
CL	CLASS
COMB	COMBINATION
CONC	CONCRETE
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
CP	CONTROL POINT
CPLG	COUPLING
D, DIA	DIAMETER
DET	DETAIL
DIP	DUCTILE IRON PIPE
DNSTM	DOWNSTREAM
DWG	DRAWING
E	EAST, EASTERLY, EASTING
EA	EACH
EF	EACH FACE
EG	EXISTING GRADE
ELEC	ELECTRIC, ELECTRICAL
EL, ELEV	ELEVATION
EOC	EDGE OF CONCRETE
EOG	EDGE OF GRAVEL
EOP, EP	EDGE OF PAVEMENT
EXIST	EXISTING
EW	EACH WAY
FC	FENCE CORNER
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FLEX	FLEXIBLE
FLG	FLANGE
FS	FINISHED SURFACE
FT	FEET, FOOT
G	GAS
GA	GAUGE
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HGL	HYDRAULIC GRADE LINE
H	HORIZONTAL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INT	INTERSECTION
INV	INVERT
JB	JUNCTION BOX
L	LENGTH/LEFT
LB	POUND
LF	LINEAR FEET
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH, NORTHERLY, NORTHING
NAD83	NORTH AMERICAN DATUM 1983
NAVD29	NORTH AMERICAN VERTICAL DATUM 1929
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
O/C	ON CENTER
OFF	OFFSET
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	POLYETHYLENE
PH	POT HOLE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
R/RT	RIGHT
R&R	REMOVE AND RECONSTRUCT
REF	REFERENCE
REQ'D	REQUIRED
REST'D	RESTRAINED
RJ	RESTRAINED JOINT
RO	ROTATED
S	SLOPE OR SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SPPWG	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SQ	SQUARE
SS	STAINLESS STEEL, SANITARY SEWER
ST	STREET
STD	STANDARD
STA	STATION
STL	STEEL
T&B	TOP AND BOTTOM
TEL	TELEPHONE
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TYP	TYPICAL
UNK	UNKNOWN
UPSTM	UPSTREAM
US/USA	UNITED STATES / UNITED STATES OF AMERICA, UNDERGROUND SERVICE ALERT
USC&GS	UNITED STATES COAST & GEODETIC SURVEY
UTIL	UTILITY
V	VERTICAL
W	WATER / WEST / WIDE
W/	WITH
WATCH	WORK AREA TRAFFIC CONTROL HANDBOOK
WM	WATER MAIN / WATER METER
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTR	WATER
WV	WATER VALVE
	DIAMETER
@	AT
Δ	DELTA

BOUNDARY AND MARKER SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
x x	x x	WIRE FENCE
		WOOD FENCE
		CHAIN LINK FENCE
		GUARD RAIL
		STONE WALL
		STONE RETAINING WALL
		PROPERTY LINE
		EASEMENT LINE
		RIGHT OF WAY (ROW)
IP	IP	IRON PIPE BOUNDARY MARKER
IR	IR	IRON ROD BOUNDARY MARKER
MON	MON	CONCRETE MONUMENT BOUNDARY MARKER
SB	SB	STONE MONUMENT BOUNDARY MARKER
		PRODUCTION WELL
		MONITORING WELL
		TURNING POINT
		TRIANGULATION POINT
B-7	B-7	BORING
S-1	S-1	SOUNDING
		BENCHMARK

UNDERGROUND/OVERHEAD UTILITY SYMBOLS

SYMBOL EXISTING	SYMBOL NEW	FEATURE
12" SS	12" SS	SANITARY SEWER AND MANHOLE
12" SD CB	12" SD CB	STORM DRAIN, MANHOLE AND CATCH BASIN
JB	JB	JUNCTION BOX
DI	DI	DRAIN INLET
GI	GI	GRATE INLET
		FIRE LINE W/FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)
FM FM FM	FM FM FM	FORCE MAIN
20" RAS - DI	20" RAS - DI	PROCESS PIPELINE CALLOUT
		PIPE MATERIAL (OPTIONAL) ABBREVIATED PROCESS LINE DESC. PIPE DIAMETER
UE UE UE	UE UE UE	UNDERGROUND ELECTRICAL CABLE/DUCT
E E E	E E E	OVERHEAD ELECTRIC
UT UT UT	UT UT UT	UNDERGROUND TELEPHONE
T T T	T T T	OVERHEAD TELEPHONE
S	S	SIGNAL LINE
UC UC	UC UC	UNDERGROUND CATV
TV TV TV	TV TV TV	OVERHEAD CATV
YH	YH	LIGHT POLE
LP	LP	LIGHT POLE
PP	PP	POWER POLE
GW	GW	GUY WIRE
TP	TM	TELEPHONE RISER
GR	GR	GAS REGULATOR
M	M	WATER METER
WMB	WMB	WATER METER BOX
G	GM	GAS METER
EV	EV	ELECTRIC VAULT
		HOSE BIBB (SINGLE OUTLET)

NOTE:
1. ELEVATIONS MAY BE SHOWN AS REQUIRED.

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
B & M C & O	B & M C & O	RAILROAD TRACKS
		DOUBLE TRACK RAILROAD
		UNIMPROVED DIRT ROAD OR GRAVELED ROADWAY
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY, SIZE & TYPE
24' ASPH PAVT.	24' ASPH PAVT.	PAVED ROADWAY W/ CURB, SIZE AND TYPE
		TUNNEL
		BRIDGE

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
		BOX CULVERT
2-36" RCP	2-36" RCP	CULVERT, PIPE SIZE AND TYPE
		SIGNS
		CONCRETE
		GRAVEL PAVEMENT
		ASPHALT PAVEMENT

SURFACE ELEVATION SYMBOLS

SYMBOL EXISTING	SYMBOL MODIFIED	FEATURE
84	84	DEPRESSION CONTOUR
84	84	INTERMEDIATE CONTOUR LINE AND ELEVATION DESIGNATION
85	85	INDEX CONTOUR LINE AND ELEVATION DESIGNATION
365.7	365.7	SPOT ELEVATION
		EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10040 — CRAIG A. ATKINSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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DATE: FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

CIVIL LEGEND & ABBREVIATIONS

JOB NO. 23016

SHEET NO. 00-G-04

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PIPING SYMBOLS

DOUBLE LINE SYMBOL	SINGLE LINE SYMBOL	FEATURE
		WELDED JOINT
SEE NOTE 2		FLANGED JOINT SIMPLIFIED REPRESENTATION.
		FLANGED JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT SIMPLIFIED REPRESENTATION.
		MECHANICAL JOINT COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED SIMPLIFIED REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT UN-RESTRAINED COMPLEX REPRESENTATION.
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT RESTRAINED, SIMPLIFIED REPRESENTATION
		BALL JOINT
		DIRECTION OF FLOW
		PLAIN END X PLAIN END PIPE COUPLING
		PLAIN END X PLAIN END PIPE COUPLING RESTRAINED
		FLANGED X PLAIN END PIPE COUPLING
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
(F) Or (R)		COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID
		FLANGE GUARD
		FLANGE FILLER
		UNION
		QUICK CONNECT COUPLING
		HOSE COUPLING

LINE VALVE STATUS

- NORMALLY OPEN (ALL VALVES EXCEPT BUTTERFLY)
- NORMALLY CLOSED (ALL VALVES EXCEPT BUTTERFLY)
- BUTTERFLY VALVE NO - NORMALLY OPEN (SHOWN) NC - NORMALLY CLOSED

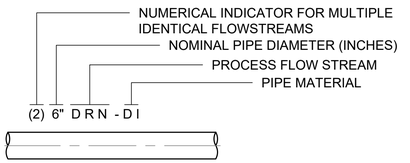
VALVE & FITTING SYMBOLS

SYMBOL	FEATURE
	DIAGHRAM VALVE
	UNCLASSIFIED. TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL
C	VALVE WITH HOSE END
	GATE VALVE
	3 WAY GATE VALVE
K	KNIFE GATE VALVE
	NEEDLE VALVE
	GLOBE VALVE
	BALL VALVE
	PINCH VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	3-WAY PLUG VALVE
	CHECK VALVE, GENERAL SYMBOL
	BALL CHECK VALVE
	DOUBLE DOOR CHECK VALVE
	ANGLE VALVE
S	SOLENOID VALVE
	ANTI-SIPHON VALVE
	BACK PRESSURE VALVE
	PRESSURE RELIEF VALVE
	REGULATING VALVE
	MUD VALVE
FD	FLOOR DRAIN
	OPEN EQUIPMENT DRAIN
ESEW	EMERGENCY SHOWER/EYEWASH
	ECCENTRIC REDUCER OR REDUCING BUSHING
	CONCENTRIC REDUCER OR REDUCING BUSHING
	Y-STRAINER
	CALIBRATION CYLINDER
ARV	COMBINATION AIR / VACUUM VALVE
M	MOTOR OPERATOR
M	MOTOR OPERATOR (W/ VFD)
E	ELECTRIC OPERATOR
	ROTAMETER
	FLEXIBLE HOSE
	PRESSURE GAUGE WITH TRANSMITTING SWITCH

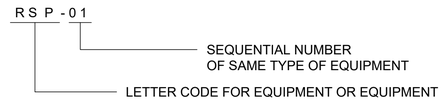
PIPE AND FITTING SYMBOL NOTES

1. SIMPLIFIED JOINT SYMBOL IS USED FOR ALL SINGE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
2. BOTH SIMPLIFIED AND COMPLEX JOINT REPRESENTATIONS MAY BE SHOWN ON THE DRAWINGS.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS.

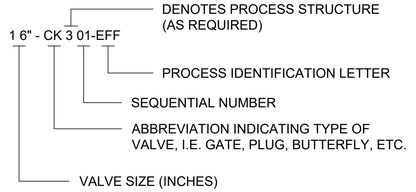
PIPE IDENTIFICATION SYSTEM



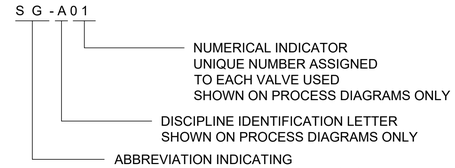
EQUIPMENT OR PROCESS IDENTIFICATION SYSTEM



VALVE TAG



GATE IDENTIFICATION SYSTEM



NOTE:
REFER TO GATE SCHEDULE IN SPECIFICATIONS FOR GATE SIZE (WIDTH & HEIGHT)

GENERAL NOTES

1. ALL VALVES 4" AND LARGER SHALL RECEIVE A TAG NUMBER. ALL OTHER SMALLER VALVES WILL BE IDENTIFIED BY THEIR SIZE AND DESIGNATION (ABBREVIATION) ONLY.
2. EQUIPMENT SHOWN ON THE PLANS SHALL BE GIVEN TAG NUMBERS AS SHOWN ON PROCESS DRAWINGS, UNLESS NOTED OTHERWISE.

PIPE MATERIAL

ABC ALU	ASBESTOS CEMENT ALUMINUM
B	BRASS
CI CPVC	CAST IRON CHLORINATED POLYVINYL CHLORIDE
CSP CU	CORRUGATED STEEL PIPE COPPER
DIP DIGL	DUCTILE IRON DUCTILE IRON - GLASS LINED
FRP	FIBER REINFORCED PLASTIC
GS	GALVANIZED CARBON STEEL
HDP	HIGH DENSITY POLYETHYLENE
MHS	METAL HOSE
PP PPE PVC PVDF	POLYPROPYLENE POLISHING POND EFFLUENT POLYVINYL CHLORIDE POLYVINYLIDENE FLUORIDE
RC RCC	REINFORCED CONCRETE REINFORCED CONCRETE CYLINDER
RH	RUBBER HOSE
STL SS	STEEL STAINLESS STEEL
TUB	TUBING
VC	VITRIFIED CLAY
PE	POLYETHYLENE

PROCESS FLOW STREAM

ADF	AVERAGE DAILY FLOW
BW	BACKWASH
DRN/DN DEC	DRAIN DECANT
EFF	EFFLUENT
FM	FORCE MAIN (SEWER)
GRT	GRIT
INF	INFLUENT
MDF MLSS	MAXIMUM DAILY FLOW MIXED LIQUOR SUSPENDED SOLIDS
NaHSO3	SODIUM BISULFITE
PAA PW	PERACETIC ACID POTABLE WATER
RS RAS RSL	RAW SEWAGE RETURN ACTIVATED SLUDGE RAW SLUDGE
SBS SCS SD SMP SS	SODIUM BISULFITE SOLUTION SCREENINGS SOLIDS STORM DRAIN SAMPLE POINT SANITARY SEWER
TW TWAS	TEPID WATER THICKENED WASTE ACTIVATED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE

GATE SYMBOLS

PLAN	FEATURE
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)
	STOP PLATE (SP)
	SHEAR GATE (SHG)
	FLAP GATE
	BYPASS GATE (BG)

SECTION (OPERATOR ONLY)	
	SLUICE GATE (SG)
	WEIR SLIDE GATE (WSLG)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MLU
DRAFTED:	MAB
CHECKED:	CAJ
DATE:	FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PIPING & PROCESS LEGEND AND ABBREVIATIONS

JOB NO. 23016

SHEET NO. 00-G-05

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PLANT INFORMATION & DESIGN PARAMETERS

PARAMETER	VALUE	UNIT
AVERAGE DAY FLOW RATE	1.65	MGD
DAILY MAXIMUM MONTHLY FLOW RATE	2.76	MGD
7 DAY AVERAGE FLOW RATE	2.76	MGD
PEAK HOURLY FLOW RATE	8	MGD
AVERAGE DAY CBOD CONCENTRATION	200	MG/L
AVERAGE DAY TSS CONCENTRATION	200	MG/L
AVERAGE DAY TKN CONCENTRATION	35.6	MG/L
AVERAGE DAY NH3-N	24.9	MG/L
AVERAGE DAY T-P CONCENTRATION	5.5	MG/L
AVERAGE DAY CBOD LOAD	4603.7	LB/DAY
AVERAGE DAY TSS LOAD	4603.7	MG/L
AVERAGE DAY NH3-N LOAD	573.2	LB/DAY
TOTAL ALKALINITY	225	MG/L
pH	6.57	-
MAX. 7 DAY AVERAGE TEMPERATURE	28	°C
AVERAGE DAY TEMPERATURE	20	°C
MIN. 7 DAY AVERAGE TEMPERATURE	12.5	°C

MECHANICAL BAR SCREENS

QUANTITY:	TWO (2)
NAME:	10-SCR-01, 10-SCR-02
TYPE:	MECHANICAL

PARAMETER	VALUE	UNIT
CAPACITY, (EA.)	8	MGD
TOTAL RATED CAPACITY	16	MGD
BAR SPACING	0.25	IN
ANGLE	10	DEGREES
DUAL CHANNELS	YES	-
CHANNEL DEPTH	16.33	FT
CHANNEL WIDTH	2.5	FT
VELOCITY AT AVERAGE DAY FLOW RATE	>1.25	MGD
VELOCITY AT RATED FLOW	<3	MGD
DESIGN BLINDING FACTOR	25	%
POWER	1.5	HP
TOTAL POWER	3	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V
WASHER COMPACTOR		
QUANTITY	2	
POWER	1	HP
TOTAL POWER	2	HP

PRIMARY SCREW PUMPS

QUANTITY:	TWO (2)
NAME:	20-SCR-01, 20-SCR-02
TYPE:	SCREW

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	2800	GPM
VFD	YES	-
FLOW MEASUREMENT	NO	-
POWER	25	HP
TOTAL POWER	50	HP
PHASE	3	-
VOLTAGE	460	V

GENERATOR

QUANTITY:	ONE (1)
NAME:	GENERATOR
TYPE:	SELF ENCLOSED, DIESEL ENGINE

PARAMETER	VALUE	UNIT
SIZE	1,250	KW
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	180	V
ATS RATING		AMPS

OXIDATION DITCH - (AERATION BASIN)

QUANTITY:	FOUR (4)
NAME:	50AER101, 50AER102, 50AER201, 50AER202
TYPE:	MIXER / AERATOR

PARAMETER	VALUE	UNIT
PROCESS SELECTION	TRADITIONAL OXIDATION DITCH	-
PRE TREATMENT	NO	-
DESIGN FLOW RATE (AVERAGE DAY/ 7 DAY)	1.65/2.76	MGD
HRT (AVG./7-DAY)	24.14/14.43	HRS
SRT	31	DAYS
ORGANIC LOADING (AVG./7-DAY)	12.4/20.74	LBS cBOD/DAY/1000FT
F/M	.09 to .1	LBS cBOD/ DAY/ LBS MLVSS
MLVSS (AVG./7-DAY)	2,150/3,325	MG/L
CHANNEL WIDTH (EA.)	40	FT
CHANNEL LENGTH (EA.)	464	FT
SIDE WATER DEPTH (EA.)	6	FT
FREEBOARD (EA)	1	FT
TOTAL VOLUME	1.66	MG
TARGET DISSOLVED OXYGEN (RESIDUAL)	>2	mg/L
AERATION TYPE	AERATOR / MIXER	-
AERATOR / MIXER	60/10	HP
TOTAL POWER EACH	70	HP
TOTAL POWER	280	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V
MAX. OXYGEN TRANSFER RATE (EA.)	2.31	LBS O2/HR
TOTAL AERATION	648.8	LBS O2/HR
MIXING/ AERATION SEPARATE	YES	-
MIXING VELOCITY	>2	FT/S
VFD	YES	-
RESIDUAL DISSOLVED OXYGEN PROBES	YES	-

GRIT REMOVAL

QUANTITY:	TWO (2)
NAME:	30PMP101, 30PMP201
TYPE:	VORTEX

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	4	MGD
TOTAL RATED CAPACITY	8	MGD
PARTICLE SIZE	>140	MICRONS
PARTICLE REMOVAL	95	%
GRIT PUMPS, NO.	2	
GRIT PUMP FLOW, EA.	250	GPM
GRIT CONCENTRATORS, NO.	2	
GRIT CONCENTRATORS PERFORMANCE	5% RESIDUAL ORGANIC MATERIAL RETAINED	
GRIT DEWATERING CONVEYORS	2	
POWER	10	HP
TOTAL POWER	20	HP
POWER FOR CONVEYOR	1	HP
TOTAL POWER FOR CONVEYORS	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SERVICE PUMP STATION

QUANTITY:	ONE (1)
NAME:	95PMP101
TYPE:	DUPLEX, HORIZONTAL, SELF-PRIMING

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	200	GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
NO. OF PUMPS	2	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	480	V

FINAL CLARIFIERS

QUANTITY:	TWO (2)
NAME:	60CLF101, 60CLF201
TYPE:	CIRCULAR

PARAMETER	VALUE	UNIT
DIAMETER	61	FT
WATER DEPTH	11.95	FT
SURFACE AREA	2,922	FT²
TOTAL SURFACE AREA	5,845	FT²
WEIR LENGTH	192	FT
TOTAL WEIR LENGTH	384	FT
FREEBOARD	3.3	FT
SCUM REMOVAL	YES	-
SLUDGE WITHDRAW	YES, SUCTION	-
CHANNEL VELOCITY	>1	-
OVERFLOW RATE (AVG./7-DAY)	282/472	FT
SOLIDS LOADING RATE (AVG./7-DAY)	16/36	GPD/ FT²
WEIR LOADING (AVG./7-DAY)	4,305/8,538	PPD/ FT²
OVERFLOW RATE (5.84 MGD)	1,000	GDP/FT
WEIR LOADING (8 MGD)	20,873	PPD/ FT
POWER	1	HP
TOTAL POWER	2	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

RAS PUMPS

QUANTITY:	THREE (3)
NAMES:	70-RAS-01, 70-RAS-02, 70-RAS-03
TYPE:	END SUCTION SOLIDS HANDLING, HORIZONTAL

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	3000	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM101
POWER (EA.)	10	HP
TOTAL POWER	30	HP
PHASE	3	-
FREQUENCEY	60	HZ
VOLTAGE	460	V

WAS/TWAS PUMPS

QUANTITY:	THREE (3)
NAME:	70PMP201, 70PMP202, 70PMP203
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
CAPACITY (EA.)	180	GPM
VFD	YES	-
FLOW MEASUREMENT	YES	70MFM201, 70MFM202
POWER (EA.)	15	HP
TOTAL POWER	45	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

SCUM PUMPS

QUANTITY:	TWO (2) DUTY, ONE (1) SPARE - THREE (3) TOTAL
NAME:	60PMP101, 60PMP201
TYPE:	RECIRCULATING SUBMERSIBLE CHOPPER

PARAMETER	VALUE	UNIT
CAPACITY (EA.)		GPM
VFD	NO	-
FLOW MEASUREMENT	NO	-
POWER (EA.)	5	HP
TOTAL POWER	10	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	460	V

PROCESS BLOWERS

QUANTITY:	FOUR (4)
NAME:	90BLW101, 90BLW102, 90BLW103, 90BLW104
TYPE:	POSITIVE DISPLACEMENT

PARAMETER	VALUE	UNIT
TOTAL FIRM CAPACITY (EA.)	1,000 @ 4.72 psig	SCFM
ALPHA F/BETA	-	-
POWER (EA.)	50	HP
TOTAL POWER	200	HP
PHASE	3	-
FREQUENCY	60	HZ
VOLTAGE	2-POLE, 208/-230/460	V

UV DISINFECTION

QUANTITY:	ONE (1)
NAME:	100UV101
TYPE:	OPEN CHANNEL, INCLINED-ARRAY
CHANNEL (REFER TO TROJAN LAYOUT-DRAWING FOR COMPLETE DETAILS)	
NUMBER OF CHANNELS	ONE (1)
APPROXIMATE CHANNEL-LENGTH REQUIRED	35.6 FT
CHANNEL WIDTH AT UV BANKS	2.9 FT
CHANNEL DEPTH RECOMMENDED	7.8 FT
UV-BANKS	
NUMBER OF BANKS PER CHANNEL	3 (2-DUTY, 1-REDUNDANT)
NUMBER OF LAMPS PER BANK	10 EA.
TOTAL NUMBER OF UV LAMPS	30 (INCLUDING 10-REDUNDANT LAMPS)
MAXIMUM DUTY LAMP POWER DRAW	33 Kw
UV BANK HADLOSS AT PEAK FLOW	2.2 IN
UV-PANEL	
POWER DISTRIBUTION CENTER QUANTITY	1
HYDRAULIC SYSTEM CENTER QUANTITY	1
SYSTEM CONTROL CENTER QUANTITY	1
ANCILLARY EQUIPMENT	
LEVEL CONTROLLER QUANTITY AND TYPE	1-FIXED WEIR
INTEGRAL BANK WALLS	INCLUDED
OTHER EQUIPMENT	10%-LAMPS, 10%-SLEEVES, 5%-LAMP DRIVERS, 20-WIPER SEALS

ELECTRICAL REQUIREMENTS

1. EACH POWER DISTRIBUTION CENTER REQUIRES AND ELECTRICAL SUPPLY OF ONE-(1) 480/277V, 60 Hz, 33.8kVA
   ONE (1)-480/277V, 60Hz, 33.8kVA
2. ELECTRICAL SUPPLY FOR HYTDRAULIC SYSTEM CENTER WILL BE (1) 480V, 60 Hz, 2.5 kVA
3. ELECTRICAL SUPPLY FOR SYSTEM CONTROL CENTER WILL BE (1) 120V, 60Hz, 1.8kVA
4. ELECTRICAL DISCONNECTS ARE NOT INCLUDED. REFER TO LOCAL ELECTRICAL CODES

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CERTIFICATE OF AUTHORIZATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 12020 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

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DATE:	FEB 2025

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

DESIGN INFORMATION

JOB NO. 23016

SHEET NO. 00-G-06

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AERATION BASIN-501

50-AERATION BASINS

AERATION BASIN-502

JUNCTION BOX NO. 400

40-STORAGE BASIN

05-C-201 INF TO WWTP

JUNCTION BOX NO. 300

30-GRIT REMOVAL

20-PRIMARY SCREW PUMPS

10-BAR SCREENS

MH #7

MH #4

MH #5

MH #8

140-MAINTENANCE BUILDING (SEPARATE CONTRACT)

SEPARATE CONTRACT

130 PUMP STATION

90-BLOWER BUILDING

AEROBIC DIGESTER-501

AEROBIC DIGESTER-502

80-AEROBIC DIGESTERS

70-RAS / WAS PUMP BUILDING

150- ADMINISTRATION BUILDING

SEPARATE CONTRACT

75-GRAVITY THICKENER (ABANDONED)

05-C-103 TWAS TO LAND APP

CLARIFIER-601

JUNCTION BOX NO. 500

CLARIFIER-602

125-WEIR & OUTFLOW CHAMBER

05-C-102 EFF TO OUTFALL

100-UV STRUCTURE

120-POST AERATION BASIN

MH #4

PROCESS FLOW SCHEMATIC

N.T.S.

LEGEND

AIR	LOW PRESSURE AIR
DEC	DECANT
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
EFF	EFFLUNET
INF	INFLUENT SANITARY SEWER
PD	PROCESS DRAIN
RS	RAW SEWAGE
RAS	RETURN ACTIVATED SLUDGE
SCUM	SCUM WASTE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
WAS	WASTE ACTIVATED SLUDGE

ITEM NO. ◇#	DESCRIPTION
1	30" INF-DIP
2	24" RS - DIP
3	16" RAS - DIP
4	12" RAS - DIP
5	12" WAS - DIP
6	4" PD-PVC
7	6" WAS - DIP
8	6" TWAS - DIP
9	4" SCUM - DIP
10	24" EFF - DIP
11	6" DEC - DIP
12	12" AIR - SS
13	10" AIR - SS
14	8" AIR - SS
15	6" AIR - SS
16	24" MLSS - DIP
17	EXISTING DRN - DIP (SIZE VARIES)

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 10220 — CRAIG A. JOHNSON — 2/4/25

0 1" — 1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROCESS FLOW SCHEMATIC

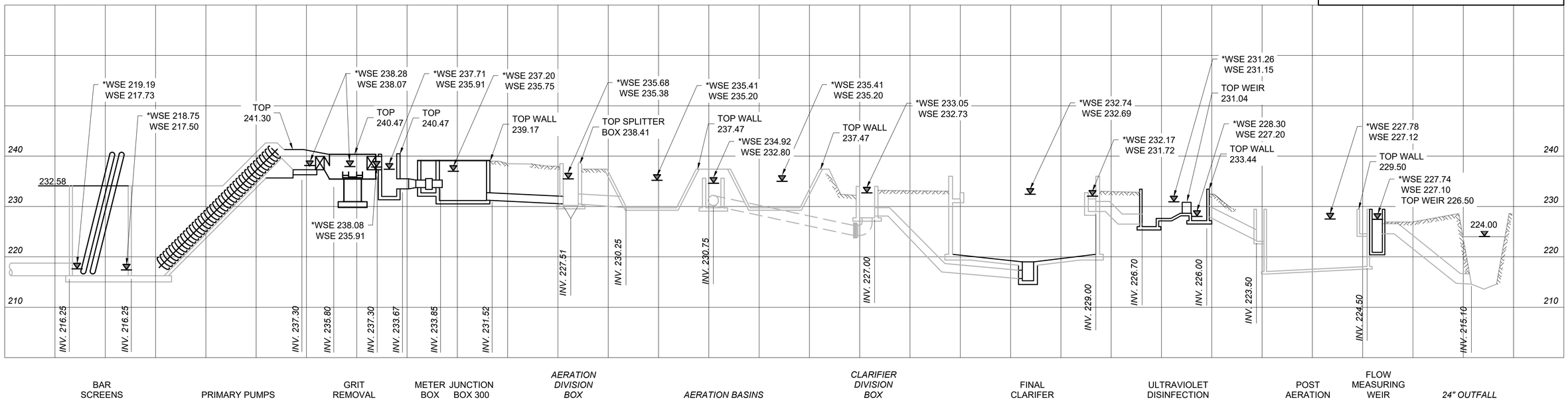
JOB NO. 23016

SHEET NO. 00-G-08

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NOTES :
1. HYDRAULIC GRADELINE ELEVATIONS SHOWN ARE FOR AVERAGE FLOW CONDITIONS AT 2.76 MGD
2. MAX ELEVATIONS SHOWN ARE FOR MAXIMUM HYDRAULIC CONDITIONS AT 8.00 MGD

*WSE = MAX PEAK = 8 MGD
WSE = AVERAGE DAY = 2.76 MGD



REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 19020 — CRAIG A. JOHNSON — 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

PROPOSED HYDRAULIC PROFILE

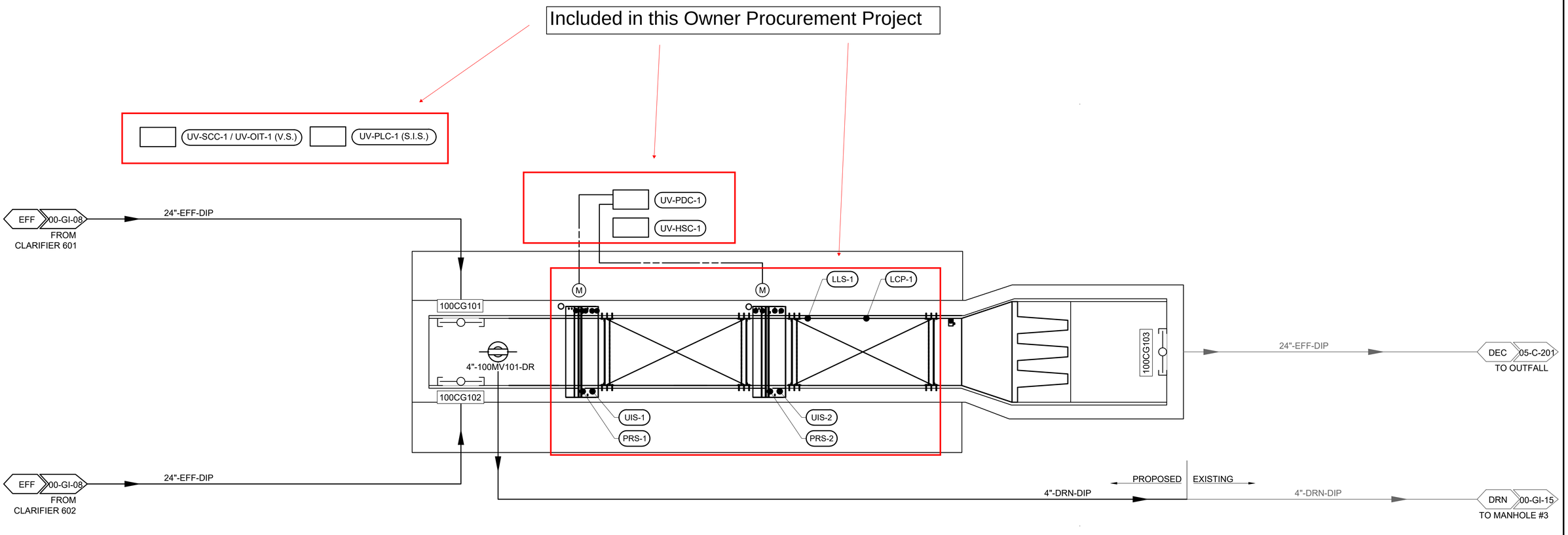
JOB NO. 23016

SHEET NO. 00-G-09

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100 UV STRUCTURE

REV. NO.	DATE	DRWN	CHKD	REMARKS

CERTIFICATE OF AUTHORIZATION
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
No. 91
ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 10220
CRAIG A. JANSON
2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

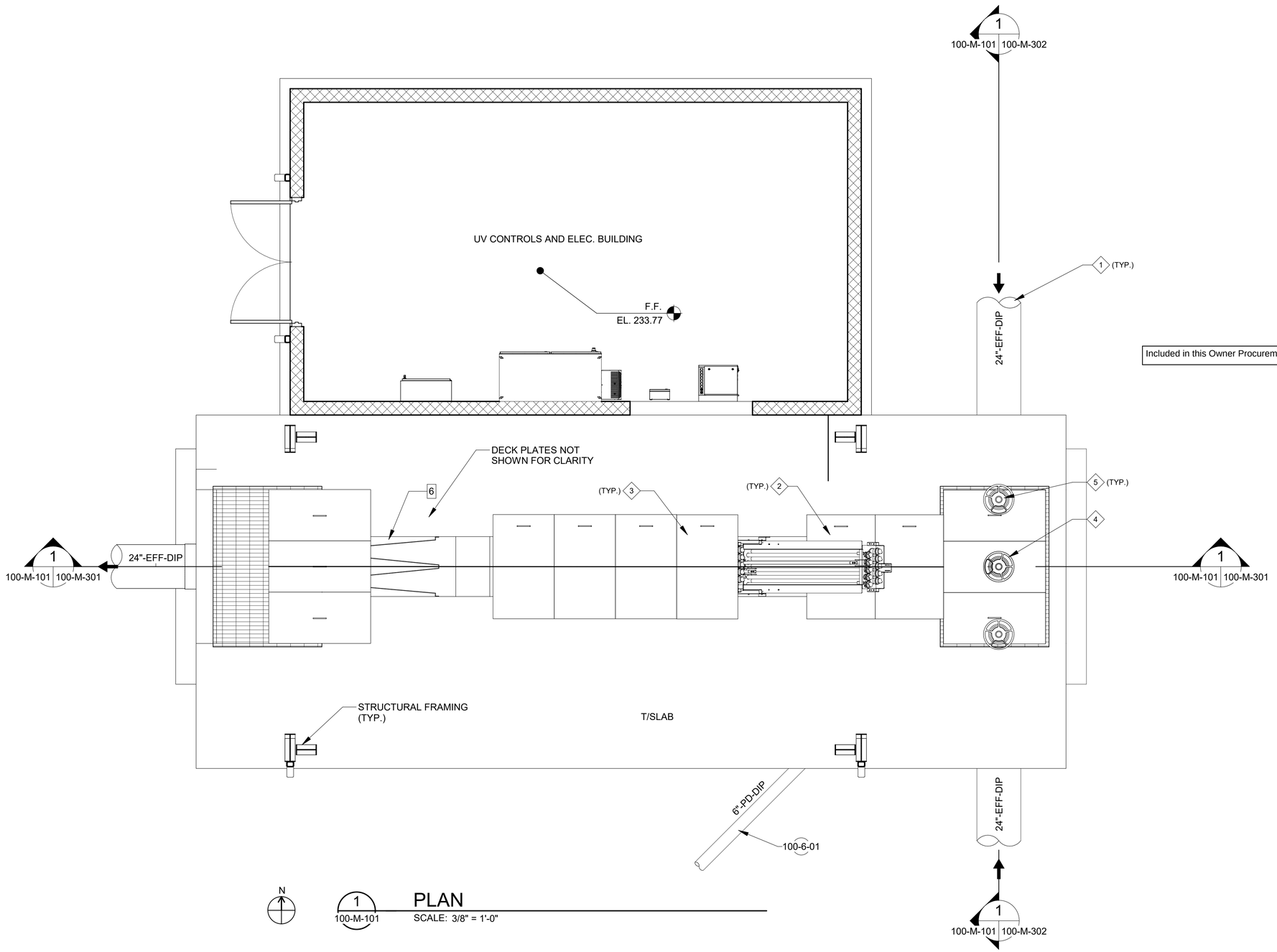
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P&ID - UV STRUCTURE

JOB NO. 23016

SHEET NO. 00-GI-14

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1
100-M-101

PLAN

SCALE: 3/8" = 1'-0"

Included in this Owner Procurement Project

KEYNOTES: DENOTED BY SYMBOL ◇X

1. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
2. UV FRAME AND BANK
3. ALUMINUM DECK PLATING
4. MUD VALVE FLOOR STAND W/ MANUAL OPERATOR
5. SLIDE GATE FLOOR STAND W/ MANUAL OPERATOR
6. SERPENTINE WEIR. RE: DETAIL B/100-M-301

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CORPORATE REGISTRATION CONSULTING ENGINEERS No. 91 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 10220 CRAIG A. JOHNSON 2/4/25

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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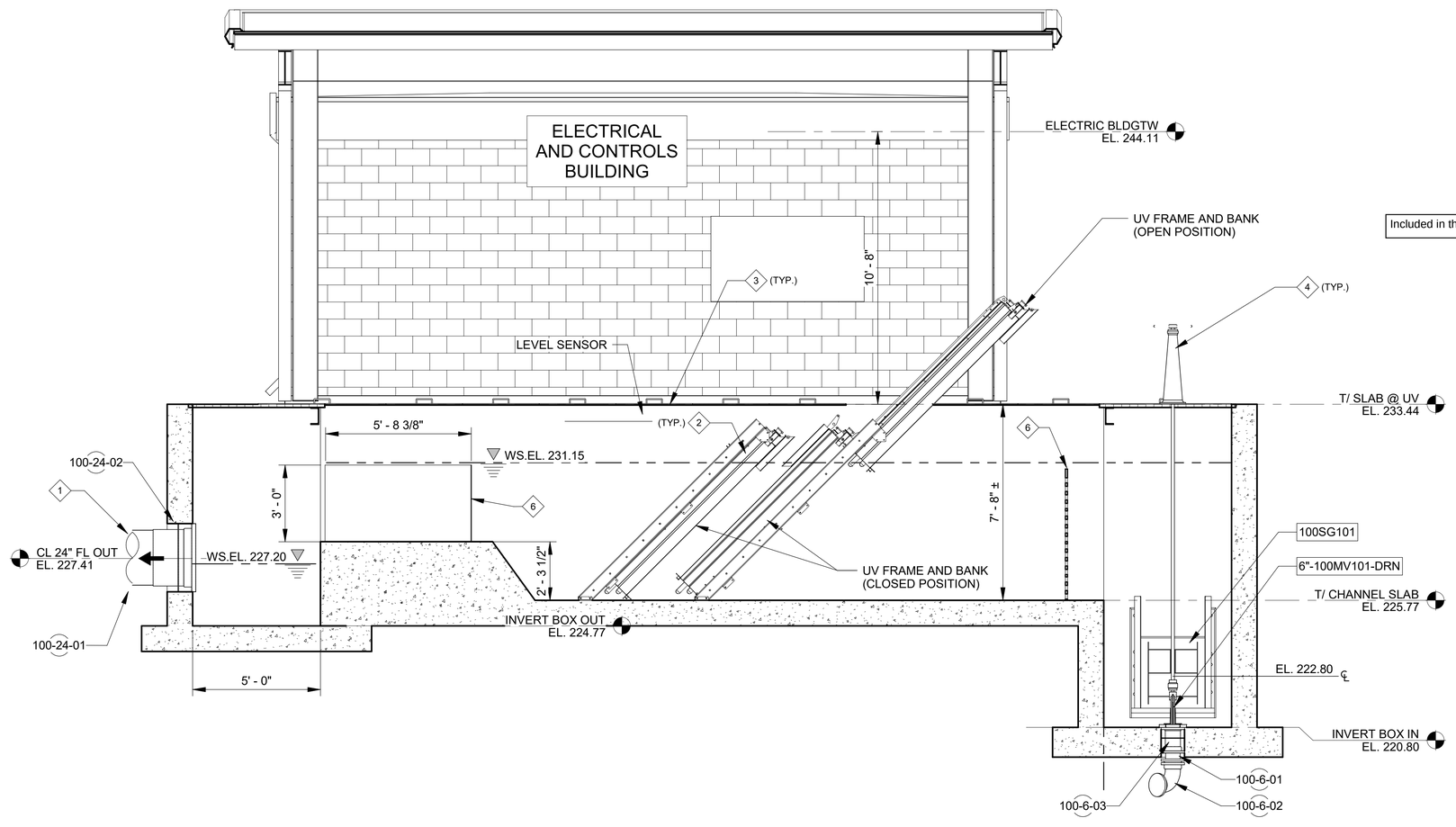
UV STRUCTURE
PLAN

JOB NO: 23016

SHEET NO: 100-M-101

Autodesk Docs://23016 - Wynne WWTP/23016 - 100-D-UV MECHANICAL.rvt

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Included in this Owner Procurement Project

KEYNOTES: DENOTED BY SYMBOL X

1. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
2. UV FRAME AND BANK
3. ALUMINUM DECK PLATING
4. MUD VALVE FLOOR STAND W/ MANUAL OPERATOR
5. SLIDE GATE FLOOR STAND W/ MANUAL OPERATOR
6. SERPENTINE WEIR. RE: DETAIL B/100-M-301

1 SECTION - NORTH

100-M-101 | 100-M-301 SCALE: 3/8" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS CORPORATE REGISTRATION No. 91 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 19220 CRAIG A. JOHNSON 2/4/25

0 1" 1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

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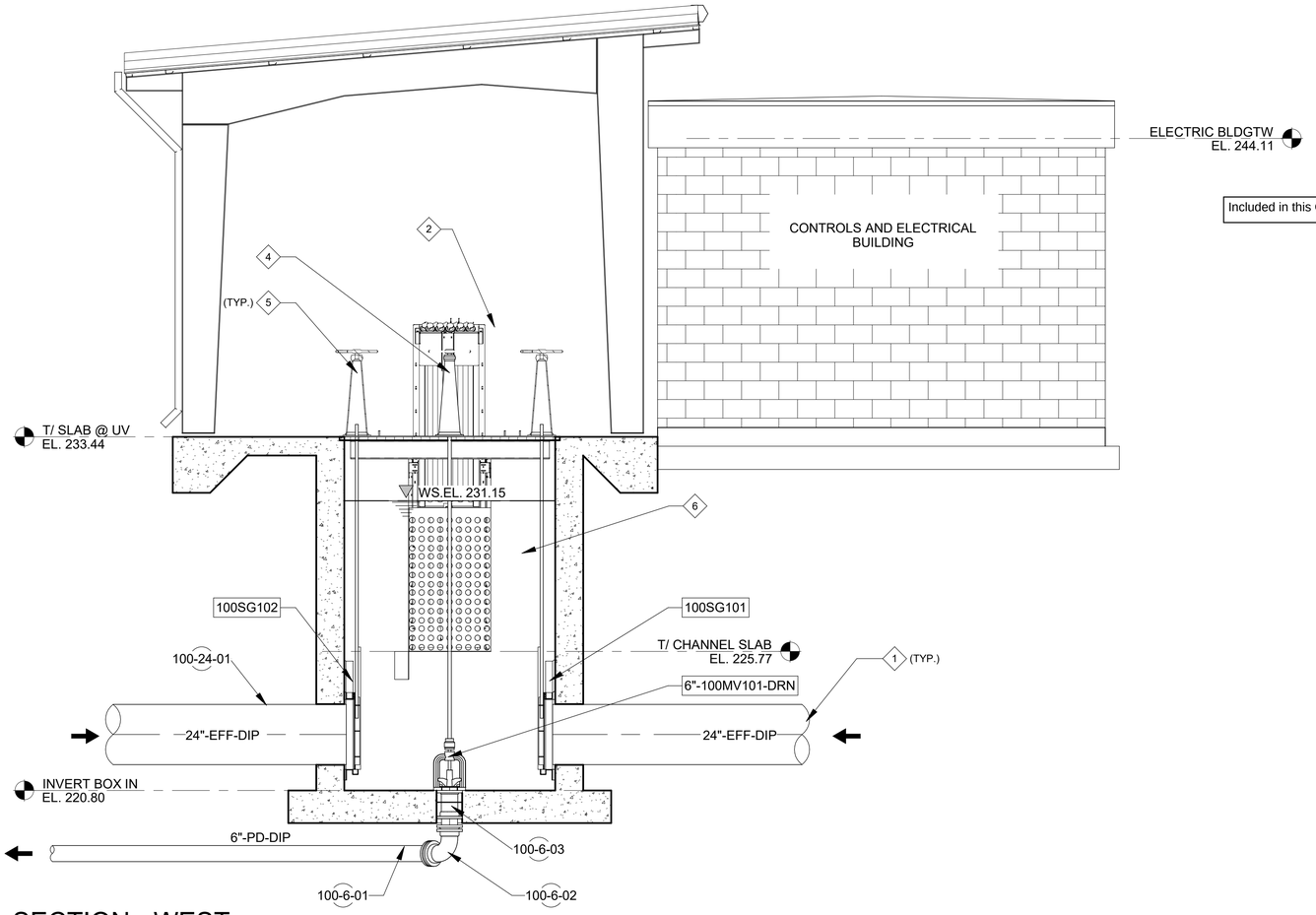
UV STRUCTURE SECTIONS

JOB NO: 23016

SHEET NO: 100-M-301

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Included in this Owner Procurement Project

KEYNOTES: DENOTED BY SYMBOL ◇X

1. RE: CIVIL YARD PIPING PLANS FOR CONTINUATION
2. UV FRAME AND BANK
3. ALUMINUM DECK PLATING
4. MUD VALVE FLOOR STAND W/ MANUAL OPERATOR
5. SLIDE GATE FOOOR STAND W/ MANUAL OPERATOR
6. FLOW CONDITIONER PLATE. RE: A/100-M-051

1 SECTION - WEST

100-M-101 | 100-M-302 SCALE: 3/8" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS

CORPORATE REGISTRATION — CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — CRAIG A. JOHNSON — No. 21775

0 1" — 1" = 1"

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WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

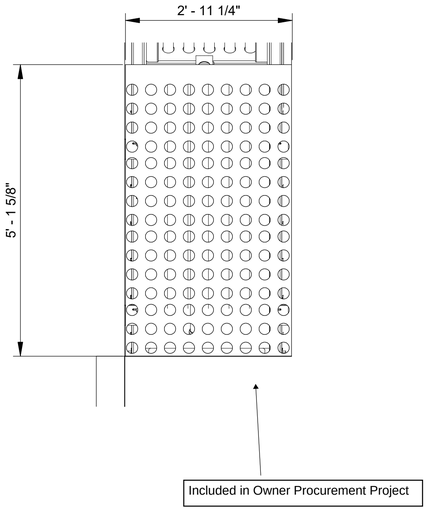
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UV STRUCTURE SECTIONS

JOB NO: 23016

SHEET NO: 100-M-302

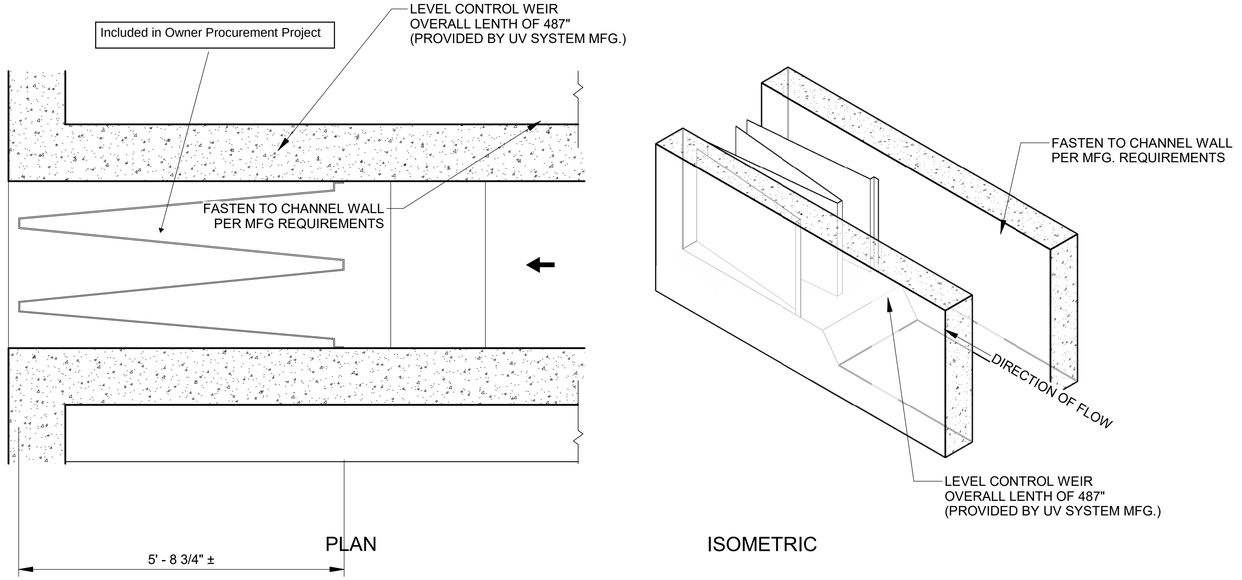
Autodesk Docs://23016 - Wynne WWTP/23016 - 100-D-UV MECHANICAL.rvt



A 100-M-501

FLOW CONDITIONER PLATE DETAIL

SCALE: NOT TO SCALE



B 100-M-501

SERPENTINE WEIR DETAIL

SCALE: NOT TO SCALE

100-UV PIPING SCHEDULE

MARK	QTY	SIZE (IN.)	CONNECTION	DESCRIPTION	COMMENTS
100-6-01	2	6	PE x PE	DI PIPE AWWA C150	
100-6-02	1	6	MJ x MJ	DI 90° BEND AWWA C153	
100-6-03	1	6	FLG x MJ	DI THRUST COLLAR AWWA C116	
100-24-01	3	24	PE x PE	DI PIPE AWWA C150	
100-24-02	1	24	FLG x MJ	DI THRUST COLLAR AWWA C116	

100-UV PROCESS MECHANICAL EQUIPMENT SCHEDULE

MARK	QTY	SIZE (IN.)	CONNECTION	ACCTUATOR	DESCRIPTION	COMMENTS
100MV101	1	6"	CAST IN FLOOR	MANUAL WHEEL	6" MUDVALVE	
100SG101	1	30" x 30"	WALL MOUNT	MANUAL WHEEL	30" x 30" WALL MOUNTED SLIDE GATE	
100SG102	1	30" x 30"	WALL MOUNT	MANUAL WHEEL	30" x 30" WALL MOUNTED SLIDE GATE	

REV. NO.	DATE	DRWN	CHKD	REMARKS

CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 — CORPORATE REGISTRATION — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 12929 — CRAIG A. JOHNSON

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED: MAB
DRAFTED: MAB
CHECKED: CAJ
DATE: FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS
PACKAGE C - WASTEWATER TREATMENT PLANT

BID SET

UV STRUCTURE
DETAILS & SCHEDULES

JOB NO: 23016

SHEET NO: 100-M-501

2/5/2025 4:20:31 PM

Autodesk Docs://23016 - Wynne WWTP/23016 - 100-D-UV MECHANICAL.rvt

PROCUREMENT CONTRACT
AND
SPECIFICATION DOCUMENTS

Wynne Water Utilities

Generator and ATS
Owner Procurement

Wynne Water Utilities

WYNNE, ARKANSAS

May 2025

Crist Job No. 23016







CRIST ENGINEERS, INC.

www.cristengineers.com

1 Executive Center Court
Little Rock, Arkansas 72211

Telephone: 501.664.1552
Fax: 501.664.8579

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GENERATOR AND ATS OWNER PROCUREMENT
WYNNE WATER UTILITIES

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004100	Bid Form (P-400)	6
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ADVERTISEMENT FOR BIDS

WYNNE WATER UTILITIES

WYNNE EMERGENCY RESPONSE - WASTEWATER IMPROVMENTS
PLANT GENERATOR
OWNER PROCUREMENT

Sealed Bids for **Wynne Water Utilities – Generator and ATS- Owner Procurement** will be received by Wynne Water Utilities, at the office of Wynne Water Utilities, 550 Falls Blvd, Wynne, AR 72396 until **2:00PM Central Standard Time, May 27, 2025**, at which time the Bids received will be publicly opened and read. The Project generally consists of materials procurement of the Plant Generator and ATS.

Bids may be delivered by any means available **except** electronically (fax or email). Fax/email bids will not be considered. It is the bidder's responsibility to see that their bid is at the designated location by the time stated above. Those not received by that time will not be considered. Wynne Water Utilities reserves the right to reject any or all bids, to waive any formalities and to, in the opinion of Wynne Water Utilities, accept the bid that is in Wynne Water Utilities' best interest.

A pre-bid conference will not be held.

Per request, on-site inspection of existing structures can be scheduled by contacting Wynne Water Utilities at 870-238-2751

Bids will be received for a single Contract. Bids shall be on a unit price basis as indicated on the Bid Form. The Issuing Office for the Bidding Documents is:

Crist Engineers, Inc.
1 Executive Center Court
Little Rock, AR 72211
501-664-1552
www.cristengineers.com

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 9:00 a.m. and 4:00 p.m. The Contract Documents may also be examined at the following:

Dodge Reports
www.construction.com

Electronic copies of the Bidding Documents may be obtained online from the Issuing Office upon payment of $25.00 for each set at www.cristengineers.com. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

This publication was paid for by Wynne Water Utilities. The amount to be paid for this publication is $351.68.

Owner**:** **Wynne Water Utilities**
By: **Blake Marotti**
Title: **General Manager**

Publish Dates:
May 11, 2025
May 18, 2025

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACTS

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INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACT

ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below.

A. *Issuing Office*—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2—PROCUREMENT BIDDING DOCUMENTS

2.01 Bidder may obtain complete sets of the Procurement Bidding Documents, in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid, from the Issuing Office. The deposit will be refunded to each document holder of record who returns a complete set of Procurement Bidding Documents in good condition within 30 days after opening of Bids. Bidders must obtain a complete set of the Procurement Contract Documents as listed in the Procurement Agreement.

2.02 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.

2.03 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

2.04 ELECTRONIC MEDIA OF PLANS AND SPECIFICATIONS

Engineer will provide a digital version (PDF) of the bidding documents for your convenience and use in the preparation of the Bid. Engineer makes no representation as to the compatibility of these files with your hardware or your software. Data contained on these electronic files is part of Engineer's instruments of service and shall not be used by the Bidder or anyone receiving this data through or from the Bidder for any purpose other than as a convenience in the preparation of the Bid. Any other use or reuse by the Bidder or others will be at the Bidder's sole risk and without liability or legal exposure to Engineer. The Bidder agrees upon execution and submission of the Bid Form to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against Crist Engineers, Inc. (CEI), its officers, directors, employees, agents or subconsultants which may arise out of or in connection with your use of the electronic files. These electronic files will not be considered as contract documents. Hard copies distributed to the prospective bidder govern. Significant differences may exist between these electronic files and corresponding hard copy contract documents. Engineer makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by Engineers and electronic files, the signed hard copy contract documents shall govern. You are responsible for determining if any conflict exists. By the Bidder's use of these electronic files, the Bidder is not relieved of the duty to fully comply with the contract documents. Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, Engineer reserves the right to remove all indicia of its ownership and/or involvement from each

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electronic display. Under no circumstances shall delivery of the digital electronic files for use by the Bidder be deemed a sale by CEI and CEI makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall CEI be liable for any loss or profit or any consequential damages.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4—SITE VISIT; PRE-BID CONFERENCE

4.01 Buyer recommends that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

4.02 A pre-bid conference will not be held for this procurement.

4.03 Interpretations or clarifications considered necessary by Engineer in response to questions will be issued by Addenda delivered to all parties recorded by Engineer as having received the Procurement Bidding Documents. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.

ARTICLE 5—INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer in writing.

5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral

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statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid, and will not be binding or legally effective.

5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 6—RESERVED

ARTICLE 7—PROCUREMENT CONTRACT TIMES

7.01 See applicable provisions in the Procurement Agreement.

ARTICLE 8—LIQUIDATED DAMAGES

8.01 Any provisions for liquidated damages, such as those for Seller's failure to attain a specified Milestone such as the delivery of the Goods, are set forth in the Procurement Agreement.

ARTICLE 9—CONFIDENTIALITY OF BID INFORMATION

9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.

9.02 Bidder shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.

9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.

9.04 Buyer's obligations with respect to confidential information are nullified by the following exceptions:

A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;

B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal;

C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;

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D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or

E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.

9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

ARTICLE 10—"OR-EQUAL" ITEMS

10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without exception or consideration of possible "or-equal" items. Whenever it is specified or described in the Procurement Bidding Documents that an "or-equal" item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contact. The procedure for submittal of any such application by Seller and consideration by Engineer is set forth in the General Conditions and may be supplemented in the Procurement Specifications. Should a manufacturer or specified equipment be provided that is not listed in the specification and/or exception(s) provided at the time of bid, the Buyer has full right without recourse from the Bidder to reject the bid.

ARTICLE 11—PREPARATION OF BID

11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.

11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words "No Bid" may be entered.

11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.

11.04 Bidder shall:

A. Sign the Bid Form as indicated in the Bid Form.

B. Include evidence of authority to sign.

C. Provide information on the individual to be contacted for any communications regarding the Bid.

D. Provide evidence of the Bidder's authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

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11.05 The responsibilities of each Bidder submitting a Bid are described in the Bidder's representations and certifications set forth in Article 6 of the Bid Form.

ARTICLE 12—BASIS OF BID; COMPARISON OF BIDS

12.01 *Unit Prices*

A. Bidder shall enter the unit price Bid for each unit price line item on the Bid Form and enter the product of the unit price times the estimated quantity for that line item. Bidder shall enter the total of products of unit price and estimated quantity for each unit price line item in the space provided to the total on the Bid Form.

B. The apparent low Bid will be determined on the basis of the total of products of unit price and estimated quantity for each unit price line item.

C. Discrepancies between the indicated figures and the arithmetically correct sum will be resolved in favor of the arithmetically correct sum.

ARTICLE 13—SUBMITTAL OF BID

13.01 Bidder shall refer to the **advertisement** for specific identification of the date, time, and place where Bids are to be submitted.

13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of Article 4 of the Bid Form.

13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Wynne Water Utilities, 550 Falls Blvd, Wynne AR 72396.

ARTICLE 14—MODIFICATION OR WITHDRAWAL OF BID

14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

14.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 15—OPENING OF BIDS

15.01 Bids will be publicly opened at the time and place indicated in the advertisement or invitation to bid and read aloud, unless obviously non-responsive. An abstract of the amounts of the Base

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Bids and Alternate Bids, if any, will be made available to Bidders after Bids have been opened and reviewed by the Buyer.

ARTICLE 16—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

16.01 All Bids will remain subject to acceptance for the period stated in the Bid Form, but Buyer may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 17—EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT

17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.

17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.

17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.

17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

ARTICLE 18—BONDS AND INSURANCE

18.01 Article 5 of the General Conditions and Article 5 of the Supplementary Conditions set forth Buyer's requirements as to insurance. When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by acceptable evidence of insurance.

ARTICLE 19—SIGNING OF PROCUREMENT AGREEMENT

19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and insurance documentation required to be delivered by the Procurement Contract Documents to Buyer. Within 10 days thereafter, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together with printed and electronic copies of the Procurement Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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DOCUMENT 004100

BID FORM FOR PROCUREMENT CONTRACT

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BID FORM FOR PROCUREMENT CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—BUYER AND BIDDER

1.01 This Bid is submitted to:

Wynne Water Utilities
550 Falls Blvd
Wynne AR, 72396

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Procurement Contract with Buyer in the form included in the Procurement Bidding Documents, and to furnish the Goods and Special Services as specified or indicated in the Procurement Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Procurement Bidding Documents.

ARTICLE 2—BASIS OF BID

2.01 Unit Price Bids

A. Bidder will furnish the Goods and Special Services including all accessories required for installation in accordance with the Procurement Contract Documents for the following Unit Price(s):

BID SCHEDULE – Generator and ATS - Owner Procurement

Wynne Water Utilities, Arkansas

Item No.	Description	QTY	Unit	Unit Price	Bid Price
1	Generator and ATS	1	EA	$	$

TOTAL BID PRICE:

$658,123.00 **Dollars**

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SCHEDULE OF PROCUREMENT TIMES

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	196	Contractor to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	7	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	270	

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ARTICLE 3—TIME OF COMPLETION

3.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule of Procurement Contract Times set forth in Article 2 of the Procurement Agreement.

3.02 Bidder accepts the provisions of the Procurement Agreement as to liquidated damages.

ARTICLE 4—ATTACHMENTS TO THIS BID

4.01 The following documents are attached to and made a condition of this Bid:

A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.

ARTICLE 5—BIDDER'S ACKNOWLEDGMENTS

5.01 Bidder accepts all terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period that Bidder may agree to in writing upon request of Buyer.

5.02 Bidder has examined and carefully studied the Procurement Bidding Documents, the related data identified in the Procurement Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents that:

1. Bidder has examined and carefully studied the Procurement Contract Documents.

2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Bidder's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Bidder has carefully studied, considered, and correlated the information known to Bidder with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

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5. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bidding Requirements, that without exception the Bid (including all Bid prices) is premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

6.02 *Bidder's Certifications*

A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Paragraph 6.02.A.4:

a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

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This Bid is offered by:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Date: _____

(date signed)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

(If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

(individual's signature)

Title: _____

(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

DOCUMENT 005100

NOTICE OF AWARD

Date of Issuance:	Owner's Contract No.:
Owner: **Wynne Water Utilities**	
Engineer: **Crist Engineers, Inc.**	Engineer's Project No.: **23016**
Project: **Wynne Emergency Response**	Contract Name: **Owner Procurement of Generator and ATS**
Bidder:	Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Wynne Water Utilities: Owner Procurement of Generator and ATS

The Contract Price of the awarded Contract is: $_____

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s).
3. Other conditions precedent (if any): None

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner**:** **Wynne Water Utilities**

_____ Authorized Signature

By: _____ Title:_____

Copy: **Crist Engineers, Inc.**

DOCUMENT 005213
AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

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AGREEMENT BETWEEN BUYER AND SELLER FOR PROCUREMENT CONTRACT

This Procurement Agreement is by and between **Wynne Water Utilities** ("Buyer") and _____ _____ ("Seller").

Terms used in this Procurement Agreement have the meanings stated in the General Conditions of the Procurement Contract and the Supplementary Conditions of the Procurement Contract.

Buyer and Seller hereby agree as follows:

ARTICLE 1—PROCUREMENT CONTRACT

1.01 *Goods and Special Services*

A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: **Generator and ATS – Owner Procurement**

1.02 *The Project*

A. The Project, of which the Goods and Special Services are a part, is generally described as follows: **Wynne Emergency Response -Generator and ATS – Owner Procurement**

1.03 *Engineer*

A. Buyer has retained **Crist Engineers, Inc.** ("Engineer"), to prepare Procurement Contract Documents and act as Buyer's representative. Engineer assumes all duties and responsibilities and has the rights and authority assigned to Engineer in the Procurement Contract Documents in connection with Seller's furnishing of Goods and Special Services.

1.04 *Point of Destination*

A. The Point of Destination is designated as: **Wynne Wastewater Plant, 53 Cross 619 Rd, Wynne, AR, 72396.**

ARTICLE 2—PROCUREMENT CONTRACT TIMES

2.01 *Time of the Essence*

A. All time limits for Milestones, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Procurement Contract Documents, are of the essence of the Procurement Contract.

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2.02 Schedule of Procurement Times

A. The schedule of procurement times is established on the Bid Form.

2.03 *Shop Drawings and Material Submittals*

A. *Material Submittals*: Seller shall submit all Shop Drawings and Material Submittals required by the Procurement Contract Documents to Engineer for its review and approval.

B. *Engineer's Review*: It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Material Submittals and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within **14** days after Seller's submittal of such Shop Drawings and Material Submittals, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

2.04 *Liquidated Damages*

A. Buyer and Seller recognize that time is of the essence as stated in Paragraph 2.01, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified on the Bid Form, plus any extensions thereof allowed in accordance with this Procurement Contract. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the delivery requirements specified on the Bid Form. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer **$750** for each day that expires after the time specified on the Bid Form for delivery of acceptable Goods.

2.05 Contract Time

MILESTONE	CALENDAR DAYS	NOTES
Submit Prep from time of executed purchase order	60	
Deliver acceptable Goods to Point of Destination	350	Contractor to provide equipment and labor for unloading at the point of destination.
Start Up and Testing	14	
Readiness for Final Inspection and Acceptance of Goods and Special Services	7	
Total	431	

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ARTICLE 3—PROCUREMENT CONTRACT PRICE

3.01 *Procurement Contract Price and Total Price—Based on Attached Bid*

A. For furnishing the Goods and Special Services in accordance with the Procurement Contract Documents, Buyer shall pay Seller the prices stated in Seller's Bid, attached hereto as an exhibit, subject to final adjustments for Unit Price Goods and Special Services.

ARTICLE 4—PAYMENT PROCEDURES

4.01 *Submittal and Processing of Applications for Payment*

A. Seller shall submit Applications for Payment in accordance with Article 13 of the General Conditions and the following paragraphs. Engineer and Buyer will process such Applications for Payment in accordance with said Article 13.

4.02 *Progress Payments; Final Payment*

A. Seller may submit an Application for Payment requesting the stated percentage of Procurement Contract Price upon attainment of each of the following Payment Line Items:

Payment Line Item (Lump Sum)	Percentage of Lump Sum
1. **Receipt of Approval of Shop Drawings and Samples - (Not to exceed 45 days after submittal is released to customer)**	**10**
2. **Delivery of Goods to Point of Destination in accordance with the Procurement Contract Documents.**	**75**
3. **Start Up and Testing**	**10**
4. Final Payment: **Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents**	5
5. Total Procurement Contract Price (Lump Sum)	100

B. Buyer shall pay Seller the amount owed under an Application for Payment within 30 days after Engineer's presentation to Buyer of the Application for Payment and Engineer's recommendation.

4.03 *Interest*

A. All amounts not paid when due will bear interest as the rate of **1%** percent per annum.

ARTICLE 5—ASSIGNMENT OF PROCUREMENT CONTRACT

5.01 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such

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consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

5.02 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

ARTICLE 6—PROCUREMENT CONTRACT DOCUMENTS

6.01 *List of Procurement Contract Documents*

A. The Procurement Contract Documents consist of the following:

1. This Procurement Agreement. (pages 1 to 7, inclusive).
2. General Conditions of the Procurement Contract. (pages 1 to 37, inclusive).
3. Supplementary Conditions of the Procurement Contract. (pages 1 to 5, inclusive).
4. Procurement Specifications as listed in the Procurement Specifications table of contents.
5. Supplemental Procurement Drawings (not attached but incorporated by reference):
6. Addenda (numbers ____ to ___ inclusive).
7. Exhibits to this Procurement Agreement (enumerated as follows):
    a. Contractor's Bid (pages 1 to 6, inclusive).
8. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:
    a. Notice to Proceed;
    b. Change Orders;

B. The documents listed in Paragraph 6.01.A are attached to this Procurement Agreement (except as expressly noted otherwise above).

C. There are no Procurement Contract Documents other than those listed above.

D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of the Procurement General Conditions.

ARTICLE 7—SELLER'S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Seller's Representations*

A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:

1. Seller has examined and carefully studied the Procurement Contract Documents.

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2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.

3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.

4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.

6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.

7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

7.02 *Seller's Certifications*

A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Procurement Contract. For the purposes of this Paragraph 7.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement Contract to the detriment of Buyer, (b) to establish bid or contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Procurement Contract.

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ARTICLE 8—RESERVED

ARTICLE 9—MUTUAL WAIVER

9.01 *Mutual Waiver of Consequential Damages*

A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph 9.01.A will be binding upon the Contractor/Assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) liquidated damages, (c) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property of others, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.

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IN WITNESS WHEREOF, Buyer and Seller have signed this Procurement Agreement. Counterparts have been delivered to Buyer and Seller.

The Effective Date of the Procurement Contract is _____.

Buyer	Seller
Wynne Water Utilities	
(typed or printed name of organization)	*(typed or printed name of organization)*
By: _____	By: _____
(individual's signature)	*(individual's signature)*
Date: _____	Date: _____
(date signed)	*(date signed)*
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
	(If Seller is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
(individual's signature)	*(individual's signature)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address for giving notices:	Address for giving notices:
Designated Representative:	Designated Representative:
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address:	Address:
Wynne Water Utilities	
550 Falls Blvd	
Wynne, AR 72396	
Phone: _____	Phone: _____
Email: _____	Email: _____
(If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	

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DOCUMENT 005500

NOTICE TO PROCEED

Owner:	**Wynne Water Utilities**	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	**Crist Engineers, Inc.**	Engineer's Project No.:	**23016**
Project:	**Wynne Emergency Response**	Contract Name:	**Owner Procurement of Generator and ATS**
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, _____]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is 210 consecutive calendar days, and the number of days to achieve readiness for final payment is 240 consecutive calendar days.

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner**:** **Wynne Water Utilities**

_____
Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: **Crist Engineers, Inc.**

DOCUMENT 007250

STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

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ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Whenever used in the Procurement Bidding Requirements or Procurement Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated, which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.

2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.

3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.

4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.

5. *Buyer*—The individual or entity purchasing the Goods and Special Services.

6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.

7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.

9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.

10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.

11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

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12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.

14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.

15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.

16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.

19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.

20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.

21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.

22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).

23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.

24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.

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25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.

26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.

28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.

29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.

30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.

31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.

32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.

33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer's review of the Submittals.

34. *Seller*—The individual or entity furnishing the Goods and Special Services.

35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.

36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.

37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals

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may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.

39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.

40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.

B. *Intent of Certain Terms or Adjectives*

1. The Procurement Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.

2. The word "non-conforming" when modifying the words "Goods and Special Services," "Goods," or "Special Services," refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:

a. do not conform to or comply with the requirements of the Procurement Contract Documents;

b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or

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c. in the case of Special Services, have not been completed.

3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.

4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

5. The word "furnish," when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.

C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.

D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer.

B. Performance and Payment Bonds will not be required for this procurement contract.

C. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.

D. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

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2.03 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

2.04 *Preliminary Schedules*

A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:

1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.

a. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the Submittals, tests, and deliveries to completion within the specified Milestones of the Procurement Contract Times.

b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.

c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.

2. a preliminary schedule of Submittals.

B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

2.05 *Preliminary Conference*

A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.

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B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

A. The Procurement Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.

C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.

D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.

F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.

B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

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3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents*: If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.

2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

B. *Resolving Discrepancies*: Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement Contract Documents); or

2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Procurement Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.

1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.

B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the

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Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.

C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

A. Seller and its subcontractors and suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

4.02 *Continuing Performance*

A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.

B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.

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1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.

2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.

B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.

C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. inspection delays by governmental authorities, and custom delays;

4. international shipping delays;

5. acts or failures to act of third-party entities; and

6. acts of war or terrorism.

D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions*: Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:

1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.

2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.

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3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.

E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5— INSURANCE

5.01 *Insurance*

A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.

B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided will not be construed as a waiver of Seller's obligation to maintain such insurance.

C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.

D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.

E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

5.02 *Surety or Insurance Companies*

A. All insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

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ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.

B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.

C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.

D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.

B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.

C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.

2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.

D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

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6.03 *Buyer's Infringement*

A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.

B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.

C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.

1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.

2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER'S RESPONSIBILITIES

7.01 *Performance of Obligations*

A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.

B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.

C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.

B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must be:

1. new, and of good quality;

2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and

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3. shop-assembled to the greatest extent practicable.

7.03 *Laws and Regulations*

A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.

B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.

1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or equal" item.

2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.

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B. *Engineer's Evaluation*: Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.

C. *Special Guarantee*: Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."

D. *Data*: Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 *Taxes*

A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Supplementary Conditions.

7.06 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Seller shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.

3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

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1. *Shop Drawings*

    a. Seller shall submit the number of copies required in the Procurement Specifications.

    b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.

2. *Samples*

    a. Seller shall submit the number of Samples required in the Procurement Specifications.

    b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.

3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.

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6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.

8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Seller shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.

3. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. *Submittals Other than Shop Drawings and Samples*

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:

   a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.

   d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

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7.07 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.

B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling, and all other costs associated with shipment and delivery.

8.02 *Delivery*

A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.

B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.

C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.

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D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.

E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.

F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.

B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER'S RIGHTS

9.01 *Seller's Warranties and Guarantees*

A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.

B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.

C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;

2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;

3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or

4. normal wear and tear under normal usage.

D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:

1. observations by Buyer, Engineer, or Project Owner;

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2. recommendation by Engineer or payment by Buyer of any progress or final payment;

3. use of the Goods by Buyer or Project Owner;

4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;

5. the end of the correction period established in Paragraph 9.04;

6. the issuance of a notice of acceptance;

7. any inspection, test or approval by others; or

8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.

E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.

3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.

4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.

5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.

6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.

7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

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B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.

2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.

2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.

3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Procurement Contract Times, remove and replace the rejected Goods.

2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.

3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. *Buyer's Rejection of Non-Conforming Special Services*

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1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.

2. Seller shall promptly provide conforming Special Services acceptable to Buyer.

3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

D. *Remedying Non-Conforming Goods*: If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

E. *Buyer's Acceptance of Non-Conforming Goods*: Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods.

F. *Seller Obligations*: Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations will include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

G. *Buyer's Rejection of Conforming Goods*: If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

9.04 *Correction Period*

A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.

B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.

B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.

C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

10.02 *Duties and Responsibilities; Authority; Limitations*

A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.

B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.

C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.

D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.

E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.

F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

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ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.

B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Buyer and Seller shall execute appropriate Change Orders covering:

1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;

2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;

3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.

B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.

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B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.

B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided herein.

11.05 *Buyer-Authorized Changes in the Goods and Special Services*

A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion. Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

11.06 *Buyer's Contingency Allowance*

A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.

B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.

C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.

D. The Procurement Agreement, Article 5, addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

11.07 *Unauthorized Changes in the Goods and Special Services*

A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

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11.08 *Change of Procurement Contract Price*

A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Procurement Contract Price will be determined as follows:

1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;

2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or

3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15%.

11.09 *Change of Procurement Contract Times*

A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.

B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.

C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.

D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

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F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.

G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.

H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.

I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.

J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.

K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.

B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith.

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The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.

C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:

1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or

3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.

B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.

C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.

D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

A. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;

b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and

c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or

b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.

4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or

b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or

c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or

d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or

e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:

a. the Goods and Services are non-conforming, requiring correction or replacement;

b. the Procurement Contract Price has been reduced by Change Orders;

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c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or

d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.

13.04 *Suspension of or Reduction in Payment*

A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and

2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.

3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;

c. Seller has failed to provide and maintain insurance;

d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

e. the Goods and Special Services are non-conforming, requiring correction or replacement;

f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;

g. the Procurement Contract Price has been reduced by Change Orders;

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h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;

i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or

j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.

B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.

B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.

C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.

D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.

E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.

F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.

G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

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13.06 *Waiver of Claims*

A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.

B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

ARTICLE 14—CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will not constitute a breach of contract by Buyer. Upon cancellation:

1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.

2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Procurement Contract Price of such Goods.

14.02 *Suspension of Performance by Buyer*

A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

14.03 *Suspension of Performance by Seller*

A. Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:

1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Procurement Contract; and

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

14.04 *Breach and Termination*

A. *Buyer's Breach*

1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.

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2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.

B. In the case of any conflict between the express terms of this Procurement Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Procurement Contract will apply.

15.03 *Computation of Time*

A. When any period of time is referred to in the Procurement Contract by number of days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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15.04 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

15.05 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Procurement Contract, as well as all continuing obligations indicated in the Procurement Contract, will survive final payment, completion, and acceptance of the Goods and Special Services or termination or completion of the Procurement Contract or of the services of Seller.

15.06 *Entire Agreement*

A. Buyer and Seller agree that this Procurement Contract is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Procurement Contract may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

15.07 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

15.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

15.09 *Successors and Assigns*

A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract.

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DOCUMENT 007350

SUPPLEMENTARY CONDITIONS OF THE PROCUREMENT CONTRACT

These Supplementary Conditions amend or supplement EJCDC® P-700, Standard General Conditions of the Procurement Contract (2019). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Buyer shall furnish to Seller **5** printed copies of the Procurement Contract Documents (including one fully signed counterpart of the Procurement Agreement), and **one copy** in electronic portable document format (PDF).

ARTICLE 5 – BONDS AND INSURANCE

5.01 Insurance

SC-5.01 Add the following new paragraphs immediately after Paragraph 5.01.E:

A. Seller shall purchase and maintain such liability and other insurance as is appropriate for the furnishing of Goods and Special Services and as will provide protection from claims set forth below which may arise out of or result from Seller’s furnishing of the Goods or Special Services and Seller’s other obligations under the Procurement Contract Documents, whether the furnishing of Goods and Special Services or other obligations are to be performed by Seller, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to furnish the Goods and Special Services, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Seller’s employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller’s employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (b) by any other person for any other reason;

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5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this Paragraph 5.01 to be purchased and maintained must:

1. with respect to insurance required by Paragraphs SC-5.01.F.3 through SC-5.01.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, their consultants, and all of whom must be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds must provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Seller's indemnity obligations under Paragraph 7.07;

5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;

6. remain in effect at least until final payment and at all times thereafter when Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 9.03 and 9.04; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter).

C. The limits of liability for the insurance required by Paragraph SC-5.02.F must provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs SC-5.02.F.1 and F.2:

Workers' Compensation and Related Policies	Establish Policy Limits
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory

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Workers' Compensation and Related Policies	Establish Policy Limits
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	**$500,000**
Bodily injury by disease—aggregate	**$500,000**
Employer's Liability	
Each accident	**$500,000**
Each employee	**$500,000**
Policy limit	**$500,000**
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	**$500,000**

2. Seller's General Liability under Paragraphs SC-5.02.F.3 through F.6 which must include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Seller:

Commercial General Liability	Policy limits of not less than
General Aggregate	**$2,000,000**
Products—Completed Operations Aggregate	**$1,000,000**
Personal and Advertising Injury	**$1,000,000**
Bodily Injury and Property Damage—Each Occurrence	**$1,000,000**

3. Automobile Liability under Paragraph SC-5.02.F.6:

Automobile Liability	Policy limits of not less than
Bodily Injury	
Each Person	**$1,000,000**
Each Accident	**$1,000,000**
Property Damage	
Each Accident	**$1,000,000**

4. Professional Liability (if the Special Services include professional services):

Seller's Professional Liability	Policy limits of not less than
Each Claim	**$0**
Annual Aggregate	**$0**

D. Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance

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requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.

ARTICLE 7— SELLER'S RESPONSIBILTY

7.02 Taxes

B. Buyer is exempt from payment of sales and compensating use taxes of the State of **Arkansas** and of cities and counties thereof on all materials and equipment to be incorporated into the Project facilities.

1. Buyer will furnish the required certificates of tax exemption to Seller with respect to materials and equipment to be incorporated into the Project facilities.

2. Buyer's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Seller, or to supplies or materials not incorporated into the Project facilities.

3. The Procurement Contract Price does not include the cost of sales or compensating use taxes to the extent such are exempted by this paragraph.

ARTICLE 9 – BUYERS RIGHTS

SC-9.05 Add the following new paragraph after Paragraph 9.04:

9.05 Limitation of Seller's Liability

A. Buyer and Seller agree that the total liability of Seller to Buyer for claims, costs, losses, and damages arising from this Procurement Contract will be limited to the amount established in the Procurement Agreement as the Procurement Contract Price.

ARITCLE 12 – CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

SC-12.03 Add the following new paragraph immediately after Paragraph 12.02:

12.03 Arbitration

A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-12.03). This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Procurement Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 12, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority

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to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Procurement Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Procurement Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Procurement Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party of the right to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Procurement Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Procurement Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Buyer or Seller, or consents to being joined in the arbitration; and

4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Procurement Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

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SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1.3 RELATED SECTIONS

A. None.

1.4 SUBMITTALS

A. Submit product data as specified herein, including standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, catalog cuts, standard wiring diagrams, printed performance curves and operational range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing and printed product warranties, as applicable to the work.

Resubmittals will be handled in the same manner as first submittals. On resubmittals the Manufacturer shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Manufacturer shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

Submittals shall include the following:

1. Certified shop and erection drawings showing all important details of construction, dimensions, and anchor bolt locations.
2. Descriptive literature, bulletins and/or catalogs of the equipment.
3. Data on the characteristics and performance of the pumps. Data shall include guaranteed and certified performance curves, based on actual shop tests of units to be delivered, which show that they meet the specified requirements for head, capacity, efficiency, NPSH required (based on tests similar units), and horsepower. Curves shall be submitted on 8-1/2-in by 11-in sheets. Curves for variable speed pumps shall be provided with at least five frequency curves: 40 Hz, 45 Hz, 50 Hz, 55 Hz and 60 Hz. The curves shall be plotted demonstrating frequency and operating rpm from maximum rpm to minimum rpm for each type of pump with subsequent pumps operating parallel through the minimum and maximum flow requirements.
4. The total weight of the equipment including weight of the single largest item.
5. A complete total bill of materials for all equipment.

6. A list of the manufacturer's recommended spare parts with the manufacturer's current price for each item. Include gaskets, packing, etc, on the list. List the bearings by the bearing manufacturer's numbers only.
7. A statement indicating bearing life.
8. Complete description of surface preparation and shop prime painting.
9. Submittal of motor data for acceptance shall be in accordance with Division 26 and shall include complete nameplate data and test characteristics in accordance with the latest version of NEMA Standard MG1-12. In addition, the following data for the motors shall be provided:

    a. Efficiency at 1/2, 3/4, and full load.
    b. Power factor at 1/2, 3/4, and full load.
    c. Motor outline drawings, dimensions, and weight.
    d. Descriptive bulletins, including full description of insulation system.
    e. Bearing design data and L-10 bearing life.
    f. Special features (i.e., space heaters, temperature detectors, etc.).
    g. Power factor correction capacitor rating and type.
    h. Insulation information.
    i. Locked Rotor Amperes at rated voltage and NEMA starting code letter.
    j. Temperature rise.
    k. Service factor.

B. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Manufacturer's review and approval markings and action taken by Engineer.
3. Include the following information on label for processing and recording action taken:

    a. Project name,
    b. Date,
    c. Name and address of Engineer,
    d. Name and address of Manufacturer,
    e. Name and address of subcontractor,
    f. Unique identifier, including revision number,
    g. Number and title of appropriate Specification Section,
    h. Drawing number and detail references, as appropriate,
    i. Other necessary identification.

C. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than the Manufacturer.

1.5 SUBMITTAL PROCEDURES

A. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows:

1. Initial Review: Allow twenty (20) days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Manufacturer when a submittal being processed must be delayed for coordination.
2. Time for review shall commence on Engineers receipt of submittal.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data is not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operating and maintenance manuals.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
4. Number of Copies: Submit four (4) minimum black-line prints of each submittal, unless prints are required for operation and maintenance manuals. Submit five (5) prints where prints are required for operation and maintenance manuals. Engineer will retain three (3) prints; remainder will be returned. Mark up and retain one (1) returned print as a Project Record.

2.2 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

B. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

D. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

E. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

F. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

PART 3 - EXECUTION

3.1 MANUFACTURER'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Manufacturer's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Manufacturer's approval stamp and will return them without action.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Engineer will review each submittal and will not return it or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 016000

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions and contract documents.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

D. Pipe for potable water to be transported with exposed ends tarped or otherwise closed to prevent accumulation of airborne contaminates during transport.

1.2 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer’s instructions, with seals and labels intact and legible.

B. Store sensitive products in weather tight, climate-controlled enclosures.

C. For exterior storage of fabricated products, place on sloped supports, above ground.

D. Provide off-site storage and protection when site does not permit on-site storage or protection.

E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.

F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

I. Install 48” tall PVC orange mesh barrier fence around stored materials.

1.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article. Where terms such as “or equal,” Aor equivalent” are used in this Contract, they shall be taken to mean Aor approved equivalent.” Proposed equivalents shall be offered as substitutions.

1.4 SUBSTITUTIONS

A. Engineer will consider requests for substitutions only within 90 days after date established in Notice to Proceed.

1. Substitutions may be considered when a product becomes unavailable through no fault of the Materialman.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request constitutes a representation that the Manufacturer:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

1. Submit copies of Request for Substitution for consideration. Number of copies as specified in Section 013300. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
3. The Engineer will notify Manufacturer in writing of decision to accept or reject request.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Conditions: Engineer will consider Materialman’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect the Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one materialman, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all materialmen involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Engineer will consider Materialman's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 017516

STARTING OF SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Starting Equipment Systems.

B. Demonstration and Instructions.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING EQUIPMENT SYSTEMS

A. Coordinate schedule for start-up of various equipment. System startup will take place by installation Contractor during the construction phase of the Headworks Screen Replacement, Sherwood, Arkansas.

B. Notify Engineer and Owner fifteen (15) working days prior to start-up of each item.

C. Verify that each piece of equipment has been checked for proper lubrication, drive rotation, belt tension, control sequence, or for other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment in operation.

1. Authorized Representative shall be factory trained.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

I. Owner will make available to the manufacturer pressure recording devices and flow meter data from the SCADA system.

J. The manufacturer shall provide a qualified technician to attend start up services with the Engineer and Owner and record pressure and flow meter reading to create an in-service pump performance curve.

3.2 DEMONSTRATION AND INSTRUCTIONS

A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment during equipment start-up services.

C. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

D. As a minimum, provide the amount of time required for instruction on each item of equipment and system that is specified in individual sections.

E. Authorized Representative shall be a full-time employee of the manufacturer or, if acceptable to the Engineer, a third party who is routinely engaged by the Manufacturer to provide start-up services.

END OF SECTION

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Warranties.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
3. Complete startup testing of systems.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify installation Contractor of items, either on installation Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify installation Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify installation Contractor of construction that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit an electronic copy and three (3) hard copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by installation Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element, including categories for ceiling, floors, equipment, and building systems.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Engineer.
d. Name of Equipment Manufacturer (as applicable).
e. Name of installation Contractor.
f. Page number.

1.6 PROJECT RECORD DOCUMENTS

A. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

B. Record Product Data: Submit an electronic copy and one (1) hard copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Final Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of installation Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

END OF SECTION

SECTION 017823

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals.

1.3 SUBMITTALS

A. Initial Submittal: Submit an electronic copy of each manual prior to requesting payment for equipment that requires operation and maintenance manuals.

1. Include a complete operation and maintenance directory.
2. Engineer will return an electronic copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one (1) hard copy of each manual in final form at least 15 days before final inspection. Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Engineer's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Engineer's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.
4. Tabbed Dividers.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of installation Contractor.
6. Name, address, and telephone number of equipment Manufacturer.
7. Name and address of Engineer.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MATERIAL

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Manufacturer is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Wiring diagrams, with Manufacturer applied identification system.
6. Control diagrams, with Manufacturer applied identification system.
7. Piped system diagrams.
8. Precautions against improper use.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Required sequences for electric or electronic systems.
8. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MATERIAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

G. Operation and Maintenance Data

1. Copies of an operating and maintenance manual for the pump shall be furnished to the Engineer. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc, that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

2. Bid prices for equipment shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the Owner's operating personnel in operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the Engineer. A technical representative, from the respective pump manufacturer who has complete knowledge of proper operation and maintenance shall be provided for 1 day to instruct representatives of the Owner and the Engineer on proper operation and maintenance. This work may be conducted in conjunction with the inspection of the installation and test run as provided in Sections 017516 and 333219 as applicable. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

C. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

D. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 263213

ENGINE GENERATOR

PART 1 - GENERAL

1.1 Summary

A. This section includes the following items from a single supplier:

1. Engine Generator Set.
2. Enclosure
3. Related Accessories as specified

B. Related Requirements

1. It is the intent of this specification to secure an engine-driven generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
2. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted minimum 10 days prior to the closing of the bid with a line by line summary description of all the items of compliance, any items that have been are omitted or have been taken exception to, and a complete description of all deviations.
3. It is the intent of this specification to secure a generator set system that has been tested during design verification, in production, and at the final job site. The generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
4. All equipment shall be new and of current production by an international, power system manufacturer of generators, transfer switches, and paralleling switchgear. The manufacturer shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

1.2 Submittals

A. Action Submittals

1. Product Data

a. The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied; schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set, the transfer switch, and the remote annunciator panel if it is included elsewhere in these specifications.

B. Informational Submittal

1. Certificates

a. The generator set shall be listed to UL 2200 or submitted to an independent third party certification process to verify compliance as installed.

2. Test and Evaluation Reports

C. Closeout Submittal

1. Maintenance Contracts
2. Operation And Maintenance Data
3. Warranty Documentation
4. Record Documentation

1.3 Quality Assurance

A. Regulatory Agency

1. The generator set shall conform to the requirements of the following codes and standards:

a. CSA C22.2, No. 14-M91 Industrial Control Equipment.
b. EN50082-2, Electromagnetic Compatibility-Generic Immunity Requirements, Part 2: Industrial.
c. EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
d. IEC8528 part 4, Control Systems for Generator Sets.
e. IEC Std 61000-2 and 61000-3 for susceptibility, 61000-6 radiated and conducted electromagnetic emissions.
f. IEEE446 Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
g. NFPA 70, National Electrical Code, Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
h. NFPA 99, Essential Electrical Systems for Health Care Facilities.
i. NFPA 110, Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit. Component level type tests will not substitute for this requirement.

2. Qualifications

a. The equipment shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production and service of its complete product line.
b. The power system shall be produced by a manufacturer who has produced this type of equipment for a period of at least 10 years and who maintains a service organization available twenty-four hours a day throughout the year.

3. Manufacturers

a. The power system shall be furnished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.
b. The basis of design is a Kohler model KD1250. If the supplier wishes to propose equivalent equipment as manufactured by Caterpillar, all additional costs associated with re-engineering and mechanical & electrical modifications to the installation will be at the contractor’s expense. The contractor must also supply the details below with his proposal:

1) A line-by-line clarification of the specification marked with "D" for deviation; "E" for exception, and "C" for comply.
2) The weight & outline dimensions of the proposed equipment.

c. Upon request, the manufacturer shall provide a notarized letter certifying compliance with all of the requirements of this specification. No exceptions to the specifications shall be allowed or included in the certification.

1.4 Warranty

A. Manufacturer’s Warranty

1. The generator set shall include a standard warranty covering five (5) years or 3000 hours whichever occurs first, to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from the date of initial startup.
2. The generator set manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall regularly engage in maintenance contract programs to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions; adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and functional tests performed on all systems.

PART 2 - PRODUCTS

2.1 Equipment

A. Equipment

1. The generator set shall be a Kohler model KD1250 with a KH03850TO4D alternator (or CAT equal). It shall provide 1562 kVA and 1250 kW when operating at 277/480 volts, 60 Hz, 0.80 power factor. The generator set shall be capable of a 130°C Standby rating while operating in an ambient condition of less than or equal to 104 °F and a maximum elevation of 1000 ft above sea level. The standby rating shall be available for the duration of the outage.

B. Engine

1. The minimum 36 liter displacement engine shall deliver a minimum of 1865 HP at a governed engine speed of 1800 rpm, and shall be equipped with the following:

a. Electronic isochronous governor capable of 0.25% steady-state frequency regulation
b. 24-volt positive-engagement solenoid shift-starting motor
c. 140-ampere automatic battery charging alternator with a solid-state voltage regulation
d. Positive displacement, full-pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain
e. Dry-type replaceable air cleaner elements for normal applications
f. Engine-driven or electric fuel-transfer pump including fuel filter and electric solenoid fuel shutoff valve capable of lifting fuel
g. The turbocharged engine shall be fueled by diesel
h. The engine shall have a minimum of 16 cylinders and be liquid-cooled

2. The engine shall be EPA certified from the factory
3. The generator must accept rated load in one-step.

C. Cooling System

1. The engine shall be liquid-cooled by a closed loop, unit mounted radiator rated to operate the generator set at full load at an ambient temperature of 50 degrees C (122 degrees F). The radiator fan and other rotating engine parts shall be guarded against accidental contact.

D. Standard Air Cleaner

1. The air cleaner shall provide engine air filtration which meets the engine manufacturer's specifications under typical operating conditions.

E. Battery

1. Each genset requires a maintenance free battery which must meet the engine manufactures' specifications for the ambient conditions specified in Part 1 Project Conditions and shall comply with the NFPA requirements for engine cranking cycles. This battery shall be rated according to SAE Standards J-537 with a minimum cold cranking amp of 1110 amps and a minimum reserve capacity of 120 Minutes at 80F. The batteries shall be AGM style.
2. Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.

F. Housing

1. Level 2 Sound Attenuated Enclosure

a. The generator set shall be supplied with a Sound Attenuated Enclosure, providing a sound pressure of 75.5 dB(A) while the generator is operating at 100% load at 7 meters (23 feet) – free field – using acoustic insulation and acoustic-lined inlet hoods, constructed from a minimum of 0.125 inch thick formed heavy duty aluminum panels. The acoustic insulation used shall meet UL 94 HF1 flammability classification. The enclosure shall be manufactured from bolted panels to facilitate service, future modifications, or field replacement. The enclosure shall use external vertical air inlet and outlet hoods with 90 degree angles to discharge air up and reduce noise. The enclosure shall have an integral rodent guard and skid end caps and shall have bracing to meet 186 mph wind loading.
b. The enclosure components and skid shall be cleaned with a two-stage alkaline cleaning process to remove grease, grit, and grime from parts. Components shall then be subjected to a Zirconium-based conversion coating process to prepare the metal for electrocoat (e-coat) adhesion. All enclosure parts shall receive an 100% epoxy primer electrocoat (e-coat) with high-edge protection. Following the e-coat process, the parts shall be finish coated with powder baked paint for superior finish, durability, and appearance with a Power ArmorTM industrial finish that provides heavy duty durability in harsh conditions, and is fade-, scratch- and corrosion-resistant.
c. The enclosure must surpass a 3,000 hour salt spray corrosion test per ASTM B-1117.
d. Enclosures will be finished in the manufacturer's standard color.
e. The enclosures shall allow the generator set to operate at full load in an ambient temperature of 50°C with no additional derating of the electrical output of the generator set.

f. Enclosures shall be equipped with sufficient side and end doors to allow access for operation, inspection, and service of the unit and all options. Minimum requirements are two doors per side. When the generator set controller faces the rear of the generator set, an additional rear facing door is required. Access to the controller and main line circuit breaker shall meet the requirements of the National Electric Code.

g. Doors shall be fitted with hinges, hardware, and the doors shall be removable.

h. Doors shall be equipped with lockable latches. Locks shall be keyed alike. Door locks shall be recessed to minimize potential of damage to door/enclosure.

i. A duct between the radiator and air outlet shall be provided to prevent re-circulation of hot air.

j. The complete exhaust system shall be internal to the enclosure.

k. The critical silencer shall be fitted with a tailpipe and rain cap.

l. Basic Electrical Panel –The generator set enclosure shall be furnished with a load center 208V AC three phase, 100 amp max w/ main and 12 branch circuits. (1) switch control, (3) AC lights vapor tight and gasketed, and (2) duplex GFI receptacles.

G. Fuel oil storage

1. Double Wall Secondary Containment Sub-base Fuel Tank

a. The generator set shall be supplied with a sub-base fuel tank of sufficient capacity to hold a minimum of 24 hours of fuel at 100% loading. No less than 2605 gallons of diesel fuel.

b. The sub-base fuel system shall be listed under UL 142, subsection entitled Special Purpose Tanks EFVT category, and will bear their mark of UL Approval according to their particular classification.

c. The above ground steel secondary containment rectangular tank for use as a sub base for diesel generators is manufactured and intended to be installed in accordance with the Flammable and Combustible Liquids Code—NFPA 30, the Standard for Installation and Use of Stationary Combustible Engine and Gas Turbines—NFPA 37, and Emergency and Standby Power Systems—NFPA 110.

d. The primary tank shall be rectangular in shape and constructed in clam shell fashion to ensure maximum structural integrity and allow the use of a full throat fillet weld.

e. Steel Channel Support System. Reinforced steel box channel for generator support, with a load rating of 5,000 lbs. per generator mounting hole location. Full height gussets at either end of channel and at generator mounting holes shall be utilized.

f. Exterior Finish. The sub-base tank exterior finish shall be Power Armor PlusTM, a polyurea-textured rubberized coating.

g. Normal venting shall be sized in accordance with the American Petroleum Institute Standard No 2000, Venting Atmospheric and Low Pressure Storage Tanks not less than 1-1/4" (3 cm.) nominal inside diameter.

h. The emergency vent opening shall be sized to accommodate the total capacity of both normal and emergency venting and shall be not less than that derived from NFPA 30, table 2-8, and based on the wetted surface area of the tank. The wetted area of the tank shall be calculated on the basis of 100 percent of the primary tank. The vent is to be spring-pressure operated: opening pressure is 0.5/psig and full opening pressure is 2.5 psig. The emergency relief vent is to be sized to accommodate the total venting capacity of both normal and emergency vents.

i. There shall be a 2" NPT opening within the primary tank and lockable manual fill cap.
j. A direct reading, UL listed, magnetic fuel level gauge with a hermetically sealed, vacuum tested dial, to eliminate fogging, shall be provided.
k. A float switch for remote or local annunciation of a (50% standard) low fuel level condition shall be supplied.

H. Controller

1. Advanced Power Management 603 (APM603) Generator Set Controller

a. The generator set controller shall be a microprocessor-based control system that will provide automatic starting, system monitoring, and protection.
b. The controller shall be mounted on the generator set and shall have integral vibration isolation. The controller shall be prototype and reliability tested to ensure operation in the conditions encountered.

2. Codes and Standards

a. The generator set controller shall meet NFPA 110 Level 1 requirements and shall include an integral alarm horn as required by NFPA.
b. The controller shall meet NFPA 99 and NEC requirements.
c. The controller shall be UL 6200 recognized.
d. The controller shall meet ASTM B117 (salt spray test).

3. Applicability

a. The controller shall be a standard offering in the manufacturer's controller product line.
b. The controller's environmental specification shall be: -40°C to 70°C operating temperature range and 5-95% humidity, non-condensing.
c. The controller front face shall meet an environmental rating of IP65 when mounted properly on the generator.

4. Controller Buttons, Display, and Components

a. The generator set controller shall include the following features and functions:

5. Master Control Push Buttons – the buttons shall be tactile-feel membrane with an indicator light to initiate the following functions:

a. Run Mode – when in Run mode the generator set shall start.
b. Off/Reset Mode – when in Off/Reset mode, the generator set shall not accept any remote start commands and shall be capable of resetting all faults, allowing for the restarting of the generator set after a shutdown.
c. Auto Mode – when in Auto mode, the generator set shall be ready to accept a signal from a remote device.

6. Control Panel shall include:

a. Emergency Stop Switch – the latch type stop switch shall be red in color with a “mushroom” type head. Depressing the stop button will immediately stop the generator set and lockout the generator set for any automatic remote starting.
b. Display – the display shall be a 7.5” TFT color touchscreen.

c. Fault Light – the controller shall have an annunciator fault light that glows red for faults and yellow for warnings. The warning light will also illuminate when not in Auto.
d. Alarm Horn – the controller shall provide an alarm horn that sounds when any faults or warnings are present. The horn shall also sound when the controller is not in the Auto mode.
e. Alarm Silence/Lamp Test Button – when this button is held, it shall test all controller lamps. This button will also silence the alarm horn when the unit is not Auto or has a fault.
f. USB Connection – the controller shall have a USB connection port for a storage device that is accessible on the front of the control panel without having to open any electrical enclosure panels on the generator. This connection shall allow for updating of all software and firmware. This connection shall allow for downloading of controller parameter settings and the event log. This connection shall allow for data logging storage. This connection shall allow the ability to capture screenshots.
g. Mini-USB Connection – the controller shall have a mini-USB connection port for a PC connection that is accessible on the front of the control panel without having to open any electrical enclosure panels on the generator. This connection shall allow a certified technician to service the generator controller using a dedicated PC program. The program shall allow for servicing of generator set parameters, faults diagnostics and viewing of controller information. The program shall allow for uploading of software and firmware as well as downloading of parameter settings and the event log.

7. The controller shall have three user level access

   a. User Level – no password required, and user can view all metered values and settings
   b. Operator Level – password required to adjust settings that do not impact the generator
   c. Technician Level – password required to adjust all settings

8. Overview and Favorites

   a. Overview – User shall be able to customize up to 16 gauges for a personalized Home screen that will allow for immediate access to site specific critical data.
   b. Favorites – User shall be able to create their own menu set up with parameters for easy viewing.

9. Load Management

   a. Programmable outputs included to command the connect and disconnect of loads based on generator or paralleling system state:

      1) Under frequency
      2) Start up
      3) Generators online
      4) Priority demands

   b. Supports up to 16 loads per system

      1) Can be used on a single generator system
      2) Can be combined in a paralleling system for a total system load control capability

c. Simplified load management system view from any generator controller in the system
d. Load control requires the 4 input/15output module (see available options)

10. Controller Engine Control Features and Functions

a. User-programmable time delay for engine start.
b. User-programmable time delay engine cool down.
c. Capability to start and run at user-adjustable idle speed during warm-up for a selectable time-period until engine reaches preprogrammed temperature, or as supported by ECM (Engine Control Module) equipped engine.
d. The idle function including engine cooldown at idle speed.
e. Real-time clock and calendar for time stamping of events.
f. Output with adjustable timer for an ether injection starting system.
g. Programmable cyclic cranking that can adjust on time, off time, and number of cycles.

11. Controller Alternator Control Features and Functions

a. Patented High-speed RMS Digital Voltage Regulation – the system shall have integral microprocessor-based voltage regulator system that provides +/- 0.25% voltage regulation no-load to full load with three phase sensing. A separate voltage regulator is not acceptable. The digital voltage regulator shall be applicable to single- or three-phase systems. The system shall be prototype tested and control variation of voltage to frequency. The voltage regulator shall be adjustable at the controller with maximum +/-10% adjustable of nominal voltage.
b. Alternator Thermal Overload Protection – the system shall have integral alternator overload and short circuit protection matched to each alternator for the particular voltage and phase configuration.
c. Overcurrent Protective Device– the system shall have a thermal trip, instantaneous trip and maintenance mode per NEC240.87.

12. Other Control Features and Functions

a. Event Logging – the controller keeps a record of up to 3,000 events with date and time locally for warning and shutdown faults. This event log can be downloaded onto a USB storage device or onto a PC through the service program.

1) Event Snapshot – the control system shall capture 15 seconds of critical data around the time a fault or warning. This data shall be viewable on the controller and downloadable.

b. Data Logging – the controller shall allow customized parameters to be logged based on a start trigger from the controller interface.

1) The parameters are selectable from all monitored parameters.
2) The sample period shall be configurable from 1 second to 2 hours.
3) The collected data shall be stored on the controller or on a USB storage device plugged into the control panel.
4) The collected data shall be displayed on the screen and available for analysis.

13. Control Monitoring Requirements

a. The generator set shall have alarms and status indication lamps that show non-automatic status, warning, and shutdown conditions. The controller shall indicate with a warning lamp and or alarm and on the digital display screen any shutdown, warning, or engine fault condition that exists in the generator set system. The following alarms and shutdowns shall exist as a minimum:

1) All monitored functions must be viewable on the control panel display
2) The following generator set functions shall be monitored:

a) All output voltages - single phase, three phase, line to line, and line to neutral, 0.25% accuracy
b) All single phase and three phase currents, 0.25% accuracy
c) Output frequency, 0.25% accuracy
d) Power factor by phase with leading/lagging indication
e) Total instantaneous kilowatt loading and kilowatts per phase, 0.5% accuracy
f) kVARS total and per phase, 0.5% accuracy
g) kVA total and per phase, 0.5% accuracy
h) kW hours
i) A display of percent generator set duty level (actual kW loading divided by the kW rating)

3) Engine parameters listed below shall be monitored: (*are adjustable)

a) Engine Speed*
b) Oil Pressure
c) Coolant Temperature
d) Runtime Hours
e) Fuel Pressure
f) Fuel Consumption Rate

4) Operational records shall be stored in the control beginning at system startup

a) Total Run Time Hours
b) Total Loaded Hours
c) Total Unloaded Hours
d) Total kW Hours
e) Controller Hours
f) Controller Run Time Hours
g) ECM Run Time Hours
h) Number of Starts
i) Number of Crank Attempts
j) Last Crank Duration
k) Last Start Runtime Duration
l) Last Start Time of Day
m) Last Start Date (Day)
n) Last Start Date (Month)
o) Last Start Date (Year)
p) Last Stop Time of Day
q) Last Stop Date (Day)
r) Last Stop Date (Month)
s) Last Stop Date (Year)

5) The following operational records shall be resettable for maintenance purposes:

a) Total Run Time Since Maintenance
b) Loaded Hours Since Maintenance
c) Unloaded Hours Since Maintenance
d) kW Hours Since Maintenance
e) Reset Maintenance Records

6) For maintenance and service purposes, the controller shall store and display on demand the information:

a) Generator Model
b) Generator Serial Number
c) ECM Serial Number
d) Alternator Part Number
e) Engine Model Number
f) Engine Serial Number
g) Controller Serial Number
h) Firmware Version

7) The controller shall support a variety of maintenance parameters including:

a) Last Start Time o Day
b) ScreenshotCount
c) ECM Runtime Hours
d) Controller Runtime Hours
e) Last Stop Date (Month)
f) Last Start Time of Day
g) Last Stop Date (Day)
h) Last Start Date (Day)
i) Number of Starts
j) Last Stop Time of Day
k) Last Stop Time of Day
l) Controller Hours
m) Number of Crank Attempts
n) Last Crank Duration
o) Last Start Runtime Duration
p) Last Start Time of Day
q) Last Start Time of Day
r) Last Start Date (Month)
s) Last Start Date (Year)
t) Last Stop Time of Day
u) Last Stop Time of Day
v) Last Stop Date (Year)

14. Generator Set Warning, Shutdown Alarm and Status

a. The generator set shall have alarms and status indication lamps that show Non-Automatic Status, Warning, and Shutdown conditions. The controller shall indicate with a warning lamp and/or alarm, and on the digital display screen any shutdown, warning, or engine fault condition that exists in the generator set system. The following alarms and shutdowns shall exist as a minimum:

1) OverCrank Shutdown

2) UnderFrequency Shutdown
3) OverFrequency Shutdown
4) OverPower Shutdown
5) Low Oil Pressure Shutdown
6) High Coolant Temperature Shutdown
7) Local Emergency Stop Shutdown
8) Remote Emergency Stop Shutdown
9) OverSpeed Shutdown
10) Loss ECM Comms Shutdown
11) ECM Mismatch Shutdown
12) High Oil Temperature Shutdown
13) Alternator Protection Shutdown
14) Protective Relay Shutdown OverPower
15) Protective Relay Shutdown OverCurrent
16) Protective Relay Shutdown Reverse VAR
17) Protective Relay Shutdown ReversePower
18) UnderVoltage Shutdown (L-L, L-N, each phase)
19) OverVoltage Shutdown (L-L, L-N, each phase)
20) OverCurrent Shutdown
21) Excitation Overvoltage Shutdown
22) Low Fuel Level Shutdown
23) Low Coolant Level Shutdown
24) Generator Over Power Shutdown

b. Conditions resulting in generator warning (generator will continue to operate):

1) UnderFrequency Warning
2) OverFrequency Warning
3) OverPower Warning
4) Low Oil Pressure Warning
5) Low Coolant Temperature Warning
6) High Coolant Temperature Warning
7) Low Battery Voltage Warning
8) High Battery Voltage Warning
9) Battery Charger Fault Warning
10) High Oil Temperature Warning
11) GFCI Warning
12) UnderVoltage Warning (L-L, L-N, each phase)
13) Overvoltage Warning (L-L, L-N, each phase)
14) OverCurrent Warning
15) High Fuel Level Warning
16) Low Fuel Level Warning
17) Critically Low Fuel Level Warning
18) Generator Over Power Warning

15. Inputs and Outputs

a. Standard Dedicated User Inputs – the controller shall have dedicated inputs for:

1) Two-Wire Input

a) Remote Engine Start

2) Digital Input

a) Auxiliary Fault (Shutdown)
b) Auxiliary Warning
c) Battery Charger Fault
d) Breaker Close
e) Breaker Trip
f) Coolant Temperature
g) Excitation Over Voltage
h) Fuel Level
i) Fuel Leak Alarm
j) Low Fuel Level Switch
k) Ground Fault Relay
l) Remote Emergency Stop
m) Local Emergency Stop

3) Analog Voltage Input – Scalable Up To +- 10 VDC

a) Speed Bias
b) Voltage Bias

b. Standard Dedicated User Outputs – the controller shall have dedicated inputs for:

1) Relay Driver Output

a) Run
b) Crank
c) Horn
d) Common Failure
e) Common Warning
f) High Coolant Temperature
g) Close Breaker
h) Trip Breaker

c. Optional Configurable User Inputs and Outputs

1) User Configurable Inputs

a) 2 Analog, 0-5 VDC
b) 4 Dry Contact Digital

2) User Configurable Relay Outputs

a) 14 NO/NC Relays
b) 1 Common Fault Relay

d. PLC-like capability for applying logic to customize generator system behavior.

16. Communications

a. CAN

1) If the generator set engine is equipped with an ECM, the controller shall communicate with the ECM for control, monitoring, diagnosis, and meet SAE J1939 standards.

b. Modbus®

1) Non-isolated for RSA III
2) Isolated for Modbus devices
3) Isolated for paralleling communication
4) RJ45 for Modbus TCP, SNMP, and BACnet

c. Simple Network Management Protocol (SNMP)

1) Industry standard SNMP communication shall be available.
2) The controller shall support SNMP communication via an RJ-45 Ethernet connection.

d. BACnet®

1) Industry standard BACnet® communication shall be available.
2) The controller shall support BACnet® communication via an RJ-45 Ethernet connection.

e. Communication Connections

1) All communication connections shall be accessible in a dedicated customer connection area that is separated from factory wiring into the controller to prevent field connections from interfering with factory wiring.
2) The controller shall not require any additional hardware to support Modbus®, SNMP or BACnet® communication.

17. Paralleling

a. The controller shall be capable of paralleling with other generators with the same controller through a dedicated communication network between the controllers and onboard paralleling capabilities.
b. The controller shall support paralleling up to eight generators on a common bus.
c. The controller shall support paralleling a single generator with utility using kW, kVAR, and Power Factor settings.
d. Synchronization

1) The controller shall support onboard synchronization to allow matching of voltage, frequency and phase before closing a circuit breaker or contactor to connect the generator to the bus.
2) The controller shall use first-on logic to determine which generator will close to the dead bus first.
3) The controller shall support 3 common forms of synchronizing, Automatic (synch and close breaker), Sync-check (synch-no closure) and Permissive (no active synch, allow manual close if in synch).
4) The controller shall announce a fail to synch fault when synchronization is not achieved within the programmed time delay.
5) The controller shall actively maintain synchronizing efforts to achieve synchronization even after the time delay has expired.
6) The controller shall be capable of actively displaying the synchronizing parameter values for both the generator and the bus when synchronizing; voltage, frequency and phase.

7) The controller shall be capable of displaying the phase rotation (ABC or CBA) for both the generator and the bus and prevent closure to the bus when phase rotation does not match the generator.

e. Load Sharing

1) The controller shall actively share real and reactive power amongst all generators on the common bus, on a per-unit or percentage basis.
2) The controller shall support soft load and unload of the generator.
3) The controller shall be capable of operating with droop control.

f. Circuit Breaker/Contactor Control

1) The controller shall be capable of operating a circuit breaker or contactor to apply electricity to the parallel electrical bus.
2) The controller system shall have a normally closed contact (fail safe) that will keep the breaker tripped until such conditions are met to allow closure.
3) The controller system shall have a normally open contact to provide an energizing signal to close the circuit breaker.
4) The controller system shall have normally open contact for control of a contactor.
5) The controller will announce a Fail to Close warning when closure is not detected after 1 closure attempt.
6) The controller will announce a First on Fail warning when closure is not detected after 1 closure attempt when closing to a dead bus.
7) The controller will announce a Close Attempts Fault when the number of attempts exceeds the setting (max attempts).
8) The controller will monitor current to detect a failure to open the generator circuit breaker.
9) The controller will keep the generator running until the generator circuit breaker is seen open in order to keep the bus live to prevent other devices from closing to this bus without synchronizing.

18. Generator Management

a. Allows the start and stop of generators based on load demand or state of other generators including:

1) Start Power
2) Stop Power
3) Start Accumulator
4) Stop Accumulator
5) Total Online Capacity
6) Total Available Capacity
7) Total Bus Power
8) Total Bus Capacity
9) Negotiated Order
10) Stopped by Gen Management
11) Start Command

b. The controller shall have a programmable disconnect point (kW) below which point the controller shall automatically trip the generator circuit breaker.

19. Protective Relays

a. The controller shall provide a standard set of protective relay functions with programmable limits and time delays

1) Over Voltage (59)

a) User adjustable range – 100% to 130%
b) User adjustable range time delay – 0 to 120 seconds

2) Under Voltage (27)

a) User adjustable range – 70% to 100%
b) User adjustable time delay – 0 to 120 seconds

3) Over Frequency (81O)

a) User adjustable range – 100% to 140%
b) User adjustable time delay – 0 to 120 seconds

4) Reverse Power (32R)

a) User adjustable range – 0% to 50%
b) User adjustable time delay – 0 to 120 seconds

5) Over Power (32O)

a) User adjustable range – 90% to 150%
b) User adjustable time delay – 0 to 120 seconds

6) Loss of Field (40 Reverse VARS)

a) User adjustable range – 10% to 100%
b) User adjustable time delays – 0 to 120 seconds

7) Over Current with Voltage Range

a) User adjustable range – 100% to 200%
b) User adjustable time delay – 0 to 120 seconds

I. Generator Overcurrent and Fault Protection

1. The generator shall be provided with a factory installed, 100% rated line circuit breaker rated at 2500 amperes that is UL489 listed. Line circuit breakers shall be sized for the rated ampacity of the loads served by the breaker per the NEC.
2. The circuit breaker(s) shall incorporate an electronic trip unit.
3. Load side lugs shall be provided from the factory. Load side breaker connections made at the factory shall be separated from field connections.
4. When GFI is required per the NEC, additional neutrals shall be factory installed, and the alarm indication shall be integrated with the other generator-set alarms.
5. Barriers to provide segregation of wiring from an emergency source to emergency loads from all other wiring and equipment, if required by the NEC, shall be provided.

J. Alternator

1. The alternator shall be salient-pole, brushless, 2/3-pitch, with 4 bus bar provision for external connections, self-ventilated, with drip-proof construction and amortisseur rotor windings, and skewed for smooth voltage waveform. The ratings shall meet the NEMA standard (MG1-32.40) temperature rise limits. The insulation shall be class H per UL1446 and the varnish shall be a vacuum pressure impregnated, fungus resistant epoxy. Temperature rise of the rotor and stator shall be limited to 130°C Standby. The PMG based excitation system shall be of brushless construction controlled by a digital, three phase sensing, solid- state, voltage regulator. The AVR shall be capable of proper operation under severe nonlinear loads and provide individual adjustments for voltage range, stability and volts-per-hertz operations. The AVR shall be protected from the environment by conformal coating. The waveform harmonic distortion shall not exceed 5% total RMS measured line-to-line at full rated load. The TIF factor shall not exceed 50.
2. The alternator shall have a maintenance-free bearing, designed for 40000 hour B10 life. The alternator shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.
3. The generator shall be inherently capable of sustaining at least 300% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current-support devices.
4. Motor starting performance and voltage dip determinations shall be based on the complete generator set. **The generator set shall be capable of supplying 5351 LRKVA for starting motor loads with a maximum instantaneous voltage dip of 35%, as measured by a digital RMS transient recorder in accordance with IEEE Standard 115.** Motor starting performance and voltage dip determination that does not account for all components affecting total voltage dip, i.e., engine, alternator, voltage regulator, and governor will not be acceptable. As such, the generator set shall be prototype tested to optimize and determine performance as a generator set system.

K. Vibration Isolation

1. Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

2.2 Accessories

A. The generator set shall be supplied with a 20-ampere automatic float/equalize battery charger capable of charging both lead-acid and ni-cad type batteries, with the following features:

1. Automatic 3-stage float to equalization charge
2. Voltage regulation of 1% from no to full load over 10% AC input line voltage variations
3. Battery charging current Ammeter and battery voltage voltmeter with 5% full-scale accuracy
4. LED lamp for power ON indication
5. Current limited during engine cranking, short circuit, and reverse polarity conditions
6. Temperature compensated for ambient temperatures for -40°C to 60°C
7. Alarm circuit board featuring alarm contacts for low battery voltage, high battery voltage, and battery charger malfunction.
8. UL 1012 Listed
9. CSA Certified

B. Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.

C. The air cleaner restriction indicator shall indicate the need for maintenance of the air cleaners.

D. The generator set shall be furnished with rodent guards to prevent rodent intrusion and protect internal components.

E. The generator set shall be supplied with a common failure relay to provide means of signaling fault and/or shutdown conditions.

1. The common failure relay shall remotely signal auxiliary faults, emergency stop, high engine temperature, low oil pressure, overcrank, and over speed via one single-pole, double-throw relay with 10 amps at 120 VAC contacts.
2. The relay contacts shall be gold flashed to allow use of low current draw devices (100ma @ 28VDC min.).
3. Once energized the relay shall remain latched until the system is reset by the main controller switch.

F. The generator set shall be provided with a run relay which shall provide a three-pole, double-throw relay with 10-amp/ 250 VAC contacts to indicate that the generator is running. The run relay dry contacts can be used for energizing or de-energizing customer devices while the generator is running (e.g. louvers, indicator lamps, etc.)

G. The exhaust piping shall be gas proof, seamless, stainless steel, flexible exhaust bellows and includes the flex exhaust tube and the mounting hardware.

H. Block Heater - The block heater shall be thermostatically controlled, 9,000 watt to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA 99 and NFPA 110, Level 1.

I. Supply flexible fuel lines to provide a flexible connection between the engine fuel fittings and the fuel supply tank piping and for the fuel return lines from the injector pump per engine manufacturer's recommendations. Flex line shall have a protective steel wire braid to protect the hose from abrasion.

2.3 Source Quality Control

A. Non-Conforming Work

1. To ensure that the equipment has been designed and built to the highest reliability and quality standards, the manufacturer and/or local representative shall be responsible for three separate tests: design prototype tests, final production tests, and site tests.

a. **Design Prototype Tests.** Components of the emergency system, such as the engine/generator set, transfer switch, and accessories, shall not be subjected to prototype tests because the tests are potentially damaging. Rather, similar design prototypes and preproduction models shall be subject to the following tests:

1) Maximum power (kW)
2) Maximum motor starting (kVA) at 35% instantaneous voltage dip.
3) Alternator temperature rise by embedded thermocouple and/or by resistance method per NEMA MG1-32.6.
4) Governor speed regulation under steady-state and transient conditions.
5) Voltage regulation and generator transient response.

6) Harmonic analysis, voltage waveform deviation, and telephone influence factor.
7) Three-phase short circuit tests.
8) Alternator cooling air flow.
9) Torsional analysis to verify that the generator set is free of harmful torsional stresses.
10) Endurance testing.

b. **Final Production Tests.** Each generator set shall be tested under varying loads with guards and exhaust system in place. Tests shall include:

1) Single-step load pickup
2) Safety shutdown device testing
3) Rated Power @ 0.8 PF
4) Maximum power
5) Upon request, a witness test, or a certified test record sent prior to shipment.

c. **Site Tests.** The manufacturer's distribution representative shall perform an installation check, startup, and building load test. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test. The tests shall include:

1) Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations, under the environmental conditions present and expected.
2) Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. These shall include: block heaters, battery chargers, alternator strip heaters, remote annunciators, etc.
3) Generator set startup under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during operation, normal and emergency line-to-line voltage and frequency, and phase rotation.
4) Automatic start by means of a simulated power outage to test remote-automatic starting, transfer of the load, and automatic shutdown. Prior to this test, all transfer switch timers shall be adjusted for proper system coordination. Engine coolant temperature, oil pressure, and battery charge level along with generator set voltage, amperes, and frequency shall be monitored throughout the test.
5) Load bank testing. The test shall consist of One hour of continuous operation using a portable resistive load bank. Furnish the portable load bank, all connecting cables, metering equipment, and other equipment or devices required to perform the on-site testing. During the test, readings shall be taken every 15 minutes showing % load, voltage, amps, oil pressure, water temperature, and battery charge.

END OF SECTION

SECTION 263214

AUTOMATIC TRANSFER SWITCH

PART 1 - GENERAL

1.1 Summary

A. This section includes the following items from a single supplier:

1. Automatic transfer switch
2. Related Accessories as specified

B. Related Requirements

1. It is the intent of this specification to secure an automatic transfer switch that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
2. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted minimum 10 days prior to the closing of the bid with a line by line summary description of all the items of compliance, any items that have been are omitted or have been taken exception to, and a complete description of all deviations.
3. It is the intent of this specification to secure an automatic transfer switch that has been tested during design verification, in production, and at the final job site. The automatic transfer switch will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
4. All equipment shall be new and of current production by an international, power system manufacturer of generators, transfer switches, and paralleling switchgear. The manufacturer shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

1.2 Submittals

A. Action Submittals

1. Product Data

a. The submittal shall include specification sheets showing all standard and optional accessories to be supplied; schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set, the transfer switch, and the remote annunciator panel if it is included elsewhere in these specifications.

B. Closeout Submittals

1. Operation And Maintenance Data
2. Warranty Documentation

1.3 Quality Assurance

A Regulatory Agency

1. The automatic transfer switch shall conform to the requirements of the following codes and standards:

    a. UL 1008 - Standard for Transfer Switch Equipment
    b. IEC 947-6-1 Low-voltage Switchgear and Control gear; Multifunction equipment; Automatic Transfer Switching EquipmentEN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
    c. NFPA 70 - National Electrical Code
    d. NFPA 99 - Essential Electrical Systems for Health Care Facilities
    e. NFPA 110 - Emergency and Standby Power Systems
    f. IEEE Standard 446 - IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
    g. NEMA Standard ICS 10-2005, Electromechanical AC Transfer Switch Equipment.
    h. EN61000-4-4 Fast Transient Immunity Severity Level 4
    i. EN61000-4-5 Surge Immunity Class 4 (voltage sensing and programmable inputs only)
    j. IEEE 472 (ANSI C37.90A) Ring Wave Test
    k. IEC Specifications for EMI/EMC Immunity (CISPR 11, IEC 1000-4-2, IEC 1000-4-3, IEC 1000-4-4, IEC 1000-4-5, IEC 1000-4-6, IEC 1000-4-8, IEC 1000-4-11)
    l. CSA C22.2 No. 178 certification

2. Qualifications

    a. The automatic transfer switch shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production and service of its complete product line.
    b. A manufacturer who has produced this type of equipment for a period of at least 10 years and who maintains a service organization available twenty-four hours a day throughout the year shall produce the automatic transfer switch.

3. Manufacturers

    a. The automatic transfer switch shall be furnished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.
    b. The manufacturer shall maintain a national service organization of employing personnel located throughout the contiguous United States. The Service center’s personnel must be factory trained and must be on call 24 hours a day, 365 days a year.
    c. The manufacturer shall maintain records of each switch, by serial number, for a minimum of 20 years.

1.4 Warranty or Bond

A. Manufacturer’s Warranty

1. The ATS shall include a standard warranty covering one (5) year, to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from the date of initial startup.

2. The ATS manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall regularly engage in maintenance contract programs to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions; adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and functional tests performed on all systems.

PART 2 - PRODUCTS

2.1 Equipment

A. Equipment

1. Furnish and install an automatic transfer switches system(s) with 3-Pole 4-Wire, Solid Neutral, 2600 Amps, 480V/60Hz. Each automatic transfer shall consist of an inherently double throw power transfer switch mechanism and a microprocessor controller to provide automatic operation. All transfer switches and controllers shall be the products of the same manufacturer.

B. Manufacturer

1. Automatic transfer switches shall be Kohler Any Breaker Rated - Programmed Transition KCP-DMTC-2600S (or ASCO equal). Any alternate shall be submitted for approval to the consulting engineer at least 10 days prior to bid date. Alternate bids shall include a line-by-line clarification of the specification marked with "D" for deviation; "E" for exception, and "C" for comply.

C. Construction

1. The transfer switch shall be electrically operated and mechanically held with double throw construction, and operated by a momentarily energized solenoid-driven mechanism.
2. All transfer switch sizes shall use only one type of main operator for ease of maintenance and commonality of parts.
3. The switch shall be positively locked and unaffected by momentarily outages, so that contact pressure is maintained at a constant value and contact temperature rise is minimized for maximum reliability and operating life.
4. All main contacts shall be silver composition. Switches rated 600 amperes and above shall have segmented, blow-on construction for high withstand and close-on capability and be protected by separate arcing contacts.
5. Inspection of all contacts shall be possible from the front of the switch without disassembly of operating linkages and without disconnection of power conductors. Switches rated 800 amperes and higher shall have front removable and replaceable contacts. All stationary and moveable contacts shall be replaceable without removing power conductors and/or bus bars.
6. Designs utilizing components of molded-case circuit breakers, contactors, or parts thereof, which are not intended for continuous duty, repetitive switching or transfer between two active power sources, are not acceptable.
7. For two and three pole switches, where neutral conductors are to be solidly connected as shown on the plans, a neutral conductor plate with fully rated AL-CU pressure connectors shall be provided.
8. For four pole switches with a switching neutral, where neutral conductors must be switched as shown on the plans, the contactor shall be provided with fully rated switched neutral transfer contacts. Overlapping neutral contacts may be used as an alternative.

D. Enclosure

1. The ATS shall be furnished in a NEMA 3R enclosure.
2. All standard door mounted switches and indicating LEDs shall be integrated into a flush-mounted, interface membrane or equivalent in the enclosure door for easy viewing & replacement. The panel shall be capable of having a manual locking feature to allow the user to lockout all membrane mounted control switches to prevent unauthorized tampering. This cover shall be mounted with hinges and have a latch that may be padlocked. The membrane panel shall be suitable for mounting by others when furnished on open type units.

2.2 Operation

A. Controls

1. A four line, 20 character LCD display and dynamic 4 button keypad shall be an integral part of the controller for viewing all available data and setting desired operational parameters. Operational parameters shall also be available for viewing and control through the communications interface port or USB. The following parameters shall only be adjustable via a password protected programming on the controller:

   a. Nominal line voltage and frequency
   b. Single or three phase sensing
   c. Operating parameter protection
   d. Transfer operating mode configuration (Standard transition, Programmed transition, or Closed transition)

B. Voltage and Frequency

1. Voltage (all phases) and frequency on both the normal and emergency sources shall be continuously monitored. Voltage on both normal and emergency sources and frequency on the emergency sources shall be adjustable with the following pickup, dropout, and trip setting capabilities (values shown as % of nominal unless otherwise specified):

	Parameter	Dropout/Trip	Pickup/Reset
a.	Under voltage	75 to 98%	85 to 100%
b.	Over voltage	06 to 135%	95 to 100% of trip
c.	Under frequency	95 to 99%	80 to 95%
d.	Over frequency	01 to 115%	105 to 120%
e.	Voltage unbalance	5 to 20%	3 to 18%

2. Repetitive accuracy of all settings shall be within ± 0.5% over an operating temperature range of -20°C to 70°C.
3. An adjustable dropout time for transient voltage and frequency excursions shall be provided. The time delays shall be 0.1 to 9.9 seconds for voltage and .1 to 15 seconds for frequency.
4. Voltage and frequency settings shall be field adjustable in 1% increments either locally with the display and keypad, remotely via the communications interface port or USB.
5. The controller shall be capable of sensing the phase rotation of both the normal and emergency sources. The source shall be considered unacceptable if the phase rotation is not the preferred rotation selected (ABC or BAC). Unacceptable phase rotation shall be indicated on the LCD; the service required LED and the annunciation through the communication protocol and dry contacts. In addition, the phase rotation sensing shall be capable of being disabled, if required.

6. The controller shall be capable of detecting a single phasing condition of a source, even though a voltage may be regenerated by the load. This condition is a loss of phase and shall be considered a failed source.
7. Source status screens shall be provided for both normal & emergency to provide digital readout of voltage on all 3 phases (phase to phase and phase to neutral), frequency, and phase rotation.

C. Time Delays

1. An adjustable time delay of 0 to 6 seconds shall be provided to override momentary normal source outages and delay all transfer and engine starting signals. Capability shall be provided to extend this time delay to 60 minutes by providing an external 12 or 24 VDC power supply.
2. A time delay shall be provided on transfer to the emergency source, adjustable from 0 to 60 minutes, for controlled timing of transfer of loads to emergency.
3. A time delay shall be provided on re-transfer to normal. The time delays shall be adjustable from 0 to 60 minutes. Time delay shall be automatically bypassed if the emergency source fails and the normal source is acceptable.
4. A time delay shall be provided on shut down of engine generator for cool down, adjustable from 0 to 60 minutes.
5. A time delay activated output signal shall also be provided to drive external relay(s) for selective load disconnect and reconnect control. The controller shall be capable of controlling a maximum of 9 individual output time delays to step loads on after a transfer occurs. Each output may be individually programmed for their own time delay of up to 60 minutes. Each sequence shall be independently programmed for transferring from normal to emergency and transferring from emergency to normal.
6. All time delays shall be adjustable in 1 second increments.
7. All time delays shall be adjustable by using the display and keypad, with a remote device connected to the communications interface port or USB.
8. Each time delay shall be identified and a dynamic countdown shall be shown on the display. Active time delays can be viewed with a remote device connected to the communications interface port or USB.

D. Additional Features

1. The controller shall have 3 levels of security. Level 1 shall allow monitoring of settings and parameters only. The Level 1 shall be capable of restricted with the use of a lockable cover. Level 2 shall allow test functions to be performed and Level 3 shall allow setting of all parameters.
2. The display shall provide for the test functions, allowed through password security. The test function shall be load, no load or auto test. The auto test function shall request an elapsed time for test. At the completion of this time delay the test shall be automatically ended and a retransfer sequence shall commence. All loaded tests shall be immediately ended and retransfer shall occur if the emergency source fails and the normal source is acceptable.
3. A contact closure shall be provided for a low-voltage engine start signal. The start signal shall prevent dry cranking of the engine by requiring the generator set to reach proper output, and run for the duration of the cool down setting, regardless of whether the normal source restores before the load is transferred.
4. Auxiliary contacts shall be provided consisting of a minimum of two contacts, closed when the ATS is connected to the normal source and two contacts closed, when the ATS is connected to the emergency source.
5. LED indicating lights shall be provided; one to indicate when the ATS is connected to the normal source (green) and one to indicate when the ATS is connected to the emergency source (red).

6. LED indicating lights shall be provided and energized by controller outputs. The lights shall provide true source availability of the normal (green) and emergency sources (red), as determined by the voltage, frequency and phase rotation sensing trip and reset settings for each source.
7. A membrane switch shall be provided on the membrane panel to test all indicating lights and display when pressed.
8. Provide the ability to select “commit/no commit to transfer" to determine whether the load should be transferred to the emergency generator if the normal source restores before the generator is ready to accept the load.
9. Terminals shall be provided for a remote contact which opens to signal the ATS to transfer to emergency and for remote contacts which closes to inhibit transfer to emergency and/or retransfer to normal. Both of these inhibit signals can be activated through the keypad, communications interface port or USB. A “not-in-auto" LED shall indicate anytime the controller is inhibiting transfer from occurring.
10. The programmed transition feature shall control the transfer so that mechanism is placed in a load disconnect position for an adjustable period of time, giving motor and transformer loads an opportunity to decay to acceptable levels. The programmed transition feature shall be specifically designed for and be the product of the ATS manufacturer. The programmed transition setting shall be capable of being enabled or disabled from the user interface, communications interface port or USB. The controller shall include a built-in time delay for programmed transition operation. This time shall be adjustable from the user interface. The default value shall be 1 second and shall be adjustable from 0 to 60 minutes.
11. A time based load control feature shall be available to allow the prioritized addition and removal of loads based during transfer. This feature may be enabled for either or both sources. The user shall be able to control up to nine loads with independent timing sequences for pre and post transfer delays in either direction of transfer.
12. The controller shall provide 2 inputs for external controls that can be programmed from the following values:
13. Common fault, Remote test, Inhibit transfer, Low battery voltage, Peak shave, Time delay bypass, Load shed forced to OFF position (Programmed transition only)
14. The controller shall provide two form "C" contact outputs rated for up to 12A @ 240VAC or 2A @ 480VAC that can be programmed from the following values:
15. Aux switch open, Transfer switch aux contact fault, Alarm silenced, Alarm active, I/O communication loss, Contactor position, Exercise active, Test mode active, Fail to transfer, Fail to acquire standby source, Source available, Phase rotation error, Not in automatic mode, Common alarm, In phase monitor sync, Load bank control active, Load control active, Maintenance mode active, Non-emergency transfer, Fail to open/close, Loss of phase, Over/under voltage, Over/under frequency, Voltage unbalance, Start signal, Peak shave active, Preferred source supplying load, Standby source supplying load
16. The controller shall be capable of expanding the number of inputs and outputs with additional modules.
17. Optional input/output modules shall be furnished which mount on the inside of the enclosure to facilitate ease of connections.
18. Engine Exerciser - The controller shall provide an internal engine exerciser. The engine exerciser shall allow the user to program up to 21 different exercise routines based on a calendar mode. For each routine, the user shall be able to:

    a. Enable or disable the routine
    b. Enable or disable transfer of the load during routine.
    c. Set the start time, time of day, day of week, week of month (1st, 2nd, 3rd, 4th, alternate or every)
    d. Set the duration of the run.

e. At the end of the specified loaded exercise duration the switch shall transfer the load back to normal and run the generator for the specified cool down period. All loaded exercises shall be immediately ended and retransfer shall occur if the standby source fails. The next exercise period shall be displayed on the main screen with the type of exercise, time and date. The type of exercise and the time remaining shall be display when the exercise is active. It shall be possible of ending the exercise event with a single button push.

19. Date and time - The date shall automatically adjust for leap year and the time shall have the capability of automatically adjusting for daylight saving and standard times.
20. System Status - The controller shall have a default display the following on:

    a. System status
    b. Date, time and type of the next exercise event
    c. Average voltage of the preferred and standby sources
    d. Scrolling through the displays shall indicate the following:

        1) Line to line and line to neutral voltages for both sources
        2) Frequency of each source
        3) Load current for each phase
        4) Single or three phase operation
        5) Type of transition
        6) Preferred source
        7) Commit or no commit modes of operation
        8) Source/source mode
        9) In phase monitor enable/disable
        10) Phase rotation
        11) Date and time

21. Controllers that require multiple screens to determine system status or display “coded" system status messages, which must be explained by references in the operator’s manual, are not permissible.
22. Self-Diagnostics - The controller shall contain a diagnostic screen for the purpose of detecting system errors. This screen shall provide information on the status input signals to the controller which may be preventing load transfer commands from being completed.
23. Communications Interface - The controller shall be capable of interfacing, through a standard communication with a network of transfer switches and generators. It shall be able to be connected via an RS-485 serial communication (up to 4000 ft. direct connect or multi-drop configuration). This module shall allow for seamless integration of existing or new communication transfer devices and generators.
24. The transfer switch shall also be able to interface to 3rd party applications using Modbus RTU open standard protocols utilizing Modbus register maps. Proprietary protocols shall not be acceptable.
25. The controller shall contain a USB port for use with a software diagnostic application available to factory authorized personnel for downloading the controller’s parameters and settings; exercise event schedules; maintenance records and event history. The application can also adjust parameters on the controller.
26. Data Logging - The controller shall have the ability to log data and to maintain the last 2000 events, even in the event of total power loss. The following events shall be time and date stamped and maintained in a non-volatile memory. The controller shall be able to display up to the last 99 events. The remaining events shall be accessible via the communications interface port or USB.

a. Event Logging

1) Data, date and time indication of any event

b. Statistical Data

1) Total number of transfers*
2) Total number of fail to transfers*
3) Total number of transfers due to preferred source failure*
4) Total number of minutes of operation*
5) Total number of minutes in the standby source*
6) Total number of minutes not in the preferred source*
7) Normal to emergency transfer time
8) Emergency to normal transfer time
9) System start date
10) Last maintenance date
11) * The statistical data shall be held in two registers. One register shall contain data since start up and the second register shall contain data from the last maintenance reset.

27. External DC Power Supply - An optional provision shall be available to connect up to two external 12/24 VDC power supply to allow the LCD and the door mounted control indicators to remain functional when both power sources are dead for extended periods of time. This module shall contain reverse battery connection indication and circuit protection.

2.3 Source Quality Control

A. Test and Inspection

1. Upon request, the manufacturer shall provide a notarized letter certifying compliance with all of the requirements of this specification including compliance with the above codes and standards. The certification shall identify, by serial number(s), the equipment involved. No exceptions to the specifications, other than those stipulated at the time of the submittal, shall be included in the certification.
2. The ATS manufacturer shall be certified to ISO 9001 International Quality Standard and the manufacturer shall have third party certification verifying quality assurance in design/development, production, installation and servicing in accordance with ISO 9001.

END OF SECTION

APPENDIX A

SUPPLEMENTAL DRAWINGS

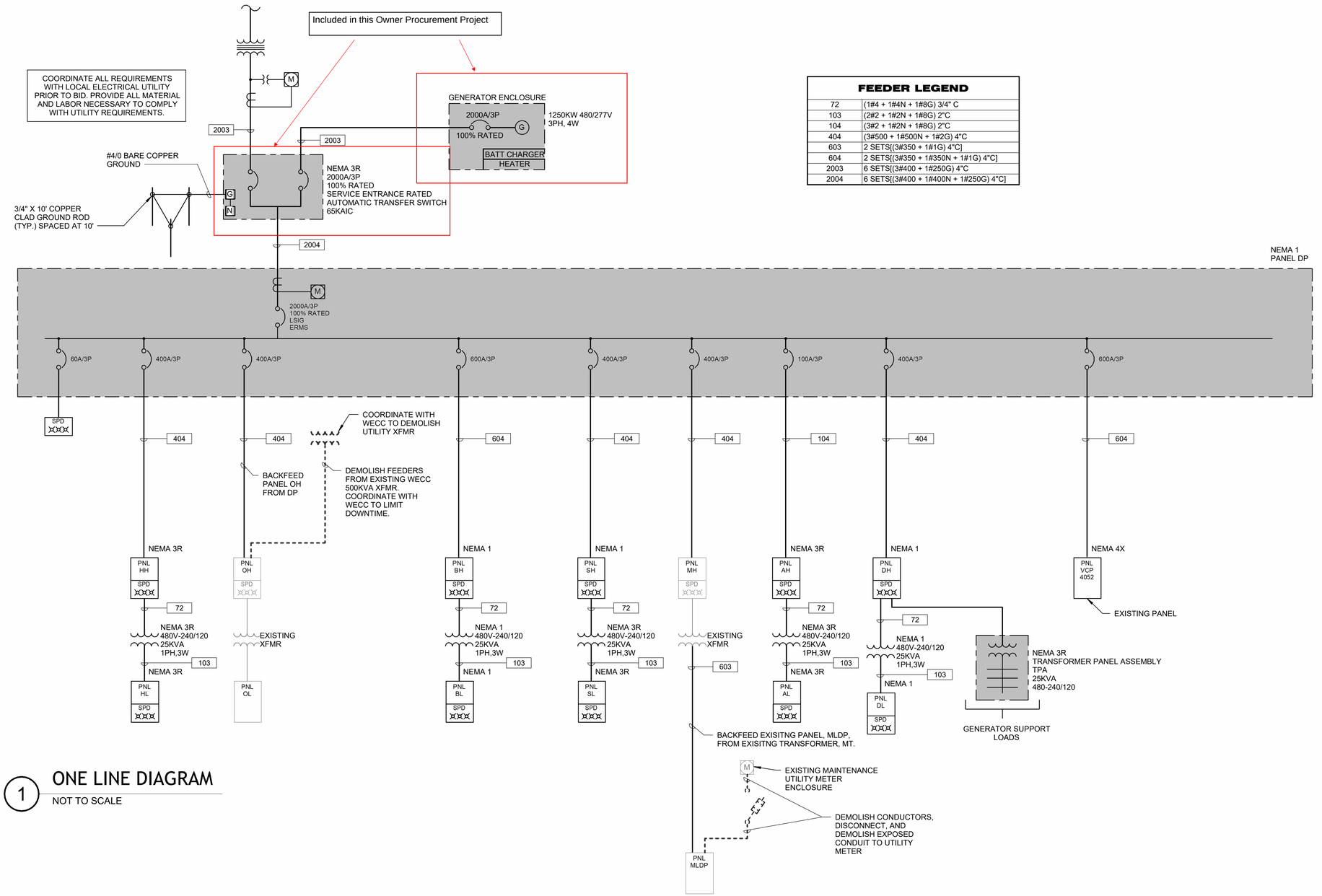
Wynne Emergency Response Project C – Wastewater Treatment Plant Improvements

Electrical One Line

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Autodesk Docs://23016 - Wynne WWTP/CRI-038_Wynne WWTP PLANT_E23.rvt



FEEDER LEGEND	
72	(1#4 + 1#4N + 1#8G) 3/4" C
103	(2#2 + 1#2N + 1#8G) 2"C
104	(3#2 + 1#2N + 1#8G) 2"C
404	(3#500 + 1#500N + 1#2G) 4"C
603	2 SETS[(3#350 + 1#1G) 4"C]
604	2 SETS[(3#350 + 1#350N + 1#1G) 4"C]
2003	6 SETS[(3#400 + 1#250G) 4"C
2004	6 SETS[(3#400 + 1#400N + 1#250G) 4"C]

1 ONE LINE DIAGRAM

NOT TO SCALE

REV. NO.	DATE	DRWN	CHKD	REMARKS

BROWN ENGINEERS
17200 Chenal Pkwy.
Suite 300 PMB 324
Little Rock, AR 72223
Phone 501-448-0100
www.brownengineers.net

CERTIFICATE OF AUTHORIZATION — BROWN ENGINEERS, LLC — No. 1323 — ENGINEERING

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 16666 — SCOTT OSBORN GEURIN

0 1" — 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	BB
DRAFTED:	CB
CHECKED:	SG
DATE:	FEB 2025

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

WYNNE, ARKANSAS

WYNNE WASTEWATER TREATMENT IMPROVEMENTS PACKAGE C, WASTEWATER TREATMENT PLANT

AGENCY REVIEW SET

ELECTRICAL ONE-LINE DIAGRAM

JOB NO: CRI-038

SHEET NO: E22

ATTENTION BIDDERS

The As-Built documents are provided to Bidders for the Wynne Wastewater Treatment Plant Improvements project as supplemental information only and not considered to be a part of the contract documents. The As-Built documents that were specifically prepared for the Wynne Water Utility under separate contract from the Engineer of Record. The interpretation of the As-Built information, recommendations, findings, conclusions, or other information provided herein is at the sole discretion of the Bidder.

WASTEWATER TREATMENT PLANT EXPANSION AND REHABILITATION

WYNNE, ARKANSAS

JANUARY, 2001

9924

ADEQ PROJECT NO. CS-050793-03

CRIST ENGINEERS, INC.

CONSULTING ENGINEERS

LITTLE ROCK, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.3482 LARRY D. GADDIS

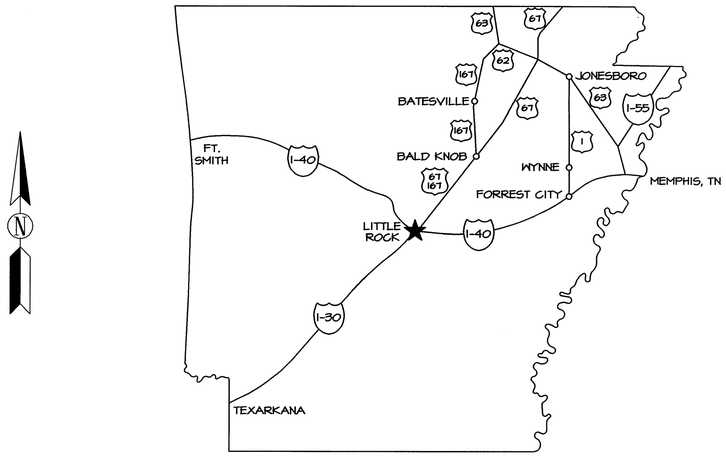
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.4226 RICHARD W. ZELNICK

CORPORATE REGISTRATION CRIST ENGINEERS, INC. CONSULTING ENGINEERS No. 91 ARKANSAS ENGINEER

12-02

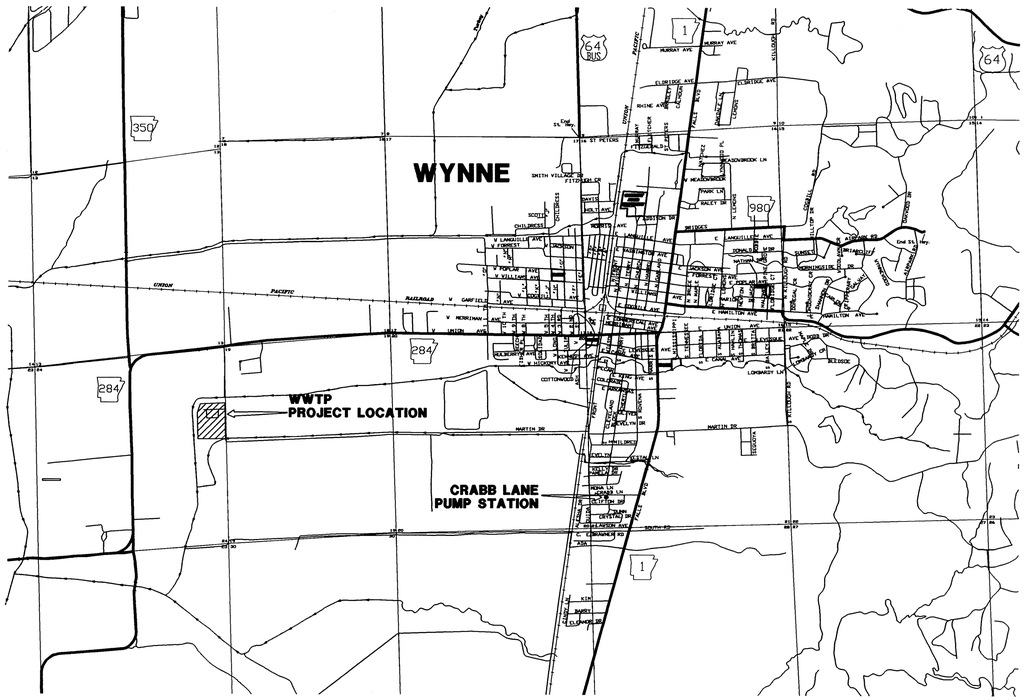
AS CONSTRUCTED

9924-00.dwg



ARKANSAS

NO SCALE



BASE MAP PROVIDED BY THE MAPPING SECTION,
PLANNING AND RESEARCH DIVISION,
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT,
IN COOPERATION WITH THE U.S. DEPARTMENT OF TRANSPORTATION

VICINITY MAP

1"=2000'

SHEET INDEX

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45 GRAVITY THICKENER – PLAN AND SECTIONS
46 GRAVITY THICKENER – SECTION AND DETAILS
47 GRAVITY THICKENER – PLAN AND SECTIONS
48 GRAVITY THICKENER – STRUCTURAL SECTIONS
49 PUMP BUILDING – ELEVATIONS
50 PUMP BUILDING – PLAN AND SECTIONS
51 PUMP BUILDING – DETAILS
52 PUMP BUILDING – FOUNDATION PLAN
53 PUMP BUILDING – ROOF FRAMING PLAN
54 PUMP BUILDING – FOUNDATION DETAILS
55 BLOWER BUILDING – SITE PLAN
56 BLOWER BUILDING – ELEVATIONS
57 BLOWER BUILDING – PLAN, SCHEDULE, & DETAILS
58 BLOWER / PUMP BUILDING – MISCELLANEOUS DETAILS
59 BLOWER BUILDING – FOUNDATION PLAN
60 BLOWER BUILDING – ROOF FRAMING PLAN
61 STRUCTURAL DETAILS AND FRAMING NOTES
62 GENERAL FOUNDATION DETAILS & CONCRETE NOTES
63 ADMINISTRATION BUILDING – PLAN AND DETAILS
64 CRABB LANE PUMP STATION – VICINITY MAP / SITE PLAN
65 CRABB LANE PUMP STATION – PLAN, SECTION, & DETAILS
66 MISCELLANEOUS DETAILS 1
67 MISCELLANEOUS DETAILS 2
68 ELECTRICAL – SITE PLAN
69 PLANT WIDE ONE–LINE DIAGRAM
70 PUMP BUILDING – ELECTRICAL & CONTROLS PLAN
71 BLOWER BUILDING – ELECTRICAL PLAN
72 ELECTRICAL DETAILS – CONTROLS

REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION

VICINITY MAP / INDEX

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	1
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-01.dwg

N

REPLACE EXISTING ROTORS (4)

Flow

NEW 4' CHAIN LINK FENCE

Aeration Basin No. 1

10' Gate

Aeration Basin No. 2

Flow

Existing 3' Walkway

10'-0"

10' Gate

Storage Basin

Bore #1

GRIT REMOVAL BAR SCREENS

PRIMARY SUBMERSIBLE PUMP STATION

Headworks

790.75 N
922.25 E

780.00 N
918.00 E

774.00 N
903.00 E

DIVERSION MANHOLE

Service Pump Station

Existing Drive (To Be Removed)

Return Sludge Pumps

Existing Drive (To Be Replaced)

667.00 N
569.50 E

680.00 N
690.00 E

BLOWER BUILDING

Final Clarifier CONVERT TO AEROBIC DIGESTER

658.00 N
726.00 E

Sludge Drying Beds

Bore #5

TBM #2

TBM #1

655.41 N
884.71 E

648.00 N
795.00 E

RAS MANHOLE

610.50 N
728.27 E

623.00 N
588.00 E

621.50 N
711.00 E

GRAVITY THICKENER

Administration Building

PARKING

514.50 N
651.15 E

581.25 N
744.15 E

Bore #2

Bore #3

FINAL CLARIFIER #1

SLUDGE PUMP BUILDING

Final Flume

ULTRAVIOLET DISINFECTION

555.00 N
511.00 E

551.50 N
574.00 E

CLARIFIER DIVISION BOX

554.50 N
707.00 E

NEW OUTFALL STRUCTURE

CONVERT TO POST AERATION

Contact Basin

Chlorine Building

497.00 N
705.40 E

FINAL CLARIFIER #2

Bore #4

REROUTE ROAD

16' Gate

NEW STRUCTURE

EXISTING STRUCTURE TO BE MODIFIED

TBM #1:

Chiseled White Square
On Back Of Curb
Elev. 231.85

TBM #2:

Top Of SW Bolt, SW Corner
Of Sludge Drying Bed
Elev. 228.77

REVISED AS CONSTRUCTED, DECEMBER 2002

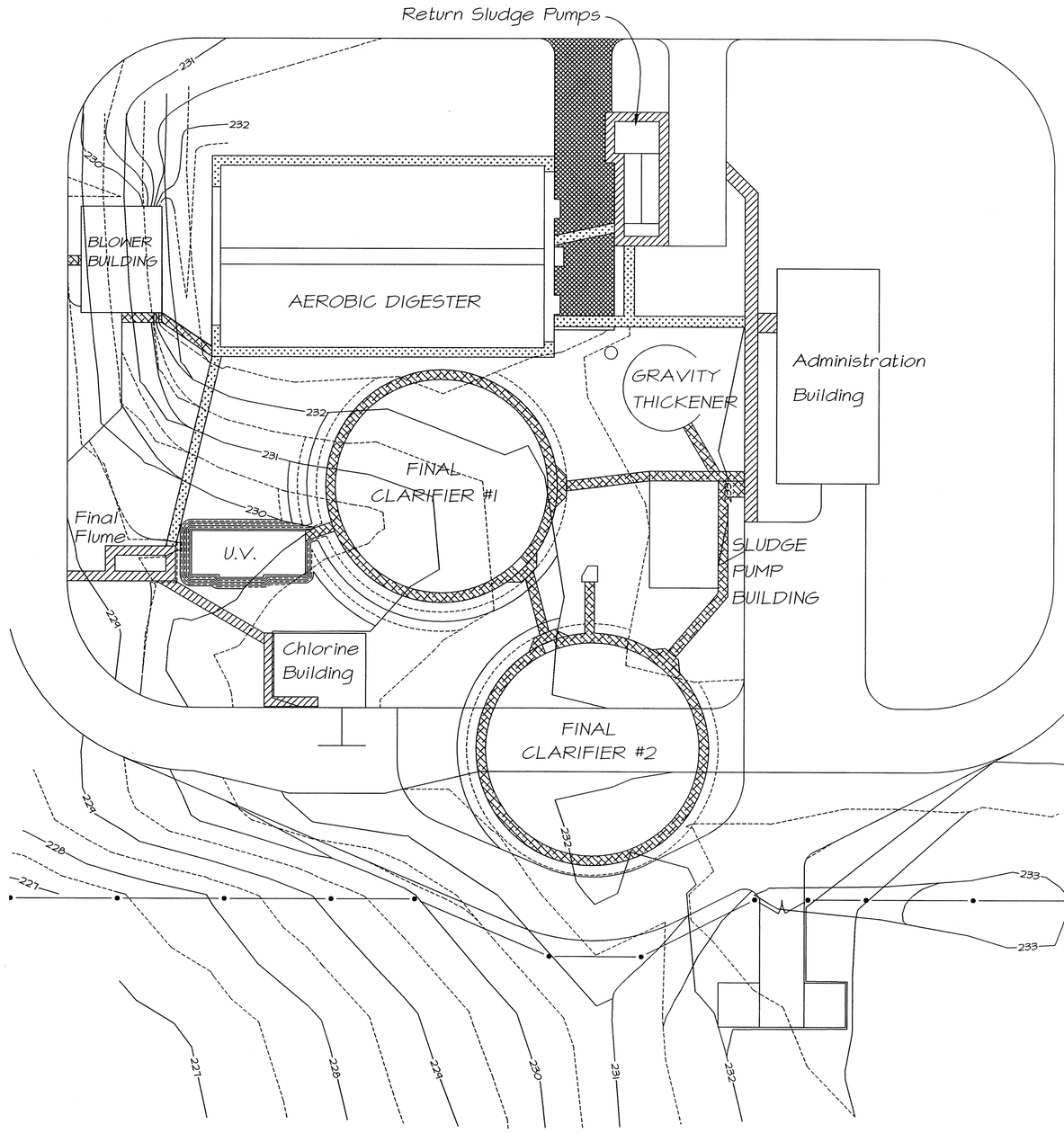
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION

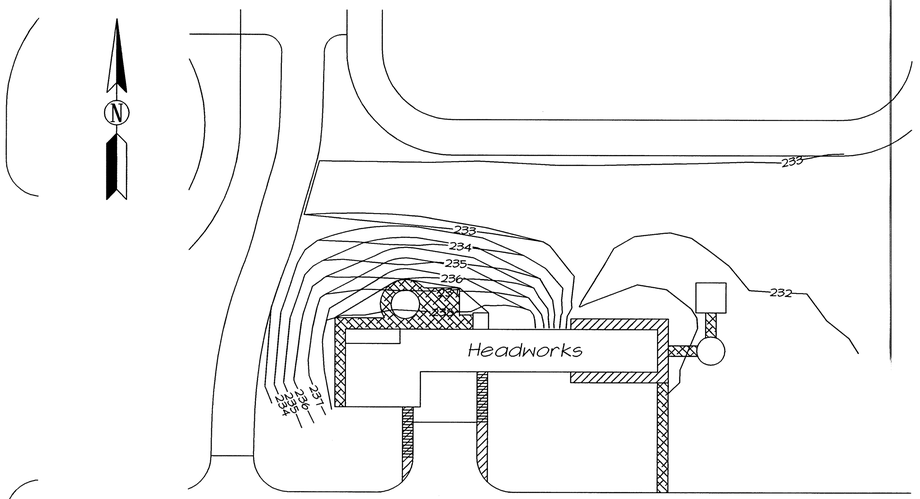
SITE PLAN

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	2 / 72
DRAFTED: SWJ	SCALE: 1" = 30'		
CHECKED: LDG			

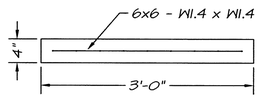
9924-02.dwg



PARTIAL GRADING PLAN A



PARTIAL GRADING PLAN B



WALKWAY DETAIL

N.T.S.

LEGEND

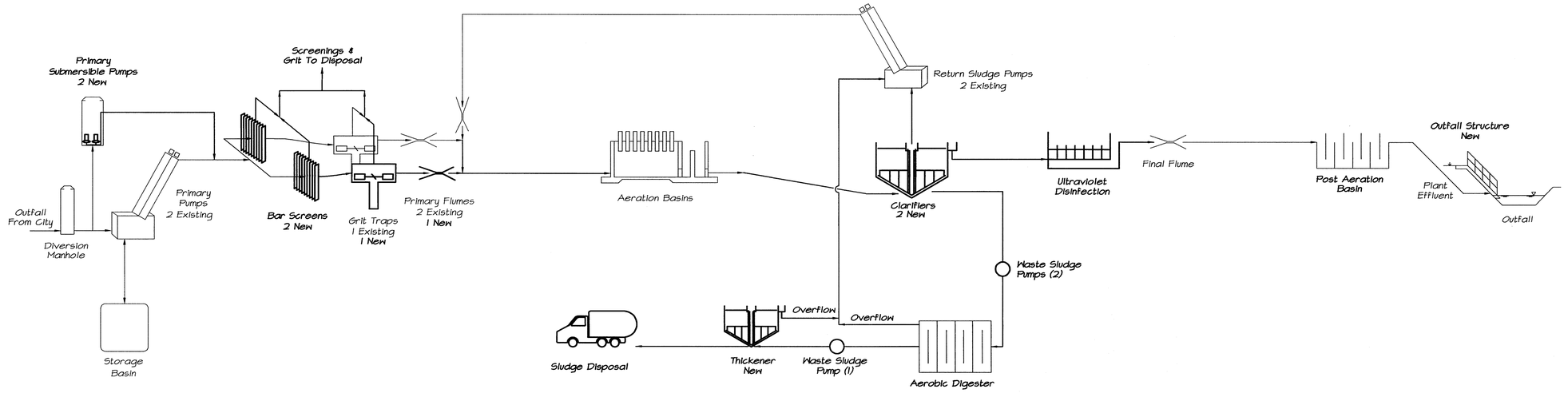
- Existing Walkway To Remain
- Proposed Walkway
- Existing Walkway To Be Replaced
- Existing Walkway/Drive To Be Removed

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

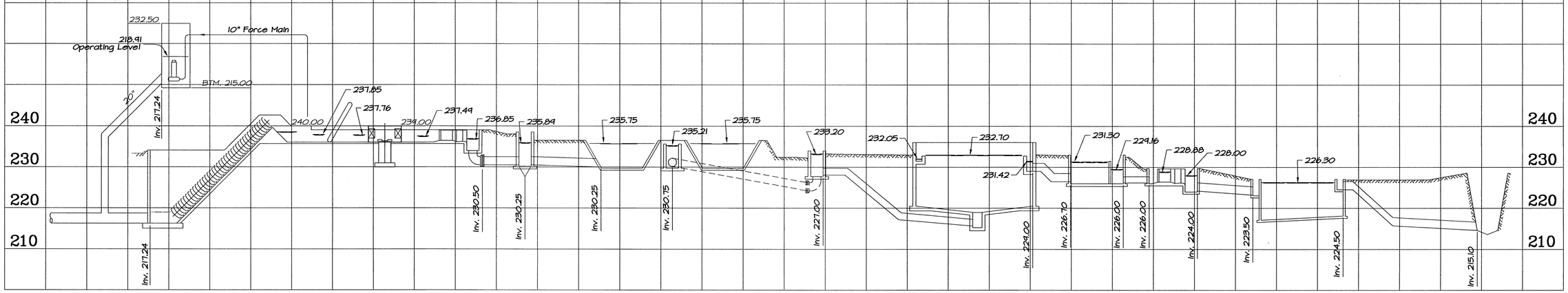
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
GRADING PLAN AND WALKWAY PLAN

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	3
DRAFTED: SWJ	SCALE: 1"=20'		72
CHECKED: LDG			

9924-03.dwg



PROCESS SCHEMATIC (AFTER CONSTRUCTION)



* Hydraulic Profile Shown At 6.65 MGD Flow Rate (Max. Day, 20-Year Design)

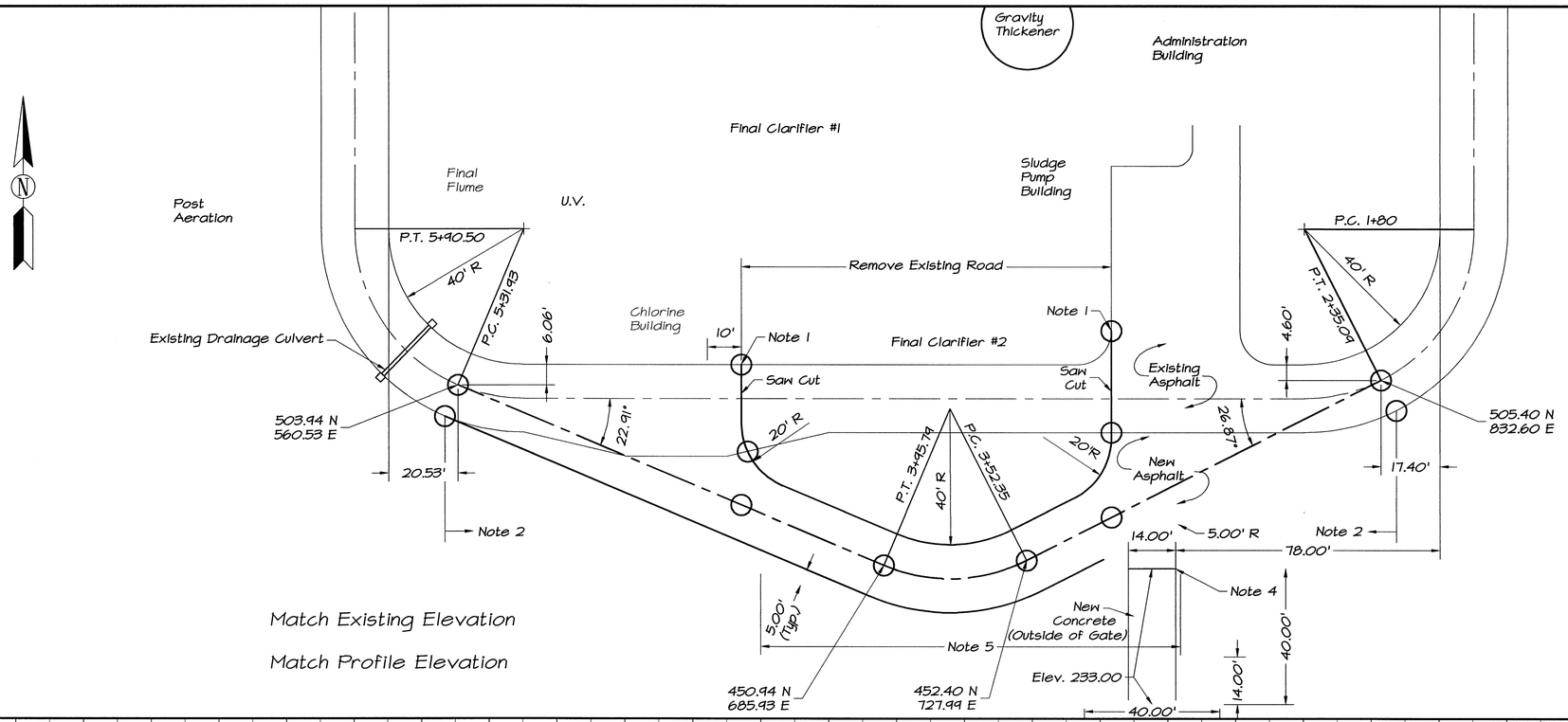
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PROCESS SCHEMATIC & HYDRAULIC PROFILE

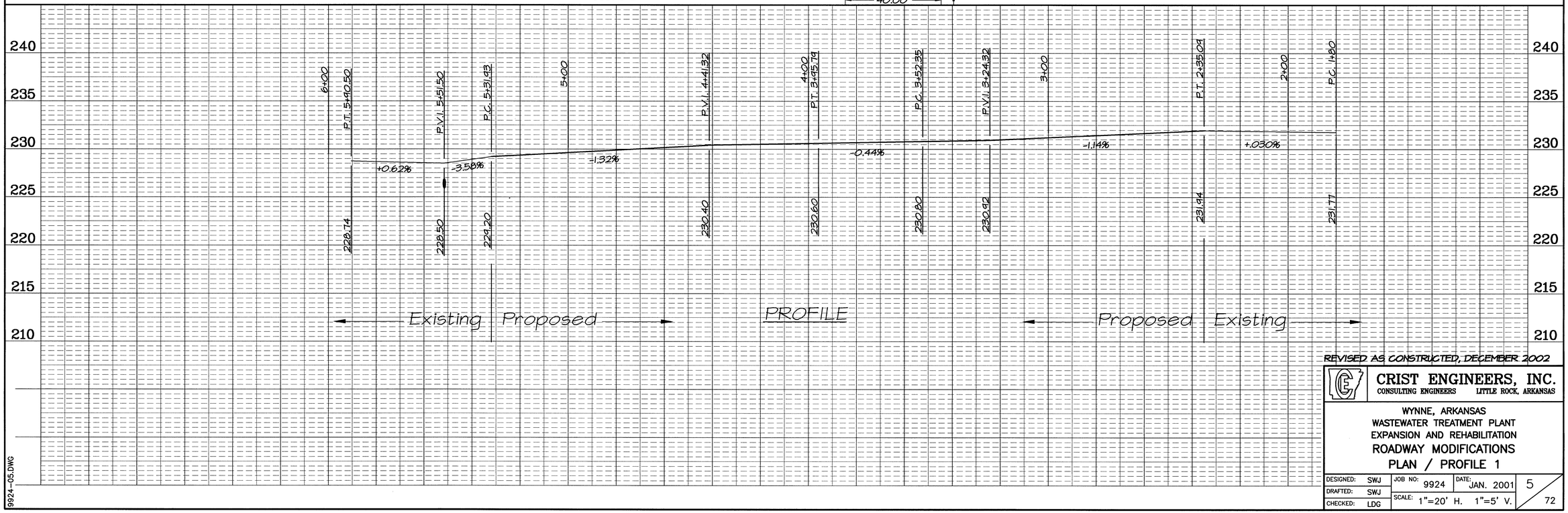
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	4
DRAFTED: SWJ	SCALE: NO SCALE		72
CHECKED: LDG			

9924-04.dwg



NOTES:

1. Saw Cut Existing Road Along Proposed Line. Remove Existing Curb And Gutter. Remove Existing Asphalt Surfacing. Protect Edges Of Cut Asphalt.
2. Remove Existing Curb And Gutter As Shown Between Notes. Match New Asphalt Surface To Existing Asphalt Surface.
3. Contractor Responsible For Any Construction Related Damage To Existing Asphalt Surfacing.
4. End Concrete Curb And Gutter At Transition From Asphalt To Concrete.
5. Remove Existing Chain-Link Fence As Shown. Construct New Fence To 5' From Back Of New Curb. Install New 16' Gate With 6" Gate Posts. New Fence To Match Existing.



REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
ROADWAY MODIFICATIONS
PLAN / PROFILE 1

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	5
DRAFTED: SWJ	SCALE: 1"=20' H. 1"=5' V.		72
CHECKED: LDG			

9924-05.DWG

NOTES:

1. End Of Curb And Gutter.
2. Scarify And Recompact A Minimum of 6" Of Subgrade, 95% Std. Proctor. Sta. 5+20 To Sta. 8+95.
3. Match New Asphalt To Existing.
4. MH #1 - Rim Elev. 227.86±
5. MH #2 - Rim Elev. 227.86±

Aeration Basin

8+45.00
20.00'
20' R
Existing 15" Concrete Culvert (Retain)
Existing Light Pole (Retain)
20.00'
7.5'
Slope -1.43%
35.00'
20' R
MH #1
MH #2
7.5'
Existing Asphalt Replace With New
Existing Asphalt Replace With New
20' R
5+20.00
4+90.00
20.00'
Note 1
Sludge Drying Beds
Elev. 228.00
Contractor Shall Replace Existing Asphalt Surfacing With New Asphalt Surfacing From Plant Entrance To Sta. 5+20.00
Blower Building
36.00'
29.00'
18.00'

N

PROFILE

240 235 230 225 220 215 210

8+45.00 P.V.I. 8+45.00 8+00.00 P.V.I. 7+68.50 P.V.I. 7+43.50 7+00.00 6+00.00 P.V.I. 5+60.00 5+30.00 5+00.00 P.V.I. 4+90.00

0.50% 0.20% -0.20% 0.00% -2.86%

227.99 227.74 227.65 227.54 227.64 227.75 227.75 227.75 227.86 228.72 229.57 229.86

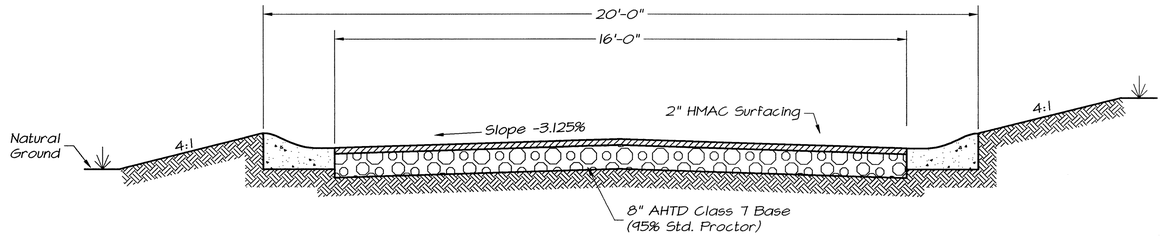
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
ROADWAY MODIFICATIONS
PLAN / PROFILE 2

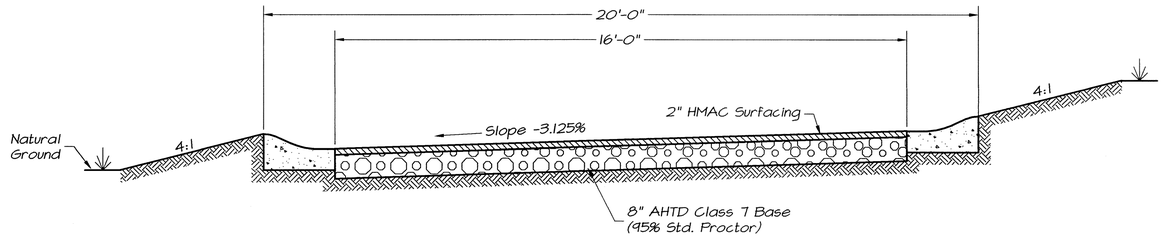
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	6
DRAFTED: SWJ	SCALE: 1"=20' H. 1"=5' V.		72
CHECKED: LDG			

9924-06.dwg



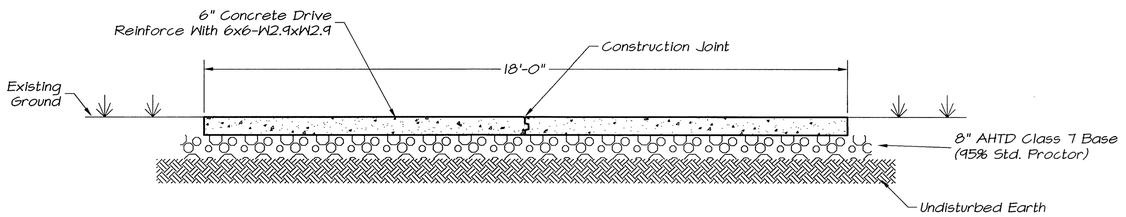
EXISTING ROAD SECTION

1/2" = 1'-0"



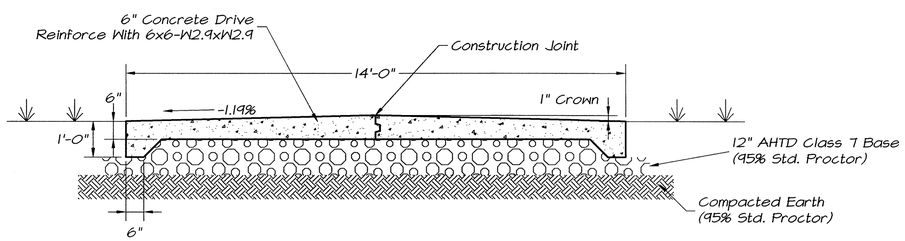
TYPICAL ROAD SECTION

1/2" = 1'-0"



SLUDGE TRUCK DRIVE REPLACEMENT

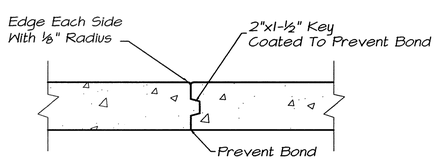
1/2" = 1'-0"



NEW SLUDGE TRUCK DRIVE

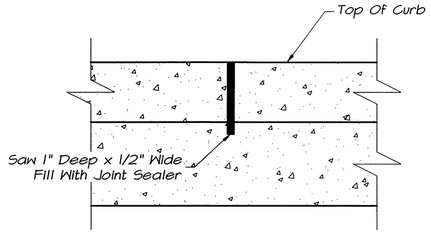
1/2" = 1'-0"

Note:
Hand Tool Contraction Joints
At 10'-0" Intervals.

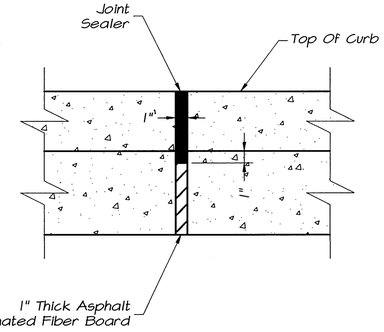


CONSTRUCTION JOINT

N.T.S.



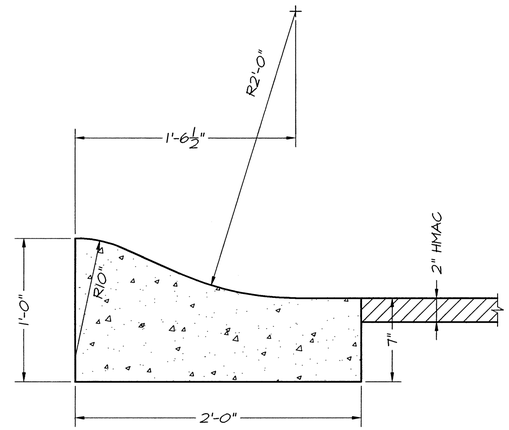
DUMMY JOINT
(Max. 15' Spacing)



EXPANSION JOINT
(Max. 60' Spacing)

CURB JOINT DETAILS

2" = 1'-0"



CURB DETAILS

2" = 1'-0"

REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
ROADWAY MODIFICATIONS
DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	7
DRAFTED: SWJ			
CHECKED: LDG	SCALE: AS SHOWN		72

9924-07.dwg

1" FRP Grating	
Mark	Opening Dimension
1	3'-4" x 6'-8"
2	4'-4" x 8'-10"
3	4'-4" x 8'-10"
4	3'-4" x 3'-6"
5	3'-4" x 7'-0"
6	3'-4" x 3'-0"

GRATING SCHEDULE

LEGEND

FH - Fire Hydrant
YH - Yard Hydrant
HB - Hose Bib
HB* - Hose Bib To Be Replaced
FFHB - Frost Free Hose Bib w/ Vacuum Breaker, Eclipse No. 909, or equal.
O - Existing
● - Proposed

NOTES:

1. Remove Existing 2-Inch Water Line And Appurtenances. Deliver Removed Items To Owner. After Other Construction Is Complete And Structures Are Backfilled With Properly Compacted Material, Install New 2-Inch Water Line And Appurtenances As Shown. Connect New Water Line To Old With Coupling.
2. Prior To Excavation For Drain Connection (See Sheet 9), Remove Affected Section Of Existing 2-Inch Water Line And Hose Bib Beyond Limits Of Construction And Install Temporary Cap (Remaining Line Shall Stay Active During Construction). Deliver Removed Items To Owner. After Other Construction Is Complete, Remove Temporary Cap and Extend Water Line To Original Location And Install New Hose Bib. Connection New Water Line To Old With Coupling.
3. Remove Existing Bend And Install New 2-Inch Cross. Extend 2-Inch Water Line. Maintain All Existing Services. Install Five (5), 2-Inch Yard Hydrants. See Specifications.
4. Re-Route Exisiting PVC Water Line As Shown. Abandon Existing PVC Water Lines. Maintain Existing Service To Chlorine Building.
5. New 1-Inch PVC Water Line To Sludge Pump Building.
6. New 1-Inch PVC Water Line To Flush Valve. New 1-Inch Copper Water Line To Screw Conveyor/Compactor.
7. See Chlorine Detail, Sheet 66. Extend New 1¼" SCH. 80 PVC Chlorine Solution Line To New RAS Manhole. Maintain Existing Service To Chlorine Contact Basin.
8. New 3" Galvanized Air Line From Blower Building.

REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
WATER SYSTEM MODIFICATIONS
& NEW AIR PIPING

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	8
DRAFTED: SWJ		SCALE: 1"=30'	72
CHECKED: LDG			

9924-08.DWG

NOTES:

1. Remove 6"x6" 90° Bend. Retain Existing 6" Valve. Install 6"x6" MJ Tee And 6"x4" PExMJ Reducer. FE 221.4 ±
2. Install 4" DIP Drain Line At Continuous Slope From U.V. Disinfection To Existing Drain Line.
3. Cut In 8"x6" MJ Tee.
4. Remove Existing 24" 90° Bend. Make New Connection With 2 24" 45° Bends. Extend 24" DIP To Clarifier Division Box. Remove Existing 24" DIP Between New 24" Sleeve And Aerobic Digester (Former Clarifier). Grout Fill 24" Opening At Digester. See Specifications For Connection Sequence.
5. Cut In 16"x16" MJ Tee. Extend 16" DIP To New RAS Manhole. Install Temporary Plug In 16" DIP At Manhole. See Specifications For Connection Sequence.
6. Remove Existing 24" 90° Bend. Make New Connection Between U.V. And Flume With 24" MJ Sleeve. See Specifications For Connection Sequence.
7. Slope Concrete Drive To Center Drain. See Detail, Sheet 67. Slope Remainder Of Drive To Existing Pavement At Road.
8. BellxPE, 1" Stubout.
9. Limits Of Gravity Thickener.

Final Flume
Note 6
24" DIP
Note 1
6" DIP
4" DIP
Note 2
MH
U.V.
Cleanout To Grade
24" DIP
24" DIP
Chlorine Building
6'
FINAL CLARIFIER #1
22°30'0"
5°38'33"
68°21'27"
12" DIP
AEROBIC DIGESTER
8" DIP
To Drying Beds
Plug Valve
Plug Valve
FINAL CLARIFIER #2
11°15'00"
24" DIP
24" DIP
24" DIP
RAS Manhole
Note 4
12" DIP
Note 8,9
16" DIP
10" DIP
Note 5
6" DIP
Note 3
Return
Pumps
16" DIP
Note 9
6" DIP
8" DIP
Cleanout (5) See Detail Sheet 66
SLUDGE PUMP BUILDING
6" DIP
Note 9
11°15'0"
GRAVITY THICKENER
6" DIP
Note 9
SLUDGE TRUCK CONNECTION 1
29'-0"
Note 7
Existing Drive (To Be Replaced)
18'-0"
6" SDR-35 PVC
FE Elev. 226.80±
MH
6" DIP
MH
1½" PVC
6" DIP
Elev. 233.00
20'-0"
SLUDGE TRUCK CONNECTION 2
ADMINISTRATION BUILDING

LEGEND
- Existing Pipe
- Proposed Gravity Pipe
- Proposed Force Main
- Existing Valve
- Proposed Gate Valve
- Proposed Plug Valve

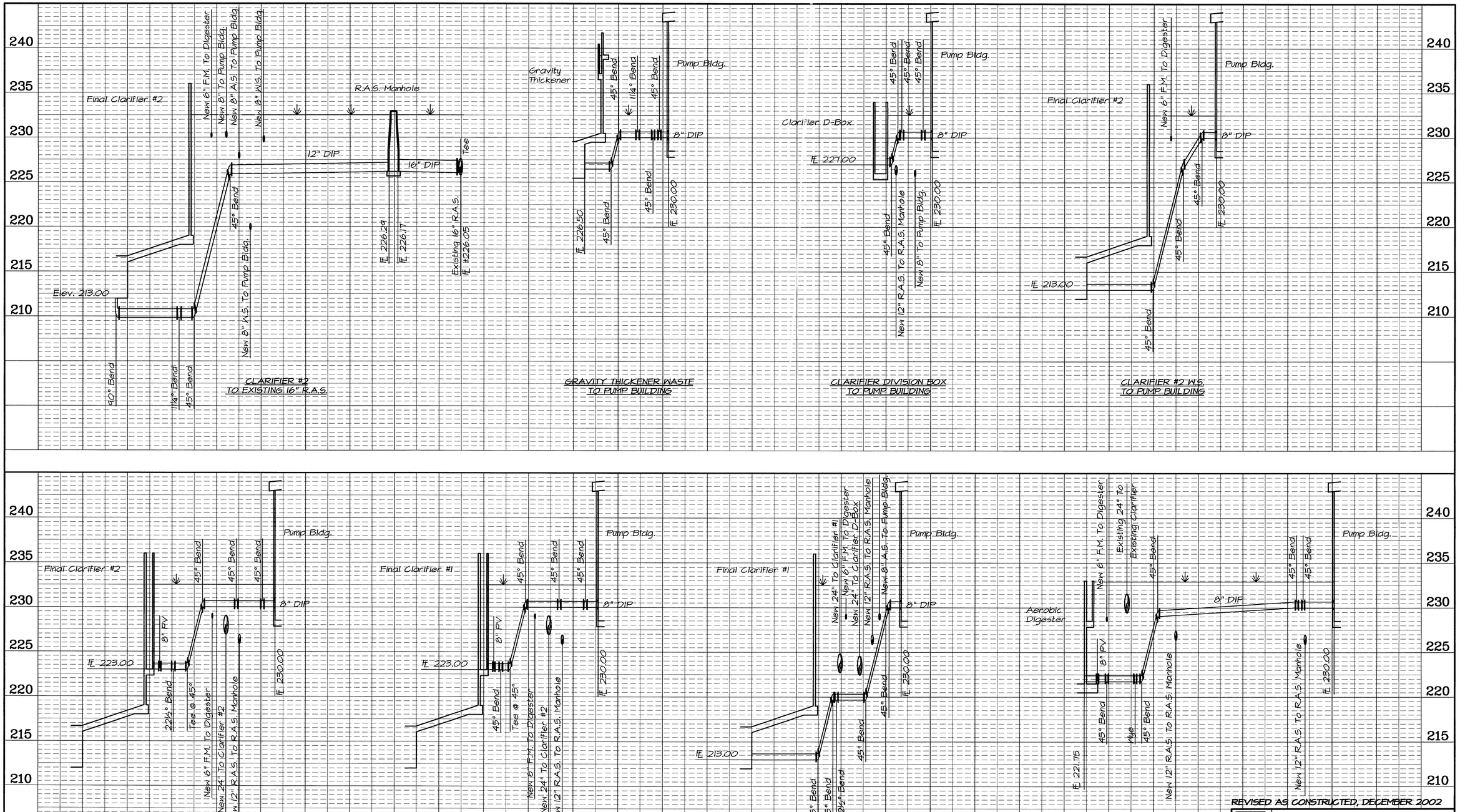
9924-09.dwg

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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
YARD PIPING
PLAN

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	9
DRAFTED: SWJ	SCALE: 1"=10'		72
CHECKED: LDG			



REVISED AS CONSTRUCTED, DECEMBER 2002

LEGEND

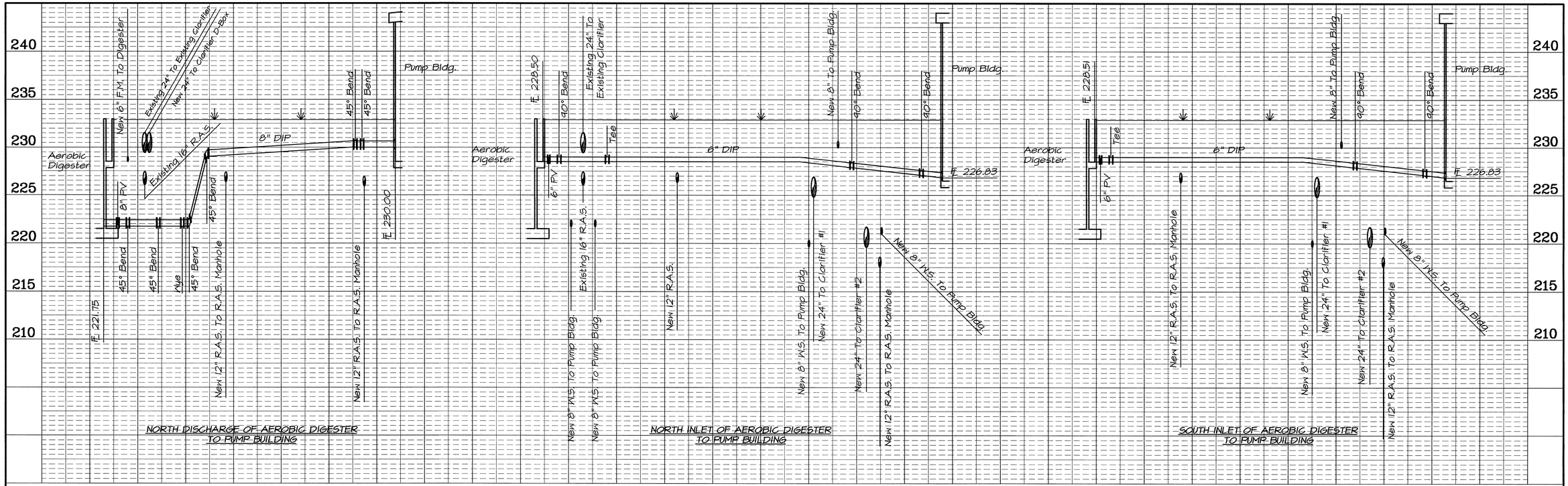
DIP = Ductile Iron Pipe
PV = Plug Valve
W.S. = Waste Sludge
R.A.S. = Return Activated Sludge

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
YARD PIPING
PROFILES 1

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	10 / 72
DRAFTED: SWJ	SCALE: 1'=20' H. 1"=5' V.		
CHECKED: LDG			

9924-10.dwg



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LEGEND

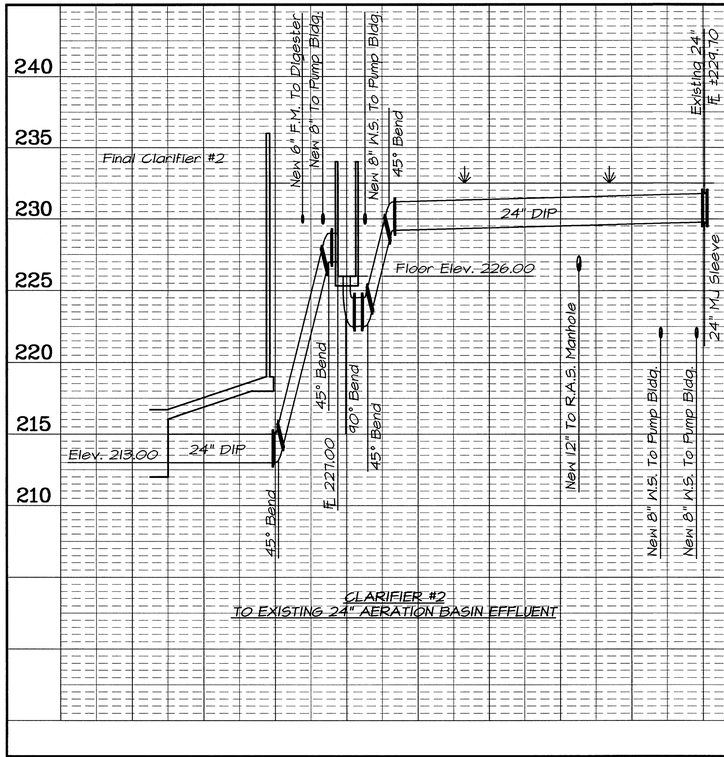
DIP = Ductile Iron Pipe
PV = Plug Valve
W.S. = Waste Sludge
R.A.S. = Return Activated Sludge

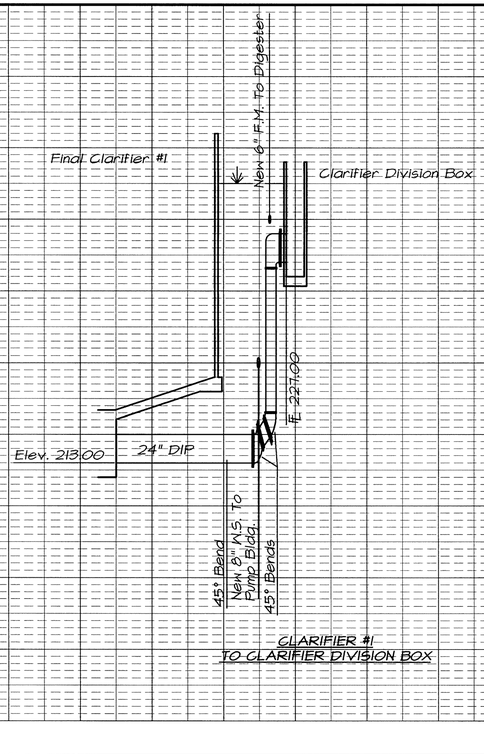
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

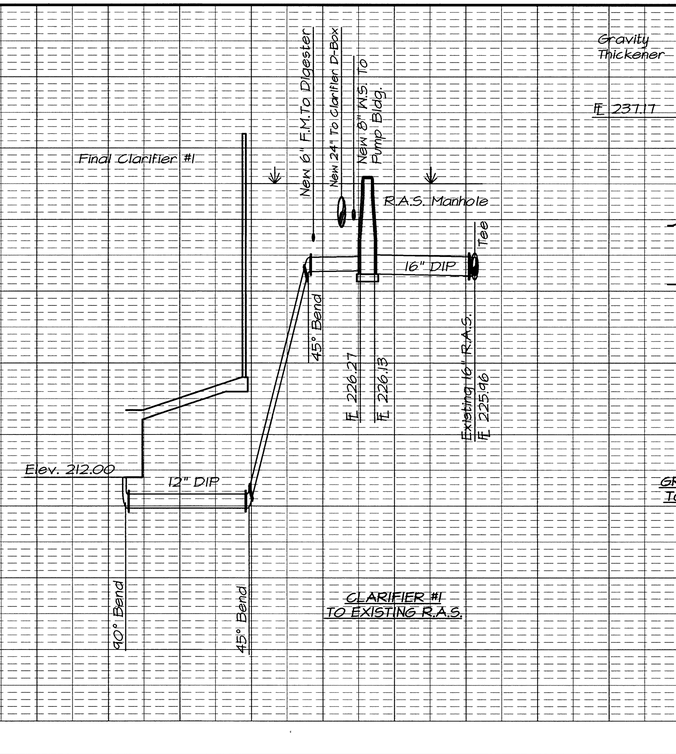
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
YARD PIPING
PROFILES 2

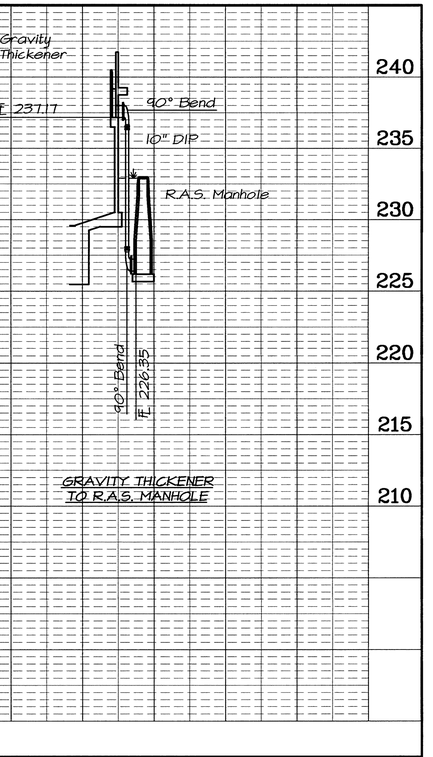
DESIGNED:	SWJ	JOB NO: 9924	DATE: JAN. 2001	11
DRAFTED:	SWJ			
CHECKED:	LDG	SCALE: 1"=20' H. 1"=5' V.		72

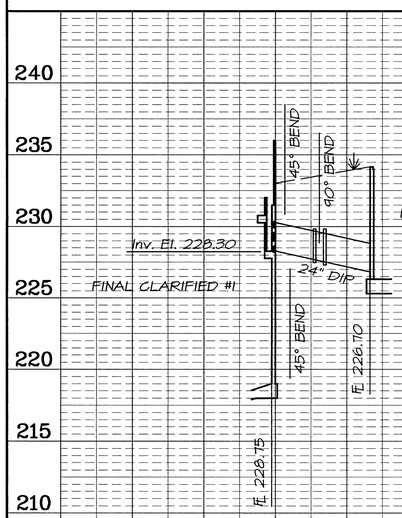
9924-11.dwg

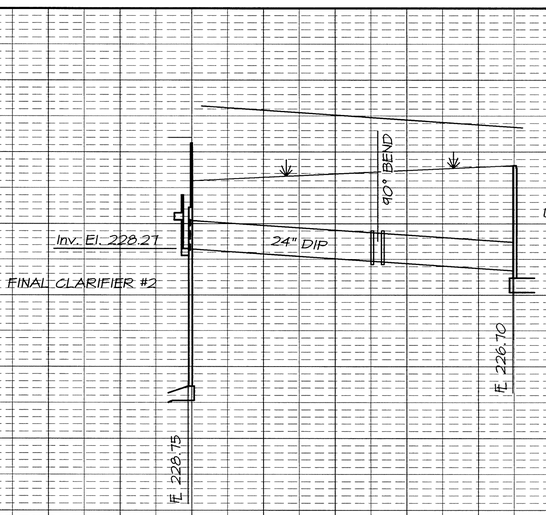












LEGEND

DIP - Ductile Iron Pipe
W.S. - Waste Sludge
R.A.S. - Return Activated Sludge
F.M. - Force Main

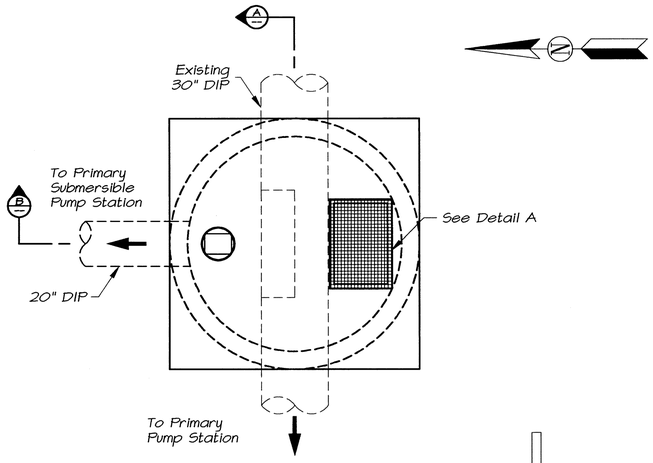
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
YARD PIPING
PROFILES 3

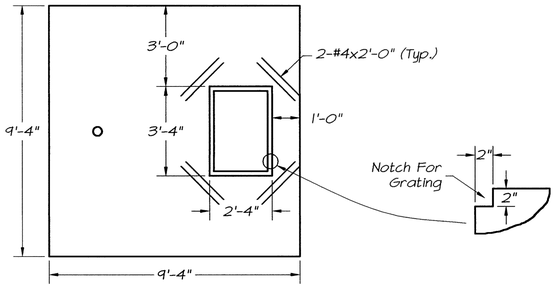
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	12
DRAFTED: SWJ	SCALE: 1"=20' H. 1"=5' V.		72
CHECKED: LDG			

9924-12.DWG



PLAN

3/8" = 1'-0"

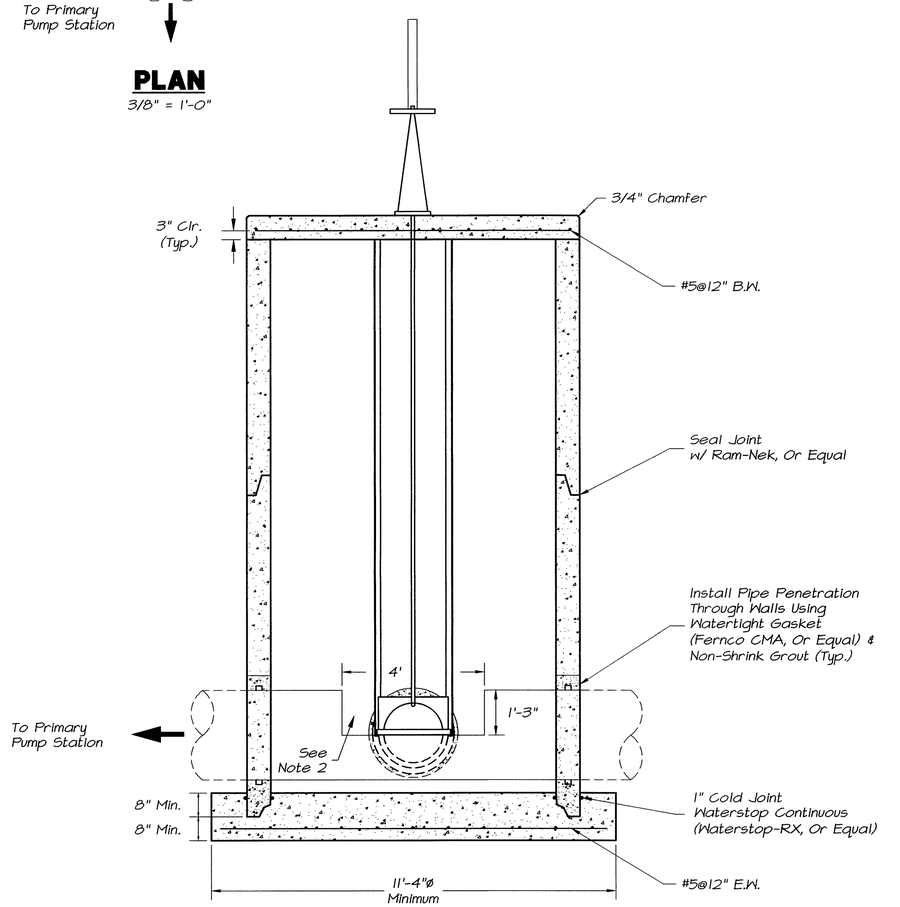


DETAIL A

3/8" = 1'-0"

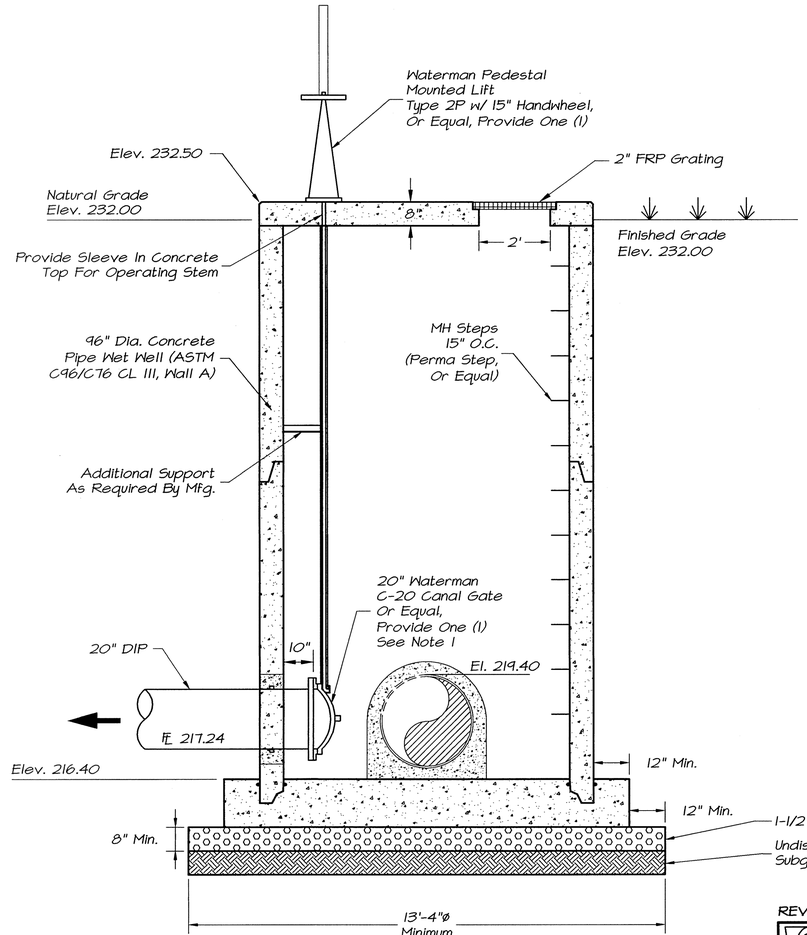
NOTES:

1. Canal Gate To Be Attached To Flanged End Of 20" DIP.
2. Cut 1/4 Section Out Of 30" DIP And Smooth All Sharp Edges After Manhole Is Completed And All Equipment Is Installed.



SECTION A

1/2" = 1'-0"



SECTION B

1/2" = 1'-0"

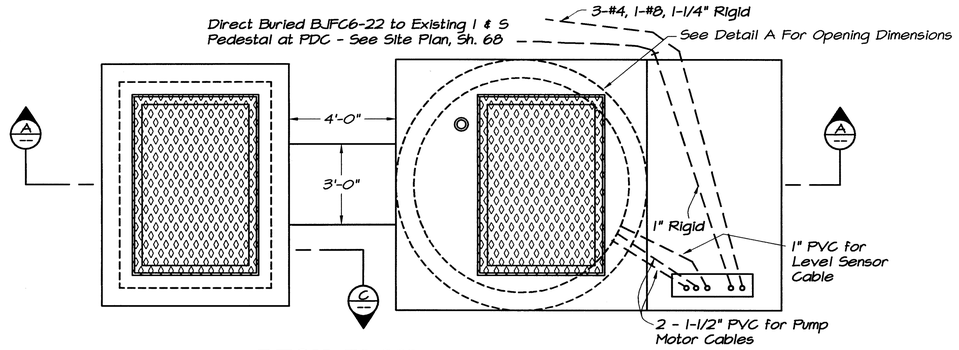
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
DIVISION MANHOLE

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	13 / 72
DRAFTED: SWJ			
CHECKED: LDG	SCALE: AS SHOWN		

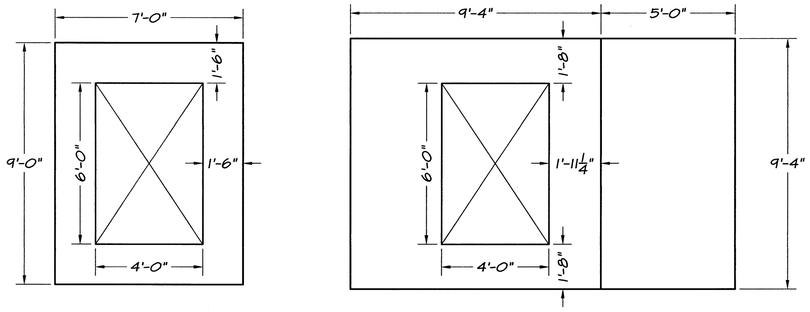
9924-13.dwg



DECK PLAN

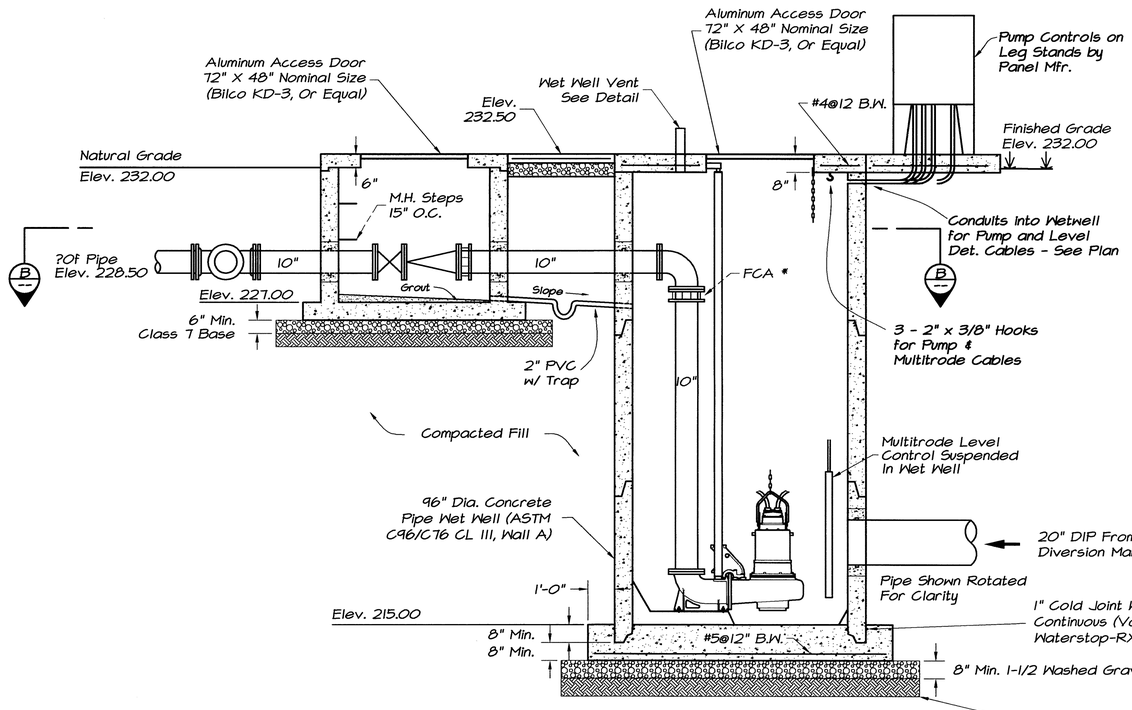
3/8" = 1'-0"





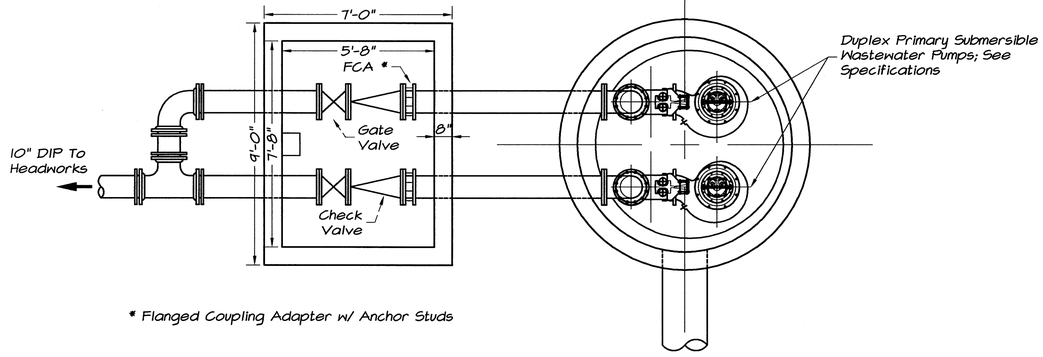
DETAIL A

3/8" = 1'-0"



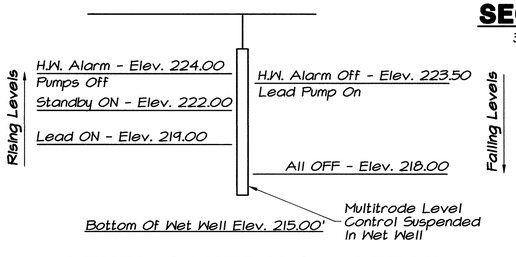
SECTION A

3/8" = 1'-0"



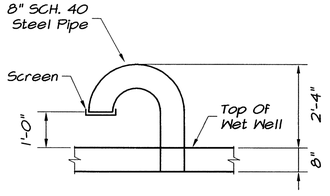
SECTION B

3/8" = 1'-0"



LEVEL CONTROLS - DETAIL

N.T.S.

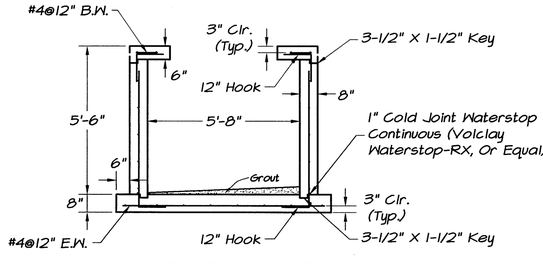


VENT DETAIL

N.T.S.

Notes:

1. Connect PE Pipe To Flanged With Flange Coupling Adapter w/ Anchor Studs (Dresser Style 127, Or Equal).
2. Use Retainer Glands On All MJ Fittings.
3. Seal Wall Penetrations With Gasket (Fernco CMA, Or Equal).



SECTION C

3/8" = 1'-0"

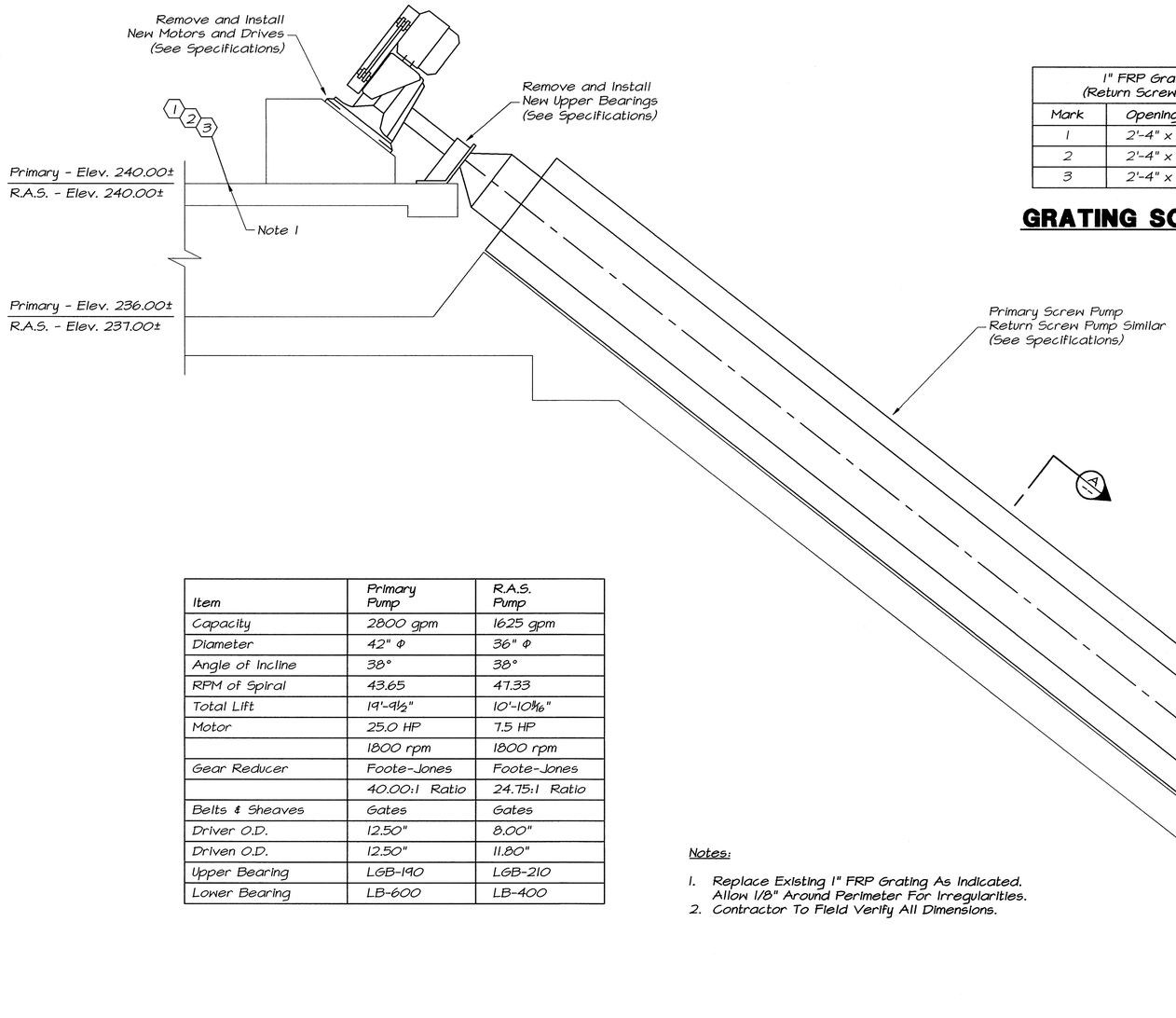
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PRIMARY SUBMERSIBLE PUMP STATION
PLAN AND SECTIONS

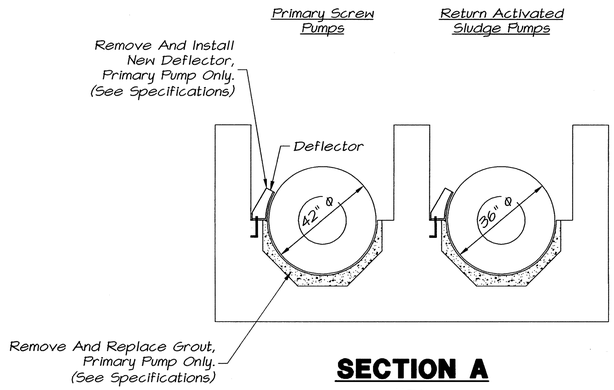
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	14
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

ASB0102 9924-14.dwg



1" FRP Grating (Return Screw Pump)	
Mark	Opening Dimension
1	2'-4" x 3'-0"
2	2'-4" x 2'-6"
3	2'-4" x 2'-6"

GRATING SCHEDULE



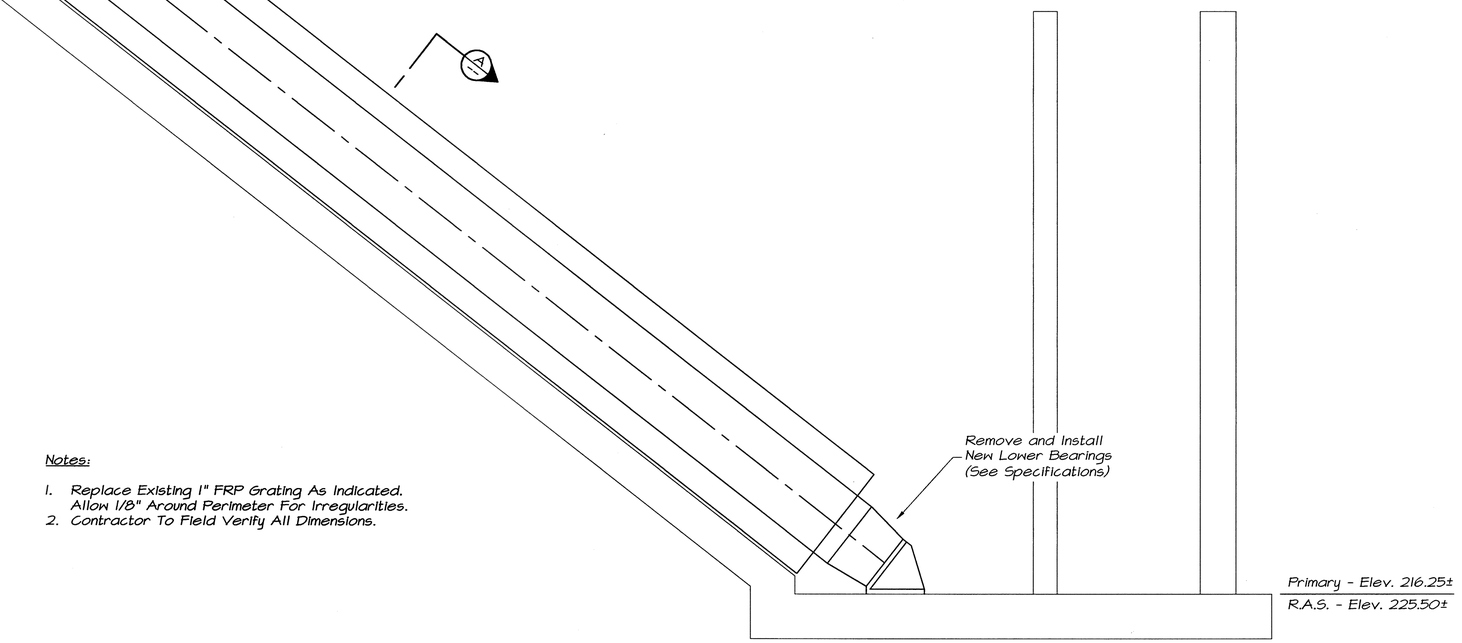
SECTION A

N.T.S.

Item	Primary Pump	R.A.S. Pump
Capacity	2800 gpm	1625 gpm
Diameter	42" Φ	36" Φ
Angle of Incline	38°	38°
RPM of Spiral	43.65	47.33
Total Lift	19'-9½"	10'-10⅜"
Motor	25.0 HP	7.5 HP
	1800 rpm	1800 rpm
Gear Reducer	Foote-Jones	Foote-Jones
	40.00:1 Ratio	24.75:1 Ratio
Belts & Sheaves	Gates	Gates
Driver O.D.	12.50"	8.00"
Driven O.D.	12.50"	11.80"
Upper Bearing	LGB-190	LGB-210
Lower Bearing	LB-600	LB-400

Notes:

1. Replace Existing 1" FRP Grating As Indicated. Allow 1/8" Around Perimeter For Irregularities.
2. Contractor To Field Verify All Dimensions.



DIAGRAMMATIC SECTION
EXISTING PRIMARY & RETURN SLUDGE SCREW PUMPS

N.T.S.

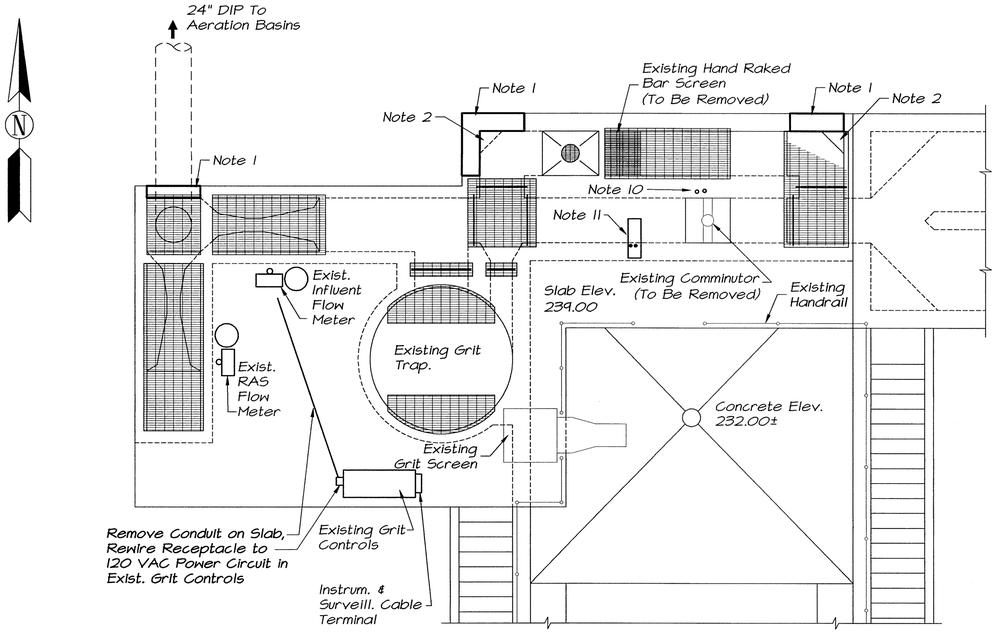
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
SCREW PUMP REHABILITATION
DETAILS

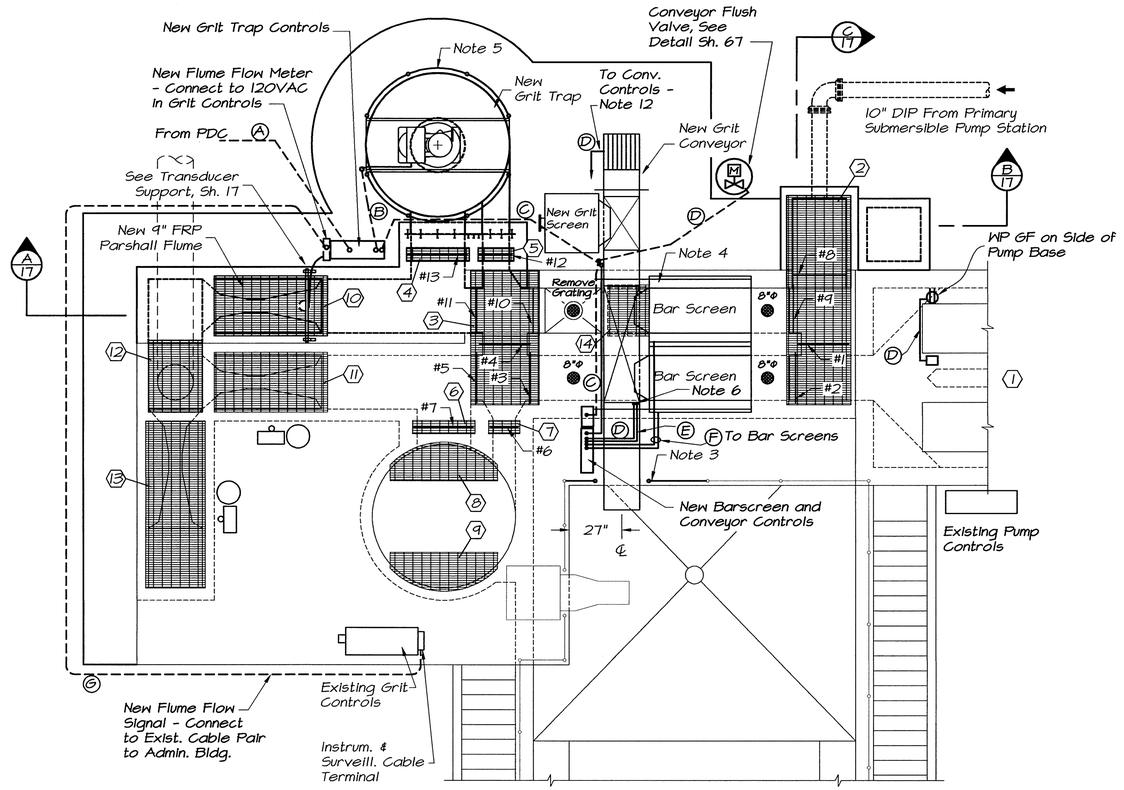
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	15
DRAFTED: SWJ			72
CHECKED: LDG	SCALE: AS SHOWN		

9924-15.dwg



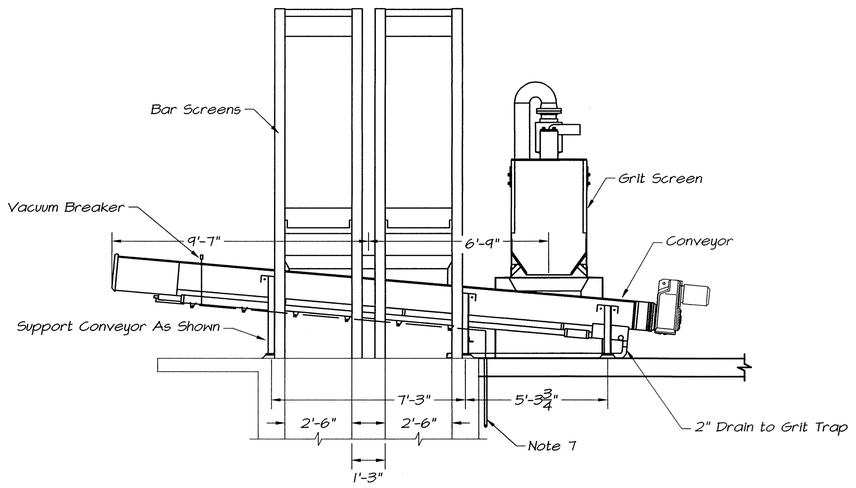
EXISTING HEADWORKS - PLAN

1/4" = 1'-0"



HEADWORKS MODIFICATIONS - PLAN

1/4" = 1'-0"



CONVEYOR DETAIL

3/8" = 1'-0"

1" FRP Grating	
Mark	Opening Dimension
1	2'-10" x 8'-6"
2	3'-7" x 11'-8"
3	3'-10" x 7'-6"
4	9" x 3'-6"
5	9" x 2'-0"
6	9" x 3'-6"
7	9" x 1'-9"
8	2'-2" x 6'-0"
9	2'-2" x 6'-0"
10	3'-4" x 6'-4"
11	3'-4" x 6'-4"
12	3'-0" x 4'-0"
13	3'-4" x 9'-4"
14	2'-10" x 3'-0"

GRATING SCHEDULE

Notes:

1. Existing Wall To Be Removed. See Structural Drawings.
2. Remove Concrete Fillet.
3. Modify Existing 1½" Aluminum Handrail To Provide Opening For New Conveyor.
4. Provide Openings In Top Slab For Bar Screens Per Manufacturer's Requirements.
5. Provide 1½" Aluminum Handrail Around Openings In Grit Trap.
6. Extend Existing Conduits & Conductors to New Controls Enclosure
7. 1" Copper Water Line From Conveyor Flush Valve. Provide Sleeve For Water Line Through Concrete. Transition From Copper To PVC. Secure PVC To Conveyor And Make Connections As Required.
8. All 1" FRP Grating Shown Under Headworks Modification Shall Be New. Contractor To Field Verify All Opening Dimensions.
9. Cut Hole In Grating Over New Parshall Flume Per Transducer Manufacturer Requirements.
10. Cut Conduits Flush with Slab & Plug with Concrete
11. Remove Existing Control Box, Retain Conduits
12. Drive Motor at North End of Conveyor - Provide power from New Conveyor Controls. Flushing Water Motor Oper. Valve requires 3-#14, 1/2" Rigid from New Conveyor Controls.

SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
A	4	12	3/4	Rigid
B	16	12	1	Rigid
C	4	14	1/2	Rigid
D	3	12	1/2	Rigid
E	4	22	1/2	Rigid
F	6	12	3/4	Rigid
G	1	2/C #18 Shld.	1/2	Rigid
	2	14		

NOTE: All Rigid Conduit above grade shall be Aluminum. Below Grade & Embedded Conduit shall be Rigid Galv. Steel.

WIRE & CONDUIT SCHEDULE

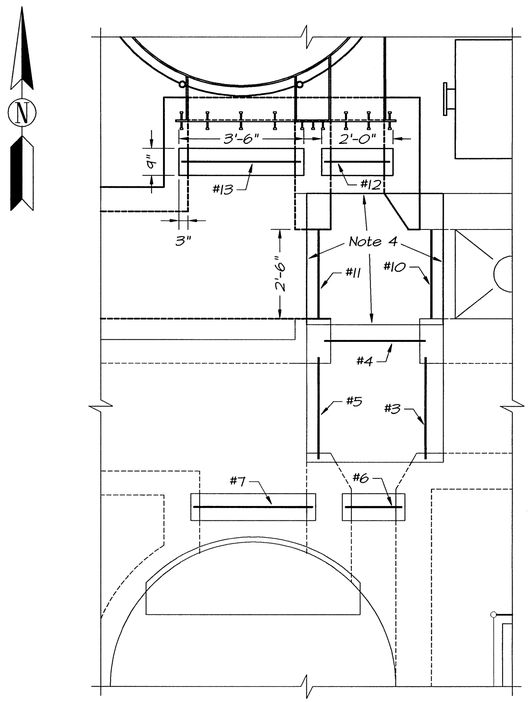
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
STRUCTURAL PLAN & DETAILS 1

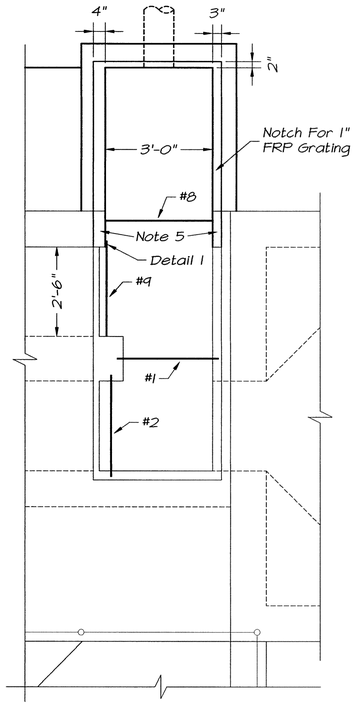
DESIGNED:	SWJ	JOB NO: 9924	DATE: JAN. 2001	16
DRAFTED:	SWJ	SCALE: AS SHOWN		72
CHECKED:	LDG			

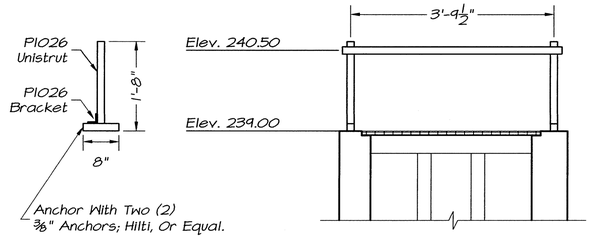
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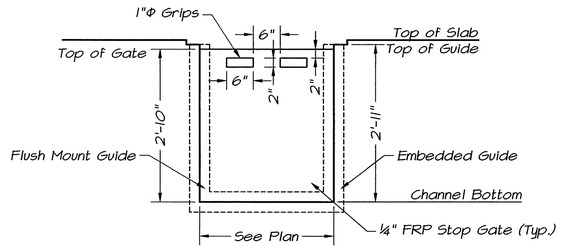
PLAN
1/2" = 1'-0"

Notes:
1. Gates 1, 2, 3, 4, 5, 6, 7 Are Existing.
2. Gates 8, 9, 10, 11 Are Flush Mount.
3. Gates 12, 13 Are Embedded Mount.
4. Remove Top Slab For Grating. See Sheet 19 For Details.
5. Saw Cut Notch For Grating. See Sheet 19 For Details.
6. Crest Elev. Of New Flume Shall Match Elev. Of Existing Flume.



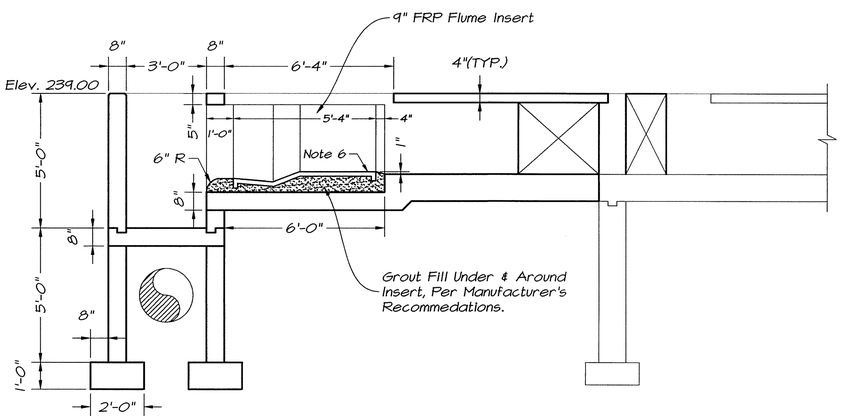


TRANSDUCER SUPPORT
3/4"=1'-0"

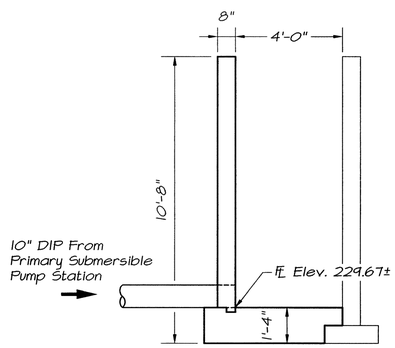


ELEVATION
3/4" = 1'-0"

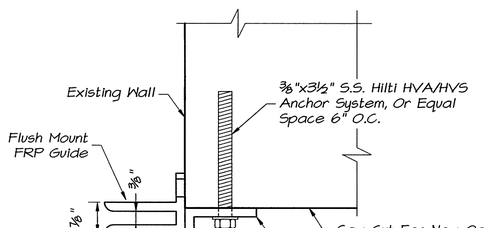
STOP GATE DETAILS



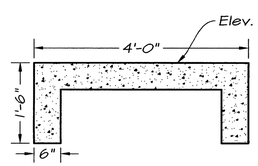
SECTION A
3/8"=1'-0"



SECTION C
3/8"=1'-0"



DETAIL 1
N.T.S.



SECTION B
3/4"=1'-0"

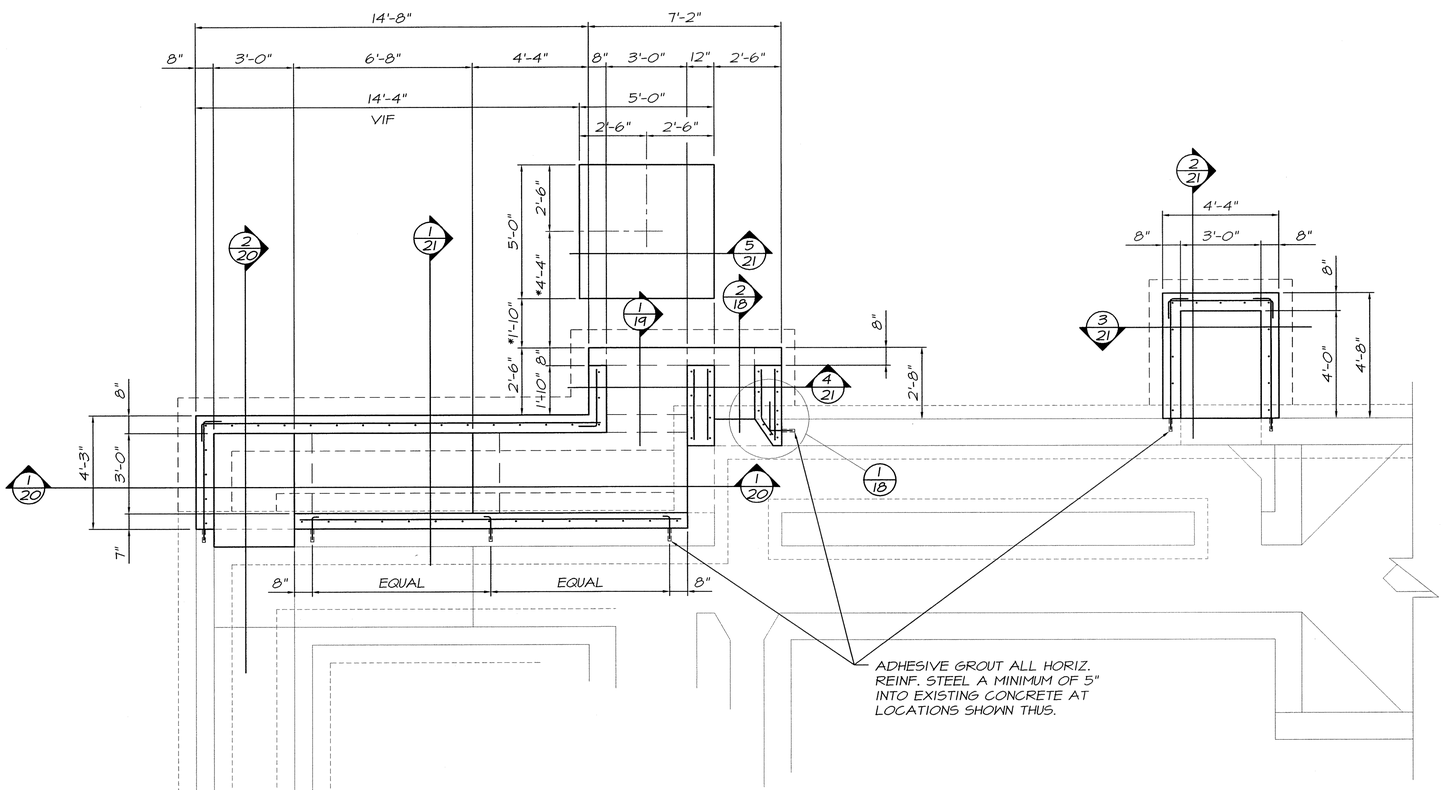
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
STRUCTURAL PLAN & DETAILS 2

DESIGNED:	SWJ	JOB NO:	9924	DATE:	APR. 2001
DRAFTED:	SWJ	SCALE:	AS SHOWN		17 / 72
CHECKED:	LDG				

9924-17.dwg



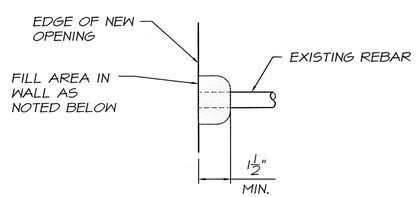
FOUNDATION PLAN: HEADWORKS

Scale: 3/8" = 1'-0"

REFER TO SHEET 62 FOR GENERAL CONCRETE NOTES.

FOR ALL EXISTING REBAR EXPOSED AT NEW OPENINGS SEE DETAIL 3/18

NORTH

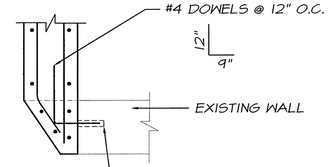


1. BREAK OUT 1 1/2" OF CONCRETE.
2. CUT EXISTING REBAR OF 1 1/2" FROM EDGE OF WALL.
3. CLEAN AND REMOVE ALL LOOSE CONCRETE.
4. APPLY WET SCRUB OF THORITE RAPID VERTICAL BY CHEMREX, INC. WITH BRUSH.
5. IMMEDIATELY APPLY THORITE RAPID VERTICAL BY CHEMREX, INC. TO FILL HOLE.
6. KEEP PATCH MOIST UNTIL FINAL SET.

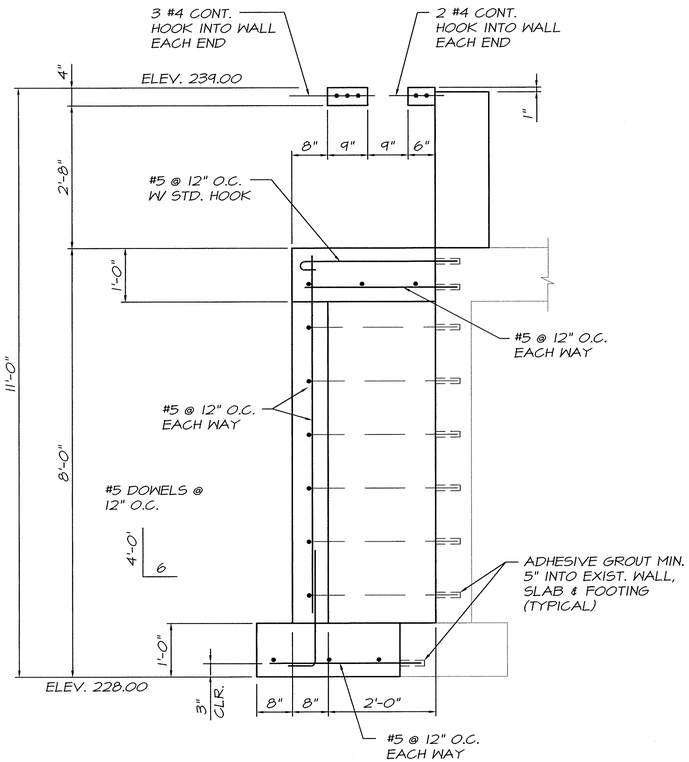
3/18 TYPICAL @ EXISTING REBAR EXPOSED TO SURFACE
N.T.S.

FOUNDATION LEGEND:

UNO	UNLESS NOTED OTHERWISE
SIM.	SIMILAR
VIF	VERIFY IN FIELD
TJ	TOOLED JOINT - SEE 1/35
EJ	EXPANSION JOINT - SEE 2/35
*	VERIFY WITH EQUIPMENT MANUF



1/18 PLAN @ WALL INTERSECTION
3/4" = 1'-0"



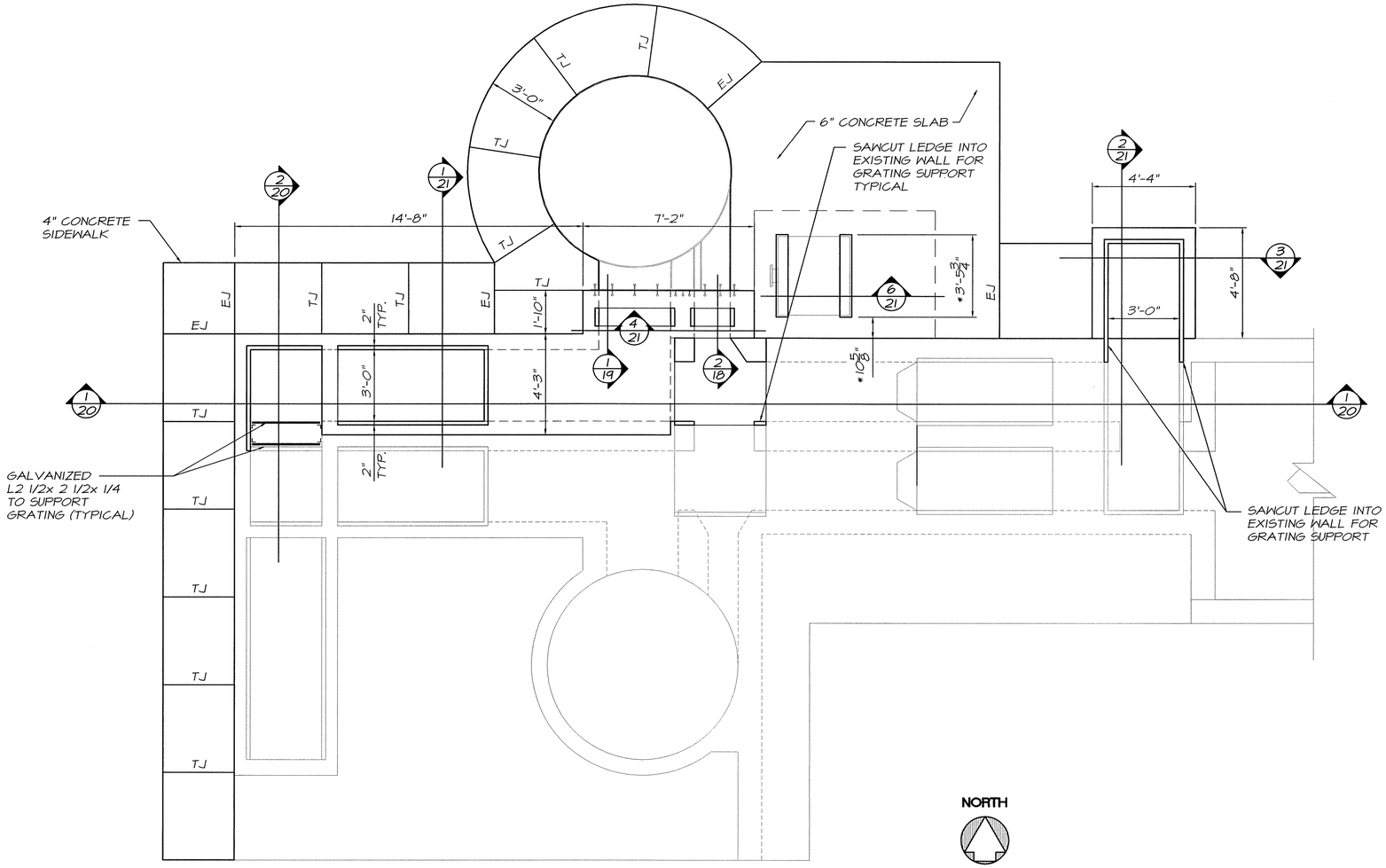
2/18 SECTION
3/4" = 1'-0"

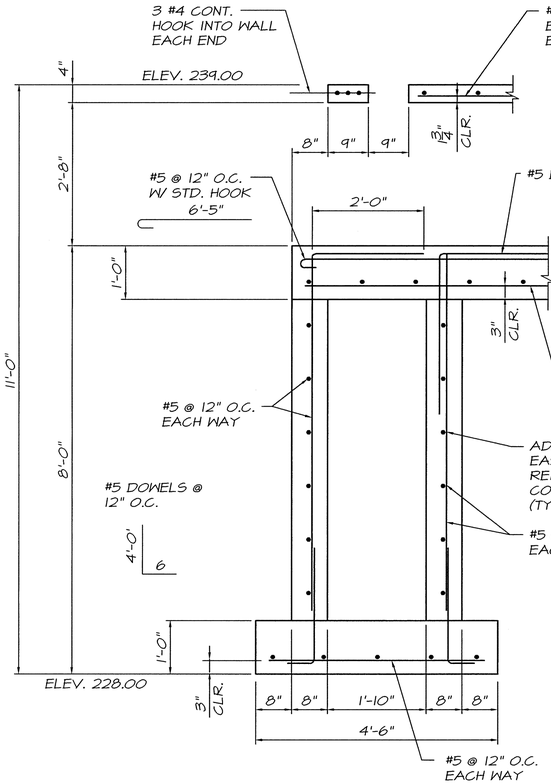
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
FOUNDATION PLAN

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	18
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		72
CHECKED: FMG			





1/19 SECTION
3/4" = 1'-0"

PLAN @ ELEVATION 239.00: HEADWORKS

Scale: 3/8" = 1'-0"

* VERIFY DIMENSIONS WITH EQUIPMENT MANUF.

FOR ALL EXISTING REBAR EXPOSED AT NEW OPENINGS SEE DETAIL 3/18

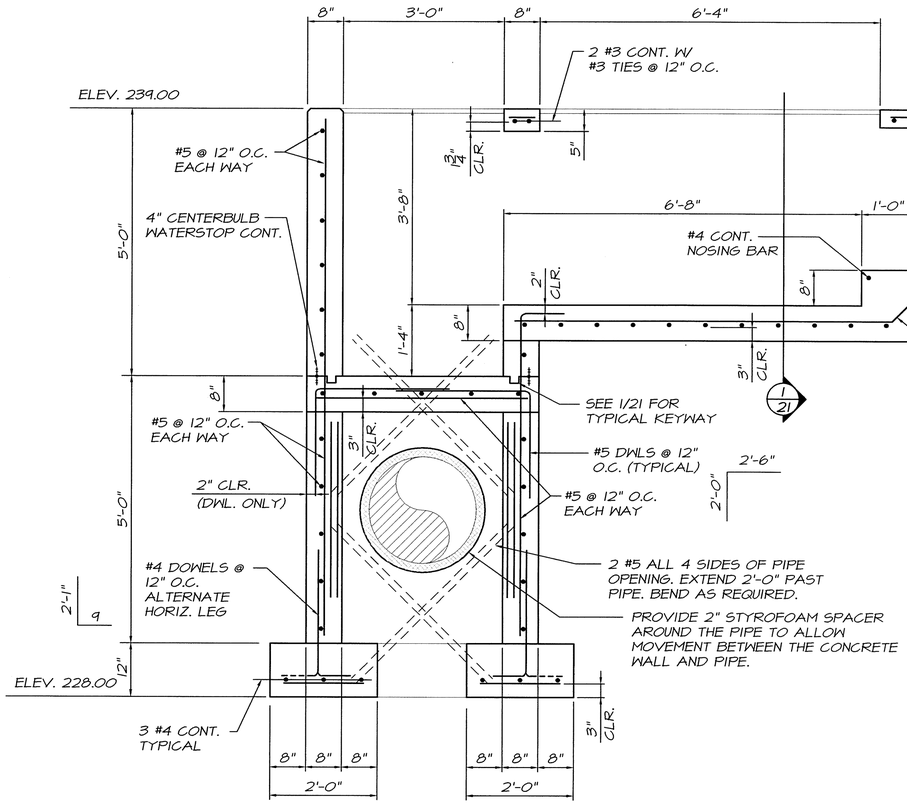
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

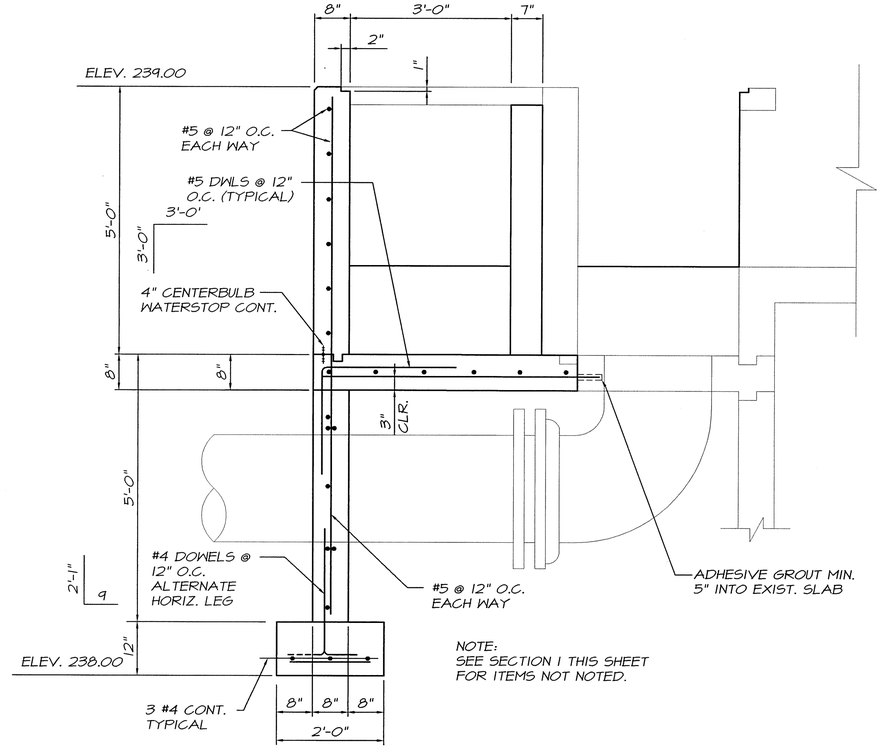
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
PLAN @ ELEV. 239.00

DESIGNED: FMG	JOB NO: 9924	DATE: JAN 2001	19
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		72
CHECKED: FMG			

J:\GGAE Projects Archive\200030-Wynne WWTP\Drawings\AS-BUILT\00030-DG18AB.dwg, 01/10/03 10:14:53 AM



1/20 SECTION
3/4" = 1'-0"



NOTE:
SEE SECTION 1 THIS SHEET FOR ITEMS NOT NOTED.

2/20 SECTION
3/4" = 1'-0"

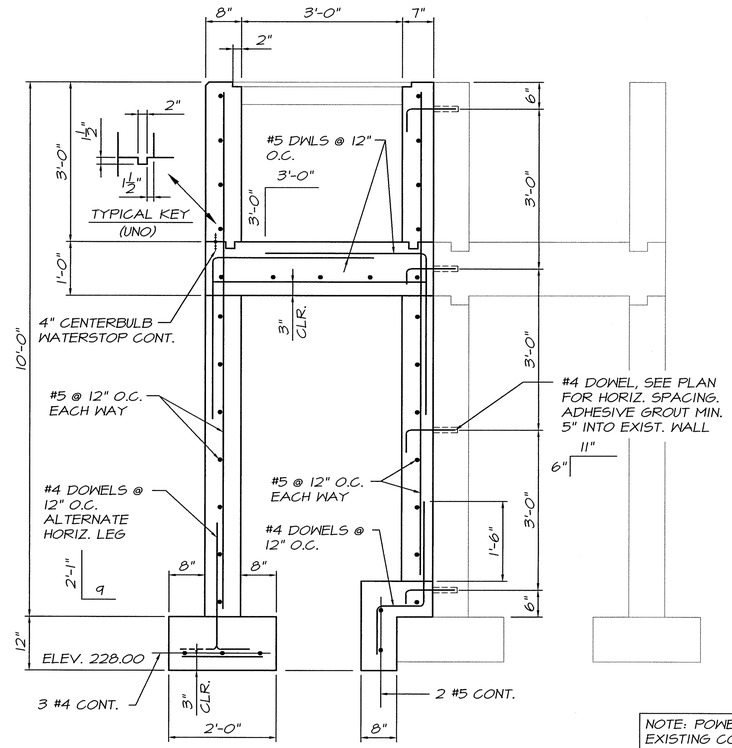
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
STRUCTURAL SECTIONS 1

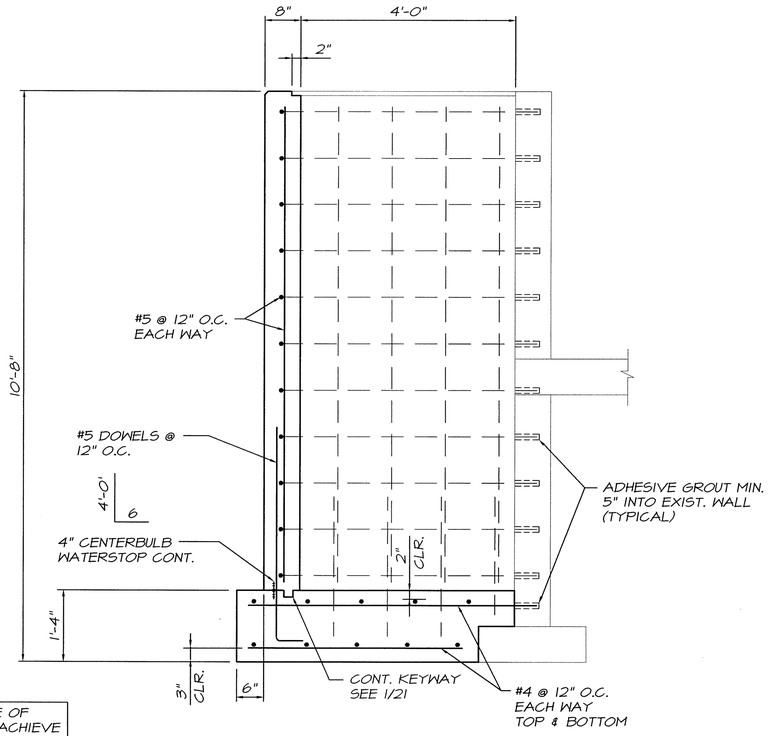
DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	20
DRAFTED: AAA		SCALE: 3/4" = 1'-0"	72
CHECKED: FMG			

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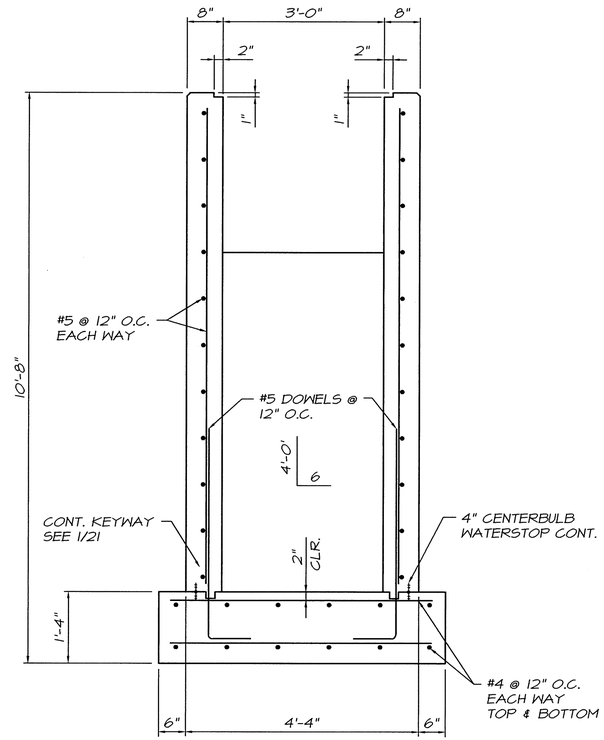


1 SECTION 21
3/4" = 1'-0"

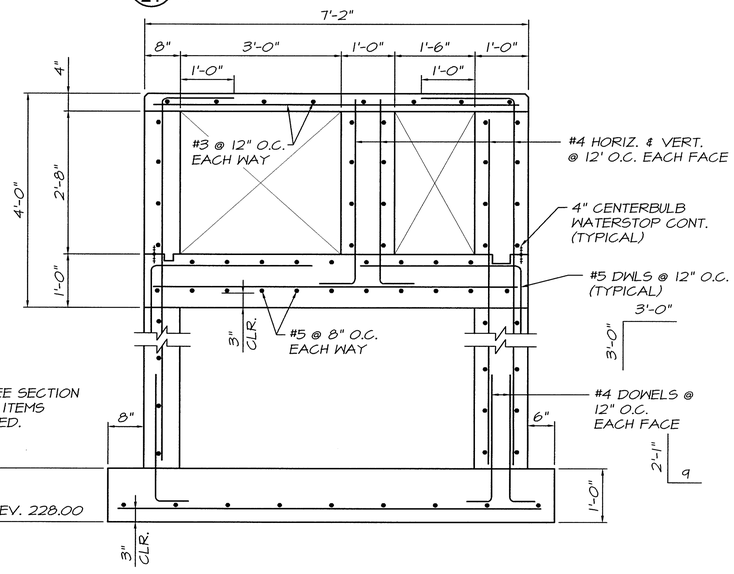
NOTE: POWERWASH FACE OF EXISTING CONCRETE TO ACHIEVE A GOOD BOND. (TYPICAL)



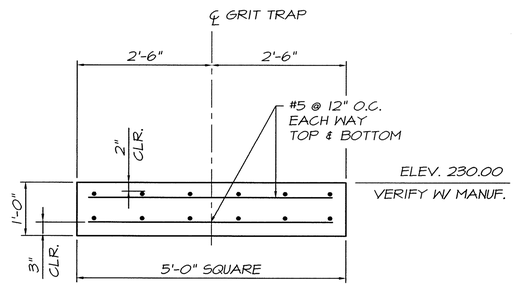
2 SECTION 21
3/4" = 1'-0"



3 SECTION 21
3/4" = 1'-0"

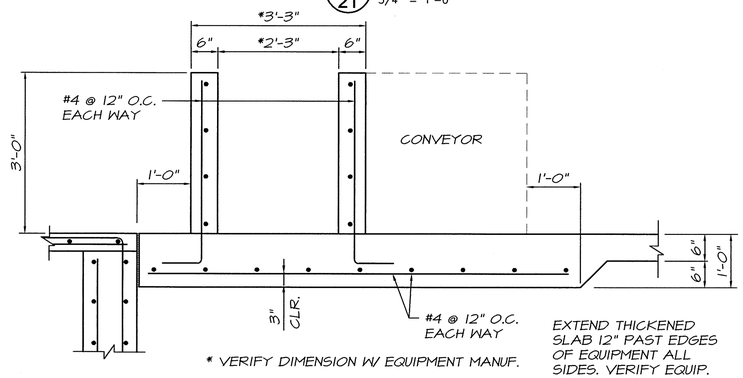


4 SECTION 21
3/4" = 1'-0"



NOTE:
REFER TO MANUFACTURER'S DWG. FOR GRIT TRAP ANCHOR BOLT SIZE & LOCATIONS.

5 FOOTING @ GRIT TRAP 21
3/4" = 1'-0"



* VERIFY DIMENSION W/ EQUIPMENT MANUF.

6 SCREEN SUPPORT 21
3/4" = 1'-0"

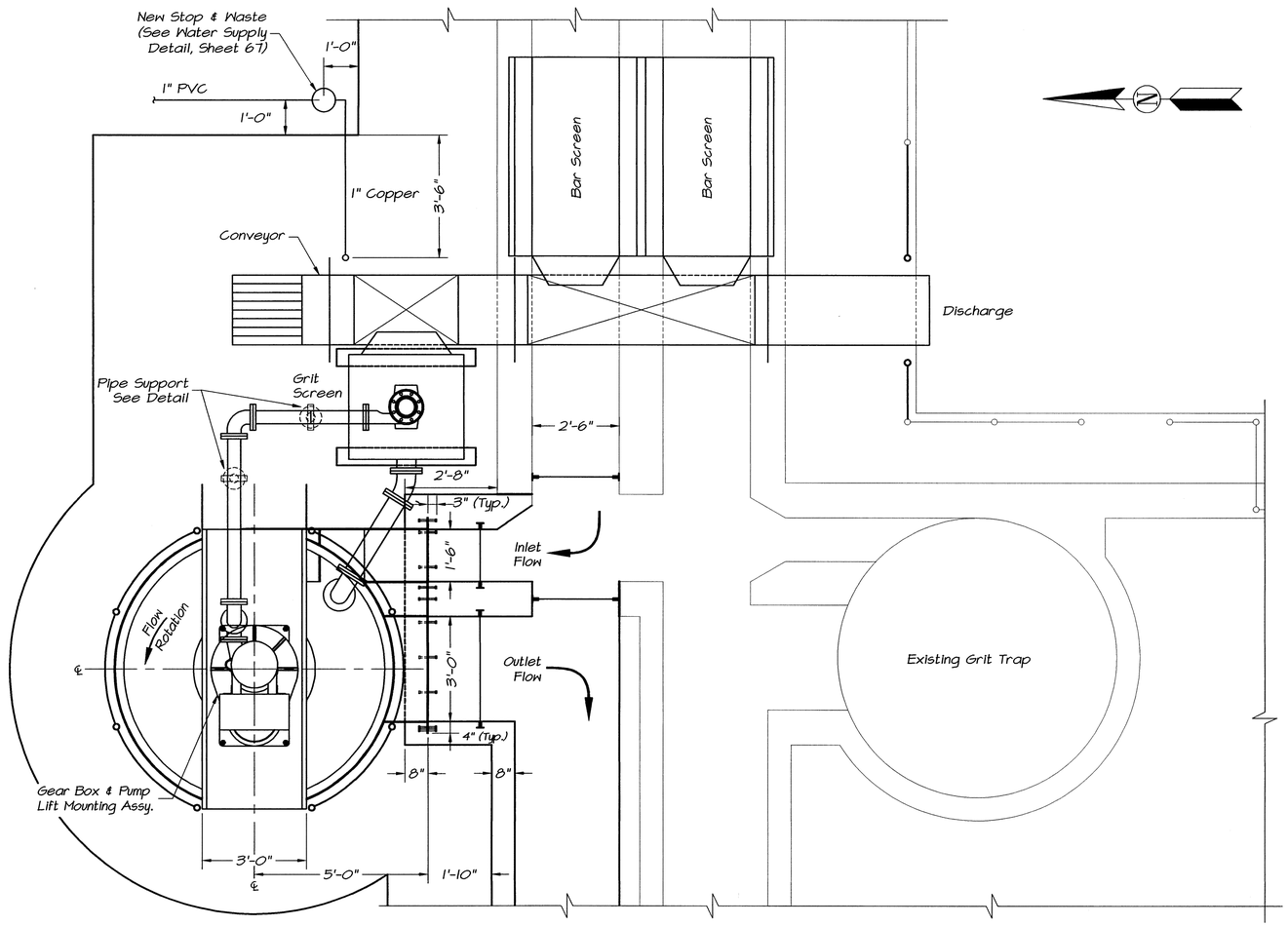
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
HEADWORKS
STRUCTURAL SECTIONS 2

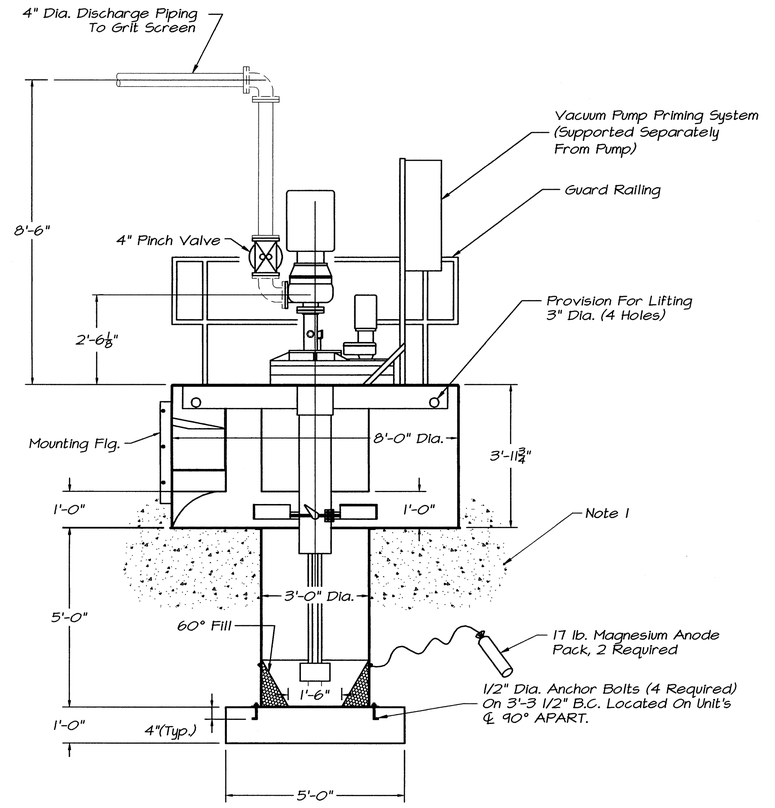
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DRAFTED: AAA	SCALE: 3/4" = 1'-0"		72
CHECKED: FMG			

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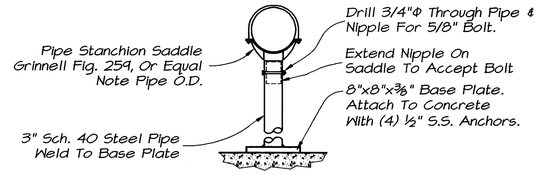
GRIT TRAP - PLAN

1/2" = 1'-0"



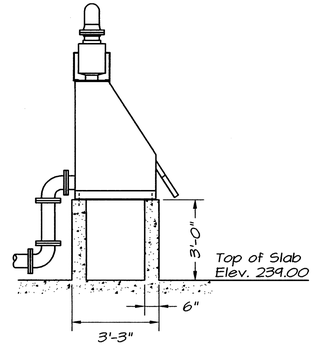
GRIT TRAP - SECTION

1/2" = 1'-0"



PIPE SUPPORT DETAIL

N.T.S.



SCREEN SUPPORT DETAIL

3/8" = 1'-0"

Notes:

1. Use Flowable Fill Under All Structures Where Equipment Cannot Be Used To Achieve Proper Compaction Of Backfill. This Includes, But Is Not Limited To The New Grit Removal And Related Concrete Work.

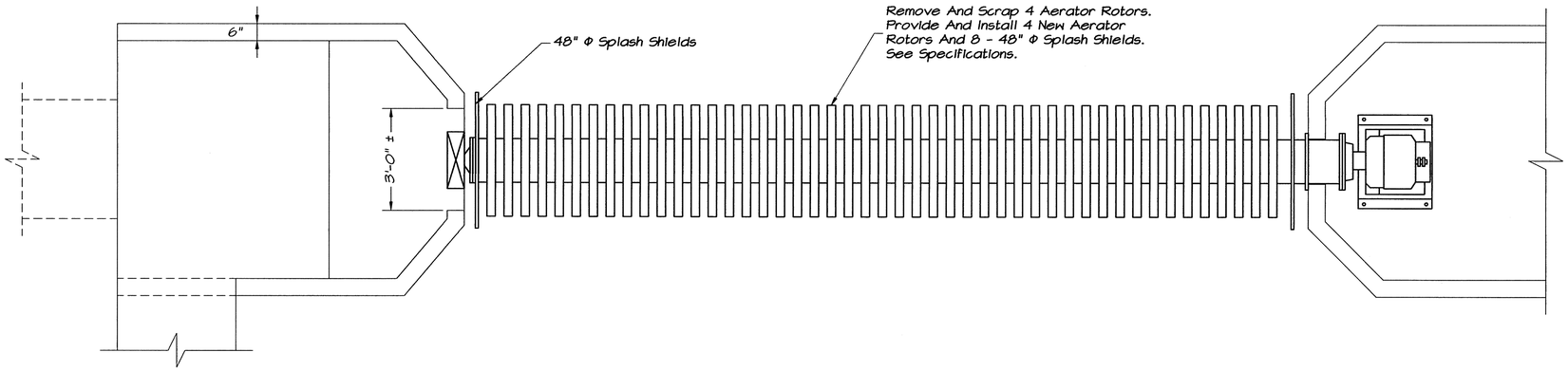
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

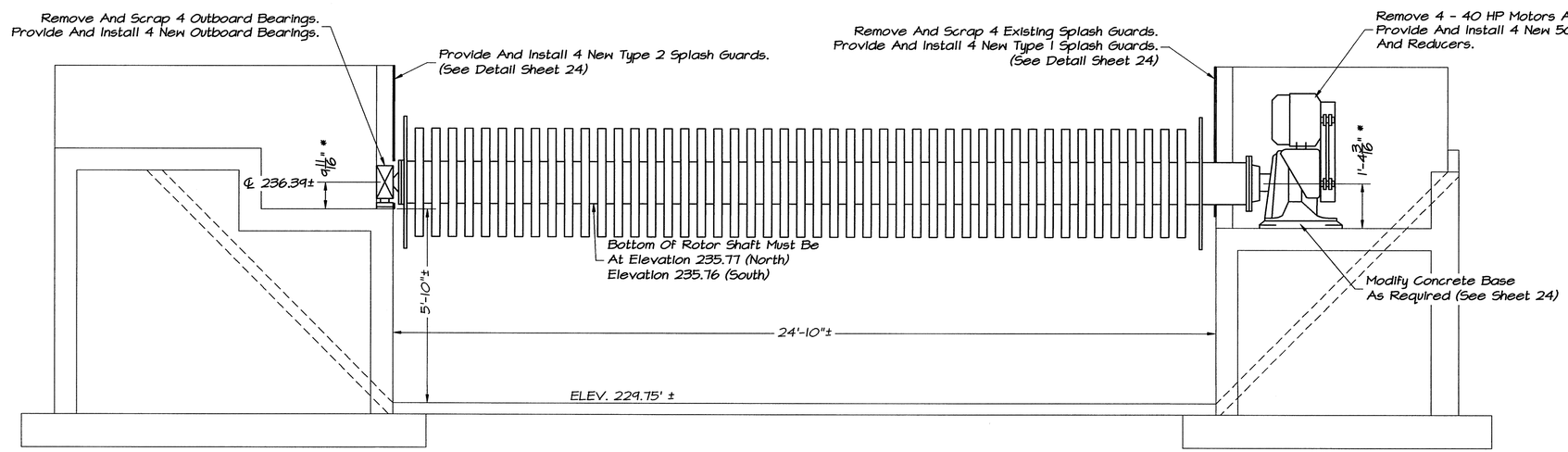
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
GRIT REMOVAL
PLAN AND SECTION

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	22
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-22.dwg



PLAN



* Dimensions From Original Shop Drawings.
Contractor Must Verify Existing Elevations.

SECTIONAL ELEVATION

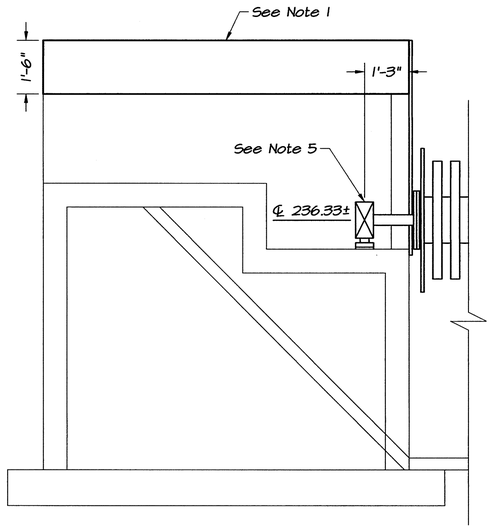
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
AERATION BASINS
BRUSH ROTOR PLAN & SECTION

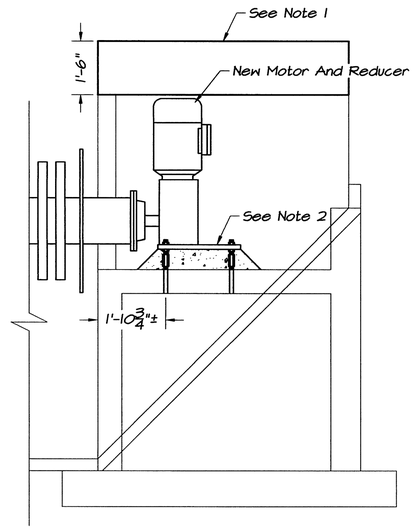
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DRAFTED: SWJ	SCALE: 1/2"=1'-0"		72
CHECKED: LDG			

9924-23.dwg



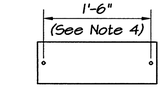
END BEARING CONDITION DETAIL

1/2" = 1'-0"



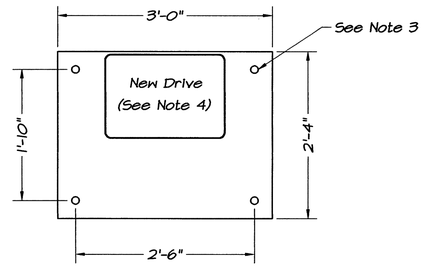
DRIVE END CONDITION DETAIL

1/2" = 1'-0"



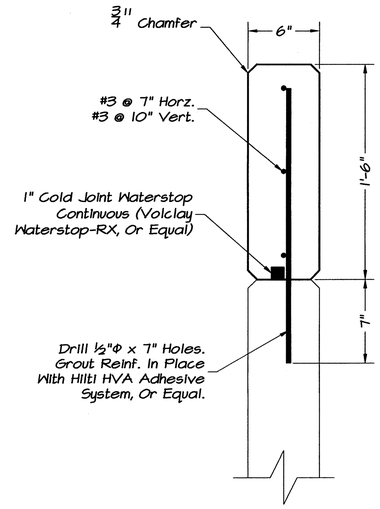
END BEARING BASE PLATE

1" = 1'-0"



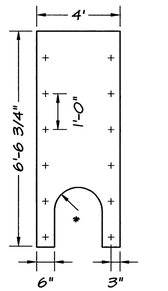
DRIVE ASSEMBLY BASE PLATE

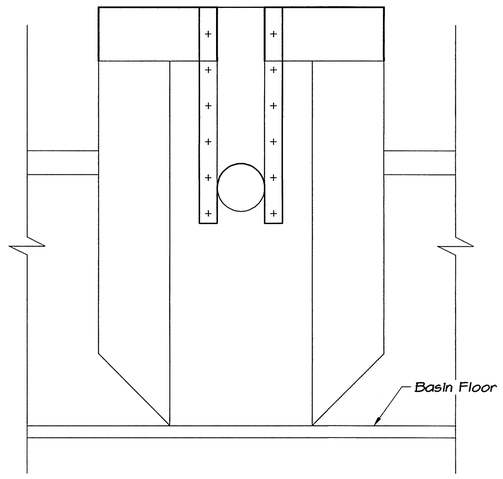
1" = 1'-0"



WALL EXTENSION DETAIL

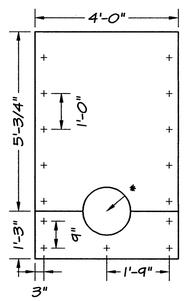
2" = 1'-0"

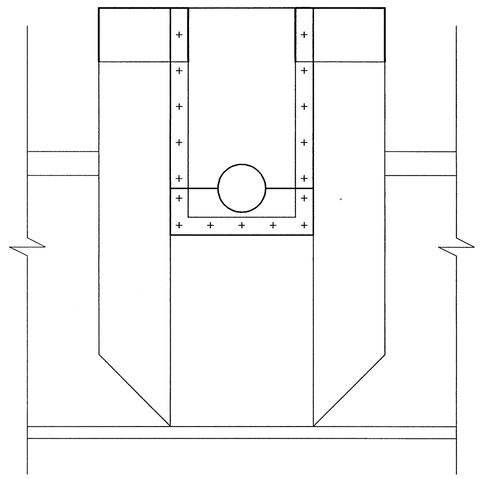




TYPE 1 SPLASH GUARD DETAIL

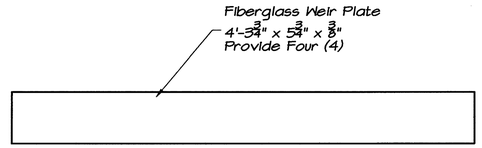
1/2" = 1'-0"





TYPE 2 SPLASH GUARD DETAIL

1/2" = 1'-0"



WEIR PLATE DETAIL

N.T.S.

NOTES:

1. Contractor To Raise Walls Around Drive End and End Bearing Walls As Shown.
2. Where Possible, Contractor To Use Existing Anchor Bolts To Anchor New Base Plate. Use 4"xI-1/4" Coupling Nuts, Leveling Nuts, Washers, And I-1/4" Threaded Rod To Secure New Base Plate To Proper Elevation. Place Leveling Grout Under Base Plate.
3. Contractor To Verify Dimensions And Placement Of Existing I-1/4" Anchor Bolts.
4. Verify Dimensions With Equipment Manufacturer.
5. Locate New Outboard Bearing To Allow For Splash Guard Seal Around Stub Shaft.
6. Splash Guards To Be Aluminum Mount With ½" S.S. Anchors, Washers, And Nuts.

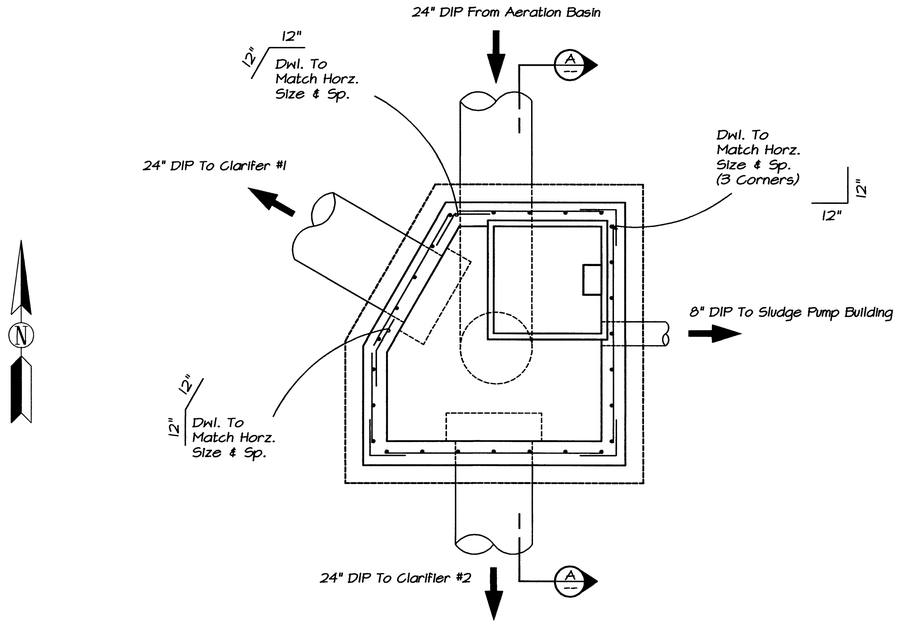
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

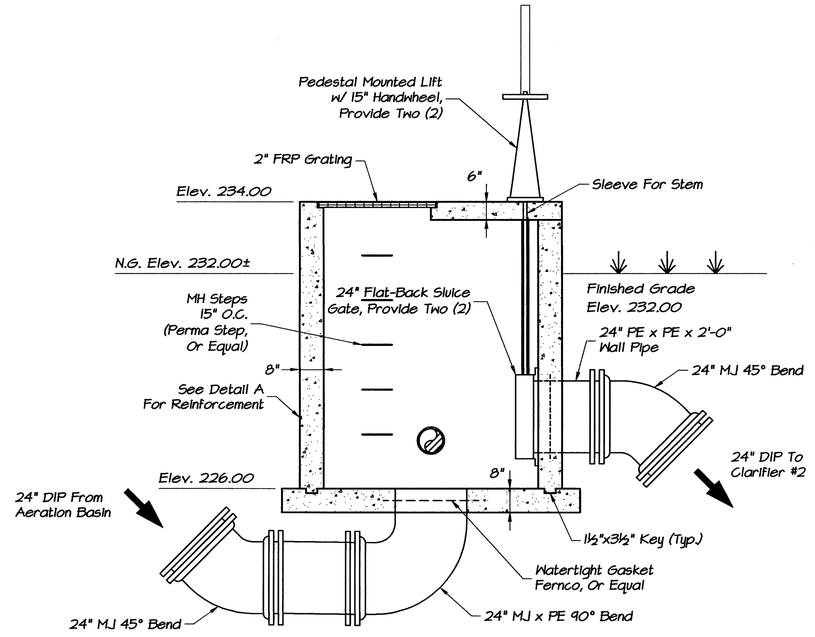
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
AERATION BASINS
BRUSH ROTOR DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	24
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

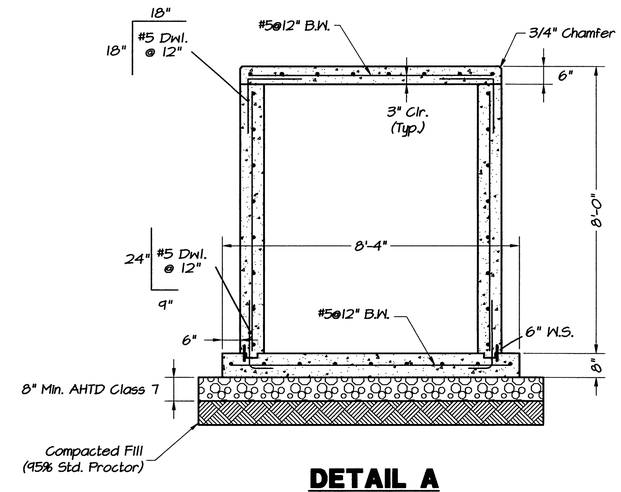
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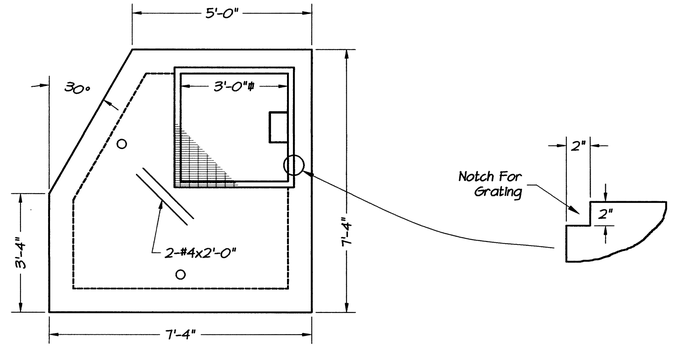
PLAN
1/2" = 1'-0"



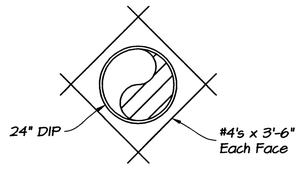
SECTION A
1/2" = 1'-0"



DETAIL A
1/2" = 1'-0"



DECK PLAN
1/2" = 1'-0"



PIPE PENETRATION DETAIL
1/2" = 1'-0"

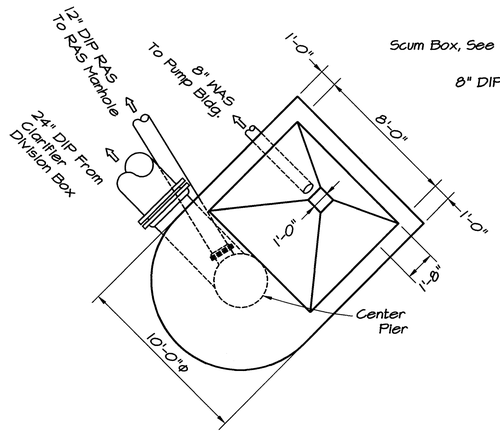
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
CLARIFIER DIVISION BOX
PLAN, SECTION, & DETAILS

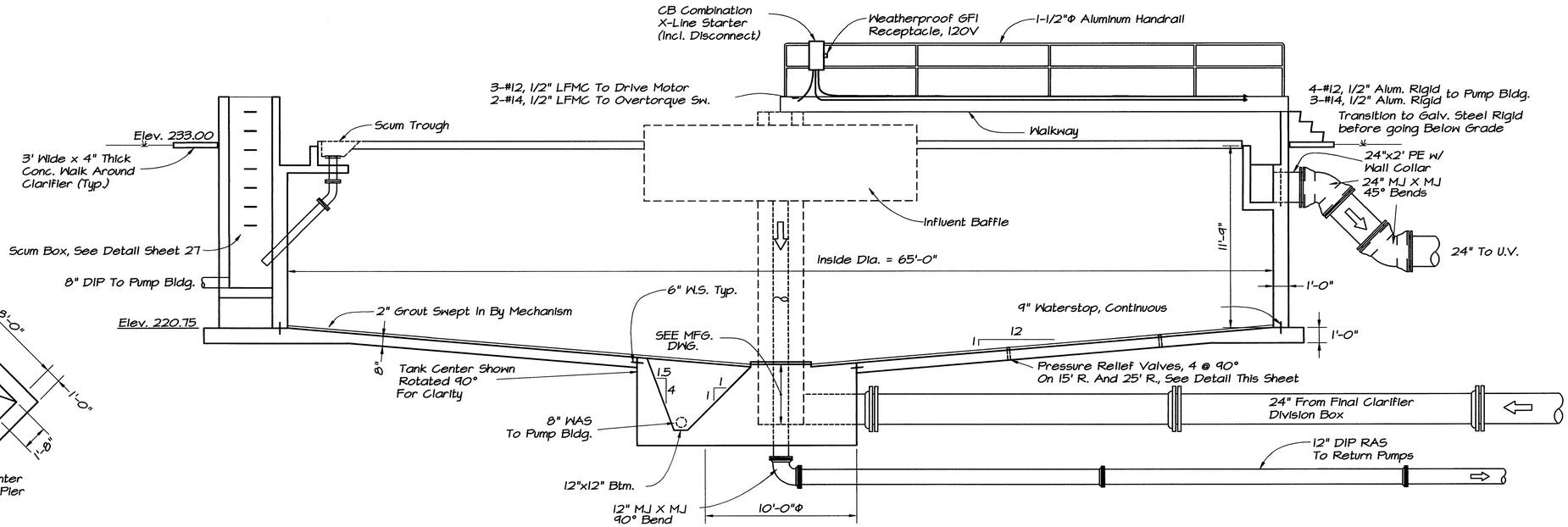
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DRAFTED:	SWJ	SCALE: AS SHOWN		72
CHECKED:	LDG			

9924-25.dwg



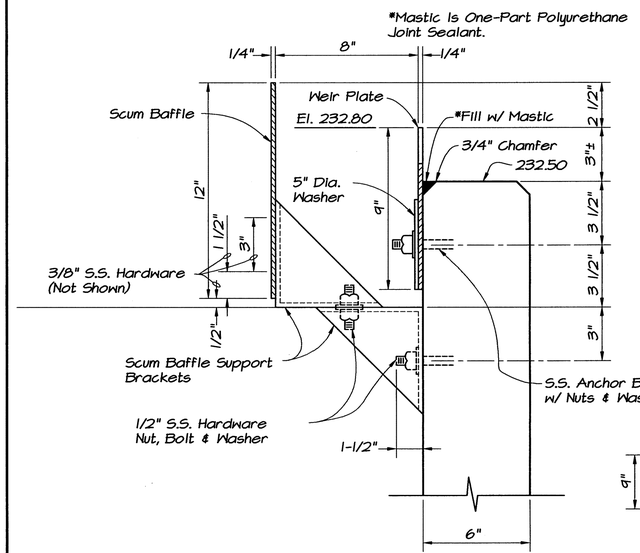
TANK CENTER DETAILS

N.T.S.



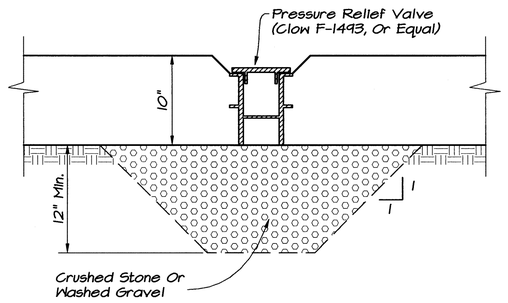
DIAGRAMMATIC SECTION

1/4" = 1'-0"



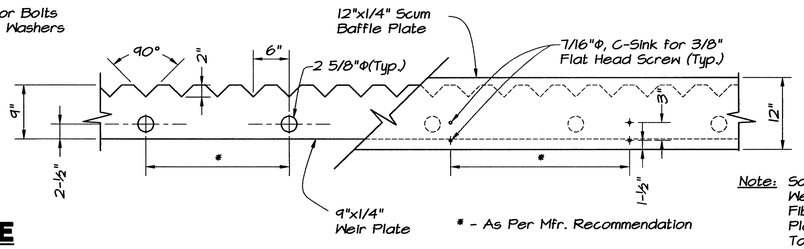
WEIR PLATE & SCUM BAFFLE INSTALLATION DETAILS

3"=1'-0"



PRESSURE RELIEF VALVE

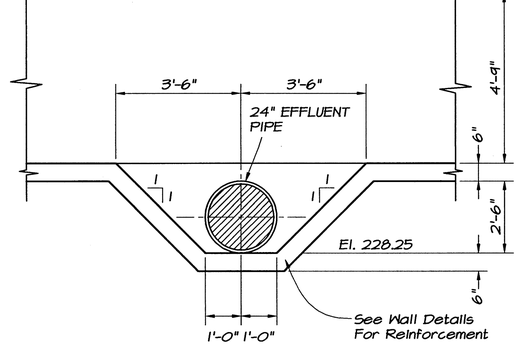
1 1/2" = 1'-0"



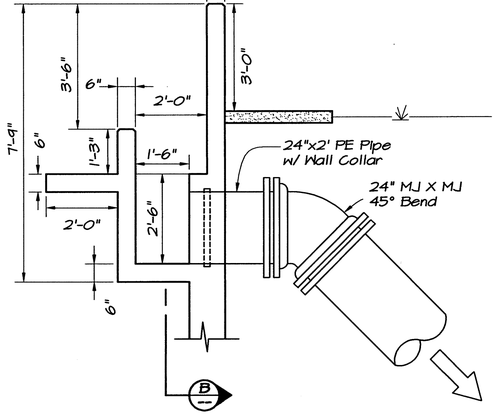
Note: Scum Baffle Plate & Weir Plate To Be Fiberglass Reinforced Plastic; All Hardware To Be Stainless Steel

WEIR & SCUM BAFFLE DETAIL

1"=1'-0"



SECTION B



VERTICAL SECTION

EFFLUENT STRUCTURE DETAILS

1/2"=1'-0"

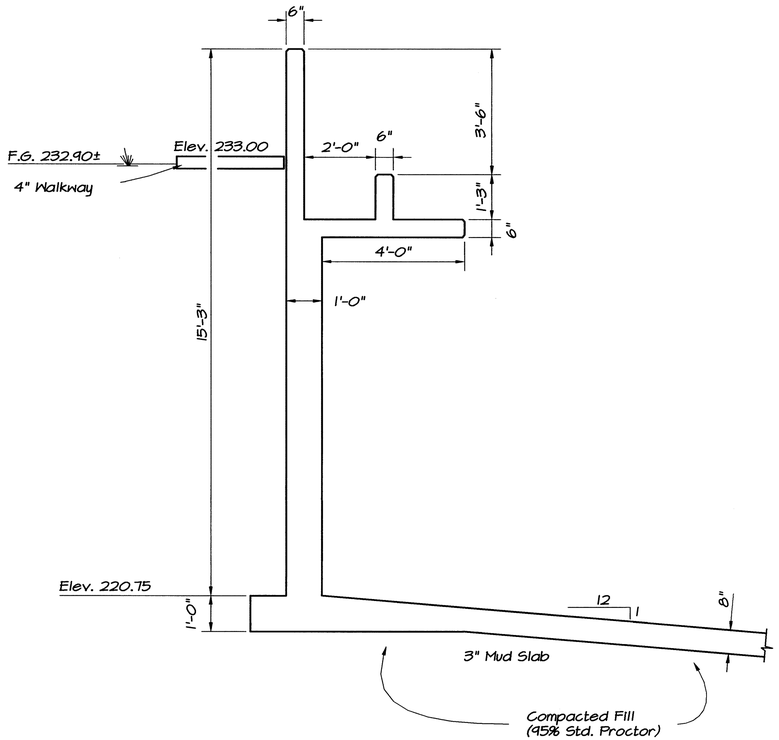
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
FINAL CLARIFIERS
SECTIONS AND DETAILS

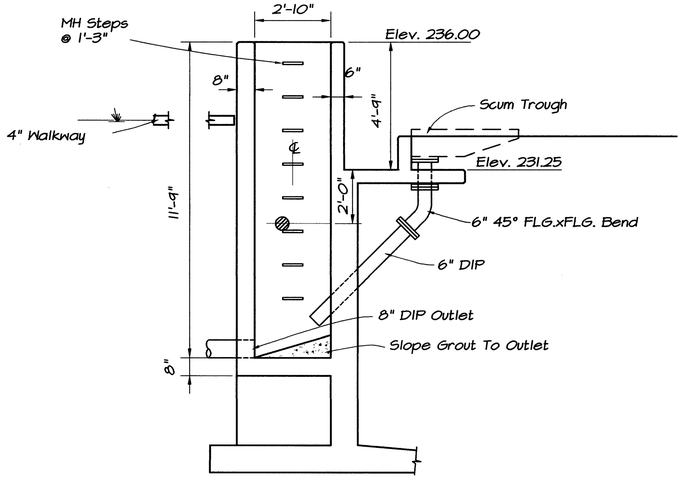
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	26
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-26.dwg



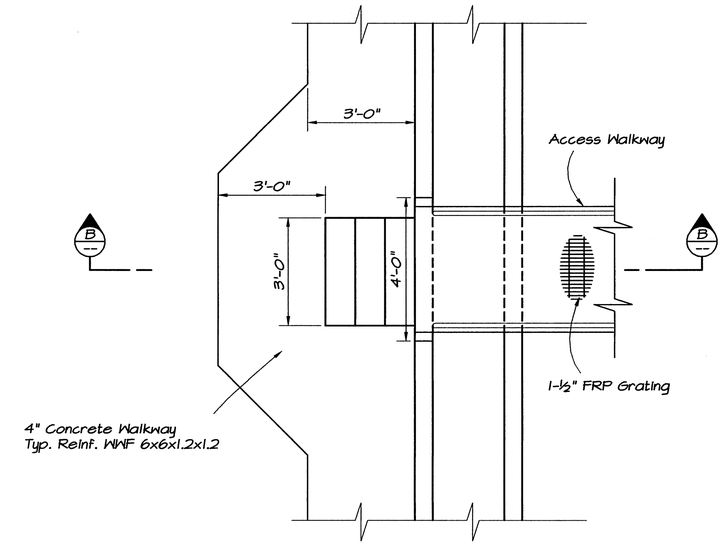
WALL DETAILS

1/2" = 1'-0"

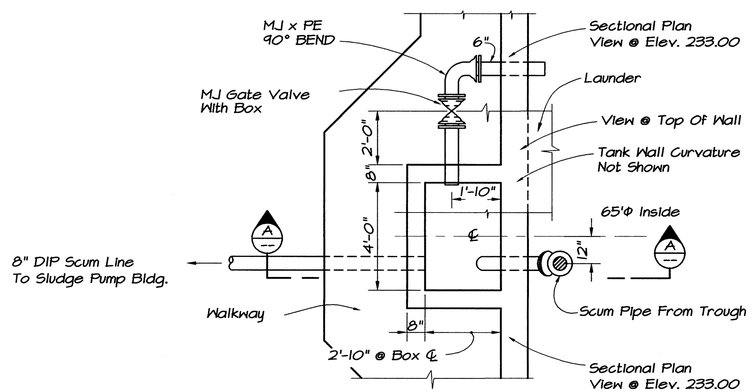


SECTION A

3/8" = 1'-0"



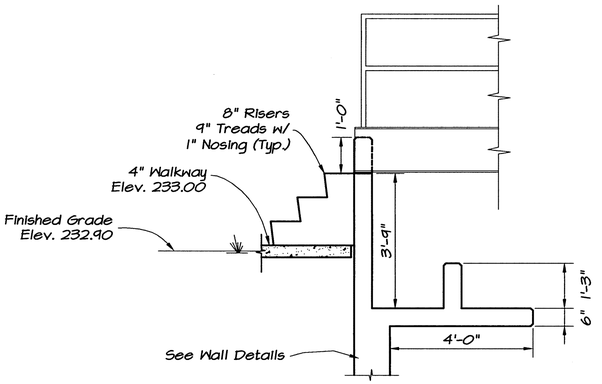
PLAN



PLAN

SCUM BOX PLAN

3/8" = 1'-0"



SECTION B

WALKWAY SUPPORT DETAILS

1/2" = 1'-0"

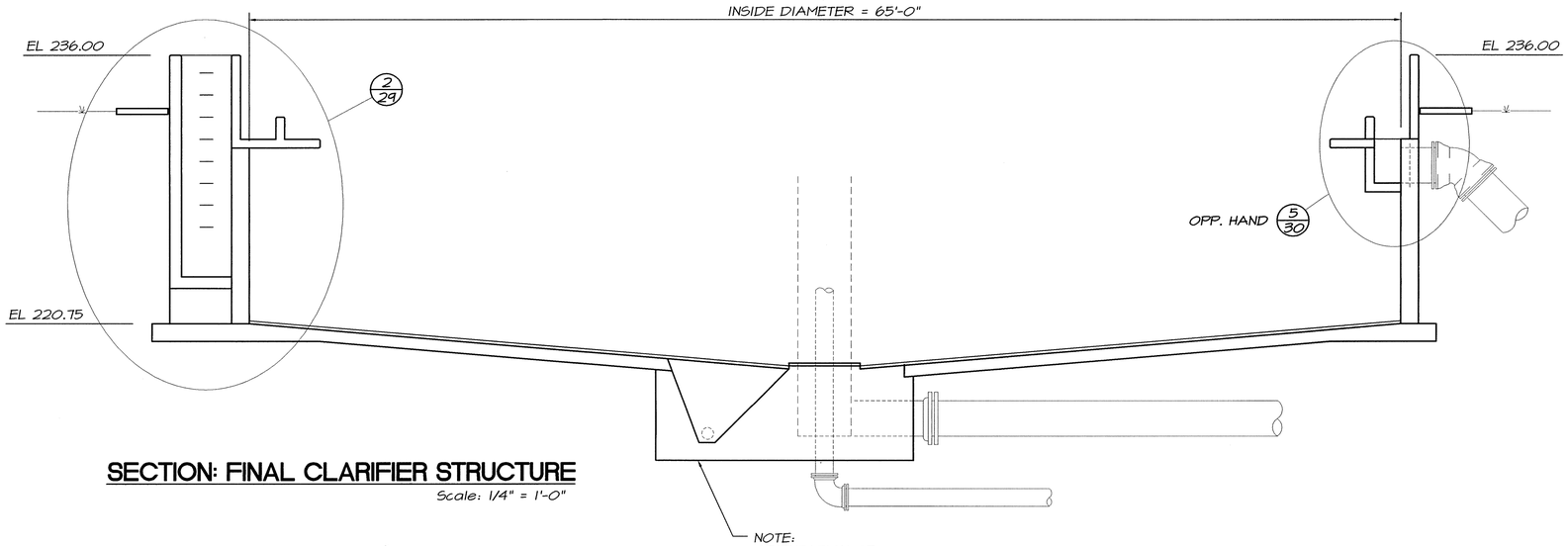
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
FINAL CLARIFIERS
PLANS, SECTIONS, & DETAILS

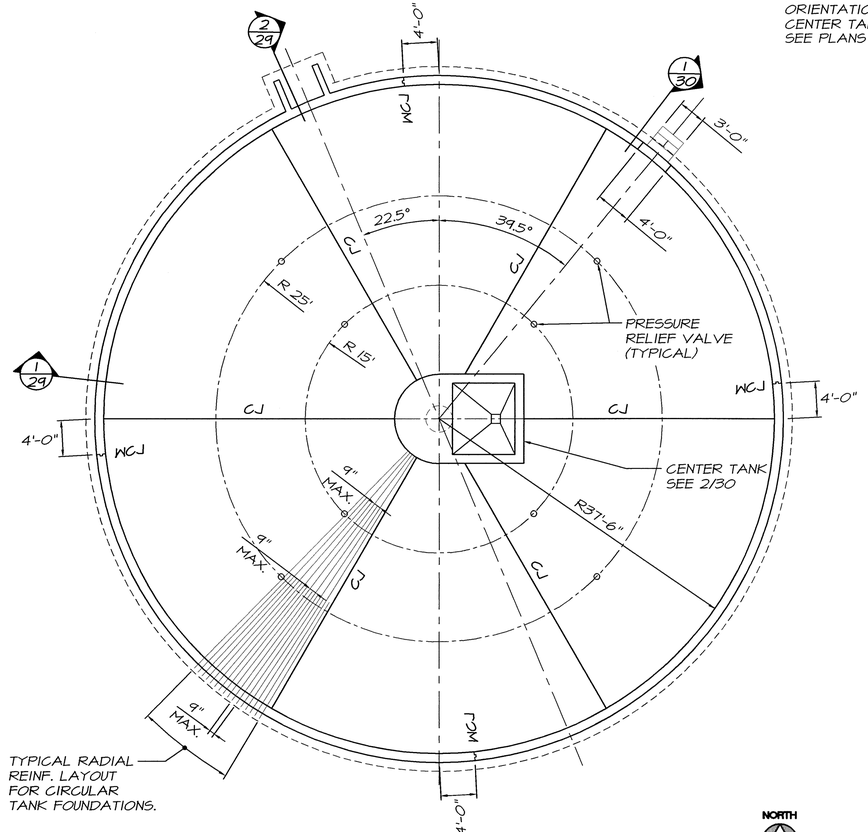
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	27
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-27.dwg



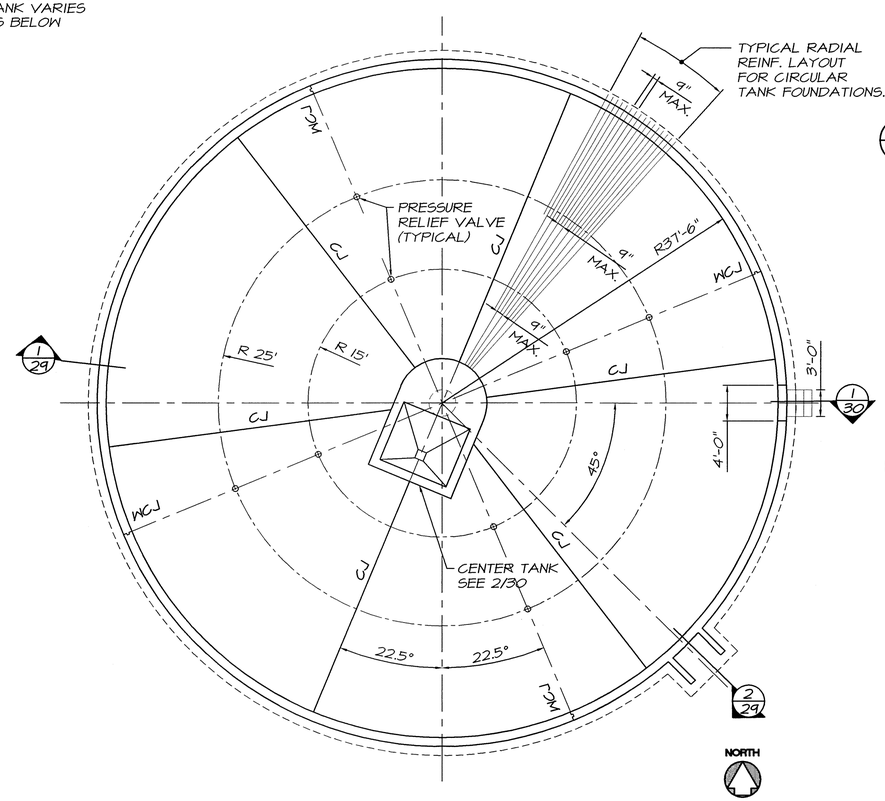
SECTION: FINAL CLARIFIER STRUCTURE

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



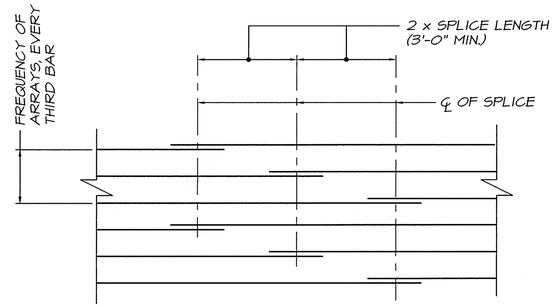
FOUNDATION PLAN: FINAL CLARIFIER STRUCTURE #2

REFER TO SHEET 62 FOR GENERAL CONCRETE NOTES. Scale: 1/8" = 1'-0"

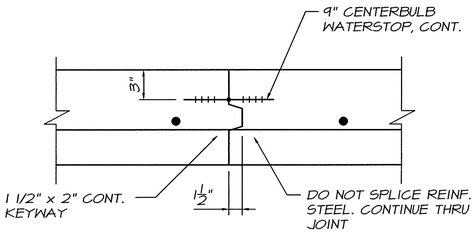


FOUNDATION PLAN: FINAL CLARIFIER STRUCTURE #1

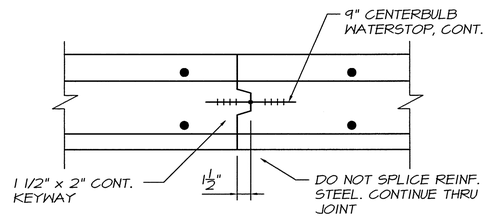
REFER TO SHEET 62 FOR GENERAL CONCRETE NOTES. Scale: 1/8" = 1'-0"



1/28 STAGGER SPLICES OF CIRCULAR REINF.
N.T.S.
TYPICAL FOR HORIZONTAL STEEL IN CIRCULAR TANK WALLS.



2/28 CONST. JOINT (CJ) IN CIRCULAR TANK SLAB
N.T.S.



3/28 WALL CONST. JOINT (WCJ) IN CIRCULAR TANK
N.T.S.

FOUNDATION LEGEND:

EL	ELEVATION
*	VERIFY WITH EQUIPMENT MANUF.
R	RADIUS
UNO	UNLESS NOTED OTHERWISE
TYP.	TYPICAL
SIM.	SIMILAR
CJ	CONSTRUCTION JOINT - SEE 2/28
WCJ	WALL CONSTRUCTION JOINT - SEE 3/28

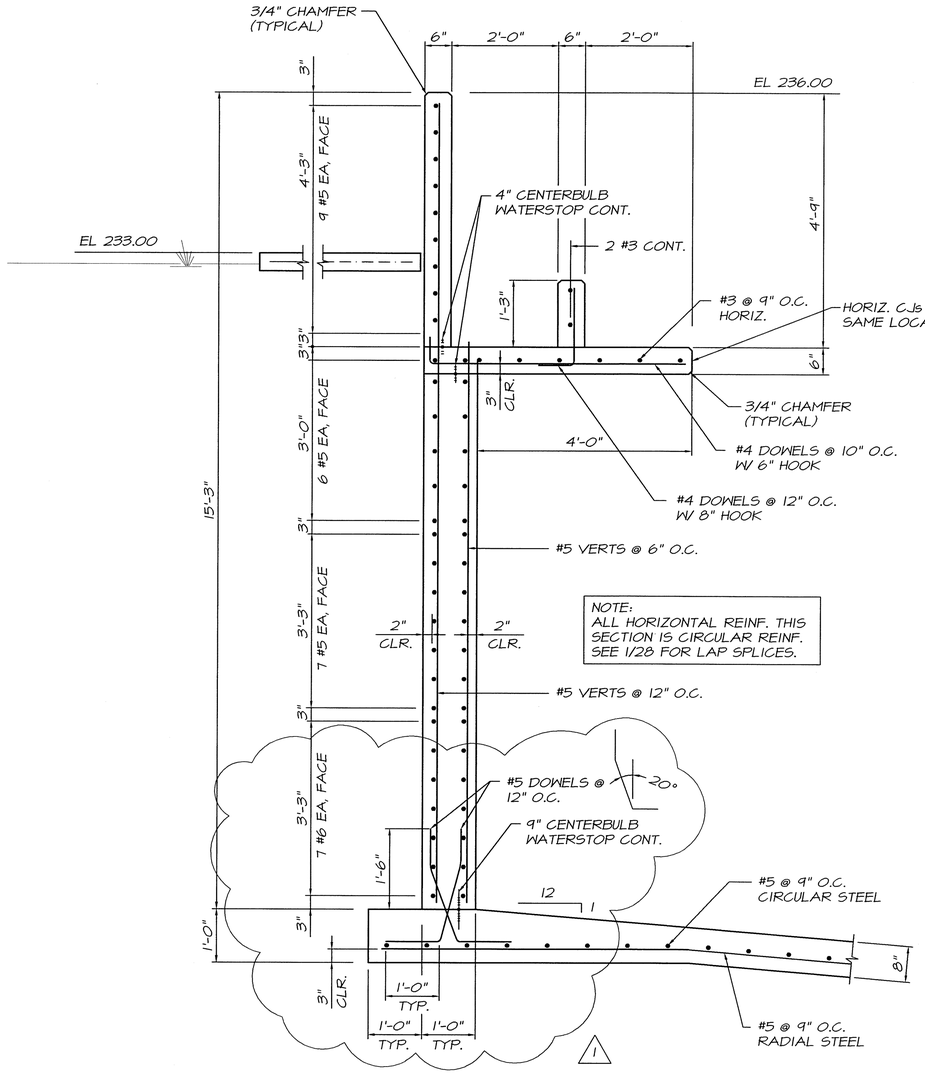
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
FINAL CLARIFIERS
FOUNDATION PLAN & SECTIONS

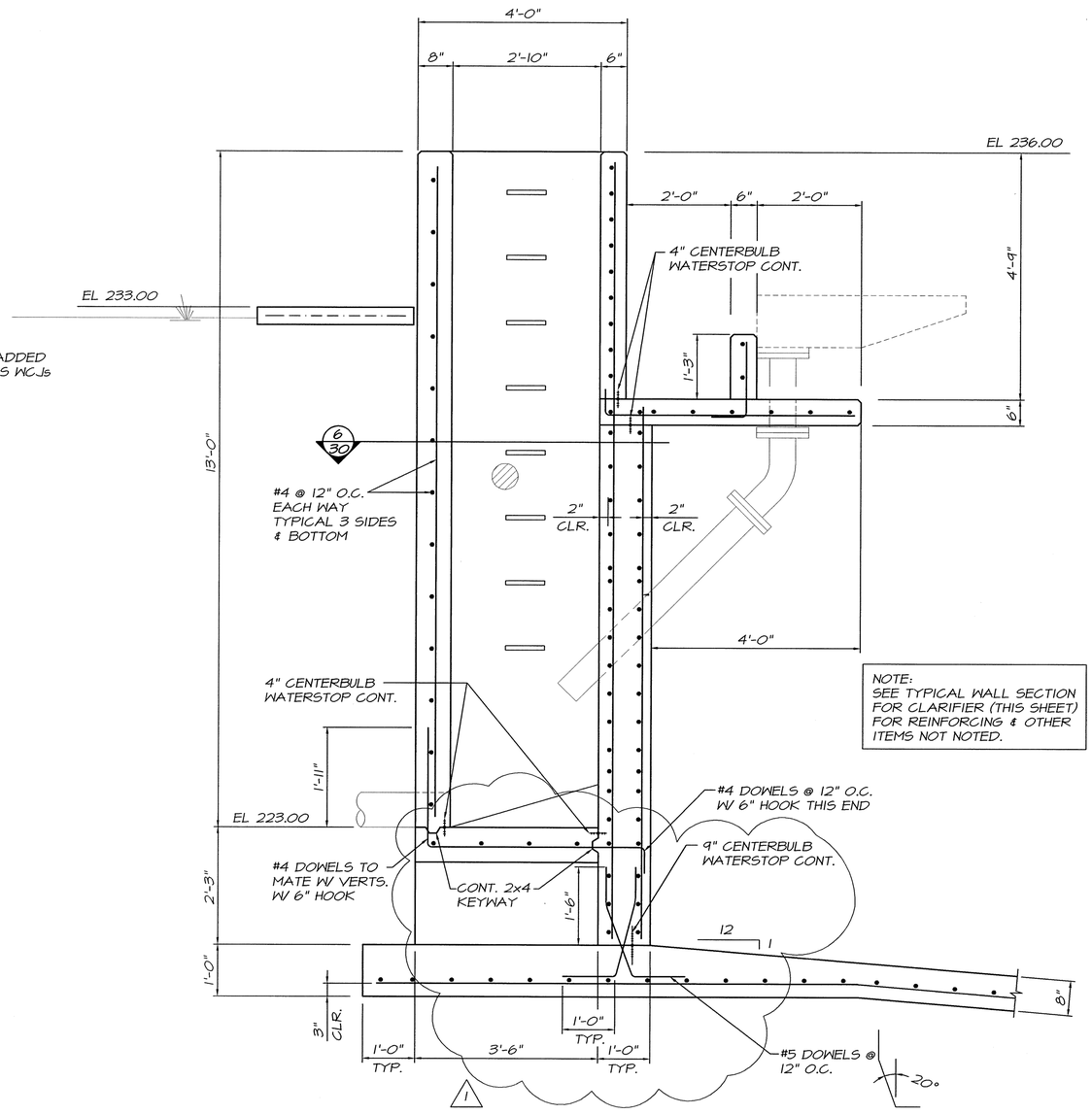
DESIGNED: CWG	JOB NO: 9924	DATE: JAN. 2001	28
DRAFTED: AAA	SCALE: AS NOTED		72
CHECKED: FMG			

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1/29 TYPICAL SECTION @ CLARIFIER WALL

3/4" = 1'-0"



2/29 SECTION SECTION @ SCUM BOX

3/4" = 1'-0"

1 6-5-2001 ADD FTG. TO WALL DOWELS

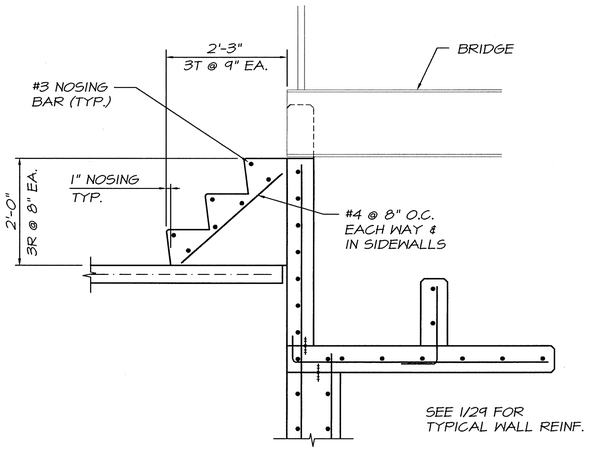
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

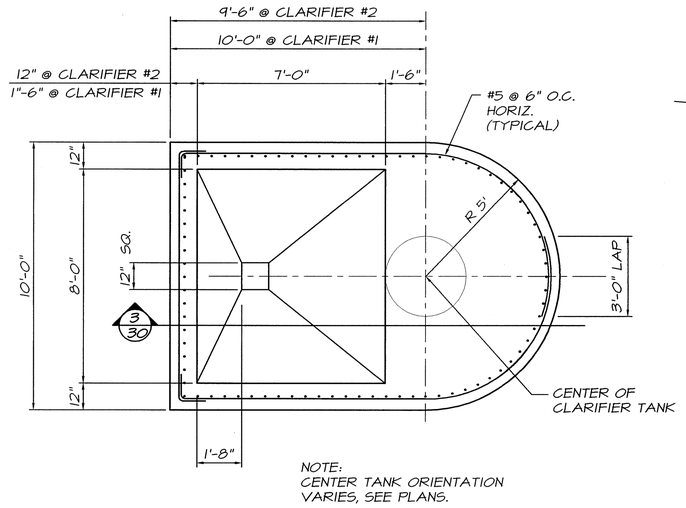
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
FINAL CLARIFIERS
STRUCTURAL SECTIONS 1

DESIGNED: CWG	JOB NO: 9924	DATE: JAN. 2001	29
DRAFTED: AAA	SCALE: 3/4" = 1'-0"		72
CHECKED: FMG			

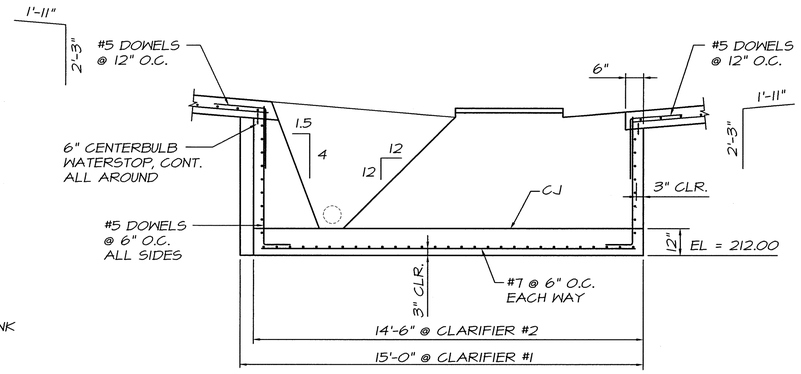
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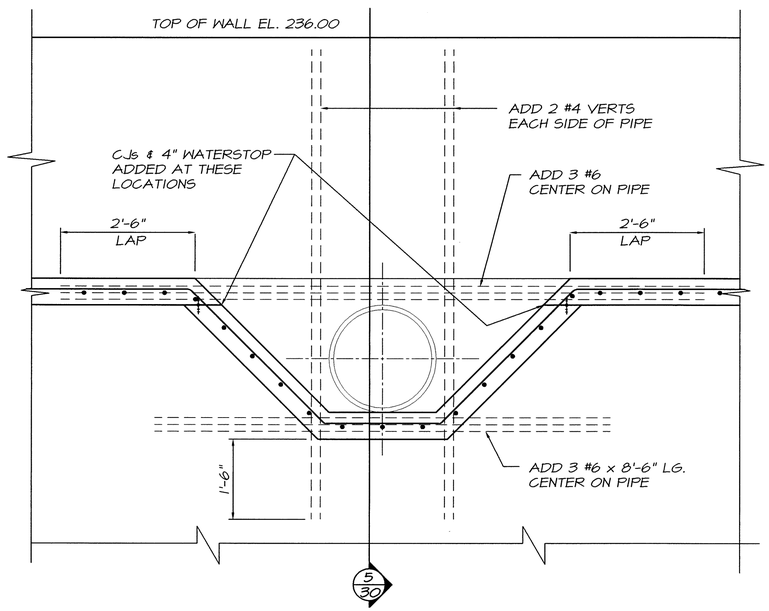
1/30 SECTION @ STEPS
3/4" = 1'-0"



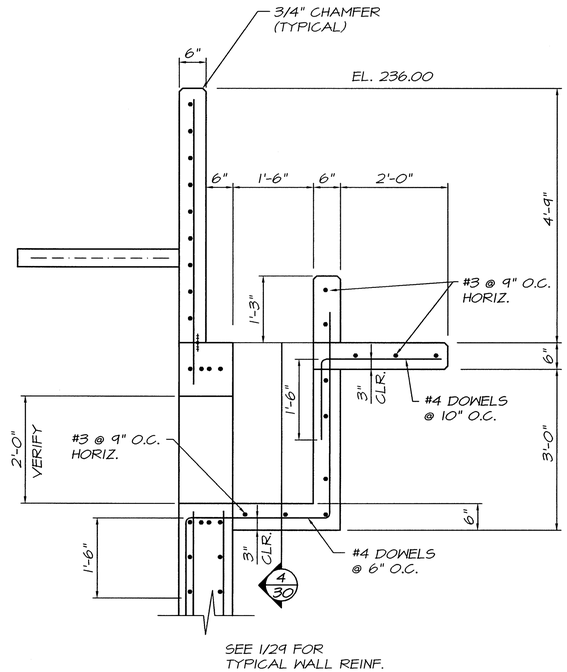
2/30 PLAN @ CENTER TANK
3/8" = 1'-0"



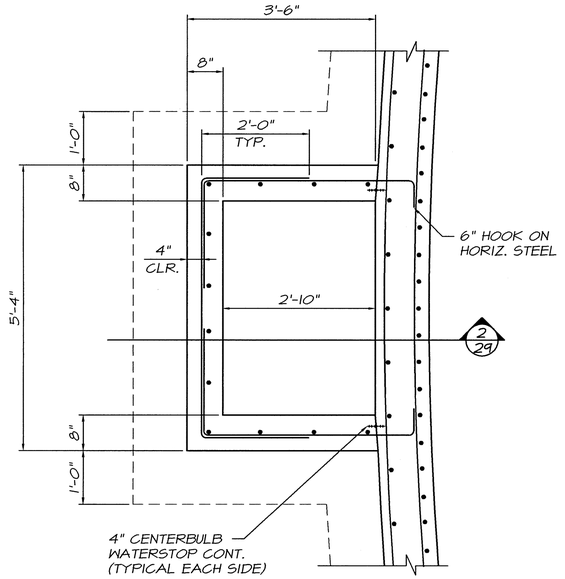
3/30 SECTION @ CENTER TANK
3/8" = 1'-0"



4/30 SECTION @ EFFLUENT PIPE IN WALL
3/4" = 1'-0"



5/30 SECTION @ EFFLUENT PIPE IN WALL
3/4" = 1'-0"



6/30 PLAN @ SCUM BOX
3/4" = 1'-0"

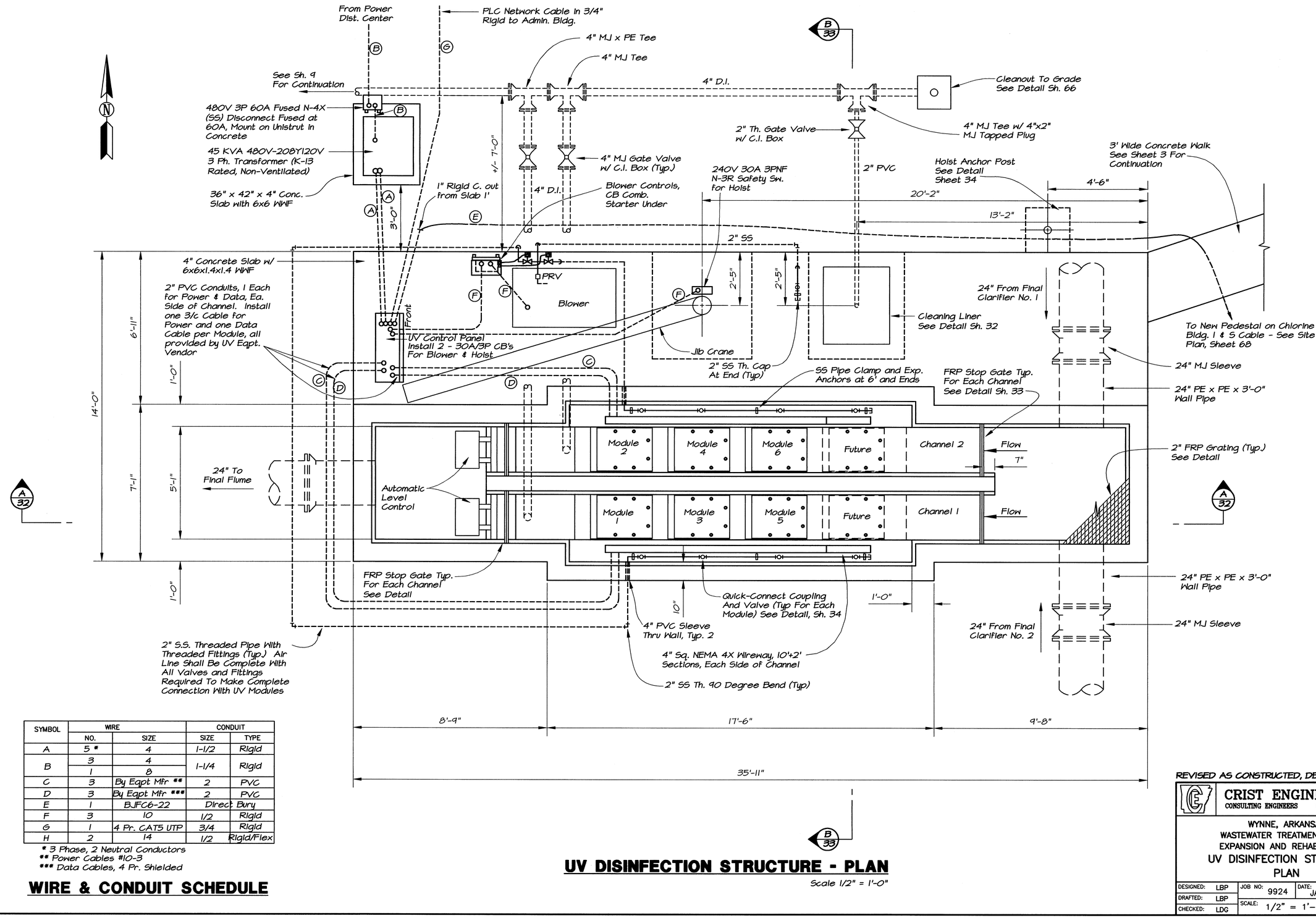
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
FINAL CLARIFIERS
STRUCTURAL SECTIONS 2

DESIGNED: CWG	JOB NO: 9924	DATE: JAN. 2001	30	
DRAFTED: AAA	SCALE: AS NOTED			72
CHECKED: FMG				

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SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
A	5 *	4	1-1/2	Rigid
B	3	4	1-1/4	Rigid
	1	8		
C	3	By Eqpt Mfr **	2	PVC
D	3	By Eqpt Mfr ***	2	PVC
E	1	BJFC6-22	Direct Bury	
F	3	10	1/2	Rigid
G	1	4 Pr. CAT5 UTP	3/4	Rigid
H	2	14	1/2	Rigid/Flex

* 3 Phase, 2 Neutral Conductors
** Power Cables #10-3
*** Data Cables, 4 Pr. Shielded

WIRE & CONDUIT SCHEDULE

UV DISINFECTION STRUCTURE - PLAN

Scale 1/2" = 1'-0"

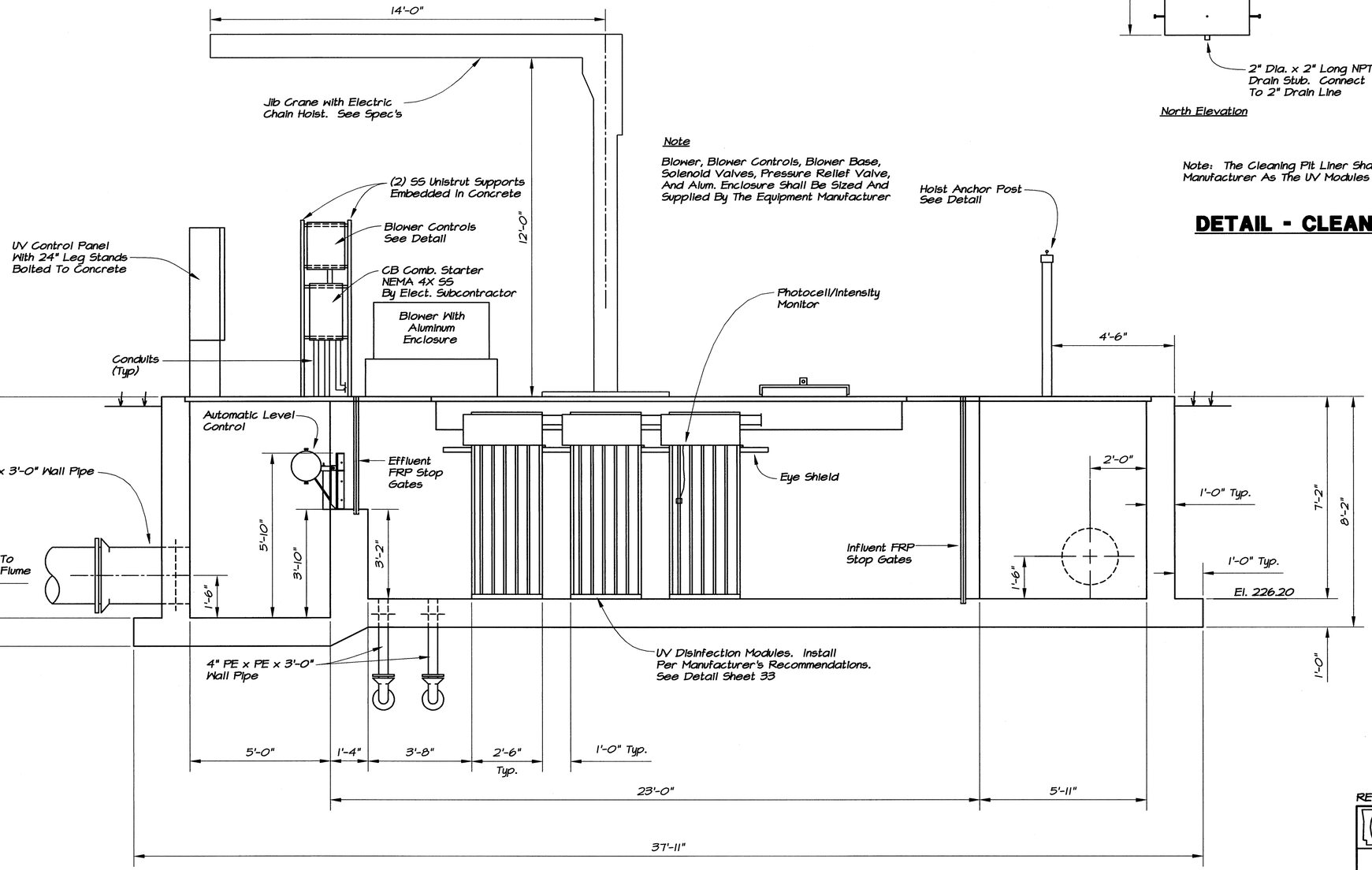
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

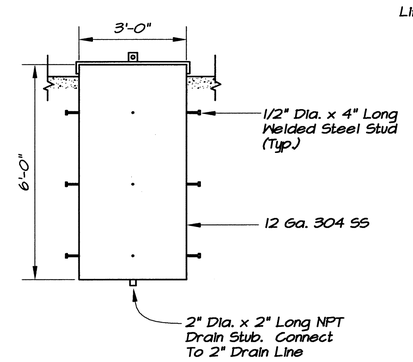
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
UV DISINFECTION STRUCTURE PLAN

DESIGNED: LBP	JOB NO: 9924	DATE: JAN. 2001	31
DRAFTED: LBP	SCALE: 1/2" = 1'-0"		72
CHECKED: LDG			

9924-31.dwg



SECTION A
Scale 1/2"=1'-0"



Note

Blower, Blower Controls, Blower Base, Solenoid Valves, Pressure Relief Valve, And Alum. Enclosure Shall Be Sized And Supplied By The Equipment Manufacturer

Note: The Cleaning Pit Liner Shall Be Supplied By The Same Manufacturer As The UV Modules And Associated Equipment.

DETAIL - CLEANING PIT LINER
Scale 1/2"=1'-0"

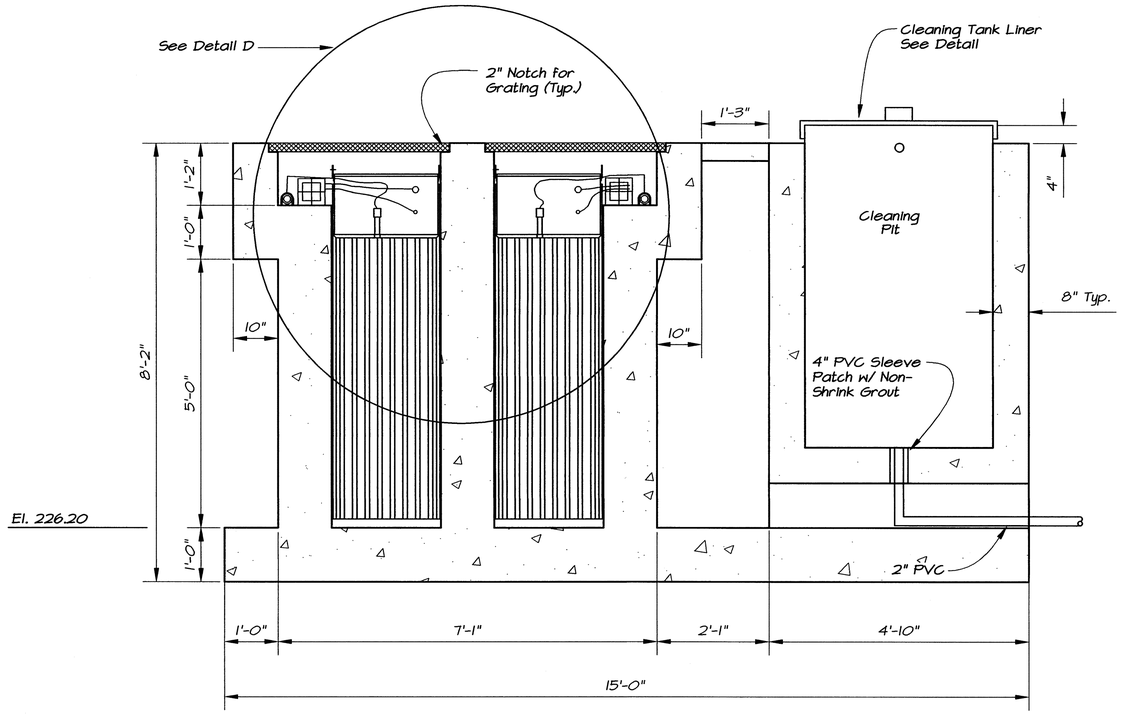
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
UV DISINFECTION STRUCTURE
SECTION AND DETAILS 1

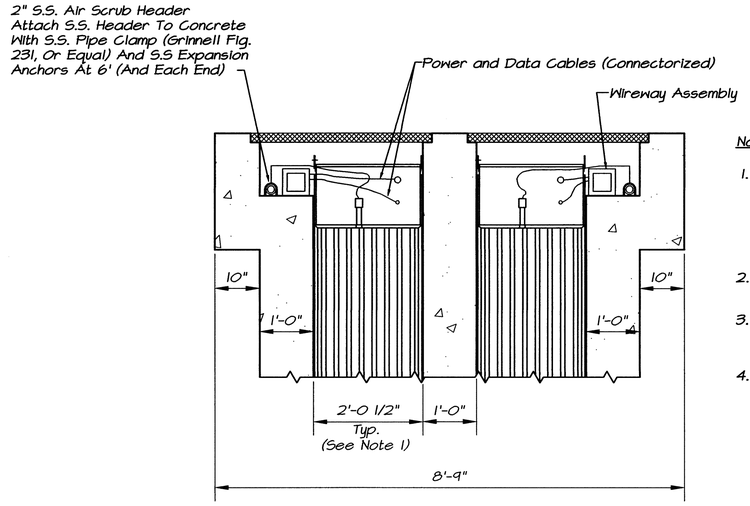
DESIGNED: LBP	JOB NO: 9924	DATE: JAN. 2001	32 / 72
DRAFTED: LBP	SCALE: 1/2" = 1'-0"		
CHECKED: LDG			

ASB0102 9924-32.dwg



SECTION B

Scale 3/4"= 1'-0"

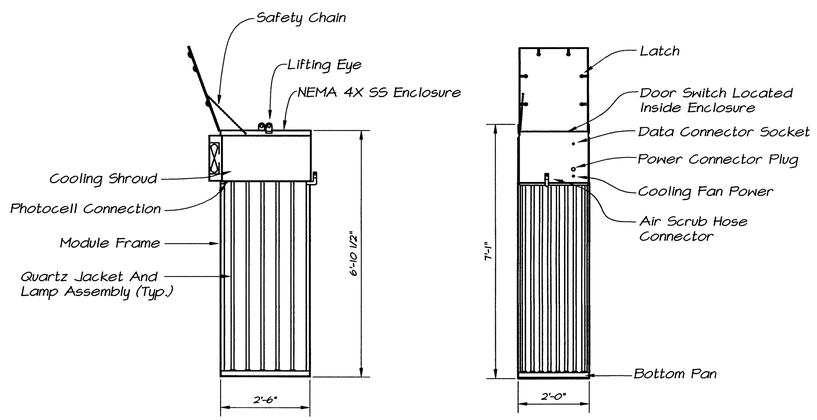


DETAIL D

Scale 3/4"=1'-0"

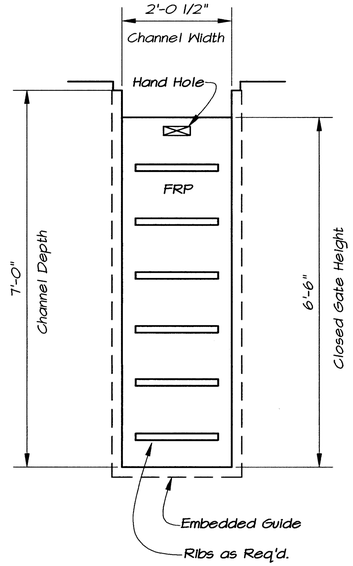
Notes

1. The Width And Squareness of Each Channel Is Extremely Critical For The Proper Installation of the UV Modules The Contractor Will Be Required To Remove and Reconstruct the Channels If the Channels Do Not Conform To Manufacturer's Recommendations and the Dimensions as Shown.
2. Anchor Eyeshield and Modules per Manufacturer Recommendations.
3. Power Cable - 3 Conductor Power Cable 1 per Each Module. Cut to Length and Terminate at Control Panel Power Terminal Strip.
4. Data Cable - Contractor Shall Use Caution When Pulling Through Conduit. Cut to Length and Terminate at Control Panel.

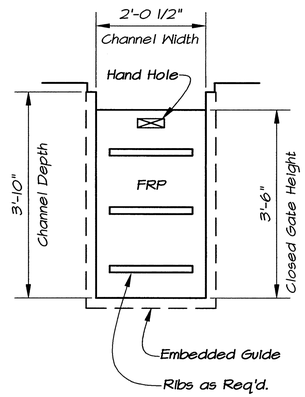


DETAIL - UV MODULES

Scale 1/2" = 1'-0"



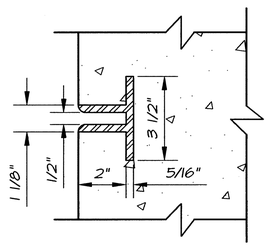
1 Required



1 Required

DETAIL - STOP GATES

Scale 3/4"= 1'-0"



DETAIL - EMBEDDED GUIDE FRAME

Not To Scale

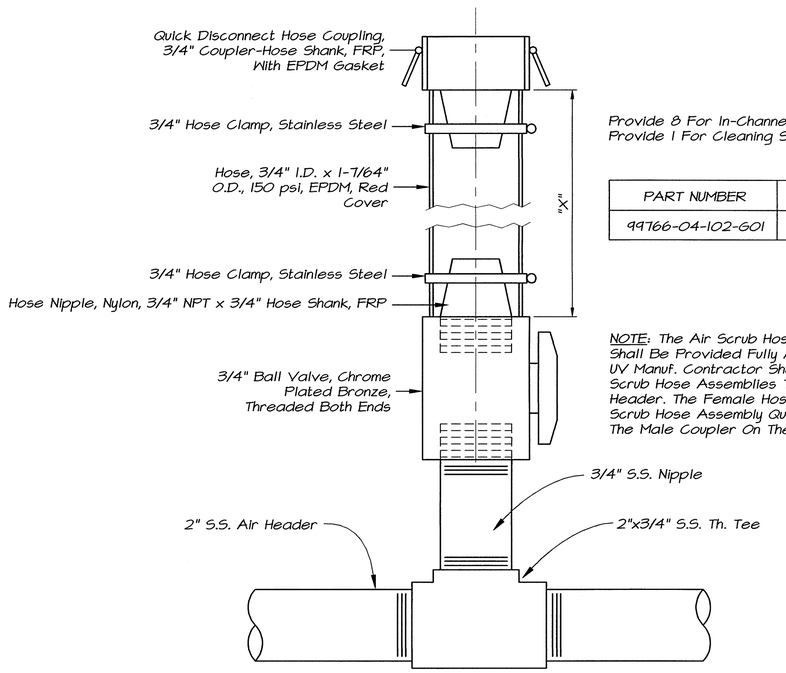
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
UV DISINFECTION STRUCTURE
SECTION AND DETAILS 2

DESIGNED:	LBP	JOB NO: 9924	DATE: JAN. 2001	33	
DRAFTED:	LBP	SCALE: AS SHOWN			72
CHECKED:	LDG				

9924-33.dwg



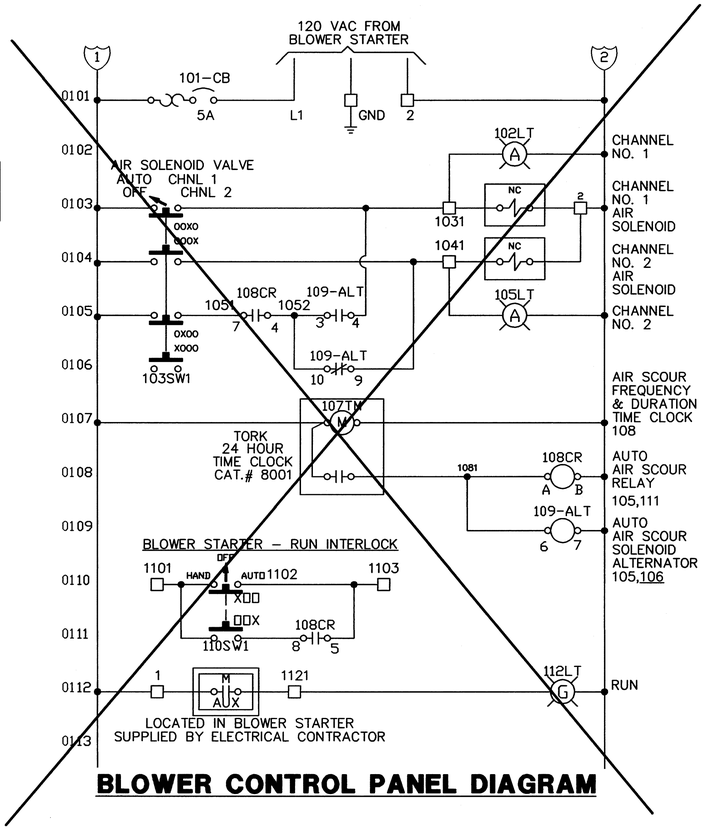
Provide 8 For In-Channel Cleaning
Provide 1 For Cleaning Station

PART NUMBER	"X"	QUANTITY
99766-04-102-601	48"	9

NOTE: The Air Scrub Hose Assemblies Shall Be Provided Fully Assembled By The UV Manuf. Contractor Shall Connect Air Scrub Hose Assemblies To Air Scrub Header. The Female Hose Shank Of Air Scrub Hose Assembly Quick Connects To The Male Coupler On The UV Module.

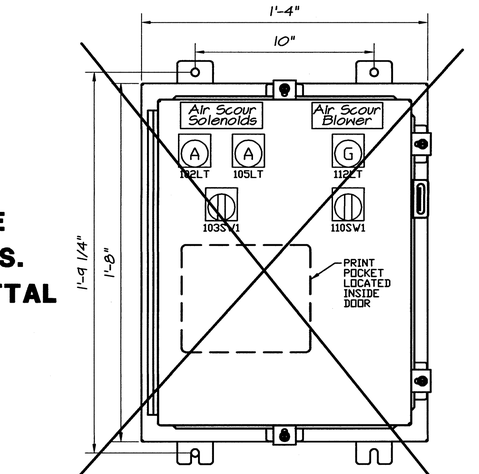
TYPICAL AIR SCRUB / HOSE ASSEMBLY

No Scale



BLOWER CONTROL PANEL DIAGRAM

SEE MFR'S. SUBMITTAL

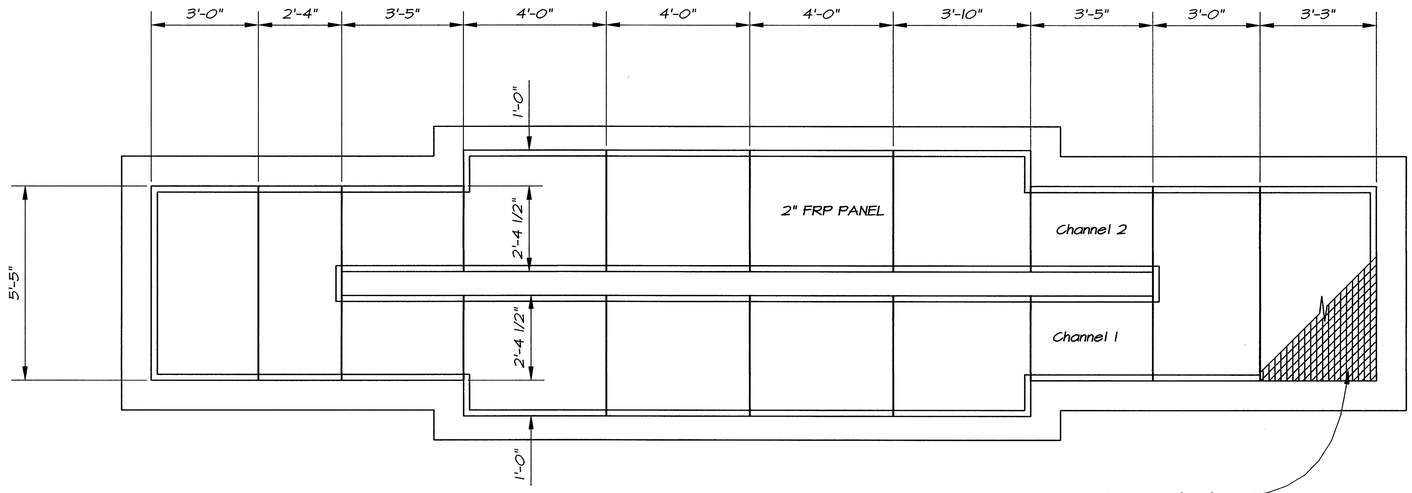


BLOWER CONTROL PANEL

NTS

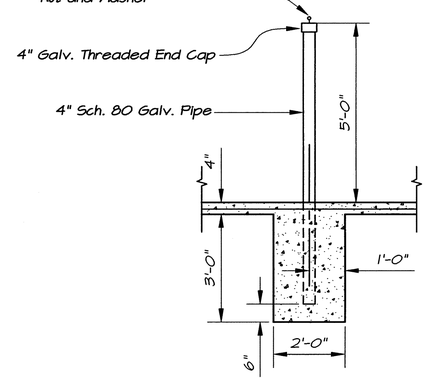
NOTES

1. Enclosure Shall Be NEMA 4X SS, 20H x 16W x 8 D, w/ Interior Mounting Panel 17 H x 13 W.
2. See Control Schematic This Sheet.
3. Nameplates Shall Be White Phenolic With 3/16" H Black Lettering Engraved As Shown.



UV DISINFECTION STRUCTURE - GRATING PLAN

Scale 1/2" = 1'-0"



DETAIL - HOIST ANCHOR POST

Scale 1/2" = 1'-0"

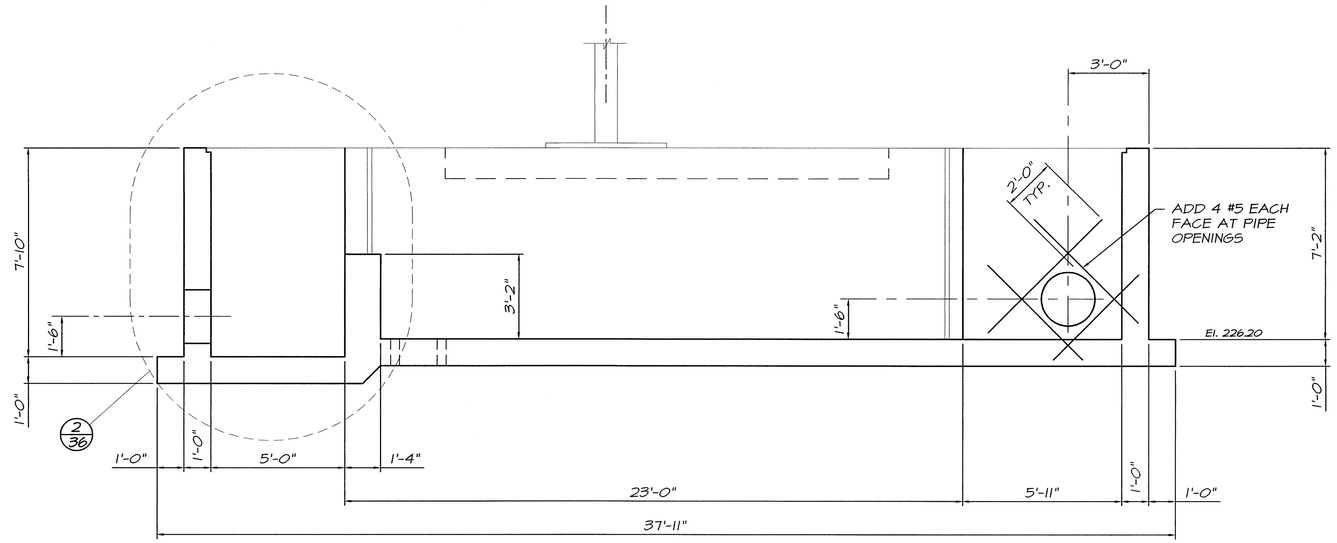
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
UV DISINFECTION STRUCTURE
MISCELLANEOUS DETAILS

DESIGNED: LBP	JOB NO: 9924	DATE: JAN. 2001	34
DRAFTED: LBP	SCALE: AS SHOWN		72
CHECKED: LDG			

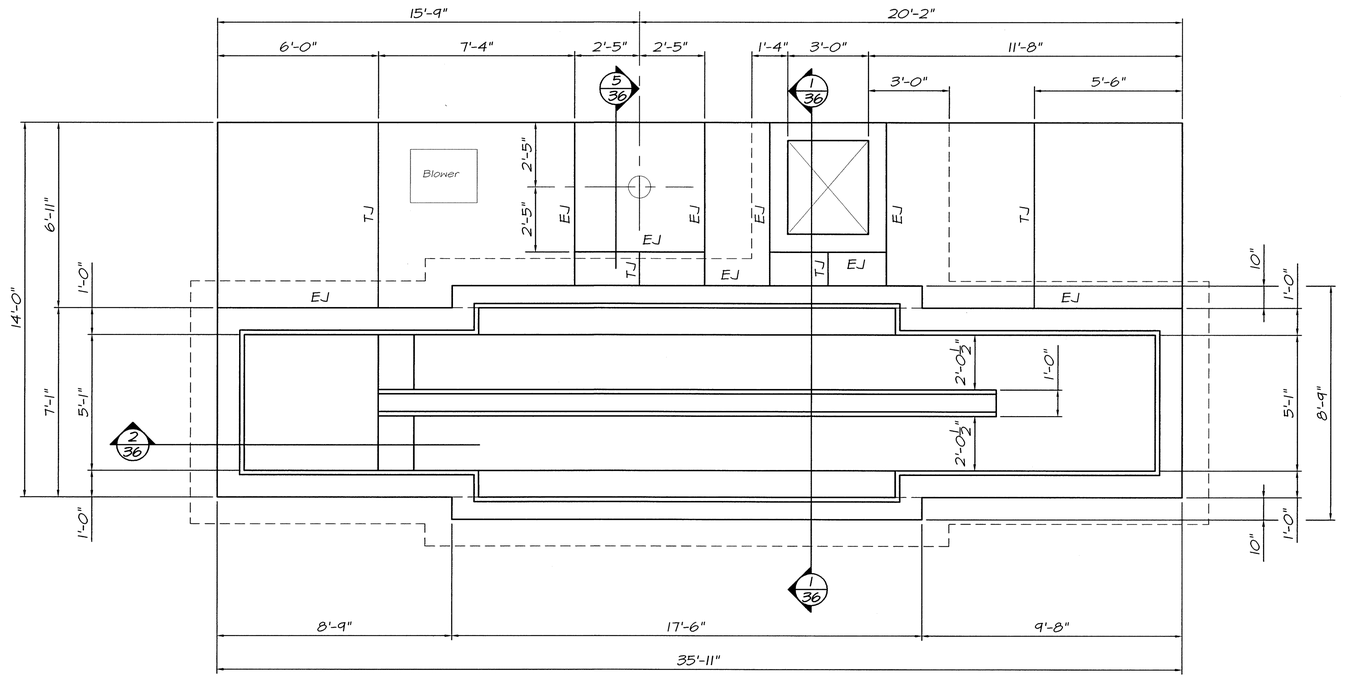
9924-34.dwg



LONGITUDINAL SECTION: UV DISINFECTION STRUCTURE

Scale: 3/8" = 1'-0"

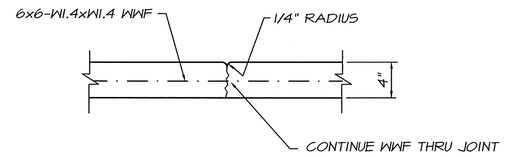
NORTH



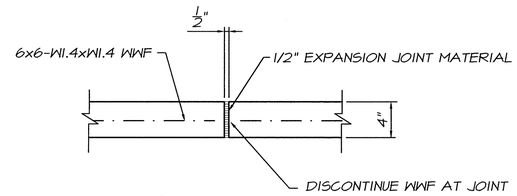
FOUNDATION PLAN: UV DISINFECTION STRUCTURE

Scale: 3/8" = 1'-0"

NORTH



1/35 TOOLED JOINT (TJ)
1 1/2" = 1'-0"



2/35 EXPANSION JOINT (EJ)
1 1/2" = 1'-0"

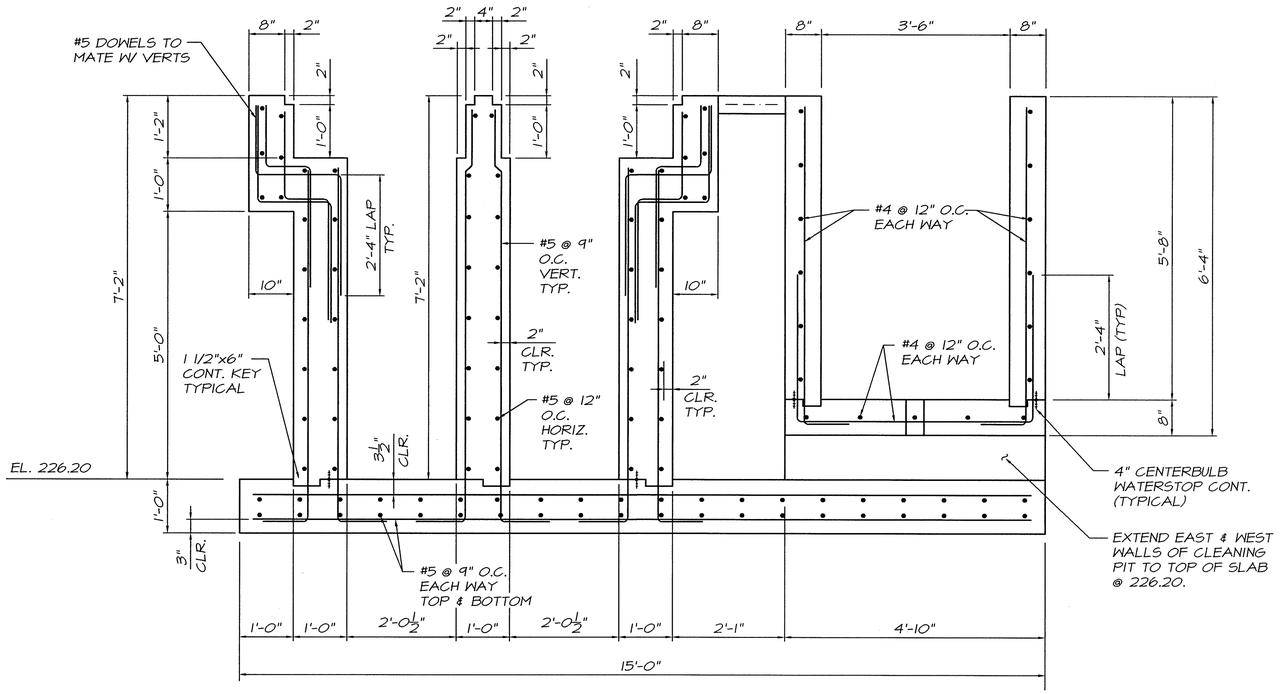
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

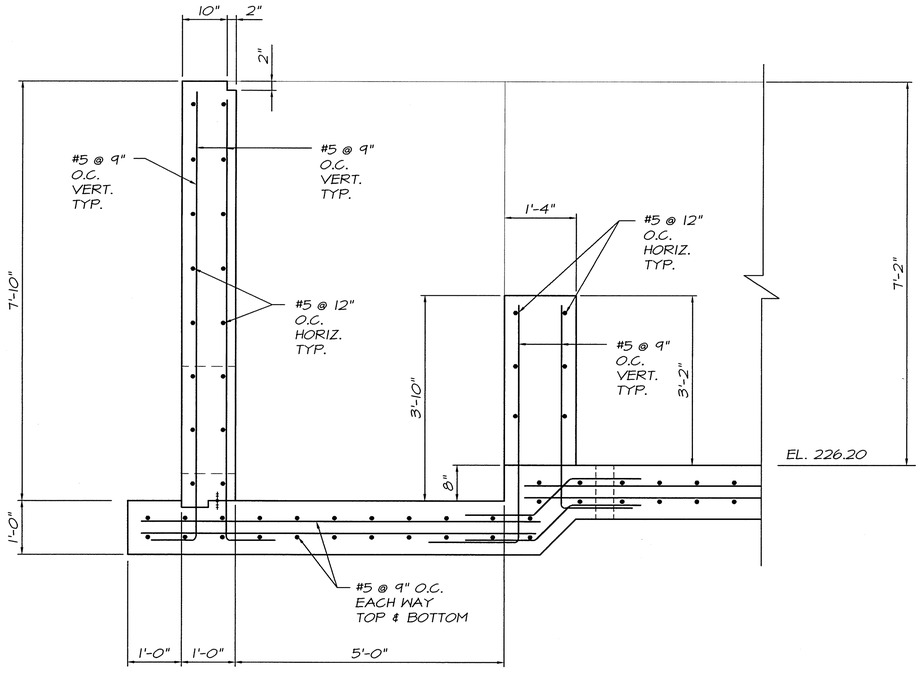
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
UV DISINFECTION STRUCTURE
FOUNDATION PLAN & SECTIONS

DESIGNED: CWG	JOB NO: 9924	DATE: JAN. 2001	35
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		72
CHECKED: FMG			

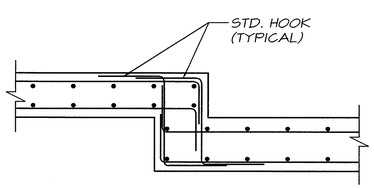
J:\GGAE Projects Archive\200030-Wynne WWTP\Drawings\AS-BUILT\00030-DG8AB.dwg, 01/10/03 10:20:09 AM



1/36 TRANSVERSE SECTION - UV STRUCTURE
3/4" = 1'-0"

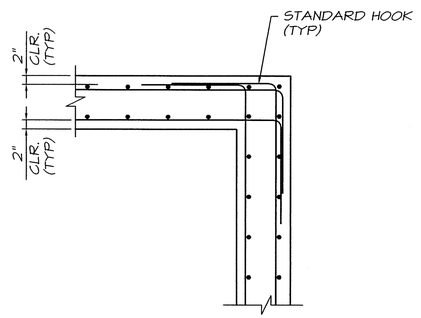


2/36 SECTION
3/4" = 1'-0"



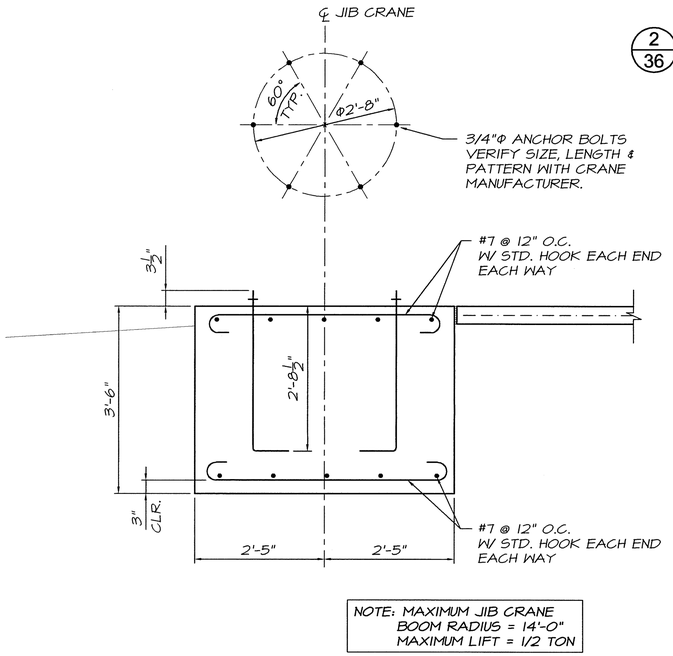
NOTE: SEE WALL SECTIONS FOR TYPICAL REINFORCING.

3/36 PLAN @ WALL CORNER
3/4" = 1'-0"



NOTE: SEE WALL SECTIONS FOR TYPICAL REINFORCING.

4/36 PLAN @ WALL CORNER
3/4" = 1'-0"



NOTE: MAXIMUM JIB CRANE BOOM RADIUS = 14'-0"
MAXIMUM LIFT = 1/2 TON

5/36 SECTION @ 1/2 TON JIB CRANE FOUNDATION
3/4" = 1'-0"

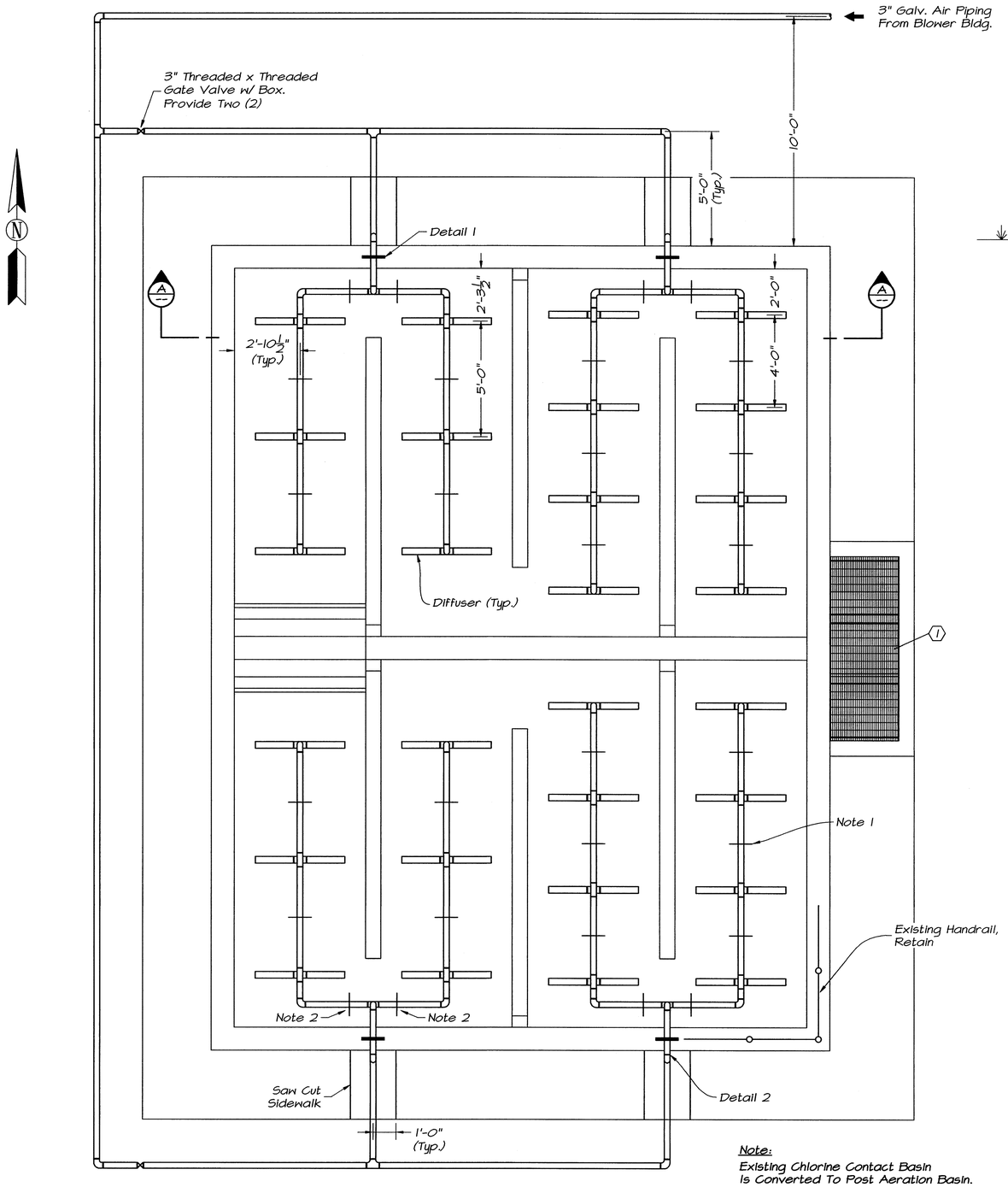
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
UV DISINFECTION STRUCTURE
STRUCTURAL SECTIONS

DESIGNED: CWG	JOB NO: 9924	DATE: JAN. 2001	36
DRAFTED: AAA			72
CHECKED: FMG	SCALE: 3/4" = 1'-0"		

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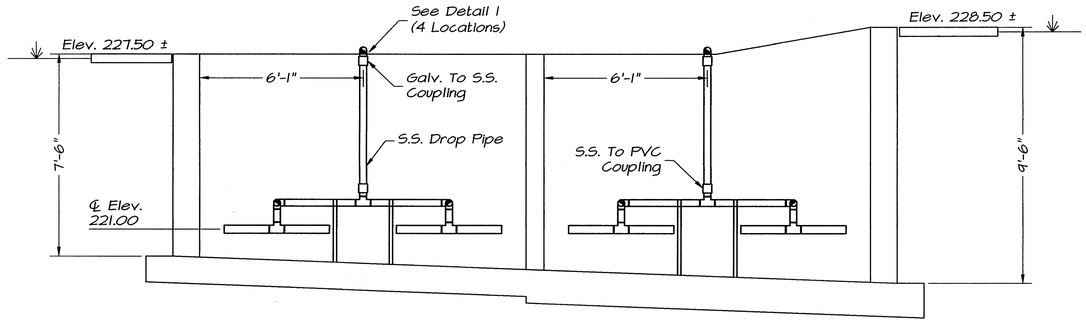
Note:
Existing Chlorine Contact Basin Is Converted To Post Aeration Basin.

PLAN

3/8" = 1'-0"

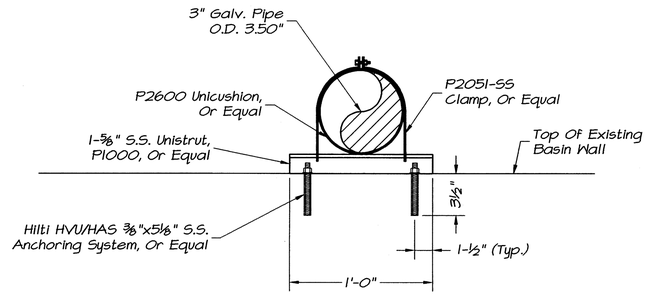
NOTES:

1. Special Air-Piping S.S. Support System Furnished By Aeration Equipment Manufacturer.
2. Rigid Support Here, All Others Simple.
3. See Sheet 43 For Pipe Support Details.
4. Proposed Moisture Release System To Consist Of: 3" Galv. Tee Bushed To ½". ½" Threaded PVC Fitting. Run ½" SCH. 40 PVC Along New Air Line As Shown. Install New ½" Ball Valve. Terminate ½" PVC Above Water Surface. Provide Two (2).



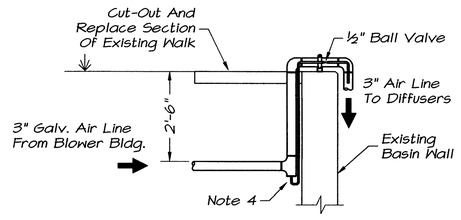
SECTION A-A

3/8" = 1'-0"



DETAIL 1

N.T.S.



DETAIL 2

N.T.S.

1" FRP Grating	
Mark	Opening Dimension
1	3'-0" x 8'-4"

GRATING SCHEDULE

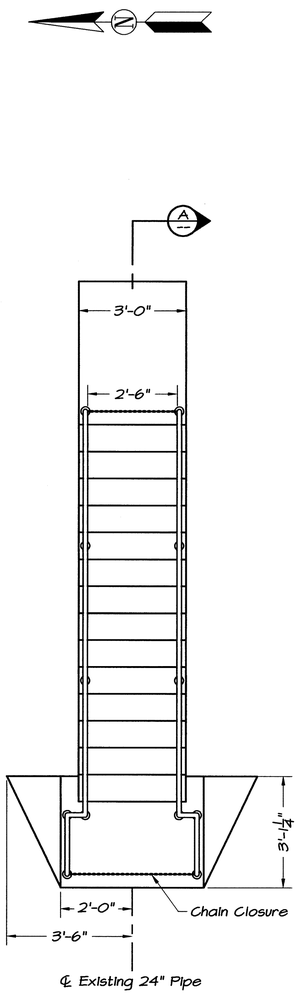
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
POST AERATION BASIN
PLAN, SECTION, & DETAILS

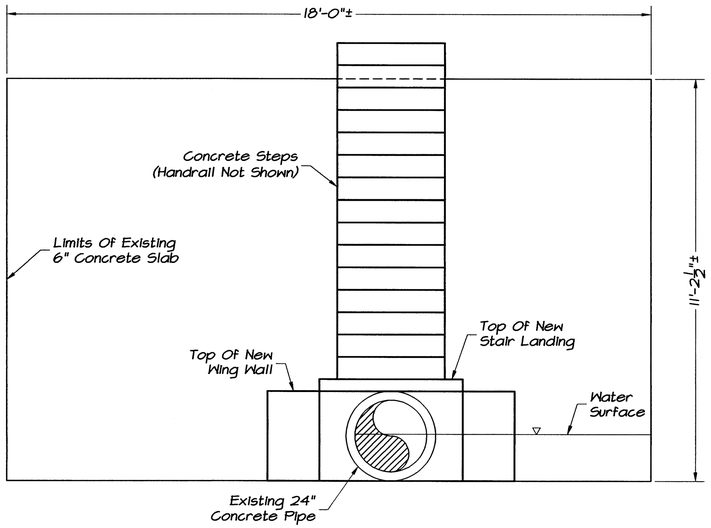
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	37
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-37.dwg



PLAN

½" = 1'-0"

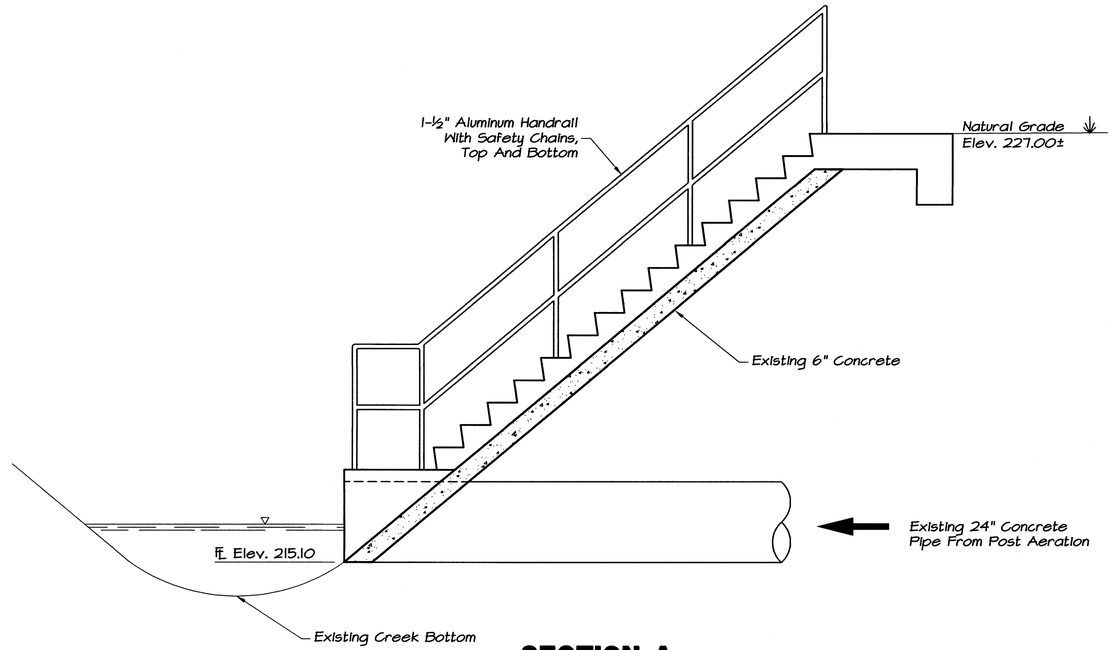


WEST ELEVATION

½" = 1'-0"

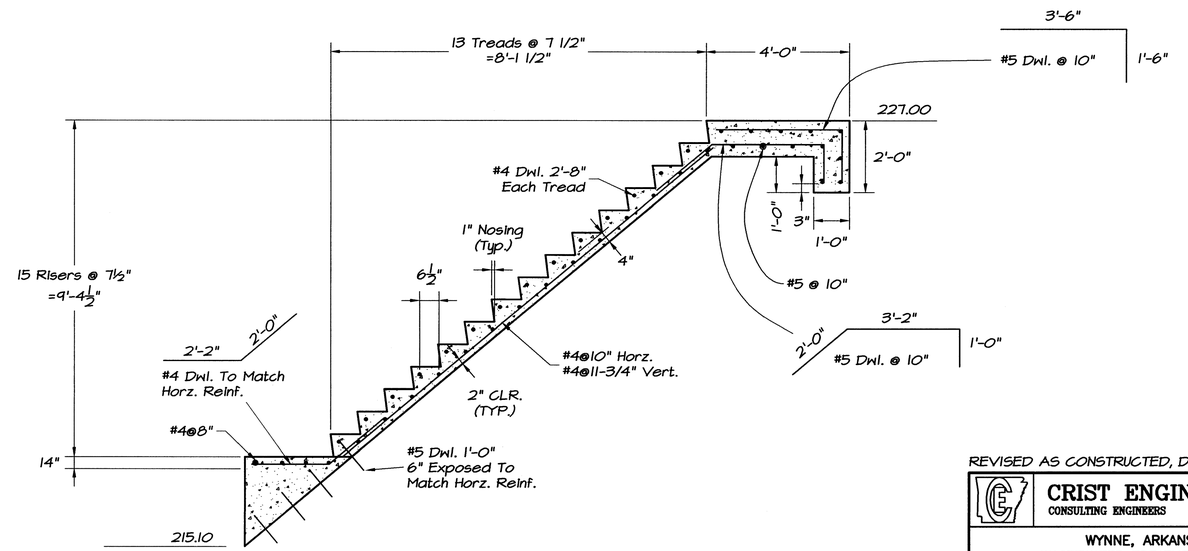
NOTES:

1. Remove Existing Wooden Stairs And Platform Structure.
2. Construct New Wing Wall Around Existing Concrete Pipe.
3. Construct New Stair Landing On Top Of New Wing Wall.
4. Construct New Stairs From New Stair Landing To Existing Natural Grade Above.
5. 4" Abrasive Nosing Strip On Each Tread.



SECTION A

½" = 1'-0"



REINFORCING DETAIL

½" = 1'-0"

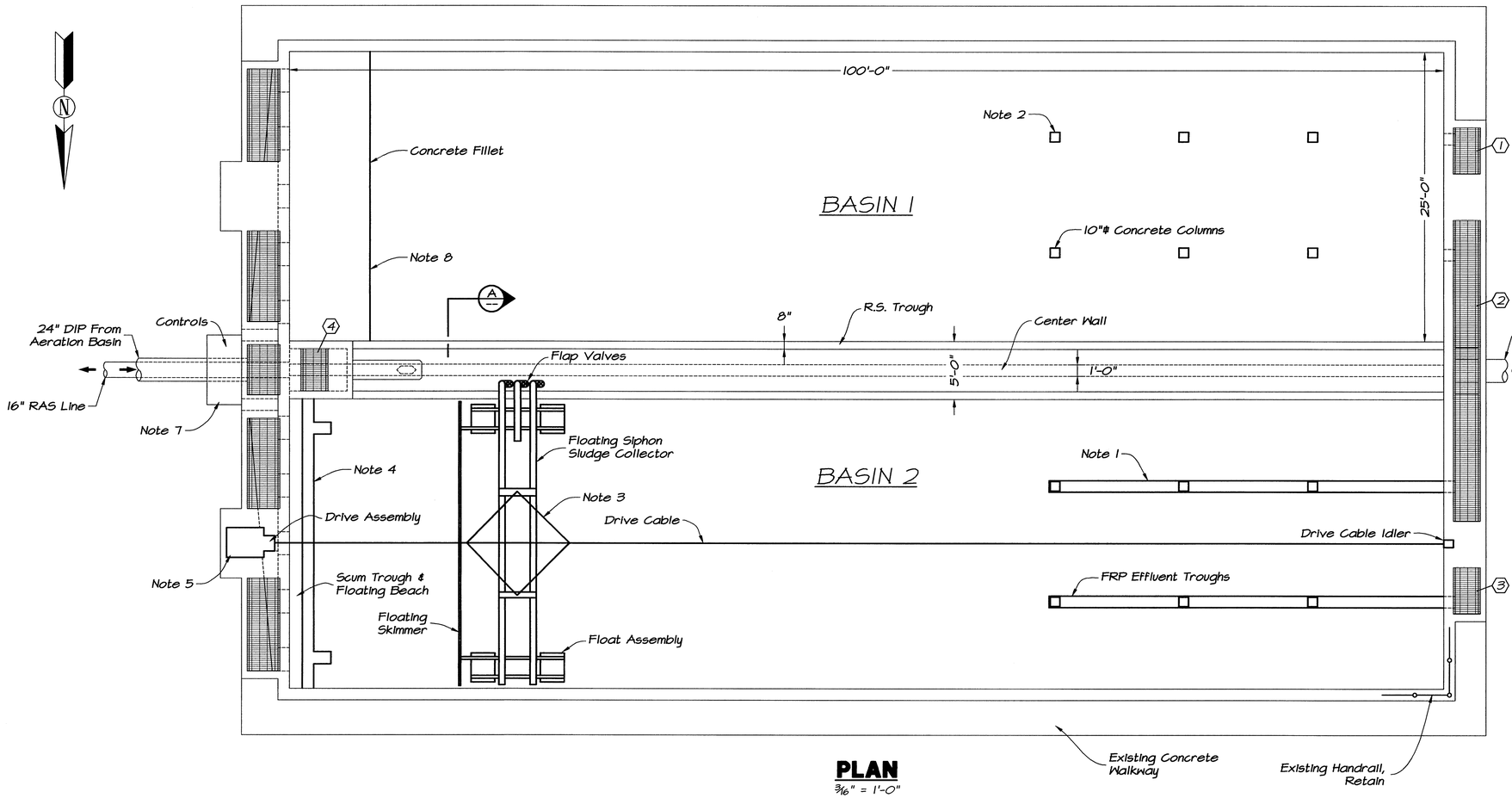
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PLANT EFFLUENT STRUCTURE
PLAN, SECTION & DETAILS

DESIGNED:	SWJ	JOB NO:	9924	DATE: JAN. 2001	38
DRAFTED:	SWJ	SCALE:	AS SHOWN		72
CHECKED:	LDG				

9924-38.dwg



PLAN

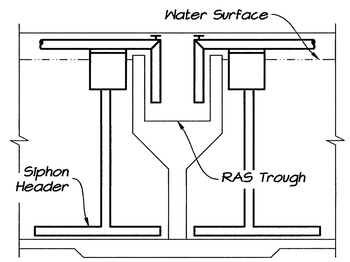
3/16" = 1'-0"

NOTES: Apply To Both Basins

1. Remove FRP Effluent Troughs (4)
2. Remove 10"ϕ Concrete Columns (12)
3. Remove Sludge Collection System Consisting of Float Assembly, Collection Headers, and Flap Valves (2)
4. Remove Scum Trough and Floating Beach (2)
5. Remove Drive Assembly (2)
6. Remove Drive Cable Idler (2)
7. Remove Controls (2) And Control Pad (1)
8. Remove Concrete Fillet (2)
9. Contractor To Field Verify All Dimensions For 1" FRP Grating.

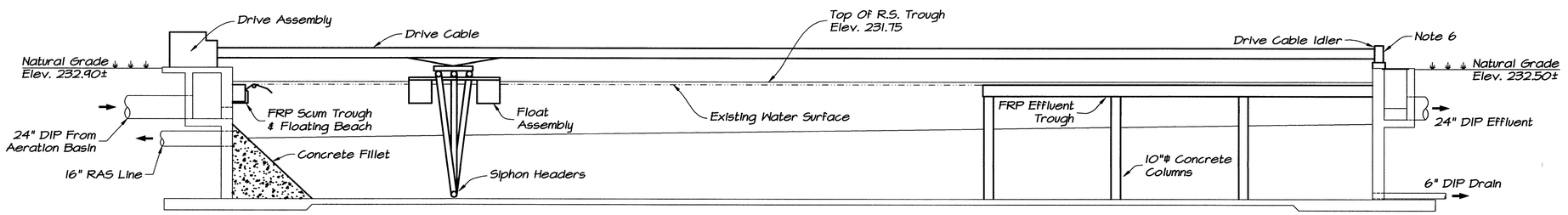
1" FRP Grating	
Mark	Opening Dimension
1	2'-4" x 4'-0"
2	2'-4" x 26'-0"
3	2'-4" x 4'-0"
4	2'-4" x 3'-8"

GRATING SCHEDULE



SECTION A

¼" = 1'-0"



SECTION

3/16" = 1'-0"

Note: Existing Final Clarifier To Be Converted To Aerobic Digester

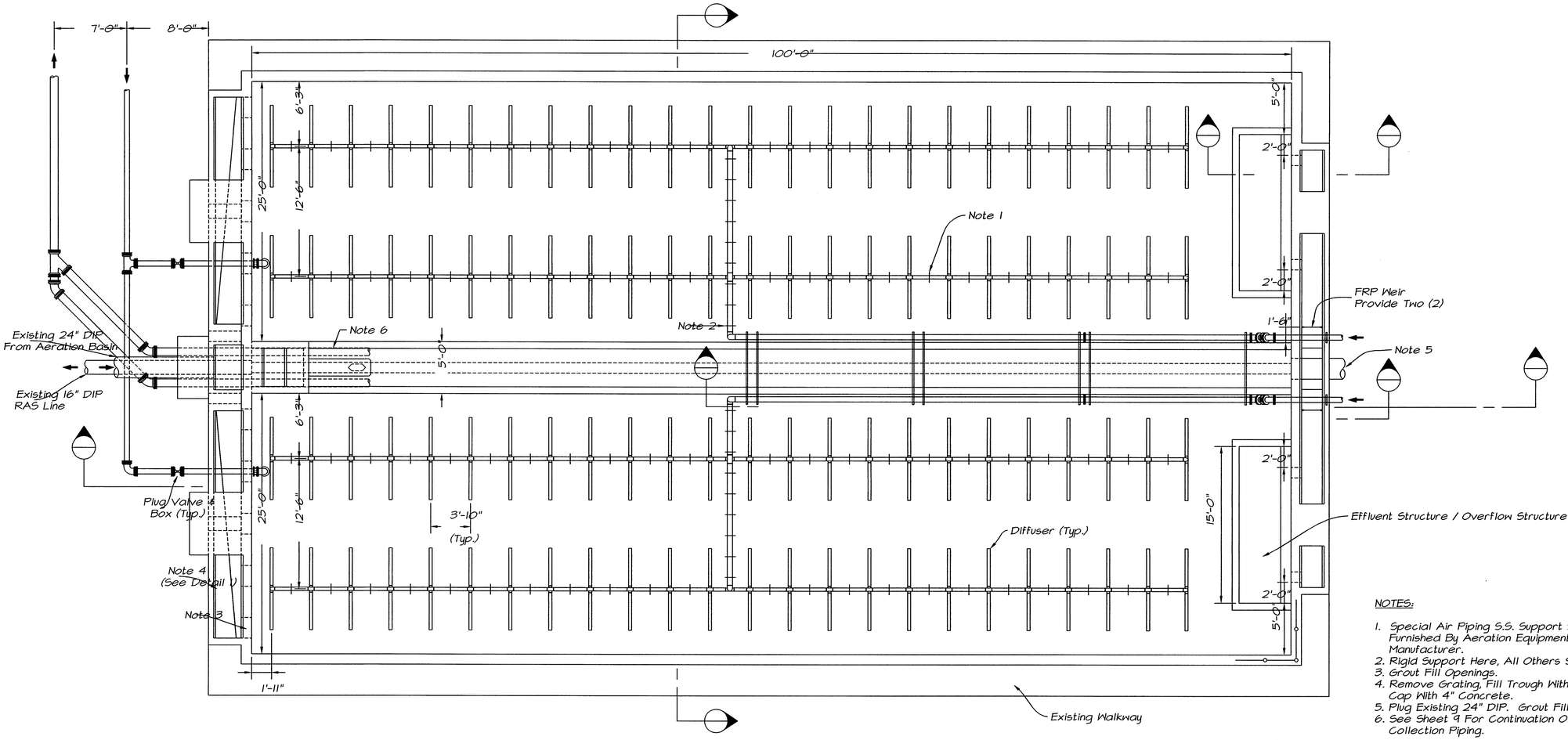
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
EXISTING FINAL CLARIFIER
EQUIPMENT REMOVAL & DEMOLITION

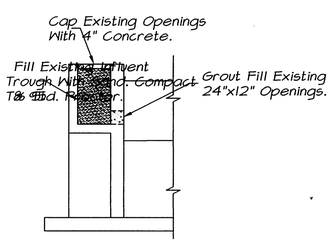
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	39
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-39.dwg

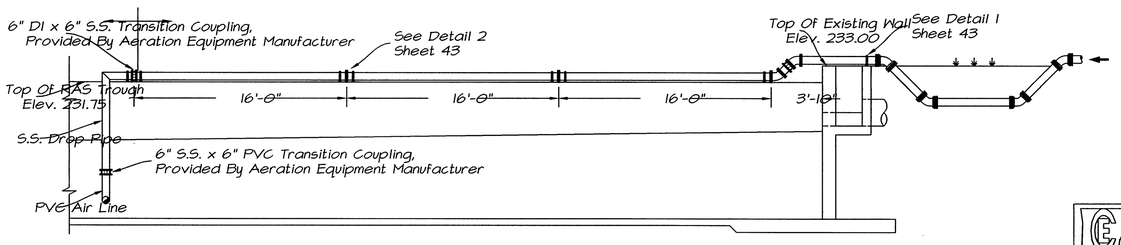


NOTES:

1. Special Air Piping S.S. Support System Furnished By Aeration Equipment Manufacturer.
2. Rigid Support Here, All Others Simple.
3. Grout Fill Openings.
4. Remove Grating, Fill Trough With Sand, Cap With 4" Concrete.
5. Plug Existing 24" DIP. Grout Fill Opening.
6. See Sheet 9 For Continuation Of Sludge Collection Piping.



DETAIL 1



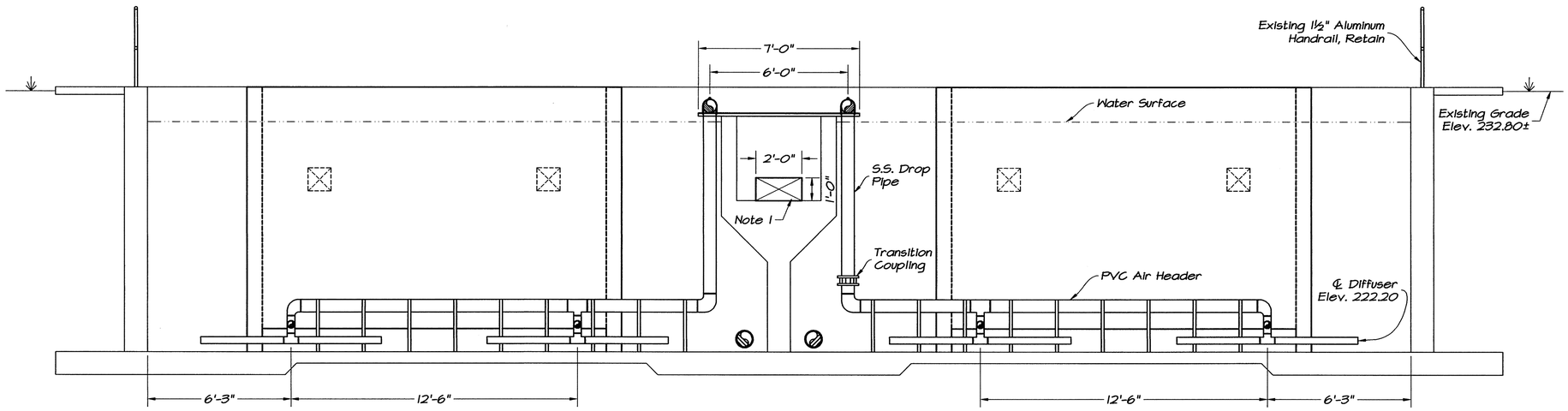
SECTION A

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
AEROBIC DIGESTER
PLAN AND SECTION

DESIGNED:	SWJ	JOB NO:	9924	DATE: JAN. 2001	40
DRAFTED:	SWJ	SCALE:	AS SHOWN		72
CHECKED:	LDG				

9924-40.dwg

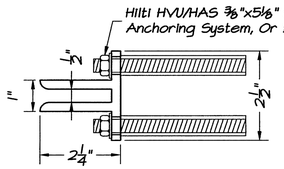


SECTION B

3/8" = 1'-0"

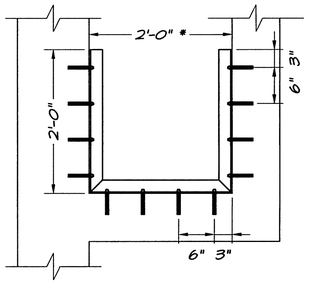
Notes:

1. Saw Cut Opening In Existing Wall At West End Of RAS Trough.



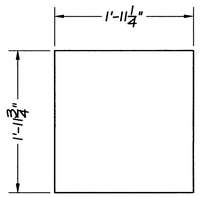
DETAIL 3

N.T.S.



DETAIL 2

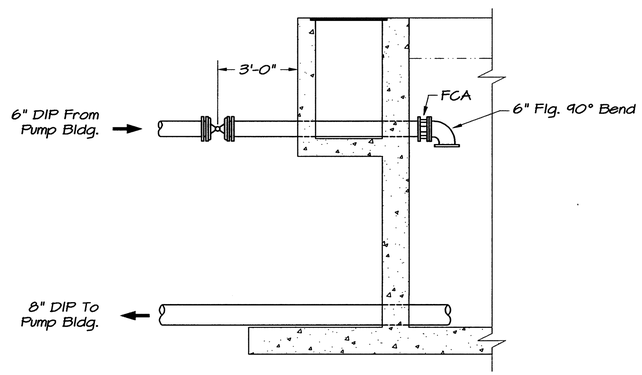
N.T.S.



¼" FRP Weir Plate
Provide Two (2)

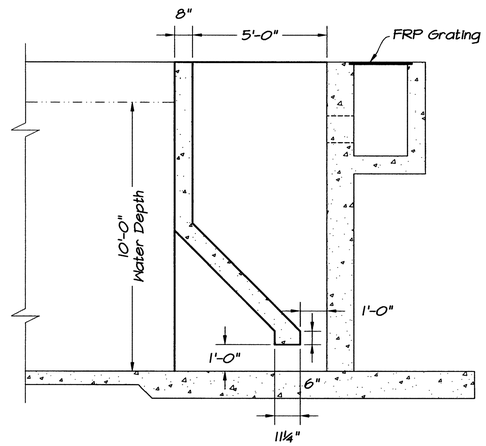
DETAIL 1

N.T.S.



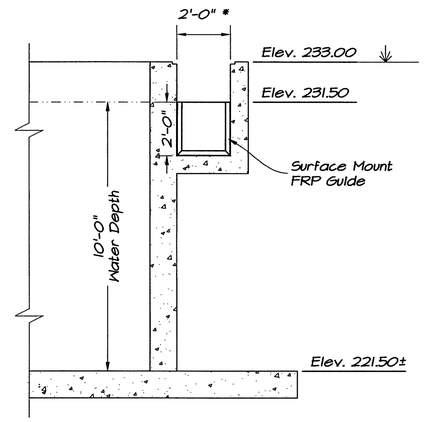
SECTION D

3/8" = 1'-0"



SECTION C

3/8" = 1'-0"



SECTION E

3/8" = 1'-0"

* Verify Dimension In Field

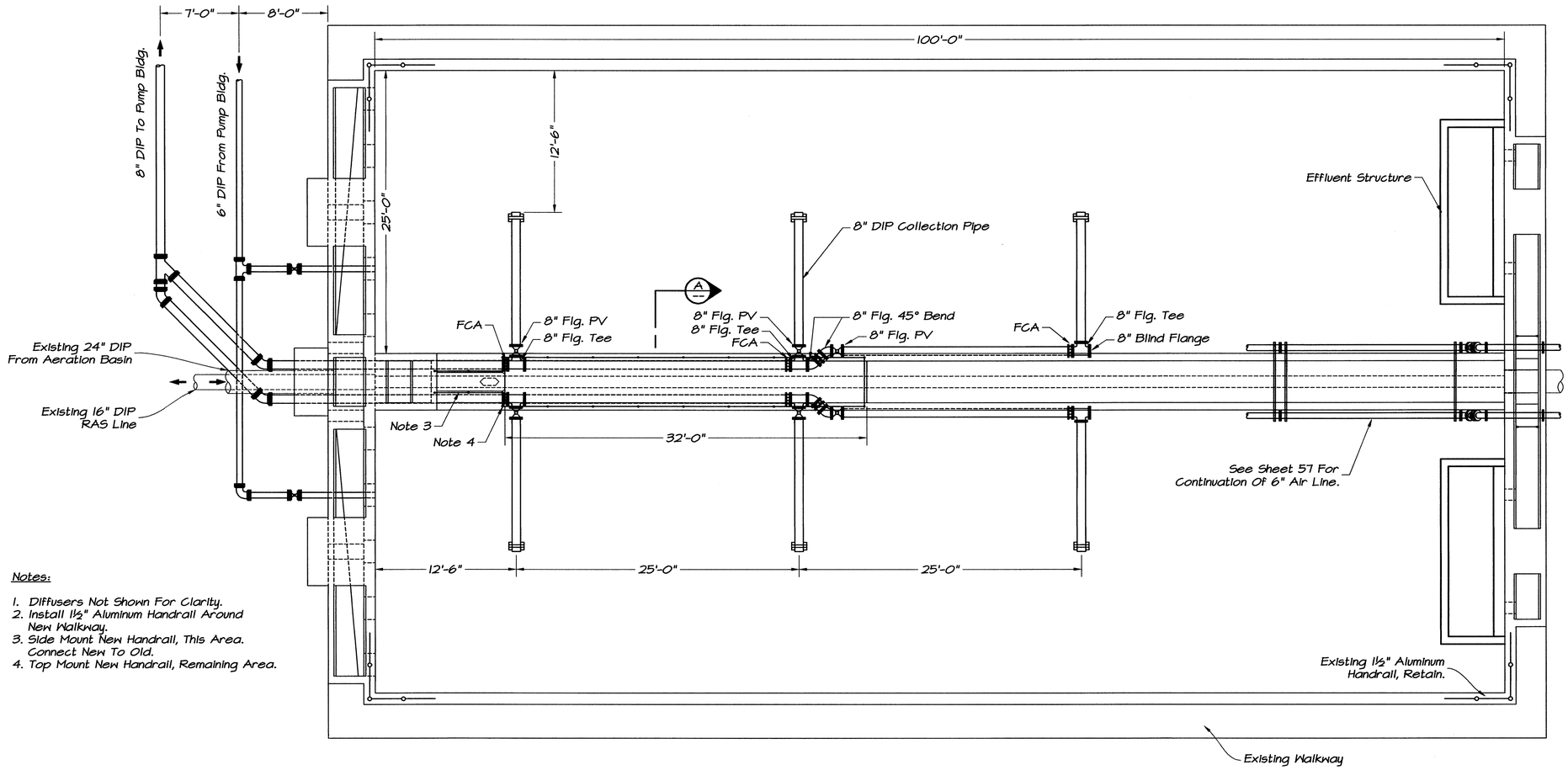
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
AEROBIC DIGESTER
SECTIONS AND DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	41
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

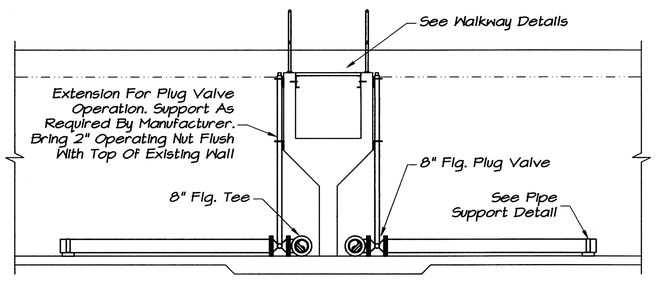
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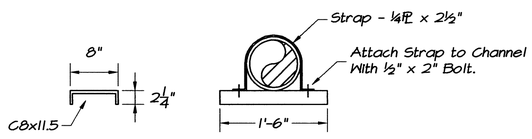
PLAN
3/16" = 1'-0"

Notes:

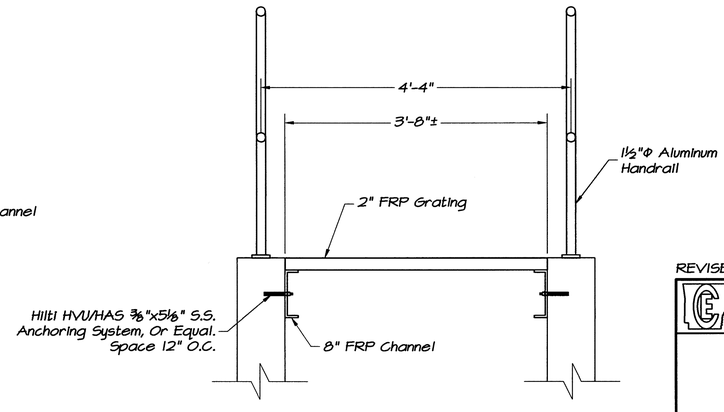
1. Diffusers Not Shown For Clarity.
2. Install 1½" Aluminum Handrail Around New Walkway.
3. Side Mount New Handrail, This Area. Connect New To Old.
4. Top Mount New Handrail, Remaining Area.



SECTION A
¼" = 1'-0"



PIPE SUPPORT DETAIL
N.T.S.



WALKWAY DETAILS
1" = 1'-0"

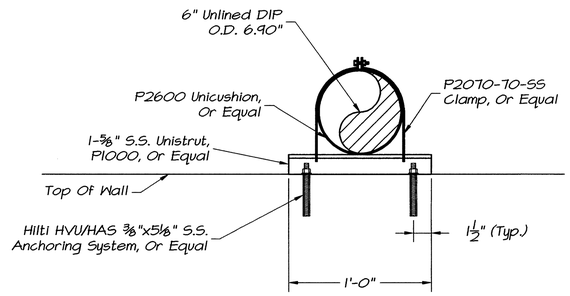
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
AEROBIC DIGESTER
SLUDGE COLLECTION DETAILS

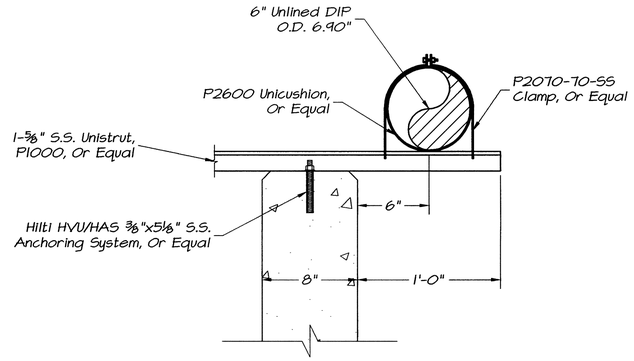
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	42
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-42.dwg



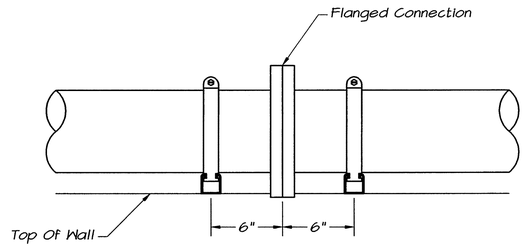
DETAIL 1

No Scale



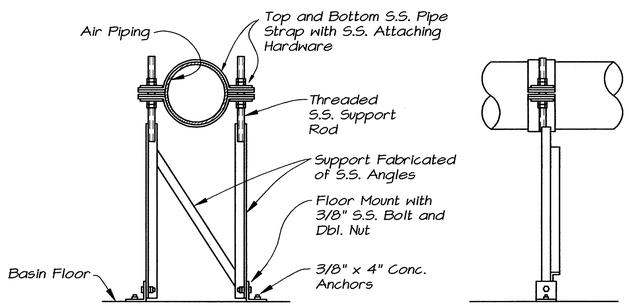
DETAIL 2

No Scale



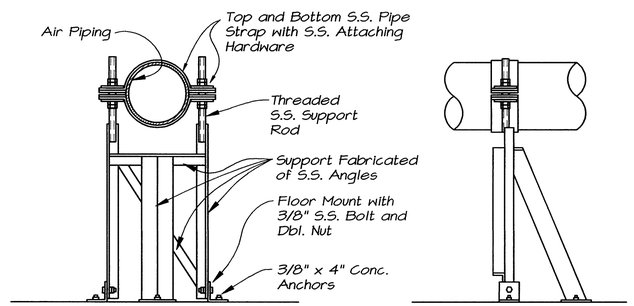
DETAIL 3

No Scale



ELEVATION **PROFILE**

SIMPLE PIPE SUPPORT

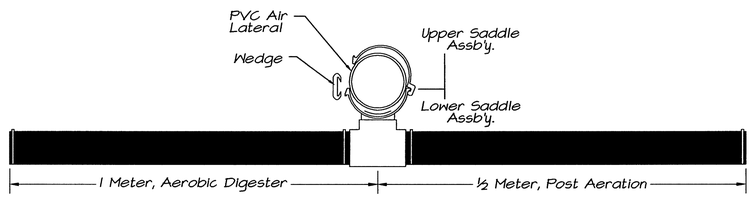


ELEVATION **PROFILE**

RIGID PIPE SUPPORT

AEROBIC DIGESTER / POST AERATION BASIN AIR-PIPING S.S. PIPE SUPPORTS

No Scale



DIFFUSER ASSEMBLY

No Scale

NOTES:

Bottom Saddle Assembly Factory Assembled
And Contains:
- Bottom Of Saddle
- O-Ring Seal
- PVC Membrane Support Piping
- Flexair Diffuser Membranes
- S.S. Hose Clamps
- Adjustable Endcaps
- Tee

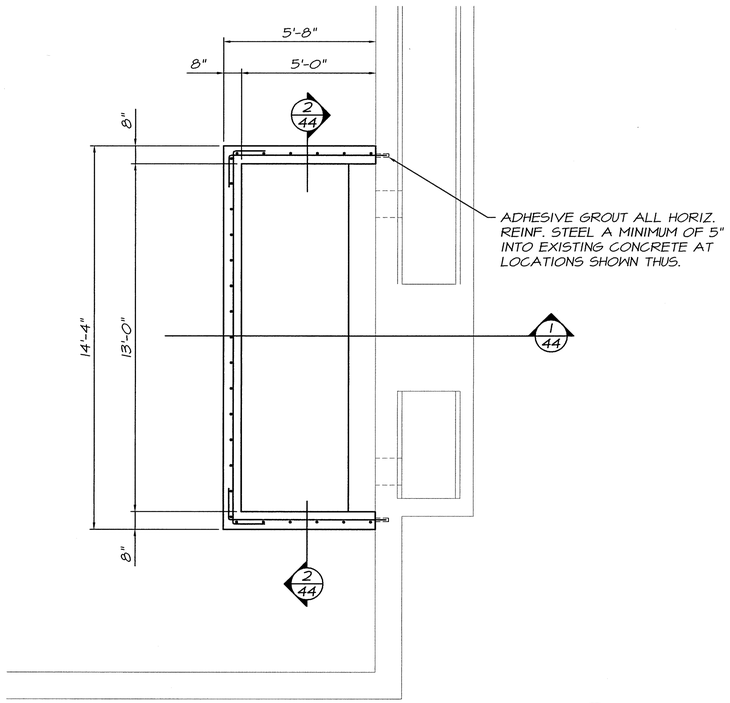
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
AEROBIC DIGESTER
MISCELLANEOUS DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	43
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

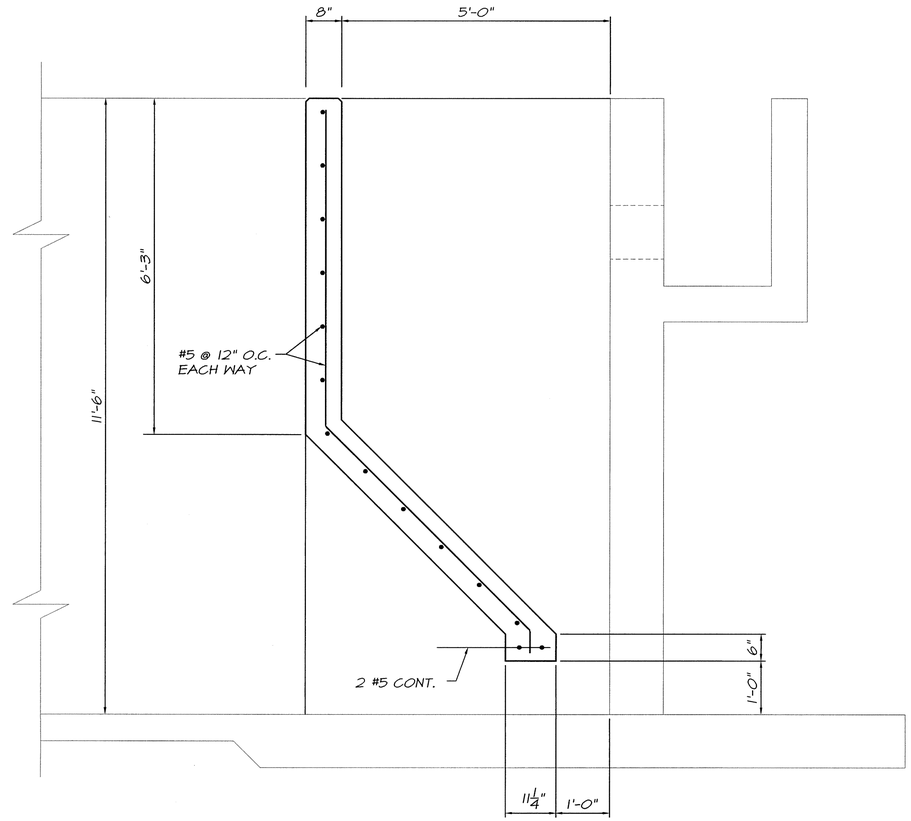
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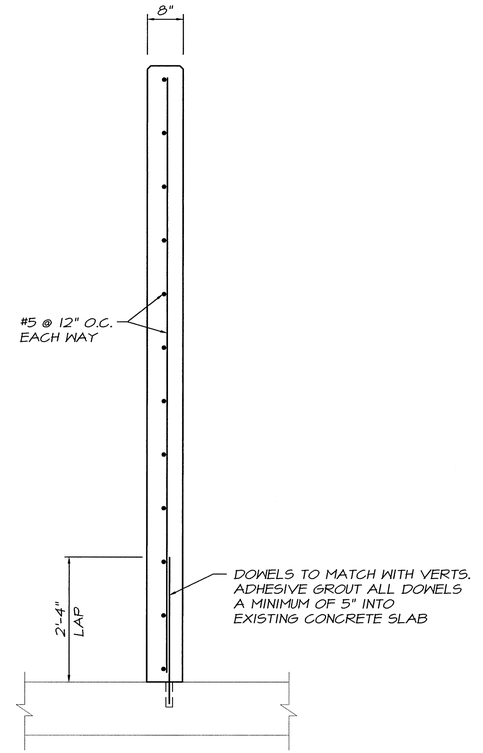
NORTH

PLAN ● NEW EFFLUENT STRUCTURE IN AEROBIC DIGESTER

Scale: 3/8" = 1'-0"



1/44 SECTION
3/4" = 1'-0"



2/44 SECTION
3/4" = 1'-0"

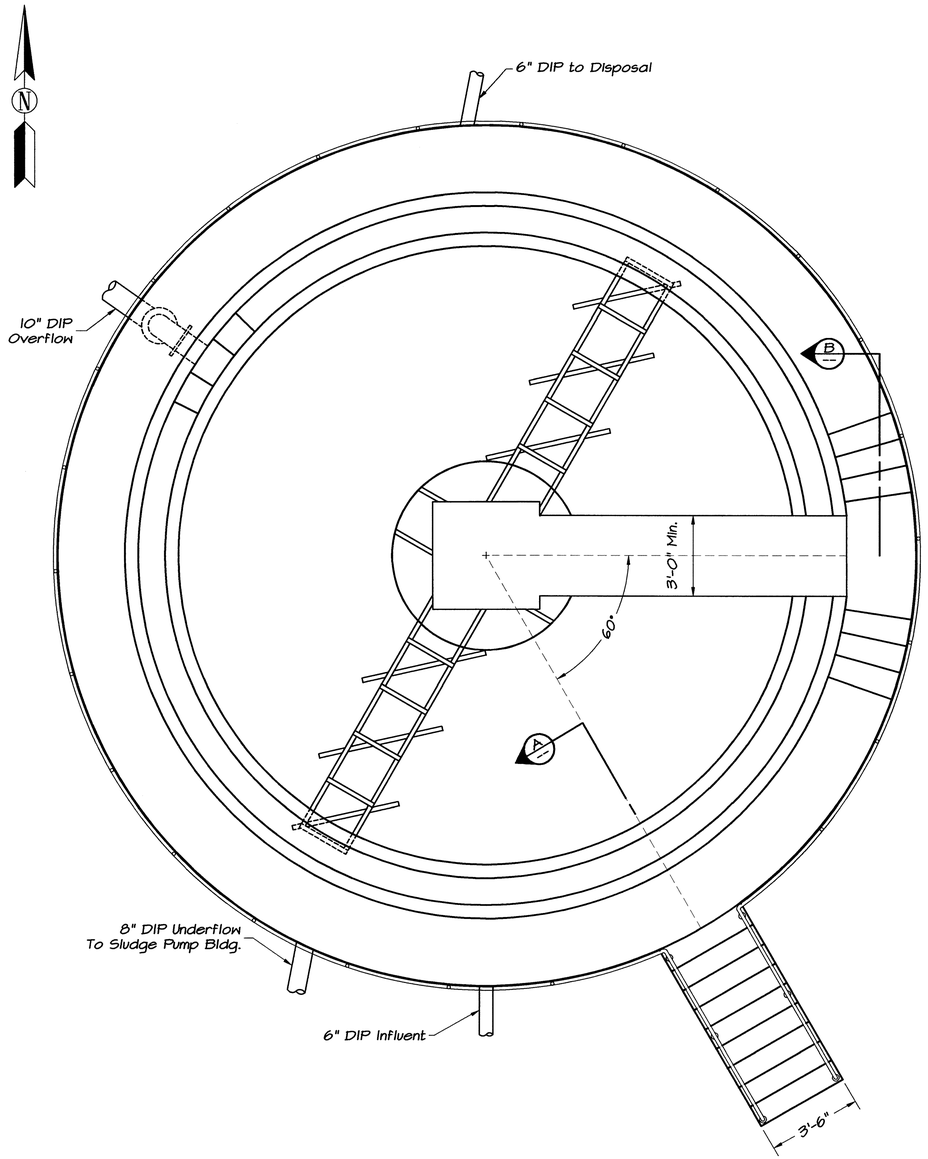
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
AEROBIC DIGESTER EFFLUENT STRUCTURE
PLAN AND SECTIONS

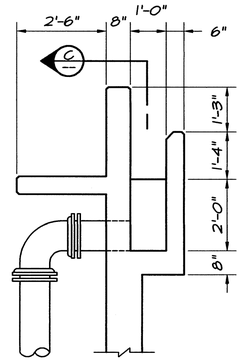
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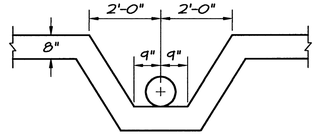


PLAN

3/8"=1'-0"



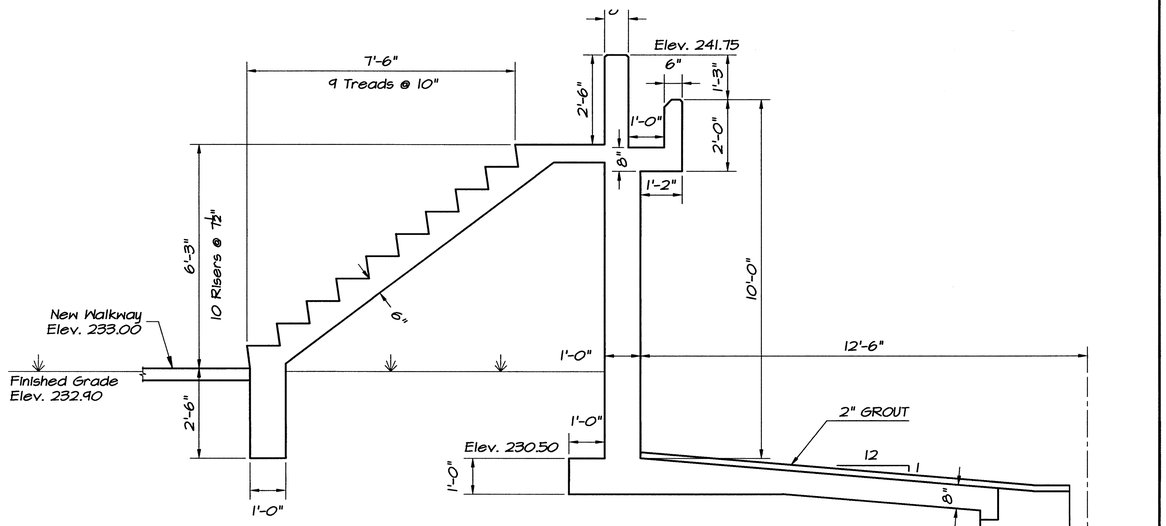
VERTICAL SECTION



SECTION C

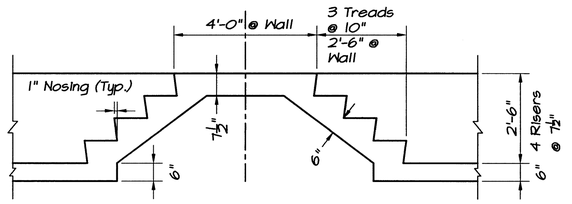
OVERFLOW DETAILS

1/2"=1'-0"



SECTION A

1/2"=1'-0"



SECTION B

1/2"=1'-0"

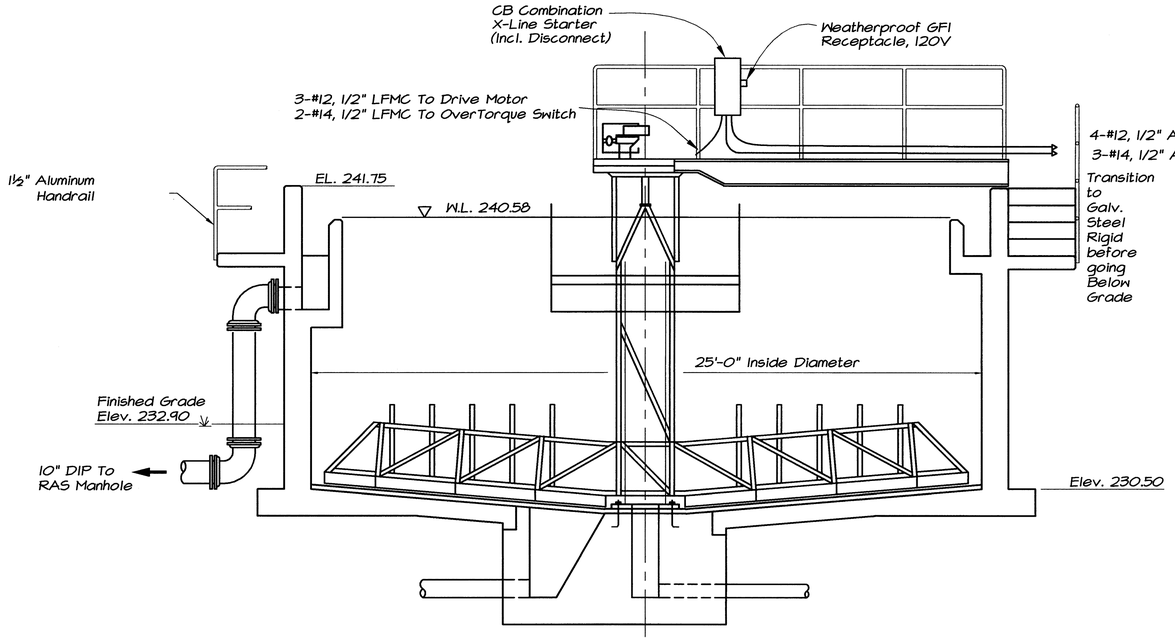
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
GRAVITY THICKENER
PLAN AND SECTIONS

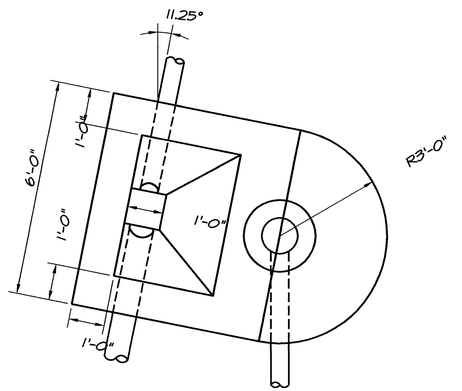
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	45
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-45.dwg

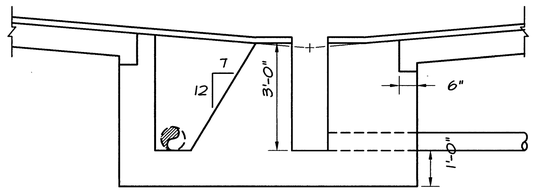


DIAGRAMMATIC SECTION

3/8"=1'-0"



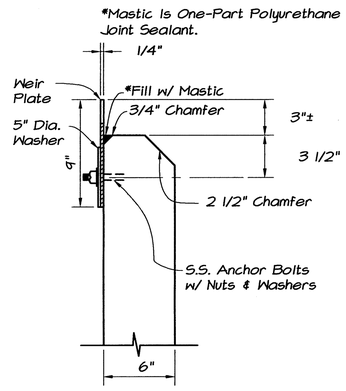
PLAN



SECTION

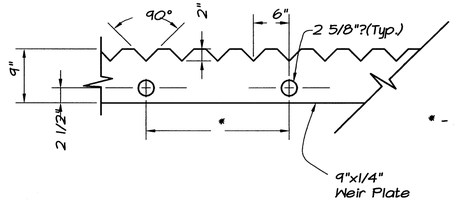
DETAILS - CENTER PIER

1/2"=1'-0"



WEIR PLATE INSTALLATION DETAILS

2"=1'-0"



* - As Per Mfr. Recommendation

Note: Weir Plate To Be Fiberglass Reinforced Plastic; All Hardware To Be Stainless Steel

WEIR DETAIL

1"=1'-0"

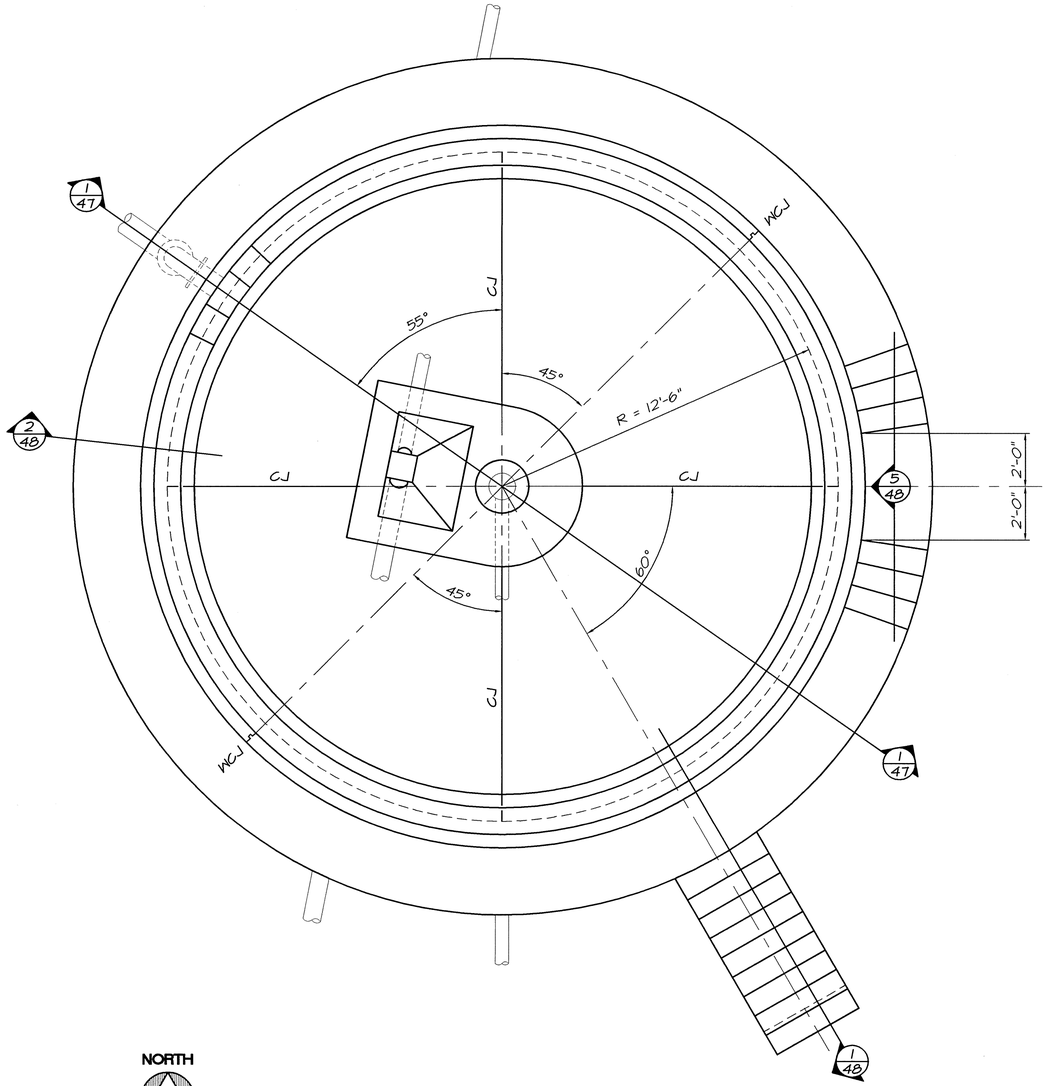
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
GRAVITY THICKENER
SECTION AND DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	46
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

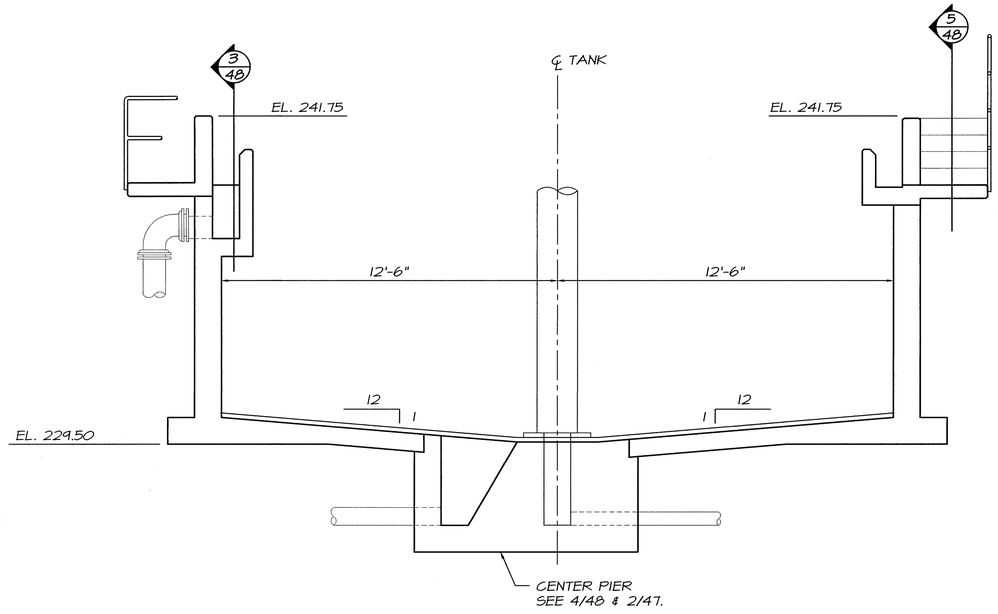
ASB0102 9924-46.dwg



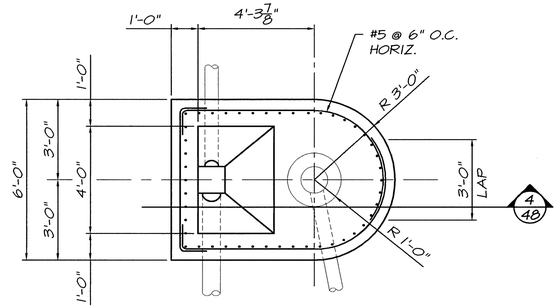
NORTH

PLAN: GRAVITY THICKENER

Scale: 1/8" = 1'-0"



1/47 SECTION @ GRAVITY THICKENER
3/8" = 1'-0"



2/47 PLAN @ CENTER PIER
3/8" = 1'-0"

PLAN NOTES:

1. REFER TO SHEET 62 FOR GENERAL CONCRETE NOTES.
2. REFER TO SHEET 28 FOR TYPICAL CIRCULAR TANK DETAILS.

FOUNDATION LEGEND:

EL	ELEVATION
R	RADIUS
CJ	CONSTRUCTION JOINT - SEE 2/28
UNO	UNLESS NOTED OTHERWISE
TYP.	TYPICAL
SIM.	SIMILAR
WCJ	WALL CONSTRUCTION JOINT - SEE 3/28

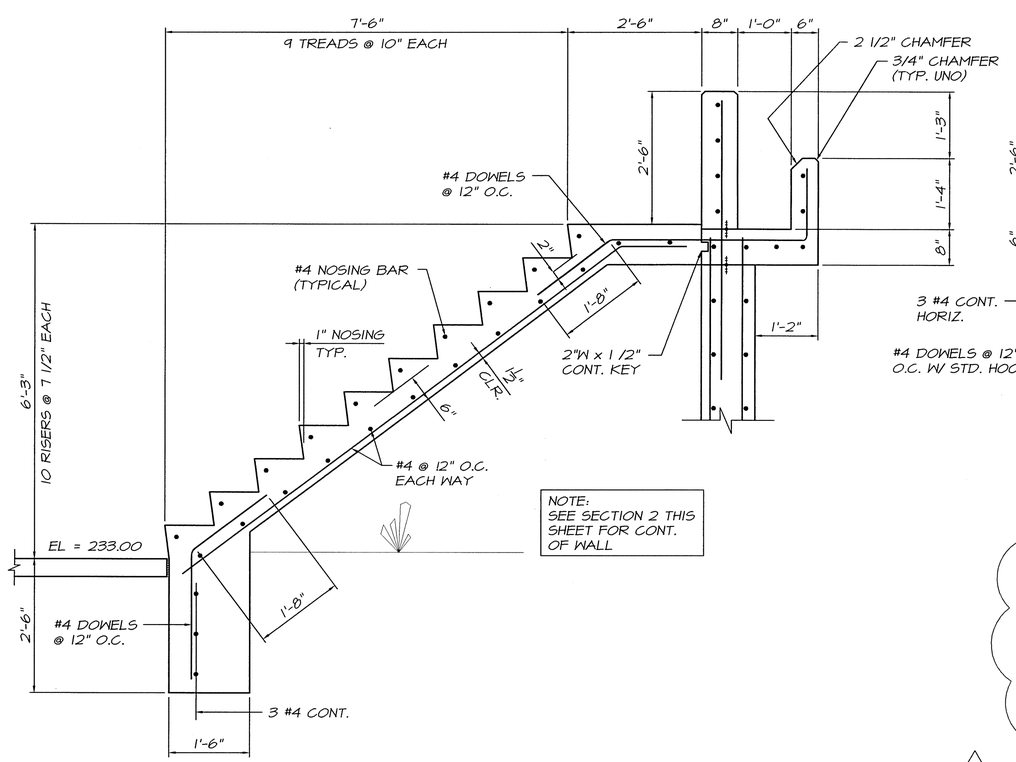
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

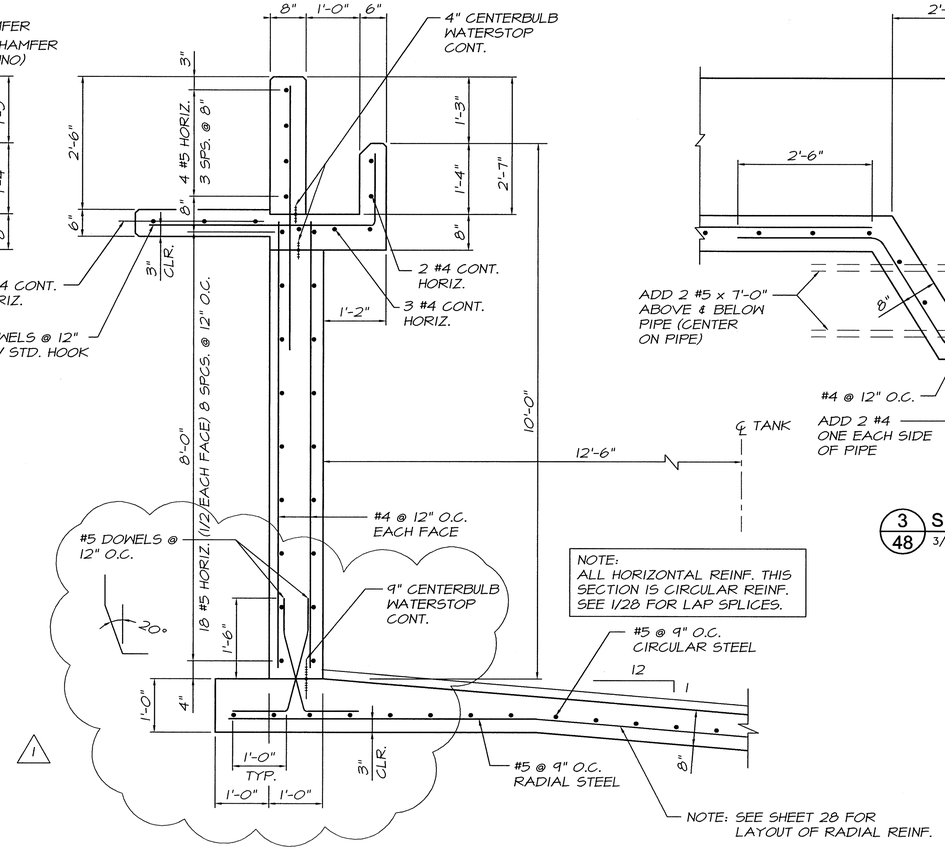
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
GRAVITY THICKENER
PLAN & SECTIONS

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	47 / 72
DRAFTED: AAA	SCALE: AS NOTED		
CHECKED: FMG			

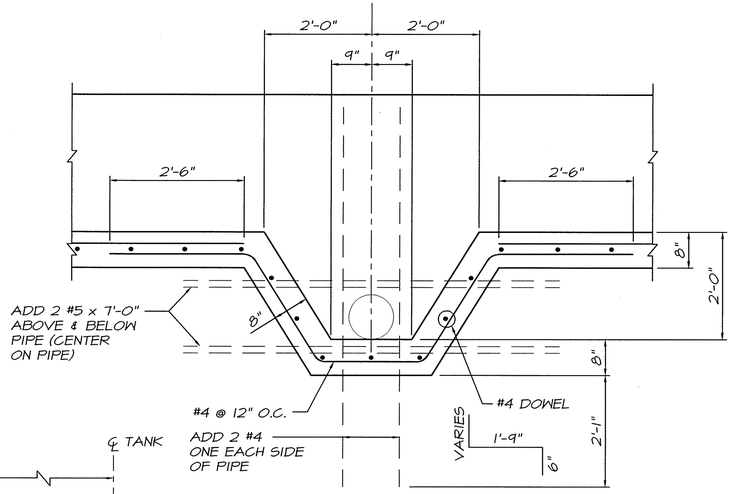
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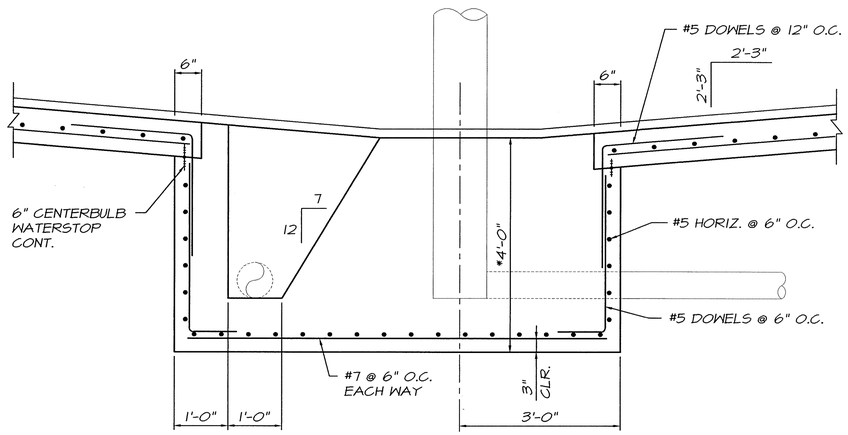
1 SECTION @ STEPS
48 3/4" = 1'-0"



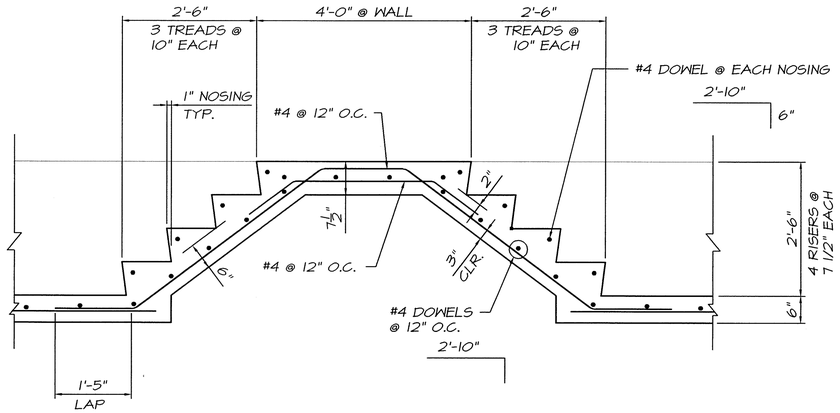
2 TYPICAL WALL SECTION @ GRAVITY THICKENER
48 3/4" = 1'-0"



3 SECTION
48 3/4" = 1'-0"



4 SECTION @ CENTER PIER
48 3/4" = 1'-0"



5 SECTION @ STEPS
48 3/4" = 1'-0"

1 6-5-2001 ADD FTG. TO WALL DOWELS

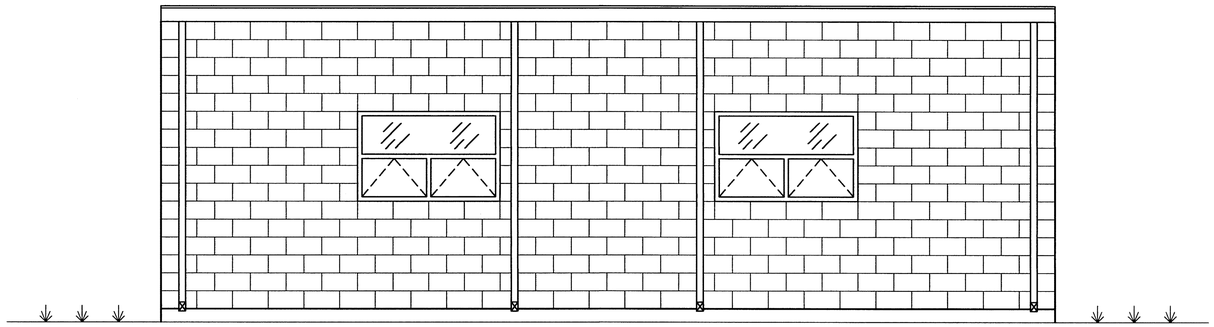
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

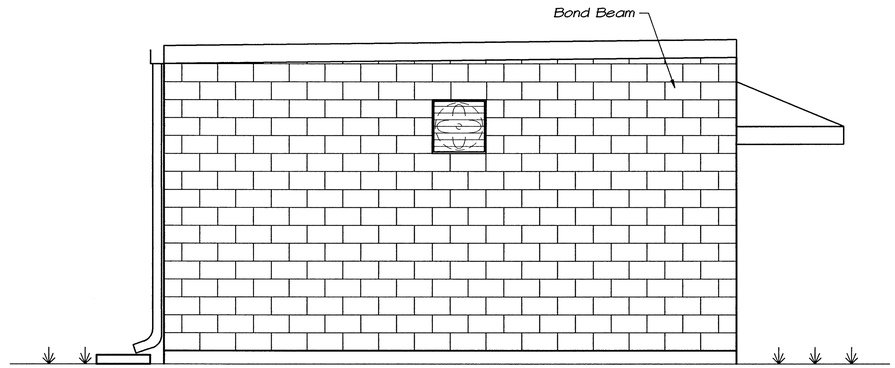
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
GRAVITY THICKENER
STRUCTURAL SECTIONS

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	48	
DRAFTED: AAA	SCALE: 3/4" = 1'-0"		72	
CHECKED: FMG				

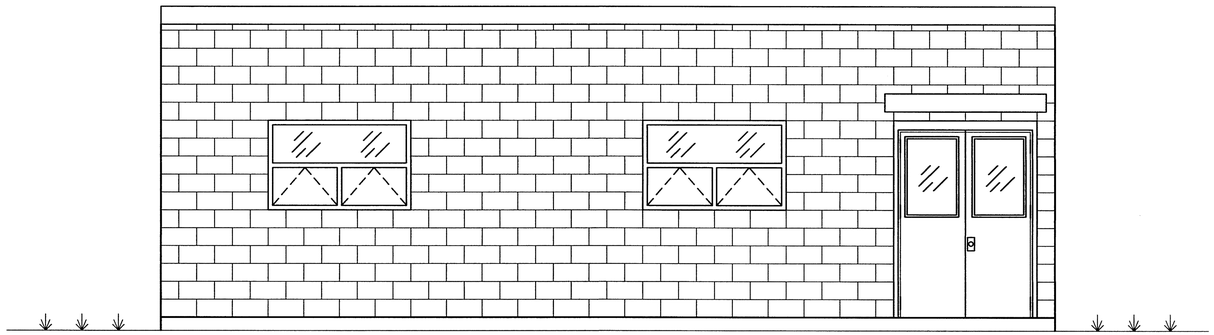
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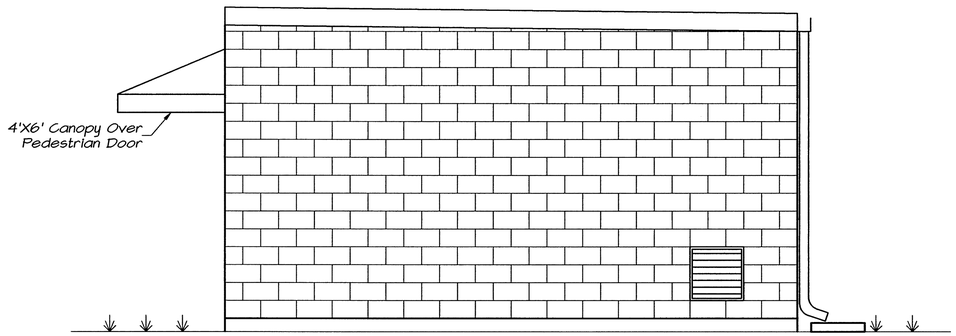
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

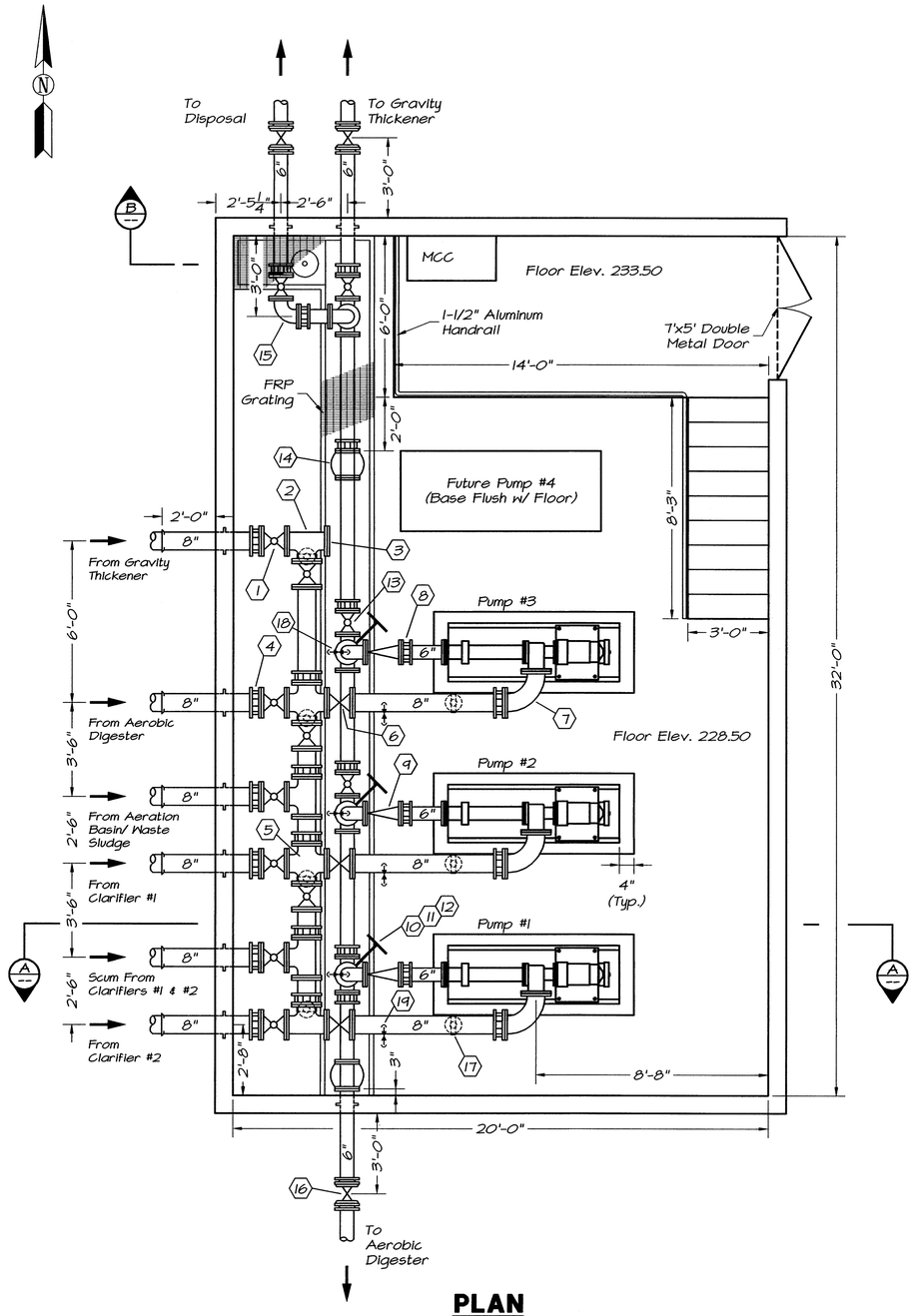
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
ELEVATIONS

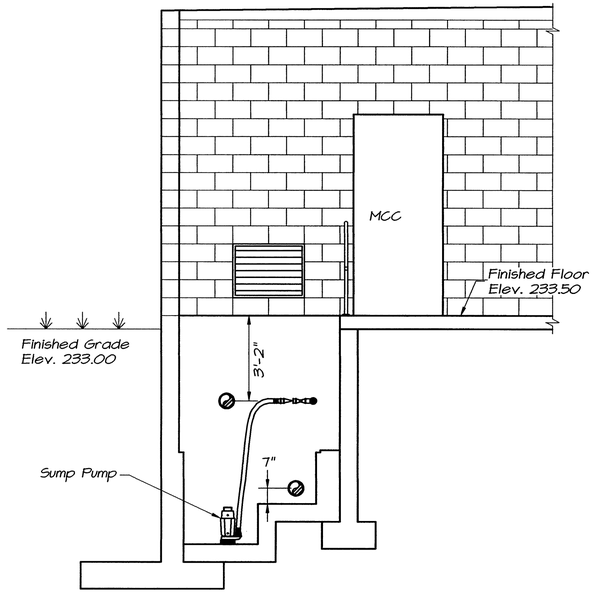
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	49
DRAFTED: SWJ	SCALE: 3/8" = 1'-0"		72
CHECKED: LDG			

9924-49.dwg



PLAN

3/8"=1'-0"



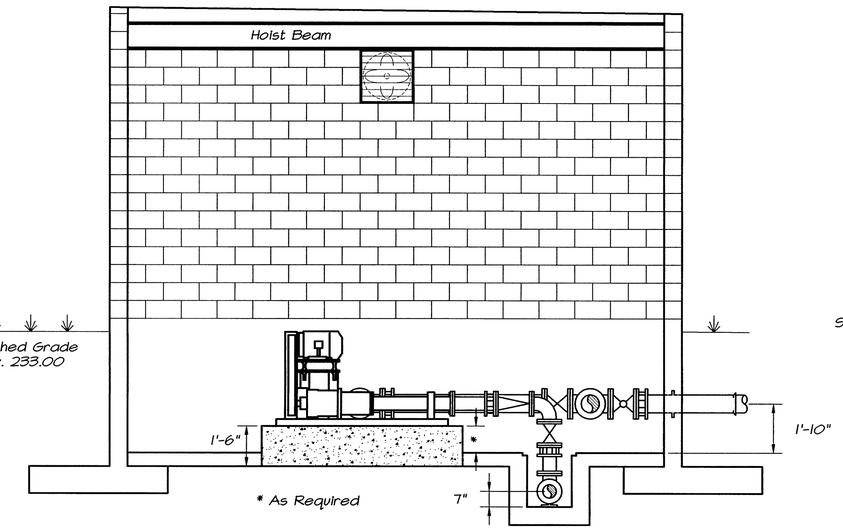
SECTION B

3/8" = 1'-0"

SCHEDULE OF COMPONENTS			
KEY	SIZE	EST. QTY.	DESCRIPTION
1	8"	9	Flanged Plug Valve
2	8"	4	Flanged Tee
3	8"	1	Blind Flange
4	8"	14	Flanged Coupling Adapter
5	8"	2	Flanged Cross
6	8"	3	Flanged Gate Valve
7	8"	3	Flanged Long Radius Elbow
8	6"	15	Flanged Coupling Adapter
9	6"	3	Flanged Check Valve
10	6"	3	Flanged 90° Bend w/ Tapping Boss
11	6"	3	Flanged Gate Valve, Stem Horizontal
12	6"	4	Flanged Base Tee
13	6"	4	Flanged Plug Valve
14	6"	2	Flanged Magnetic Flow Meter, UniMag, Or Equal
15	6"	2	Flanged 90° Bend
16	6"	3	MJ Gate Valve w/ Box
17		7	Pipe Support
18		3	Sample Tap
19		3	Manual Air Release

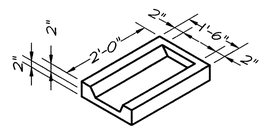
Notes:

1. All Suction Piping and Fittings To Be 8" Ductile Iron.
2. All Discharge Piping and Fittings To Be 6" Ductile Iron.



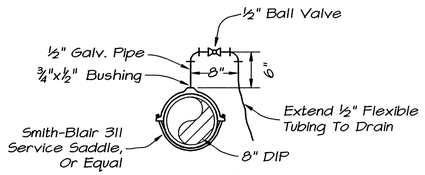
SECTION A

3/8" = 1'-0"



CONCRETE SPLASH PAD

N.T.S.



MANUAL AIR RELEASE

N.T.S.

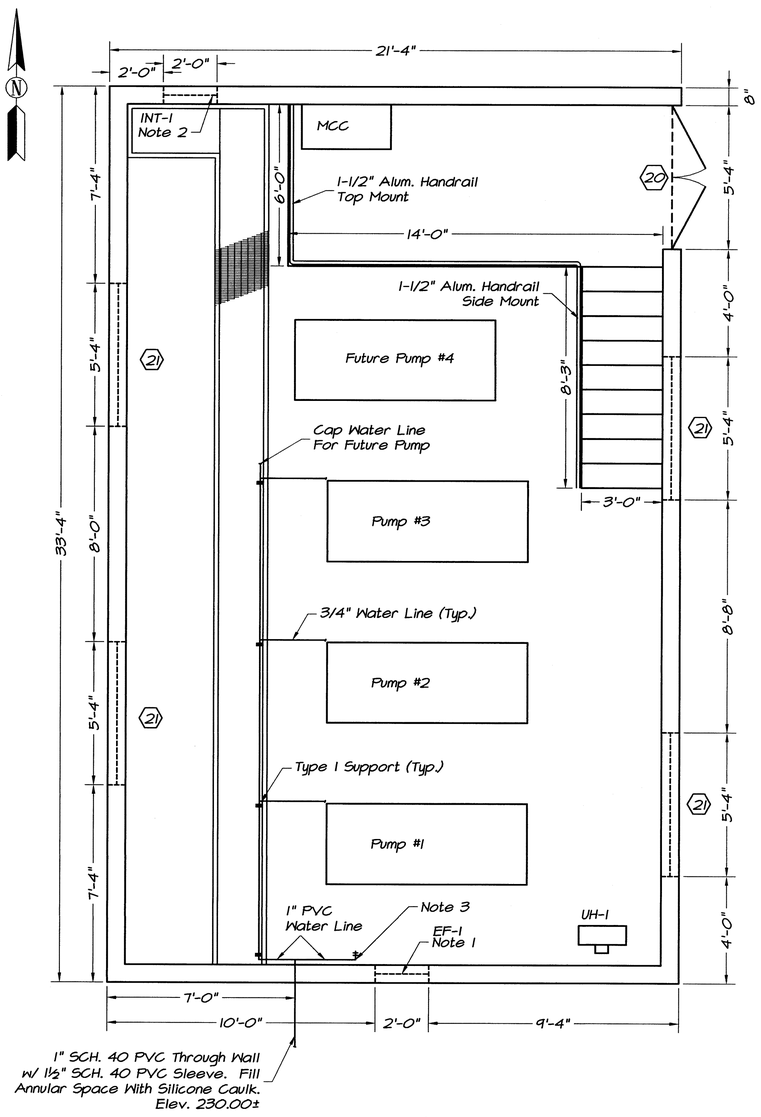
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
PLAN AND SECTIONS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	50
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-50.dwg

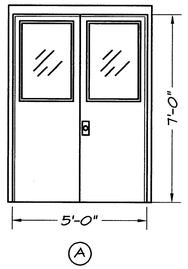


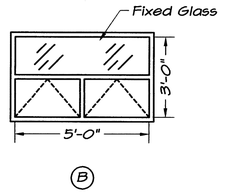
PLAN

3/8"=1'-0"

Notes:

1. 24" x 24" Exhaust Fan. Mount At Elev. 234.17.
2. 24" x 24" Intake Louver. Mount At Elev. 241.50.
3. 3/4" Hose Bib. Anchored To Wall 3' Above Floor.
4. Attach Unistrut To Pump Base With Two (2) ⅜"x3½" S.S. Anchors.
5. Water Flush System Components Shall Include A Strainer, Flow Regulator, And Flow Meter On The Inlet Side, And Pressure Gauge With Snubber And Isolation Valve, Needle Valve, And Solenoid Valve On The Outlet Side.
6. Pumps And Piping Not Shown In Plan.





KEY	STYLE	SIZE	THICKNESS	ACCESSORIES/REMARKS	LOCK SET
20	A	5070	1-3/4"	Stop, Sweep, Aluminum Threshold	Gov't. 86C
21	B	5030	-	Half Hopper, Project In w/ Screen	-

DOOR & WINDOW SCHEDULE

SYMBOL	DEVICE	MANUFACTURER	CATALOG NO.	WIDTH	HEIGHT	ACTUATOR
INT-1	Louver-Damper	DONCO	A-LEC	24"	24"	120 VAC
EF-1	Damper	Damper Supplied With Fan				

LOUVER & DAMPER SCHEDULE

SYMBOL	DEVICE	MANUFACTURER	CATALOG NO.	CFM	SP	HP	VOLTAGE
EF-1	Prop. Fan	Cook	20SP10D	3000	0.2	1/3	120/60/1

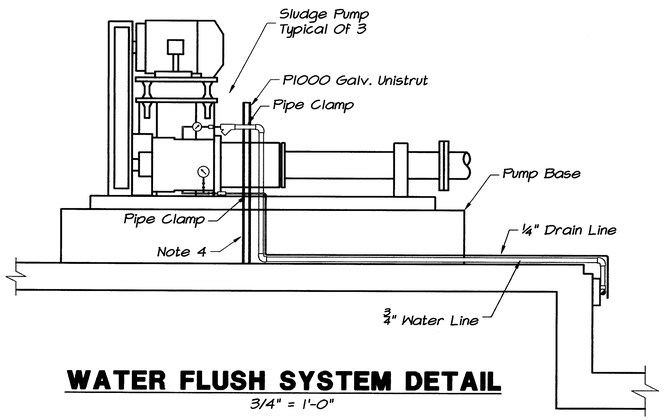
with Cap. Start Motor, Damper as Sch. above, Finish Epoxy - Light Tan, Coat Inside & Out of Fan & Factory Attached Acc's, NEMA 1 Toggle Sw., Wall Collar, Closure Angles

EXHAUST FAN SCHEDULE

	UH-1
Volts	480
Phase	3
KW	10
CFM	700
Mf'r	Markel
Model	P3P5110CA2

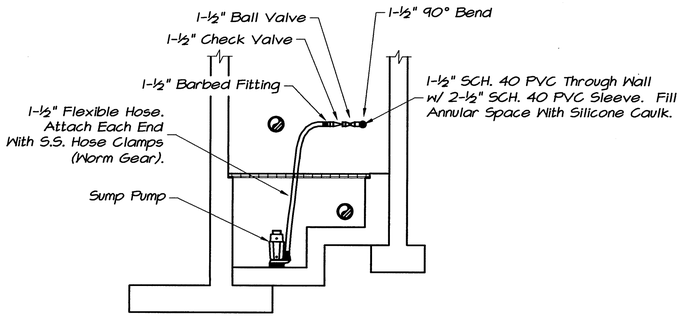
UNIT HEATER

w/ TW141 Line Voltage Thermostat
A5120 Mounting Bracket



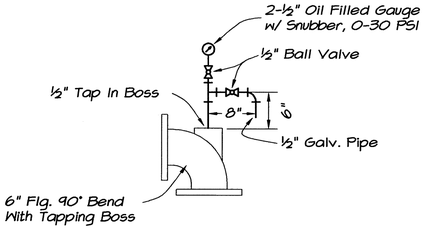
WATER FLUSH SYSTEM DETAIL

3/4" = 1'-0"



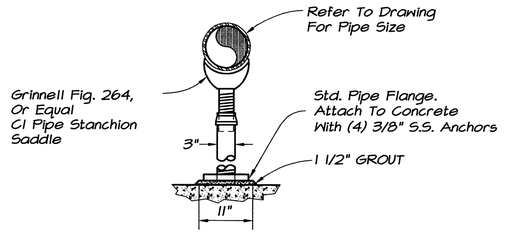
SUMP PUMP DETAIL

3/8" = 1'-0"



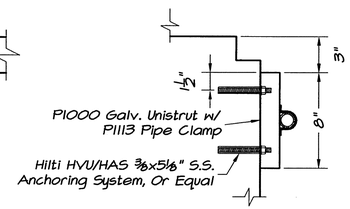
SAMPLE TAP DETAIL

1" = 1'-0"



PIPE SUPPORT DETAIL

N.T.S.



TYPE 1 SUPPORT

N.T.S.

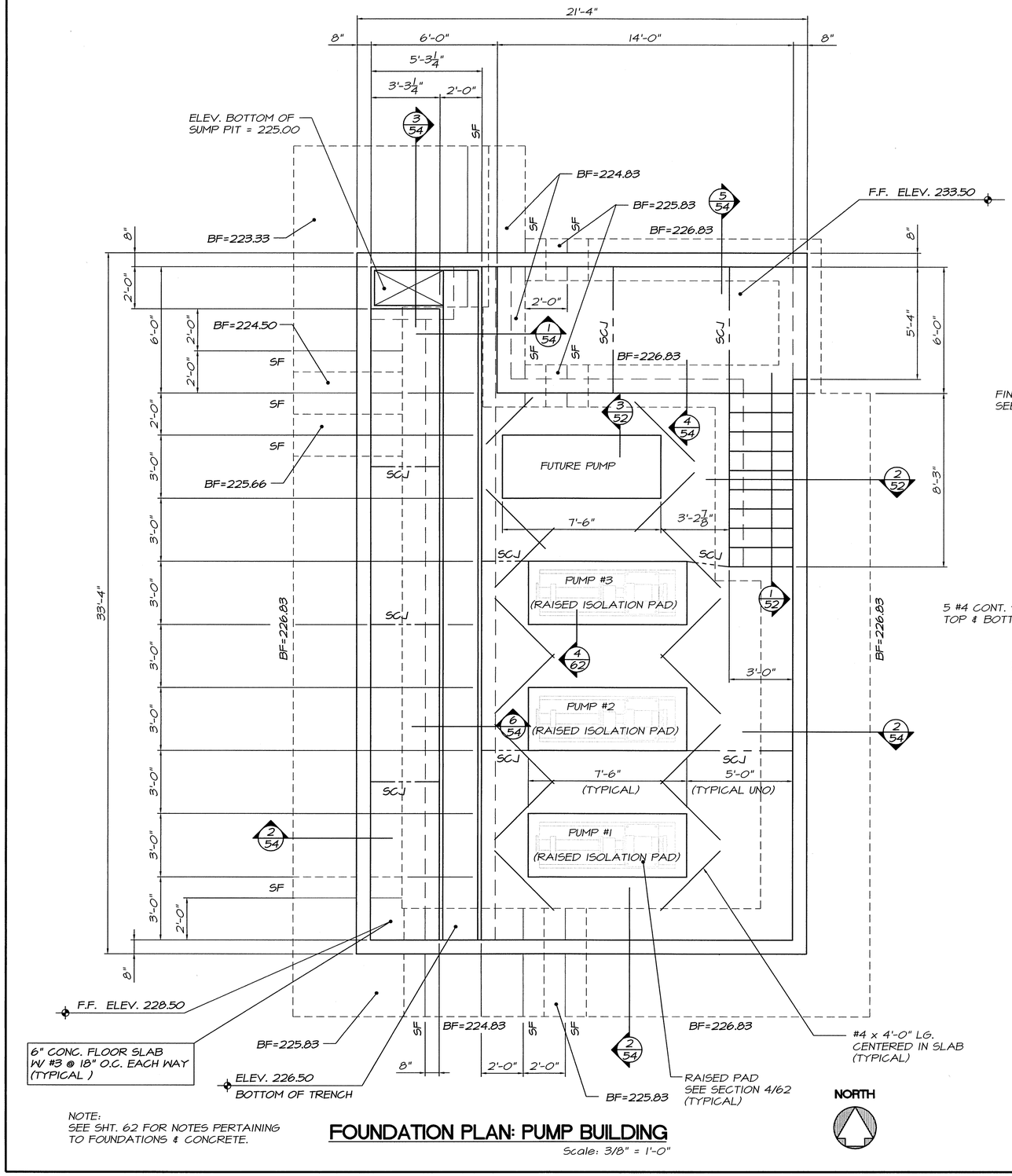
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	51
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

ASB0102 9924-51.dwg

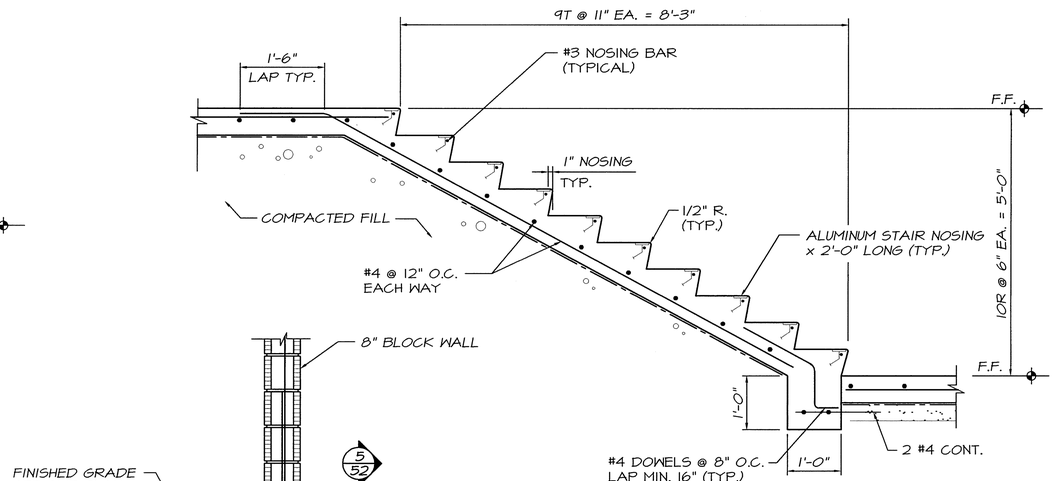


NOTE:
SEE SHT. 62 FOR NOTES PERTAINING TO FOUNDATIONS & CONCRETE.

FOUNDATION PLAN: PUMP BUILDING

Scale: 3/8" = 1'-0"

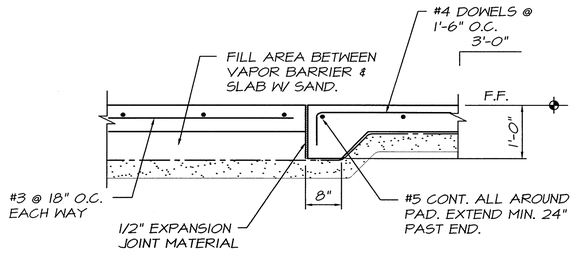
NORTH



1/52 SECTION @ STEPS @ PUMP BLDG.
3/4" = 1'-0"

2/52 SECTION @ STEPS @ PUMP BLDG.
3/4" = 1'-0"

* VERIFY W/ EQUIPMENT MANUFACTURER



3/52 SECTION @ FUTURE PUMP ISOLATION PAD
3/4" = 1'-0"

FOUNDATION LEGEND:

SF	STEP FOOTING - SEE 3/62
FF	FINISHED FLOOR
SCJ	SAWN CONTROL JOINT - SEE 1/62
UNO	UNLESS NOTED OTHERWISE
BF	BOTTOM OF FOOTING ELEVATION
SIM.	SIMILAR

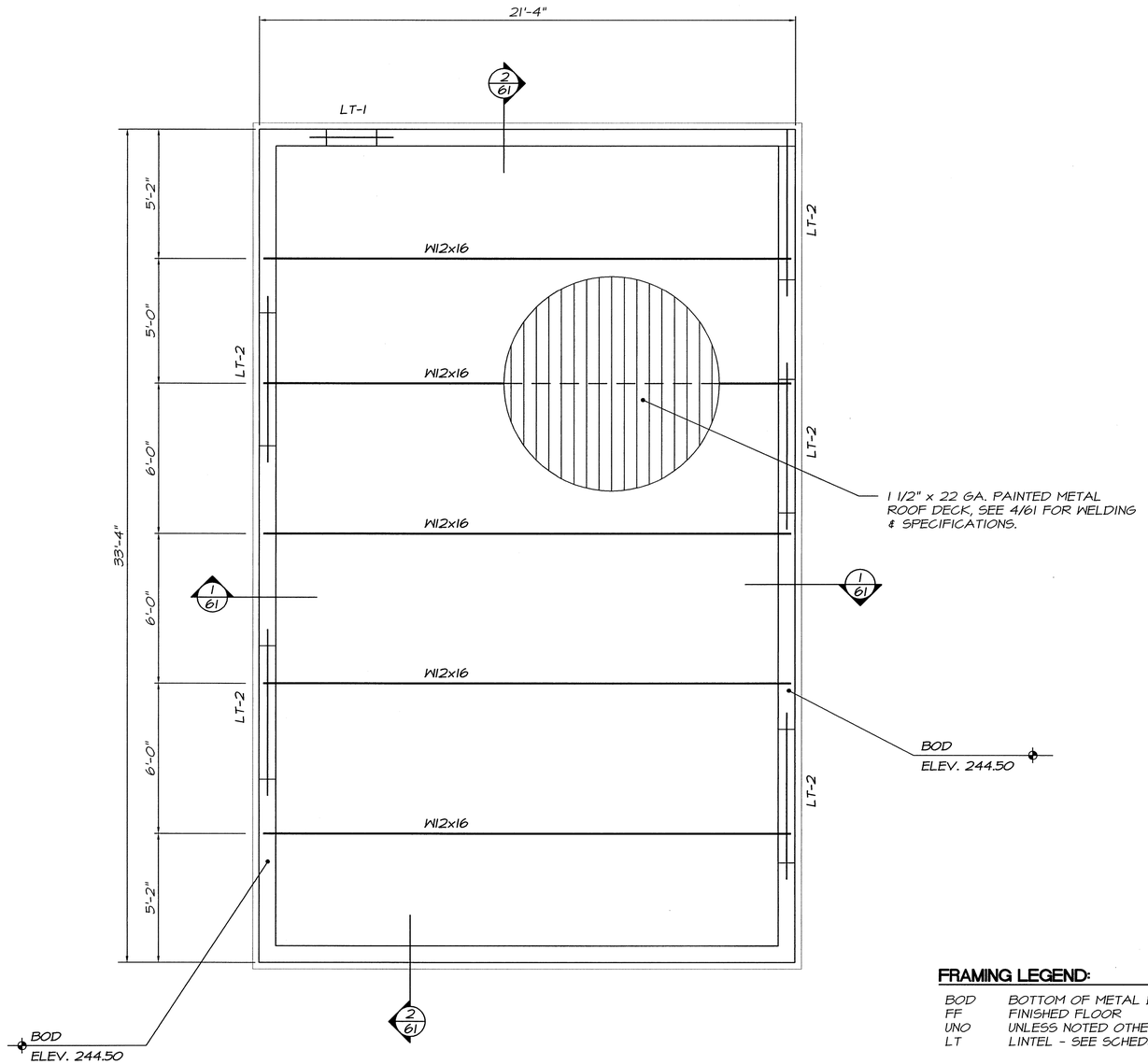
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
FOUNDATION PLAN

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	52
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		72
CHECKED: FMG			

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FRAMING LEGEND:

BOD	BOTTOM OF METAL DECK
FF	FINISHED FLOOR
UNO	UNLESS NOTED OTHERWISE
LT	LINTEL - SEE SCHEDULE ON SHEET 61

NORTH

ROOF FRAMING PLAN: PUMP BUILDING

Scale: 3/8" = 1'-0"

REFER TO SHEET 61 FOR GENERAL FRAMING NOTES.

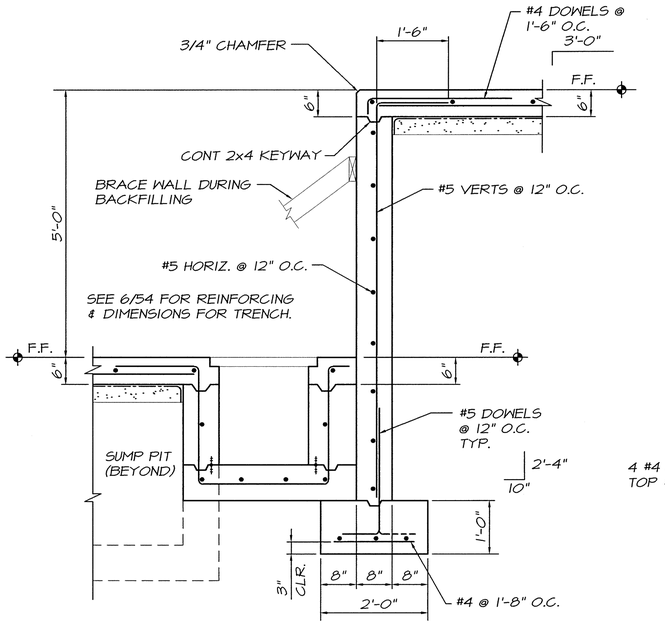
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CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

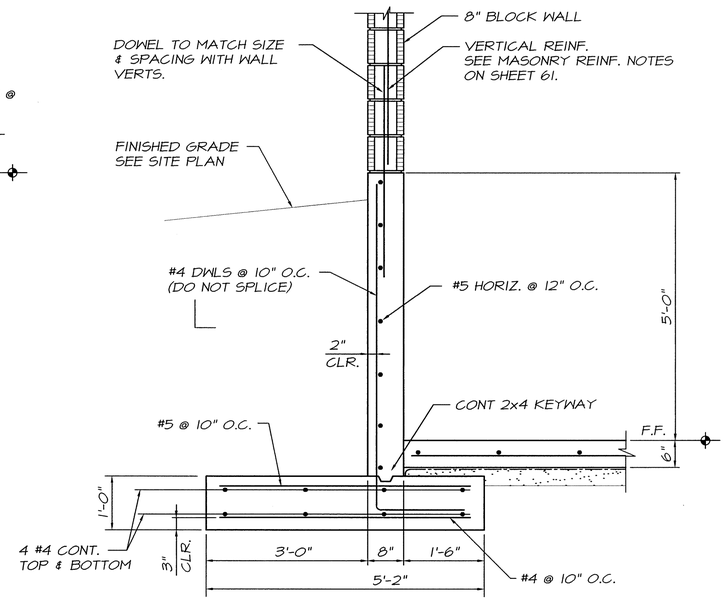
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
ROOF FRAMING PLAN

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	53
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		72
CHECKED: FMG			

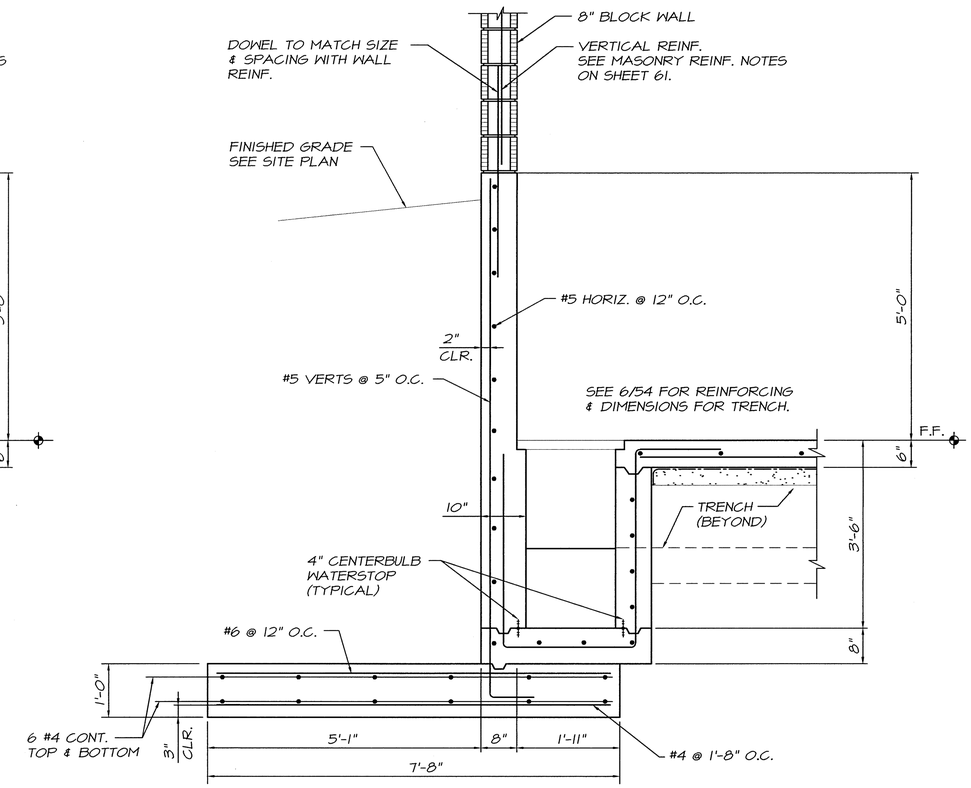
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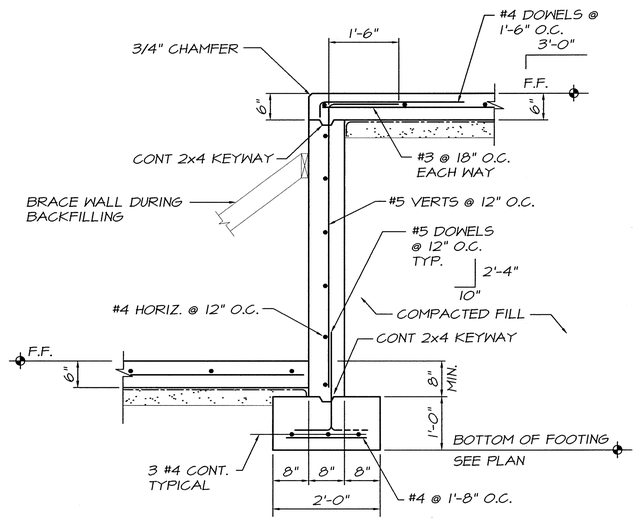
1 / 54 SECTION @ LANDING SLAB/TRENCH @ PUMP BLDG.
3/4" = 1'-0"



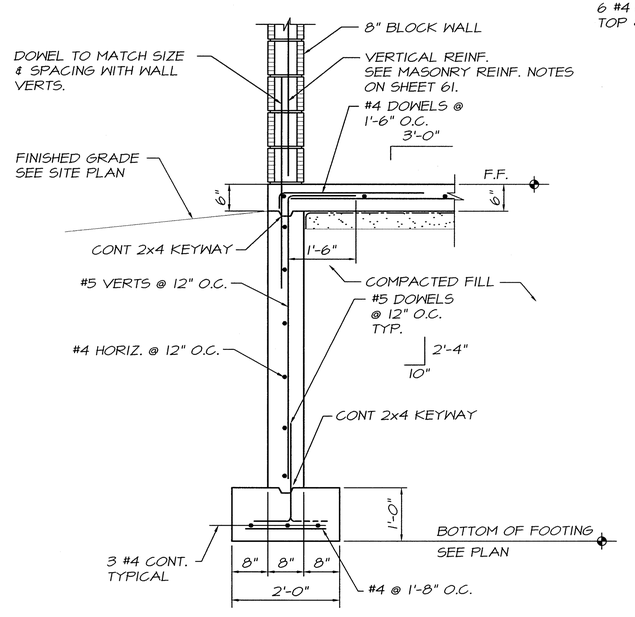
2 / 54 SECTION @ EXTERIOR WALL @ PUMP BLDG.
3/4" = 1'-0"



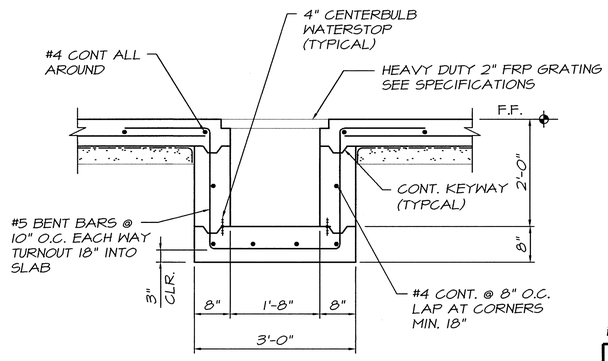
3 / 54 SECTION @ EXTERIOR WALL/SUMP PIT @ PUMP BLDG.
3/4" = 1'-0"



4 / 54 SECTION @ LANDING SLAB @ PUMP BLDG.
3/4" = 1'-0"



5 / 54 SECTION @ LANDING SLAB @ PUMP BLDG.
3/4" = 1'-0"



6 / 54 TRENCH SECTION @ PUMP BLDG.
3/4" = 1'-0"

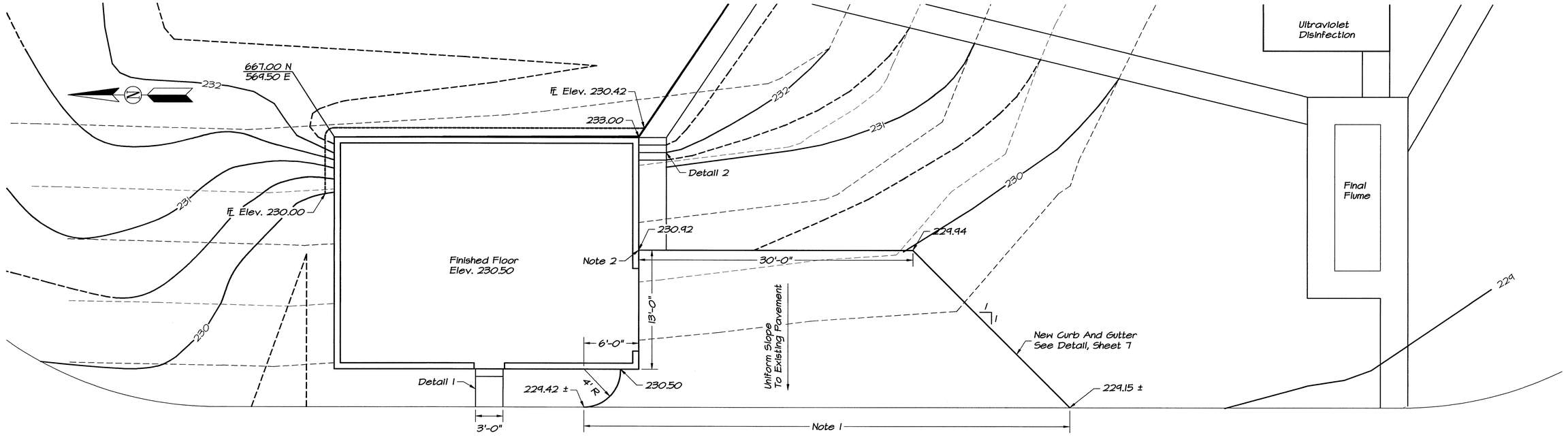
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
FOUNDATION DETAILS

DESIGNED: FMC	JOB NO: 9924	DATE: JAN. 2001	54	
DRAFTED: AAA	SCALE: 3/4" = 1'-0"			72
CHECKED: FMC				

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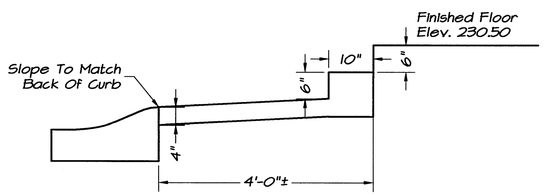
PLAN

3/16" = 1'-0"

Existing Asphalt Road

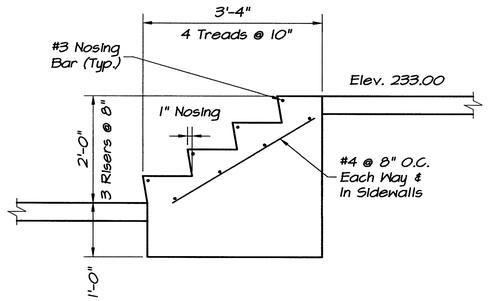
NOTES:

1. Remove Curb And Gutter. Match New Asphalt Surface To Existing Asphalt Surface.
2. Back Of Curb To Here.
3. Drain Pipe To Daylight At Elev. 230.00.



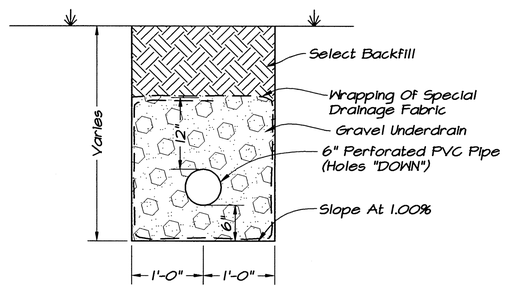
DETAIL 1

3/4" = 1'-0"



DETAIL 2

3/4" = 1'-0"



DRAINAGE DETAIL

1" = 1'-0"

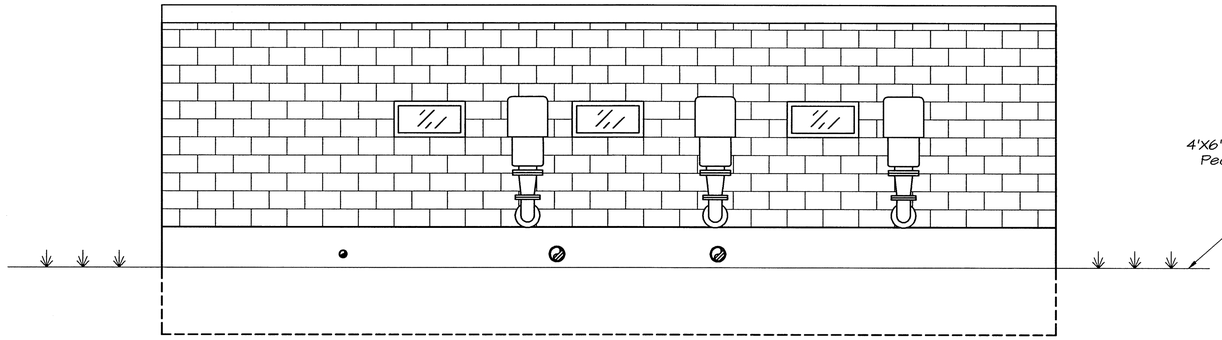
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

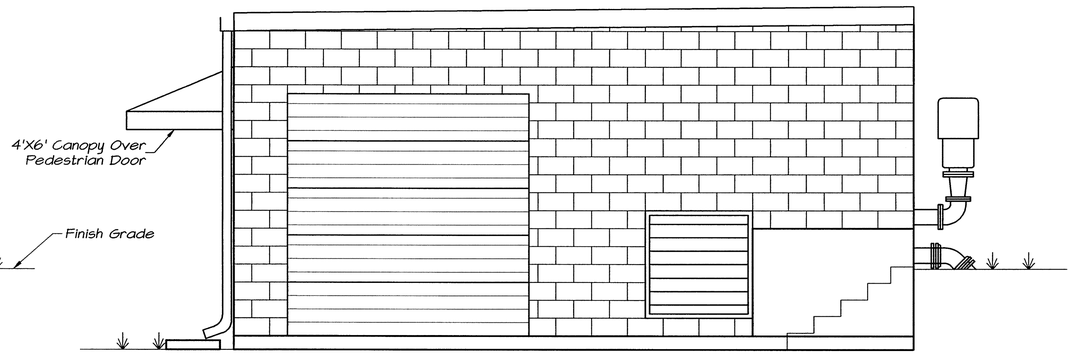
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
BLOWER BUILDING
SITE PLAN

DESIGNED:	SWJ	JOB NO:	9924	DATE:	JAN. 2001
DRAFTED:	SWJ	SCALE:	AS SHOWN		55 / 72
CHECKED:	LDG				

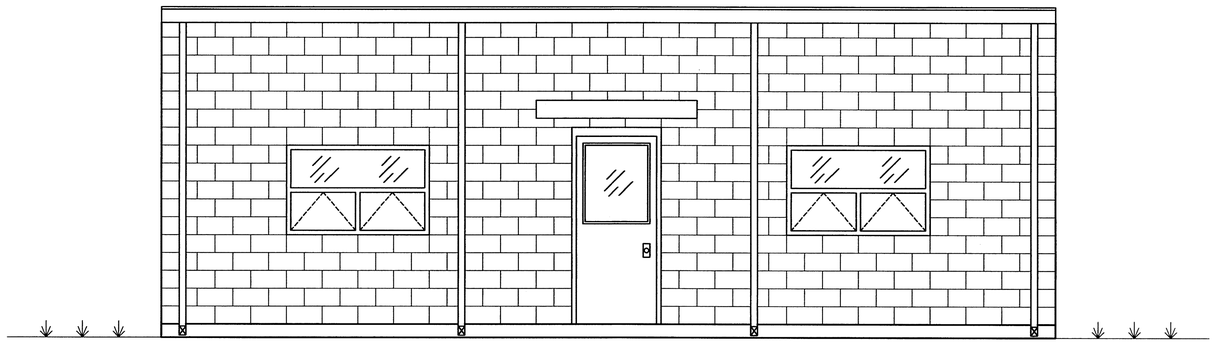
9924-55.dwg



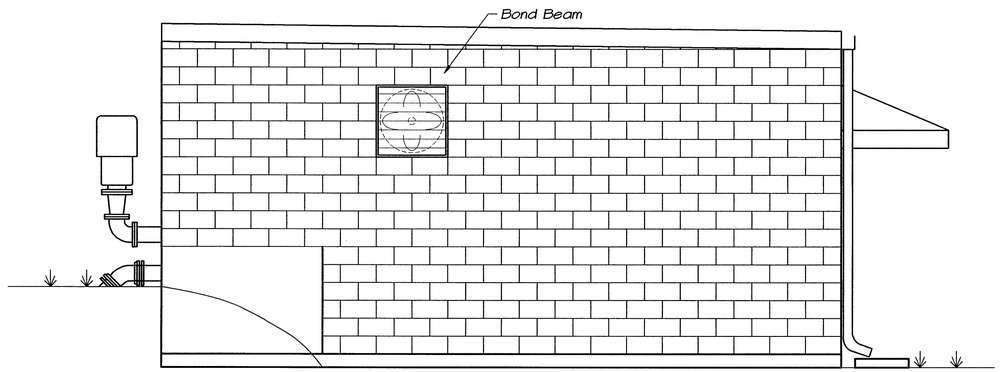
EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION

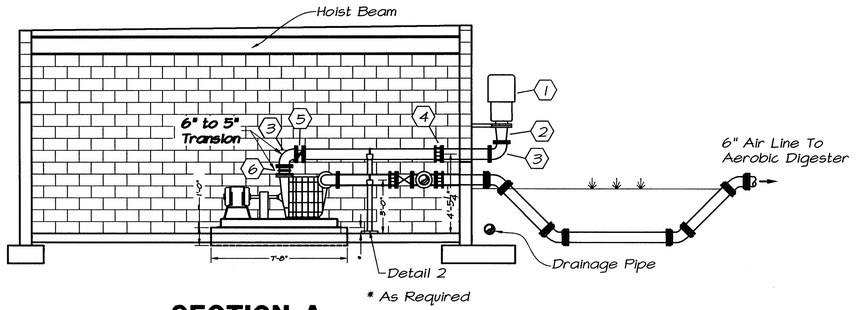
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
BLOWER BUILDING
ELEVATIONS

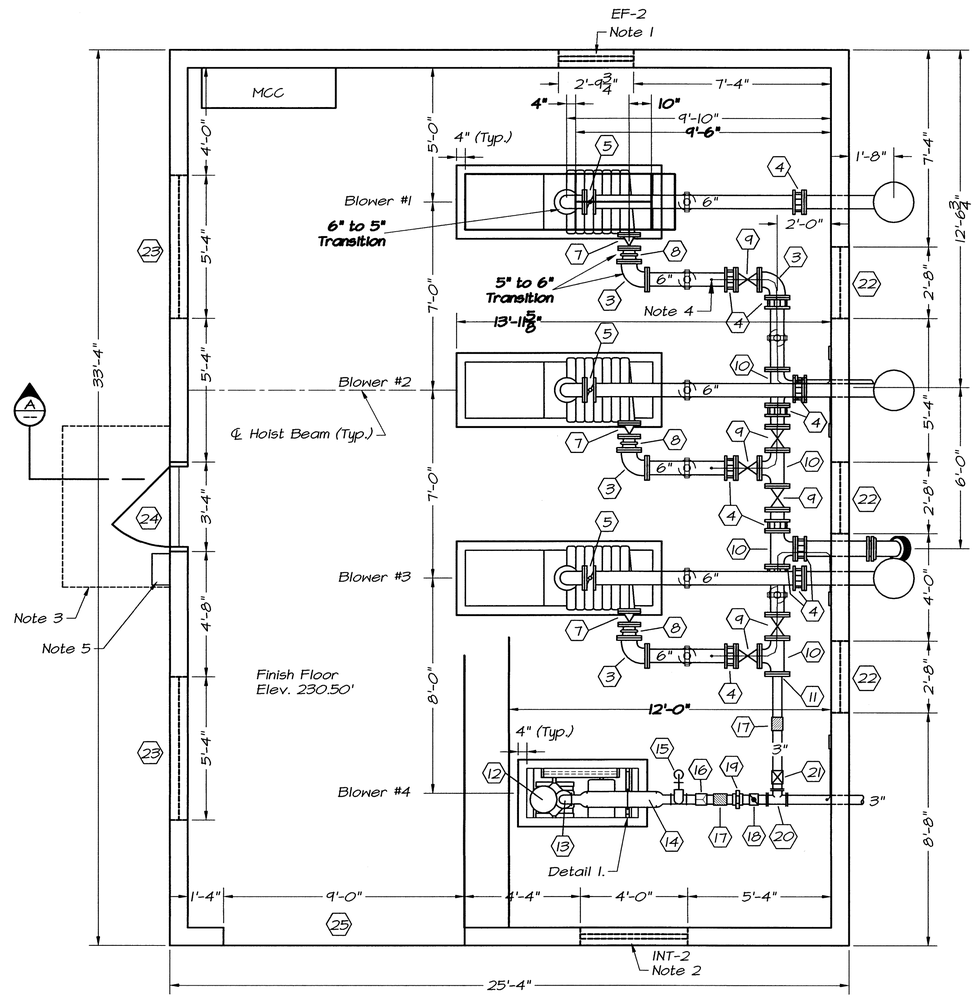
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	56
DRAFTED: SWJ	SCALE: 3/8" = 1'-0"		72
CHECKED: LDG			

9924-S6.dwg



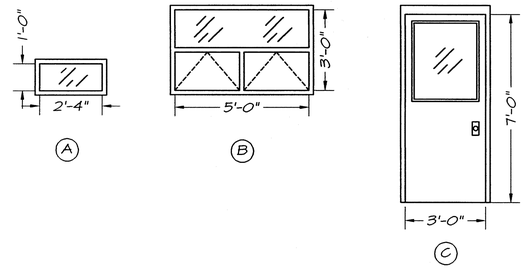
SECTION A

1/4" = 1'-0"



PLAN

3/8" = 1'-0"



KEY	STYLE	SIZE	THICKNESS	ACCESSORIES/REMARKS	LOCK SET
22	A	2410	-	Fixed Pane Window	-
23	B	5030	-	Half Hopper, Project In w/ Screen	-
24	C	3070	1-3/4"	Stop, Sweep, Aluminum Threshold	Gov't. 86C
25	-	-	2"	9'x9' 420 Series Steel Door by Overhead Door Corporation	-

DOOR & WINDOW SCHEDULE

SYMBOL	DEVICE	MANUFACTURER	CATALOG NO.	WIDTH	HEIGHT	ACTUATOR
INT-2	Louver-Damper	DOWCO	A-LEC	48"	48"	120-Volt
EF-2	Damper	Damper Supplied With Fan				

* With Internal SS Insect Screen, Formed Alum. Extended Sill, Finish Epoxy, Hampton Brown
* With Flattened Expanded Alum. Bird Screen, Formed Alum. Extended Sill, Finish Epoxy, Hampton Brown

LOUVER & DAMPER SCHEDULE

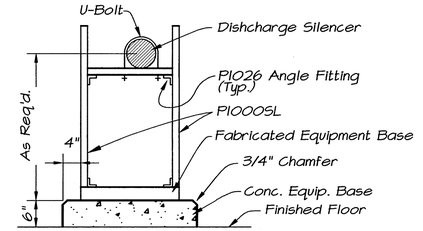
SYMBOL	DEVICE	MANUFACTURER	CATALOG NO.	CFM	SP	HP	VOLTAGE
EF-2	Prop. Fan	Cook	24XMW	3500	0.2	1/3	120/60/1

with Cap. Start Motor, Damper as Sch. above, Finish Epoxy - Light Tan, Coat Inside & Out of Fan & Factory Attached Acc's, NEMA 1 Toggle Sw., Wall Collar, Closure Angles

EXHAUST FAN SCHEDULE

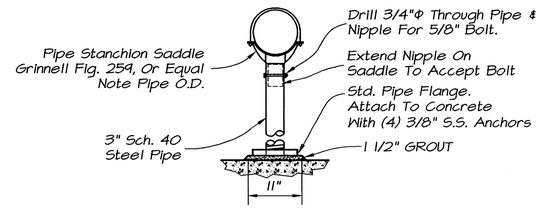
SCHEDULE OF COMPONENTS			
KEY	SIZE	PART NO. *	DESCRIPTION
1	8"	-	Filter/Silencer, CCS Series by Universal Silencer, or Equal
2	-	-	6"x8" Flg. Reducer
3	6"	-	Flg. 90° Bend
4	6"	-	Flanged Coupling Adapter
5	6"	BA-106716	Metal Seated Flanged B/F Valve With Lever Activator
6	6"	BA-100704	Flanged Expansion Joint
7	5"	BA-100605	Flg. Check Valve
8	-	BA-102407	5"x6" Flg. Expansion Joint
9	6"	-	Gate Valve w/ High Temp. Trim, Stem Vertical
10	6"	-	Flanged Tee
11	-	-	3" x 11" O.D. Companion Flange
12	-	-	Fabricated Base w/ Aeration Blower, Motor, Belt Guard, and Intake Silencer/Filter
13	3"	-	90-Deg. Street Ell In Companion Flange
14	3"	LES-30	Discharge Silencer
15	3"	-	Factory-Preset Relief Valve, Provided By Blower Mfr.; In Threaded Tee; Pipe Relief Full-Size To Within 6" of Floor
16	3"	BA-100622	Check Valve
17	3"	BA-102877	Rubber-Reinforced Sleeve With S.S. End Clamps
18	3"	BA-106030	Threaded B/F Valve With Lever Activator
19	3"	-	Threaded Union
20	3"	-	Threaded Tee
21	3"	-	Threaded Gate Valve w/ High Temp. Trim

* Lamson, or Equal



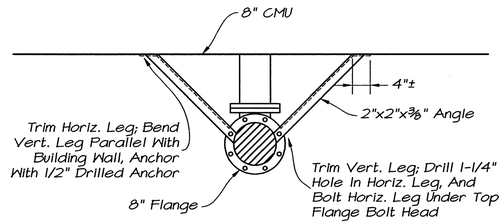
PIPE SUPPORT DETAIL 1

N.T.S.



PIPE SUPPORT DETAIL 2

N.T.S.



FILTER/SILENCER SUPPORT DETAIL

3/4" = 1'-0"

Notes:

1. Exhaust Fan. Mount 9'-0" Above Finished Floor.
2. Intake Louver. Mount 8" Above Finished Floor.
3. Center Canopy Over Pedestrian Door.
4. Tap Discharge Line For Remote Pressure Gauge, 0-15 PSI (4 Locations). Mount Pressure Gauges On Wall, 5' Above Finished Floor.
5. Hearing Protection Storage To Consist Of: 16"x14"x8" Fiberglass Enclosure, NEMA-4X, Hinged Cover, Quick-Release Latch. Hoffman, Or Equal. Mount 5' Above Finished Floor On Exterior Of Building.

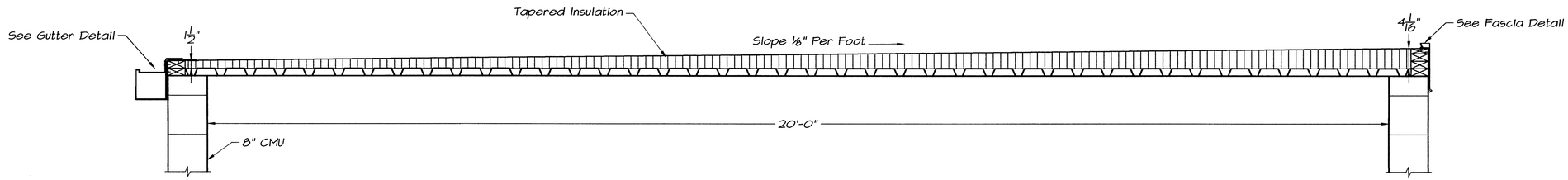
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
BLOWER BUILDING
PLAN, SCHEDULE, & DETAILS

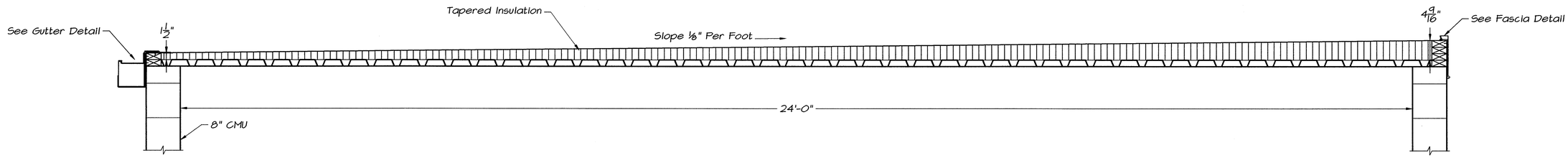
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	57
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-57.dwg



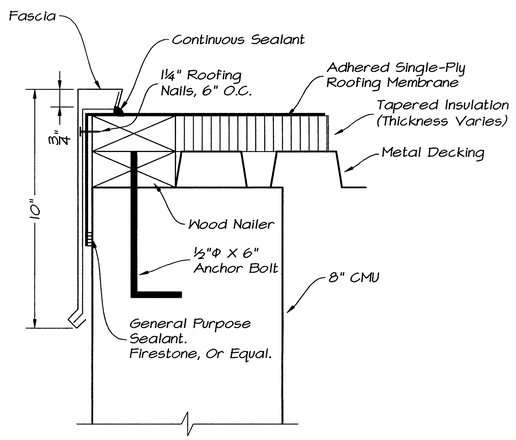
ROOF SECTION - PUMP BUILDING

1" = 1'-0"



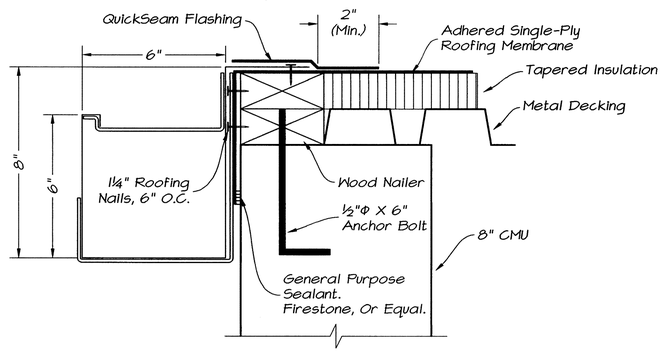
ROOF SECTION - BLOWER BUILDING

1" = 1'-0"



FASCIA DETAIL

N.T.S.



GUTTER DETAIL

N.T.S.

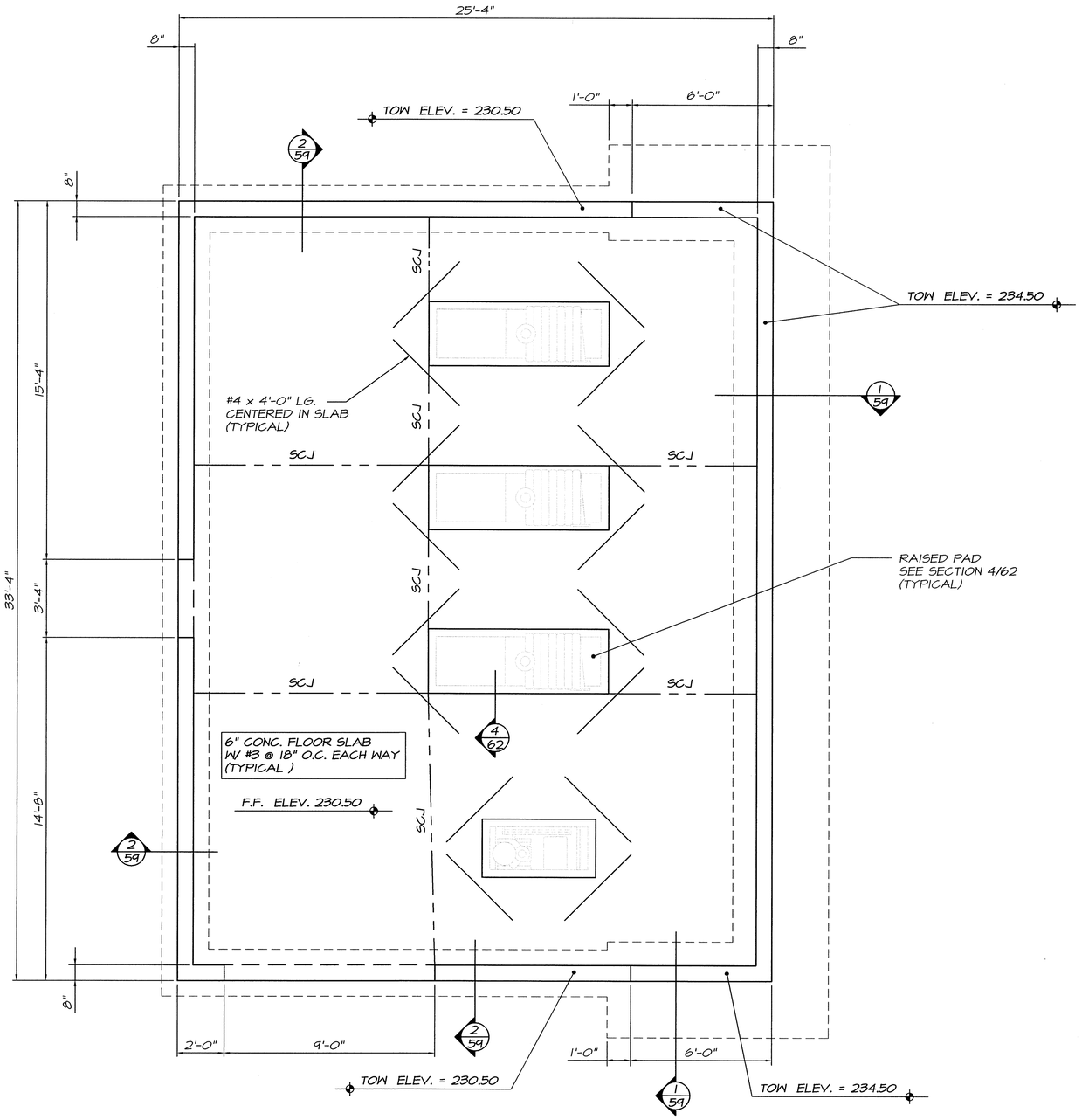
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
BLOWER / PUMP BUILDING
MISCELLANEOUS DETAILS

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	58
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

9924-58.dwg



FOUNDATION PLAN: BLOWER BUILDING

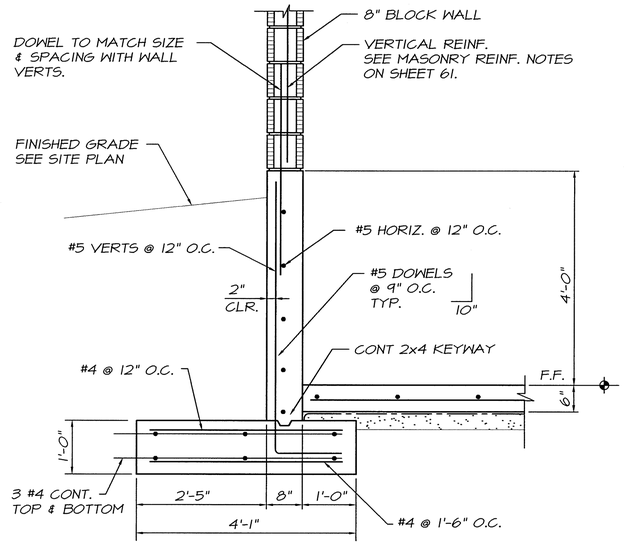
Scale: 3/8" = 1'-0"

NOTE:
SEE SHT. 62 FOR NOTES
PERTAINING TO FOUNDATIONS & CONCRETE.

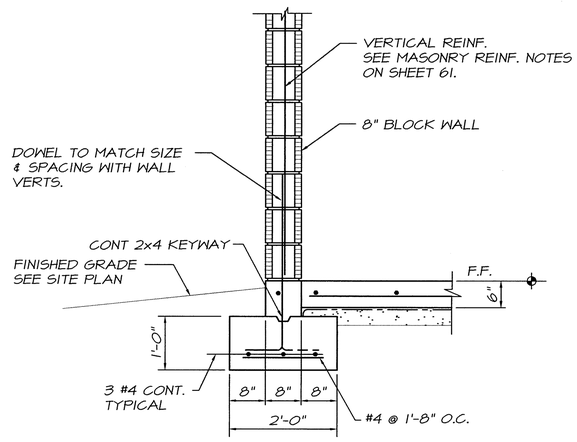
NORTH

FOUNDATION LEGEND:

SF	STEP FOOTING - SEE 3/62
FF	FINISHED FLOOR
SCJ	SAWN CONTROL JOINT - SEE 1/62
UNO	UNLESS NOTED OTHERWISE
BF	BOTTOM OF FOOTING ELEVATION
SIM.	SIMILAR
TOW	TOP OF WALL ELEVATION



1/59 SECTION @ EXTERIOR WALL @ BLOWER BLDG.
3/4" = 1'-0"



2/59 SECTION @ EXTERIOR WALL @ BLOWER BLDG.
3/4" = 1'-0"

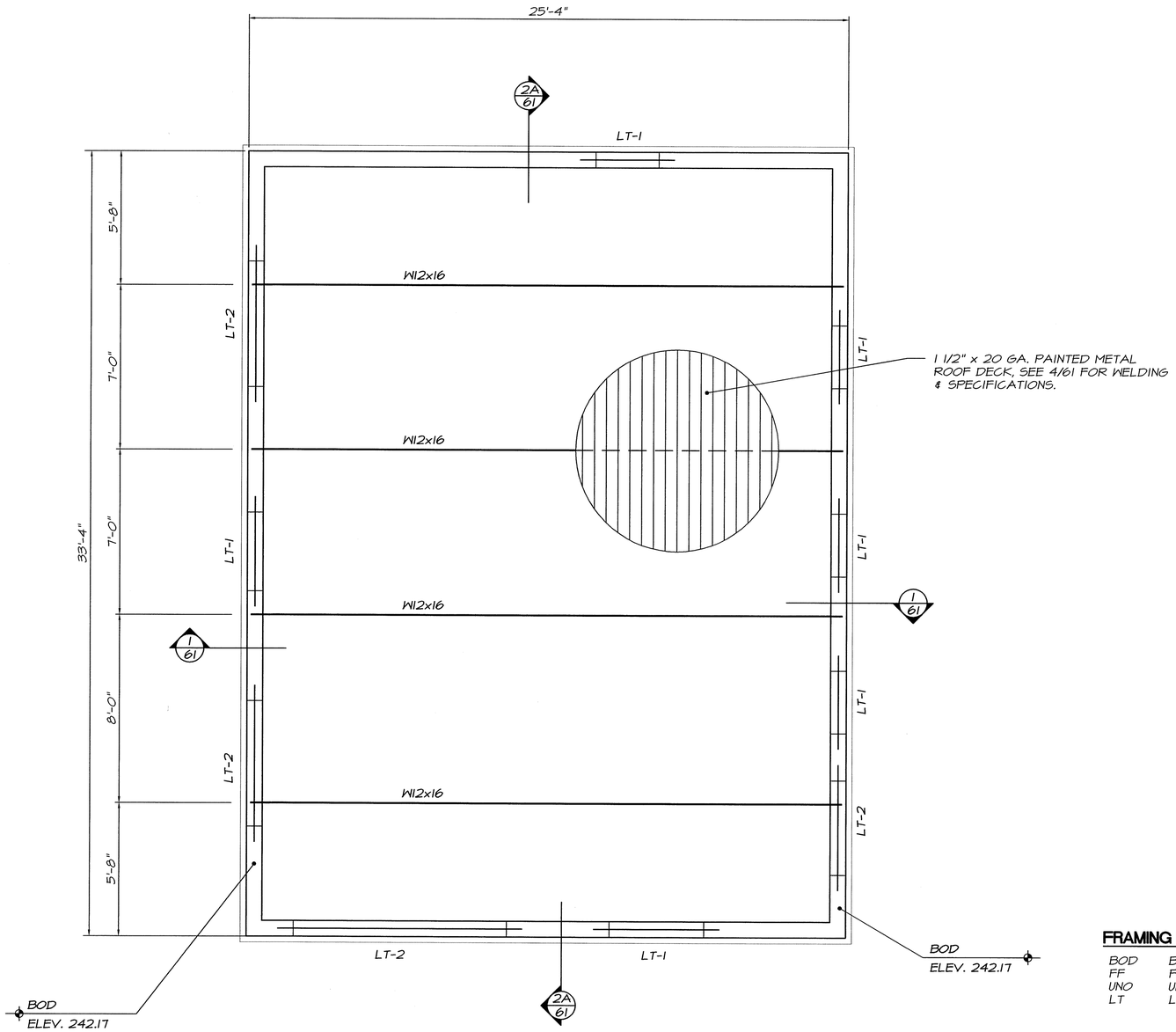
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
BLOWER BUILDING
FOUNDATION PLAN

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	59
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		72
CHECKED: FMG			

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FRAMING LEGEND:

BOD	BOTTOM OF METAL DECK
FF	FINISHED FLOOR
UNO	UNLESS NOTED OTHERWISE
LT	LINTEL - SEE SCHEDULE ON SHEET 61

NORTH

ROOF FRAMING PLAN: BLOWER BUILDING

Scale: 3/8" = 1'-0"

REFER TO SHEET 61 FOR GENERAL FRAMING NOTES.

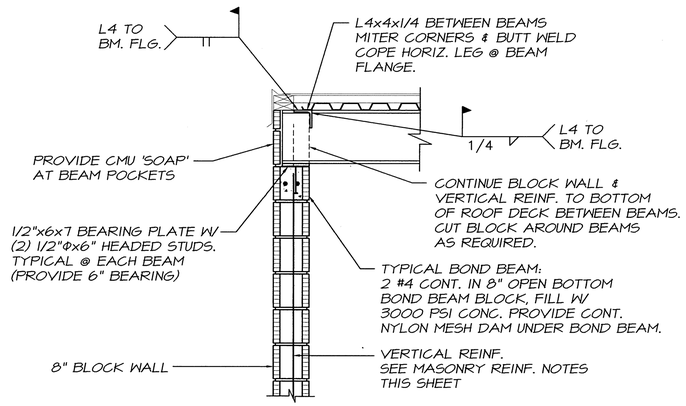
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

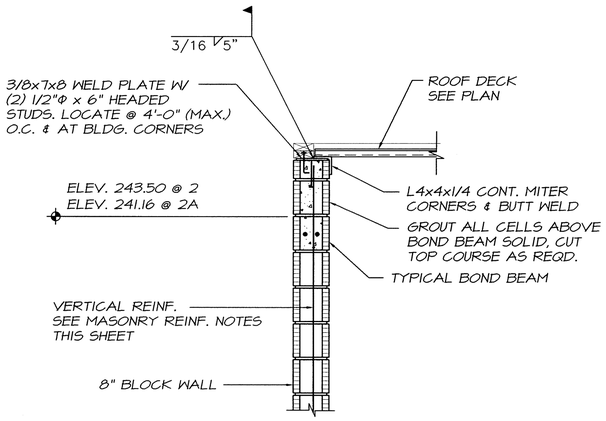
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
BLOWER BUILDING
ROOF FRAMING PLAN

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	60 / 72
DRAFTED: AAA	SCALE: 3/8" = 1'-0"		
CHECKED: FMG			

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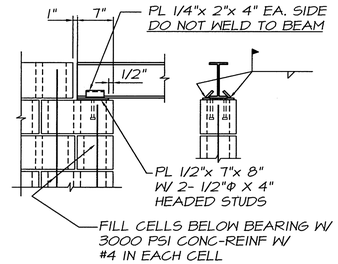


1/61 TYPICAL W12 BEARING @ ROOF
3/4" = 1'-0"



2A/61 ENDWALL @ BLOWER BLDG.
3/4" = 1'-0"

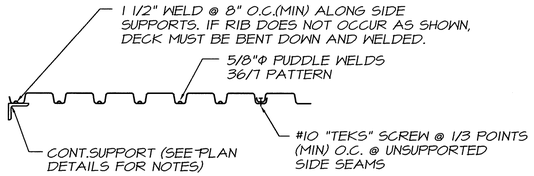
2/61 ENDWALL @ SLUDGE PUMP BLDG.
3/4" = 1'-0"



NOTE: BEAM MUST BE FREE TO SLIDE ALONG ITS AXIS. DO NOT WELD TO CLIPS OR BEARING PLATE.

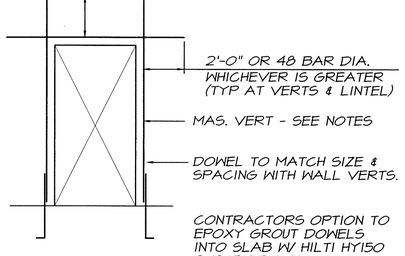
3/61 LINTEL BEAM BEARING
3/4" = 1'-0"

NOTE: PROVIDE 5/8"Φ PUDDLE WELDS @ 6" O.C. @ END LAPS (MIN 2" LAP) AND @ ENDS OF EACH RUN.



ROOF DECKING SHALL BE 1 1/2", TYPE 'B' PAINTED STEEL DECKING (SEE PLAN FOR GAGE)
ALL DECK WELDS TO STRUCTURAL MEMBERS SHALL BE MADE W/ 1/8"Φ E70XX ELECTRODES W/ WELDING MACHINE AMPERAGE SET @ NO GREATER THAN 120 AMPERES.

4/61 TYPICAL DECK WELDING PATTERN
3/4" = 1'-0"



NOTE: IF OPENING DOES NOT GO TO THE FOUNDATION, PROVIDE HORIZ. BAR BELOW OPG. SAME SIZE AS LINTEL, & EXTEND VERTS BELOW OPG. SAME AS ABOVE.

5/61 TYPICAL @ MASONRY WALL OPENING
N.T.S.

LINTEL SCHEDULE

LT-1	4 5/8" — 8"x 8" STD LINTEL BLOCK REINF W/ 2-#4 CONT IN 3000 PSI CONC FILL
LT-2	3/16 2@8 — W8x10 (UNO ON PLAN); 1/4 x 7" CONT PLATE STOP AT JAMB EACH END

NOTE: SEE 3/61 FOR BEAM BEARING.

GENERAL NOTES:

1. ALL EXISTING CONDITIONS MUST BE VERIFIED IN FIELD BY CONTRACTOR. ALL CONFLICTING DATA MUST BE REPORTED TO ENGINEER.

FRAMING NOTES:

1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS SHALL GOVERN ALL PHASES OF STEEL CONSTRUCTION.
2. BRACE AND GUY UNTIL ALL FINAL CONNECTIONS ARE MADE.
3. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO FABRICATION.
4. ALL STRUCTURAL STEEL MEMBERS SHALL MEET THE FOLLOWING CRITERIA:
   ROLLED SHAPES, PLATES AND BARS, Fy = 36 KSI. CONFORM TO ASTM A-36
   ELECTRIC-RESISTANCE WELDED PIPE, Fy = 35 KSI. CONFORM TO ASTM A-53 (GRADE B)
   COLD FORMED TUBING, Fy = 46 KSI. CONFORM TO ASTM A-500 (GRADE B)
5. BOLTS: ASTM A325N 3/4" DIAMETER (UNO).
6. WELDS SHALL BE IN ACCORDANCE WITH A.W.S. REQUIREMENTS FOR E70XX ELECTRODES.
7. ROOF DESIGN LOADS:
   PUMP BUILDING ROOF LIVE LOAD 20 LBS/SF
   WITH HOIST LOADING OF 3,000 LBS
   BLOWER BUILDING ROOF LIVE LOAD 20 LBS/SF
   WITH A HOIST LOADING OF 2,500 LBS

NOTES PERTAINING TO MASONRY CONSTRUCTION:

1. ALL BLOCK WALLS SHALL HAVE A FULL HEIGHT REBAR AT LOCATIONS NOTED BELOW:
   #4 VERTS AT 2'-0" O.C.;
   #4 VERTS AT THE ENDS OF ALL WALLS;
   #4 VERTS AT ALL WALL INTERSECTIONS.
   LAP SPLICES SHALL BE MINIMUM 48 BAR DIAMETERS.
2. ALL BLOCK WALLS SHALL HAVE A HORIZONTAL BOND BEAM AT OR NEAR THE TOP OF THE WALL. THE BOND BEAMS SHALL HAVE 2 #4 CONT. IN MASONRY FILL. THIS IS IN ADDITION TO HEAVY DUTY JOINT REINFORCING (DUR-O-WAL) AT 8" O.C. OR EACH BLOCK JOINT.
3. ALL BLOCK CELLS AND BOND BEAMS WITH REINFORCING SHALL BE FILLED WITH 3000 PSI (@28 DAYS) CONCRETE.
4. LAY UP BLOCK IN RUNNING BOND PATTERN USING LOW RISE MASONRY TECHNIQUE.

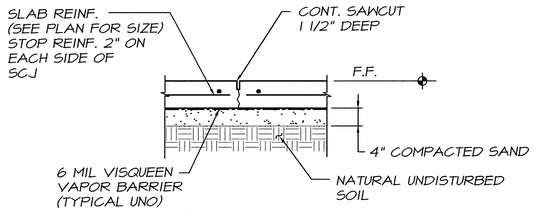
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

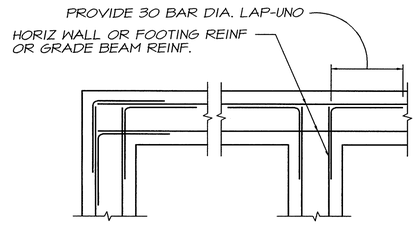
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
STRUCTURAL DETAILS
AND FRAMING NOTES

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	61 / 72
DRAFTED: AAA	SCALE: 3/4" = 1'-0"		
CHECKED: FMG			

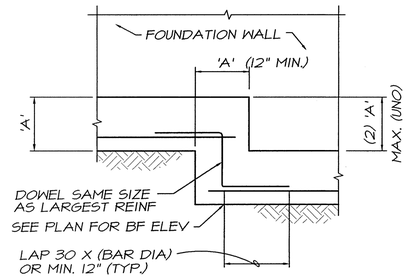
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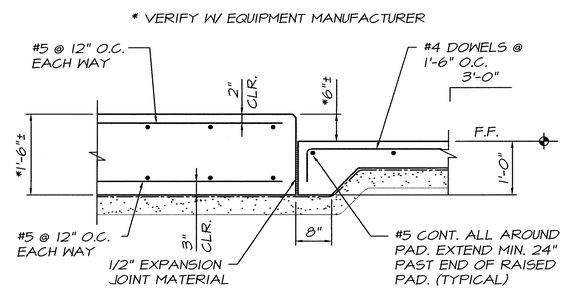
1/62 TYPICAL SAWN JOINT (SCJ) (PUMP & BLOWER BLDG.)
3/4" = 1'-0"



2/62 TYPICAL WALL OR FOUNDATION INTERSECTION (PUMP & BLOWER BLDG.)
N.T.S.



3/62 TYPICAL STEPPED FOOTING
N.T.S.



4/62 SECTION @ PUMP & BLOWER ISOLATION PAD
3/4" = 1'-0"

CONCRETE GENERAL NOTES:

1. AMERICAN CONCRETE INSTITUTE SPECIFICATIONS SHALL GOVERN ALL PHASES OF CONCRETE CONSTRUCTION.
2. CONCRETE FOR FOOTINGS SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI.
3. ALL REINFORCING SHALL BE ASTM A-615 GRADE 60. REINFORCING SHALL BE HELD SECURELY IN PLACE DURING CONCRETE PLACEMENT. PROVIDE ADDITIONAL BARS AS REQUIRED TO ADEQUATELY SUPPORT ALL BARS.
4. CONTRACTOR SHALL VERIFY ALL CONCRETE DIMENSIONS, INSERTS, AND OPENINGS BEFORE PLACING CONCRETE. ALL SLEEVES FOR CONDUIT AND DUCTS SHALL BE PLACED PRIOR TO PLACING CONCRETE. NO CONCRETE SHALL BE BROKEN OUT TO PLACE ELECT., MECH., OR SIMILAR ITEMS WITHOUT PERMISSION OF THE ENGINEER.
5. CHAMFER ALL EXPOSED HORIZONTAL EDGES 3/4".
6. PROVIDE HAND-RUBBED FINISH ON ALL EXPOSED VERTICAL CONCRETE FACES.
7. PROVIDE HARD-TROWEL FINISH ON ALL FLOOR SLABS AND ISOLATION PADS.

FOUNDATION NOTES:
(FOR SLUDGE PUMP AND BLOWER BUILDING)

1. ALL BACKFILL IS TO BE PLACED IN 8 INCH LIFTS AND COMPACTED TO 90% STANDARD PROCTOR (ASTM D-698).
2. FOOTINGS ARE DESIGNED TO BEAR ON COMPACTED FILL CAPABLE OF 2,000 PSF BEARING CAPACITY.
3. FLOOR SLABS ARE DESIGNED TO BEAR ON 4 INCHES OF COMPACTED SAND WITH 8 INCHES OF NATURAL SOIL SCARIFIED AND RECOMPACTED TO 98% STANDARD PROCTOR .
4. PROVIDE 6 MIL VISQUEEN TYPE VAPOR BARRIER UNDER ALL INTERIOR SLABS UNLESS NOTED OTHERWISE.

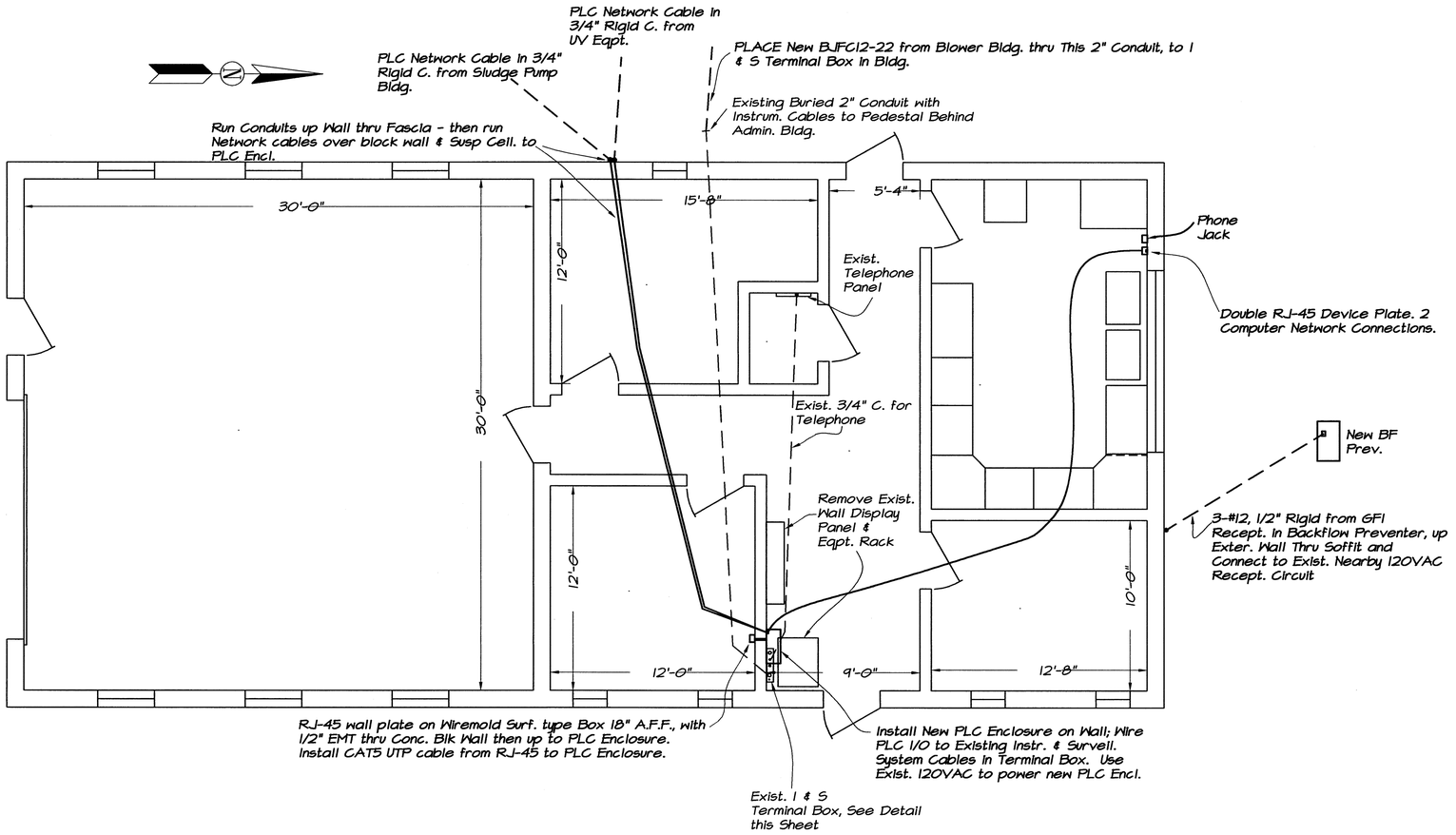
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

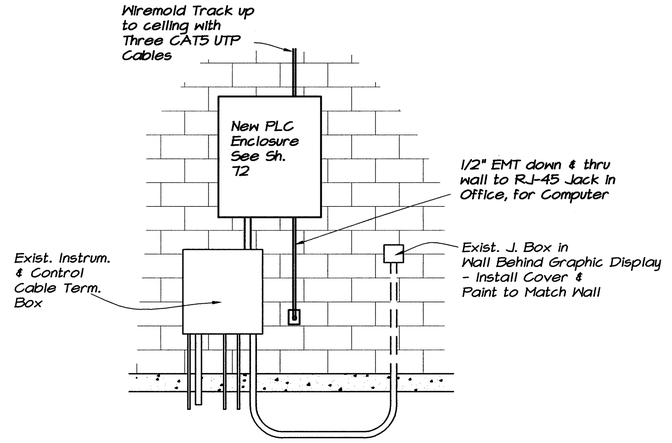
WYNNE, ARKANSAS
WASTEWATER TREATEMENT PLANT
EXPANSION AND REHABILITATION
GENERAL FOUNDATION DETAILS
& CONCRETE NOTES

DESIGNED: FMG	JOB NO: 9924	DATE: JAN. 2001	62 / 72
DRAFTED: AAA	SCALE: 3/4" = 1'-0"		
CHECKED: FMG			

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FLOOR PLAN



ELEVATION - PLC ENCLOSURE INSTALLATION

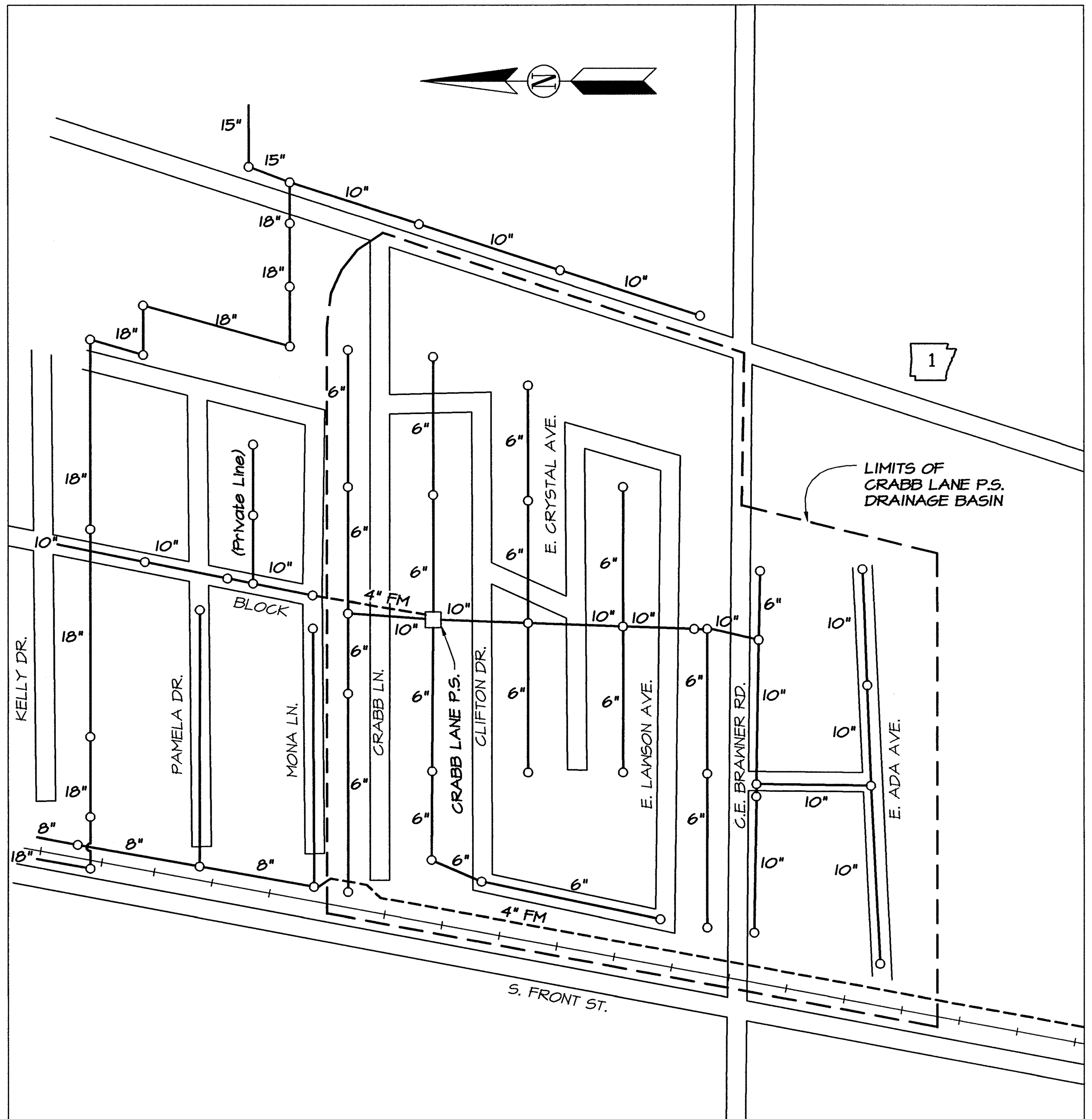
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
ADMINISTRATION BUILDING
PLAN AND DETAILS

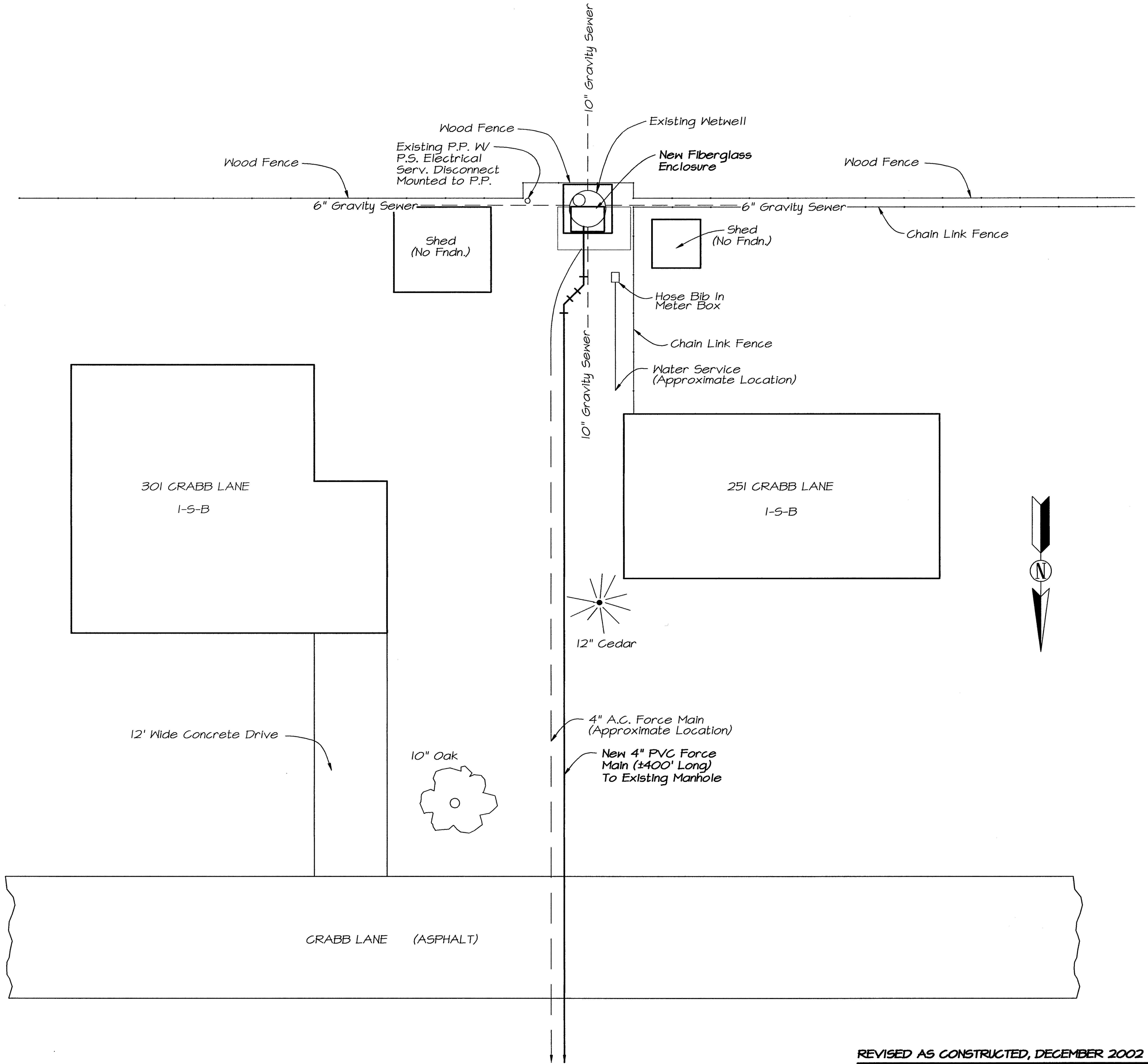
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DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDC			

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VICINITY MAP

1" = 300'



SITE PLAN

1" = 10'

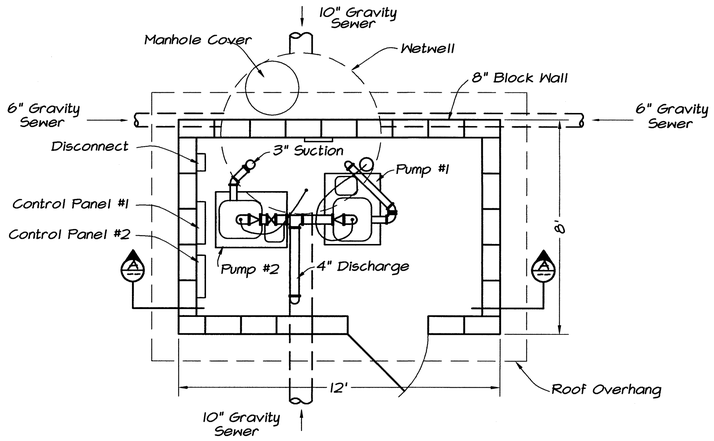
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
CRABB LANE PUMP STATION
VICINITY MAP / SITE PLAN

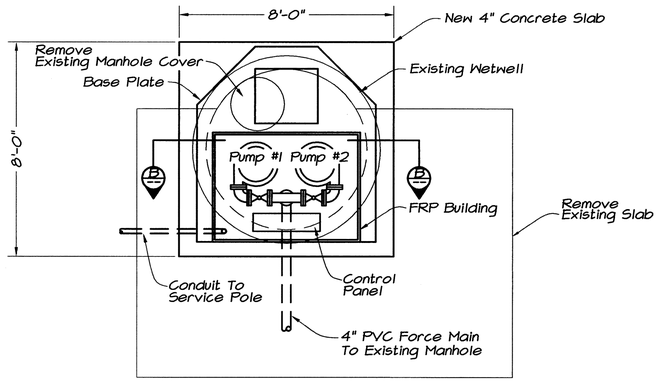
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CHECKED: LDG			

9924-64.dwg



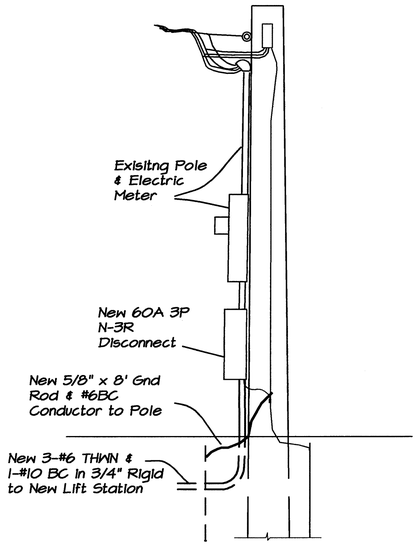
EXISTING PUMP STATION — PLAN

3/8" = 1'-0"



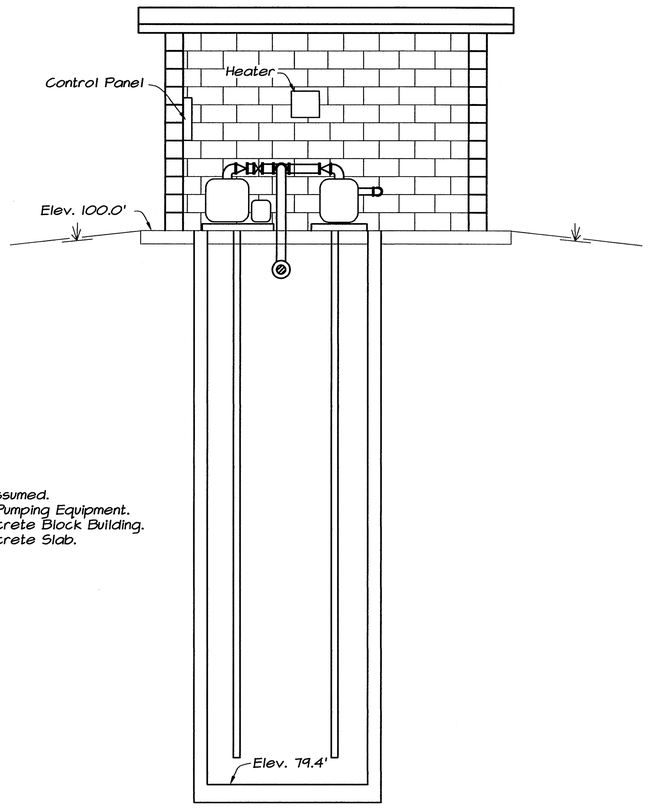
PROPOSED PUMP STATION — PLAN

3/8" = 1'-0"



ELECTRICAL DETAIL

N.T.S.

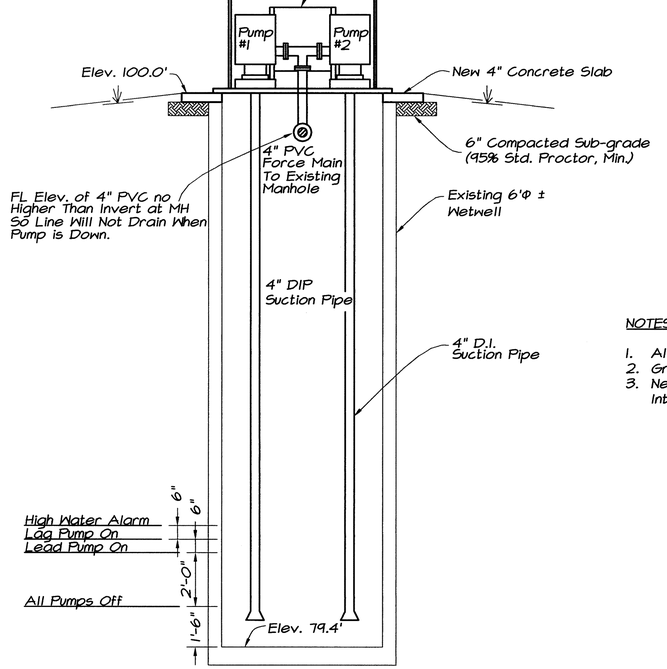


NOTES:

1. All Elevations Are Assumed.
2. Remove All Existing Pumping Equipment.
3. Remove Existing Concrete Block Building.
4. Remove Existing Concrete Slab.

EXISTING SECTION A—A

3/8" = 1'-0"



PROPOSED SECTION B—B

3/8" = 1'-0"

NOTES:

1. All Elevations Are Assumed.
2. Gravity Sewer Lines Not Shown.
3. New Concrete Slab To Be Flush With Interior Of Existing Manhole.

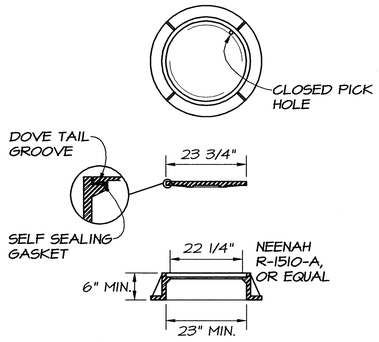
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
CRABB LANE PUMP STATION
PLAN, SECTION & DETAILS

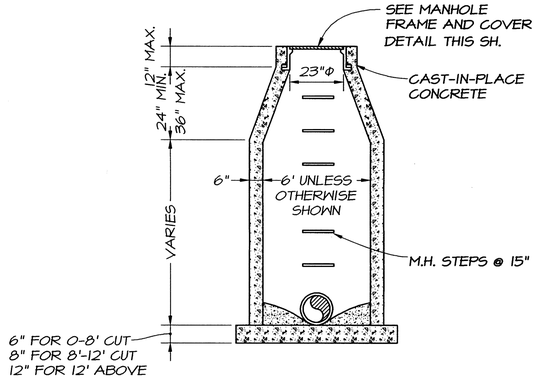
DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	65
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

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MANHOLE FRAME & COVER

N.T.S.



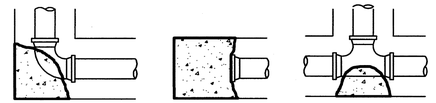
CAST IN PLACE MANHOLE

N.T.S.

THRUST LOAD AT FITTINGS

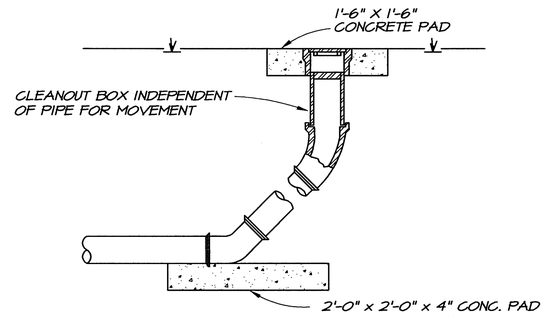
FITTINGS	THRUST (TONS) PER 100 psi PRESSURE		
	1 1/4" TO 6"	8"	10"
11 1/4° Bend	0.3	0.5	0.8
22 1/2° Bend	0.6	1.0	1.5
45° Bend	1.1	1.9	3.0
90° Bend	2.0	3.6	5.6
Tee OR Plug	1.4	2.5	3.9

NOTES:
1. Blocking Extends To Hubs On All Fittings. All Blocking To Be 3000 psi Concrete.
2. Back Tapping Sleeve Same As Tee.
3. Wrap All Bolts & Nuts With Plastic To Protect From Concrete.



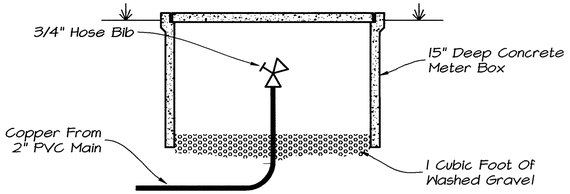
(All Bends Similar)

TYPICAL CONCRETE BACKING DETAIL FOR PRESSURE PIPE



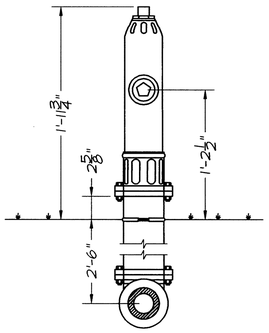
DETAIL - CLEANOUT TO GRADE (COTG)

N.T.S.



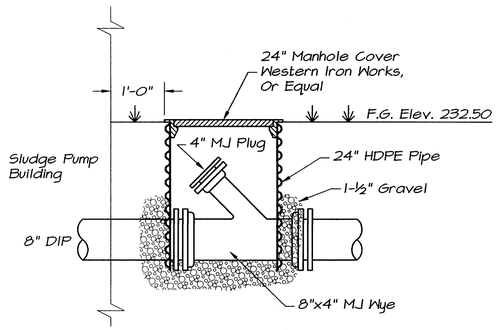
HOSE BIB DETAIL

N.T.S.



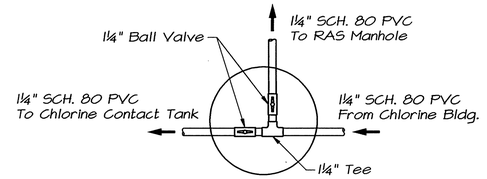
YARD HYDRANT DETAIL

N.T.S.



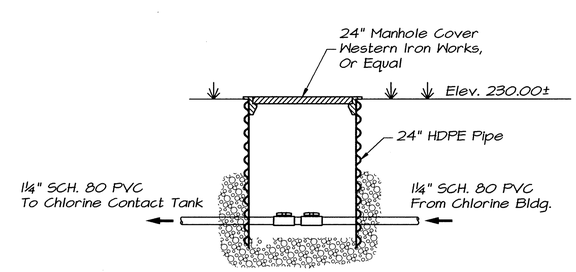
CLEANOUT

N.T.S.



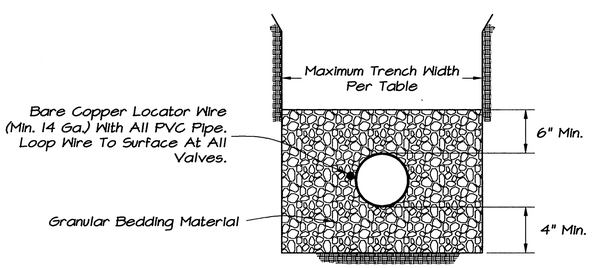
CHLORINE DETAIL - PLAN

N.T.S.

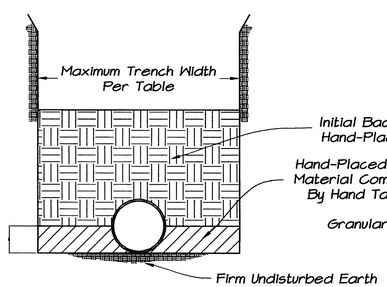


CHLORINE DETAIL - SECTION

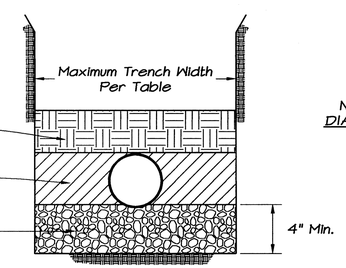
N.T.S.



PVC PIPE



DUCTILE IRON PIPE



SPECIAL BEDDING REQUIREMENTS

PIPE BEDDING DETAILS

N.T.S.

MAXIMUM TRENCH WIDTHS

NOMINAL PIPE DIAMETER, INCHES	MAXIMUM WIDTH OF TRENCH 12" ABOVE TOP OF PIPE, INCHES
<8	24
8	30
10	33
12	36
14,15,16	39
18	42
21	50
24	54
30	57
36	63

BEDDING NOTES:
1. BEDDING MATERIAL SHALL BE GRADED GRAVEL OR CRUSHED STONE, MAXIMUM 3/4" SIZE.
2. SELECT MATERIAL SHALL BE NON-PLASTIC, NATIVE OR BORROWED SOILS.
3. BEDDING FOR FLEXIBLE PIPE TO BE EITHER TAMPED BACKFILL METHOD OR GRANULAR BACKFILL METHOD, AT CONTRACTOR'S OPTION.

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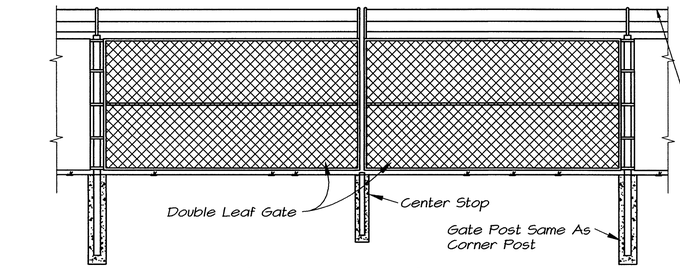
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION

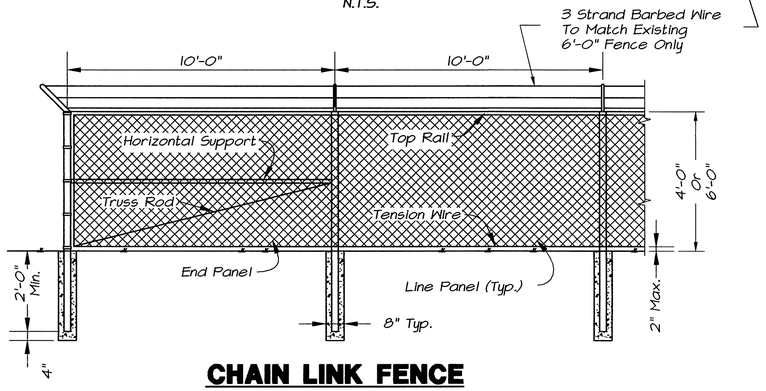
MISCELLANEOUS DETAILS 1

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	66
DRAFTED: SWJ	SCALE: AS SHOWN		72
CHECKED: LDG			

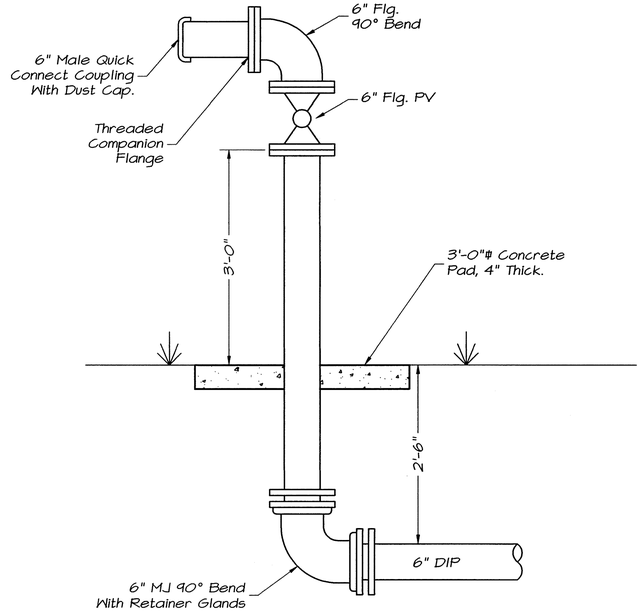
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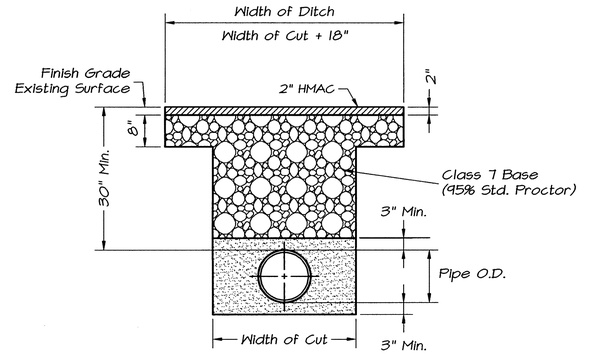
CHAIN LINK GATE
N.T.S.



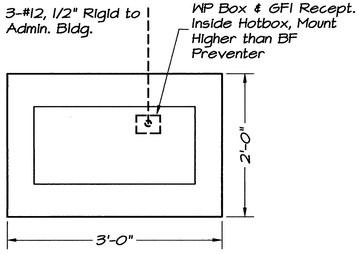
CHAIN LINK FENCE
N.T.S.

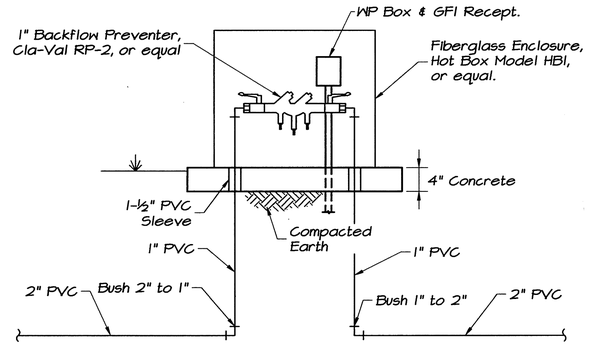


SLUDGE TRUCK CONNECTION DETAIL
N.T.S.

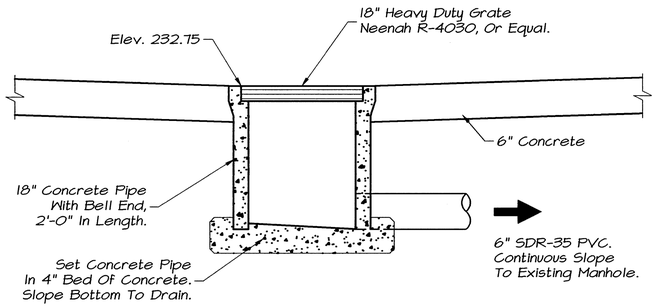


DRIVE CUT DETAIL
N.T.S.

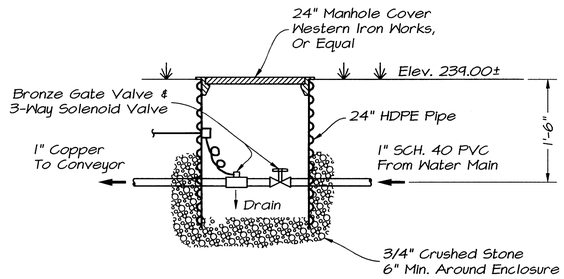




BACKFLOW PREVENTER DETAIL
N.T.S.



DRIVE DRAIN DETAIL
N.T.S.



FLUSH VALVE DETAIL
N.T.S.

REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION

MISCELLANEOUS DETAILS 2

DESIGNED: SWJ	JOB NO: 9924	DATE: JAN. 2001	67 / 72
DRAFTED: SWJ	SCALE: AS SHOWN		
CHECKED: LDG			

9924-67.dwg

REPLACE EXISTING ROTORS (4)

Flow

NEW 4' CHAIN LINK FENCE

Aeration Basin No. 1

10' Gate

Aeration Basin No. 2

Flow

Existing 3' Walkway

10'-0"

NOTE: All 4 Aerator Motors are to be Replaced. Install New #4 Motor Conductors from Disconnect Switches to Motors. Install new Sealtite from Embedded Conduits to Motor Term. Boxes.

10' Gate

Storage Basin

GRIT REMOVAL BAR SCREENS

PRIMARY SUBMERSIBLE PUMP STATION

34'

48'

Headworks

DIVERSION MANHOLE

See Sh. 69 for PDC Detail

Exist. I & S Cable Pedestal

Service Pump Station

Sludge Drying Beds

Retain Existing Area Lighting Conduit - Extend into New Blower Building

Existing Drive (To Be Removed)

Return Sludge Pumps

Existing Drive (To Be Replaced)

BLOWER BUILDING

Final Clarifier CONVERT TO AEROBIC DIGESTER

PLC Network Cable from UV to Admin. Bldg.

Expose & Disconnect South Branch of Area Lighting Circuit

Existing I & S System Cable Pedestal - Connect new 6 pr. (E) to Exist. circuits to Chlorine Bldg.

RAS MANHOLE

PARKING

BJFC12-22 5I-62

BJFC6-22 I+22-25+IxD

BJFC6-22 22+5xD

GRAVITY THICKENER

Administration Building

36'

Final Flume

ULTRAVIOLET DISINFECTION

FINAL CLARIFIER #1

SLUDGE PUMP BUILDING

CLARIFIER DIVISION BOX

Chlorine Building

FINAL CLARIFIER #2

REROUTE ROAD

16' Gate

WP, GF

NEW OUTFALL STRUCTURE

CONVERT TO POST AERATION

Contact Basin

SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
A	3	4/0	2-1/2	Rigid
	1	2		
B	3	4	1-1/4	Rigid
	1	8		
C	3	6	1	Rigid
	1	10		
D	4	12	3/4	Rigid
E	1	BJFC6-22	Direct Bury	
F	4	14	1/2	Rigid
G	1	4 Pr. CAT5 UTP	3/4	Rigid
H	3	10	1/2	Rigid

WIRE & CONDUIT SCHEDULE

1. Remove & Store Light Pole & Fixture
2. Expose Existing Control Cable, Splice in new Pedestal. Connect Pr. 22 (Final Flume Flow) IN SERIES to UV Eqpt.
3. Expose Existing 1" C. to Chlorine Bldg, Splice new (C) to Exist. feed from PDC
4. Expose Exist. 1" C. to Chlorine Bldg, Run old & new conduits into J.Box, pull new wires from Chlorine Bldg. with No Splices to Point 3

Street Light Pole Reinstalled on New Foundation

Existing Underground Cable or Conduit

New Underground Cable or Conduit

BJFC12-22 5I-62 { Instrum. & Surveillance Cable Type & Pair Assignment

LEGEND

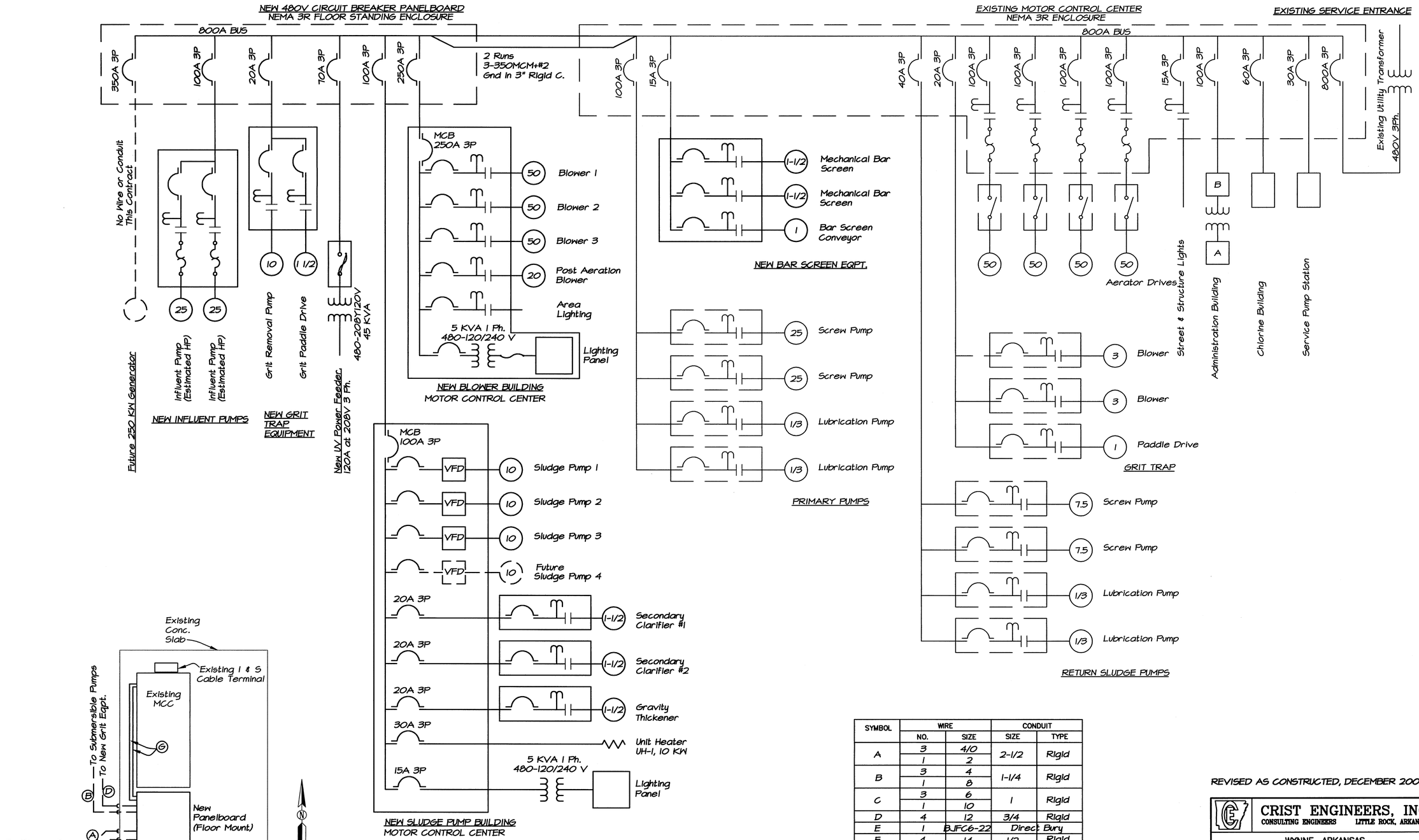
REVISED AS CONSTRUCTED, DECEMBER 2002

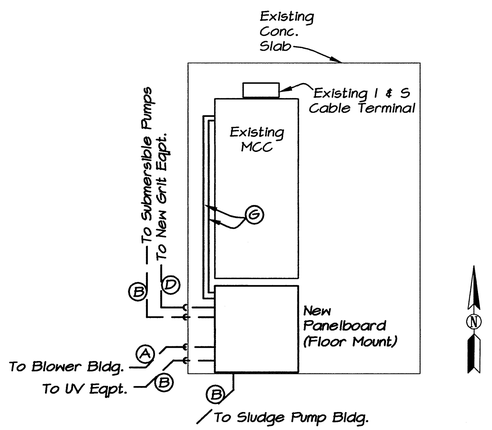
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
ELECTRICAL
SITE PLAN

DESIGNED: RWZ	JOB NO: 9924	DATE: JAN. 2001	68
DRAFTED: RWZ	SCALE: 1"=30'		72
CHECKED: LDG			

ASB0102 9924-68.dwg





PLAN - POWER DISTRIB. CENTER ADDITION

SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
A	3	4/0	2-1/2	Rigid
	1	2		
B	3	4	1-1/4	Rigid
	1	8		
C	3	6	1	Rigid
	1	10		
D	4	12	3/4	Rigid
E	1	BJFC6-22	Direct Bury	
F	4	14	1/2	Rigid
G	3	350MCM	3	Rigid
	1	2		

WIRE & CONDUIT SCHEDULE

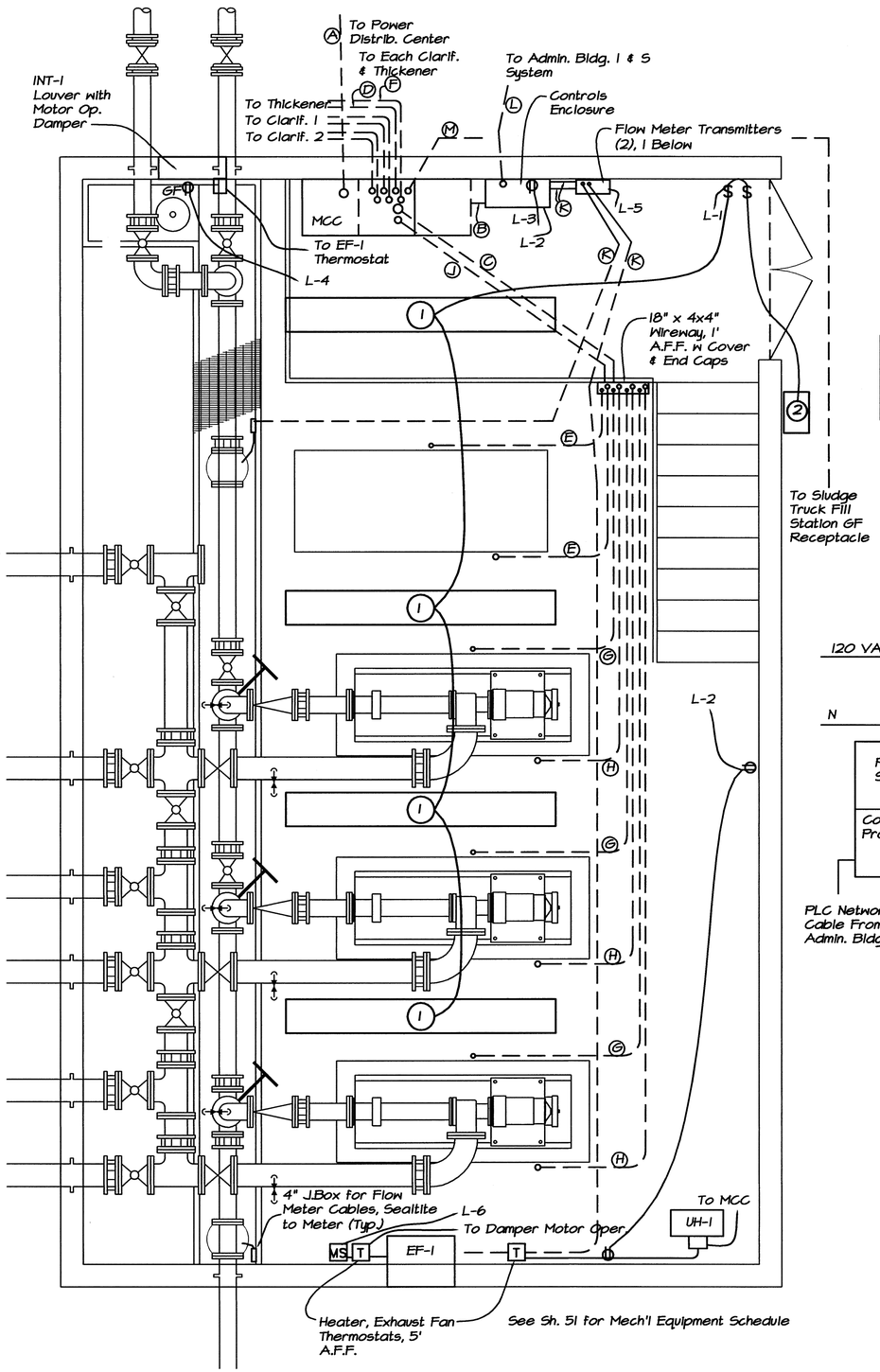
REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PLANT-WIDE
ONE-LINE DIAGRAM

DESIGNED:	RWZ	JOB NO:	9924	DATE: JAN. 2001	69
DRAFTED:	RWZ	SCALE:	NO SCALE		72
CHECKED:	LDG				

ASB0102 9924-69.dwg

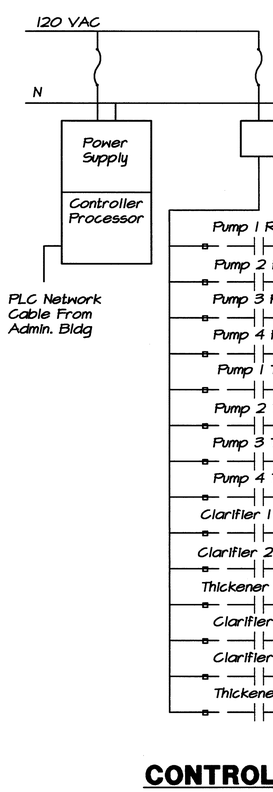


SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
A	3	4	1-1/4	Rigid
	1	8		
B	As Req'd		2	Rigid
C	12	12	2	Rigid
D	4	12	1/2	Rigid
E	None - Future		1/2	Rigid
F	3	14	1/2	Rigid
G	2	14	1/2	Rigid
H	3	12	1/2	Rigid
J	8	14	1	Rigid
K	2	2/c #18 Shielded	3/4	Rigid
L	1	4 Pr. CAT5 UTP	3/4	Rigid
M	3	10	1/2	Rigid

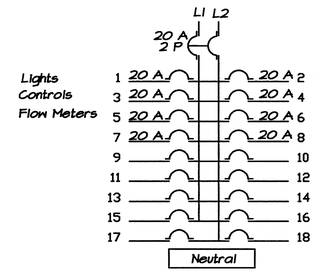
WIRE & CONDUIT SCHEDULE

SYMBOL	MANUFACTURER	CATALOG NO.	LAMPS			MOUNTING HEIGHT
			NO.	TYPE	WATTS per LAMP	
1	Metalux	8TDIM-232-120V-EB82	4	F32	32	Ceiling
2	Lumark	PLVR-PC-2B-120V-LL-PE	1	PL28	28	6.5'

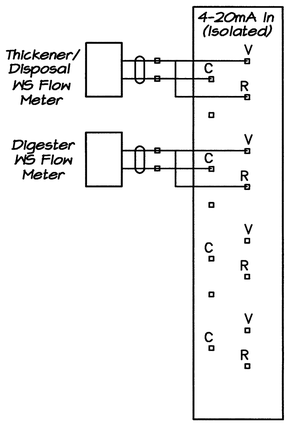
LIGHTING FIXTURE SCHEDULE

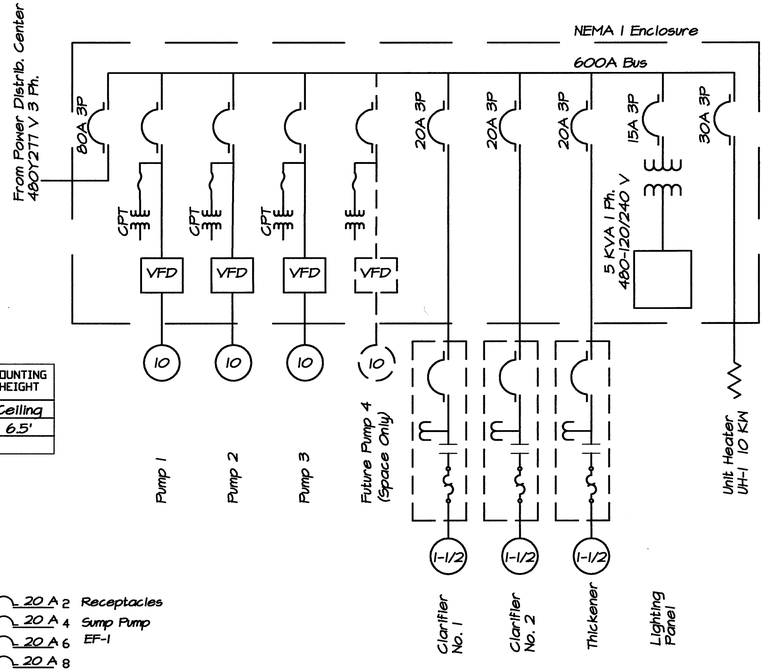


CONTROLLER INPUT/OUTPUT DIAGRAM

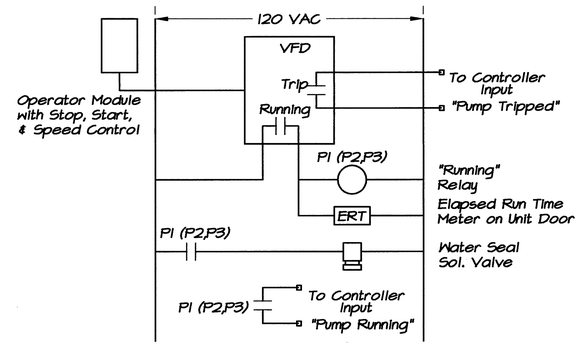


LIGHTING PANEL





MOTOR CONTROL CENTER DIAGRAM



PUMP CONTROL CIRCUIT

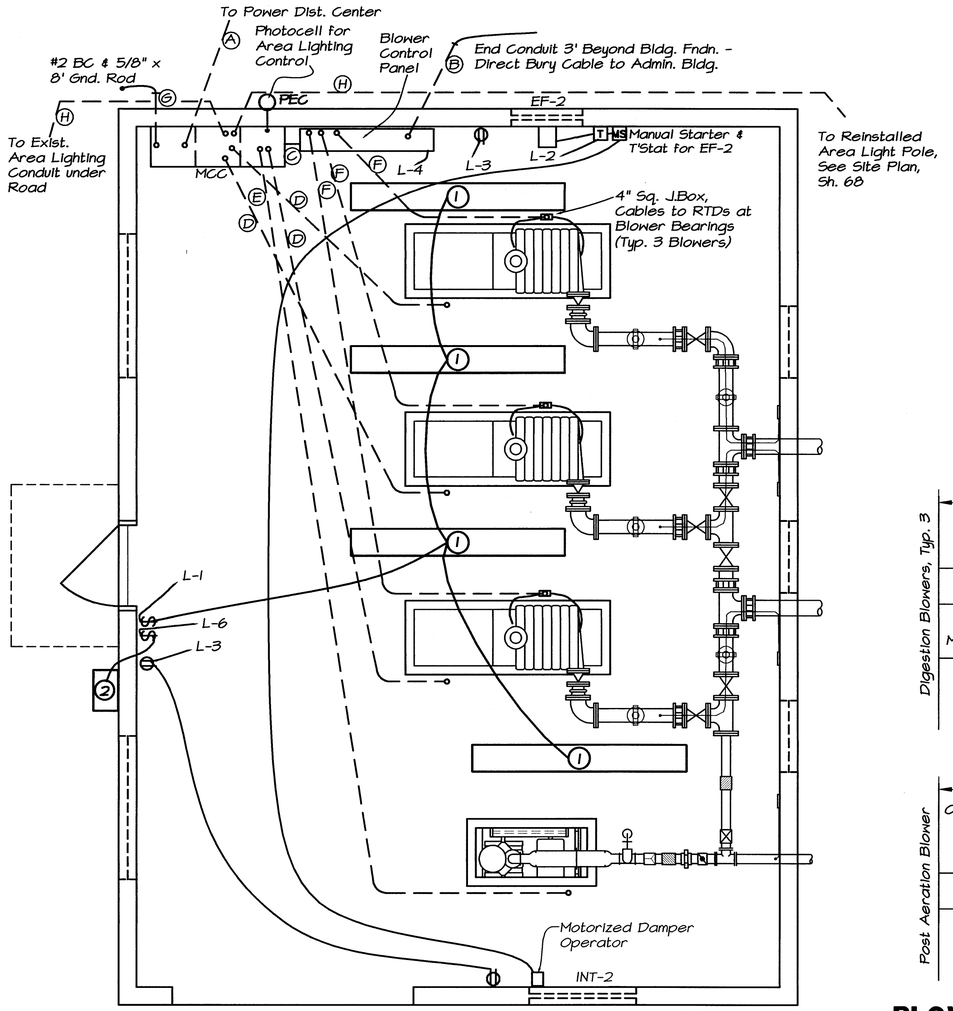
Typ. 3

ASB0102 9924-70.dwg

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

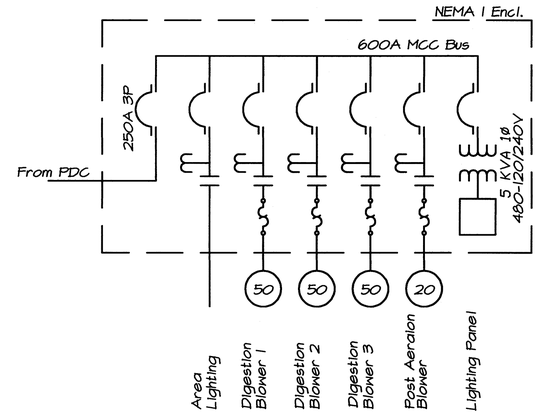
WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
PUMP BUILDING
ELECTRICAL & CONTROLS PLAN

DESIGNED: RWZ	JOB NO: 9924	DATE: JAN. 2001	70	
DRAFTED: RWZ	SCALE: 1/2" = 1'-0"			72
CHECKED: LDG				

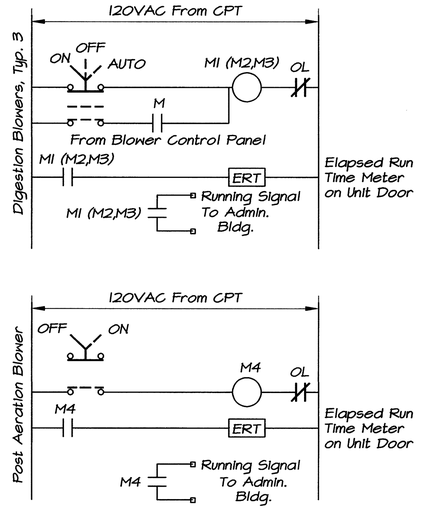


ELECTRICAL PLAN

Scale: 3/8" = 1'-0" See Sh. 57 for Mechanical Eqpt. Schedules

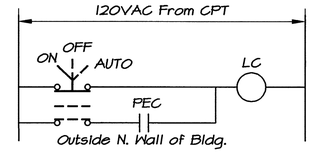


MOTOR CONTROL CENTER DIAGRAM

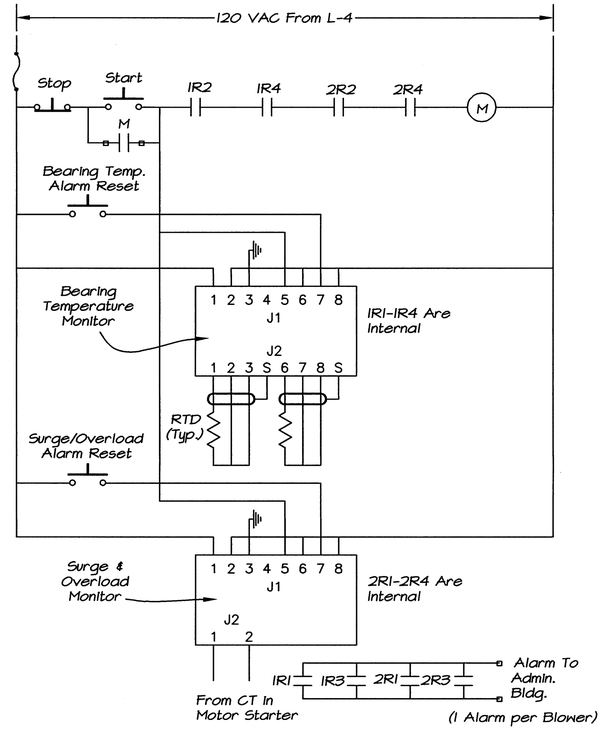


BLOWER STARTER CIRCUITS

Starters in Motor Control Center

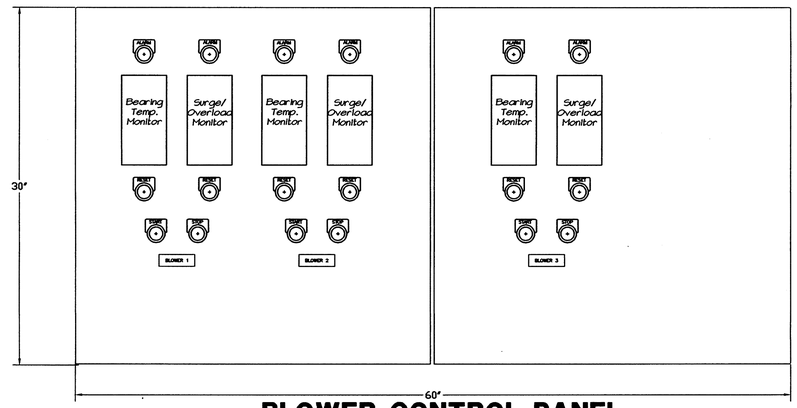


AREA LIGHTING CONTROL



BLOWER CONTROL CIRCUIT

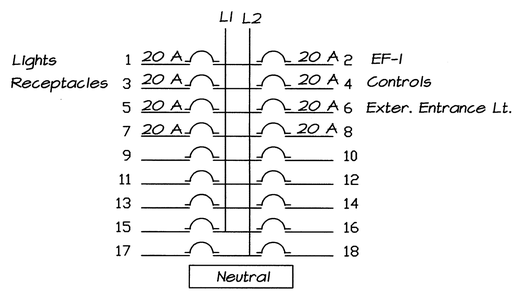
3 Thus, in Blower Control Panel For Digestion Blowers Only



BLOWER CONTROL PANEL

SYMBOL	WIRE NO.	WIRE SIZE	CONDUIT SIZE	CONDUIT TYPE
A	3	4/0	2-1/2	Rigid
	1	2		
B	1	BJFC12-22	1	Rigid
C	As Req'd		1-1/2	Rigid
D	3	6	1	Rigid
	1	8		
E	3	8	1	Rigid
	1	10		
F	2	3/c #18 Shld.	3/4	Rigid
G	1	#2 BC	1	Rigid
H	2	12	1/2	Rigid

WIRE & CONDUIT SCHEDULE



LIGHTING PANEL

SYMBOL	MANUFACTURER	CATALOG NO.	LAMPS NO.	LAMPS TYPE	LAMPS WATTS per LAMP	MOUNTING HEIGHT
1	Metalux	8TDIM-232-120V-EB82	4	F32	32	Ceiling
2	Lumark	PLVR-PC-28-120V-LL-PE	1	PL28	28	6.5'

LIGHTING FIXTURE SCHEDULE

REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
BLOWER BUILDING
ELECTRICAL PLAN

DESIGNED: RWZ	JOB NO: 9924	DATE: JAN. 2001	71
DRAFTED: RWZ	SCALE: 1/2" = 1'-0"		72
CHECKED: LDG			

9924-71.dwg

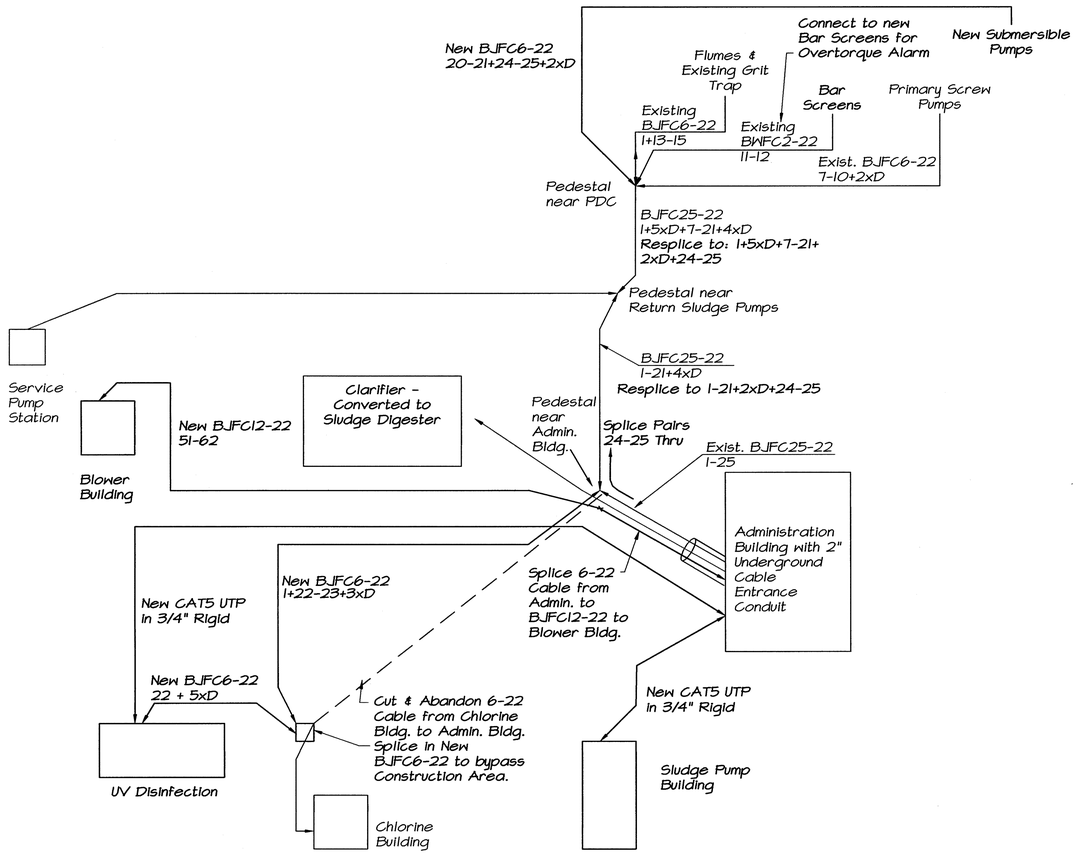
PLC INPUT	PAIR	EXISTING PURPOSE	FROM	NEW PURPOSE	FROM
Administration Building PLC					
	1	Intercom (Not part of PLC wiring)	Various		
1	2	Wet Well High Level Alarm	Service Pump Station		
	3	Spare	Service Pump Station		
2	4	Return Sludge Pump No. 1 Running	RAS Pump Structure		
3	5	Return Sludge Pump No. 2 Running	RAS Pump Structure		
	6	Spare	RAS Pump Structure		
4	7	Primary Pump No. 1 Running	Primary Pump Structure		
5	8	Primary Pump No. 2 Running	Primary Pump Structure		
6	9	Primary Pump No. 1 Overcurrent Alarm	Primary Pump Structure		
7	10	Primary Pump No. 2 Overcurrent Alarm	Primary Pump Structure		
8	11	Bar Screen Overtorque Alarm	Bar Screen Structure	Either Bar Screen Alarm	Bar Screen Controls
9	12	Spare	Bar Screen Structure		
A1	13	Primary Flume Flow	Pri. Flume Flow Transmitter		
A2	14	RAS Flume Flow	RAS Flume Flow Transmitter		
10	15	Spare	Grit Trap Structure	Grit Trap 2 Alarms	Grit Trap Controls
11	16	Aerator No. 1 Running	Power Distribution Center		
12	17	Aerator No. 2 Running	Power Distribution Center		
13	18	Aerator No. 3 Running	Power Distribution Center		
14	19	Aerator No. 4 Running	Power Distribution Center		
15	20	Spare	Power Distribution Center	Submers. Pump 1 Running	Submersible Pump Controls
16	21	Spare	Power Distribution Center	Submers. Pump 2 Running	Submersible Pump Controls
A3	22	Final Flume Flow	Chlorine Bldg.		
17	23	Chlorine Gas Alarm	Chlorine Bldg.		
18	24	Chlorinator Supply Pump No. 1 Running	Chlorine Bldg.	Influent High Water Alarm	Submersible Pump Controls
19	25	Chlorinator Supply Pump No. 2 Running	Chlorine Bldg.	Submers. Pump 1,2 O'load Trip	Submersible Pump Controls
	26	Sludge Collector No. 1 Running	Final Settling Basin		
	27	Sludge Collector No. 1 Overtorque Alarm	Final Settling Basin		
	28	Sludge Collector No. 2 Running	Final Settling Basin		
	29	Sludge Collector No. 2 Overtorque Alarm	Final Settling Basin		
	30	Spare	Final Settling Basin		
	31	Spare	Final Settling Basin		
		NEW SIGNALS			
20	51	Blower 1 Running	Blower Bldg.		
21	52	Blower 2 Running	Blower Bldg.		
22	53	Blower 3 Running	Blower Bldg.		
23	54	Blower 4 Running	Blower Bldg.		
24	55	Blower 1 Alarm	Blower Bldg.		
25	56	Blower 2 Alarm	Blower Bldg.		
26	57	Blower 3 Alarm	Blower Bldg.		
27	58	Blower 4 Alarm	Blower Bldg.		
	59	Spare	Blower Bldg.		
	60	Spare	Blower Bldg.		
	61	Spare	Blower Bldg.		
	62	Spare	Blower Bldg.		
Sludge Pump Bldg. Remote Inputs via Ethernet/10BaseT					
		Sludge Pump 1 Running	Sludge Pump Bldg.		
		Sludge Pump 2 Running	Sludge Pump Bldg.		
		Sludge Pump 3 Running	Sludge Pump Bldg.		
		Sludge Pump 4 Running (Fut.)	Sludge Pump Bldg.		
		Sludge Pump 1 Fail	Sludge Pump Bldg.		
		Sludge Pump 2 Fail	Sludge Pump Bldg.		
		Sludge Pump 3 Fail	Sludge Pump Bldg.		
		Sludge Pump 4 Fail (Fut.)	Sludge Pump Bldg.		
		Clarifier 1 Running	Sludge Pump Bldg.		
		Clarifier 1 Overtorque	Sludge Pump Bldg.		
		Clarifier 2 Running	Sludge Pump Bldg.		
		Clarifier 2 Overtorque	Sludge Pump Bldg.		
		Thickener Running	Sludge Pump Bldg.		
		Thickener Overtorque	Sludge Pump Bldg.		
		Thickener/Disposal WS Flow (Analog)	Sludge Pump Bldg.		
		Digester WS Flow (Analog)	Sludge Pump Bldg.		
UV System MODBUS Protocol via Ethernet/10BaseT					
		To be defined by UV System Supplier	UV System		

INSTRUMENTATION & SURVEILLANCE CABLE PAIR ASSIGNMENTS

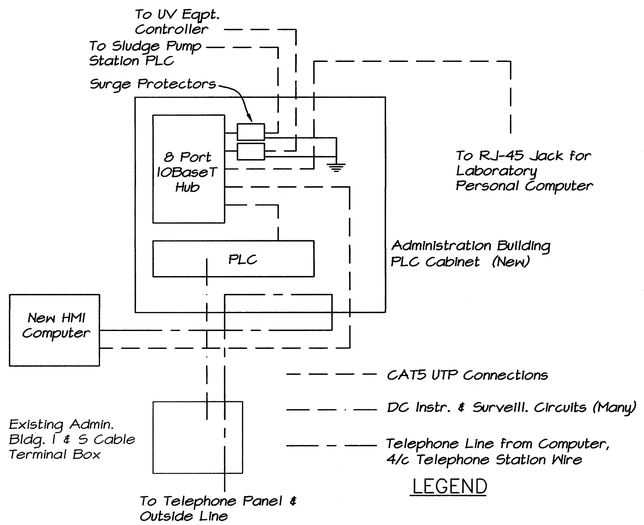
Pair No.	Colors	
1	White	Blue
2	White	Orange
3	White	Green
4	White	Brown
5	White	Slate
6	Red	Blue
7	Red	Orange
8	Red	Green
9	Red	Brown
10	Red	Slate
11	Black	Blue
12	Black	Orange
13	Black	Green
14	Black	Brown
15	Black	Slate
16	Yellow	Blue
17	Yellow	Orange
18	Yellow	Green
19	Yellow	Brown
20	Yellow	Slate
21	Violet	Blue
22	Violet	Orange
23	Violet	Green
24	Violet	Brown
25	Violet	Slate

TELEPHONE CABLE COLOR CODE

This Color Code shall be used for identifying and splicing all Tel. Cable Conductors



CONTROL CABLE SCHEMATIC



PLC NETWORK BLOCK DIAGRAM

REVISED AS CONSTRUCTED, DECEMBER 2002

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS
WASTEWATER TREATMENT PLANT
EXPANSION AND REHABILITATION
ELECTRICAL DETAILS
CONTROLS

DESIGNED: RWZ	JOB NO: 9924	DATE: JAN. 2001	72
DRAFTED: RWZ		SCALE: NO SCALE	72
CHECKED: LDG			

9924-72.dwg

SEWERAGE IMPROVEMENTS

WYNNE , ARKANSAS

SCHEDULE 3 – SEWAGE TREATMENT PLANT

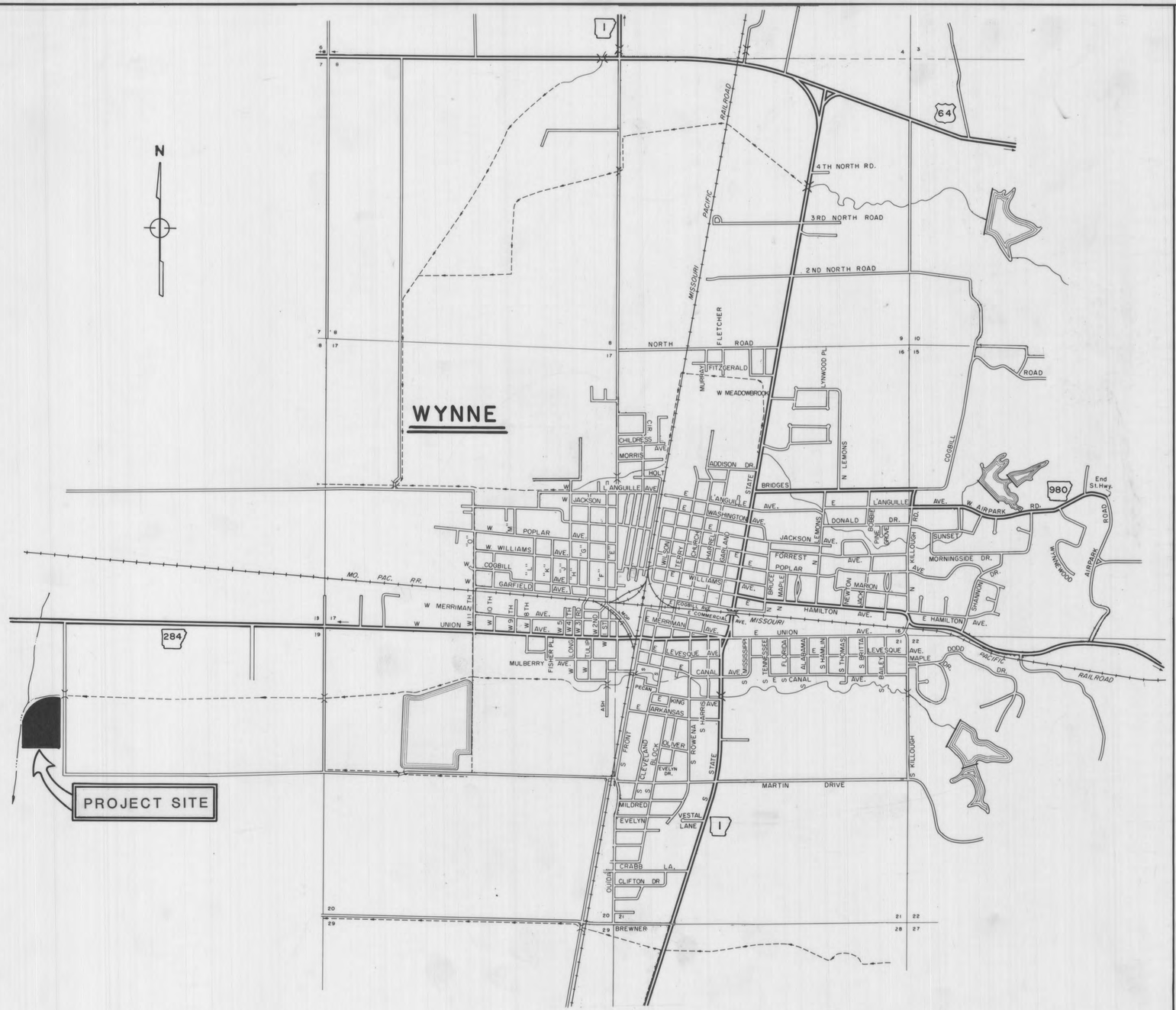
EPA PROJ. NO. C-050384-02-0

JULY , 1979

CRIST ENGINEERS , INC.
CONSULTING ENGINEERS
LITTLE ROCK , ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 1776
ROBERT L. YEATMAN

Revised As Constructed, January '84



VICINITY MAP

1" = 1000'

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Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

VICINITY MAP & INDEX

DRAWN: ——	JOB NO. C-76-15	DATE: July '79	1 / 62
TRACED: ——	SCALE: 1" = 1000'		
CHECKED: RLY			

Caney Creek Lateral No. 5

N

9+00W
8+00W
7+00W
6+00W
5+00W
4+00W
3+00W
2+00W
1+00W
0+00W

0+20N
6+70W

0+20S
7+60W

0+20S
2+20W

0+00S
0+20W

0+00S

Sch. 2

Sch. 3

27" Outfall Sewer (Sch. 2)

TBM, Spike in Tree El. 233.14

Soil Borings (See Logs) #1

STORAGE BASIN

AERATION BASINS

1+00S

2+00S

1+80S
8+50W

2+05S

2+14S
0+97W

Gravel

12'

HEADWORKS

2+80S
5+40W

2+55S

20'

35'

Gravel

2+70S
Asphalt

20'

RETURN SLUDGE PUMPS

3+10S
5+00W

SERVICE PUMP STA.

24' Gate

45°

3+00S

15'

SLUDGE DRYING BEDS

#5

3+20S
3+10W

3+42S
2+74W

3+52S
2+05W

FINAL SETTLING BASIN

1+40W

0+05E

Existing Gravel Rd.

8+25W
Gravel

8+50W

4+70W

ADMINISTRATION BLDG.

#3

#2

232

4+00S

4+27.5S
5+00W

4+45S
4+29W

FINAL FLUME

4+66.67S
3+66W

CHLORINE BLDG.

CONTACT BASIN

#4

Fence Corner at 5+50S

10' Gate

15'

30'

5+35S

30'

20'

20' Gate

15'

Chain Link Fence
(See Spec's.)

5+50S

5+00S

Fence Corner at 0+05E

Revised As Constructed, January '84

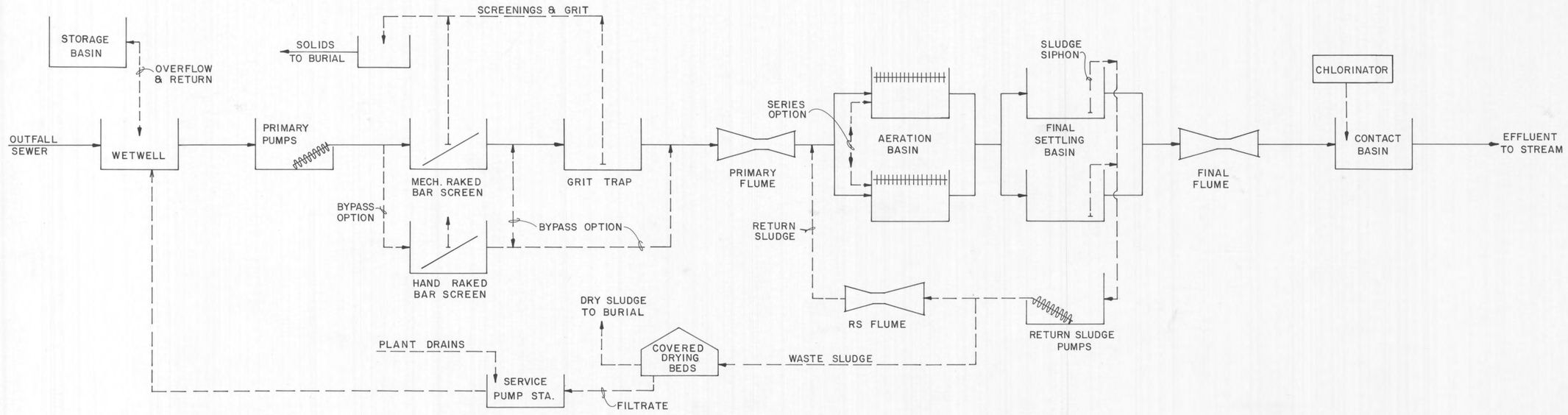
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

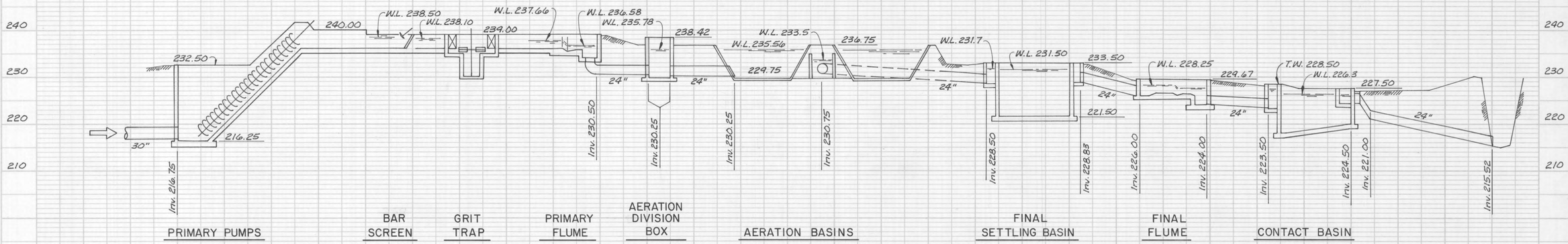
SEWAGE TREATMENT PLANT

SITE PLAN

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	2 / 62
TRACED: PEO	SCALE: 1" = 30'		
CHECKED: RLY			



PROCESS SCHEMATIC



HYDRAULIC PROFILE

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

PROCESS SCHEMATIC & HYDRAULIC PROFILE

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	3/62
TRACED: MT	SCALE: No Scale		
CHECKED: RLY			

PLAN SURVEYED BY DATE
RIGHT-OF-WAY CHECKED
NO.
PROFILE SURVEYED
BENCH MARK NOTED
IN NO'S NOTED
STRUCTURE NOTATIONS CHECKED
NO.
PLATE 1 - PLAN - PROFILE - F.A.S.
CLEARPRINT PAPER CO., S.F., CAL.
NO. 1000H-1

LOG OF BORING NO. 1

PROPOSED SEWAGE TREATMENT PLANT
WYNNE, ARKANSAS

TYPE: Auger to 23 ft - Wash LOCATION: See Plate 1

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT (0.2 0.4 0.6 0.8 1.0 1.2 1.4)	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT (10 20 30 40 50 60 70)	% RECOVERY
	SURF. EL: 233.5 ±					
	Stiff to very stiff tan and gray very silty clay with ferrous nodules		94			
5	-some organic matter near the surface					
10			103			
15			97			
20						
25	Medium dense to dense tan fine to medium sand with occasional gray clay pockets	13				
30	-99% PASSING NO. 40 SIEVE - 5% PASSING NO. 200 SIEVE AT 25 FT	38				
35		50 - 8 in.				
40		50 - 9 in.				
45		31				
50		33				

COMPLETION DEPTH: 50 ft DEPTH TO WATER IN BORING: 34 ft was dry Caved at 23 ft- Sample at
DATE: 2/3/78 DATE: 2/3/78

LOG OF BORING NO. 2

PROPOSED SEWAGE TREATMENT PLANT
WYNNE, ARKANSAS

TYPE: Auger LOCATION: See Plate 1

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT (0.2 0.4 0.6 0.8 1.0 1.2 1.4)	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT (10 20 30 40 50 60 70)	% RECOVERY
	SURF. EL: 234 ±					
	Stiff to very stiff tan and gray very silty clay with ferrous nodules					
5	-some organic matter near the surface		95			
10	-brown above 2 ft		95			
15	-some brown and gray clay pockets below 10 ft					
20						
25	Dense tan fine to medium sand	32				

COMPLETION DEPTH: 26.5 ft DEPTH TO WATER IN BORING: Dry DATE: 2/4/78
DATE: 2/4/78

LOG OF BORING NO. 3

PROPOSED SEWAGE TREATMENT PLANT
WYNNE, ARKANSAS

TYPE: Auger LOCATION: See Plate 1

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT (0.2 0.4 0.6 0.8 1.0 1.2 1.4)	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT (10 20 30 40 50 60 70)	% RECOVERY
	SURF. EL: 234 ±					
	Stiff to very stiff tan and gray very silty clay with ferrous nodules		93			
5	-brown to 2 ft		97			
10	-more clay below 6 ft					
15	-some brown clay pockets below 10 ft					
20						
25	Medium dense tan fine to medium sand	25				
30						

COMPLETION DEPTH: 26.5 ft DEPTH TO WATER IN BORING: Dry
DATE: 2/4/78 DATE: 2/4/78

LOG OF BORING NO. 4

PROPOSED SEWAGE TREATMENT PLANT
WYNNE, ARKANSAS

TYPE: Auger LOCATION: See Plate 1

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT (0.2 0.4 0.6 0.8 1.0 1.2 1.4)	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT (10 20 30 40 50 60 70)	% RECOVERY
	SURF. EL: 228.5 ±					
	Stiff to very stiff tan and gray very silty clay with ferrous nodules		96			
5	-brown to 3.5 ft		95			
10	-some brown and clay pockets below 6 ft		104			
15						
20						
25						

COMPLETION DEPTH: 25 ft DEPTH TO WATER IN BORING: Dry
DATE: 2/4/78 DATE: 2/4/78

LOG OF BORING NO. 5

PROPOSED SEWAGE TREATMENT PLANT
WYNNE, ARKANSAS

TYPE: Auger LOCATION: See Plate 1

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	COHESION, TON/SQ FT (0.2 0.4 0.6 0.8 1.0 1.2 1.4)	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT (10 20 30 40 50 60 70)	% RECOVERY
	SURF. EL: 228.5 ±					
	Very stiff gray and tan very silty clay with ferrous nodules					
5	-some brown below 4 ft		97			
10	-some clay pockets below 11 ft					
15						
20						
25	Medium dense tan fine sand with some silty clay pockets					
30						

COMPLETION DEPTH: 26.5 ft DEPTH TO WATER IN BORING: Dry
DATE: 2/4/78 DATE: 2/4/78

NOTE: See Part 9-A of the Specifications Pertinent to Boring Logs.

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

BORING LOGS

DRAWN:	JOB NO. C-76-15	DATE: July '79	4/62
TRACED:			
CHECKED: RLY	SCALE:		

N

AERATION BASINS

STORAGE BASIN

HEADWORKS

SLUDGE DRYING BEDS

SERVICE PUMP STA.

RETURN SLUDGE PUMPS

FINAL SETTLING BASIN

ADMINISTRATION BLDG.

FINAL FLUME

CHLORINE BLDG.

CONTACT BASIN

25'

Existing Contours
Finished Contours

Revised As Constructed, Jan. '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

FINISH GRADING PLAN

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	5	
TRACED: PEO	SCALE: 1" = 30'			62
CHECKED: RLY				

N

AERATION BASIN

STORAGE BASIN

SLUDGE DRYING BEDS

SERVICE PUMP STATION

FINAL SETTLING BASIN

RETURN SLUDGE PUMPS

HEADWORKS

ADMINISTRATION BLDG.

FINAL FLUME

CHLORINE BLDG.

CONTACT BASIN

4"

8" D.I.

24" D.I.

30" D.I. @ 0.07%

30" D.I. Pipe @ 0.07%

Sch. 2

Sch. 3

MH#1

MH#2

MH#3

MH#4

MH#5

MH#6

MH#7

8" @ 0.40%

8" D.I. @ 1.00%

6" D.I. @ 0.50%

6" @ 1.50%

6" D.I.

16" D.I.

24" @ 1.46%

Lay F.M. on Cont. † Slope From P.S. to Headworks

See Detail, Sh. 9

See Detail, Sheet 9

G/L

Note: See Manhole Schedule, Sheet 7.

Process Piping

Drain & Auxiliary Piping

G/L = Glass Lined

Revised As Constructed, January '84

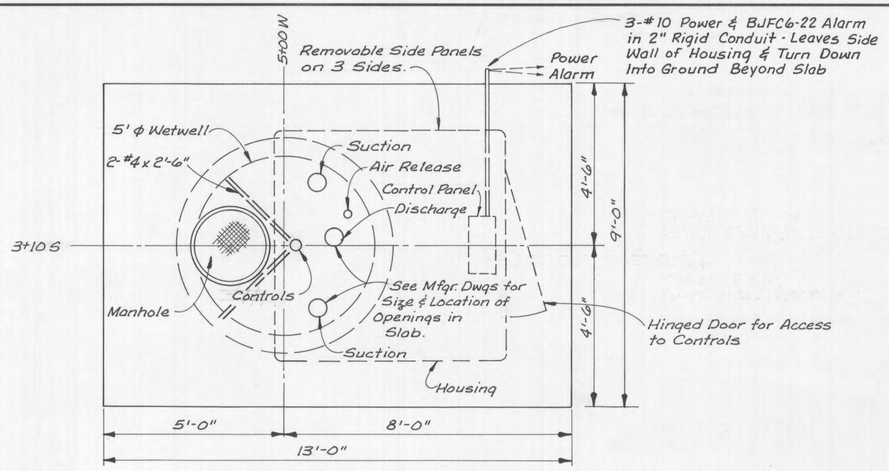
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

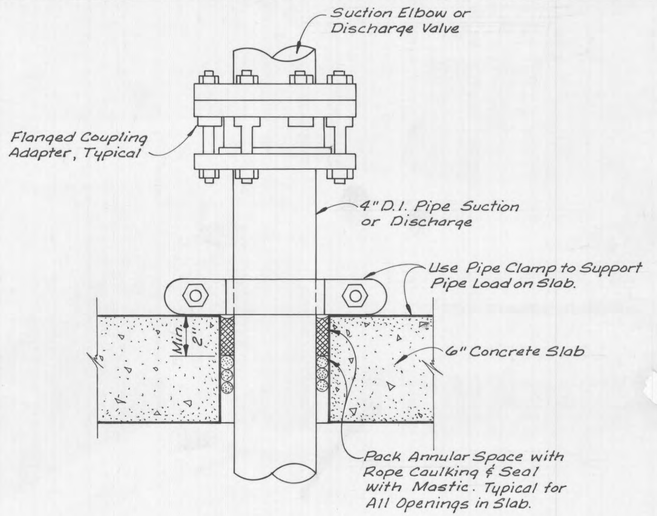
YARD PIPING

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	6 / 62
TRACED: MT	SCALE: 1" = 30'		
CHECKED: RLY			



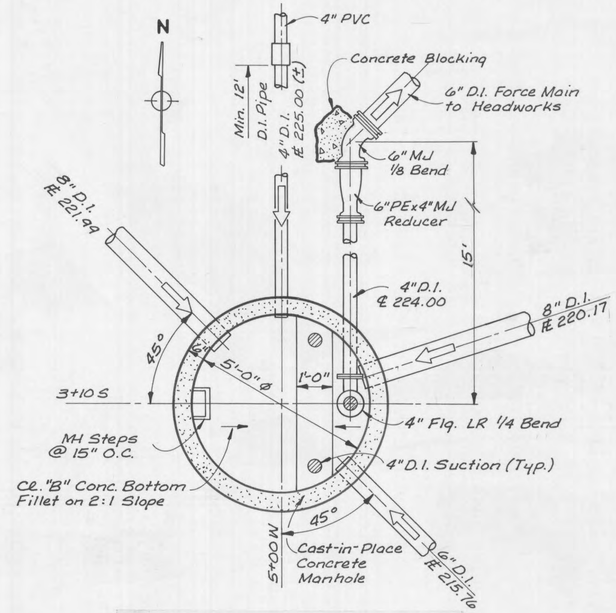
PLAN

Scale: 1/2"=1'-0"



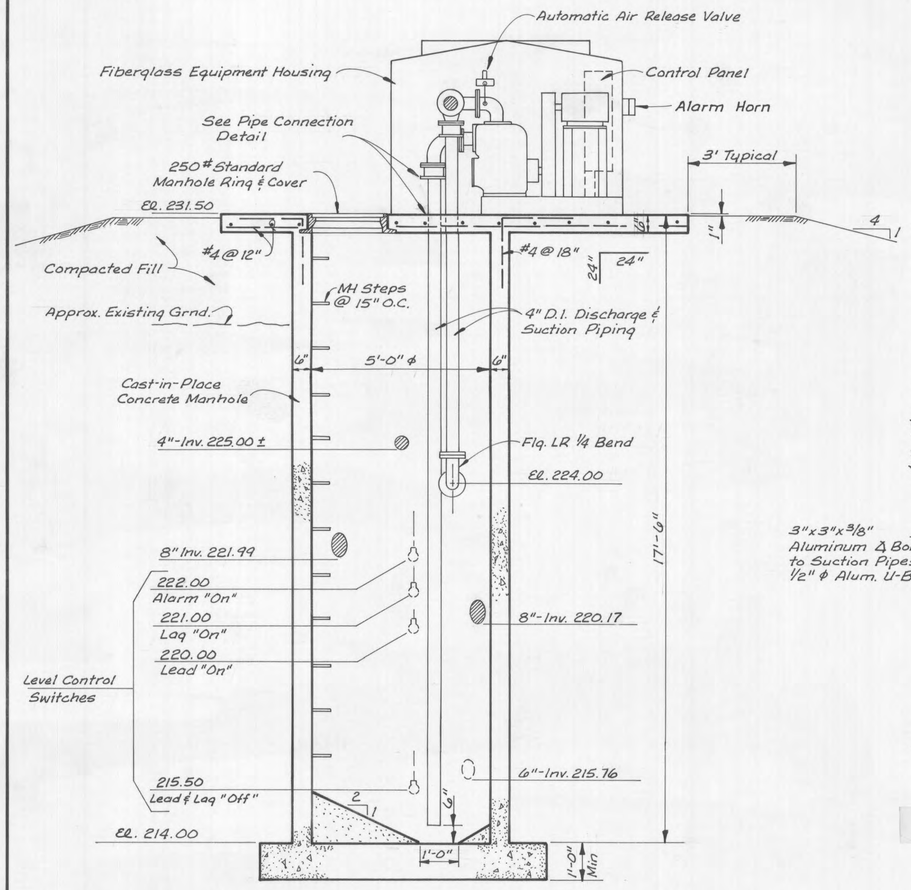
PIPE CONNECTION DETAIL

No Scale



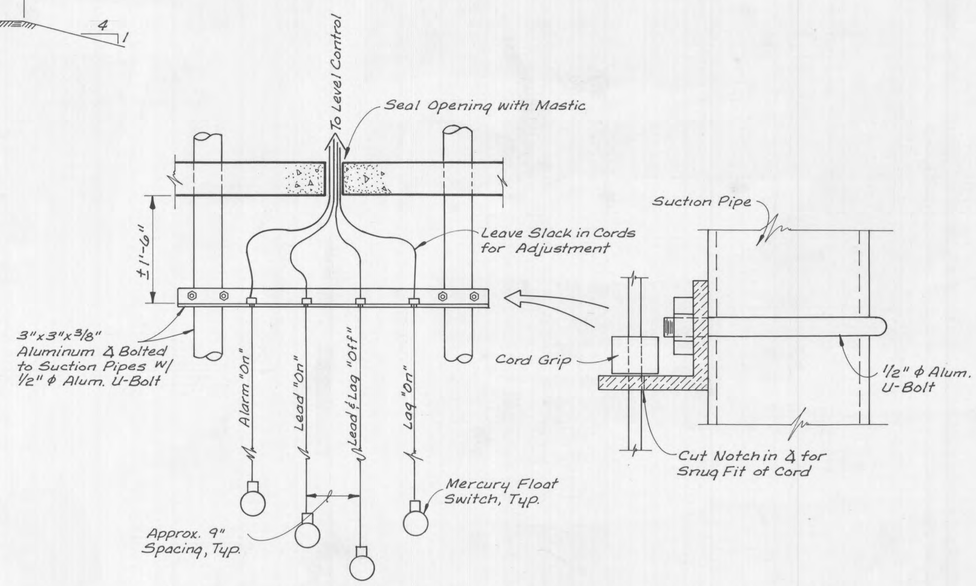
PLAN OF WETWELL

Scale: 1/2"=1'-0"



SECTION

Scale: 1/2"=1'-0"



FLOAT SWITCH MOUNTING

No Scale

MANHOLE SCHEDULE

MH NO.	MH DIA.	PIPE &	INVERT EL.	TOP EL.	REMARKS
Wetwell	5'	Bottom	214.00	231.50	
		6" In	215.76		D.I. Pipe
		8" In	220.17		D.I. Pipe
		8" In	221.99		D.I. Pipe
		4" In	225.00 (±)		D.I. Pipe
1	4'	8" Out	222.21	227.86	D.I. Pipe
		8" In	222.31		
2	4'	8" Out	223.00	227.86	
		6" In	223.50 (±)		Drain from Drying Bed
3	4'	6" Out	216.55	228.70	D.I. Pipe
		6" In	216.65		D.I. Pipe
		4" In	222.50 (±)		Bldg. Drain
4	4'	8" Out	221.00	230.50	D.I. Pipe
		6" In	224.14		
		6" In	221.11		D.I. Pipe
5	4'	6" Out	226.60	231.70	
		6" In	226.82		
		4" In	226.80 (±)		
6	4'	6" Out	228.00	232.90	
		4" In	229.00 (±)		Bldg. Drain
7	5'	30" Out	216.82	232.50	D.I. Pipe
		30" In	216.97		D.I. Pipe
1(Sch.2)	5'	30" Out	217.12	232.50	D.I. Pipe (Sch.3)
		27" In	217.22		Sewer Pipe & MH (Sch.2)

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WYNNE, ARKANSAS

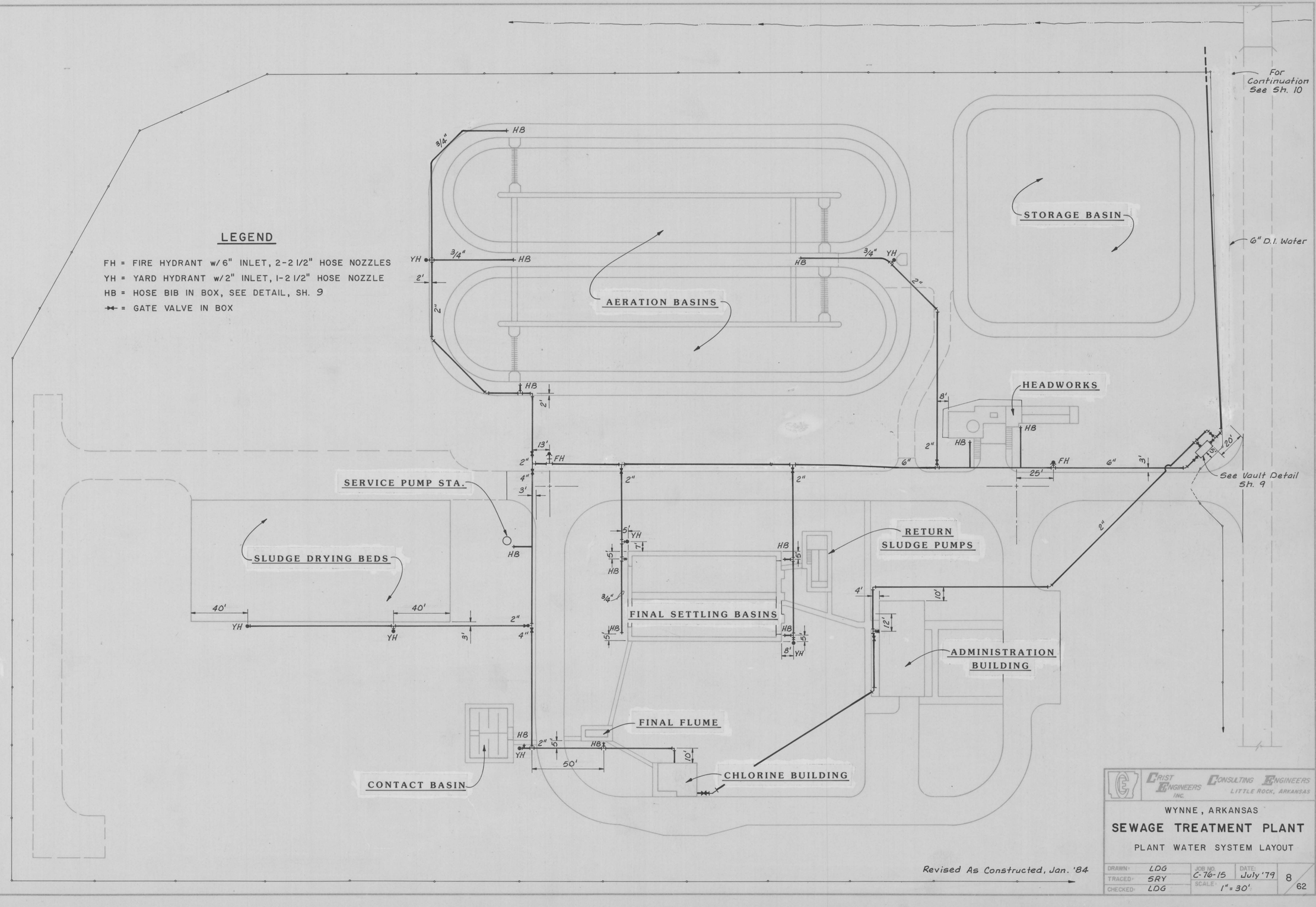
SEWAGE TREATMENT PLANT

SERVICE PUMP STATION

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	7
TRACED: MT	SCALE: As Shown		62
CHECKED: RLY			

LEGEND

FH = FIRE HYDRANT w/ 6" INLET, 2-2 1/2" HOSE NOZZLES
YH = YARD HYDRANT w/ 2" INLET, 1-2 1/2" HOSE NOZZLE
HB = HOSE BIB IN BOX, SEE DETAIL, SH. 9
⋈ = GATE VALVE IN BOX



Revised As Constructed, Jan. '84

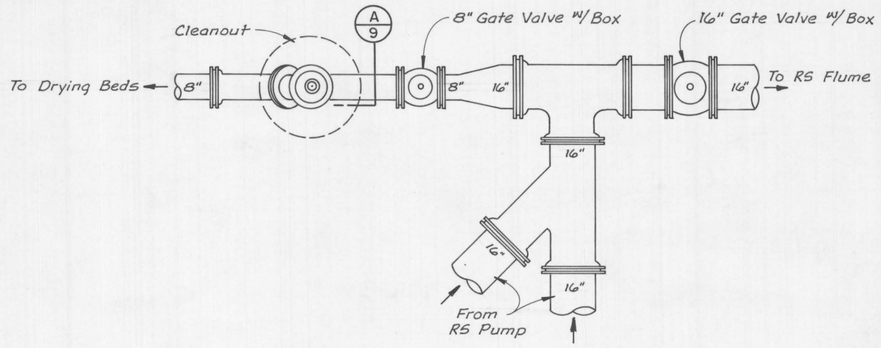
Crist Engineers Inc. — Consulting Engineers — Little Rock, Arkansas

WYNNE, ARKANSAS

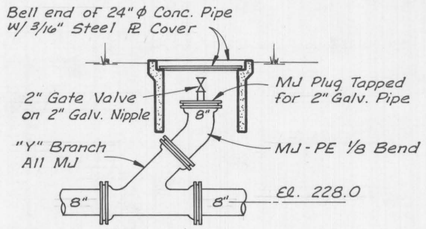
SEWAGE TREATMENT PLANT

PLANT WATER SYSTEM LAYOUT

DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	8	62
TRACED: SRY	SCALE: 1" = 30'			
CHECKED: LDG				



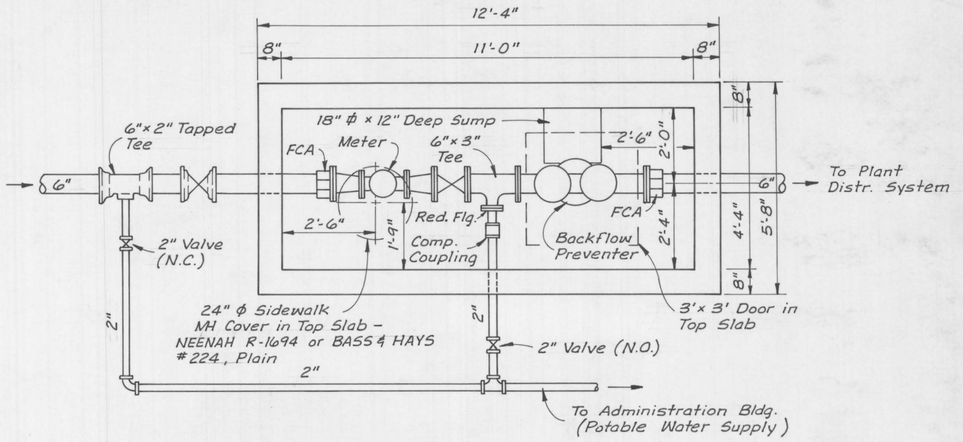
PLAN



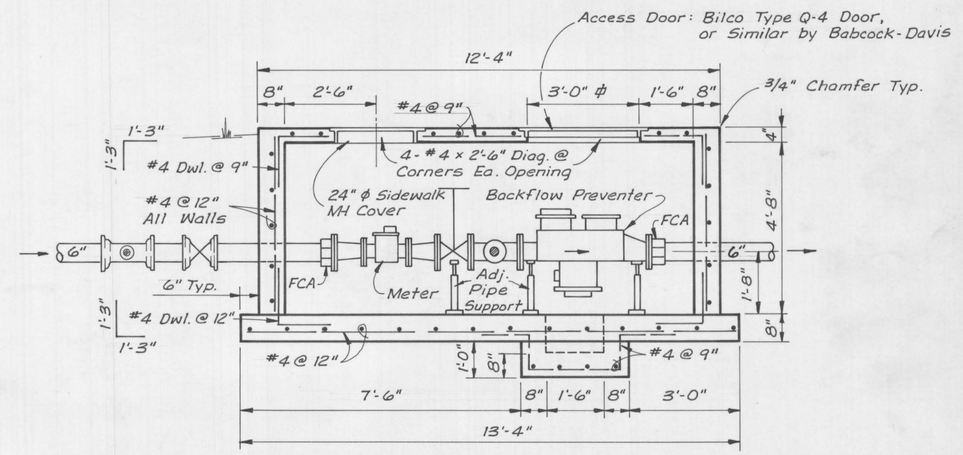
SECTION A

SLUDGE PIPING DETAILS

Scale: 1/2" = 1'-0"



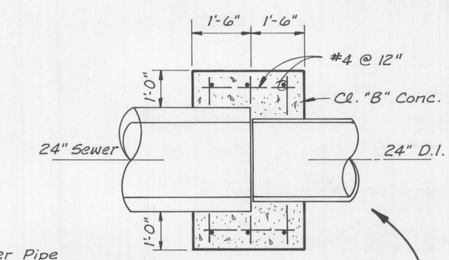
PLAN

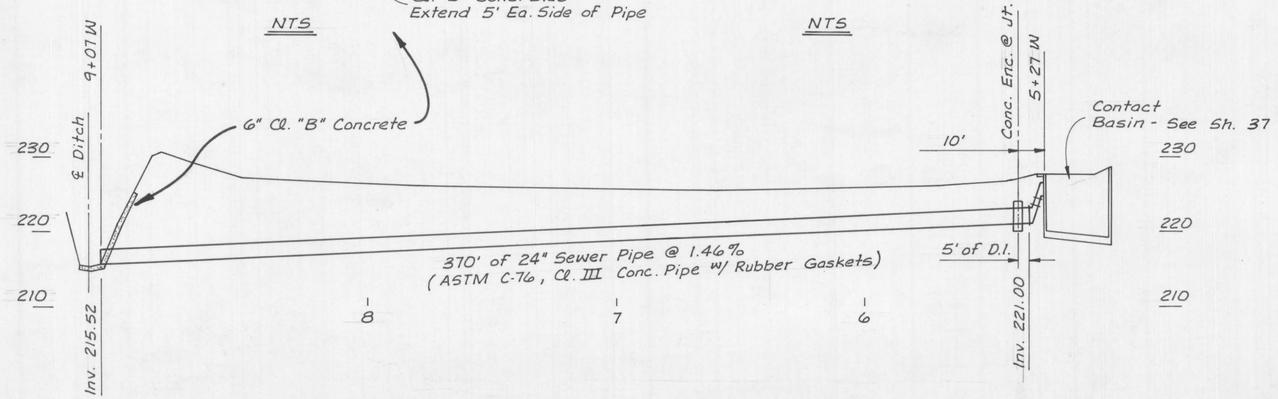


SECTION

VAULT DETAILS

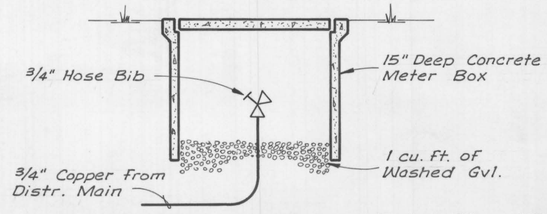
Scale: 1/2" = 1'-0"





PLANT EFFLUENT LINE

1" = 30' Hor. - 1" = 10' Vert.



Typical Where "HB" Shown on Sh. 8

HOSE BIB INSTALLATION

No Scale

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

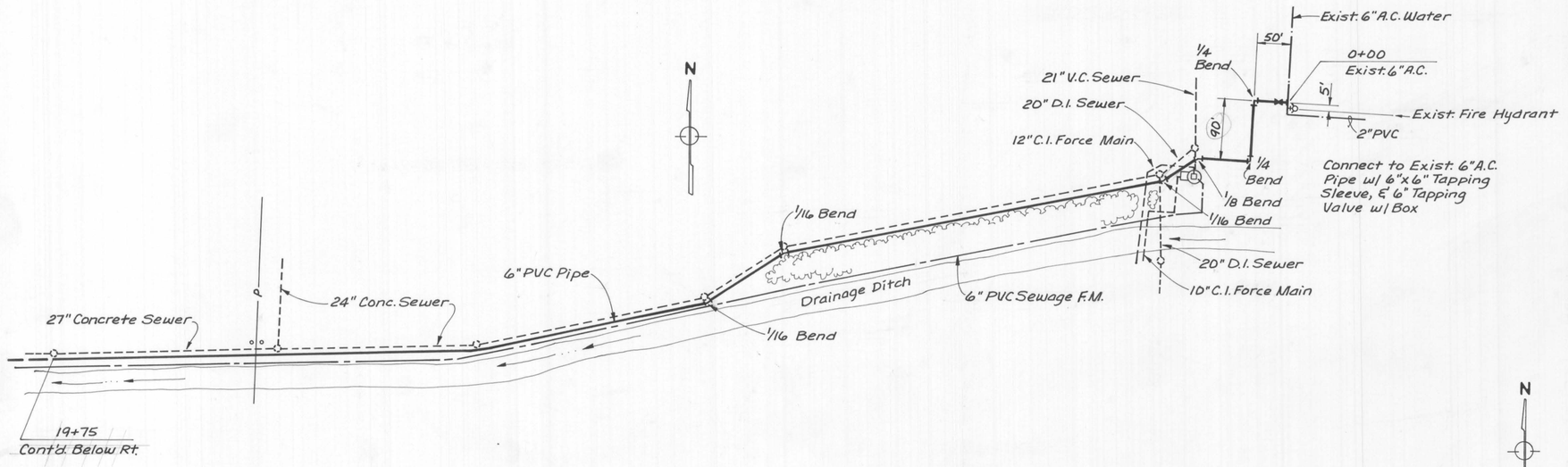
WYNNE, ARKANSAS

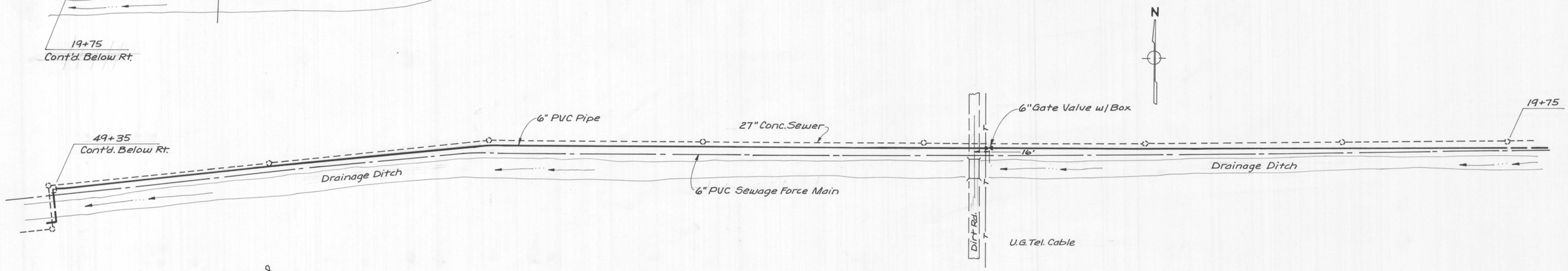
SEWAGE TREATMENT PLANT

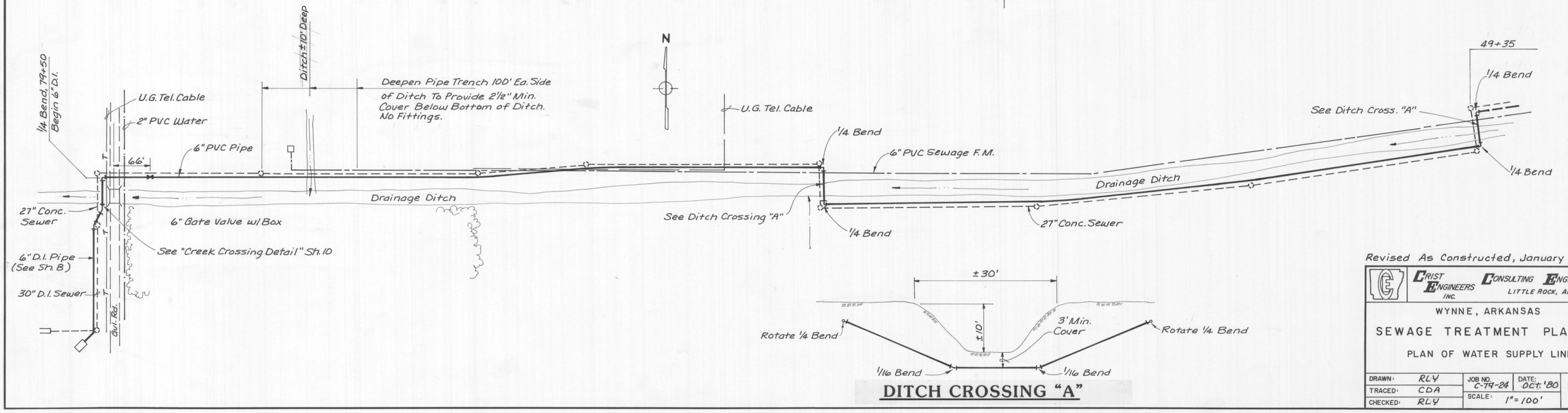
PIPING DETAILS

DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	9
TRACED: PEO	SCALE: As Shown		62
CHECKED: LDG			

AF 9675







DITCH CROSSING "A"

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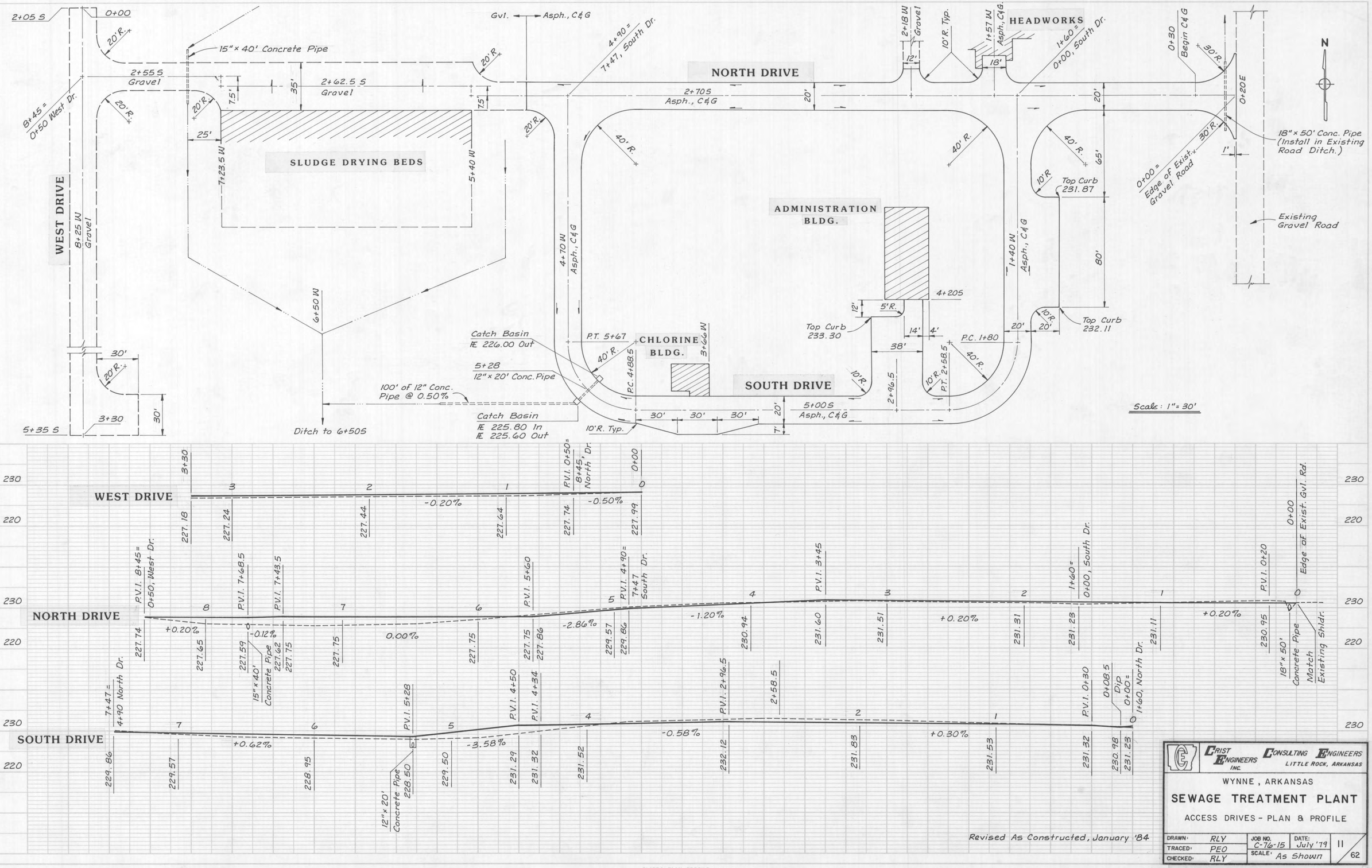
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

PLAN OF WATER SUPPLY LINE

DRAWN: RLY	JOB NO. C-79-24	DATE: OCT. '80	10	
TRACED: CDA				
CHECKED: RLY	SCALE: 1" = 100'			62



PLAN — SURVEYED: PLOTTED: SHEET BOOK: ALIGNMENT CHECKED: NO.: BY: RWY CHECKED: DATE: BY:

PROFILE — SURVEYED: PLOTTED: SHEET BOOK: GRADES CHECKED: NO.: BY: RWY CHECKED: DATE: BY:

Revised As Constructed, January '84

PLATE 1 - PLAN - PROFILE - F.A.S. CLEARPRINT PAPER CO., S. F. CAL. NO. 1000H-I

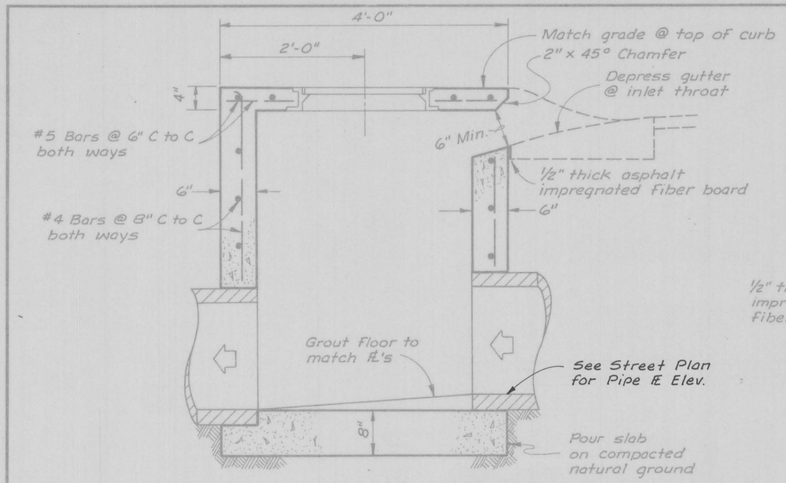
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

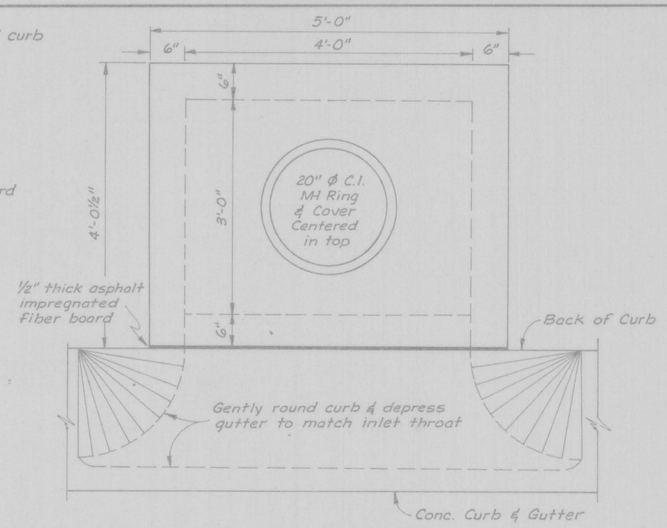
SEWAGE TREATMENT PLANT

ACCESS DRIVES - PLAN & PROFILE

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	11	
TRACED: PEO	SCALE: As Shown		62	
CHECKED: RLY				



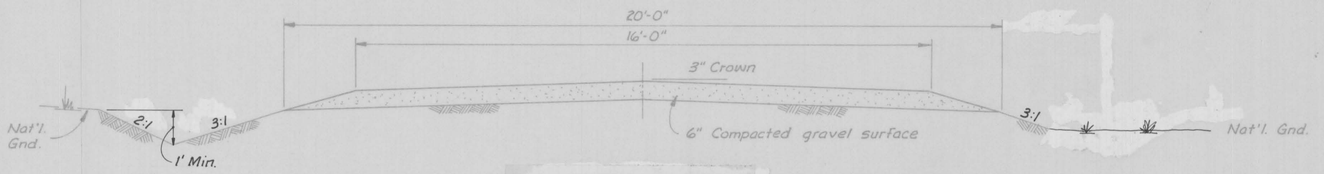
SECTION



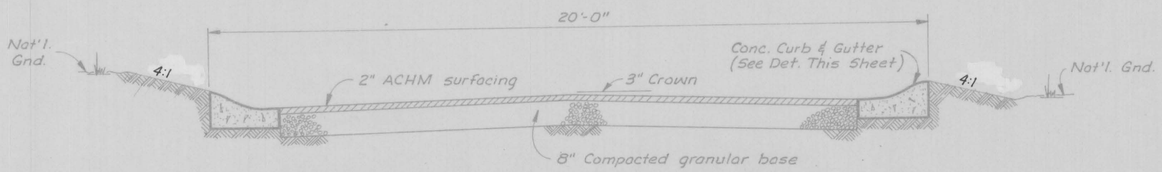
PLAN

CATCH BASIN DETAILS

Scale: 1"=1'-0"



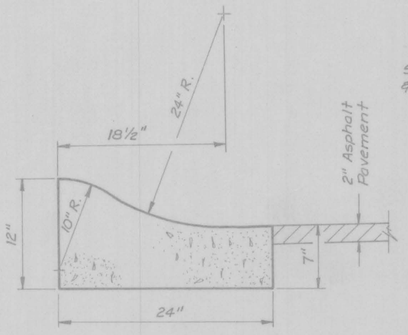
GRAVEL DRIVEWAY



ASPHALT SURFACE w/ CURB & GUTTER

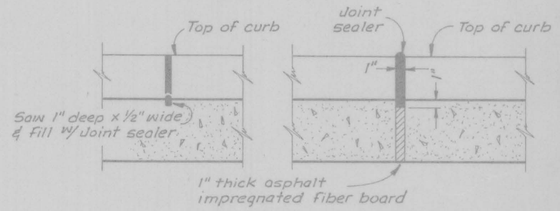
TYPICAL ROAD SECTIONS

Scale: ½"=1'-0"



CURB DETAILS

Scale: 1½"=1'-0"



DUMMY JOINT (Max. 15' Spcg.)

EXPANSION JOINT (Max. 60' Spcg.)

CURB JOINT DETAILS

Scale: 1½"=1'-0"

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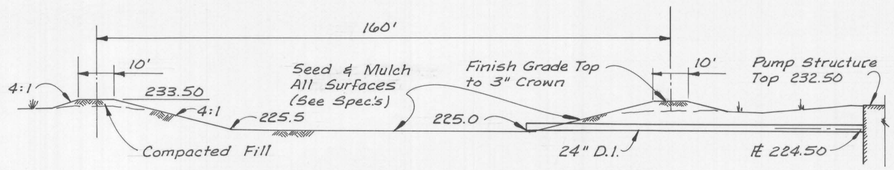
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

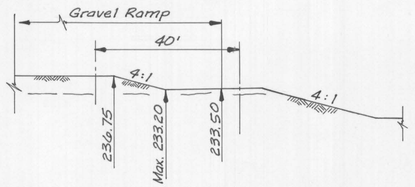
ROADWAY DETAILS

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	12
TRACED: PEO/SRY	SCALE: As Shown		62
CHECKED: RLY			



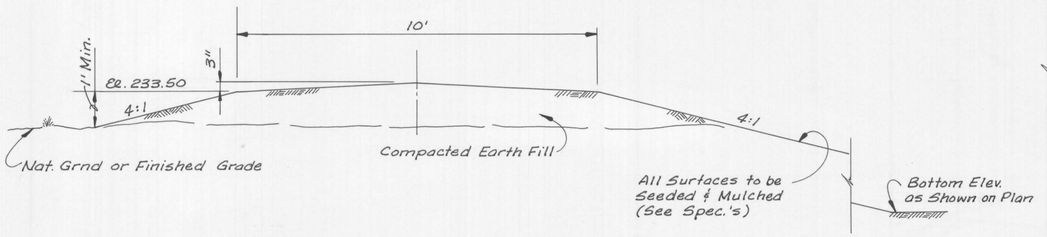
SECTION A

Scale: 1"=20'



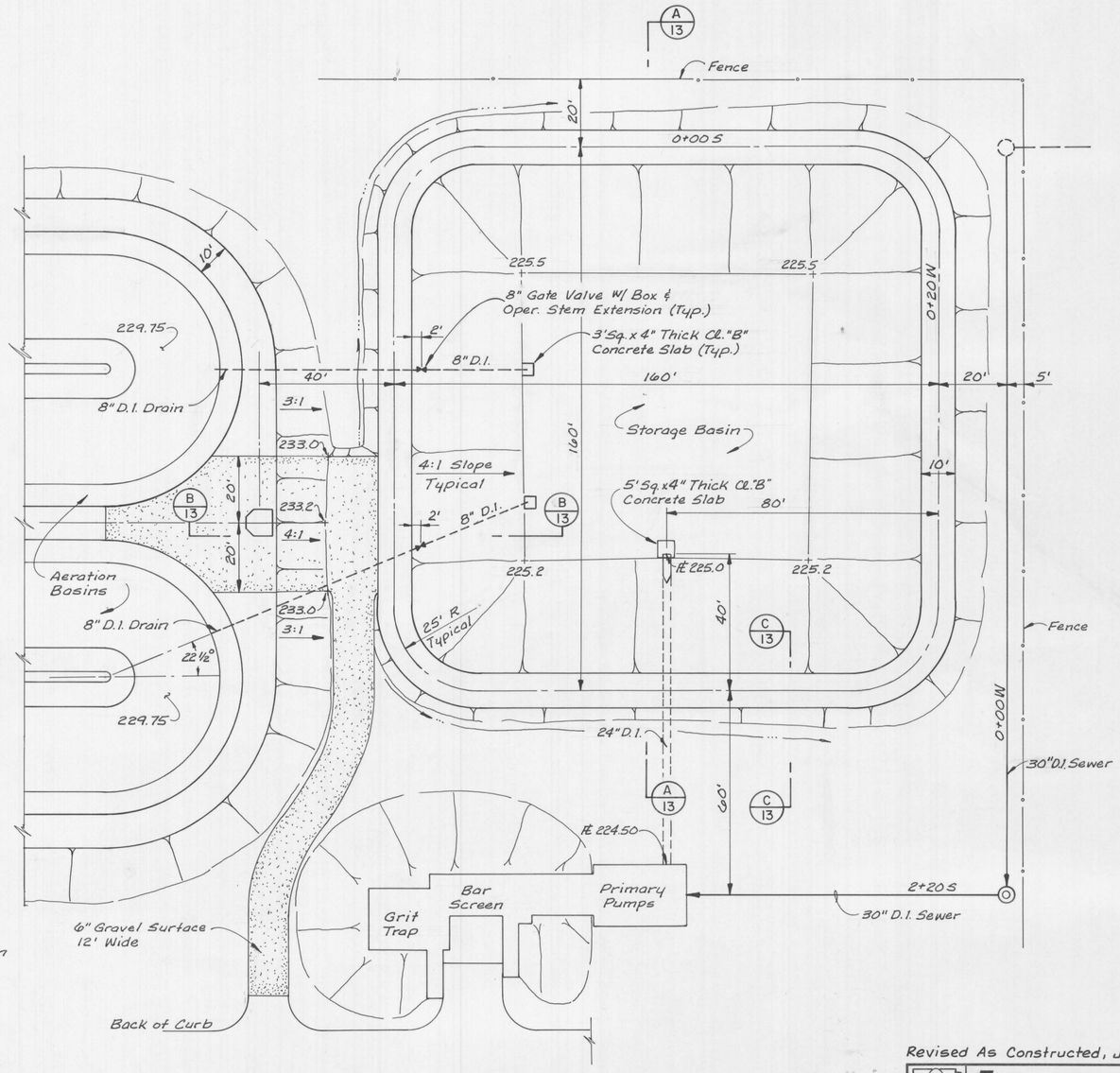
SECTION B

Scale: 1"=20'



SECTION C

Scale: ½"=1'-0"



PLAN

Scale: 1"=20'

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

STORAGE BASIN

PLAN & SECTIONS

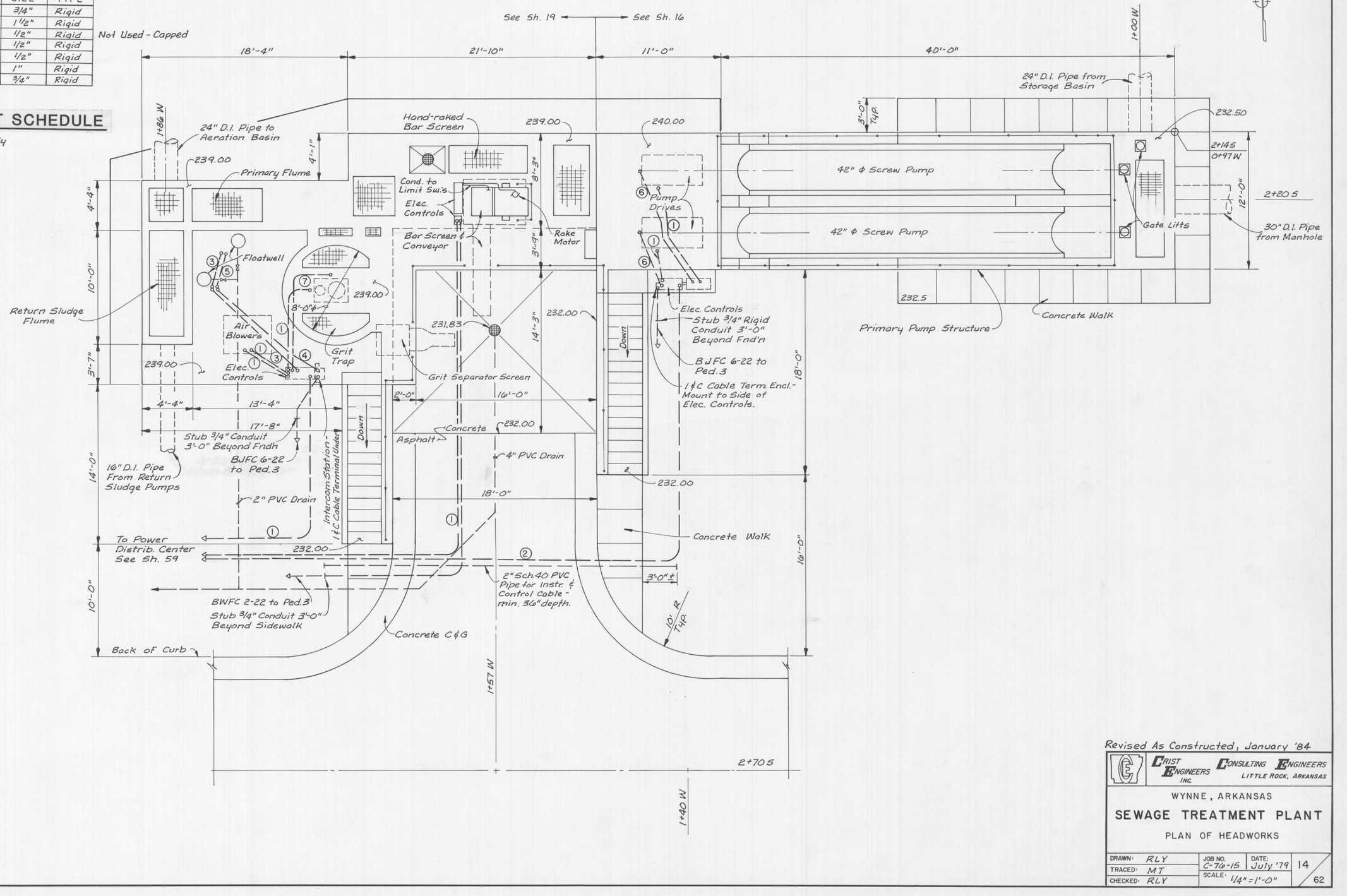
DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	13
TRACED: MT	SCALE: As Shown		62
CHECKED: RLY			

SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
1	3	12	3/4"	Rigid
2	3	2	1 1/2"	Rigid
3			1/2"	Rigid
4	4	18	1/2"	Rigid
5	2	18	1/2"	Rigid
6	3	6	1"	Rigid
7	4	12	3/4"	Rigid

Not Used - Capped

WIRE & CONDUIT SCHEDULE

This Sheet Only



Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

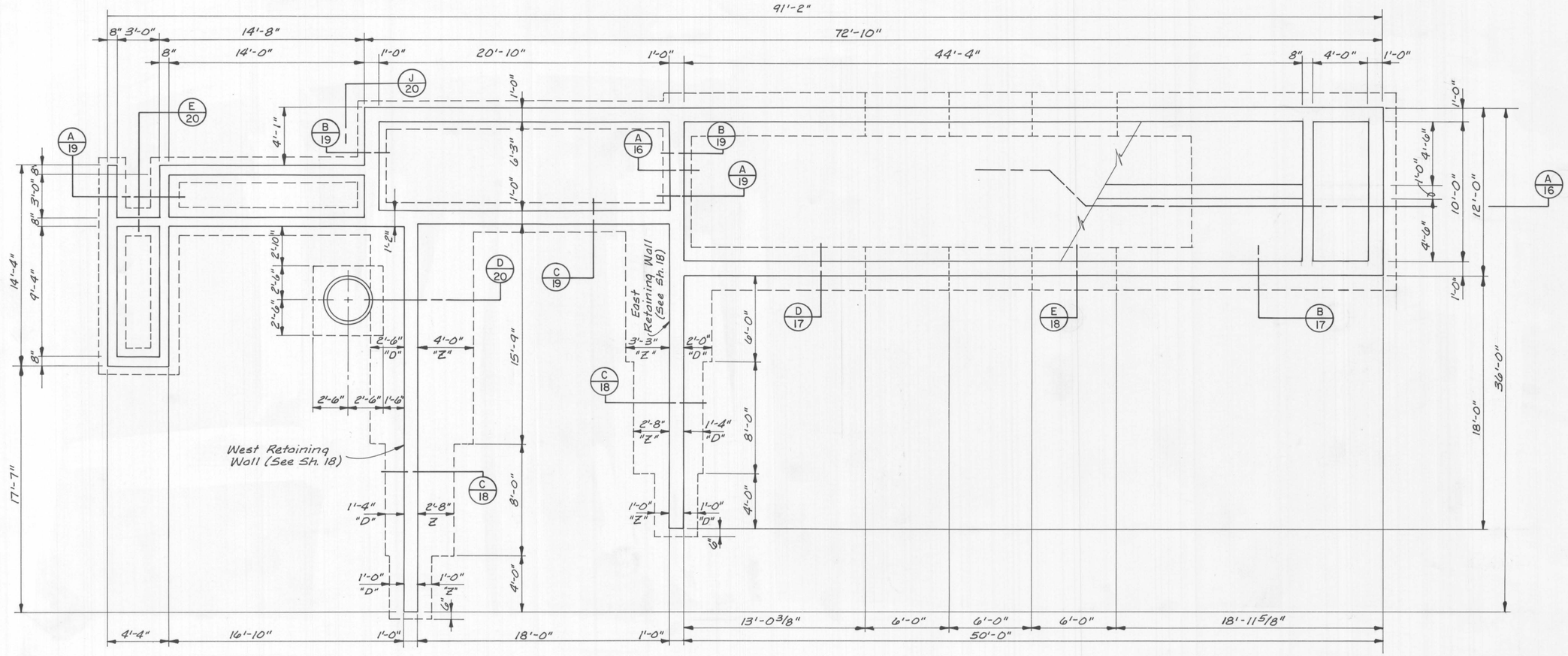
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

PLAN OF HEADWORKS

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	14
TRACED: MT	SCALE: 1/4" = 1'-0"		62
CHECKED: RLY			

AF 9675



FOUNDATION PLAN - HEADWORKS

Revised As Constructed, January '84

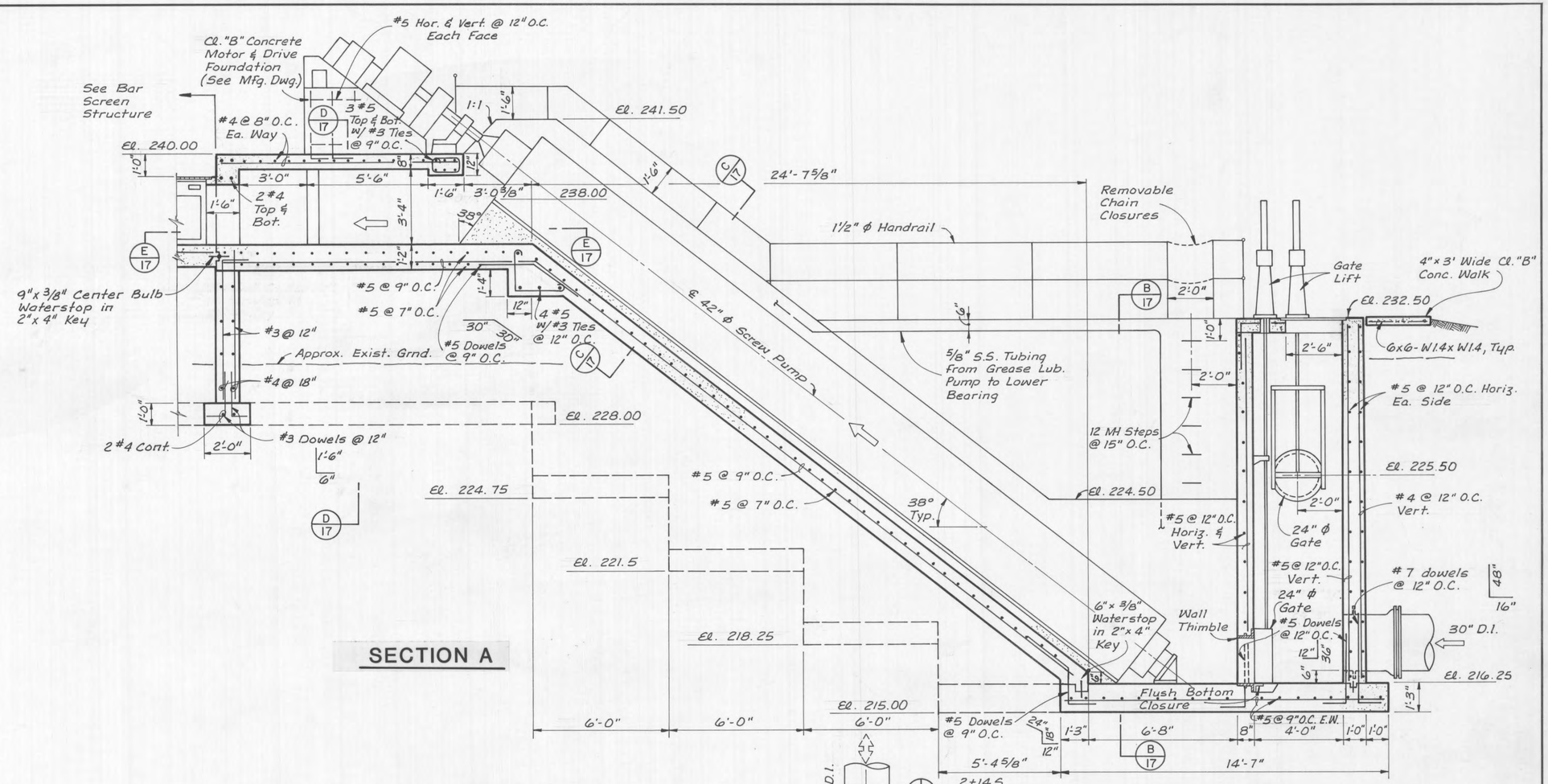
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

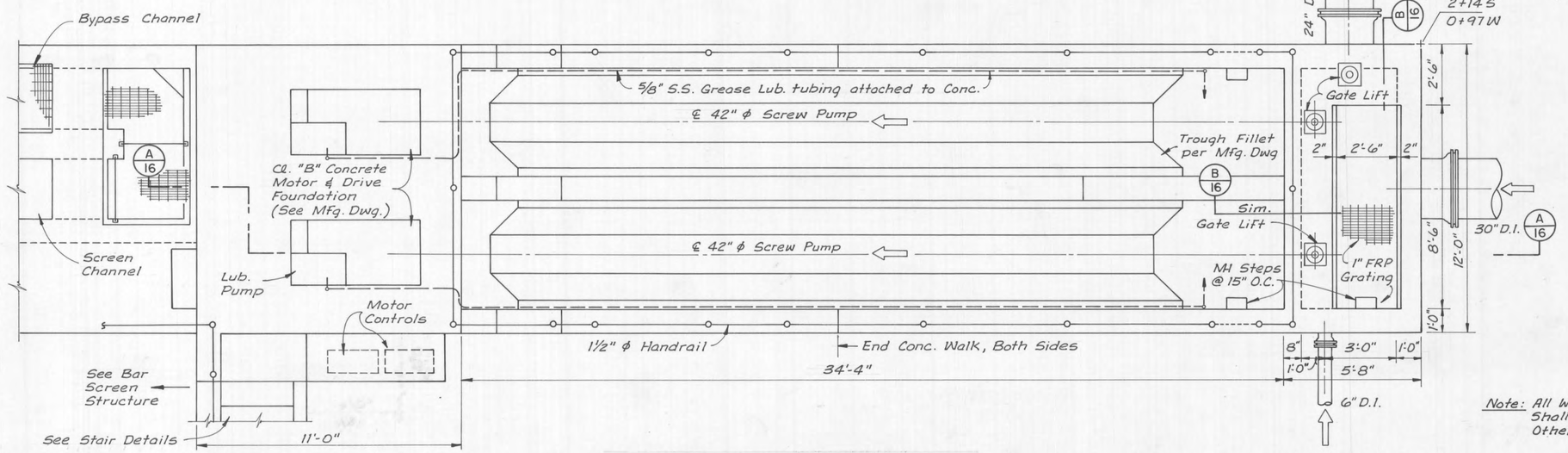
WYNNE, ARKANSAS

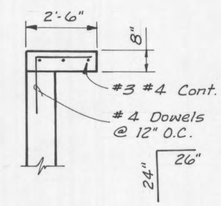
SEWAGE TREATMENT PLANT

FOUNDATION PLAN - HEADWORKS

DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	15 / 62
TRACED: MT	SCALE: 1/4"=1'-0"		
CHECKED: RLY			







Note: All Waterstops Shown Shall be 6"x 3/8" Unless Otherwise Noted.

Revised As Constructed, January '84

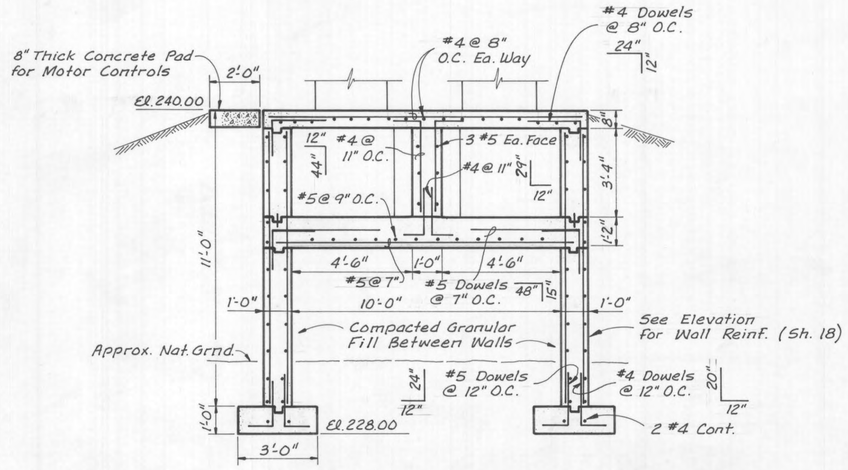
CRIST ENGINEERS INC. — CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

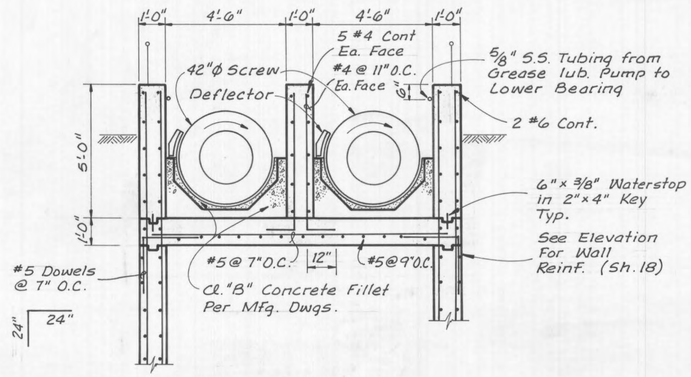
PRIMARY PUMP STRUCTURE

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	16	62
TRACED: PEO	SCALE: 3/8" = 1'-0"			
CHECKED: RLY				



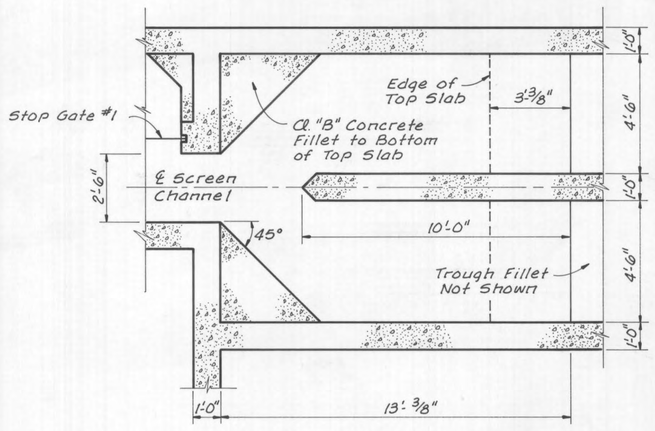
SECTION D

Scale: 3/8" = 1'-0"



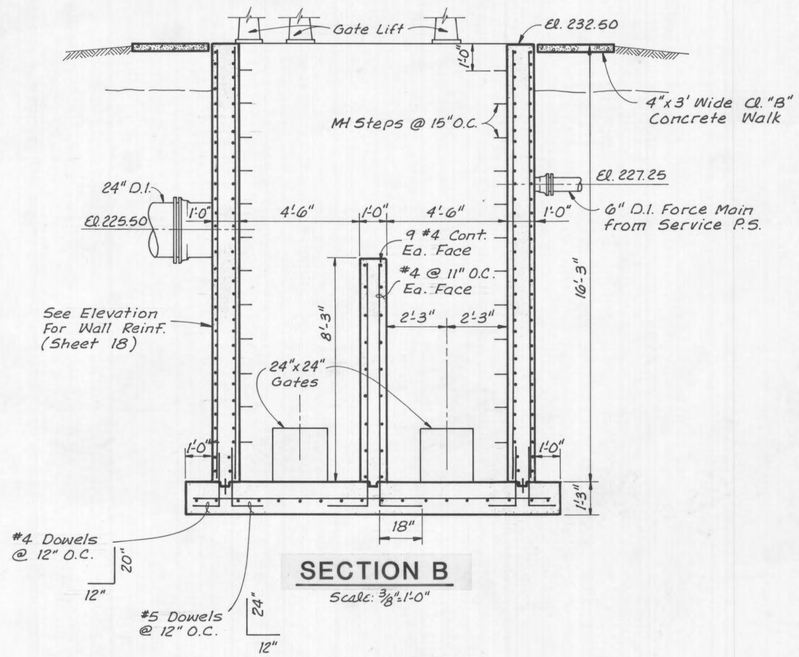
SECTION C

Scale: 3/8" = 1'-0"



SECTION E

Scale: 3/8" = 1'-0"



SECTION B

Scale: 3/8" = 1'-0"

Note: All Waterstops Shown Shall be 6" x 3/8" Unless Otherwise Noted.

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

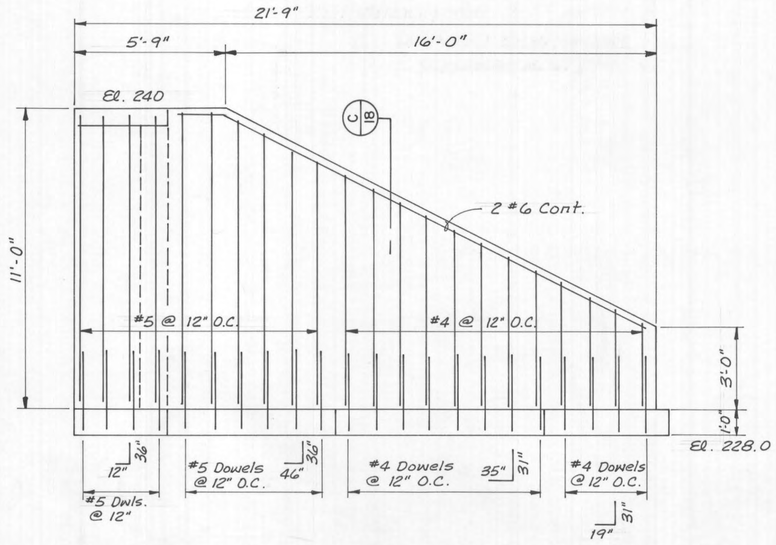
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

PRIMARY PUMP STRUCTURE

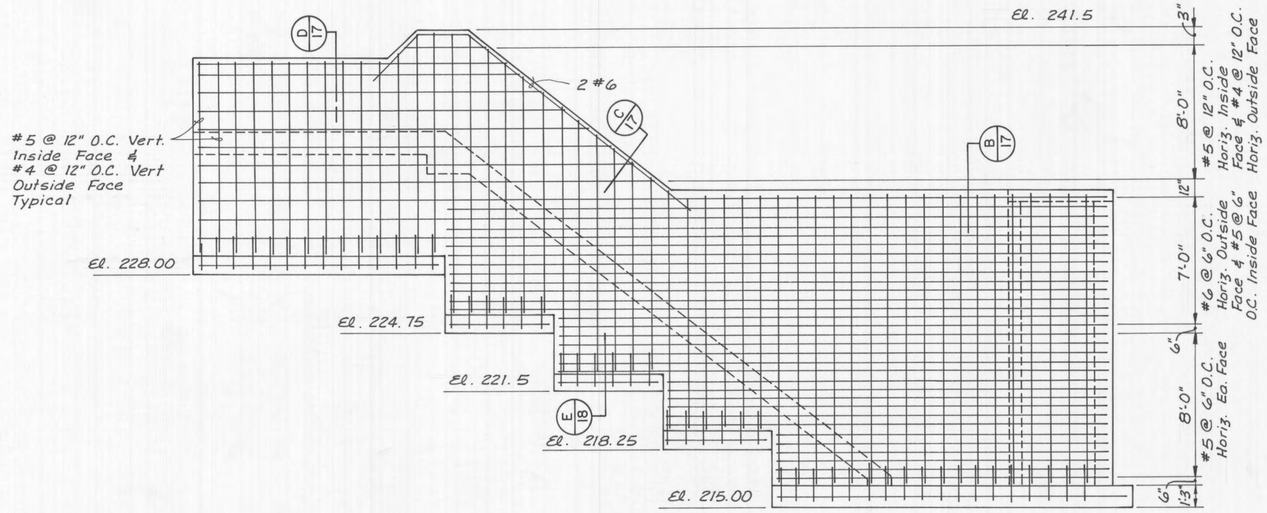
DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	17	
TRACED: SRY	SCALE: As Shown			62
CHECKED: RLY				

AF 9675



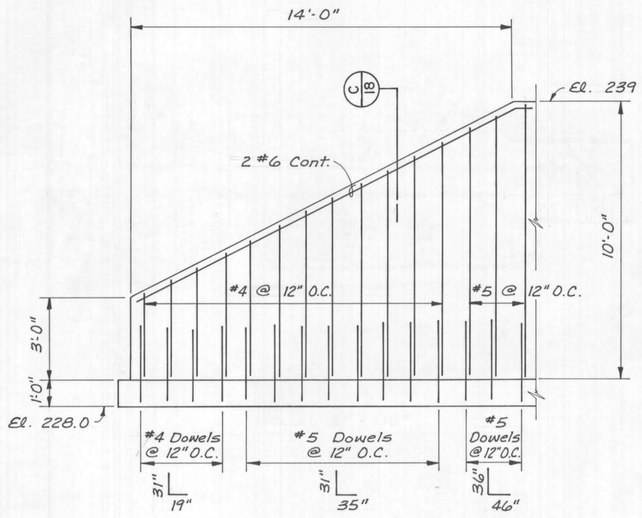
ELEVATION - EAST RETAINING WALL

Scale: 3/8" = 1'-0"



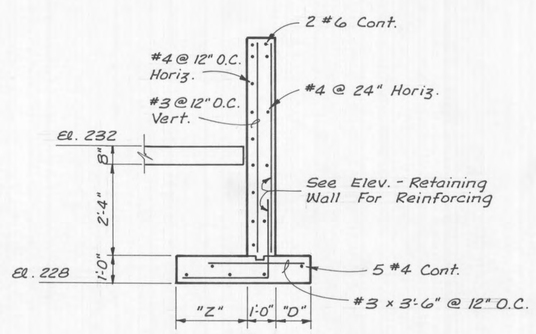
ELEVATION - PUMP STRUCTURE WALLS

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



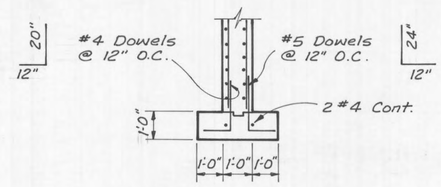
ELEVATION - WEST RETAINING WALL

Scale: 3/8" = 1'-0"



SECTION C

Scale: 3/8" = 1'-0"



SECTION E

Scale: 3/8" = 1'-0"

Revised As Constructed, January '84

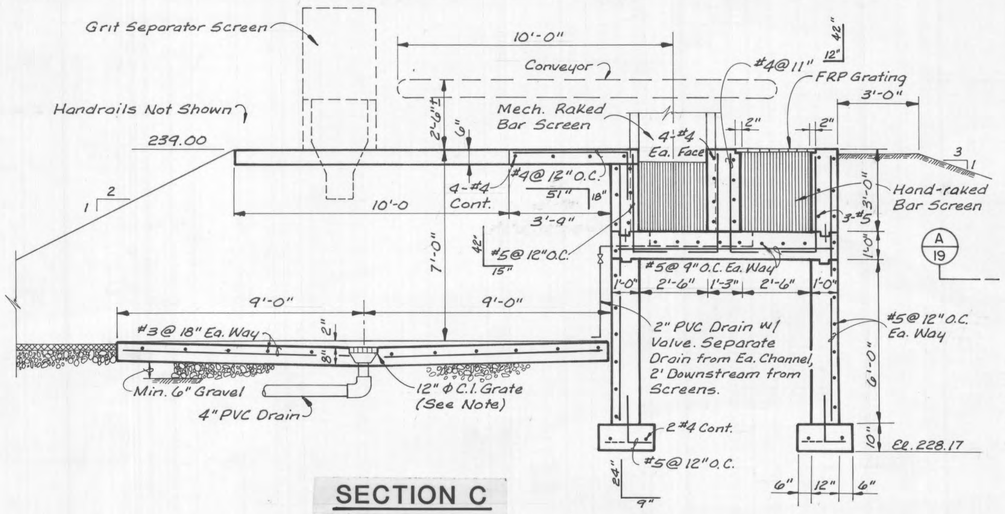
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

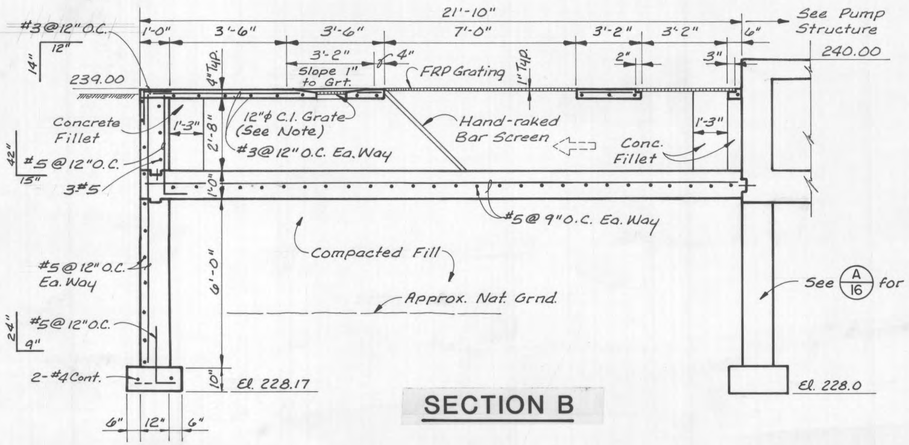
SEWAGE TREATMENT PLANT

PRIMARY PUMP STRUCTURE

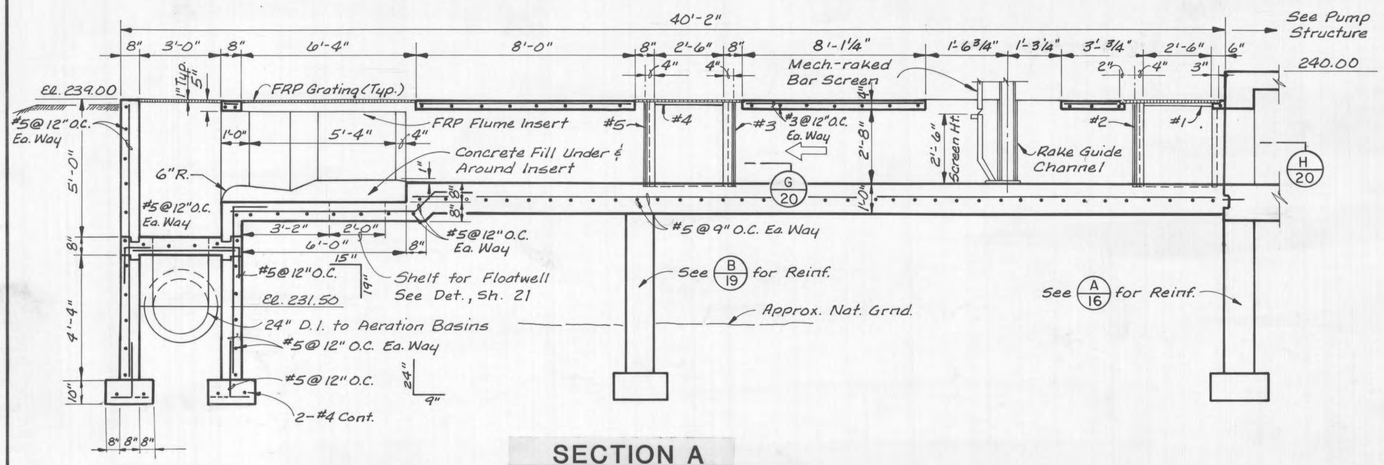
DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	18	
TRACED: PEO	SCALE: As Shown			62
CHECKED: RLY				



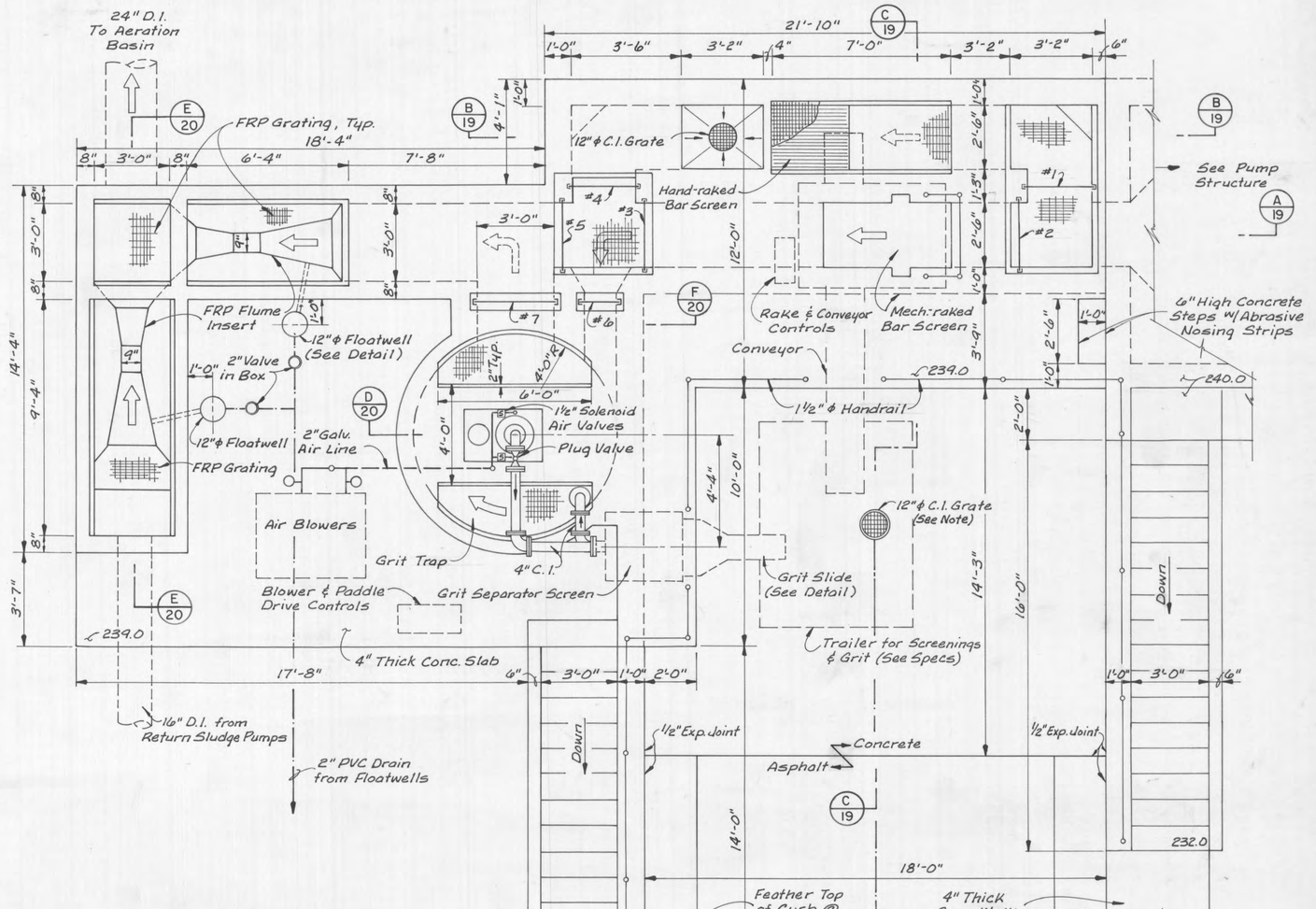
SECTION C



SECTION B



SECTION A



PLAN

NOTE:
12"ϕ C.I. Grates to be NEENAH #R-4380-8, or Pattern #700 by BASS & HAYS, or Approved Equal.

Revised As Constructed, January '84

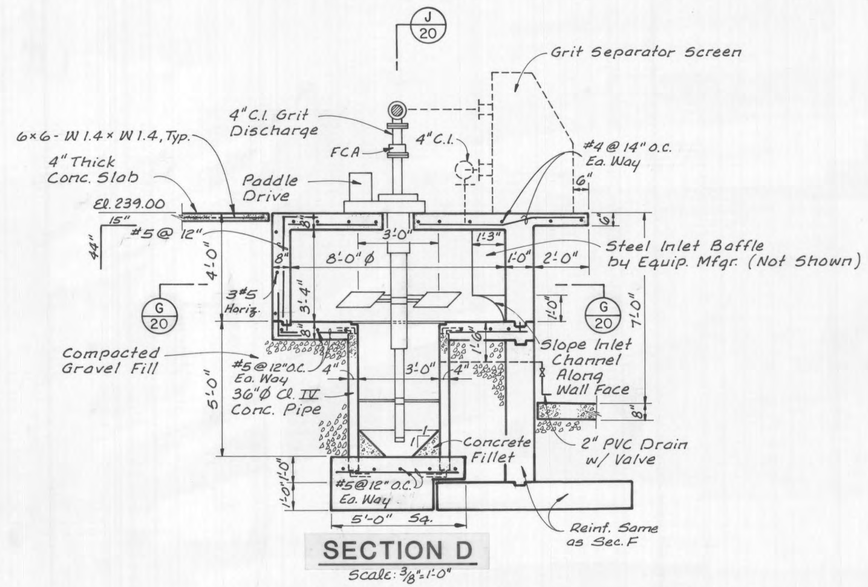
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

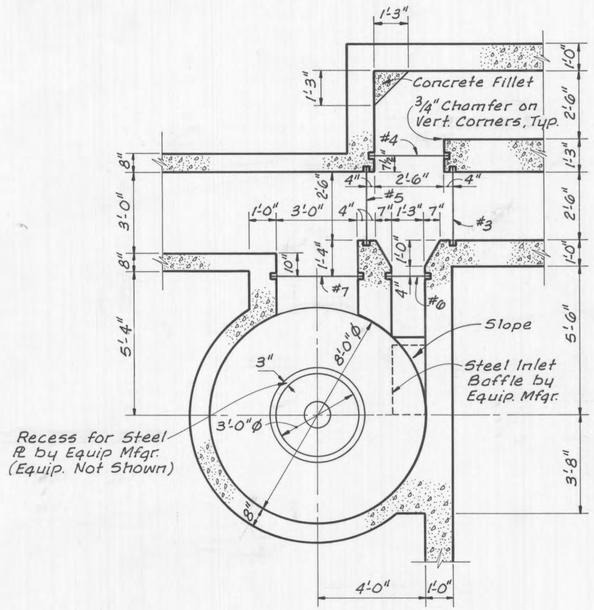
BAR SCREEN, GRIT TRAP & FLUME STRUCTURE

DRAWN: RLV	JOB NO. C-76-15	DATE: July '79	19
TRACED: MT	SCALE: 3/8"=1'-0"		62
CHECKED: RLV			



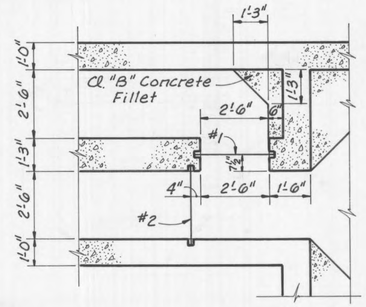
SECTION D

Scale: 3/8"=1'-0"



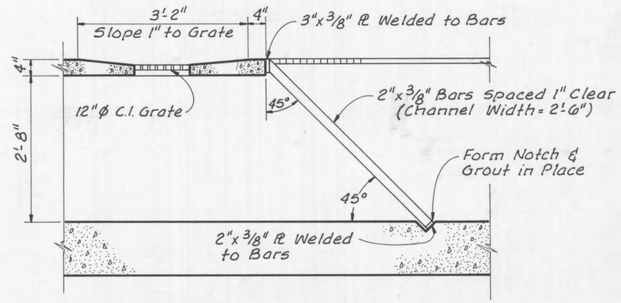
SECTION G

Scale: 3/8"=1'-0"



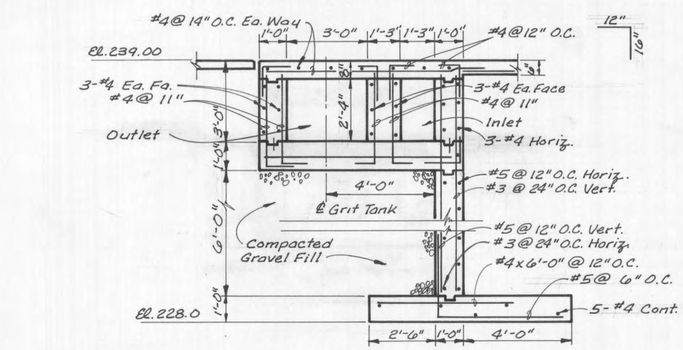
SECTION H

Scale: 3/8"=1'-0"



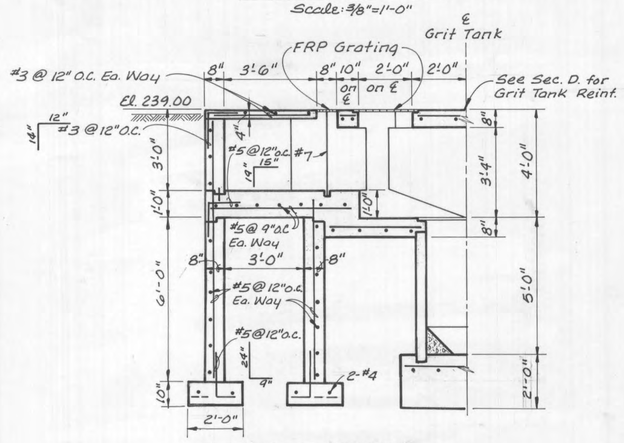
HAND-RAKED SCREEN DETAILS

Scale: 3/4"=1'-0"



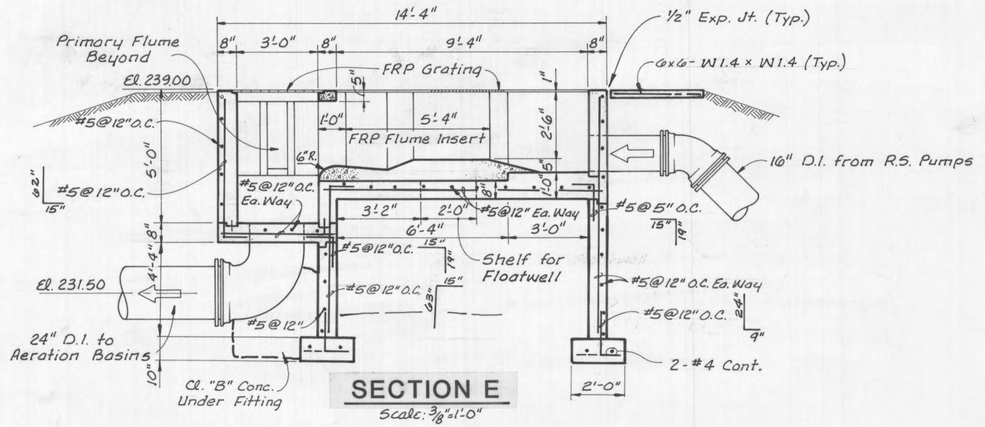
SECTION F

Scale: 3/8"=1'-0"



SECTION J

Scale: 3/8"=1'-0"



SECTION E

Scale: 3/8"=1'-0"

Note:

All Waterstops Shown Shall Be 6"x3/8" Unless Otherwise Noted.

Revised As Constructed, January '84

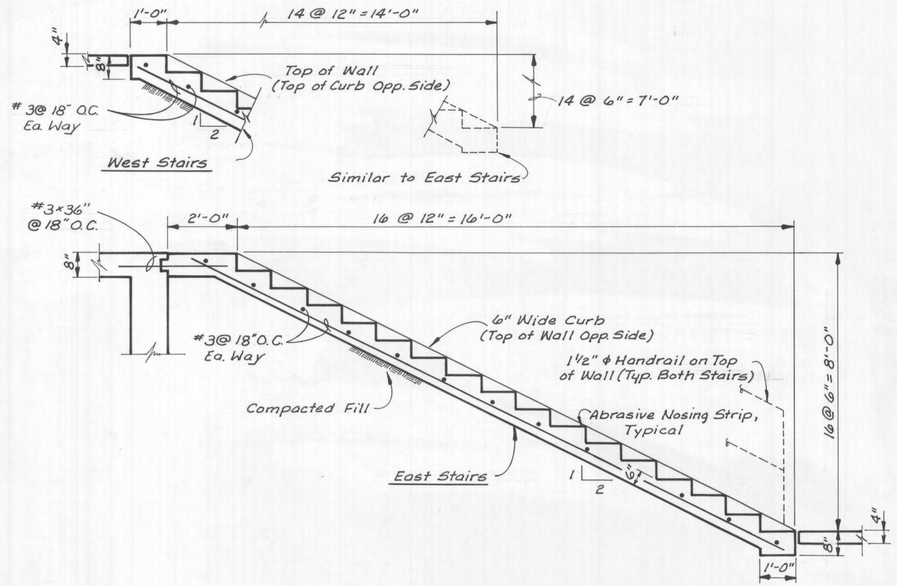
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

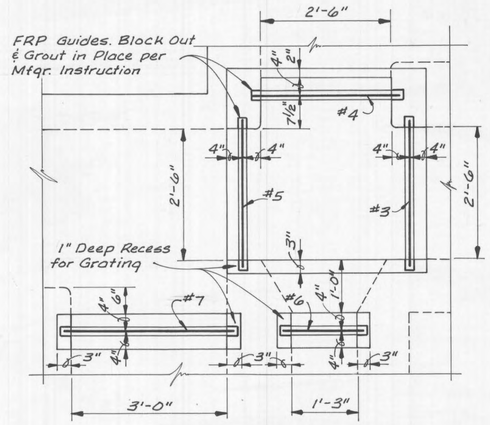
BAR SCREEN, GRIT TRAP & FLUME STRUCTURE

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	20
TRACED: SRY		SCALE: As Shown	62
CHECKED: RLY			

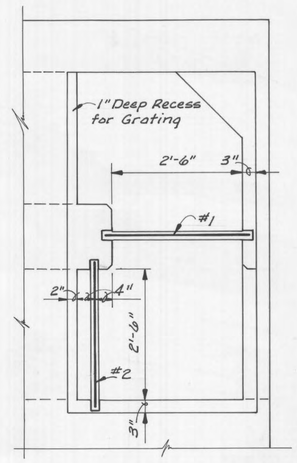


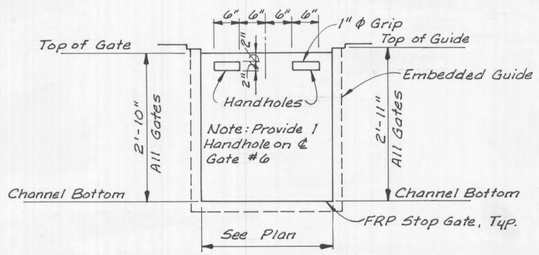
STAIR DETAILS

Scale: 1/2"=1'-0"



PLAN



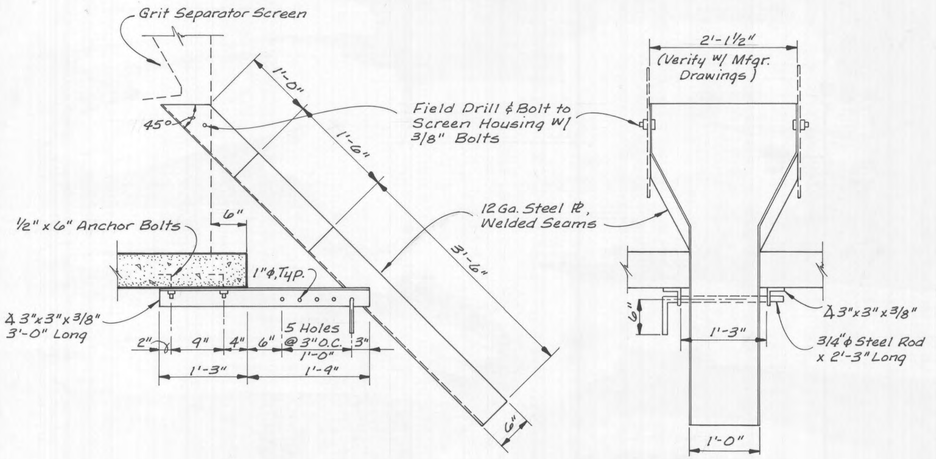


ELEVATION

STOP GATE DETAILS

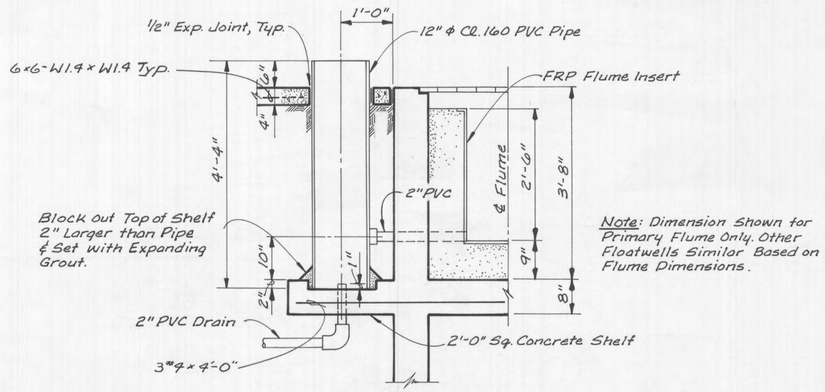
Scale: 3/4"=1'-0"

Notes: 1. Install Gate Guides for All Openings As Shown
2. Furnish Stop Gates for #1, 4, 5, 6, & 7 (5 Gates Total)
3. Gates #2, 3, 6, & 7 Normally Open
4. Gates #1, 4, & 5 Normally Closed



GRIT SLIDE DETAILS

Scale: 1"=1'-0"



Note: Dimension Shown for Primary Flume Only. Other Floatwells Similar Based on Flume Dimensions.

FLOATWELL DETAILS

Scale: 3/4"=1'-0"

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

BAR SCREEN, GRIT TRAP & FLUME STRUCTURE

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	21
TRACED: MT		SCALE: As Shown	62
CHECKED: RLY			

To PDC

A 22

Junc. Box

Junc. Box

2t20 W
0t20 S

N

Manual Disconnect
w/ 120-V Recept. (WP)

Curb Limit

40'

10'

5'

3'

7'

33'-0"

AERATOR NO. 2

240'-0"

Walkway

4"x8" Curb

8'-2"

8'-2"

10'-0"

10'-0"

8"

Center Wall

10'-0"

10'-0"

3'-6"

3'

19'-0"

1'

BASIN NO. 1

(Basin No. 2 Similar
Opposite Hand)

Handrail (Typical)

AERATOR NO. 1

33'-0"

3'-6"

20'-0"

6'-0"

20'-0"

15'-0"

51'-4"

Paved Walkway

4"x8" Curb
Where Shown

8"

Basin Drain
(See Sh. 13)

3:1

Limit of Gvl. Surf.
See Sh. 13

4" PVC Drain to Plant Sewer
See Sh. 6

Gvl. Surface

40'

7'

Transfer
Structure

Manual Disconnect
w/120-V Recept. (WP)

24"

4:1

Junction Boxes
All Conduits

Gvl. Surface

3'

Light

To PDC

See Sh. 60

4'

24"

24" D.I. from Headworks
See Sh. 6

Aeration Division Box (See Sh. 23)

Aeration Basins Dimensionally
Symmetrical About East-West Centerline

5'-0"

10'-0"

Concrete
Surface

Concrete Pvt.

4" PVC Drain

3'

Manual Disconnect
w/120-V Recept. (WP)

Aerator Drive

A 22

Basin Effluent Structure

30" Transfer
Pipe

Basin Influent

4" Drain to Plant Sewer
See Sh. 6

Brush Rotor Aerator

24" Effluent to Final
Settling Basins
See Sh. 6

BASIN NO. 2

(Similar to No. 1)

Access Bridge

AERATOR NO. 3

Turning Wall

8"

Aerator End Bearing

Basin Drain
(See Sh. 13)

Note: Aerator No. 4
Not Shown This Plan

Basins Symmetrical About
East-West ℄

5' 7' 33'-0" 8" 33'-0" 7' 10' 3'

1 1 7' 7'-8" 1 1 7' 1 1 4" 3 1

1'-6"

4" Pvt.

SECTION A

Scale: 1/8"=1'-0"

All Embankments and Bottom
Mechanically Compacted
Material. Compact to 95%
Modified Proctor Density.

Revised As Constructed, Jan. '84

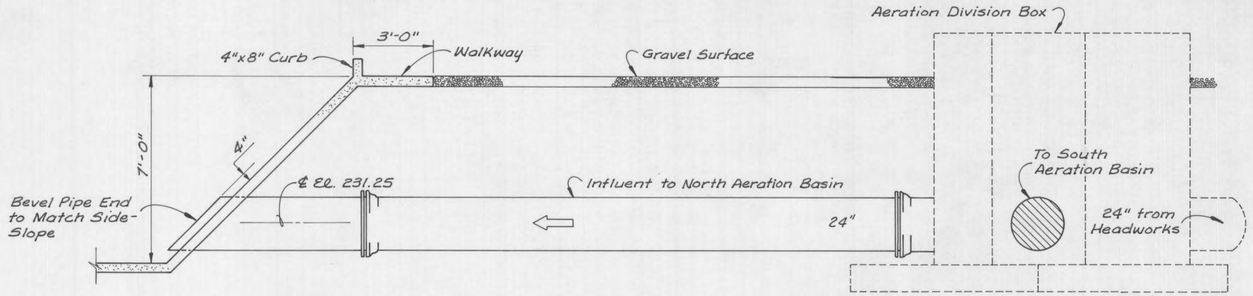
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

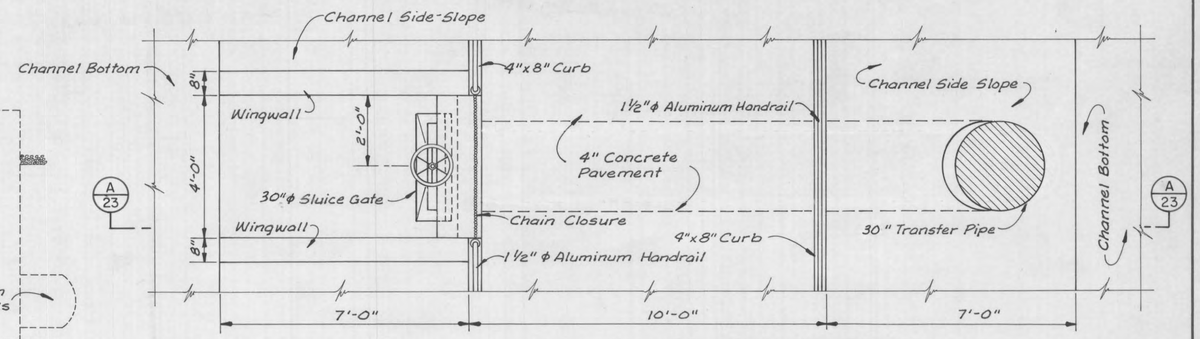
AERATION BASINS
LAYOUT

DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	22
TRACED: SRY	SCALE: 1/8"=1'-0"		62
CHECKED: LDG			



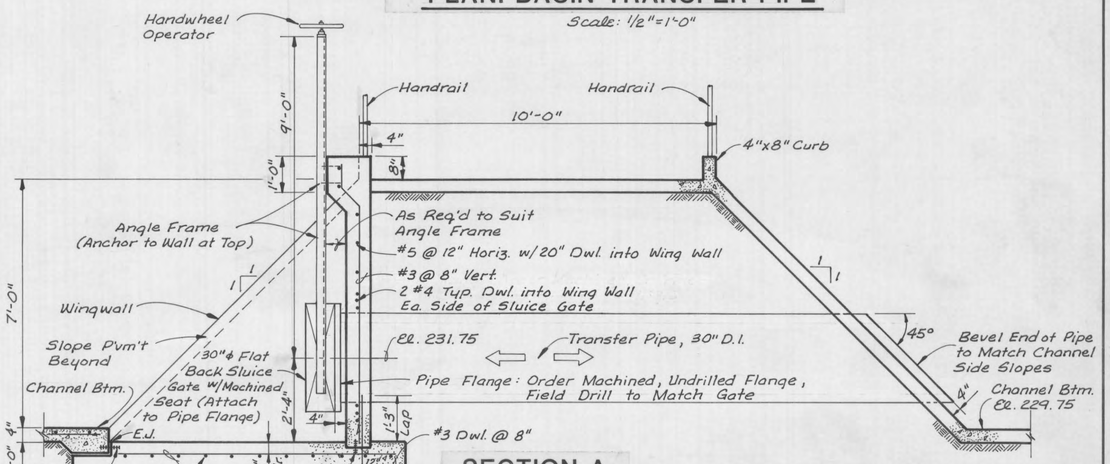
AERATION BASIN INFLUENT ROUTING

Scale: 3/8" = 1'-0"



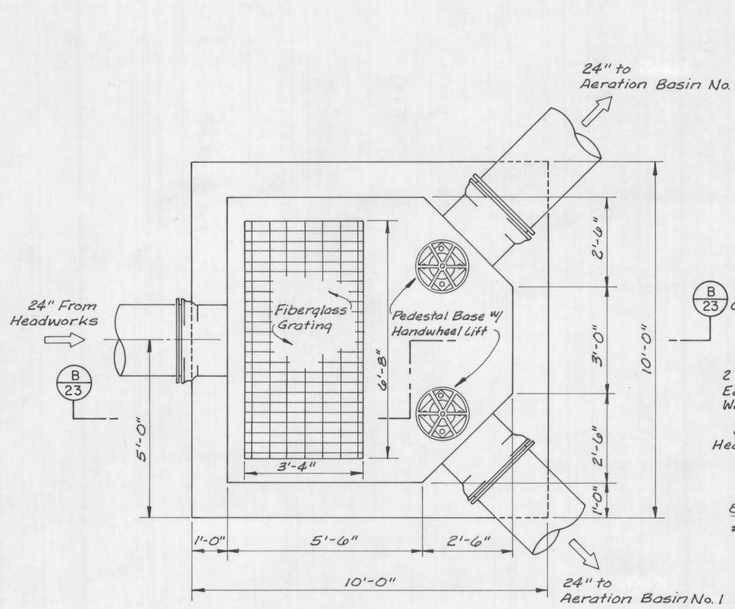
PLAN: BASIN TRANSFER PIPE

Scale: 1/2" = 1'-0"



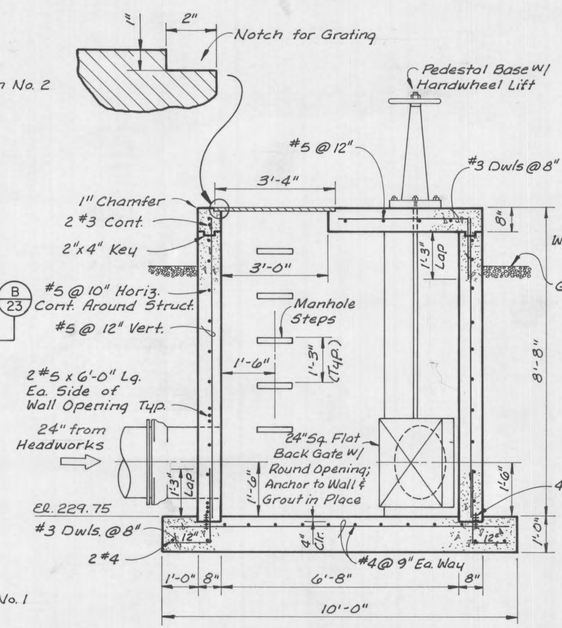
SECTION A

Scale: 1/2" = 1'-0"



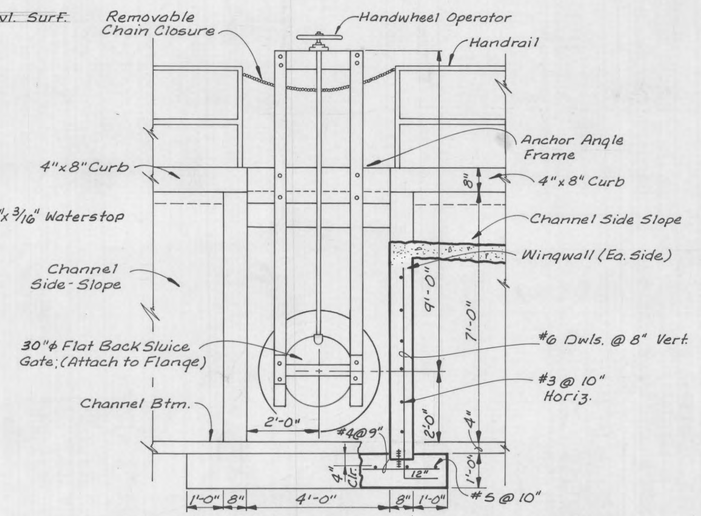
PLAN: AERATION DIVISION BOX

Scale: 1/2" = 1'-0"



SECTION B

Scale: 1/2" = 1'-0"



ELEVATION: BASIN TRANSFER PIPE

Scale: 1/2" = 1'-0"

Revised As Constructed, January '84

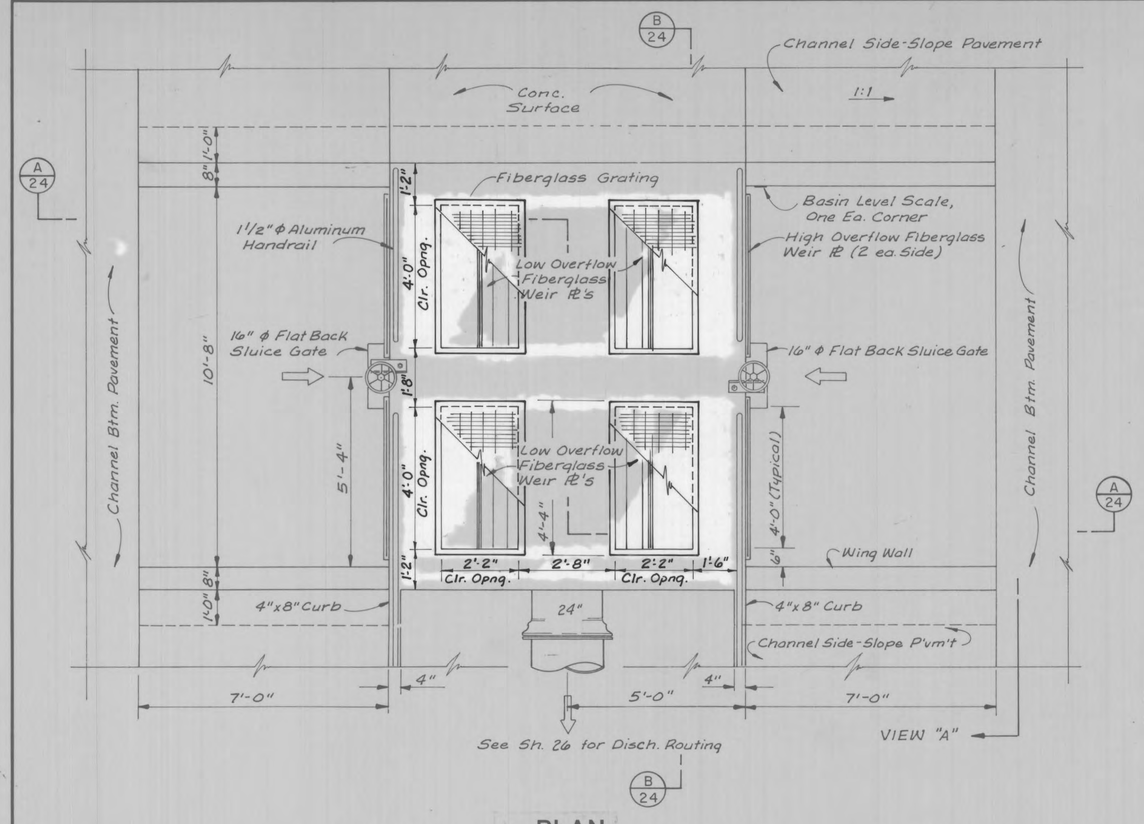
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

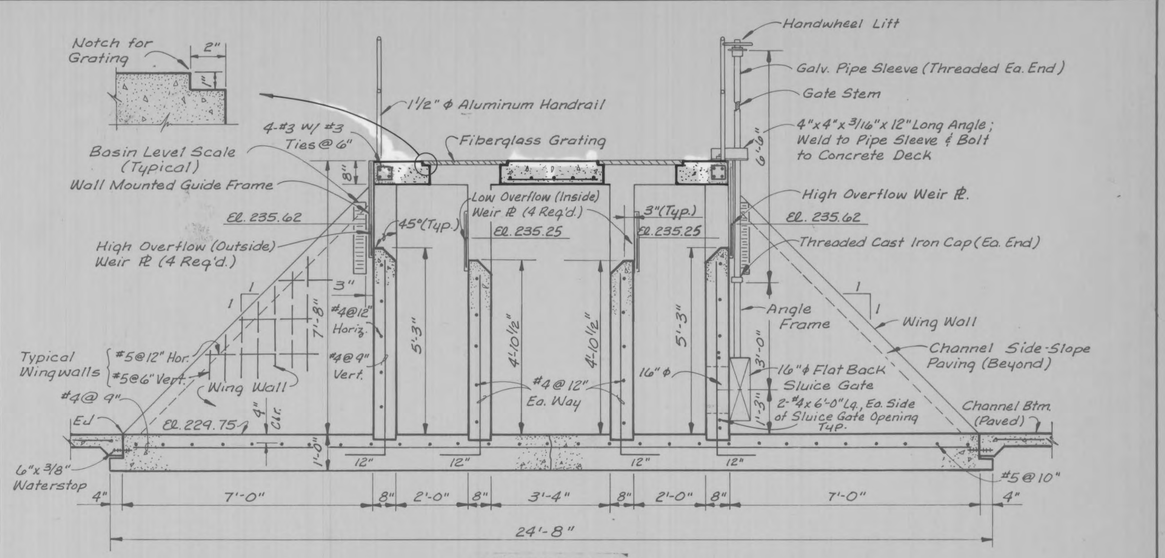
AERATION BASINS DETAILS

DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	23
TRACED: PEO/MT	SCALE: As Shown		62
CHECKED: LDG			



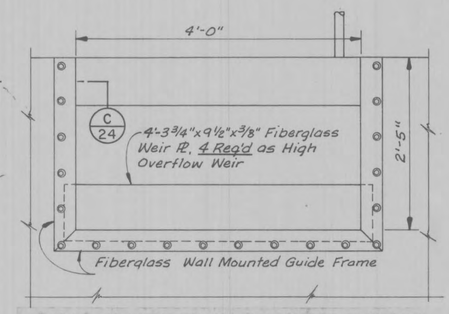
PLAN

Scale: ½"=1'-0"



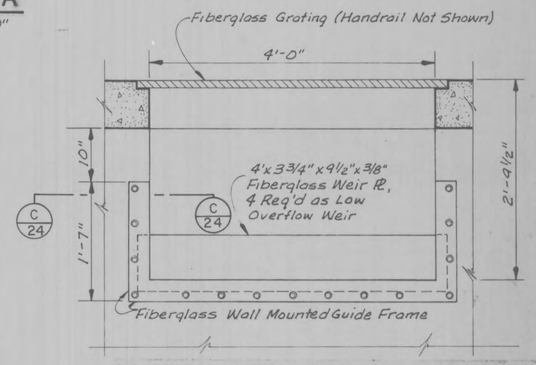
SECTION A

Scale: ½"=1'-0"



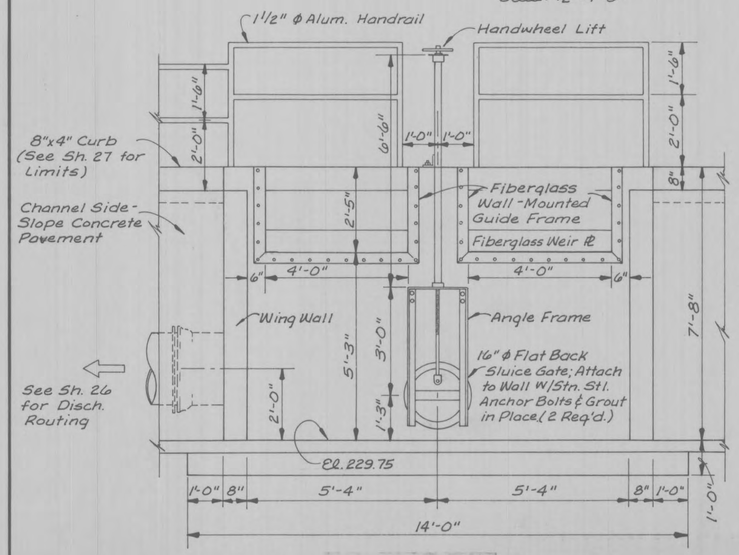
HIGH-OVERFLOW WEIR DETAIL

Scale: 1"=1'-0"
(Make 4, Each)



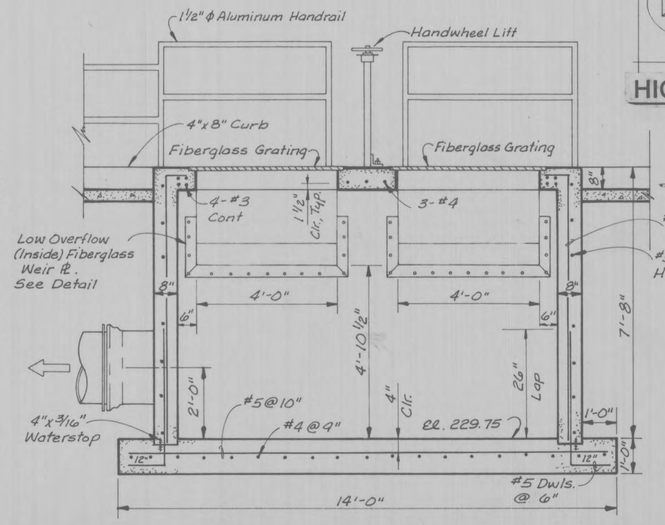
LOW-OVERFLOW WEIR DETAIL

Scale: 1"=1'-0"
(Make 4, Each)



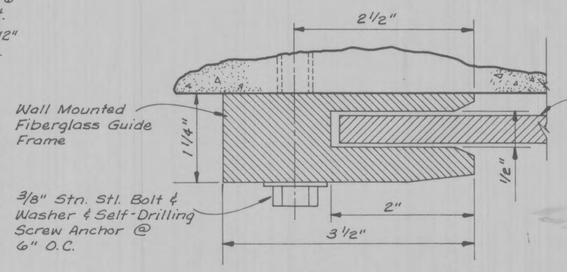
VIEW "A"

Scale: ½"=1'-0"



SECTION B

Scale: ½"=1'-0"



SECTION C

No Scale

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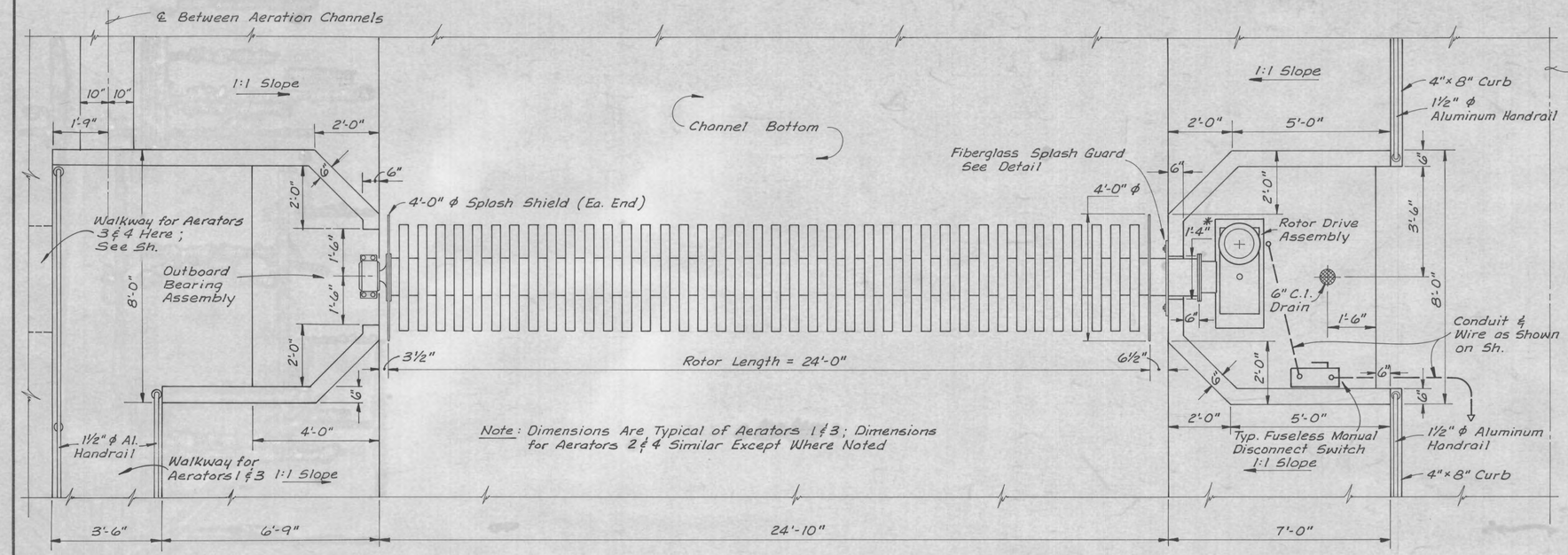
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

AERATION BASINS
EFFLUENT STRUCTURE

DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	24
TRACED: MT	SCALE: As Shown		62
CHECKED: LDG			

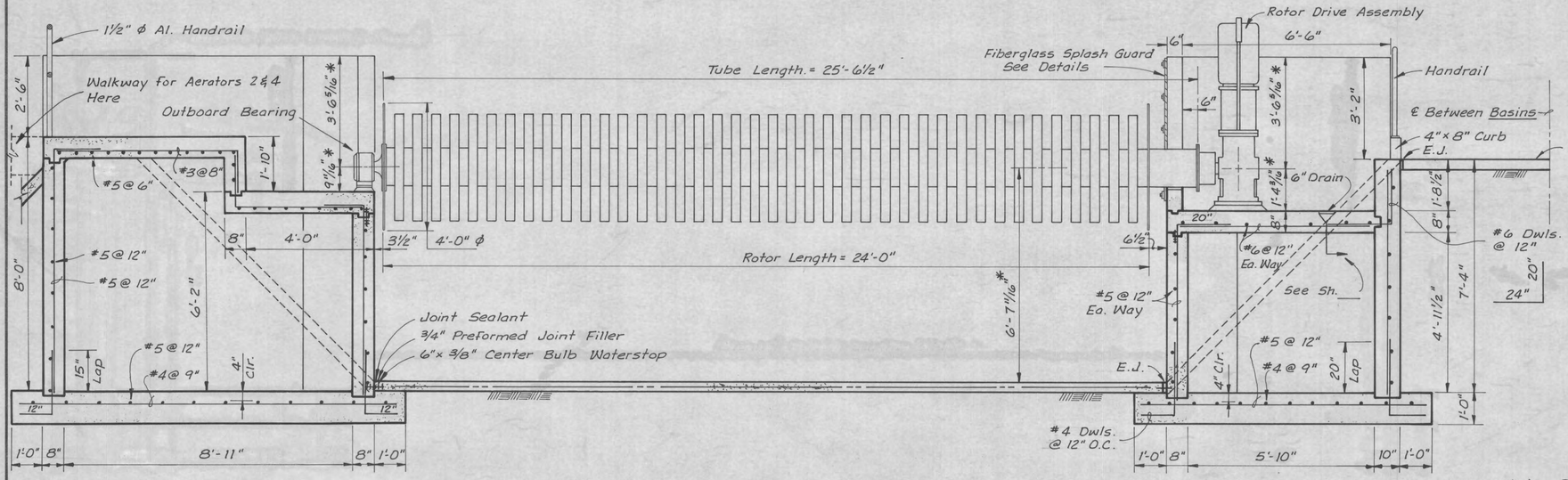


PLAN: BRUSH ROTOR AERATOR

Scale: ½"= 1'-0"

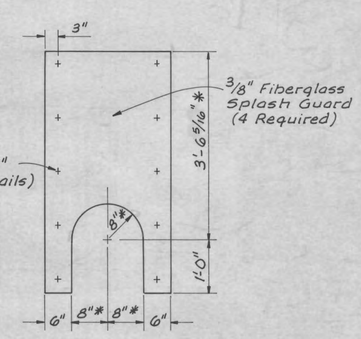
SPLASH GUARD INSTALLATION DETAIL

Scale: ½"= 1'-0"



SECTIONAL ELEVATION: BRUSH ROTOR AERATOR

Scale: ½"= 1'-0"



FIBERGLASS SPLASH GUARD

No Scale

Note: Dimensions Thus (*) Noted May Vary with Aeration Equipment Furnished; See Manufacturer's Drawings.

Revised As Constructed, January '84

Crist Engineers Inc. — Consulting Engineers — Little Rock, Arkansas

WYNNE, ARKANSAS

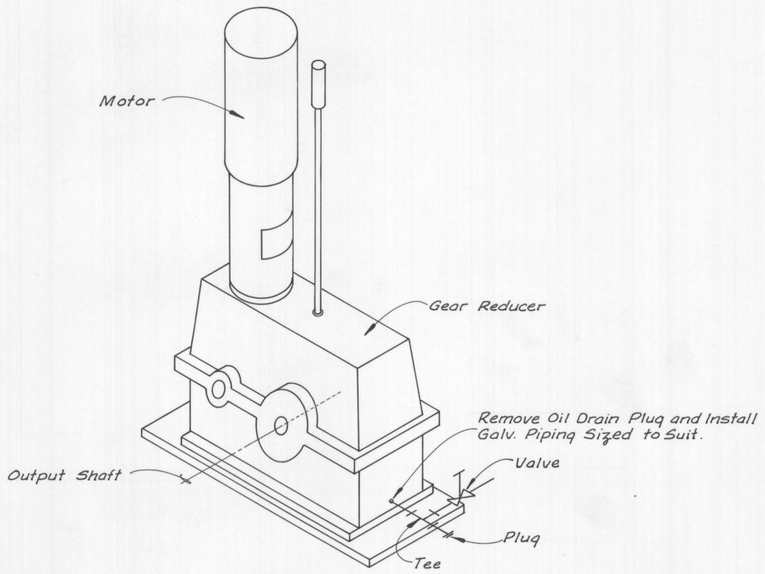
SEWAGE TREATMENT PLANT

AERATION BASINS

BRUSH ROTOR AERATOR DETAILS

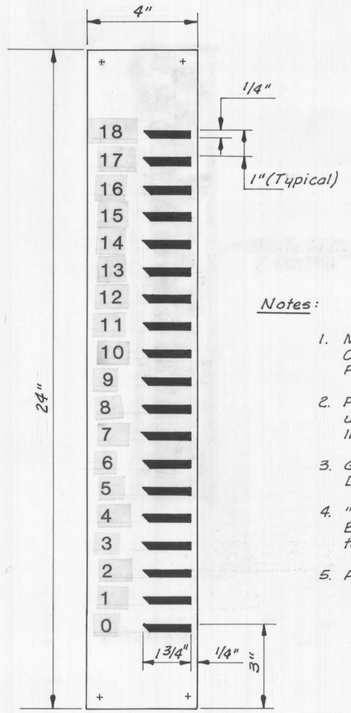
DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	25	
TRACED: PEO	SCALE: ½"= 1'-0"		62	
CHECKED: LDG				

AF 9675



AERATOR REDUCER OIL DRAIN

No Scale

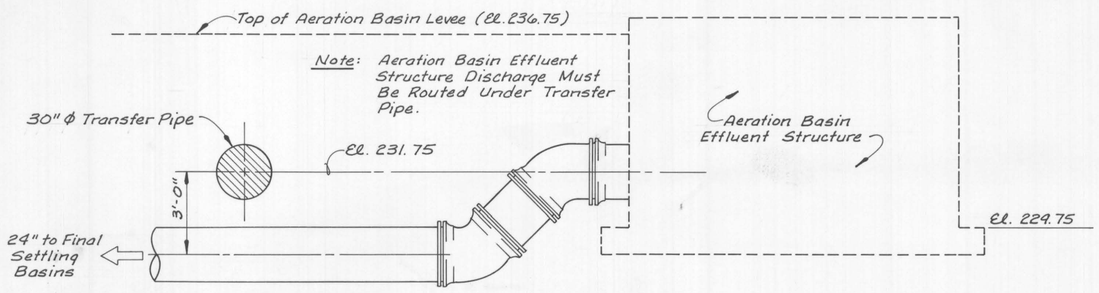


Notes:

1. Mat'l to be of 16 Gage Sheet Aluminum Coated with a Substantial Thickness of Porcelain Enamel.
2. Face of Gage is White. Numerals and Graduations are Black. Numerals to be 3/4-Inch High.
3. Graduations to be Sharp and Accurate to Dimensions Shown.
4. "Zero" Inches to Correspond to Zero Aerator Blade Submergence; 12-Inches to Correspond to 12-Inches of Blade Submergence.
5. Attach Scale to Wall With Stn. Stl. Hardware.

BASIN LEVEL SCALE (4 REQ'D.)

No Scale



AERATION BASIN DISCHARGE ROUTING

Scale: 3/8"=1'-0"

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

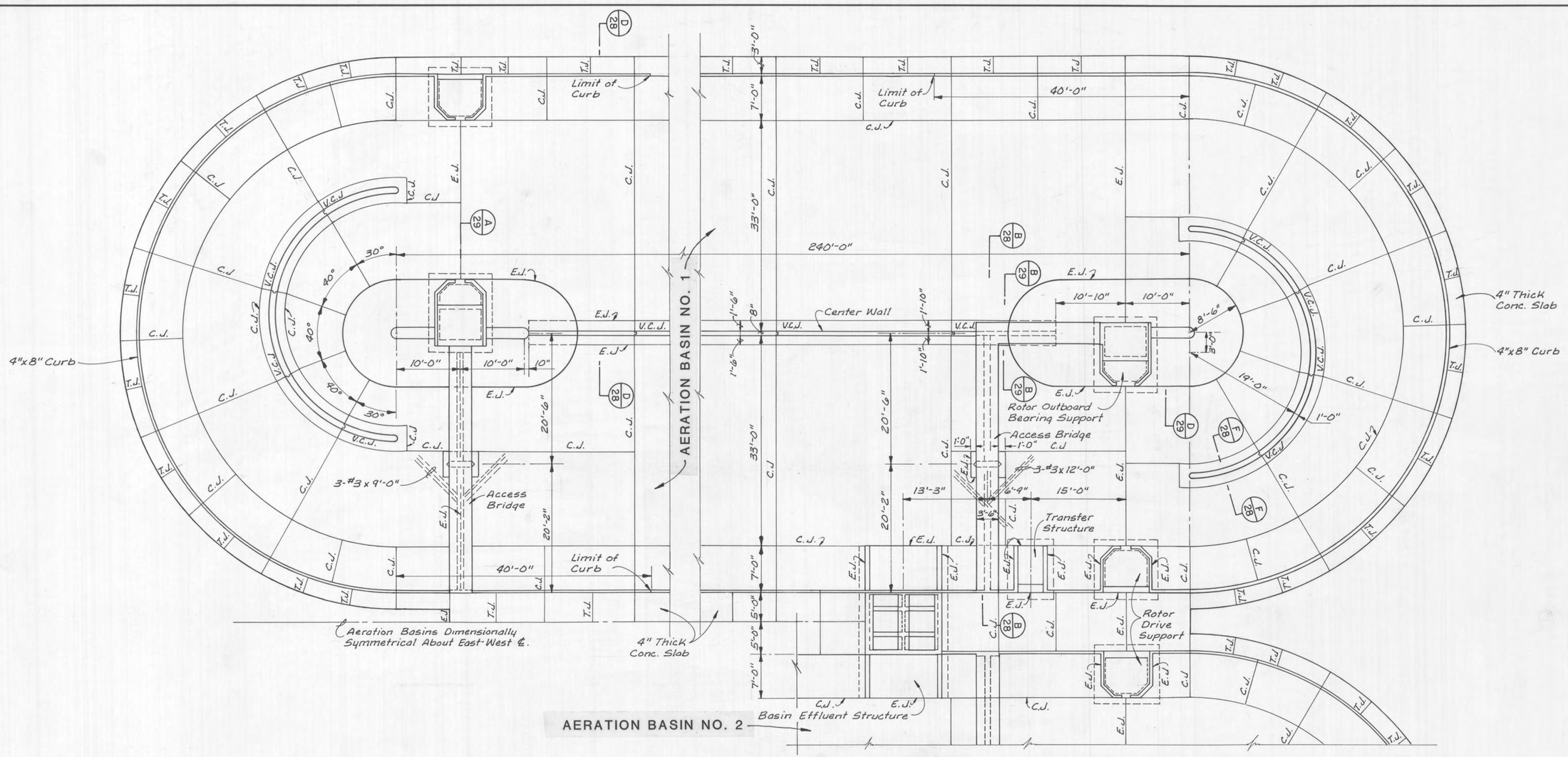
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

AERATION BASINS

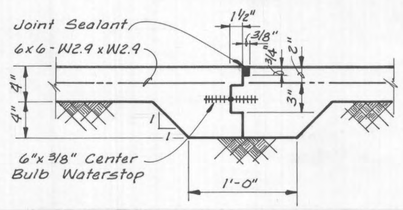
MISCELLANEOUS DETAILS

DRAWN: LDG	JOB NO. C-76-15	DATE: July '79	26
TRACED: MT	SCALE: As Shown		62
CHECKED: LDG			



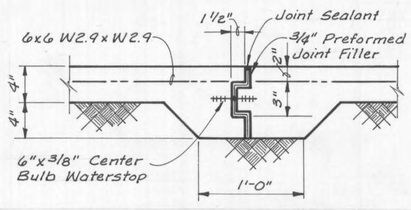
PLAN

Scale: 1/8"=1'-0"



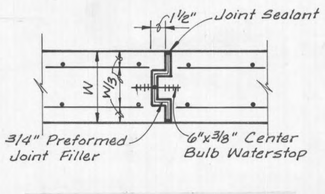
SLAB CONTRACTION JOINT "C.J."

Scale: 1½"=1'-0"



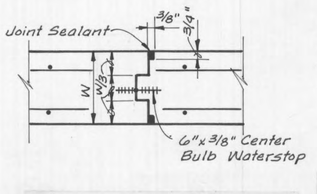
SLAB EXPANSION JOINT "E.J."

Scale: 1½"=1'-0"



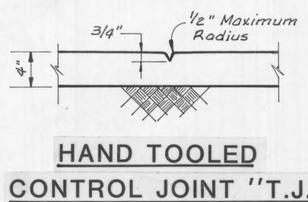
WALL OR FOOTING EXPANSION JOINT "V.E.J."

No Scale



WALL OR FOOTING CONTRACTION JOINT "V.C.J."

No Scale



HAND TOOLED CONTROL JOINT "T.J."

Scale: 1½"=1'-0"

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

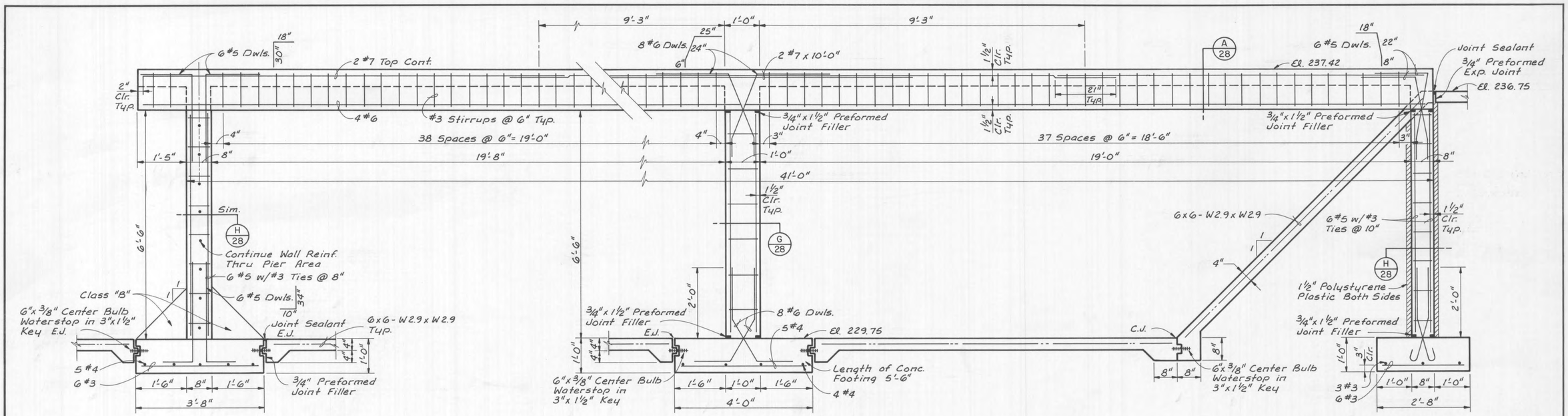
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

AERATION BASINS

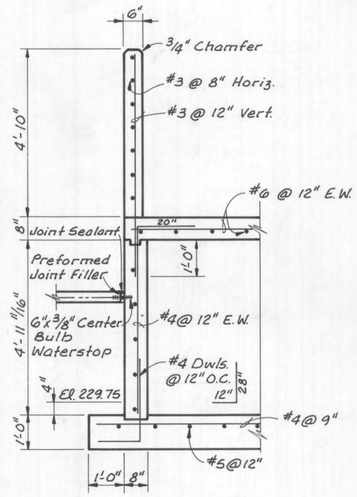
STRUCTURAL PLAN & DETAILS

DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	27
TRACED: M.T.	SCALE: As Shown		62
CHECKED: RLY			



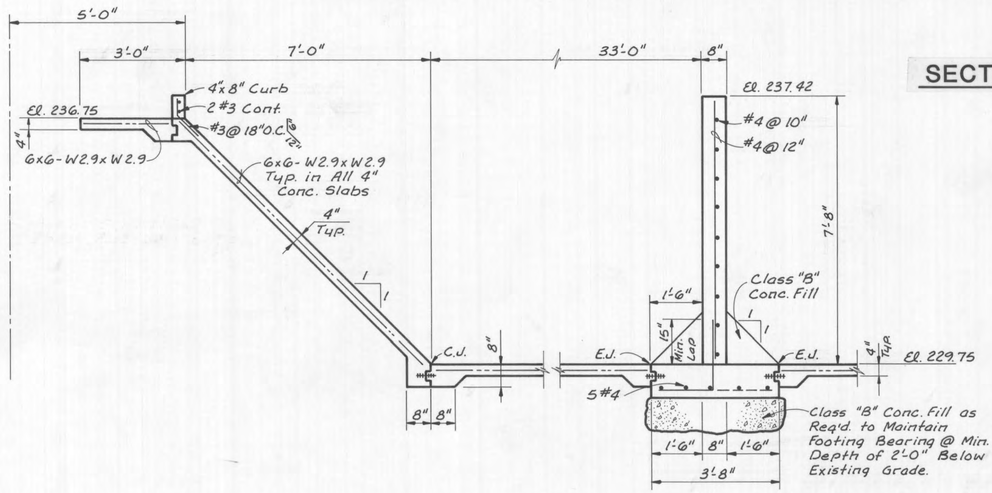
SECTION B- ACCESS BRIDGE AT AERATORS NO. 1 & NO. 3

Scale: ¾"=1'-0"



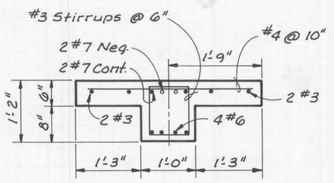
SECTION C

Scale: ½"=1'-0"



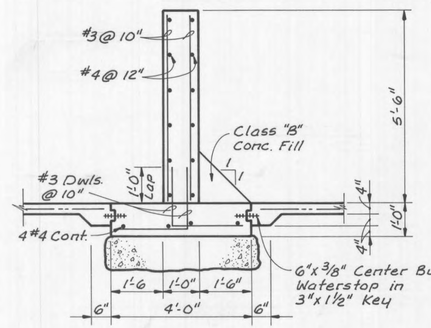
SECTION D

Scale: ½"=1'-0"



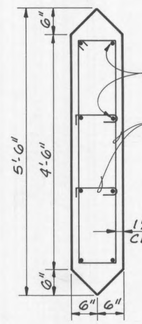
SECTION A- TYPICAL ACCESS BRIDGE

Scale: ¾"=1'-0"



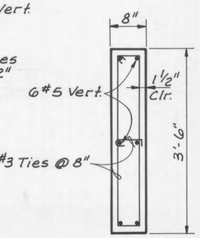
SECTION F

Scale: ½"=1'-0"



SECTION G

Scale: ¾"=1'-0"



SECTION H

Scale: ¾"=1'-0"

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

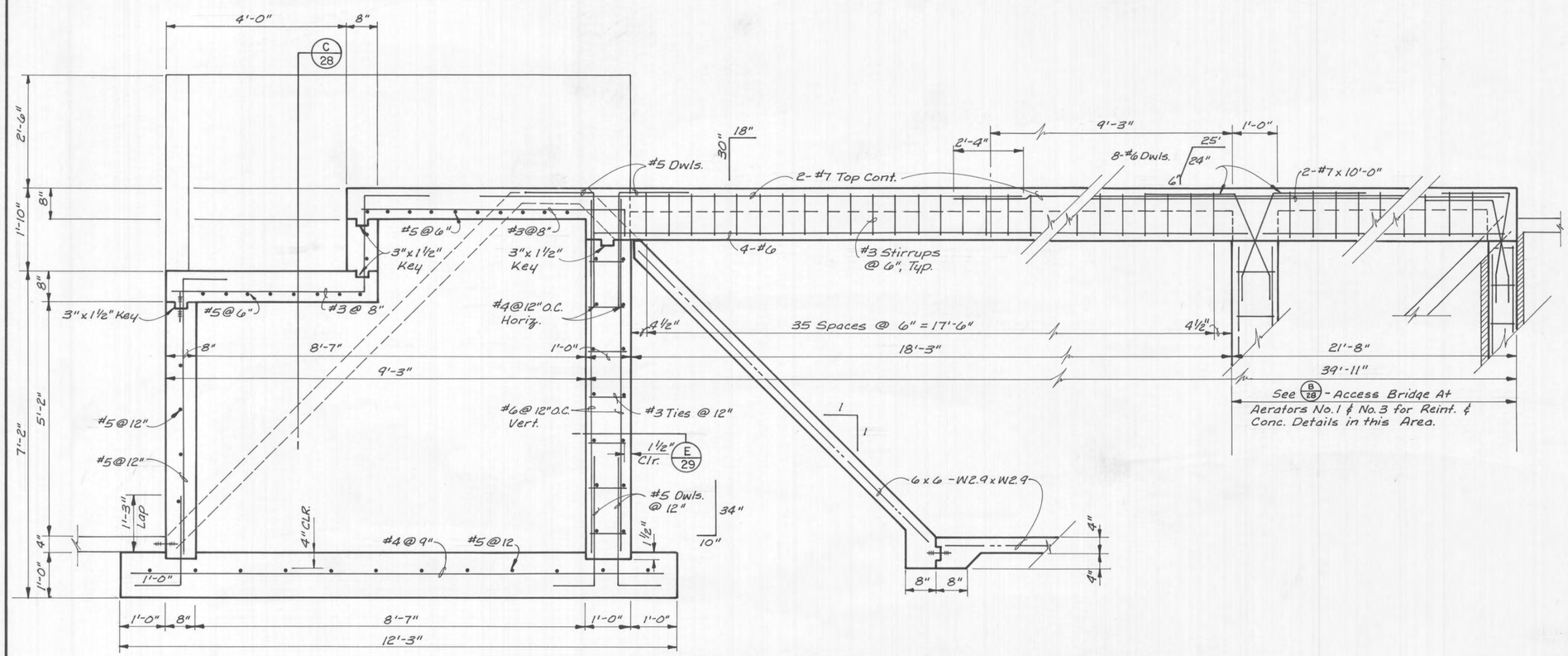
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

AERATION BASINS

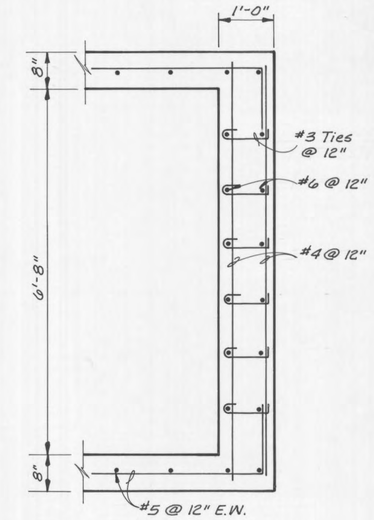
STRUCTURAL DETAILS

DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	28
TRACED: SRY	SCALE: As Shown		62
CHECKED: RLY			



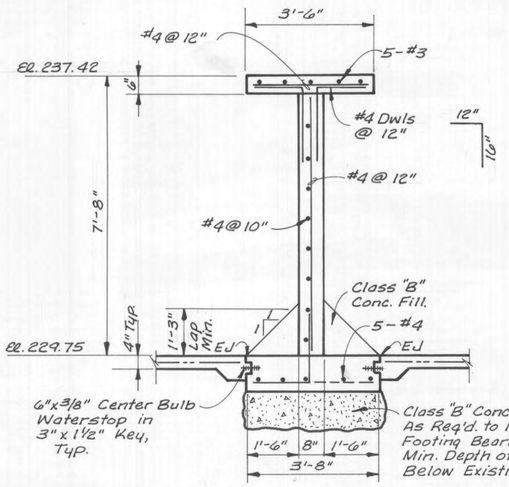
SECTION A - ACCESS BRIDGE AT AERATORS NO. 2 & NO. 4

Scale: 3/4"=1'-0"



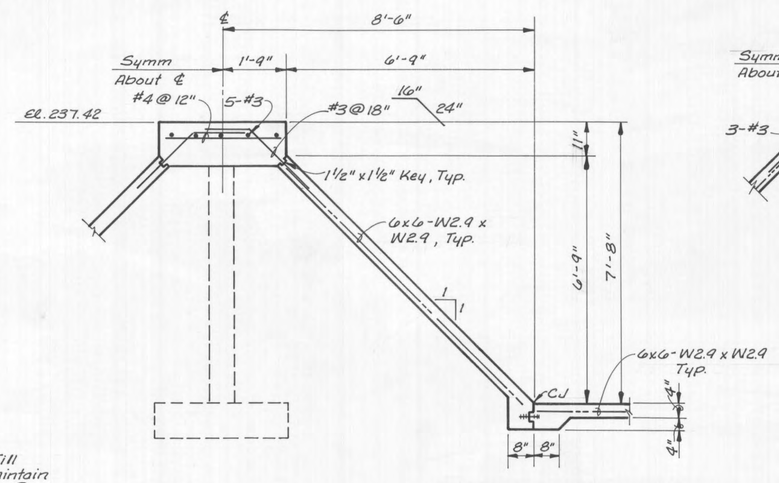
SECTION E (PARTIAL)

Scale: 3/4"=1'-0"



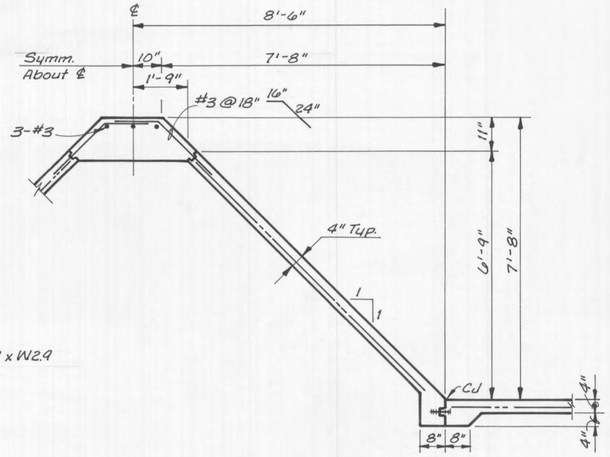
SECTION B

Scale: 1/2"=1'-0"



SECTION C

Scale: 1/2"=1'-0"



SECTION D

Scale: 1/2"=1'-0"

Revised As Constructed, January, '84

CHRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

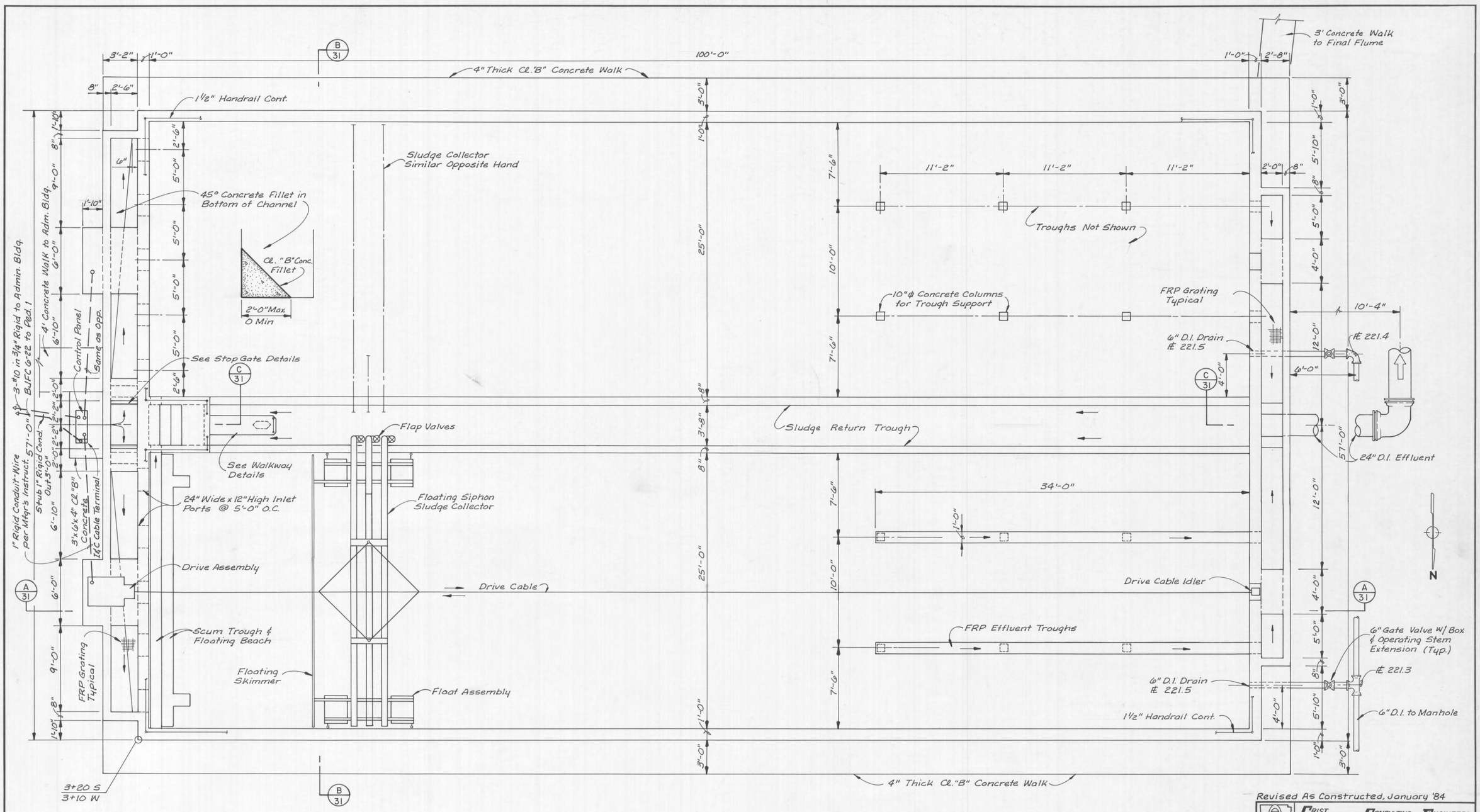
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

AERATION BASINS

STRUCTURAL DETAILS

DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	29
TRACED: MT	SCALE: As Shown		62
CHECKED: RLY			



PLAN

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

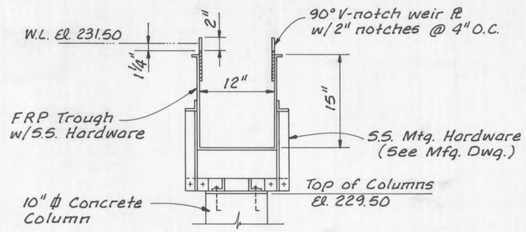
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

FINAL SETTLING BASIN

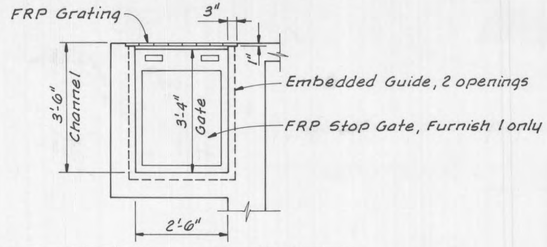
PLAN

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	30 / 62
TRACED: MT	SCALE: 1/4"=1'-0"		
CHECKED: RLY			



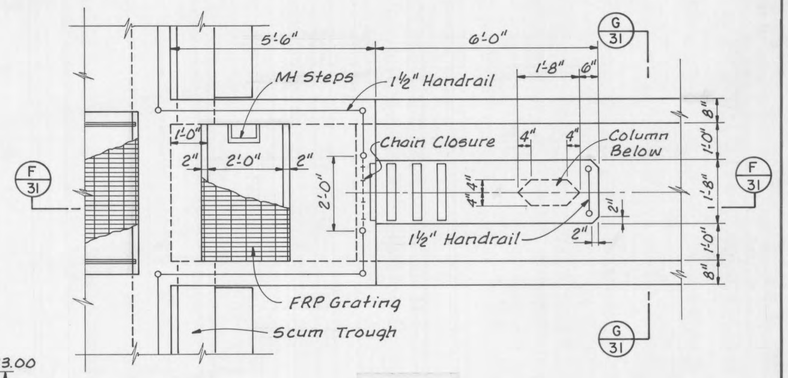
EFFLUENT TROUGH DETAILS

Scale: 1"=1'-0"

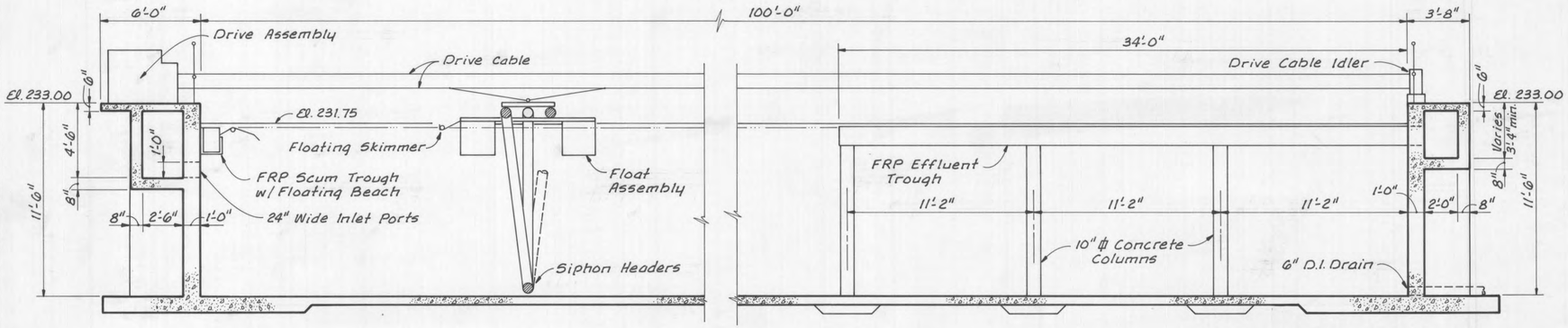


STOP GATE DETAILS

Scale: ½"=1'-0"

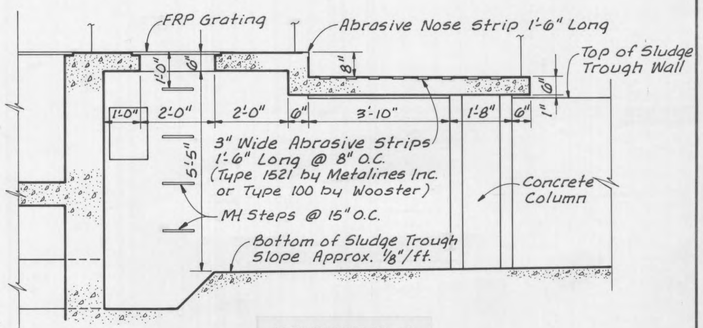


PLAN

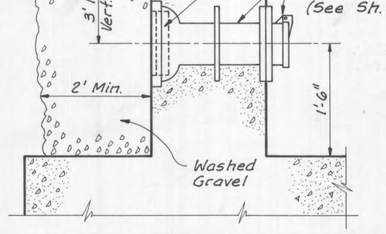


SECTION A

Scale: ¼"=1'-0"

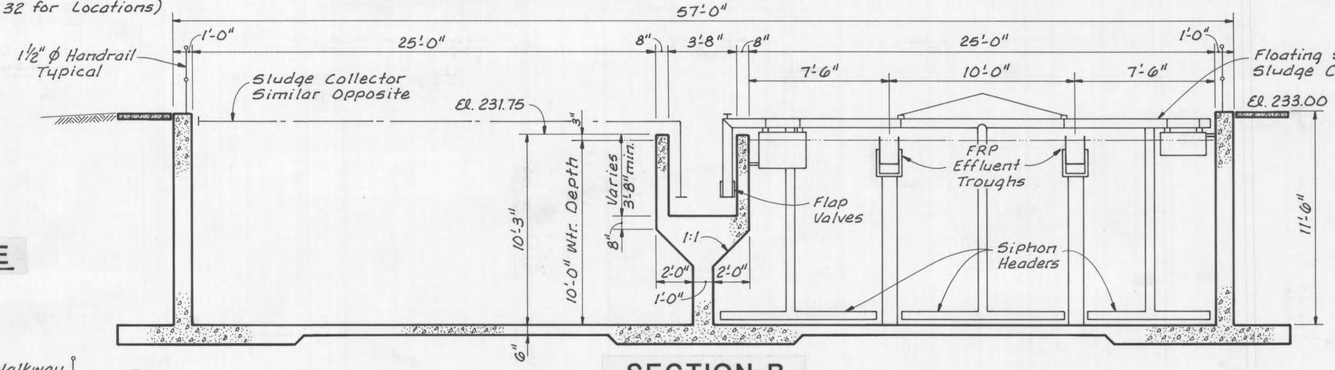


SECTION F



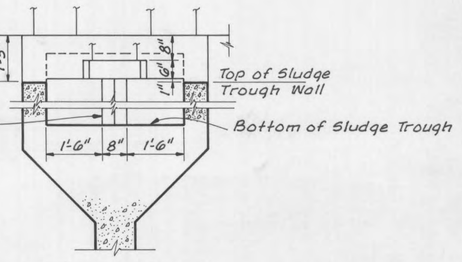
PRESSURE RELIEF VALVE

No Scale



SECTION B

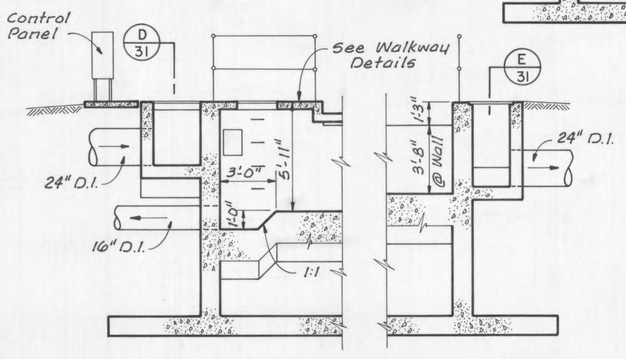
Scale: ¼"=1'-0"



SECTION G

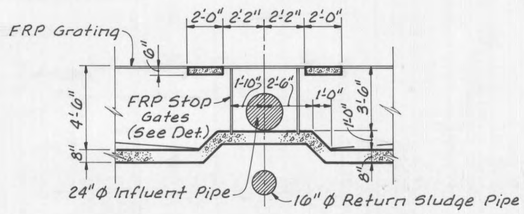
WALKWAY DETAILS

Scale: ½"=1'-0"



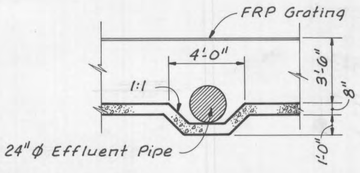
SECTION C

Scale: ¼"=1'-0"



SECTION D

Scale: ¼"=1'-0"



SECTION E

Scale: ¼"=1'-0"

Revised As Constructed, January '84

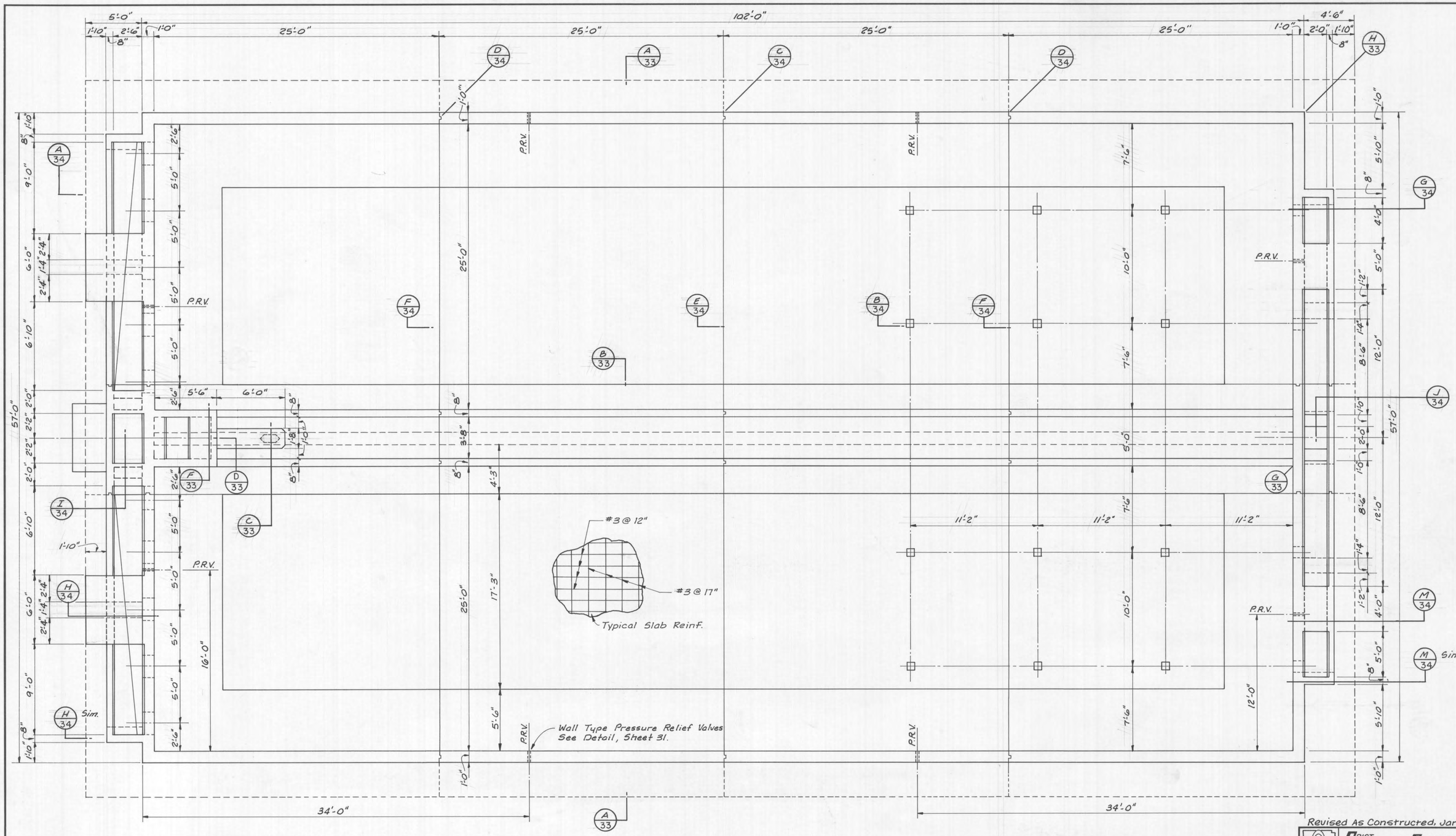
Christ Engineers Inc. — Consulting Engineers — Little Rock, Arkansas

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

FINAL SETTLING BASIN
SECTION & DETAILS

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	31
TRACED: SRY	SCALE: As Shown		62
CHECKED: RLY			



Revised As Constructed, January '84

FINAL SETTLING BASIN - STRUCTURAL PLAN

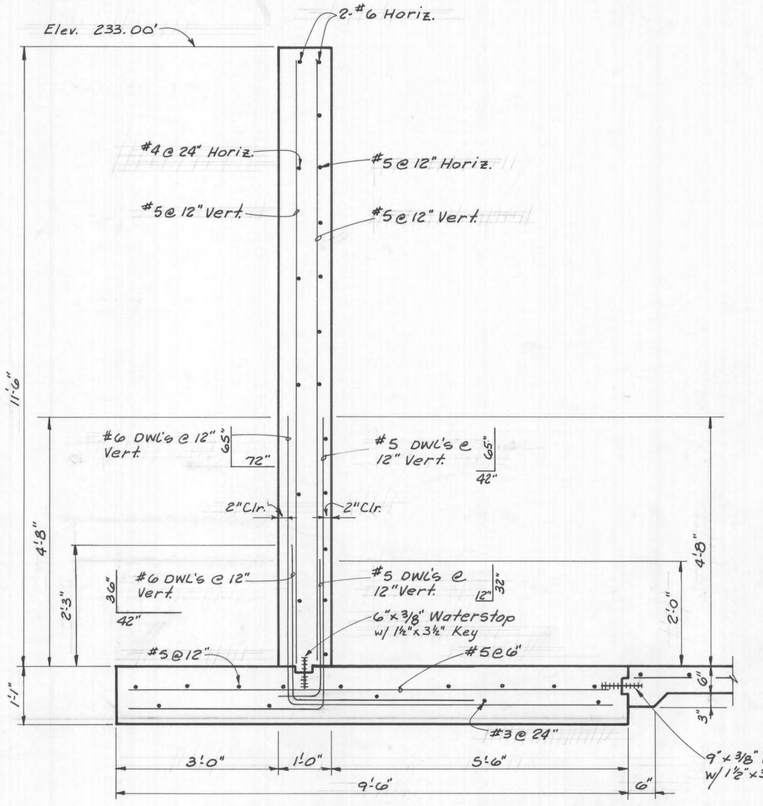
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

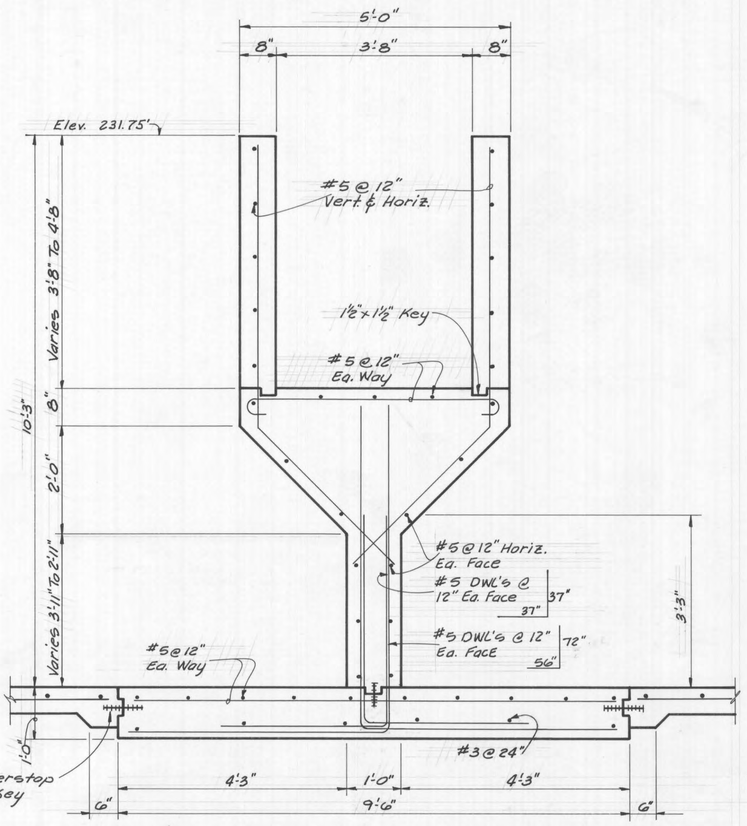
FINAL SETTLING BASIN
STRUCTURAL PLAN

DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	32	
TRACED: TL	SCALE: 1/4"=1'-0"			62
CHECKED: RLY				



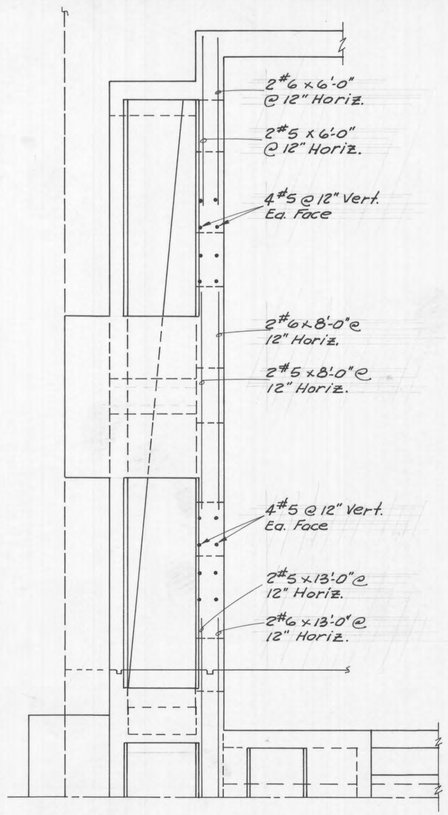
SECTION A

Scale: 3/4" = 1'-0"



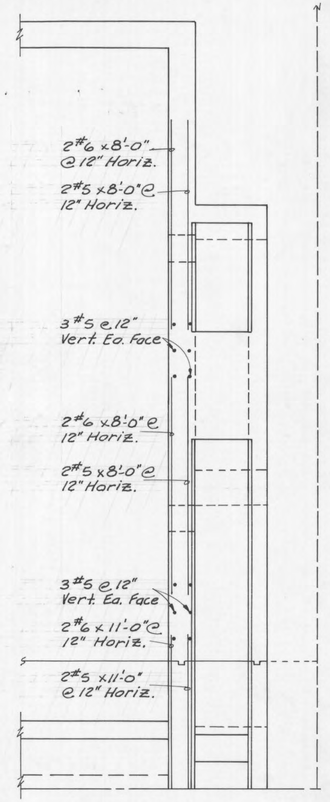
SECTION B

Scale: 3/4" = 1'-0"



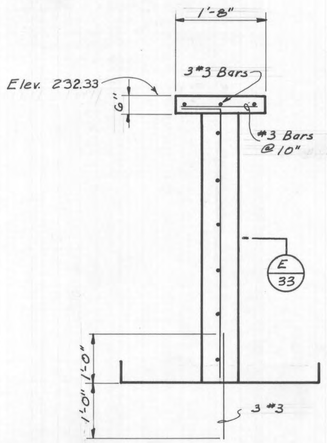
PARTIAL PLAN I

Scale: 3/8" = 1'-0"



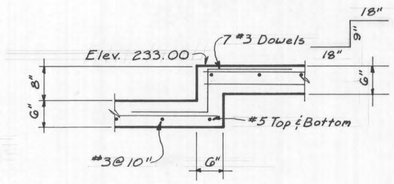
PARTIAL PLAN J

Scale: 3/8" = 1'-0"



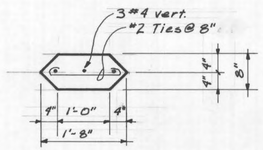
SECTION C

Scale: 3/4" = 1'-0"



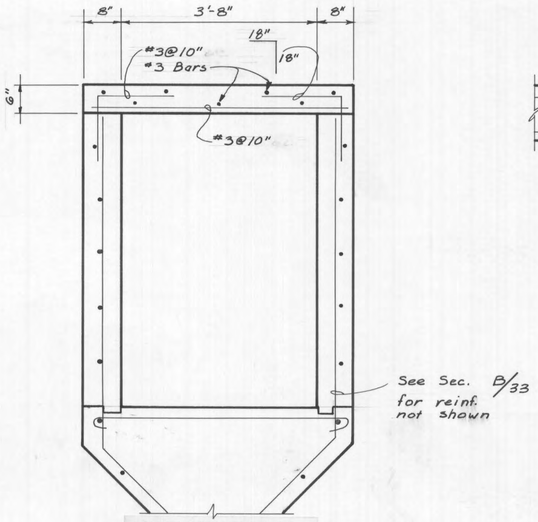
SECTION D

Scale: 3/4" = 1'-0"



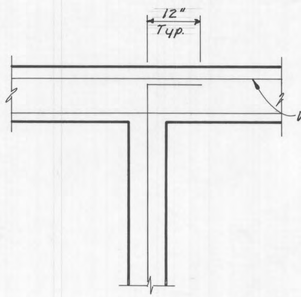
SECTION E

Scale: 3/4" = 1'-0"



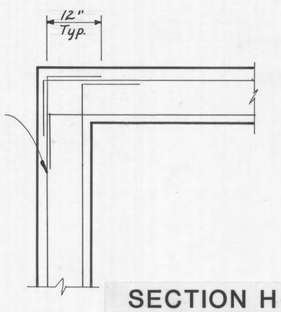
SECTION F

Scale: 3/4" = 1'-0"



SECTION G

Scale: 3/4" = 1'-0"



SECTION H

Scale: 3/4" = 1'-0"

Revised As Constructed, Jan. '84

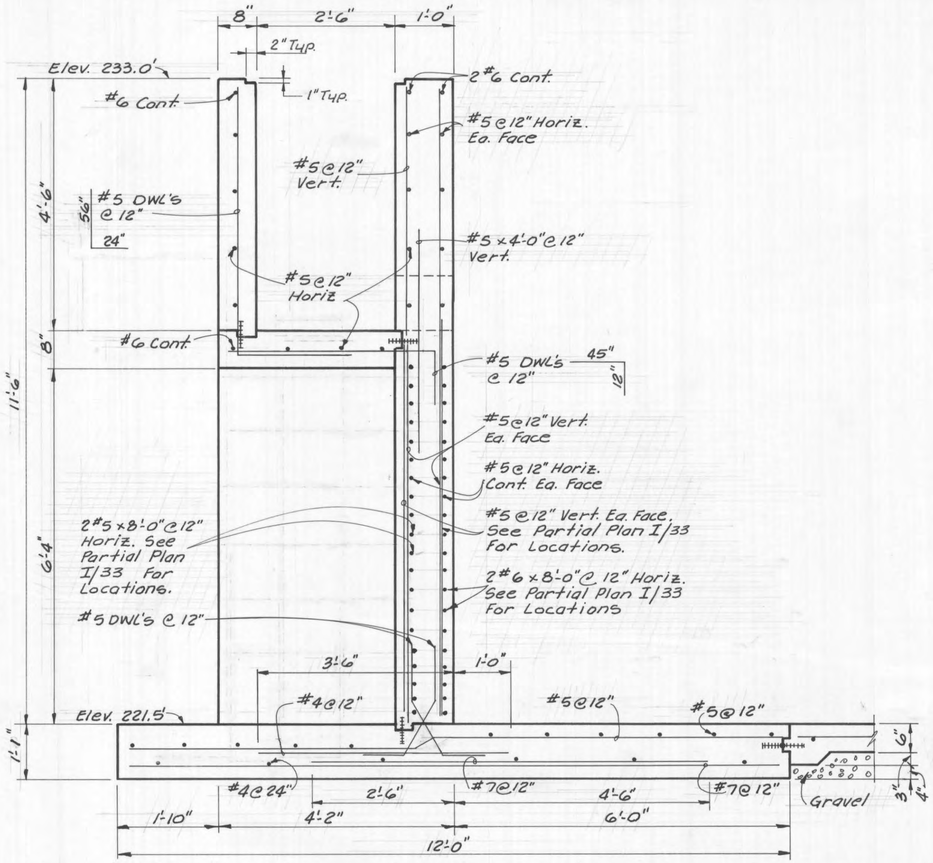
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

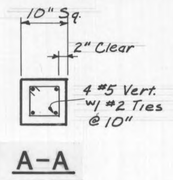
SEWAGE TREATMENT PLANT

FINAL SETTLING BASIN
STRUCTURAL DETAILS

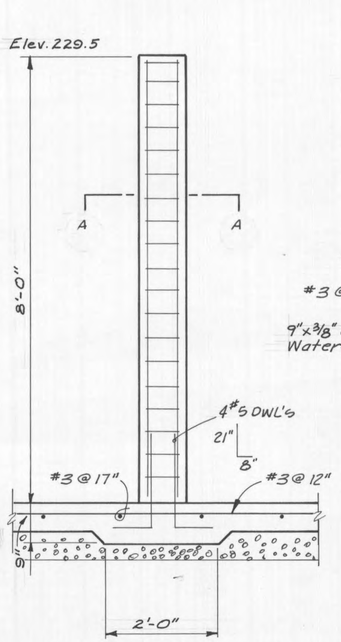
DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	33	62
TRACED: TL		SCALE: As Shown		
CHECKED: RLY				



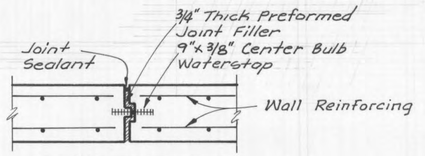
SECTION A



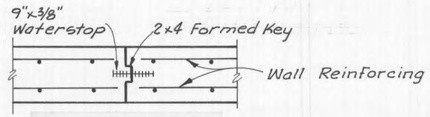
A-A



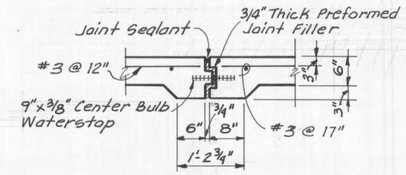
SECTION B



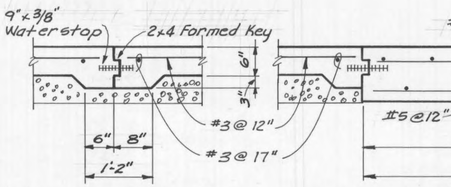
SECTION C



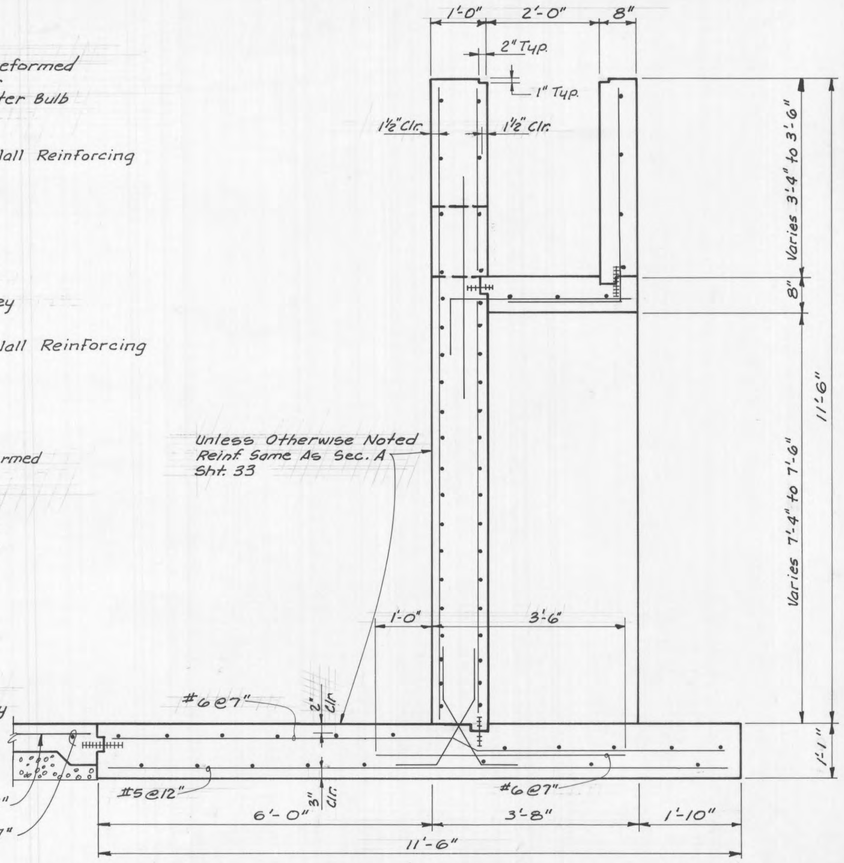
SECTION D



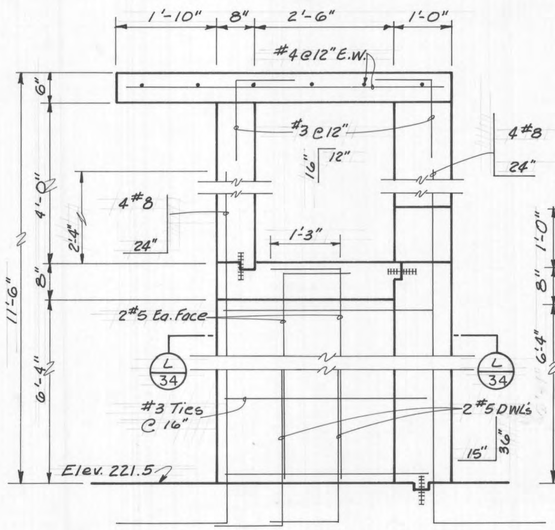
SECTION E



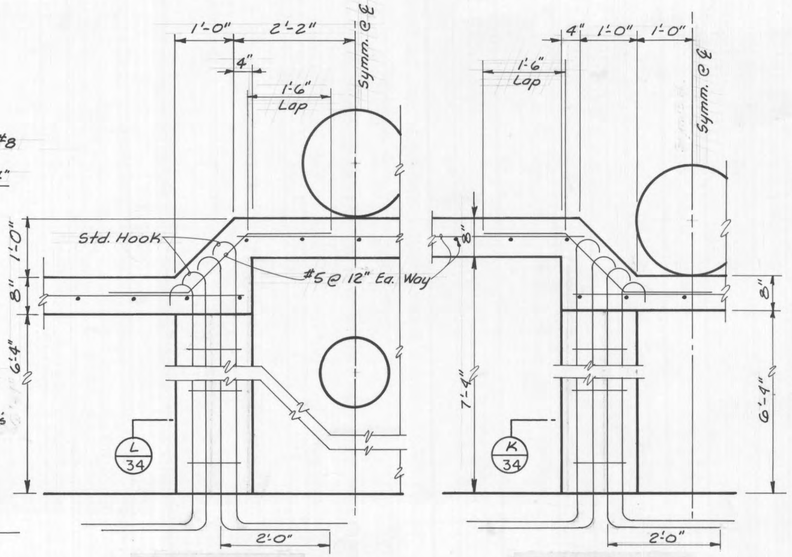
SECTION F



SECTION G

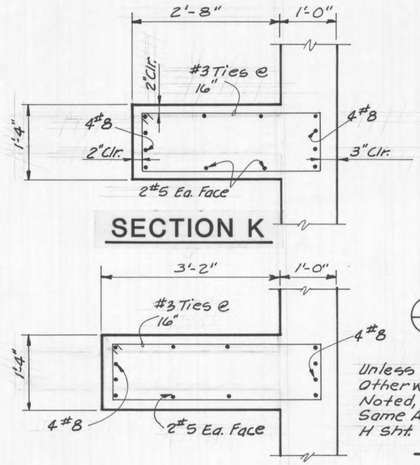


SECTION H



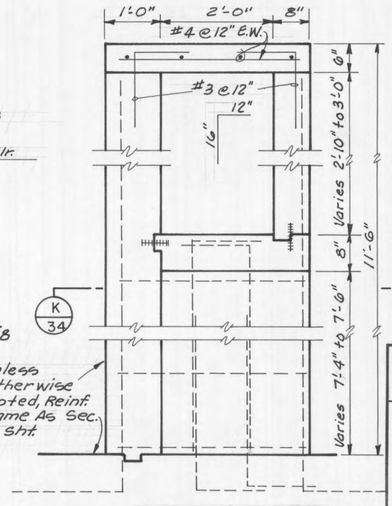
SECTION I

SECTION J



SECTION K

SECTION L



SECTION M

Note:
All Waterstops Shown Shall Be 6" x 3/8" Unless Otherwise Noted.

Revised As Constructed, January '84

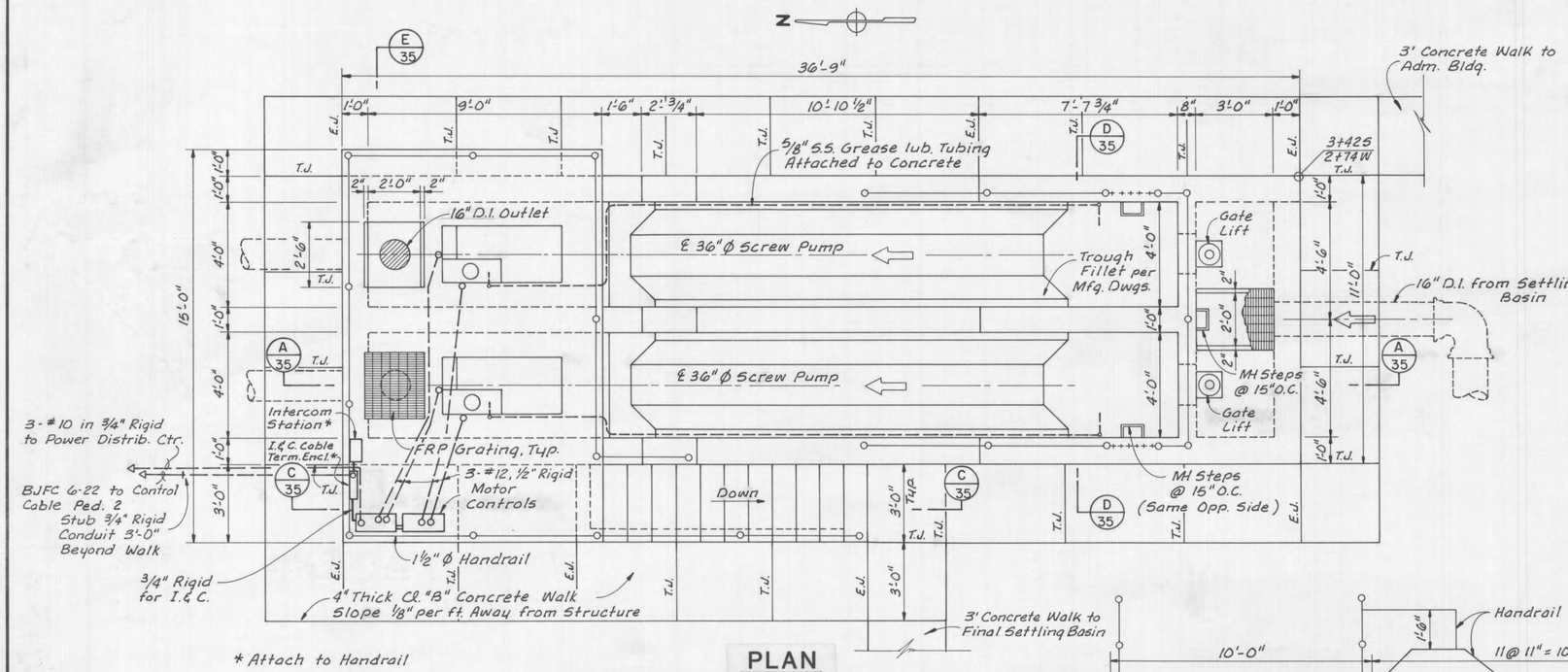
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

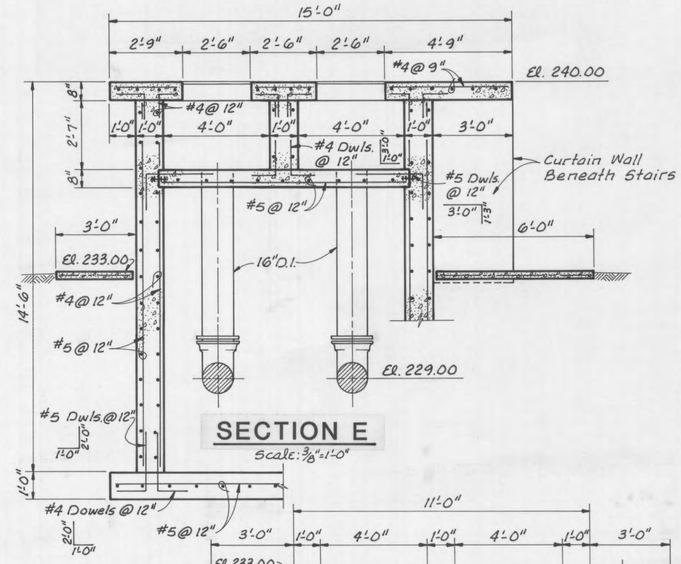
SEWAGE TREATMENT PLANT

FINAL SETTLING BASIN
STRUCTURAL DETAILS

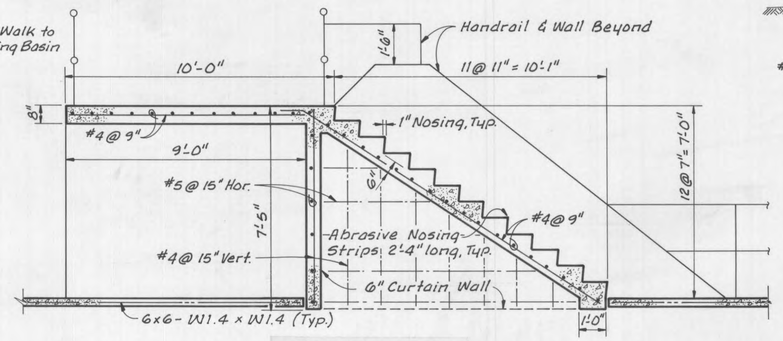
DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	34
TRACED: TL	SCALE: 3/4"=1'-0"		62
CHECKED: RLY			



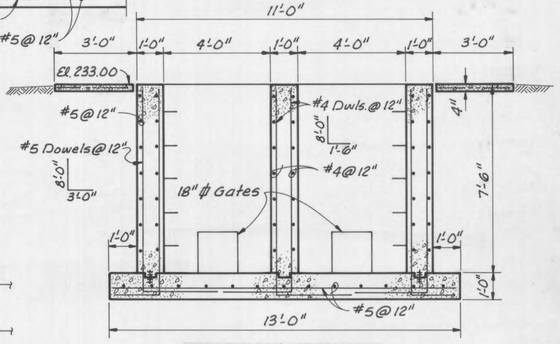
PLAN
Scale: 3/8"=1'-0"



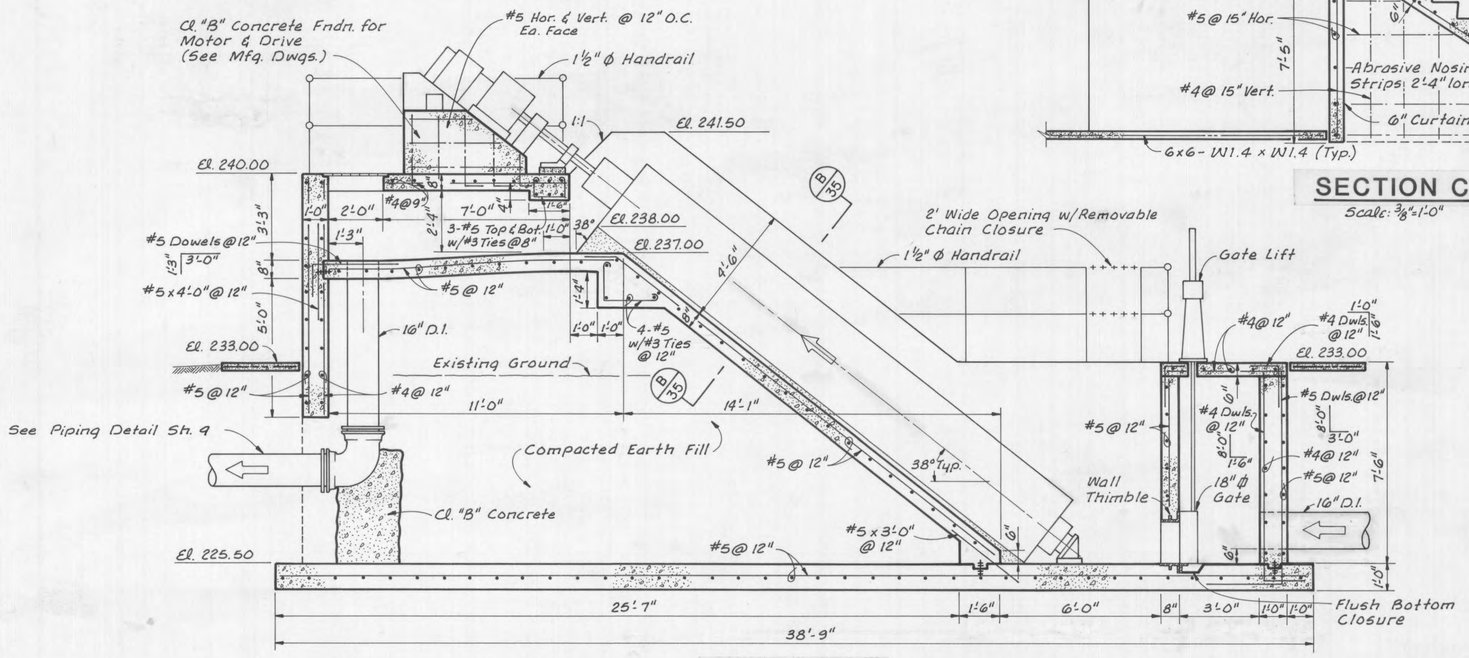
SECTION E
Scale: 3/8"=1'-0"



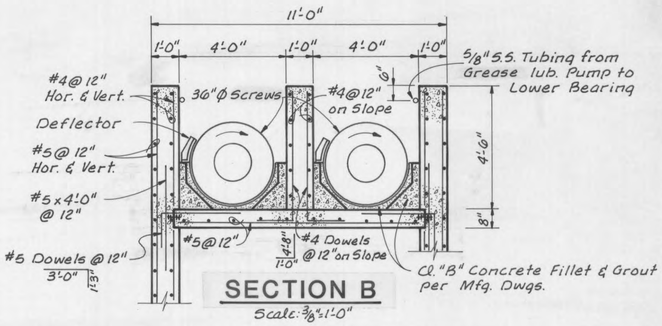
SECTION C
Scale: 3/8"=1'-0"



SECTION D
Scale: 3/8"=1'-0"



SECTION A
Scale: 3/8"=1'-0"



SECTION B
Scale: 3/8"=1'-0"

Note: All Waterstops Shown Shall Be 6" x 3/8" Unless Otherwise Noted.

Revised As Constructed, January '84

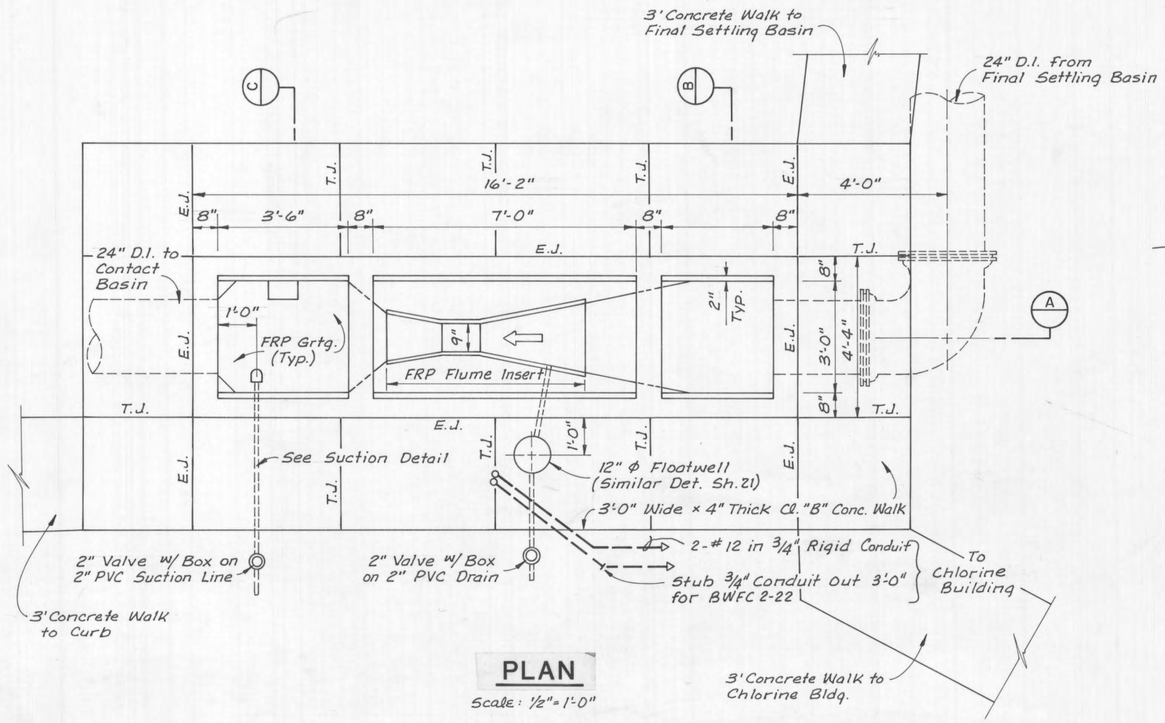
Crist Engineers Inc. — Consulting Engineers — Little Rock, Arkansas

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

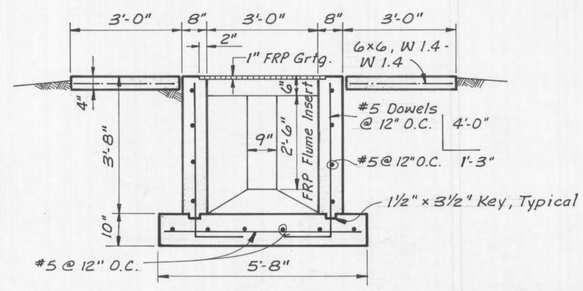
RETURN SLUDGE PUMPS

DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	35	
TRACED: SRY	SCALE: As Shown		62	
CHECKED: RLY				



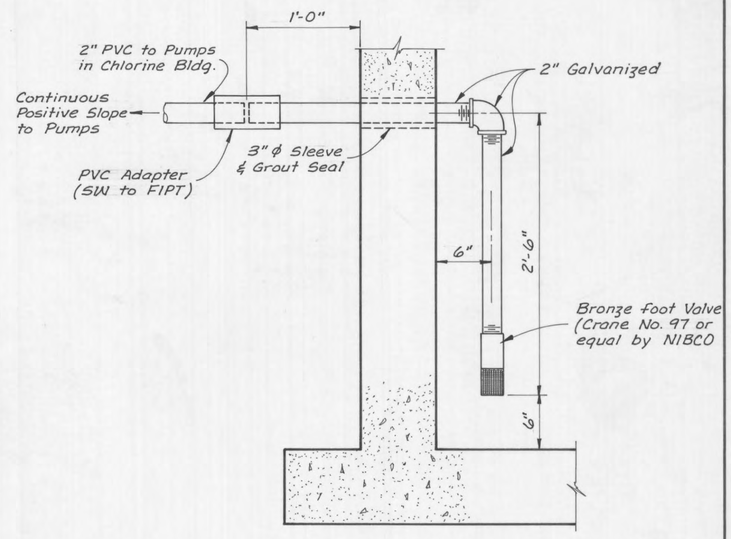
PLAN

Scale: 1/2"=1'-0"



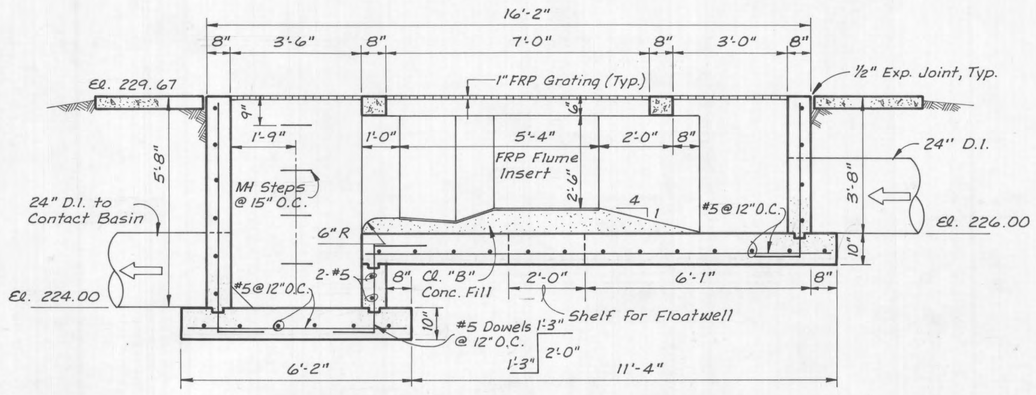
SECTION B

Scale: 1/2"=1'-0"



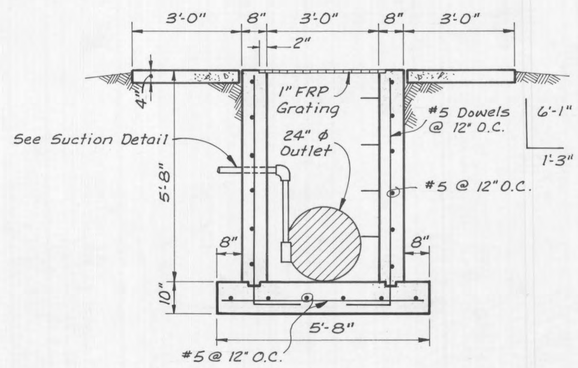
SUCTION FOR CHLOR. SUPPLY PUMPS

Scale: 1 1/2"=1'-0"



SECTION A

Scale: 1/2"=1'-0"



SECTION C

Scale: 1/2"=1'-0"

Revised As Constructed, January '84

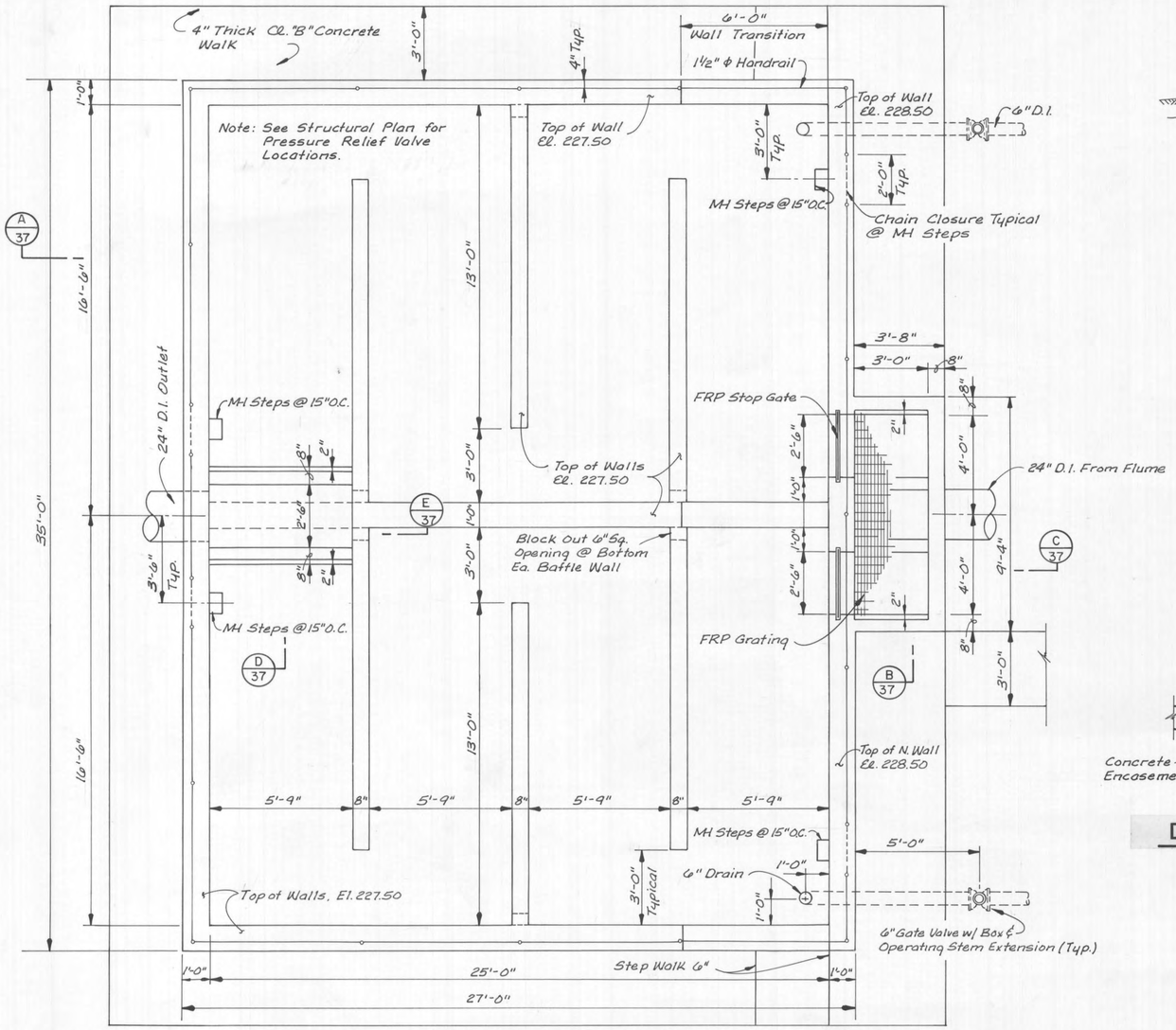
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

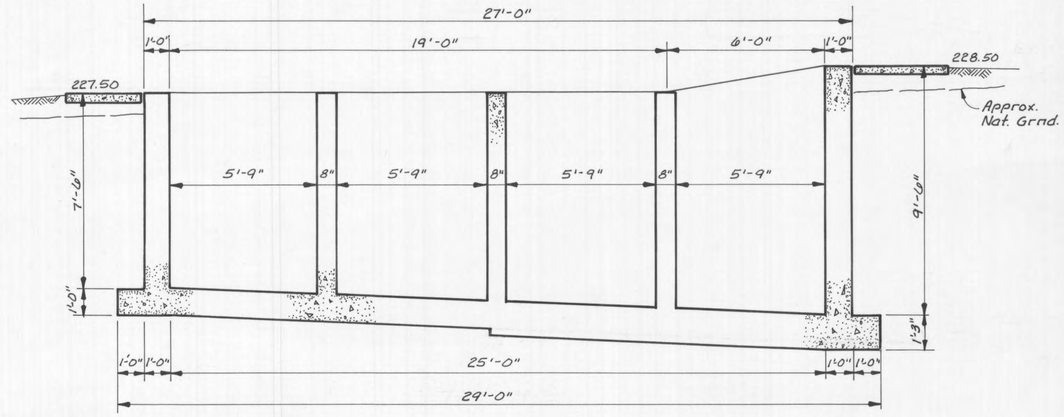
SEWAGE TREATMENT PLANT

FINAL FLUME

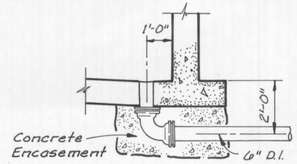
DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	36
TRACED: PEO	SCALE: As Shown		62
CHECKED: RLY			



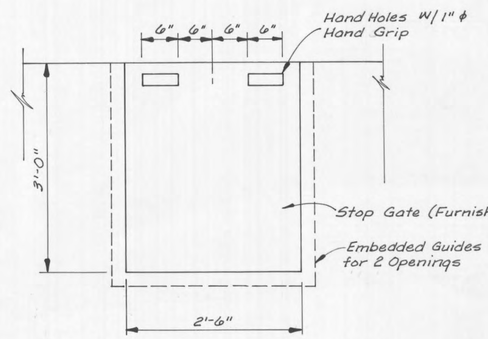
PLAN



SECTION A

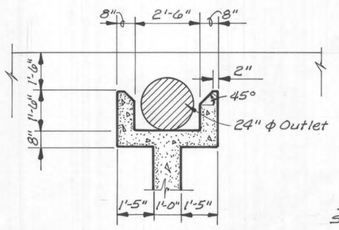


DRAIN DETAIL

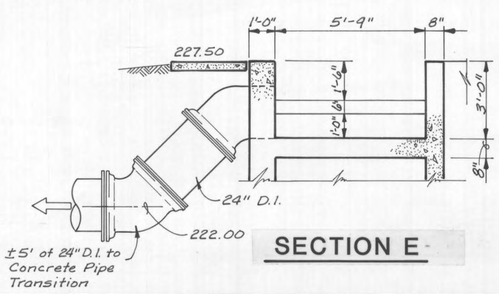


STOP GATE DETAIL

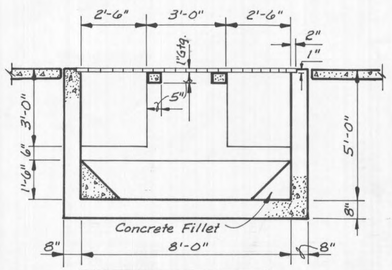
Scale: 1"=1'-0"



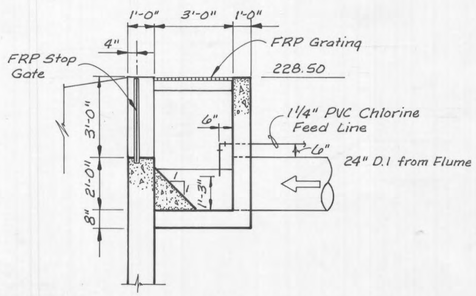
SECTION D



SECTION E



SECTION B



SECTION C

Revised As Constructed, January '84

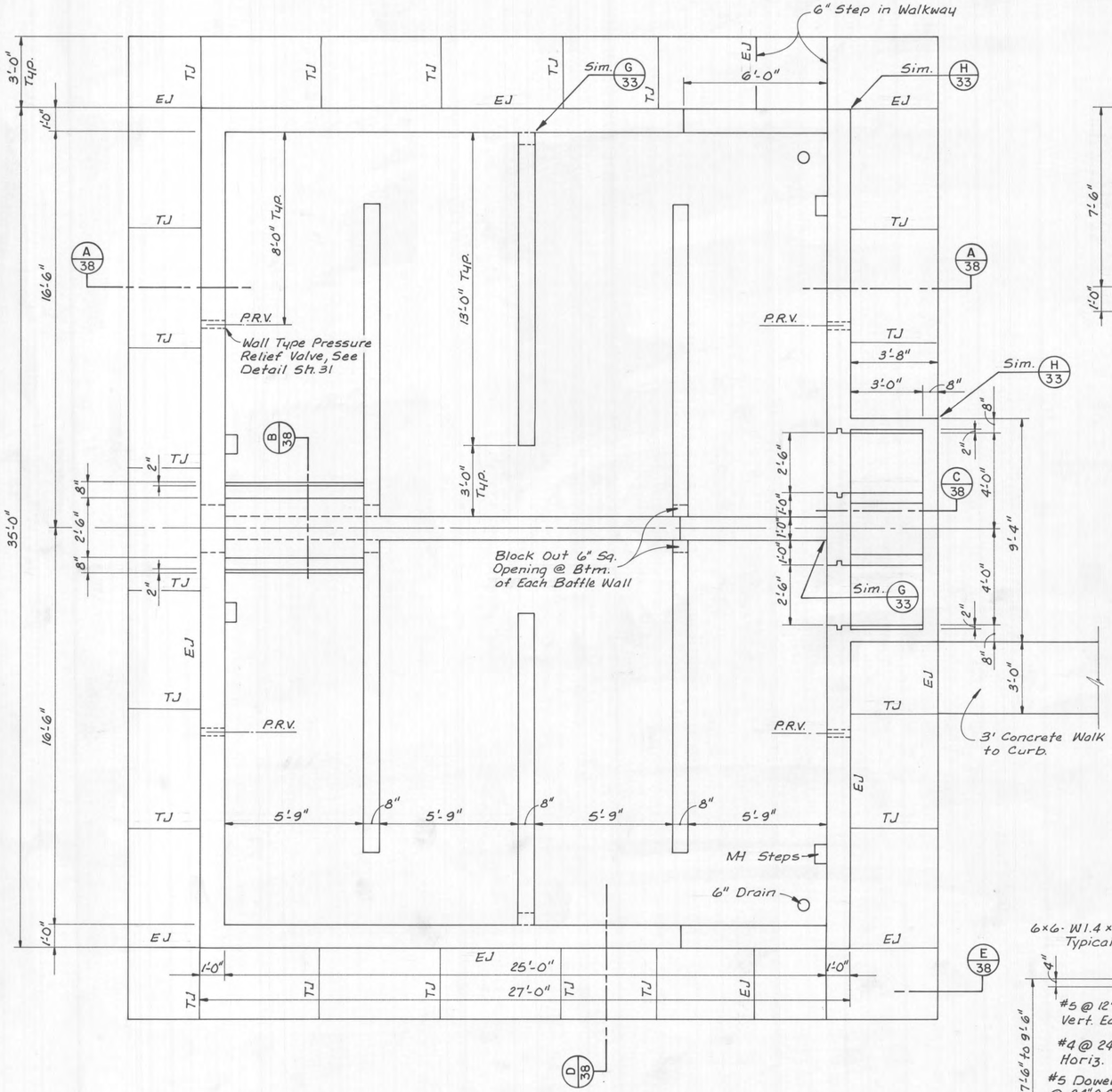
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

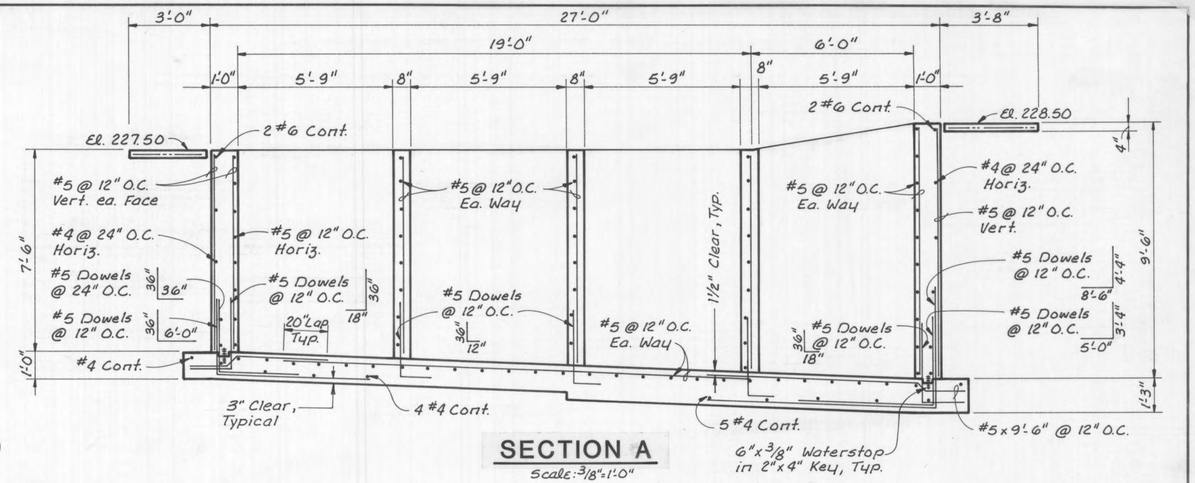
SEWAGE TREATMENT PLANT

CONTACT BASIN
PLAN & SECTIONS

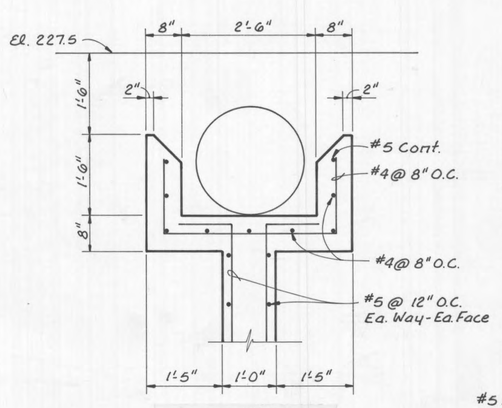
DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	37 / 62
TRACED: MT	SCALE: 3/8" = 1'-0"		
CHECKED: RLY			



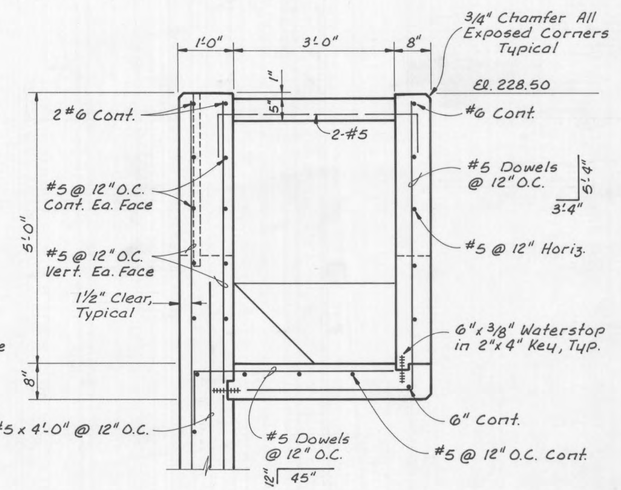
PLAN
Scale: 3/8"=1'-0"



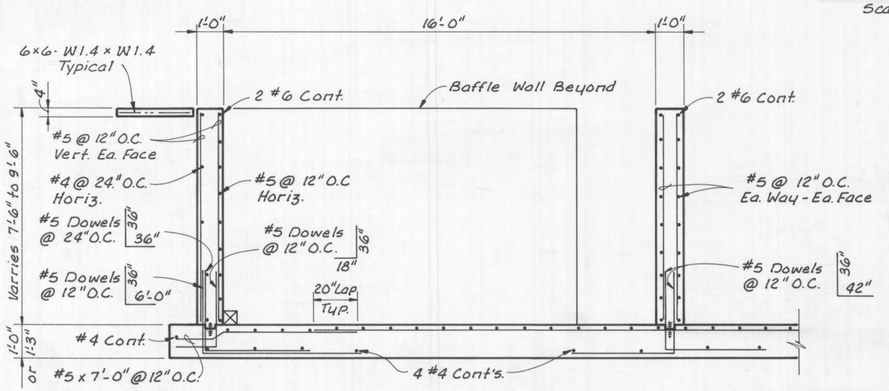
SECTION A
Scale: 3/8"=1'-0"



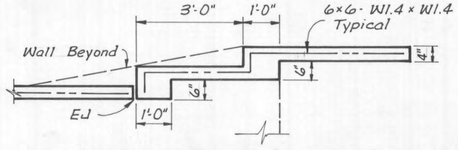
SECTION B
Scale: 3/4"=1'-0"



SECTION C
Scale: 3/4"=1'-0"



SECTION D
Scale: 3/8"=1'-0"



SECTION E
Scale: 1/2"=1'-0"

Note:
Unless Otherwise Noted
All Waterstops Shown
are 6"x3/8".

Revised As Constructed, January '84

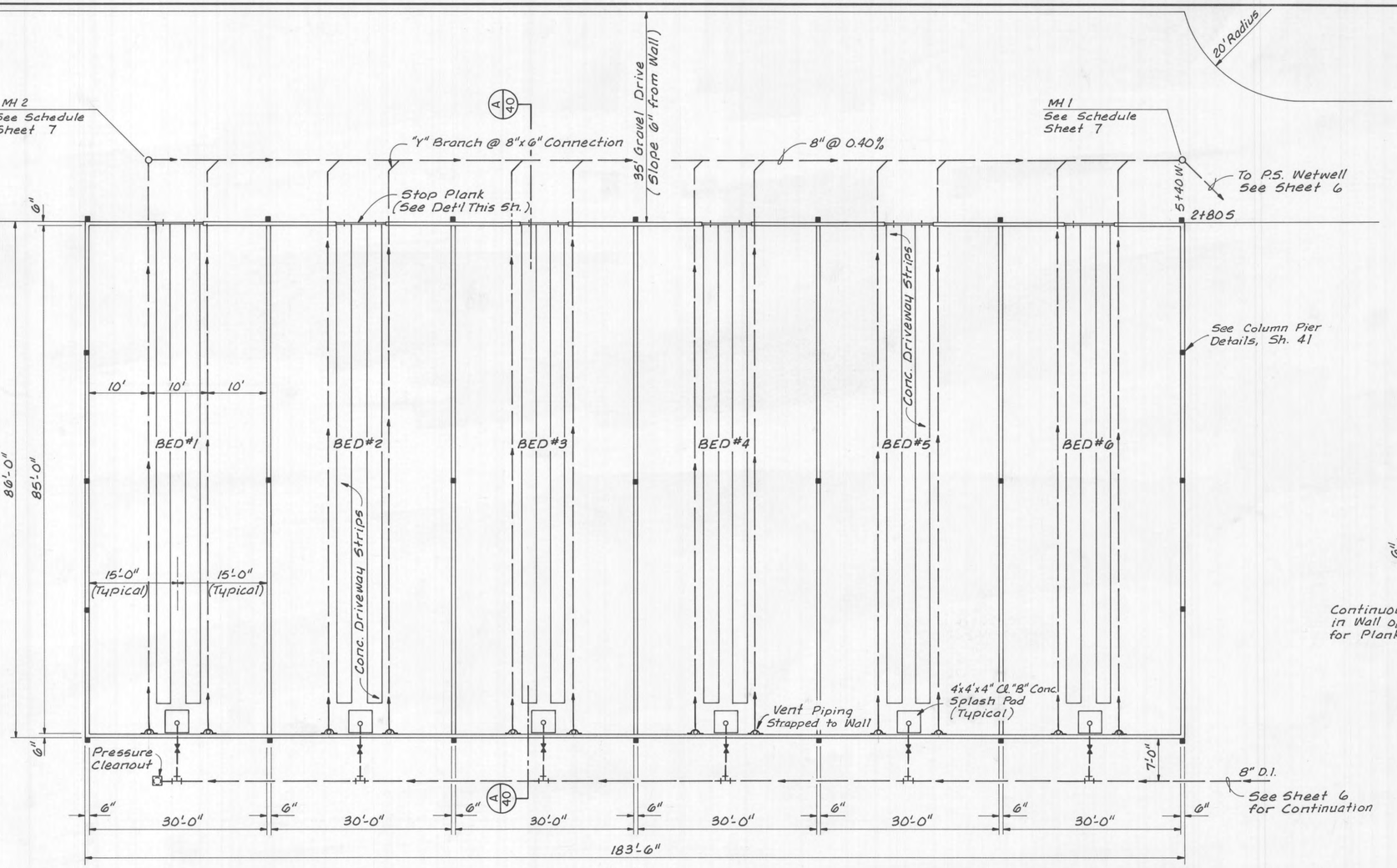
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

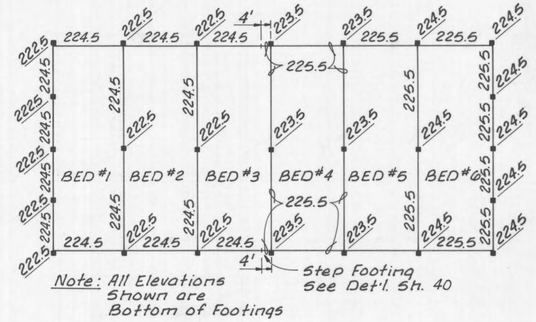
SEWAGE TREATMENT PLANT

CONTACT BASIN
STRUCTURAL DETAILS

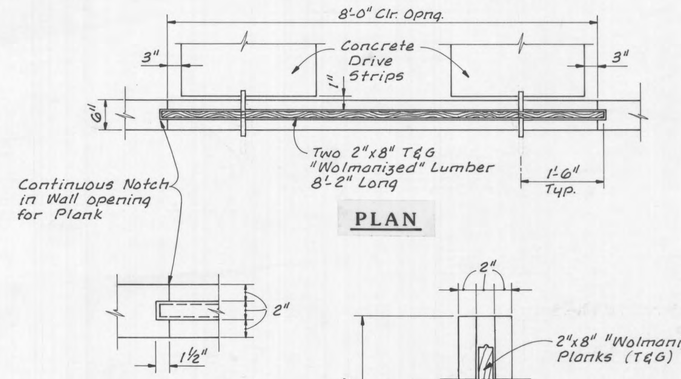
DRAWN: RSP	JOB NO. C-76-15	DATE: July '79	38	62
TRACED: SRY	SCALE: As Shown			
CHECKED: RLY				



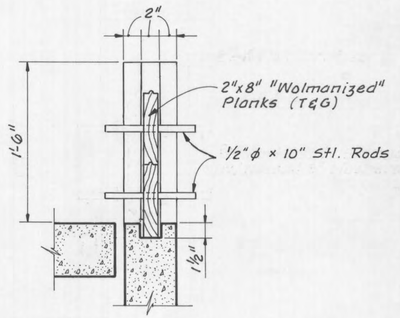
PLAN
Scale: 1"=10'-0"



FOOTING KEY PLAN
Scale: 1"=30'

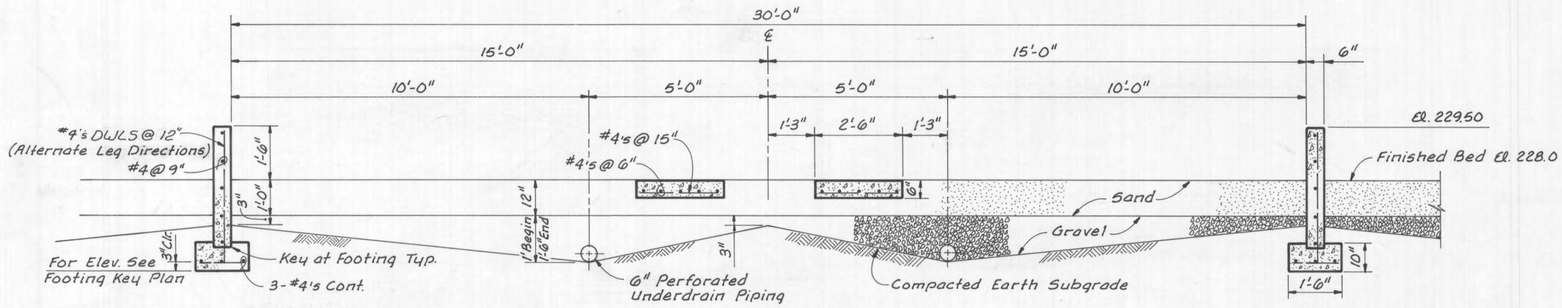


PLAN



SECTION

STOP PLANK DETAIL
No Scale



TYPICAL BED SECTION
Scale: ½"=1'-0"

Revised As Constructed, January '84

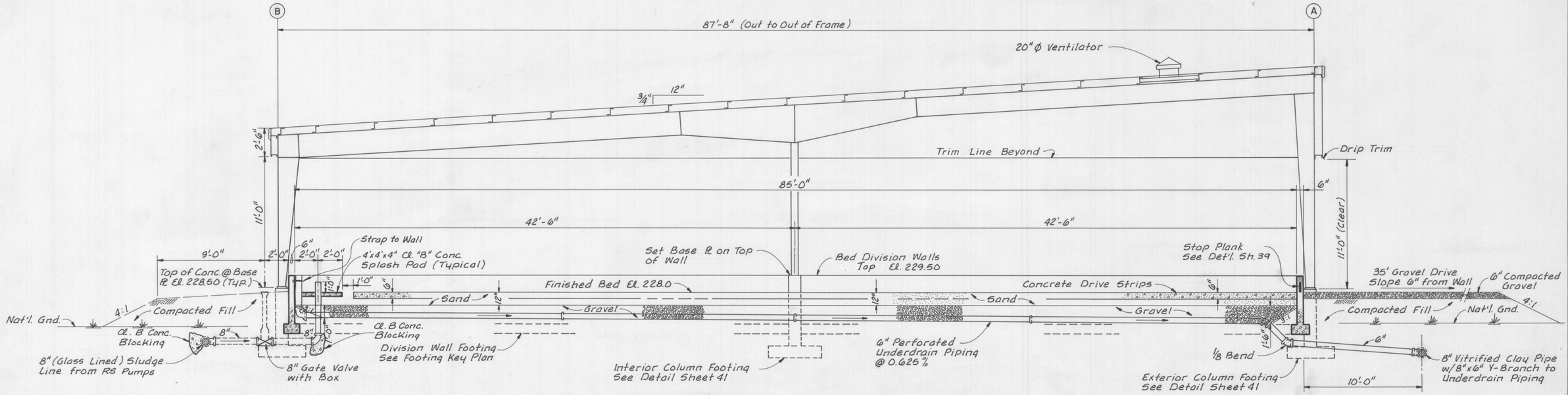
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

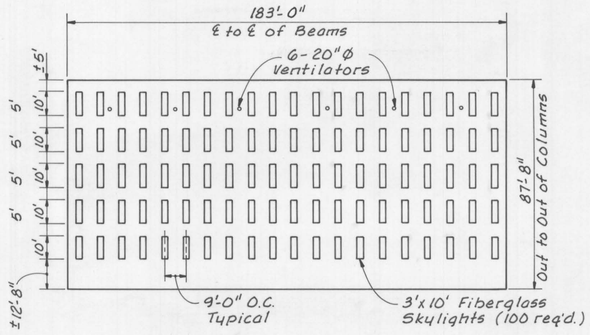
SLUDGE DRYING BEDS

DRAWN: WET	JOB NO. C-70-15	DATE: July '79	39	
TRACED: SRY	SCALE: As Shown		62	
CHECKED: RLY				



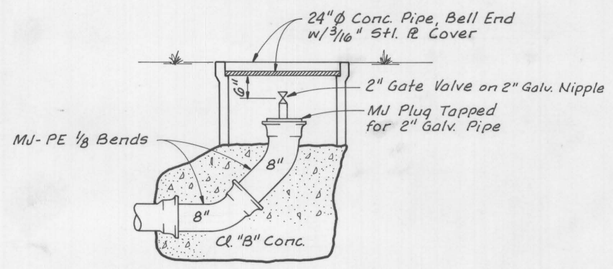
SECTION A

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



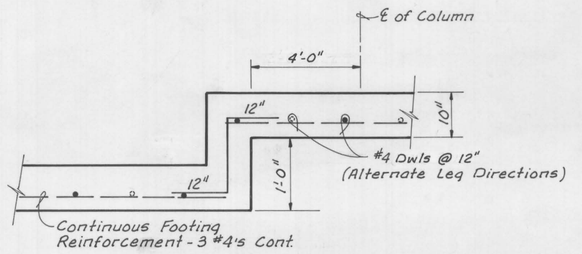
PLAN OF ROOF SKYLIGHTS

Scale: 1"=30'



PRESSURE CLEANOUT

No Scale



STEP FOOTING DETAIL

No Scale

Revised As Constructed, January '84

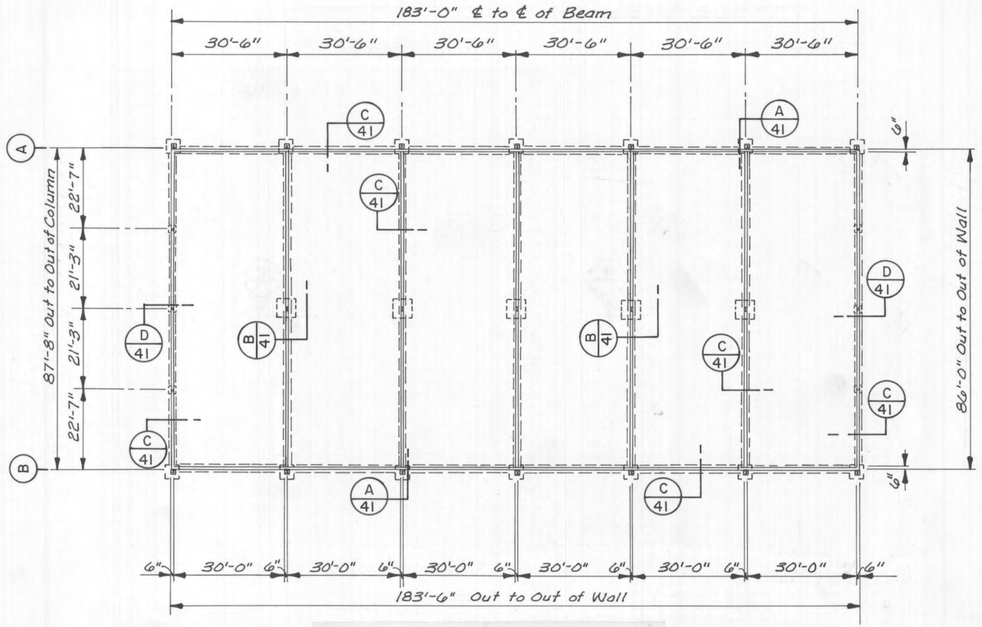
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

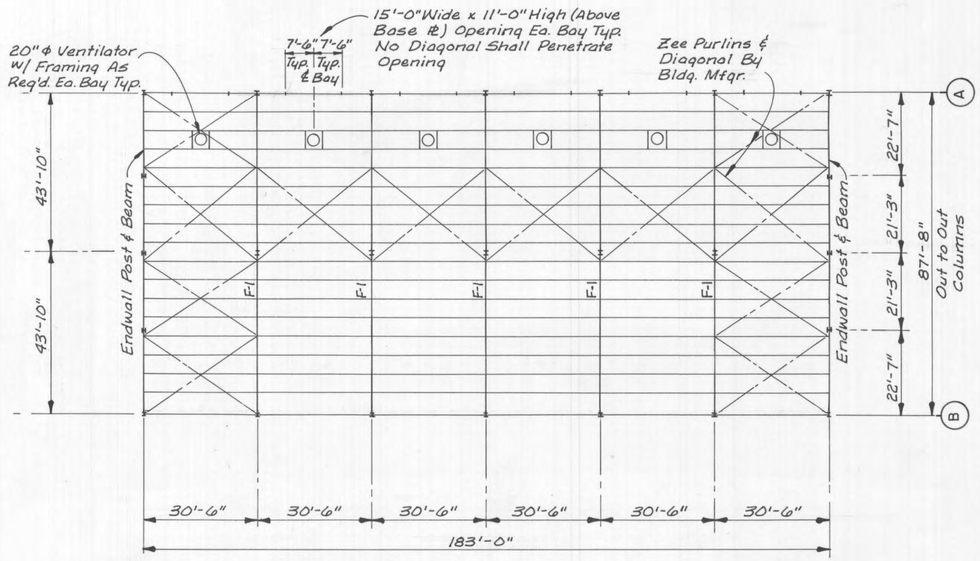
SLUDGE DRYING BEDS

DRAWN: WET	JOB NO. C-76-15	DATE: July '79	40	
TRACED: SRY	SCALE: As Shown			62
CHECKED: RLY				



SLUDGE DRYING BED
FOUNDATION PLAN

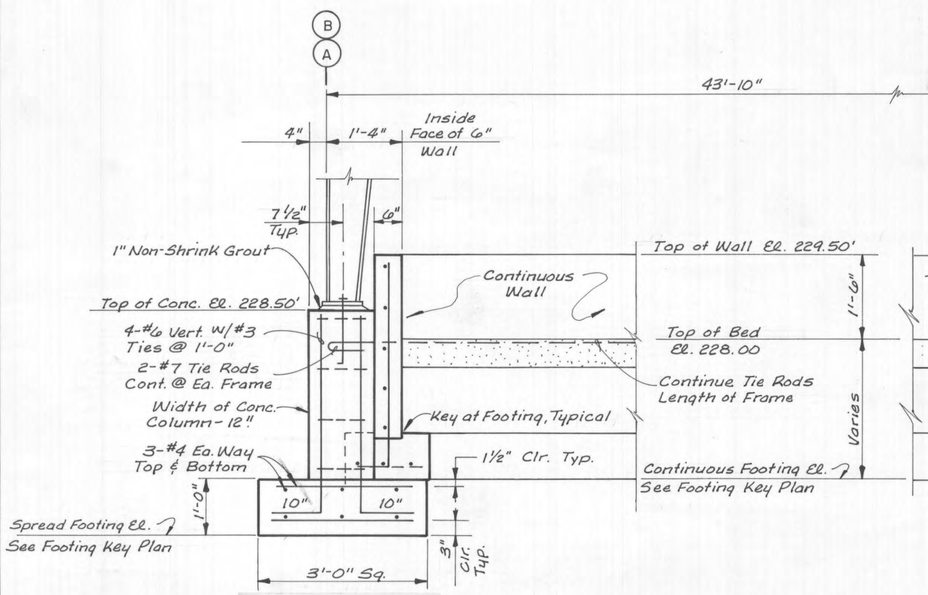
Scale: 1"=20'-0"



SLUDGE DRYING BED
FRAMING PLAN

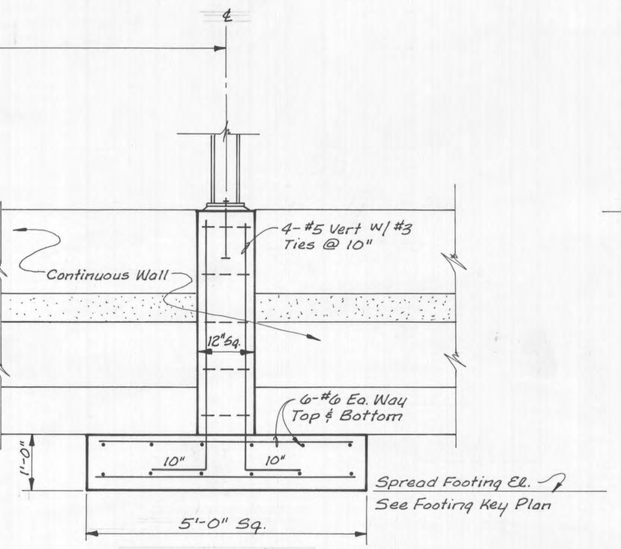
Scale: 1"=20'-0"

Note: Endwall Post ℄ Beam Dimensions May Be Adjusted to Agree W/ Standards of Bldg. Mfqr.



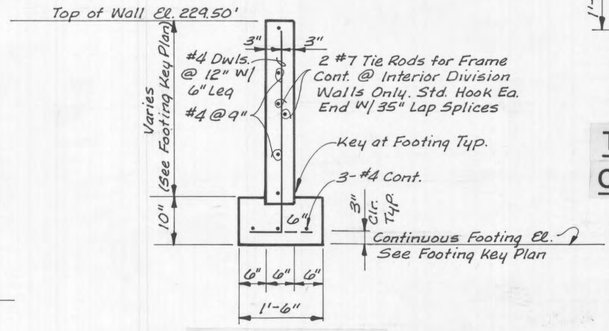
SECTION A
TYPICAL FOOTING AT EXTERIOR FRAME COLUMNS

Scale: 3/4"=1'-0"



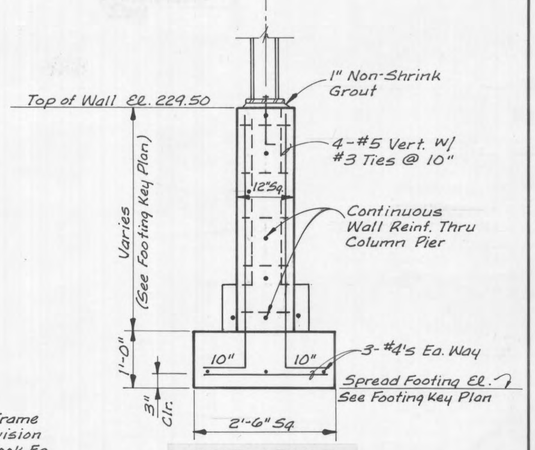
SECTION B
TYPICAL FOOTING AT INTERIOR FRAME COLUMNS

Scale: 3/4"=1'-0"



SECTION C
TYPICAL CONTINUOUS WALL

Scale: 3/4"=1'-0"



SECTION D
TYPICAL END WALL COLUMN FOOTINGS

Scale: 3/4"=1'-0"

Revised As Constructed, January '84

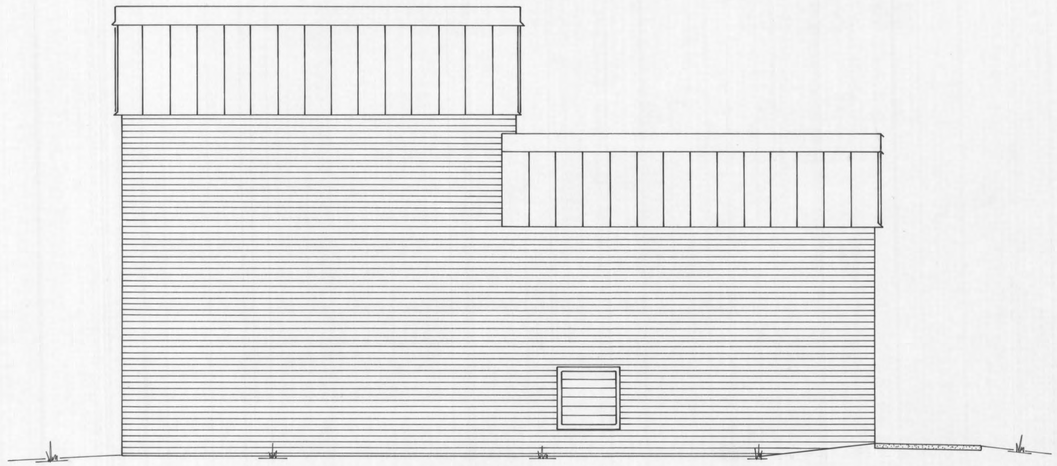
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

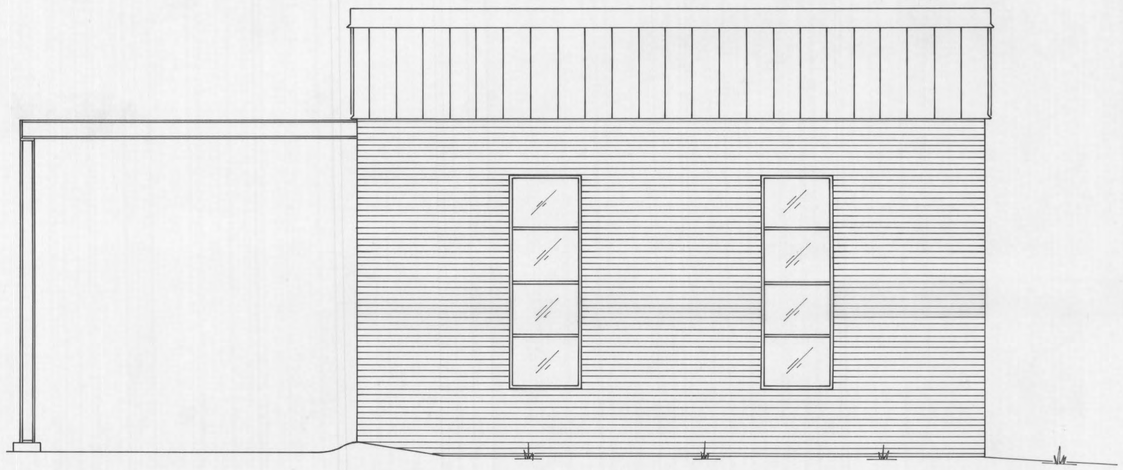
SEWAGE TREATMENT PLANT

SLUDGE DRYING BEDS

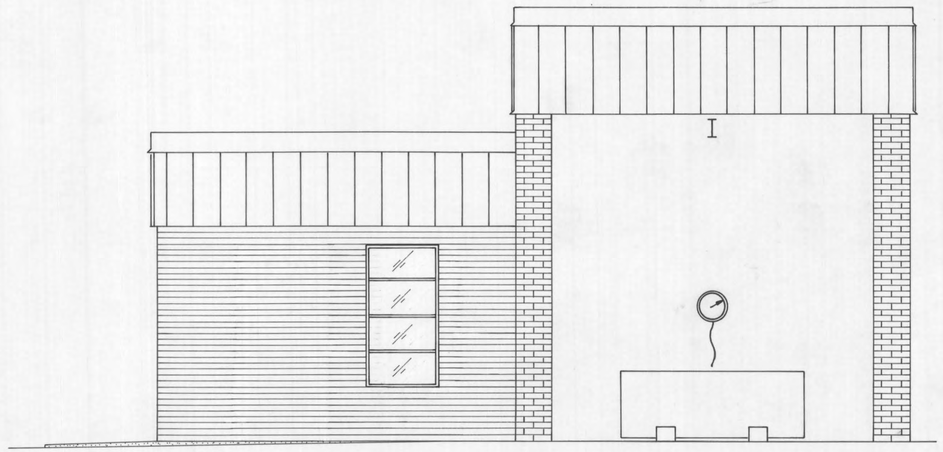
DRAWN: RSP	JOB NO. C-70-15	DATE: July '79	41
TRACED: MT	SCALE: As Shown		62
CHECKED: RLY			



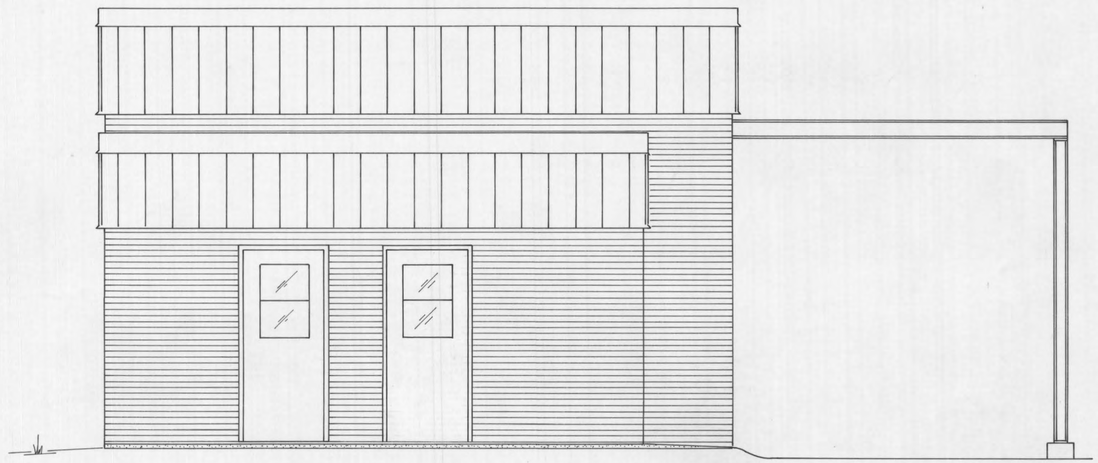
NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION

Revised As Constructed, January, '84

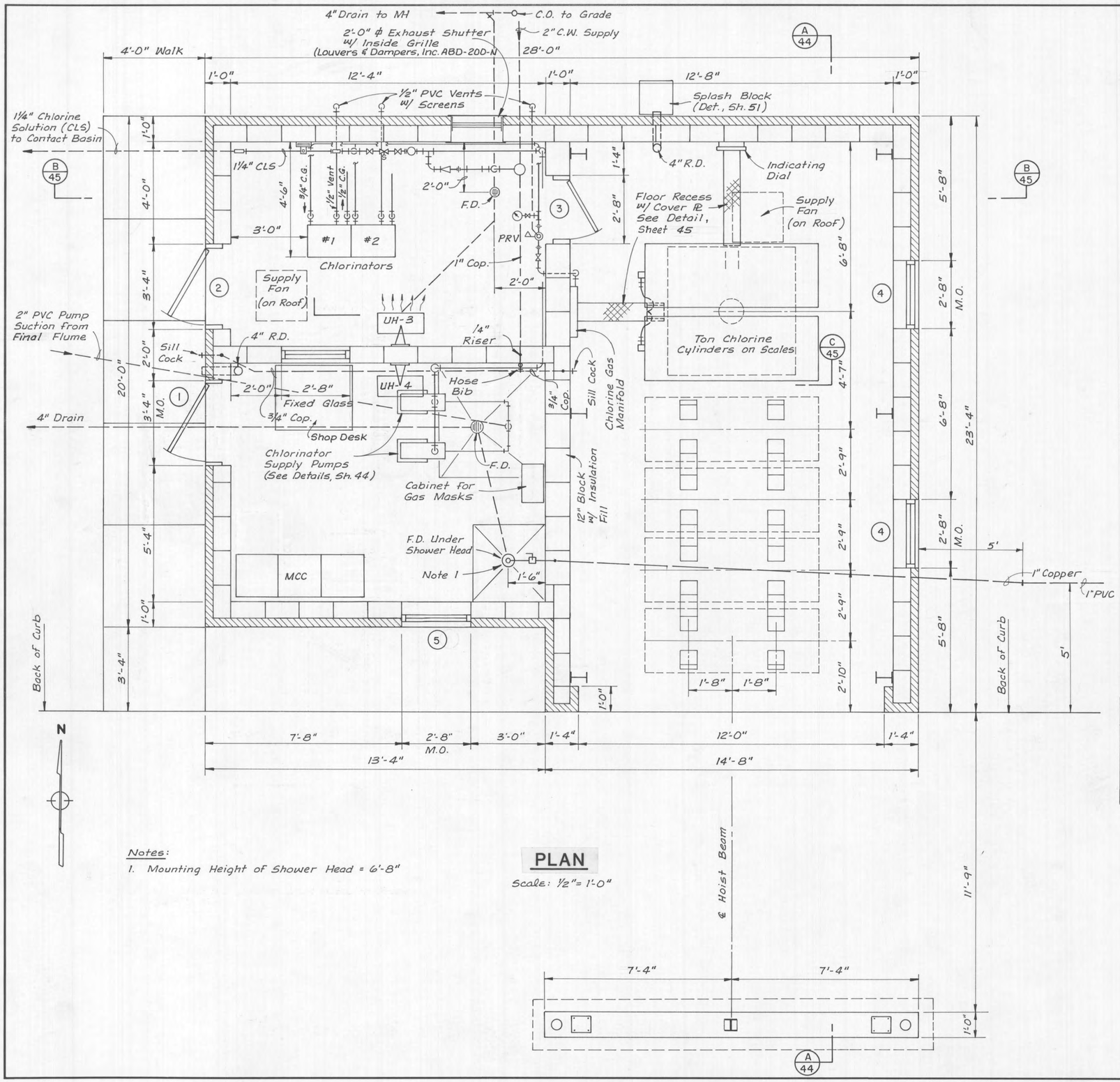
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

CHLORINE BUILDING
ELEVATIONS

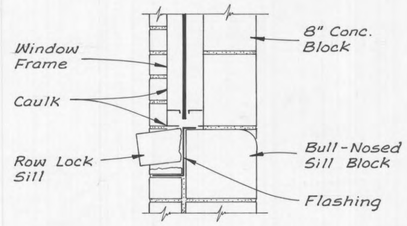
DRAWN: DRN	JOB NO. C-76-15	DATE: July '79	42	
TRACED: PEO	SCALE: 3/8" = 1'-0"			62
CHECKED: DRN				



Notes:
1. Mounting Height of Shower Head = 6'-8"

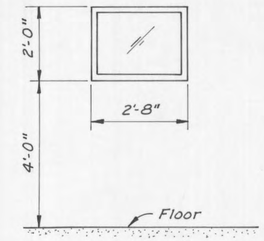
PLAN

Scale: ½"= 1'-0"



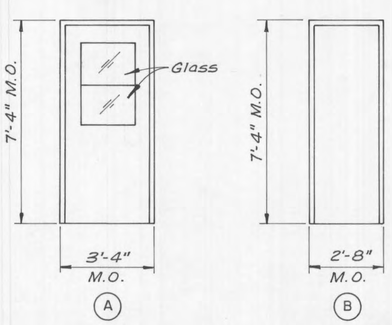
WINDOW SILL

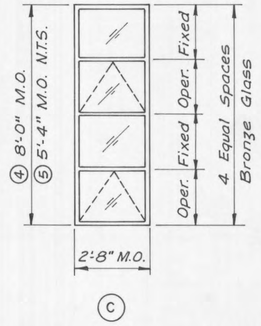
Scale: 1½"= 1'-0"



FIXED GLASS

Scale: ½"= 1'-0"





DOOR & WINDOW DETAILS

Scale: ⅜"= 1'-0"

DOOR & WINDOW SCHEDULE

MARK	STYLE	DOOR SIZE	DOOR THICKNESS	ACCESSORIES	LOCK SET (Gov. No.)	REMARKS
1	A	3072	1¾"	Threshold, Stop	86B-4	LHR
2	A	3072	1¾"	Threshold, Stop Panic Hdw.	86B-4	LHR
3	B	2472	1⅜"	Threshold, Stop Panic Hdw.	86N-4	RHR
4	C	(Window)				Awning (Project "Out")
5	C	(Window)				Awning (Project "Out")

NOTE:
All Perimeter Wall and the 12" Blk. Partition Wall to have Block Insulation Fill. (See Part 12-B (3) of Spec's.)

Revised As Constructed, January '84

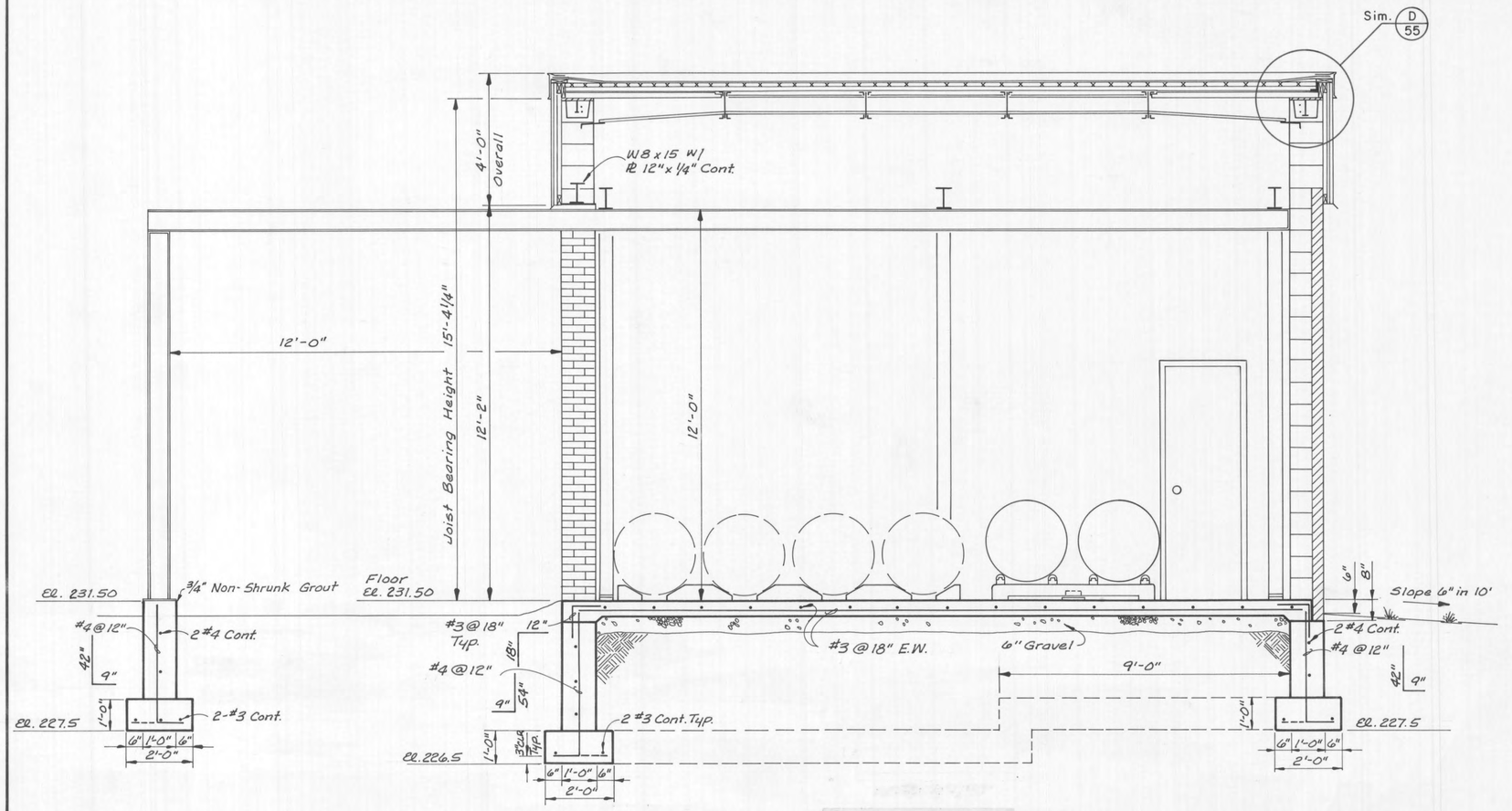
Christ Engineers Inc. — Consulting Engineers — Little Rock, Arkansas

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

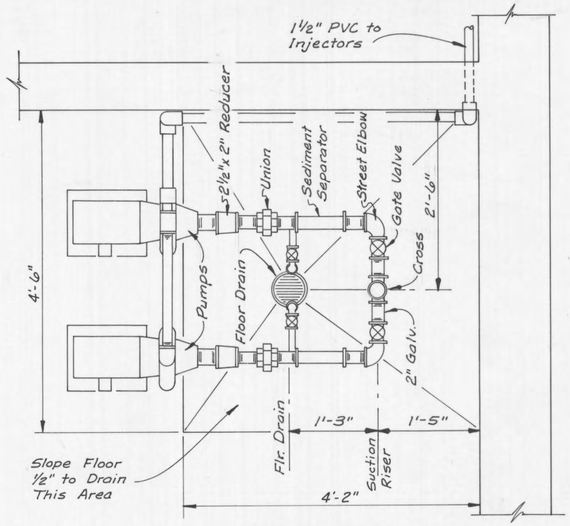
CHLORINE BUILDING
PLAN & DETAILS

DRAWN: DRN	JOB NO. C-76-15	DATE: July '79	43 / 62
TRACED: PEO	SCALE: As Shown		
CHECKED: DRN			

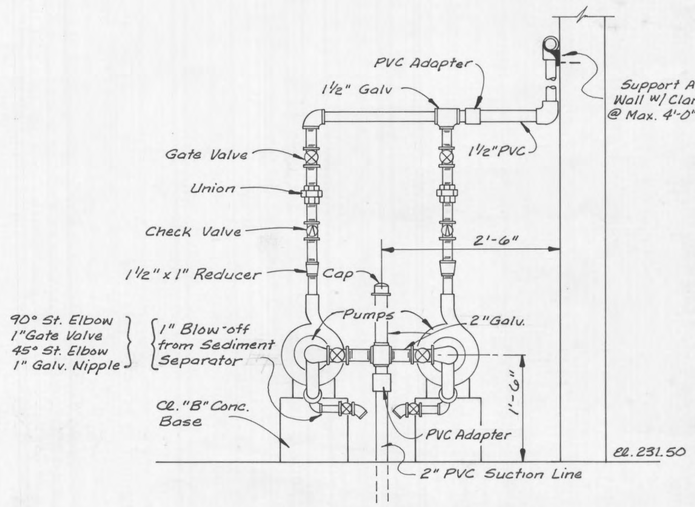


SECTION A

Scale: 1/2"=1'-0"



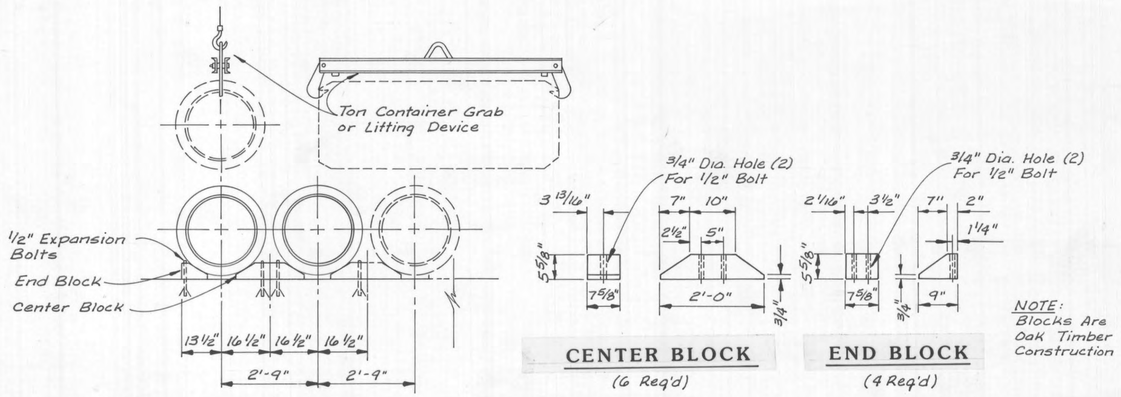
PLAN



ELEVATION

CHLORINATOR SUPPLY PUMPS

Scale: 1"=1'-0"



NOTE: Blocks Are Oak Timber Construction

TON CYLINDER CRADLES & LIFTING DEVICE

No Scale

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

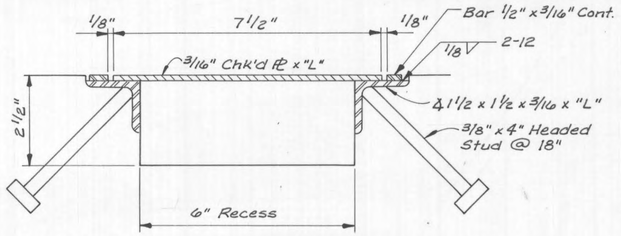
CHLORINE BUILDING

SECTION & DETAILS

DRAWN: DRN	JOB NO. C-76-15	DATE: July '79	44/62
TRACED: MT	SCALE: As Shown		
CHECKED: DRN			

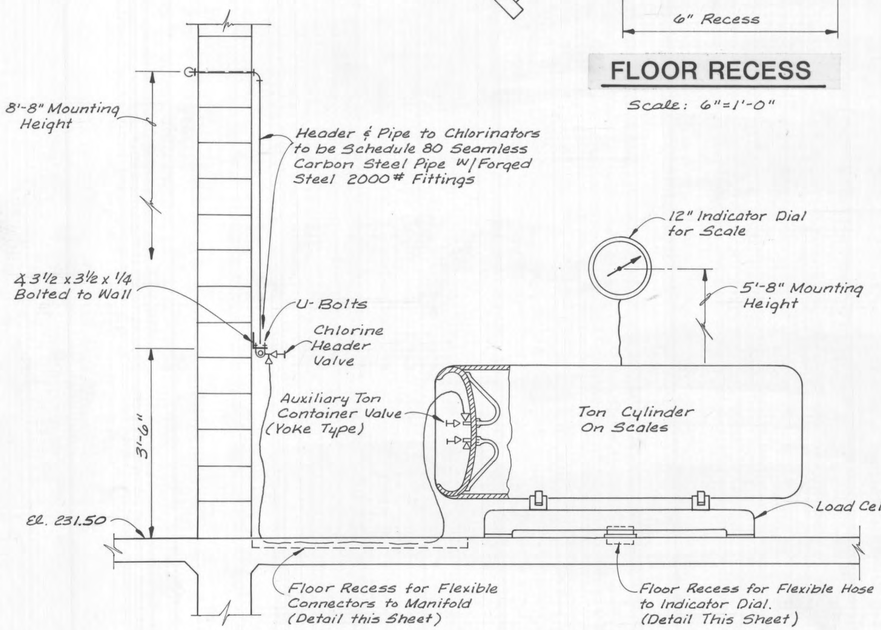
LENGTHS "L"

	Recess & Angles	Cover Plate
Hose to Indicating Dial	5'-0"	4'-0"
For Flexible Connectors to Ton Cylinders	4'-0"	3'-0"



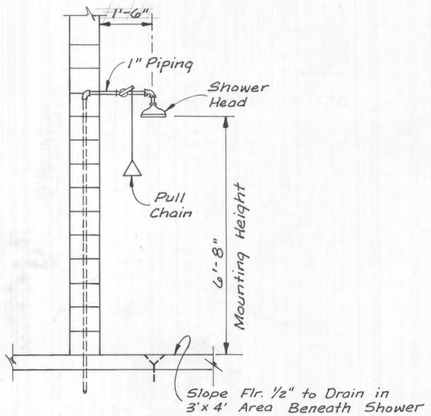
FLOOR RECESS

Scale: 6"=1'-0"



SECTION C

Scale: 3/4"=1'-0"

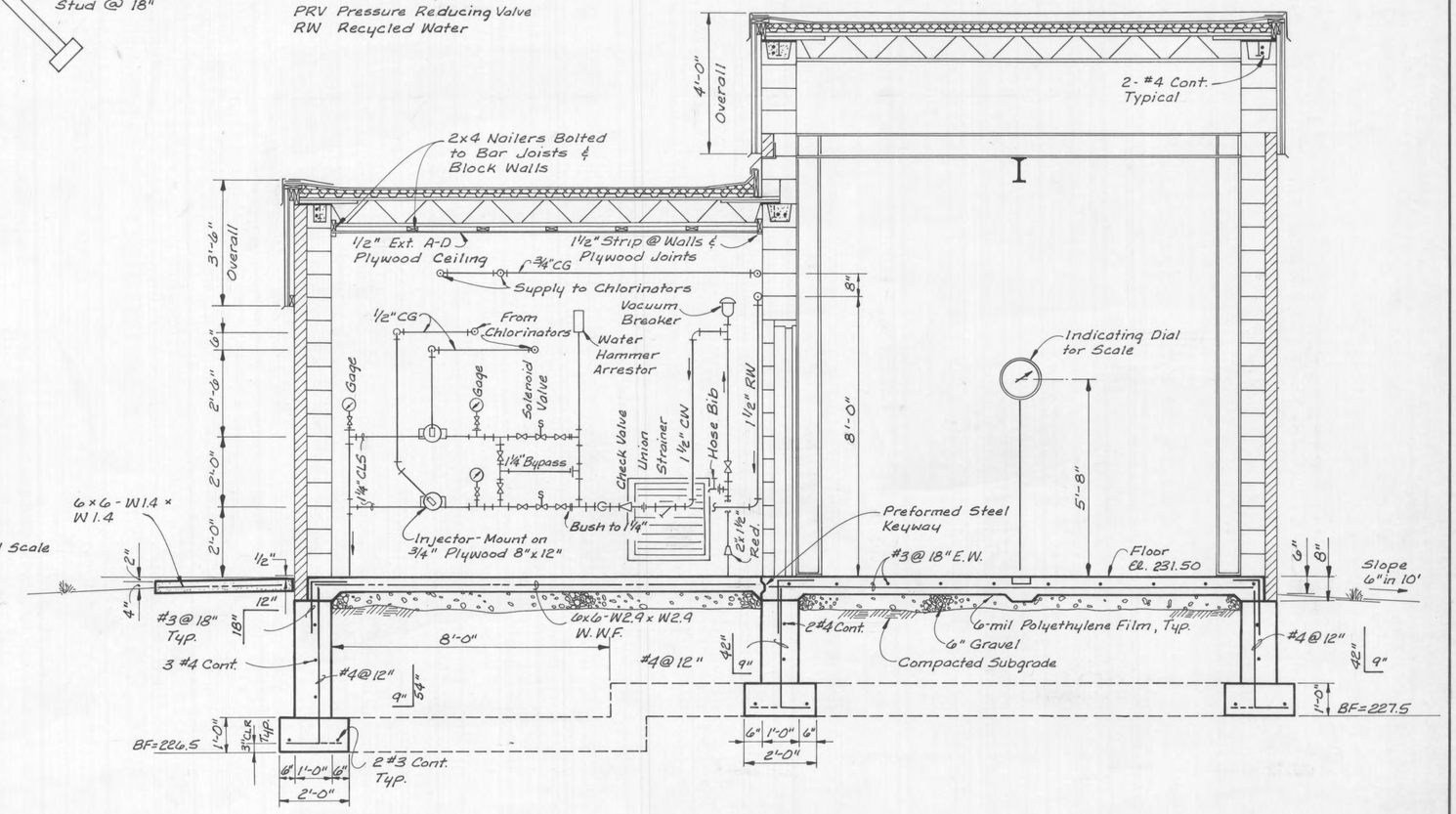


EMERGENCY SHOWER

Scale: 1/2"=1'-0"

LEGEND

CG Chlorine Gas
CLS Chlorine Solution
CW Cold Water (Potable)
PRV Pressure Reducing Valve
RW Recycled Water



SECTION B

Scale: 1/2"=1'-0"

Revised As Constructed, January '84

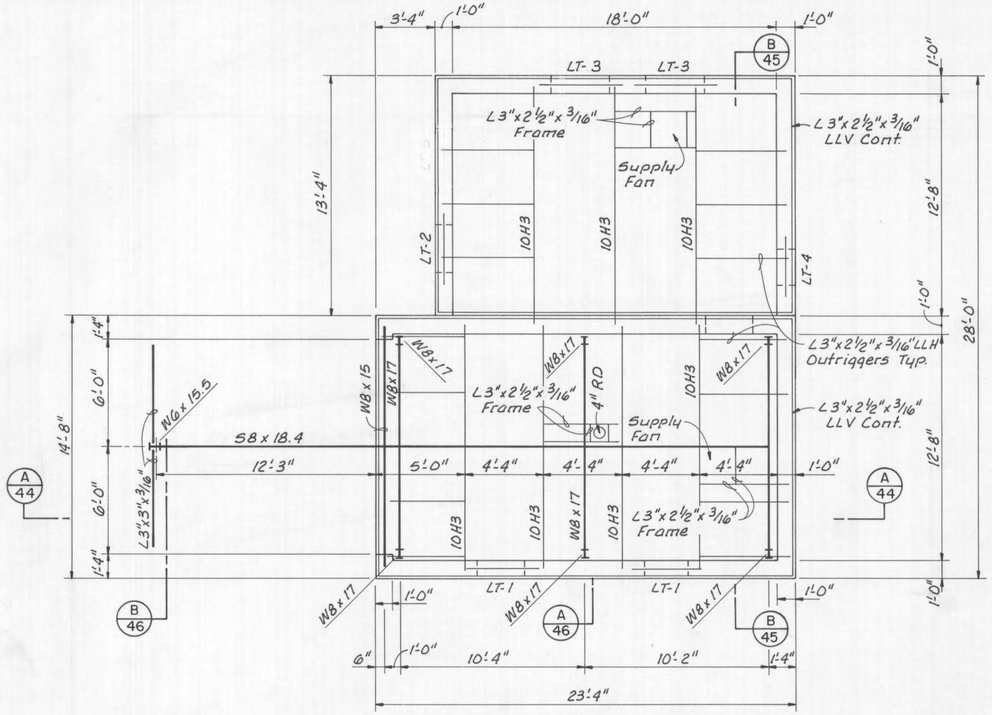
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

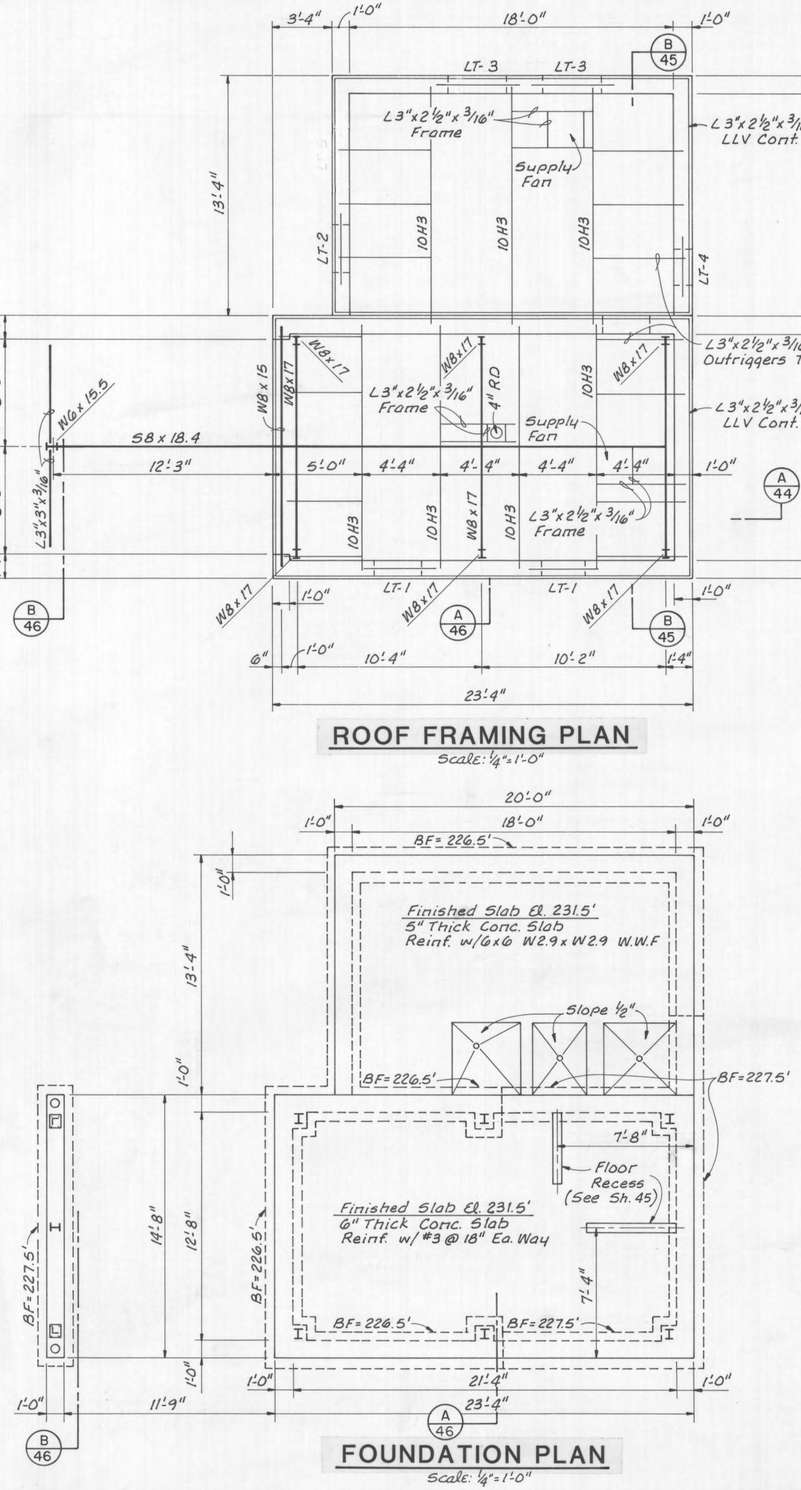
CHLORINE BUILDING
SECTION & DETAILS

DRAWN: DRN	JOB NO. C-76-15	DATE: July '79	45 / 62
TRACED: MT	SCALE: As Shown		
CHECKED: DRN			



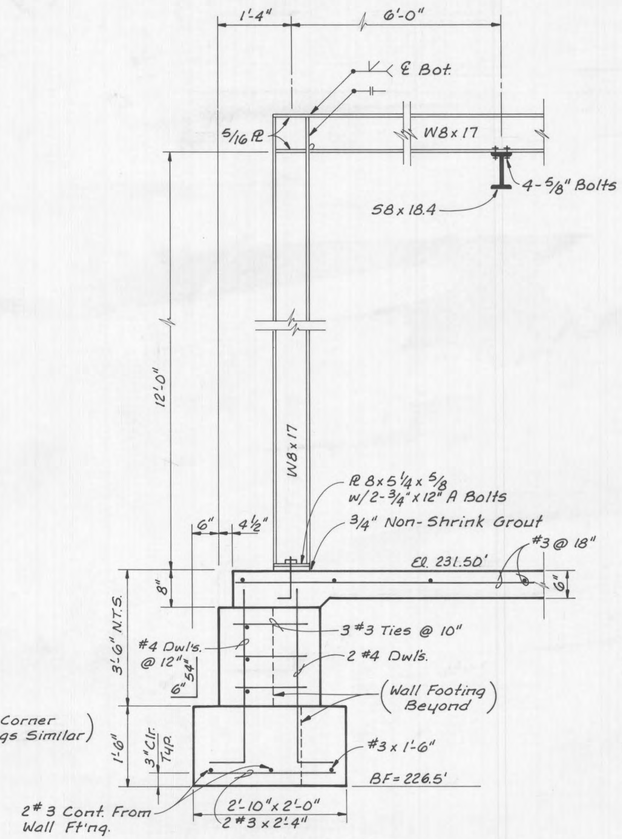
ROOF FRAMING PLAN

Scale: ¼"=1'-0"



FOUNDATION PLAN

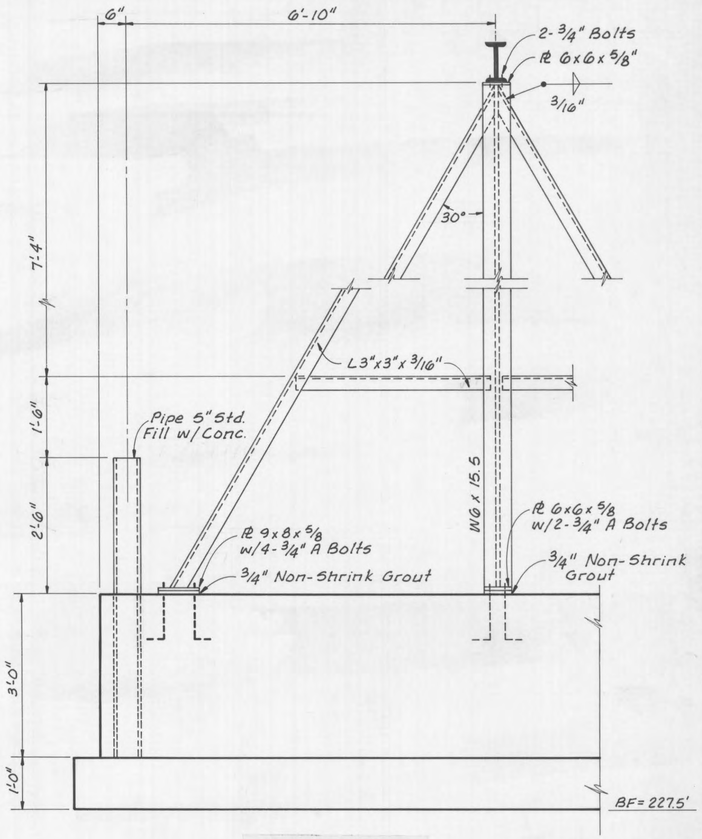
Scale: ¼"=1'-0"



(Note: Corner Footings Similar)

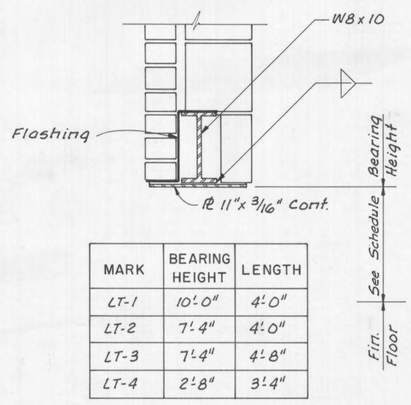
SECTION A

Scale: ¾"=1'-0"



SECTION B

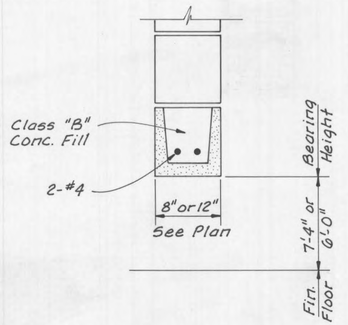
Scale: ¾"=1'-0"



MARK	BEARING HEIGHT	LENGTH
LT-1	10'-0"	4'-0"
LT-2	7'-4"	4'-0"
LT-3	7'-4"	4'-8"
LT-4	2'-8"	3'-4"

TYPICAL EXTERIOR WALL LINTEL DETAIL & SCHEDULE

Scale: 1½"=1'-0"



TYPICAL INTERIOR WALL LINTEL

Scale: 1½"=1'-0"

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

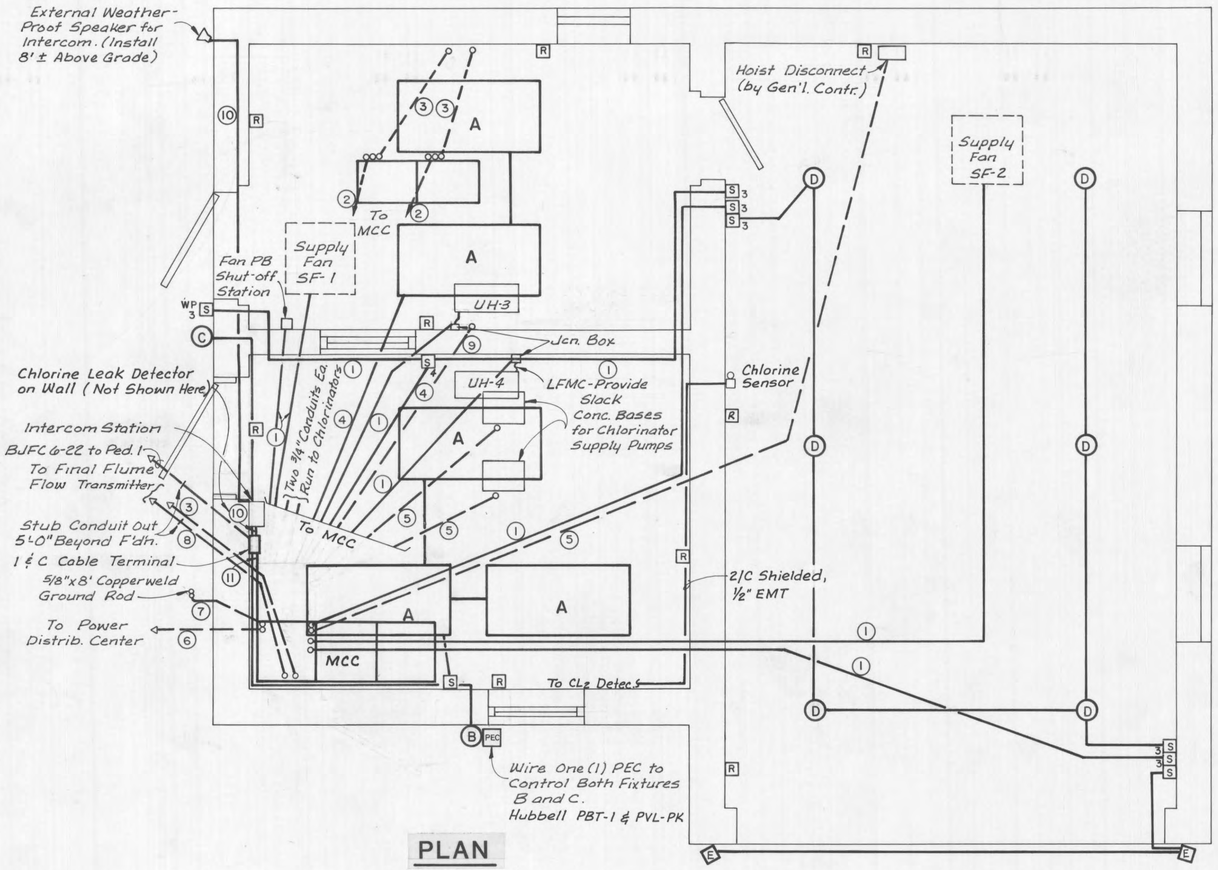
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

CHLORINE BUILDING

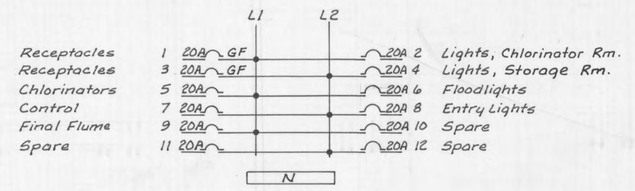
FNDN. FRAMING PLANS & DETAILS

DRAWN: DRN	JOB NO. C-76-15	DATE: July '79	46
TRACED: SRY	SCALE: As Shown		62
CHECKED: RLY			



PLAN

Scale: ½"=1'-0"



LIGHTING PANEL
120/240 V.A.C., 1Ø

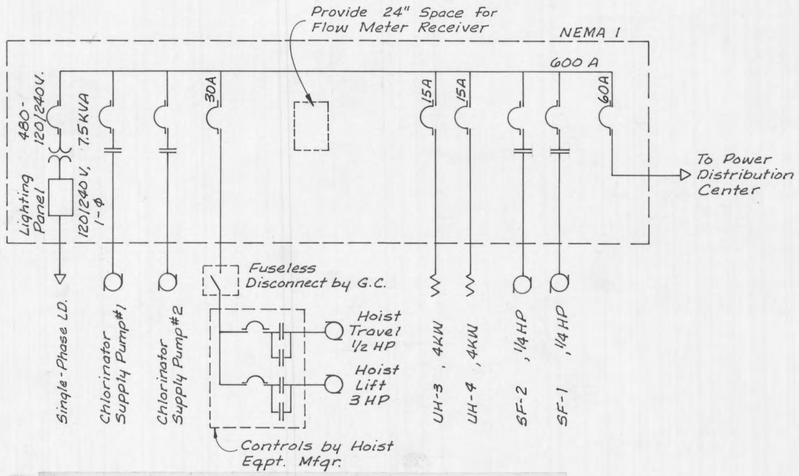
SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
1	3	12	1/2"	EMT
2	2	12	3/4"	RIGID
	Per Inst. Req'mts.		3/4"	RIGID
3	2	12	1/2"	RIGID
4	2	12	1/2"	EMT
5	3	12	1/2"	RIGID
6	3	8	1"	RIGID
7	1	#2 B.C.*	3/4"	RIGID
8	BWFC 2-22		3/4"	RIGID
9	—	—	3/4"	RIGID
10	2	18	1/2"	EMT
11	Per Inst. Req'mts		3/4"	EMT

*Run to Ground Rod

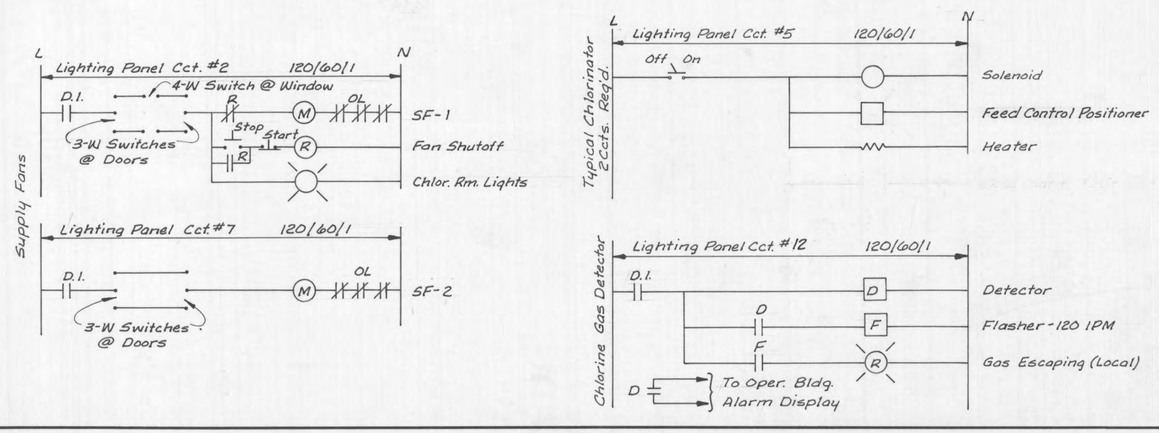
WIRE & CONDUIT SCHEDULE

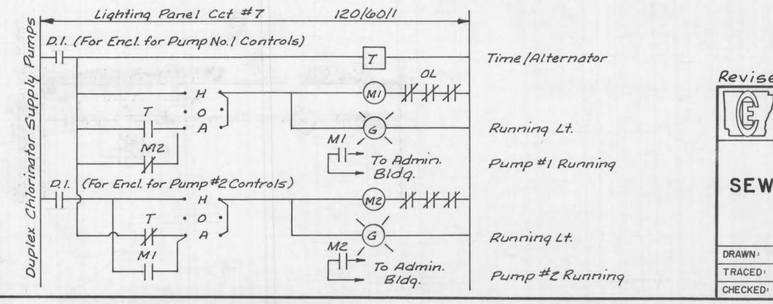
SYMBOL	MANUFACTURER	CAT. NO.	LAMPS NO.	LAMPS TYPE	LAMPS Watts/Lamp	MOUNTING HEIGHT
A	Guth	FS1-2444G-GA0K-1	4	F40CW	40	Ceiling
B	Hubbell	PVL-01505-111	1	HPS	150	7'-6"
C	Hubbell	PVL-01505-111	1	HPS	150	7'-6"
D	Abolite	RFC-500	1	Incand.	300	Joist Btm
E	Hubbell	QL-505	1	500T3Q/CL	500	11'

FIXTURE SCHEDULE



MOTOR CONTROL CENTER DIAGRAM
CHLORINE BUILDING





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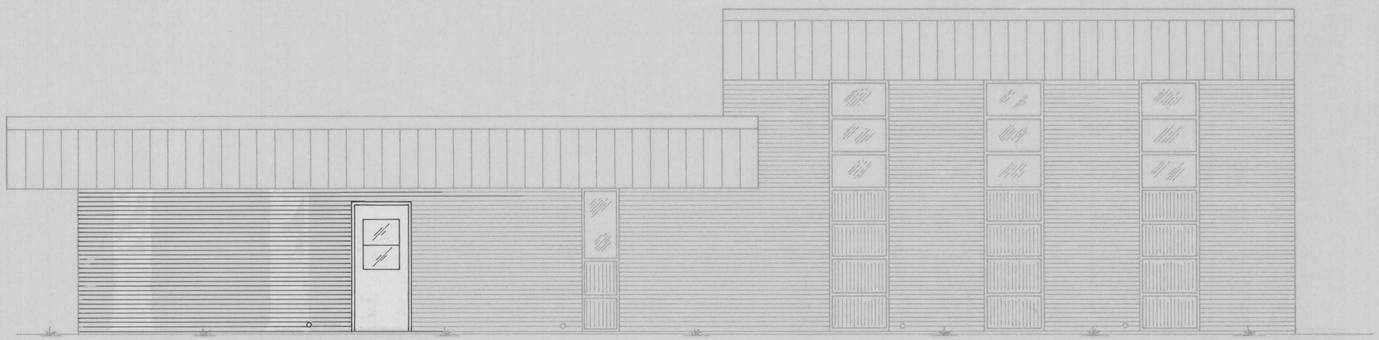
CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

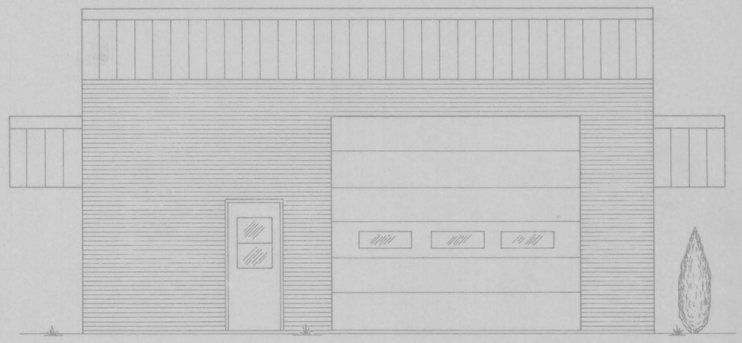
SEWAGE TREATMENT PLANT

CHLORINE BUILDING
ELECTRICAL DETAILS

DRAWN: RWZ	JOB NO. C-76-15	DATE: July '79	47
TRACED: MT		SCALE: As Shown	62
CHECKED: RWZ			



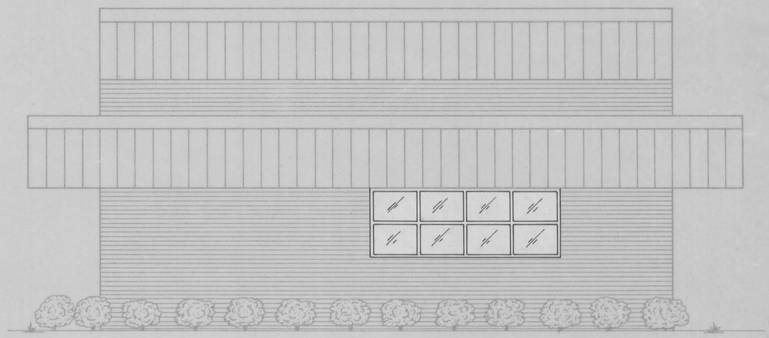
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

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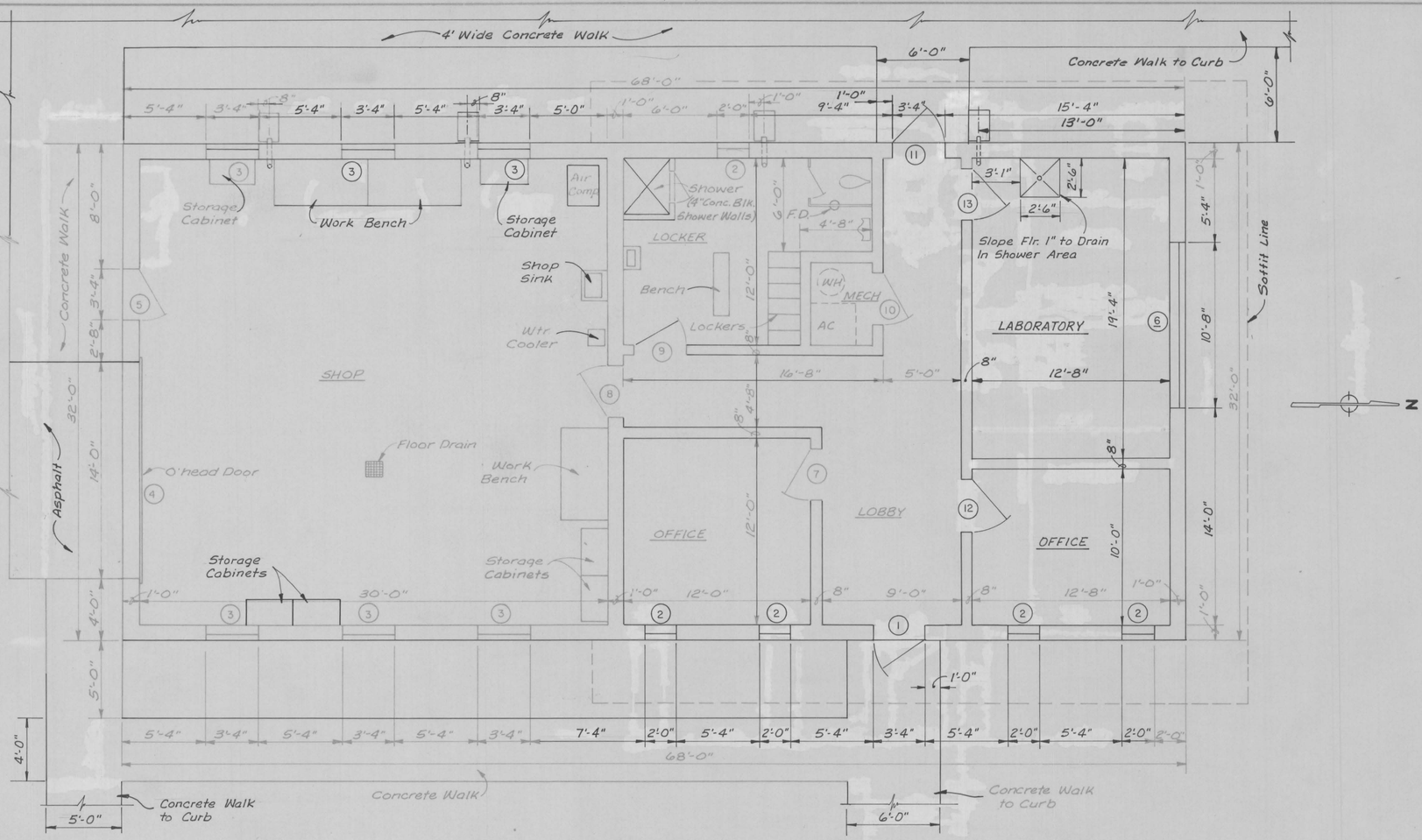
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

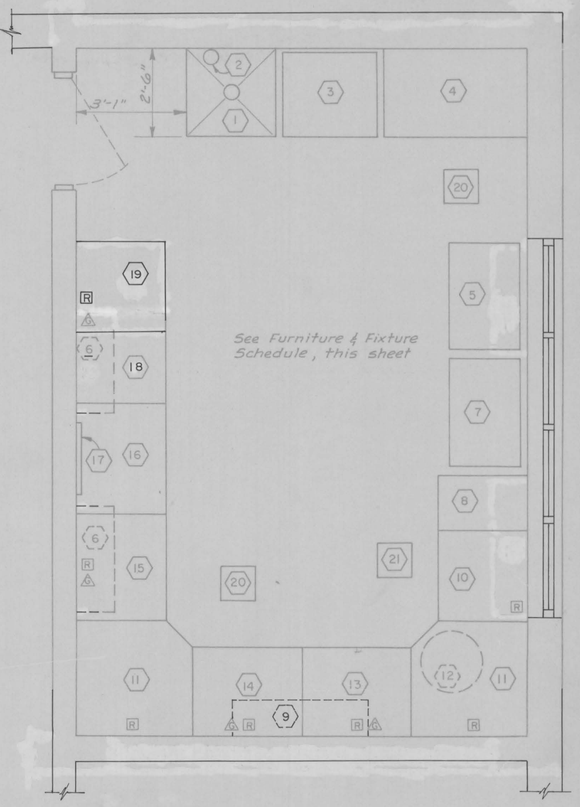
ADMINISTRATION BUILDING
ELEVATIONS

DRAWN: LDG/RLY	JOB NO. C-70-15	DATE: July '79	48	62
TRACED: PEO	SCALE: 1/4"=1'-0"			
CHECKED: RLY				



FLOOR PLAN

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



LABORATORY PLAN

Scale: 1/2" = 1'-0"

LABORATORY FURNITURE & FIXTURES

MARK	CMS No.*	ITEM OR UNIT	TOP STYLE	TOP MAT'L.	REMARKS
1	979-096	Safety Center, Shower & Eye-face Wash Unit			
2	———	5 lb. Dry Chemical Fire Extinguisher			Wall Mounted
3	———	Refrigerator			See Specs
4	990-556	Aux. Air Fume Hood Assembly 48" w		Epoxy Resin	w/Base Cabinet
5	991-075	Utility Table, 1 Drwr., 36" w x 24" d x 30" h		Black Formica	
6	989-350	Wall Case, Glass Sliding Doors 35½" w			Mount 54" off Floor
7	991-042	Balance Table			Dawn Gray Finish
8	988-931	Base Unit, 2 drwr., 1 File, Pullboard, 18¼" w	2	Castone	Sitting Height
9	989-368	Wall Case, Glass Sliding Doors, 47" w			Mount 54" off Floor
10	992-370	Table Frame, 1 Drwr. 30" w	2	Castone	Sitting Height
11	989-301	Corner Unit w/o Shelves	8	Castone	Standing Height
12	985-853	Lazy Susan			

MARK	CMS. No.	ITEM OR UNIT	TOP STYLE	TOP MAT'L.	REMARKS
13	991-547	Base Unit, 7 Drwr., 1 Cupboard 35½" w	2	Castone	Standing Height
14	989-210	Base Unit, 4 Drwr., 1 Cupboard 35½" w	2	Castone	Standing Height
15	991-059	Base Cabinet, Transite Lined, 35½" w	2	Castone	Standing Height
16	991-521	Sink Assembly, 24" x 16" Epoxy-Resin Sink	8	Epoxy-Resin	Standing Height
17	987-461	Pegboard, 24" w x 30" h			w/S.S. Drip Pan, CMS 979-872
18	———	Dishwasher	2	Castone	See Specs
19	991-505	BOD Incubator, Under Counter	2	Castone	
20	991-380	Laboratory Chair (2 Req'd.)			High Work Level, Adjustable
21	991-406	Laboratory Chair			Low Work Level, Adjustable
R	980-268	Duplex Receptacle, Pedestal Type			15A, 125 V, 3w Grounded
A	979-211	Gas** Cock, Ground Key, Turret Base			3/8" I.P.S. F. Inlet

* Curtin Matheson Scientific (CMS), Kewaunee Scientific, or Equal

** Propane

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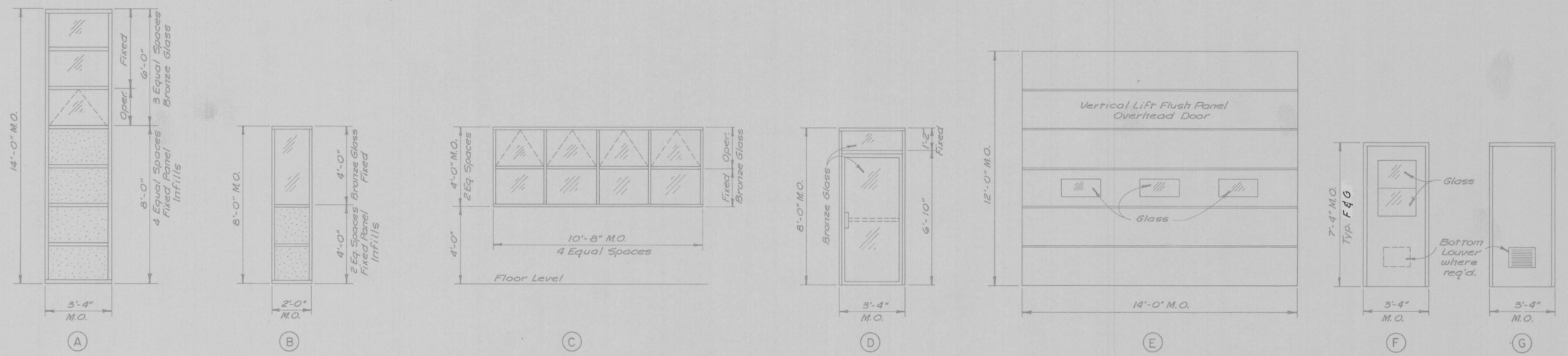
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

PLAN & DETAILS

DRAWN:	RLV	JOB NO.	C-76-15	DATE:	July '79	49
TRACED:	MT	SCALE:	As Shown			62
CHECKED:	RLV					



DOOR & WINDOW DETAILS

Scale: 3/8"=1'-0"

ADMINISTRATION BUILDING
DOOR & WINDOW SCHEDULE

MARK	STYLE	DOOR SIZE	DOOR THICK-NESS	ACCESSORIES	LOCK SET (GOV. NO.)	REMARKS
1	D	3068	1 3/4"	Closer, Pushbar, Threshold	See Spec.	RHR, Aluminum Store Front
2	B					Aluminum Store Front
3	A					Operable vent, Project in, Aluminum Store Front
4	E			Chain, Hoist, Post Tension Drums		Vertical lift, Flush panel, OH Door
5	F	3072	1 3/4"	Treshold, stop	86B-4	LH
6	C					Operable vent, project in, Aluminum Store Front
7	G	3072	1 3/8"	Stop, bottom louver	86N-4	RH
8	F	3072	1 3/4"	Bronze kickplate, Closer, treshold	86N-4	LH
9	G	3072	1 3/8"	Bronze kickplate, closer, stop, bot. louver	86N-4	LH
10	G	3072	1 3/8"	Bottom louver	86B-4	RHR
11	F	3072	1 3/4"	Threshold, Stop	86N-4	RHR
12	G	3072	1 3/8"	Stop, bottom louver	86N-4	LH
13	F	3072	1 3/8"	Stop, bottom louver	86N-4	LH

ADMINISTRATION BUILDING
FINISH SCHEDULE

LOCATION	FLOOR	WALLS	CEILING	REMARKS
Lobby & Hallways	Vinyl Asb. Tile	Paint	Susp. Acoustical	
Office (2)	Vinyl Asb. Tile	Paint	Susp. Acoustical	
Laboratory	Vinyl Asb. Tile	Paint	Susp. Acoustical	
Locker	Ceramic Tile	Paint & Cer. Tile	Susp. Acoustical	Wall tile wainscoat ht. Wall tile in shower full ht.
Mechanical	Vinyl Asb. Tile	Paint	Susp. Acoustical	
Shop	Concrete	Paint	Paint	Paint all exposed beams, joists, roof decks

Revised As Constructed, January '84

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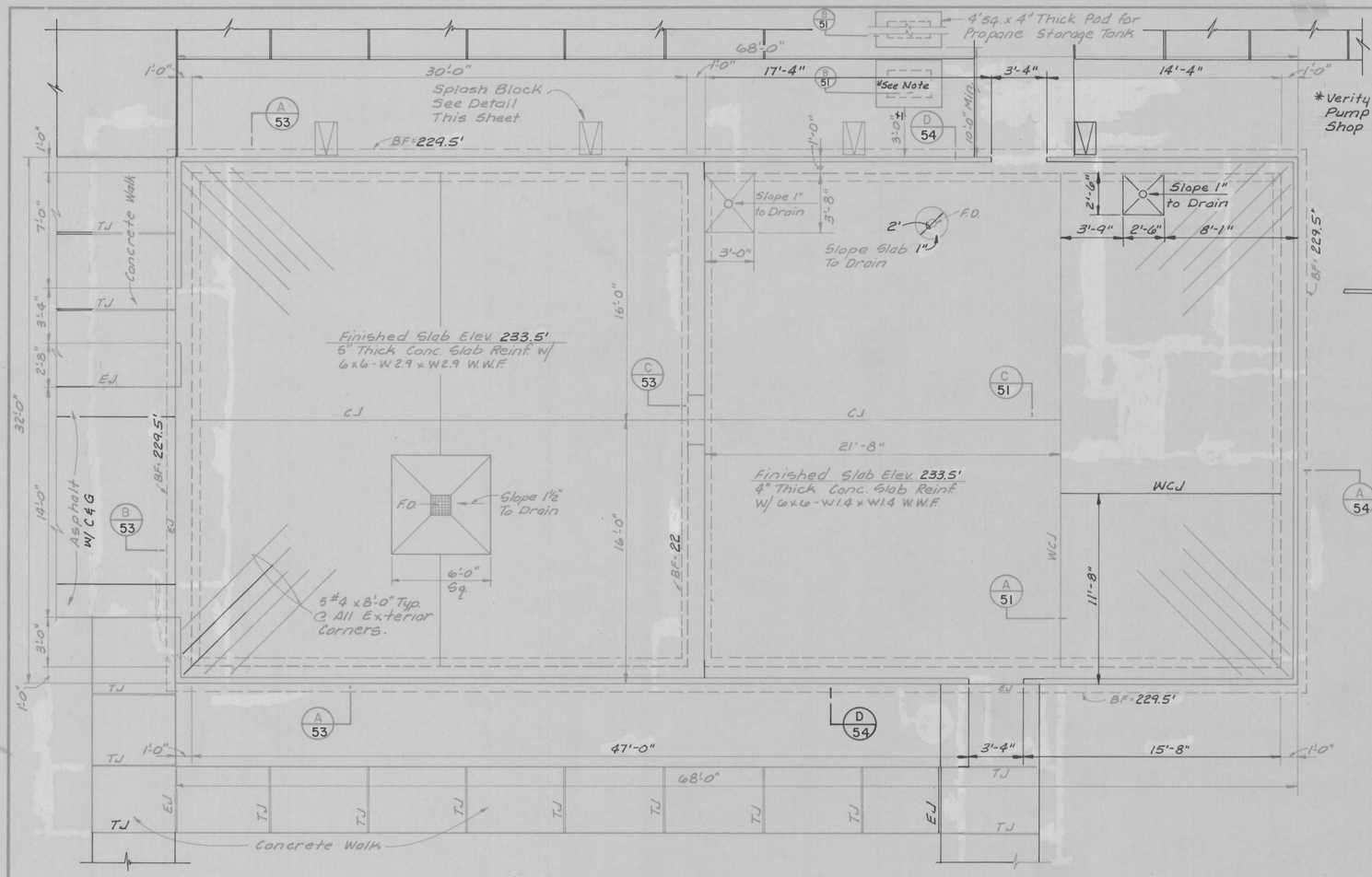
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

DOOR & WINDOW DETAILS

DRAWN: RLY	JOB NO. C-76-15	DATE July '79	50
TRACED: SRY	SCALE: As Shown		62
CHECKED: RLY			

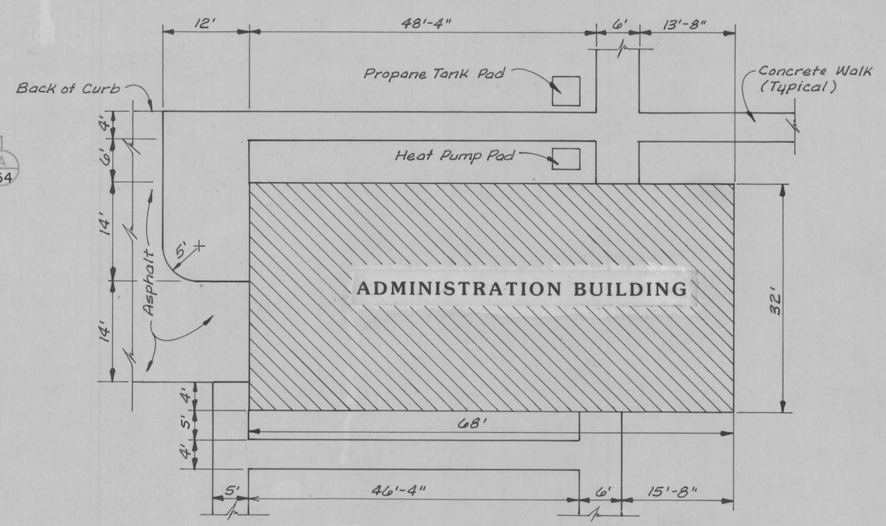


FOUNDATION PLAN

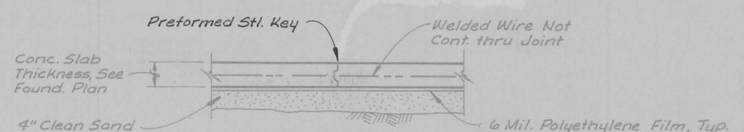
Scale 1/4"=1'-0"

GENERAL NOTES (Pertaining to Concrete)

1. General Contractor Shall Verify All Concrete Dimensions, Inserts & Openings With All Trades Before Placing Concrete. All Sleeves For Conduit or Duct & Other Inserts Shall Be Placed Prior To Placement of Concrete. No Concrete Shall Be Broken Out To Place Electrical, Mechanical or Similar Items Without Permission of The Engineer.
2. Legend:
   C.J. - Keyed Control Joint
   W.C.J. - Wall Control Joint
   E.J. - Expansion Joint
   T.J. - Tooled Joint

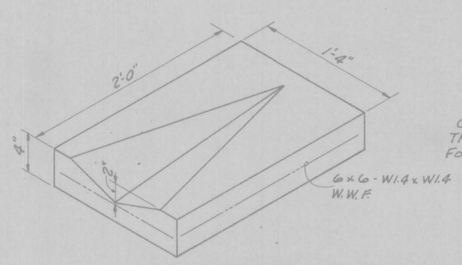


WALKWAY LAYOUT



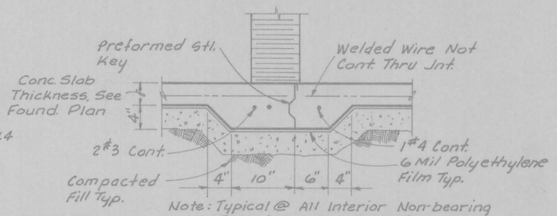
SECTION C TYP. C.J.

Scale: 1"=1'-0"



TYP. SPLASH BLOCK DETAIL

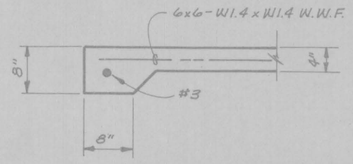
No Scale



Note: Typical @ All Interior Non-bearing Partitions. See Floor Plans for Locations.

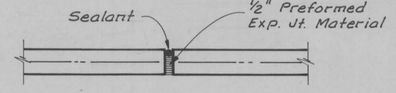
SECTION A TYP. W.C.J.

Scale 1"=1'-0"



SECTION B THICKENED SLAB

Scale 1"=1'-0"



EXPANSION JOINT (TYP. E.J.)

No Scale

Revised As Constructed, January '84

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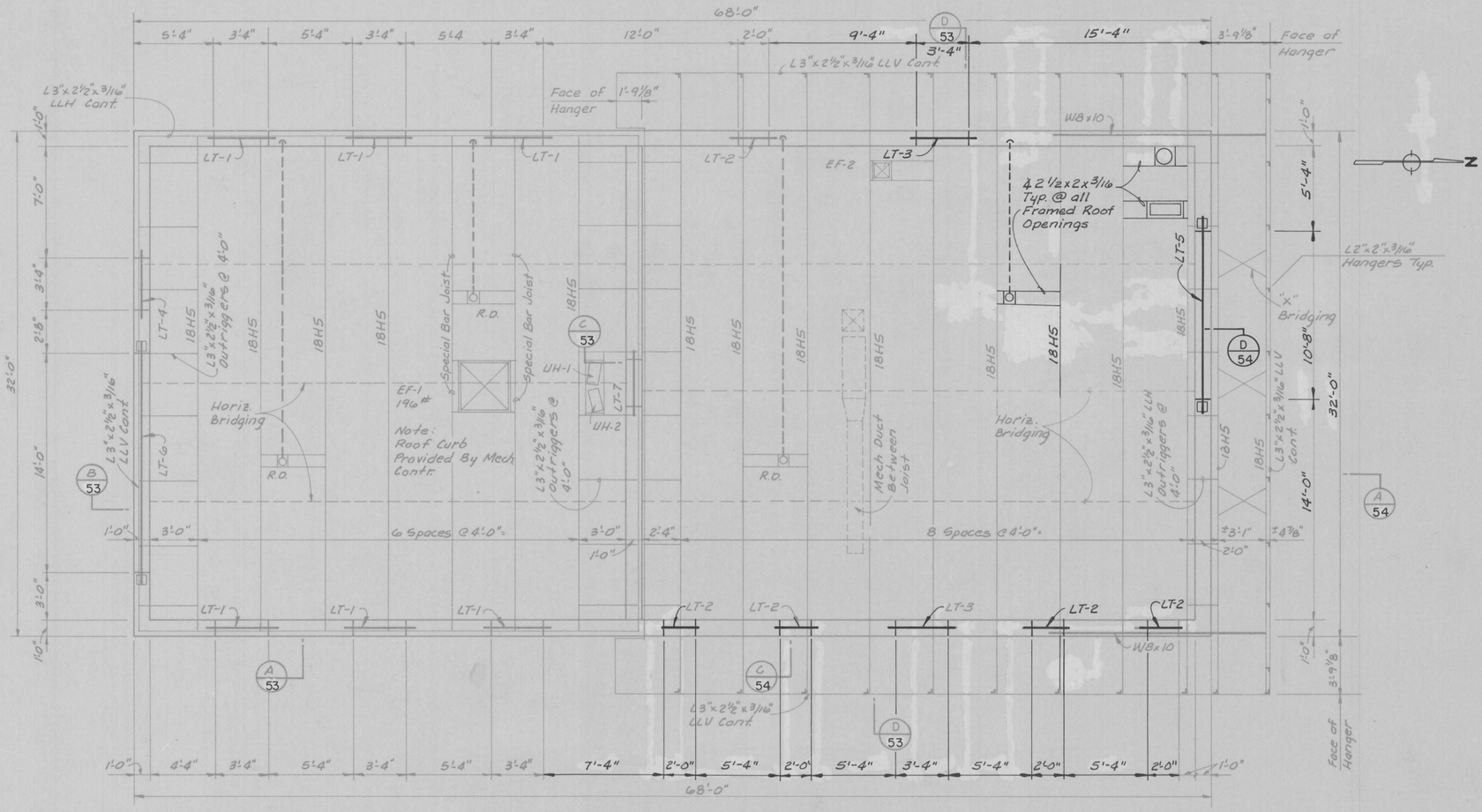
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

FOUNDATION PLAN & DETAILS

DRAWN: DB/LDG	JOB NO. C-76-15	DATE: July '79	51
TRACED: MT	SCALE: As Shown		62
CHECKED: RLY			

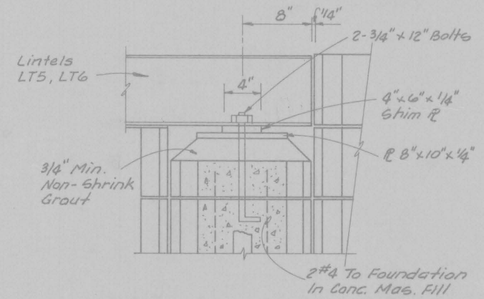


ROOF FRAMING PLAN

Scale 1/4"=1'-0"

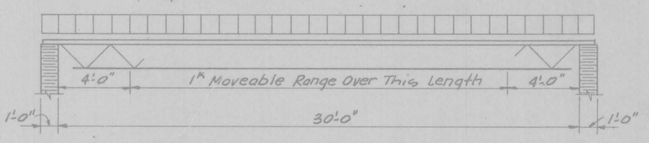
GENERAL NOTES (pertaining To Structural Steel)

1. Horiz. Bridging Shall Be L1"x1"x1/8" Typ. @ Locations Shown on Plan.
2. Unless Otherwise Noted, All Roof Openings Shall Be Framed w/ L3"x2½"x3/16" LLV.
3. The Contractor Shall Properly and Completely Brace All Parts of The Work As Necessary During The Construction of The Building Until All Final Connections Are Made.
4. Legend:
   LLH Long Leg Horizontal
   LLV Long Leg Vertical
   RD Roof Drain



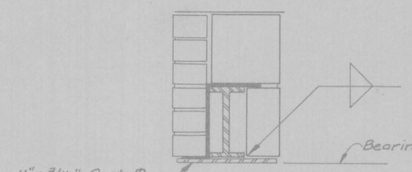
SEC. A BEAM BEARING PL

Scale 1½"=1'-0"



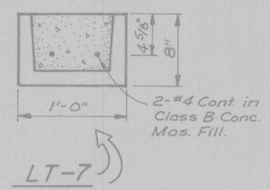
SPECIAL BAR JOIST

No Scale



MARK	BEARING HEIGHT	LENGTH	MEMBER
LT-1	14'-0"	4'-8"*	W8x10
LT-2	8'-0"	3'-4"*	W8x10
LT-3	8'-0"	4'-8"*	W8x10
LT-4	7'-4"	4'-8"*	W8x10
LT-5	8'-0"	13'-4"**	W8x10
LT-6	12'-0"	16'-8"**	W8x20

*8" Bearing Each End
**12" Bearing Each End, See Sec. A This Sh.



TYPICAL LINTEL DETAILS & SCHEDULE

Scale: 1½"=1'-0"

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WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

ROOF FRAMING PLAN & DETAILS

DRAWN: DB/LDG	JOB NO. C-76-15	DATE: July '79	52
TRACED: MT	SCALE: As Shown		62
CHECKED: RLY			

INSTRUMENTATION SUMMARY

LOCATION / PARAMETER	PRIMARY PUMPS	BAR SCREEN	PRIMARY FLUME (RAW SEWAGE FLOW)	AERATION	CLARIFICATION	RETURN SLUDGE PUMPS	RETURN SLUDGE FLUME	CHLORINATION	FINAL FLUME (EFFLUENT FLOW)	SERVICE PUMP STATION
ALARM	Indicate Pump Overload Local & in Admin. Bldg.	Overtorque Alarm Indicate in Admin. Bldg.			Drive Overtorque Indicate Local (Audible) & in Admin. Bldg.	Indicate Pump Overload Local & in Admin. Bldg.		Escaping Gas Indicate Local & in Admin. Bldg.		High Wetwell Level - Indicate Local (Audible) & in Admin. Bldg.
FLOW RATE			Indicate Local; Indicate, Record, & Totalize in Admin. Bldg.				Indicate Local; Indicate, Record & Totalize in Admin. Bldg.		Indicate Local; Indicate, Record, & Totalize in Admin. Bldg. Pace Chlorinators	
RUNNING LIGHTS	Indicate in Admin. Bldg.			Drive Motors Indicate Local & in Admin. Bldg.	Clarifiers Drives(2) Indicate in Admin. Bldg.	Indicate in Admin. Bldg.		Chlorinator Supply Pumps - Indicate Local & in Admin. Bldg.		
RUNNING TIME	ERT Meters Local			ERT Meters Local		ERT Meters Local				

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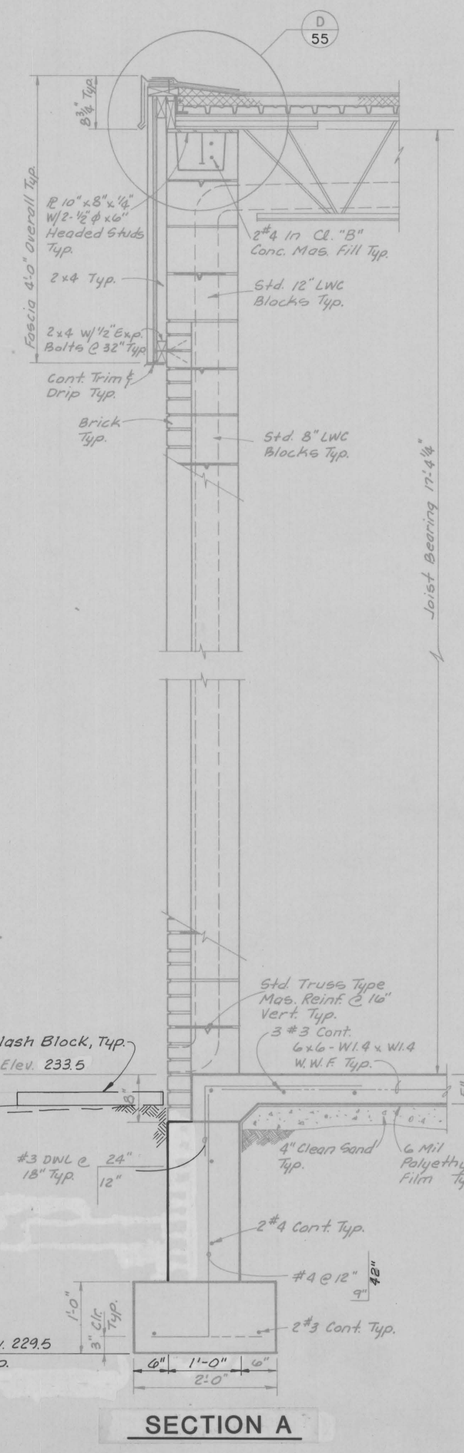
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

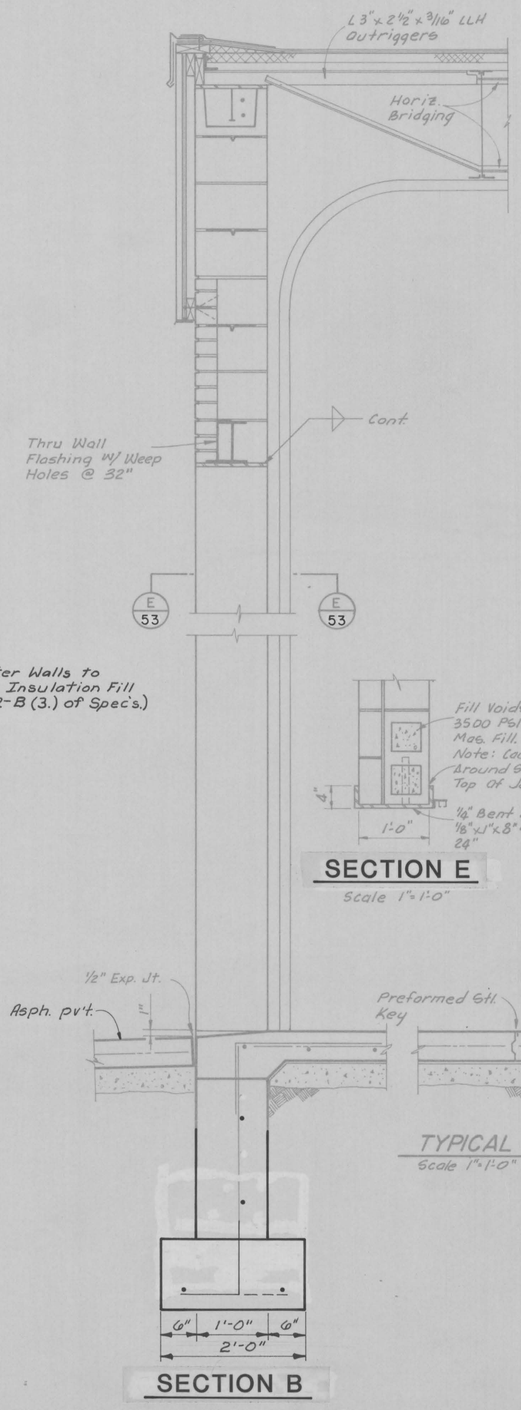
INSTRUMENTATION SUMMARY

DRAWN: RWZ	JOB NO. C-76-15	DATE: July '79	62	62
TRACED: SRY		SCALE: None		
CHECKED: RWZ				

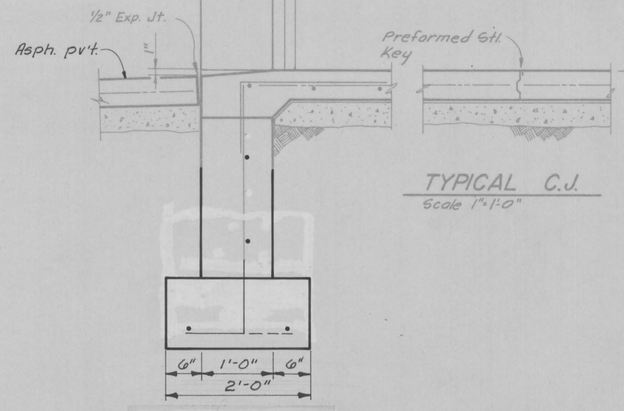


SECTION A

Note:
All Perimeter Walls to have Block Insulation Fill (See Part 12-B (3.) of Spec's.)

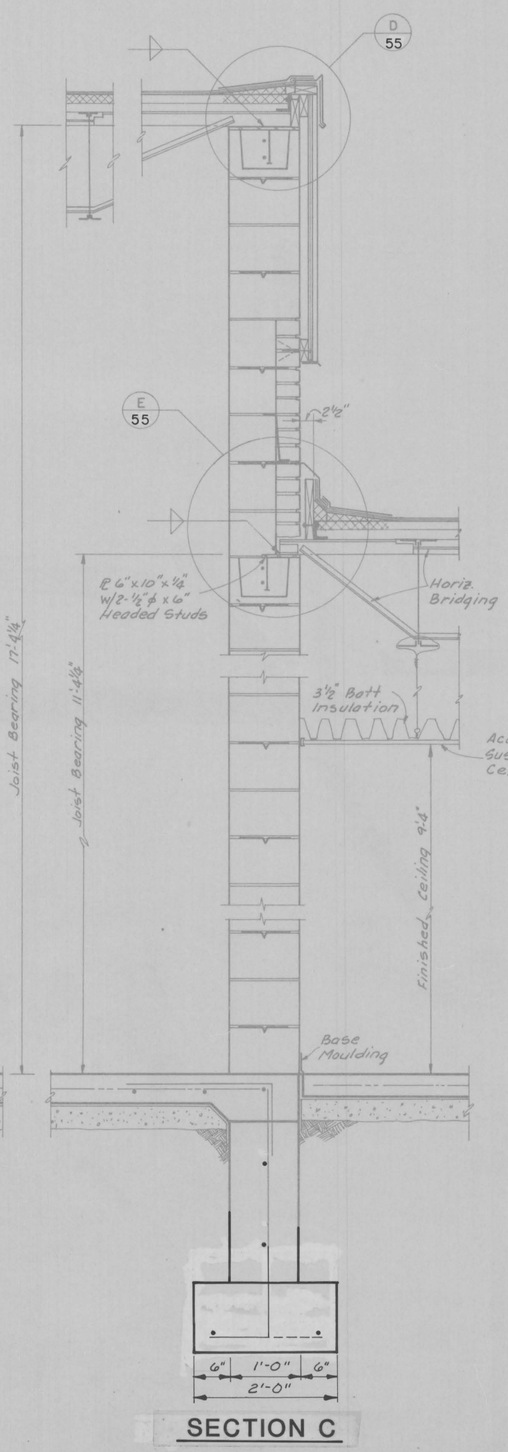


SECTION E
Scale 1"=1'-0"

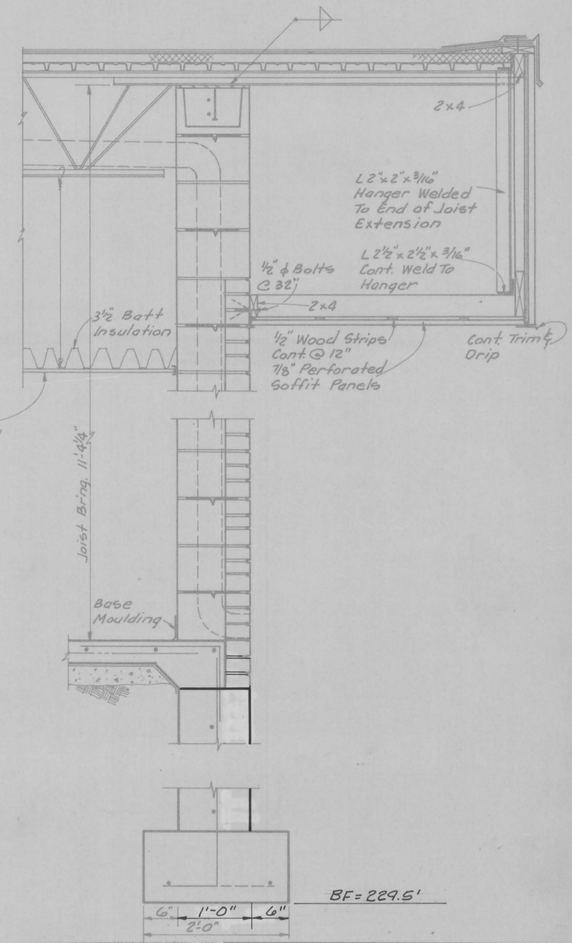


TYPICAL C.J.
Scale 1"=1'-0"

SECTION B



SECTION C



SECTION D

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

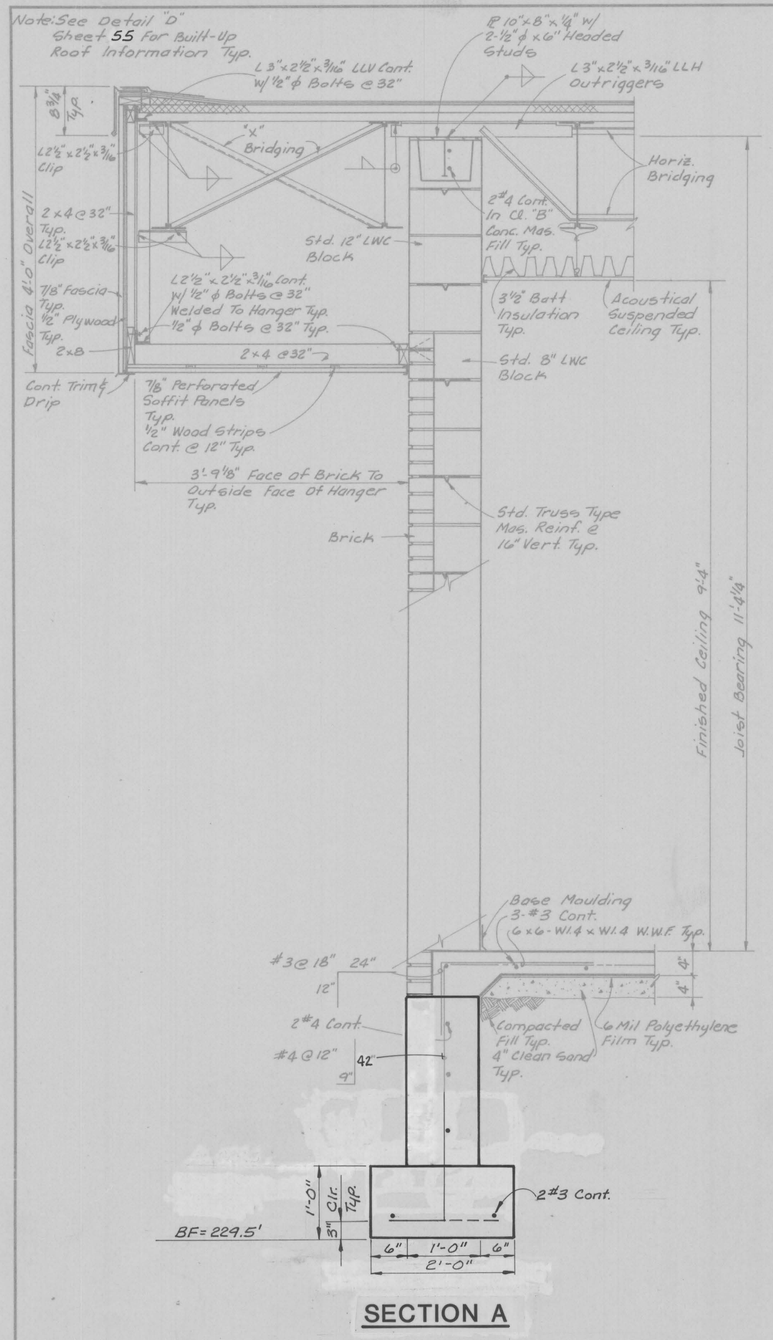
SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

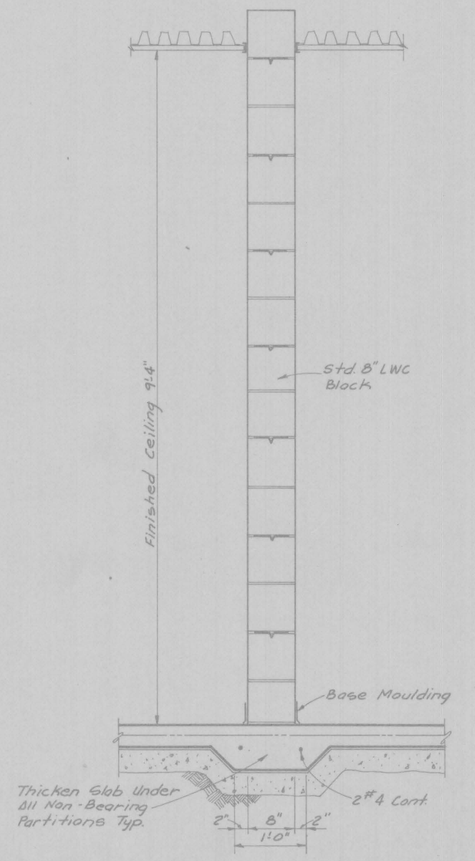
WALL SECTIONS

DRAWN: DB	JOB NO. C-76-15	DATE: July '79	53
TRACED: DB	SCALE: 1"=1'-0"		62
CHECKED: RLY			

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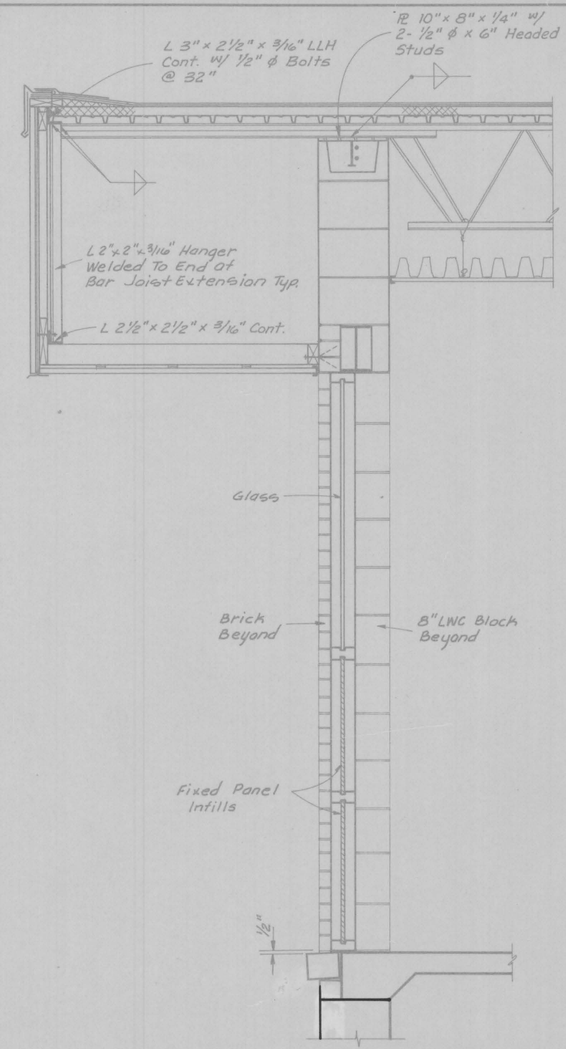


SECTION A

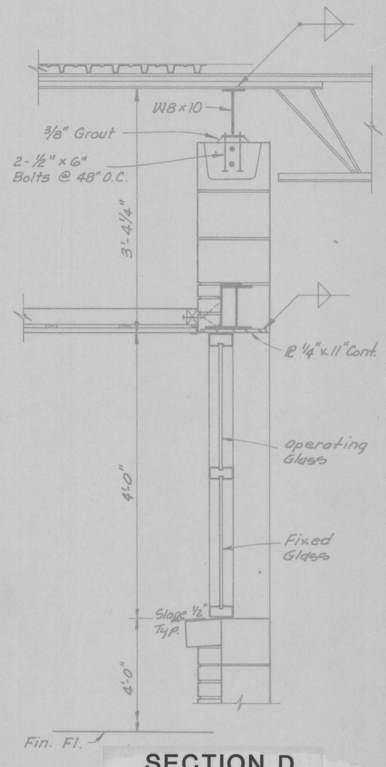


SECTION B

(Typical of All Interior Partition Walls See Sh. 51 for Partition Walls with W.C.J.)



SECTION C



SECTION D

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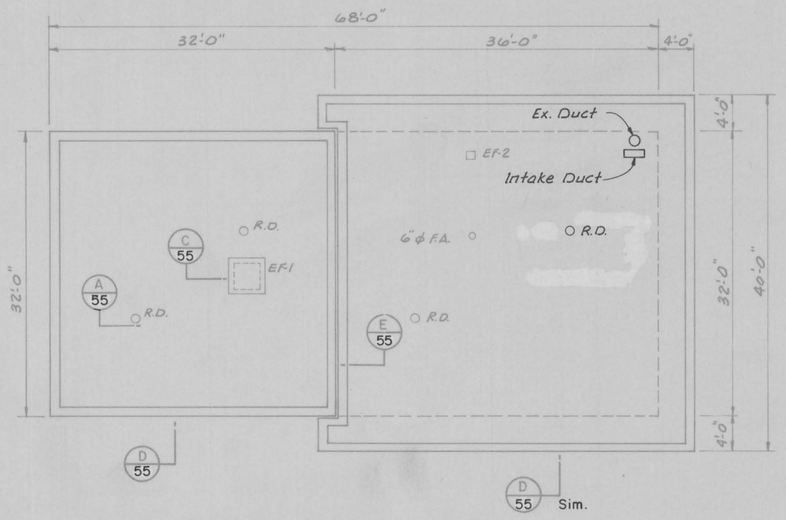
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

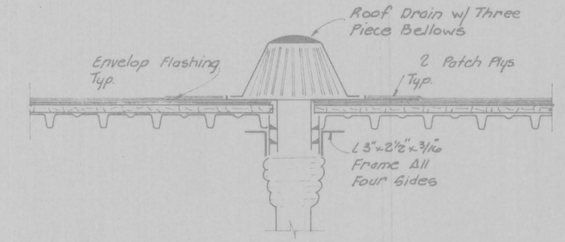
WALL SECTIONS

DRAWN: DB	JOB NO. C-76-15	DATE: July '79	54	
TRACED: DB	SCALE: 1"=1'-0"		62	
CHECKED: RLV				



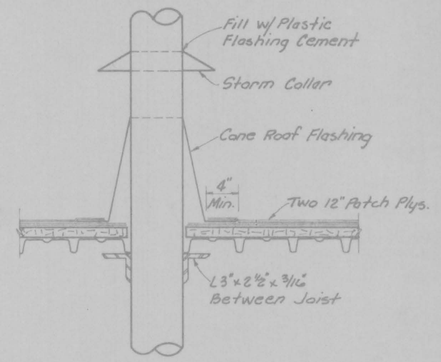
ROOF PLAN

Scale 1/8"=1'-0"



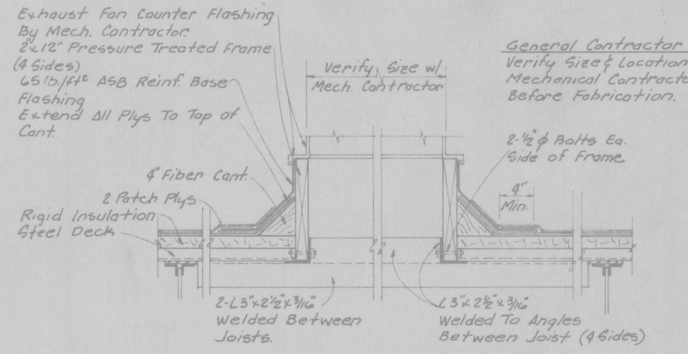
A TYPICAL ROOF DRAIN R. D.

Scale 1½"=1'-0"



B TYPICAL FLASHING AT FLUE

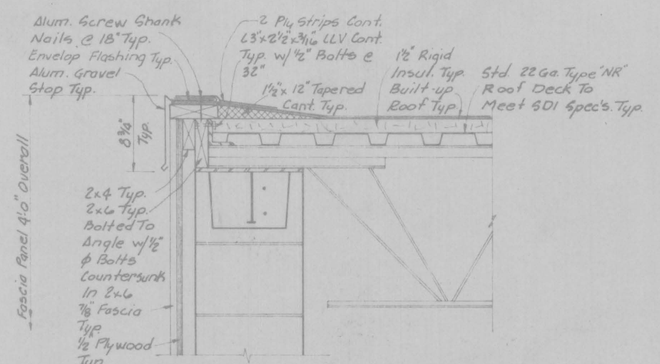
Scale 1½"=1'-0"



General Contractor Note:
Verify Size & Location w/ Mechanical Contractor Before Fabrication.

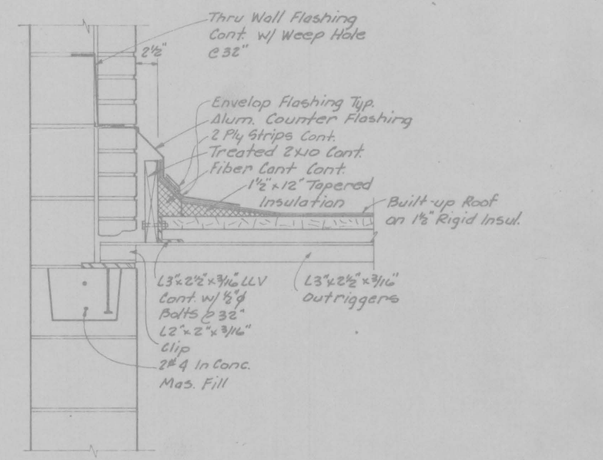
C EXHAUST FAN ROOF CURB DETAIL

Scale 1½"=1'-0"



D TYPICAL FLASHING DETAIL

Scale 1½"=1'-0"



E ROOF DETAIL AT WALL INTERSECTION

Scale 1½"=1'-0"

Note: All Lumber, Blocking & Plywood Shown Shall Be Treated.

Revised As Constructed, January '84

Crist Engineers Inc. — Consulting Engineers — Little Rock, Arkansas

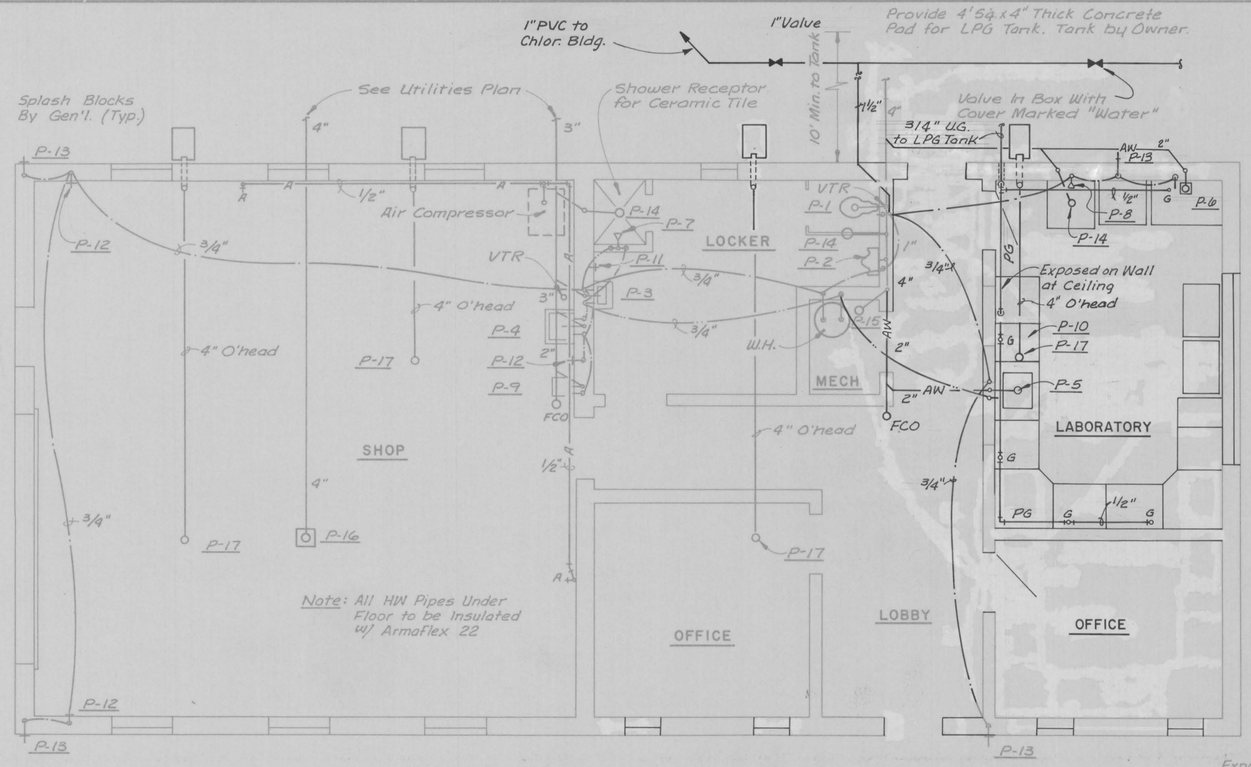
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

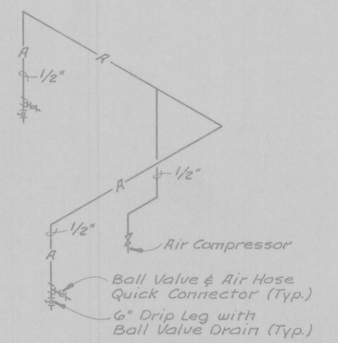
ROOF PLAN & DETAILS

DRAWN: FMG	JOB NO. C-76-15	DATE: July '79	55
TRACED: THL	SCALE: As Shown		62
CHECKED: FMG			



PLUMBING PLAN

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



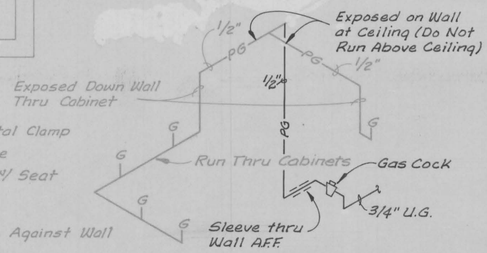
AIR PIPE RISER

No Scale

PLUMBING ROUGH-IN SCHEDULE						
MARK	DESCRIPTION	WASTE	CW	HW	MOUNT'G	REMARKS
P-1	WATER CLOSET	4"	1"	—	FLOOR	
P-2	URINAL	2"	3/4"	—	WALL	
P-3	LAVATORY	1 1/4"	1/2"	1/2"	WALL	
P-4	SHOP SINK	2"	1/2"	1/2"	—	
P-5	LAB SINK	2"	1/2"	1/2"	COUNTER TOP	
P-6	LAB SINK	2"	1/2"	1/2"	COUNTER TOP	
P-7	SHOWER	—	1/2"	1/2"	WALL	
P-8	EMERGENCY SHOWER	—	1"	—	WALL	
P-9	ELECTRIC WATER COOLER	1 1/4"	1/2"	—	WALL	
P-10	DISHWASHER	1"	—	1/2"	FLOOR	SEE SPECS.
P-11	FAUCET	—	3/4"	—	WALL	
P-12	FAUCET	—	3/4"	—	WALL	
P-13	HOSE BIBB	—	3/4"	—	WALL	FROST PROOF
P-14	FLOOR DRAIN	2"	—	—	FLOOR	5" STRAINER
P-15	FLOOR DRAIN	2"	—	—	FLOOR	RECESSED STRAINER
P-16	FLOOR DRAIN	4"	—	—	FLOOR	IRON GRATE
P-17	ROOF DRAIN	4"	—	—	—	

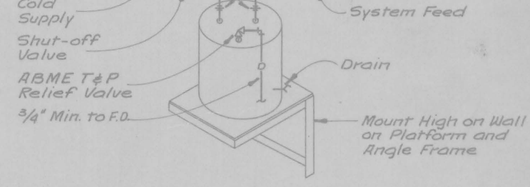
ELECTRIC HOT WATER HEATER					
MARK	STORAGE	KW	VOLTS	MFG'R	MODEL
WH	20 GAL	2	120	RUDD	POU-20

PROVIDE APPROVED T&P RELIEF



PROPANE GAS RISER

No Scale

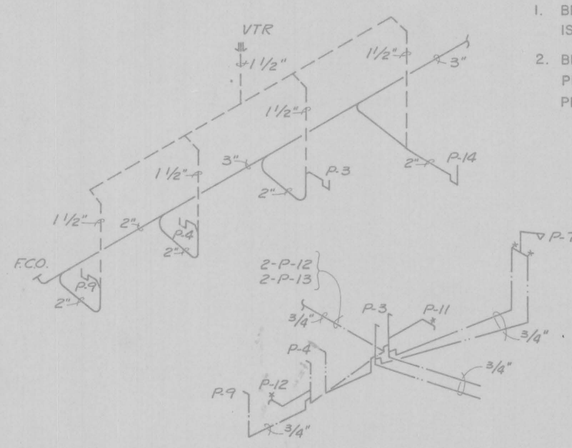


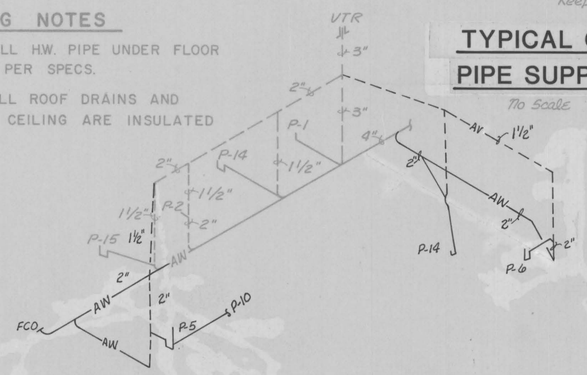
WATER HEATER PIPING DIAGRAM

No Scale

PLUMBING NOTES

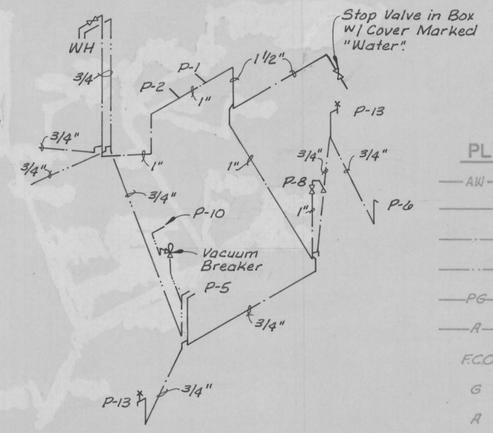
1. BE CERTAIN ALL H.W. PIPE UNDER FLOOR IS INSULATED PER SPECS.
2. BE CERTAIN ALL ROOF DRAINS AND PIPING ABOVE CEILING ARE INSULATED PER SPECS.





TYPICAL GAS PIPE SUPPORT

No Scale



WASTE AND WATER RISERS

No Scale

PLUMBING LEGEND

—AW—	ACID WASTE, —AV— ACID VENT
———	SANITARY WASTE
———	COLD WATER
———	HOT WATER
—PG—	PROPANE GAS
—A—	COMPRESSED AIR
F.C.O.	FLOOR CLEANOUT
G	GAS OUTLET
A	AIR OUTLET
P-1	FIXTURE AND NUMBER

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

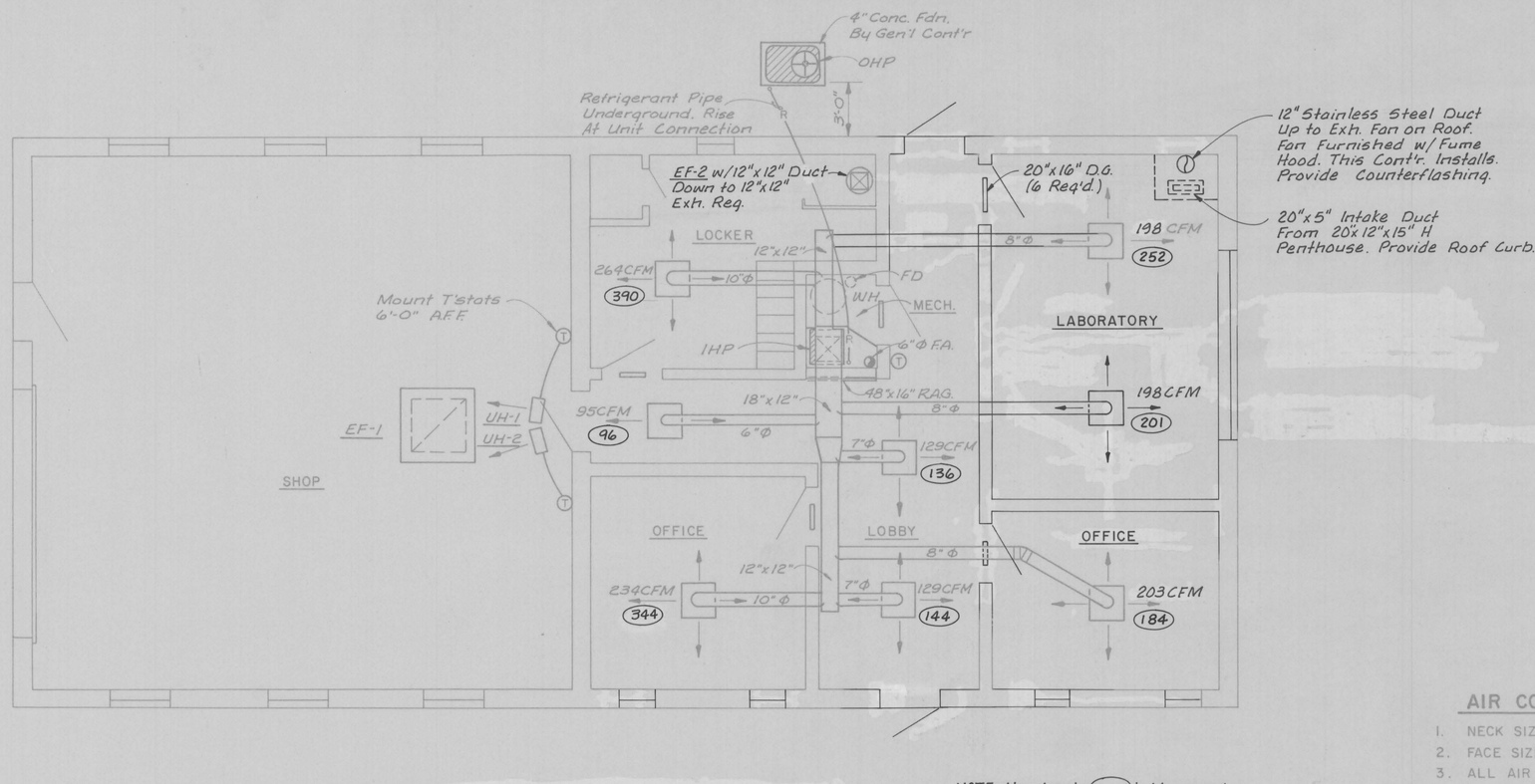
WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

PLUMBING PLAN & DETAILS

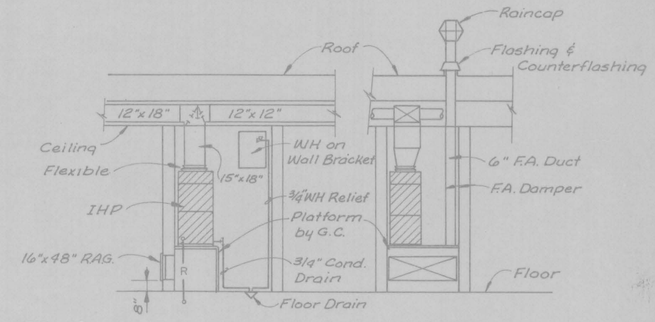
DRAWN: AHD/LDG	JOB NO. C-76-15	DATE: July '79	56/62
TRACED: MT		SCALE: As Shown	
CHECKED: AHD			



AIR CONDITIONING PLAN

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

NOTE: Number in ◯ is Measured CFM. Total = 1747



ELEVATIONS OF INDOOR HEAT PUMP

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

AIR CONDITIONING NOTES

1. NECK SIZES OF CEILING DIFFUSERS SAME AS DUCT SIZES.
2. FACE SIZE OF CEILING DIFFUSERS SHALL BE 24" x 24".
3. ALL AIR DEVICES SHALL BE TITUS AS FOLLOWS:
   - CEILING DIFFUSERS – TXS-3 Agitair EPL w/ #57 Sq.-Rnd. Adapter & MSI-6 Spin Fitting
   - EXHAUST REGISTERS – 50-F5 Agitair EC550 w/ Scoup & Damper
   - RETURN AIR GRILLE – 25-R LOG WITH FILTER Agitair DGFF 1/2
   - DOOR GRILLES – T800 BF Agitair FS
   - PENTHOUSE – PXL-01-3-53 Louvers & Dampers PL-314-MC
4. ALL CEILING DEVICES SHALL HAVE OFF WHITE FINISH.
5. COORDINATE ALL DEVICES WITH LIGHTS & CEILING.
6. SEE SPECS. FOR EXHAUST FAN SCHEDULE.
7. INSTALL ALL CONTROL AND INTERLOCK WIRING IN EMT.

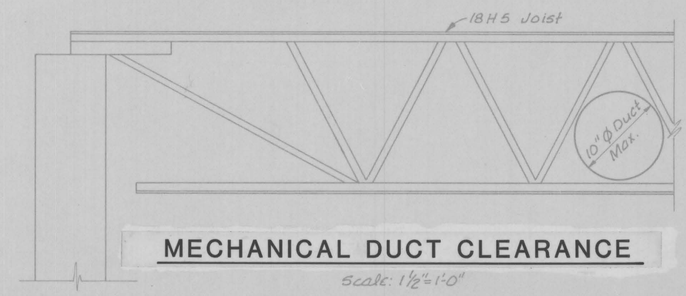
HEAT PUMP (RHEEM MODEL NOS.)

MARK	FAN SECTION					ELECTRIC HEATER SECTION					DX COIL SECTION COOLING — HEATING							CONDENSING UNIT				
	CFM	ESP	HP	VOLTS	MODEL	BTUH	KW	VOLTS	Ø	MODEL	EADB	EAWB	TBTUH	SBTUH	EADB	BTUH	MODEL	EADB	VOLTS	Ø	AMPS	MODEL
IHP OHP	1600	0.5	1/3	120	RHQA-1624K	61,000	18.0*	208	3	–	80°F	67°F	43,000	31,600	17°F	25,500	RCPB-A042	95°F	208	3	18.1	RPCA-042-CAS

*5 Elements; Only 3 Connected, For 10.8 KW, 36,800 BTUH

ELECTRIC UNIT HEATERS

MARK	BTUH	KW	VOLTS	Ø	AMPS	FHP	CFM	MODEL	MFG'R
UH-1&2	51,195	15	480	3	18	1/10	750	MUH-15-4	CHROMALOX



MECHANICAL DUCT CLEARANCE

Scale: 1½"=1'-0"

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

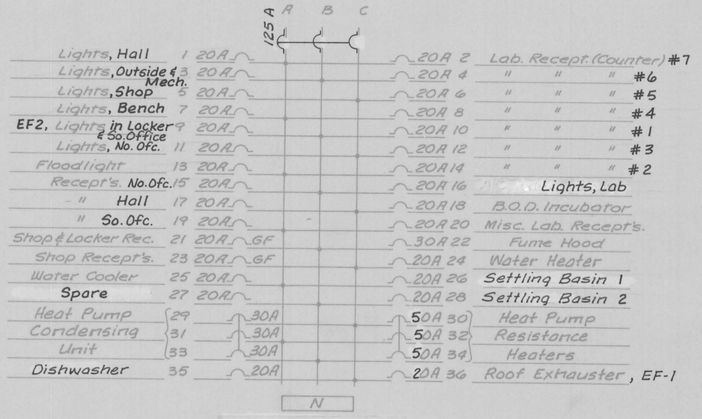
MECHANICAL PLAN & DETAILS

DRAWN: AHD/LDG	JOB NO. C-76-15	DATE: July '79	57
TRACED: M.T.	SCALE: As Shown		62
CHECKED: AHD			

SYMBOL	MANUFACTURER	CAT. NO.	LAMPS			MOUNTING HEIGHT
			No.	Type	Watts per lamp	
A	Guth	FSI-2444G-6ROK-1	4	F40CW	40	Ceiling
B	Prescolite	1015HF-7	1	Incand.	150	Ceiling
C	ITT Weaver	VSI5H04-GG-C2 VR22 Refl.	1	HPS	150	Joist Bottom
D	Prescolite	21K-S25	1	R30	75	Soffit
E	Hubbell	MGL-1000H-12-S	1	MH1000-BD	1000	13'-6"
F	Metalux	DIMN-340-POR	3	F40CW	40	8'*

*Suspend with Chain Assemblies.

FIXTURE SCHEDULE

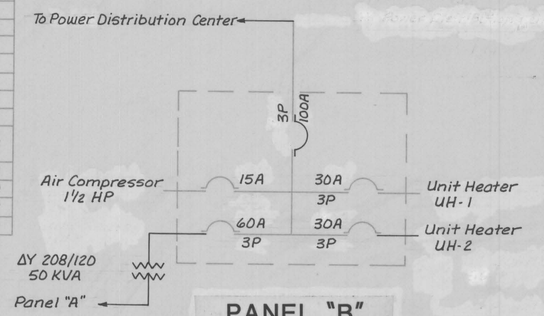


PANEL "A"

120/208 V 4-WIRE "Y"-3Ø

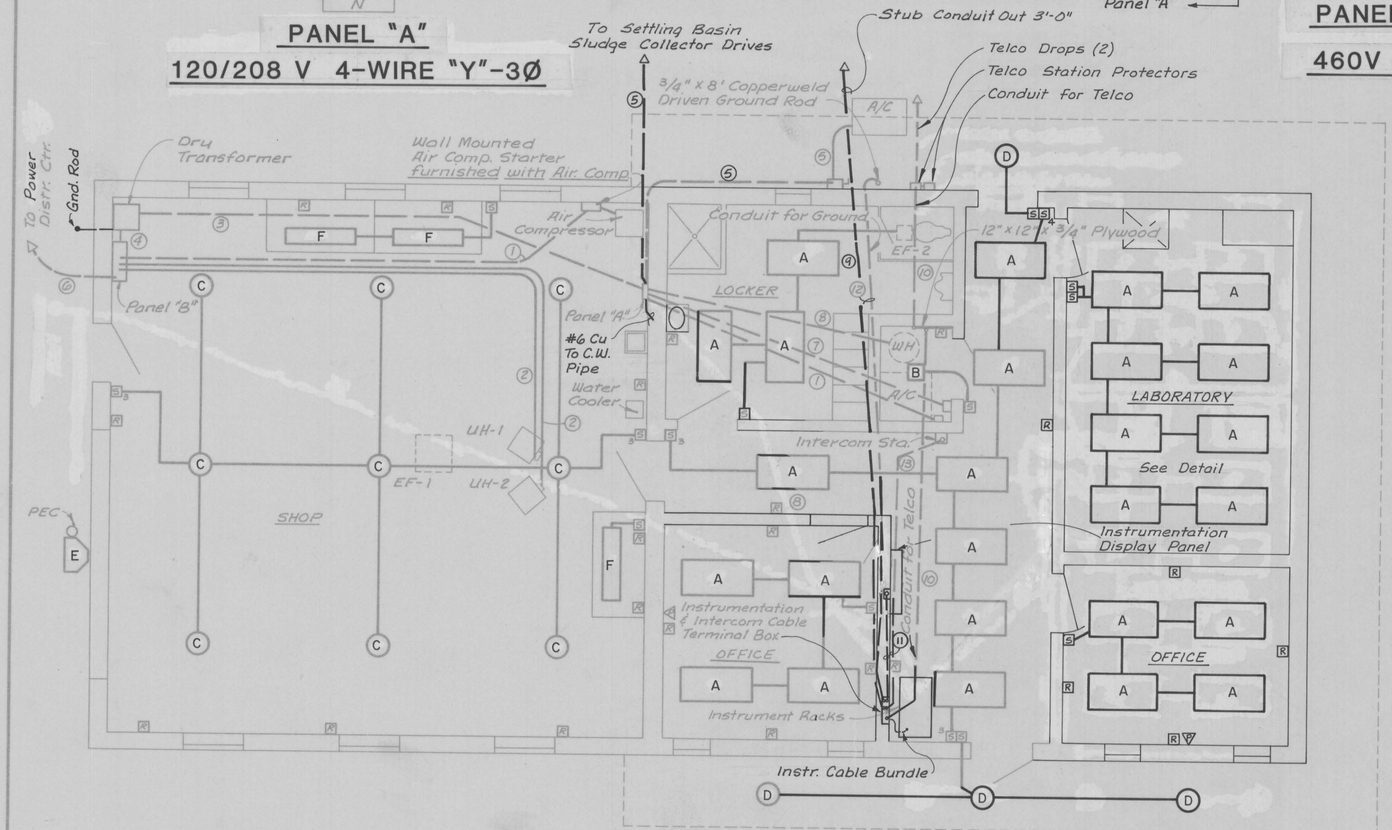
SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
1	3	12	3/4"	RIGID
2	3	10	3/4"	EMT
3	4	1/0	2"	RIGID
4	3	4	1"	RIGID
5	3	10	3/4"	RIGID
6	3	2	1 1/2"	RIGID
7	3	8	3/4"	RIGID
8	2	12	3/4"	RIGID
9	BJFC 25-22 + BJFC 6-22		2"	RIGID
10	By Telco		3/4"	RIGID
11	By Instr. Supplier		2"	RIGID
12	1	4 Bare Copper	3/4"	RIGID
13	2	18	1/2"	RIGID

Note: All Light & Receptacle Runs to be No. 12 in EMT.



PANEL "B"

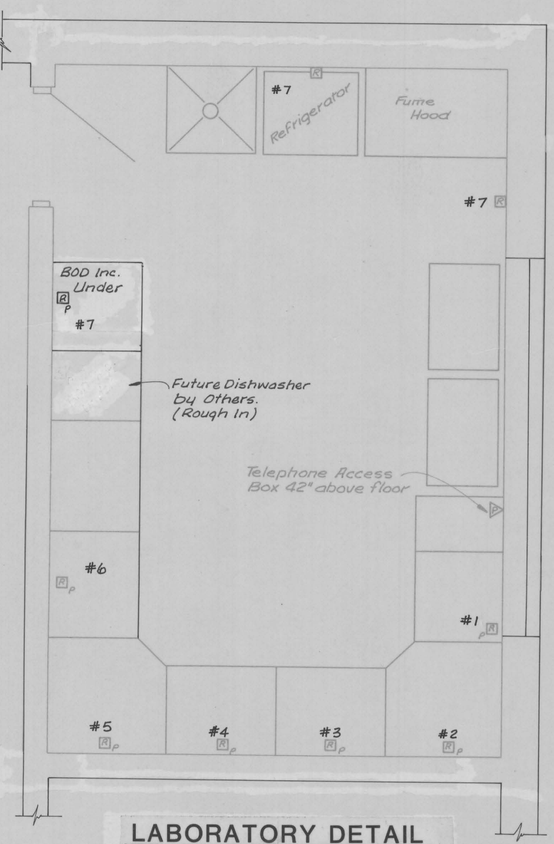
460V 3ØΔ



FLOOR PLAN

Scale 1/4" = 1'-0"

NOTE: Light Fixtures in Laboratory to be wired so that each switch controls two lamps in every fixture.



LABORATORY DETAIL

Scale 1/2" = 1'-0"

#'s Refer To Similarly Marked Circuit Breakers on Panel Diagram

△ - Telephone Outlet
R - Receptacle
R_P - Receptacle, Pedestal-Mounted

Revised As Constructed, January '84

Crist Engineers Inc. Consulting Engineers Little Rock, Arkansas

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ADMINISTRATION BUILDING

ELECTRICAL DETAILS

DRAWN: RWZ	JOB NO. C-76-1	DATE: July '79	58	
TRACED: PEO	SCALE: As Shown			62
CHECKED: RLY				

Caney Creek Lateral No. 5

N

9+00W
8+00W
7+00W
6+00W
5+00W
4+00W
3+00W
2+00W
1+00W
0+00W

0+20N
6+70W
0+20S
7+60W
1+80S
8+50W
2+05S
2+55S
8+25W
2+80S
5+40W
3+10S
5+00W
4+27.5S
5+00W
4+45S
4+29W
4+66.67S
3+66W
5+35S
0+20N
2+20W
0+20S
2+20W
0+00S
0+20W
2+14S
0+97W
1+00S
2+00S
3+00S
4+00S
5+00S
1+40W
4+70W
0+05E

230 229 228 227 226 225 231 232 233 234

Light, Recept. & Motor Circuits (3 Conduits)

Pull Box 81' 25' Pull Box 100' Pull Box 79' Pull Box

22½

19'

21'

AERATION BASINS

STORAGE BASIN

Soil Borings (See Logs) #1

TBM, Spike in Tree El. 233.14

0+00S Sch. 2 Sch. 3 27" Outfall Sewer (Sch. 2)

Light, Recept., & Motor Ccts. (3 Conduits)

66' Pull Box 100' Pull Box

31'

PDC

Transformer

U.B.S.

35'

12'

Gravel

20' 5' HEADWORKS 18½' 4' 4' 8'

10'

Pull Boxes Light Cct.

2+70S Asphalt 20'

P.B. 10'

J.B. 100'± J.B.

SERVICE PUMP STA. 17'

3+10S "T" I&C Cable

Junc. Box

FINAL SETTLING BASIN

3+20S 3+10W

Pull Boxes Cl2 & Admin. 3+52S 2+05W

2'

6'

14' 34' 6' #2

Pull Box Cl2 (Location Not Exact)

Pull Box, Light Cct.

5' 7' P.B., Lights

15' Cl2 Pull Box 6' 3'

5'

SLUDGE DRYING BEDS #5

CONTACT BASIN #4

Gravel

20' 35' 20' 8+25 W Gravel 8+50 W

10' Gate 15' 30' 20' 20' Gate 15' 30' 5+35S

Chain Link Fence (See Spec's.) 5+50S

24' Gate 45° 15' 5' 6'

Existing Gravel Rd.

Fence Corner at 5+50S

Fence Corner at 0+05E

Revised As Constructed, January '84

CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

AS-CONSTRUCTED ELECTRICAL SITE PLAN

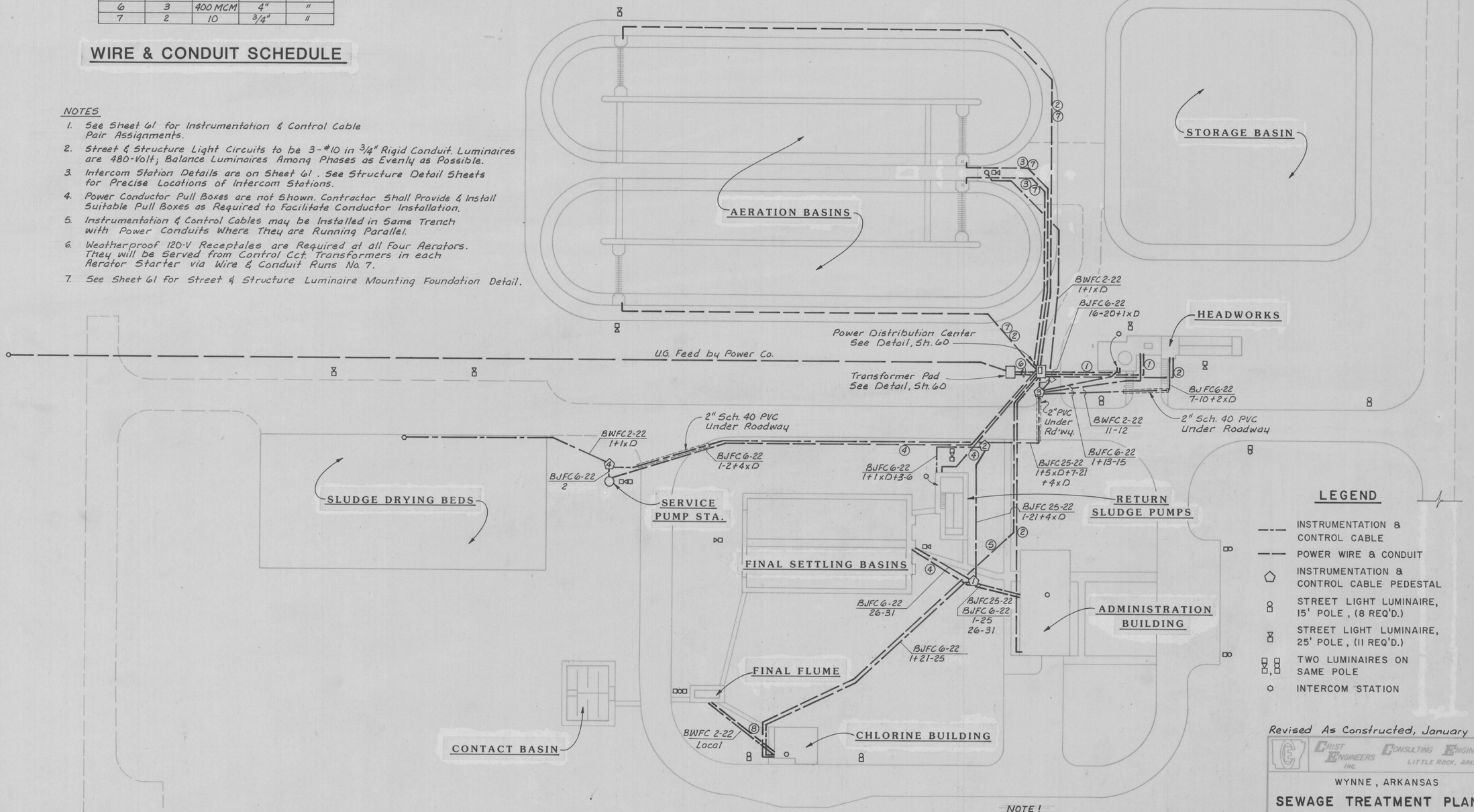
DRAWN: RLY	JOB NO. C-76-15	DATE: July '79	59A / 62
TRACED: PEO	SCALE: 1" = 30'		
CHECKED: RLY			

SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
1	3	12	3/4"	RIGID
2	3	2	1 1/2"	"
3	3	4	1"	"
4	3	10	3/4"	"
5	3	6	1"	"
6	3	400 MCM	4"	"
7	2	10	3/4"	"

WIRE & CONDUIT SCHEDULE

NOTES

1. See Sheet 61 for Instrumentation & Control Cable Pair Assignments.
2. Street & Structure Light Circuits to be 3-#10 in 3/4" Rigid Conduit. Luminaires are 480-Volt; Balance Luminaires Among Phases as Evenly as Possible.
3. Intercom Station Details are on Sheet 61. See Structure Detail Sheets for Precise Locations of Intercom Stations.
4. Power Conductor Pull Boxes are not Shown. Contractor Shall Provide & Install Suitable Pull Boxes as Required to Facilitate Conductor Installation.
5. Instrumentation & Control Cables may be Installed in Same Trench with Power Conduits Where They are Running Parallel.
6. Weatherproof 120-V Receptales are Required at all Four Aerators. They will be Served from Control Cct. Transformers in each Aerator Starter via Wire & Conduit Runs No. 7.
7. See Sheet 61 for Street & Structure Luminaire Mounting Foundation Detail.



LEGEND

- INSTRUMENTATION & CONTROL CABLE
- POWER WIRE & CONDUIT
- INSTRUMENTATION & CONTROL CABLE PEDESTAL
- STREET LIGHT LUMINAIRE, 15' POLE, (8 REQ'D.)
- STREET LIGHT LUMINAIRE, 25' POLE, (11 REQ'D.)
- TWO LUMINAIRES ON SAME POLE
- INTERCOM STATION

NOTE!

See Sheet 59A "As Constructed Electrical Site Plan" For Conduit & Cable Locations. This Sheet is Correct as to Conduit & Conductor Sizes, and I&C Cable Pair Information.

Revised As Constructed, January '84

CHRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

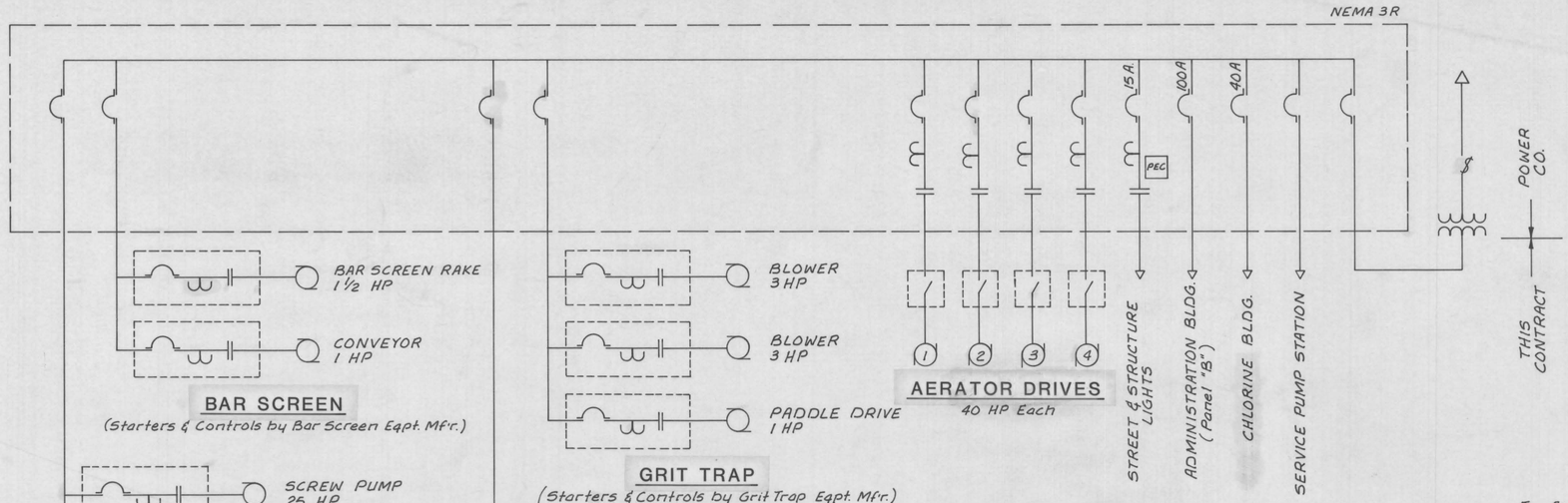
WYNNE, ARKANSAS

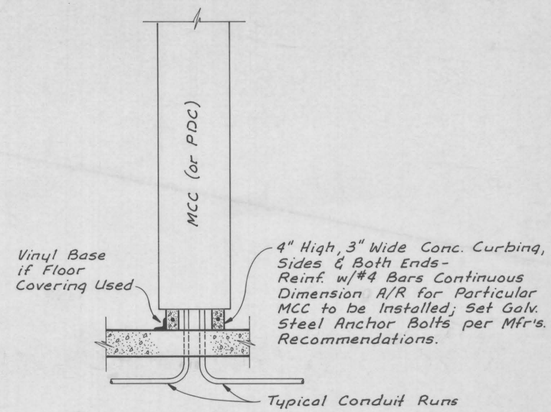
SEWAGE TREATMENT PLANT

POWER DISTRIBUTION SYSTEM
INSTRUMENTATION & CONTROL
CABLE SCHEMATIC

DRAWN: RWZ	JOB NO. C-76-15	DATE: July '79	59
TRACED: SRY	SCALE: 1"=30'		62
CHECKED: RWZ			

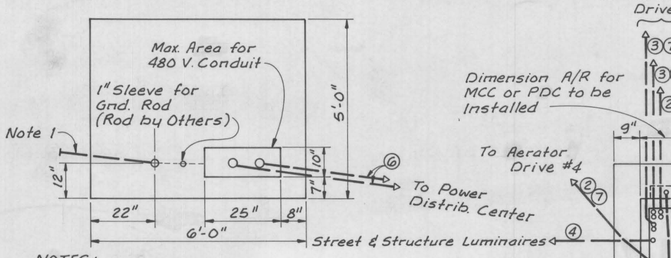
POWER DISTRIBUTION CENTER DIAGRAM





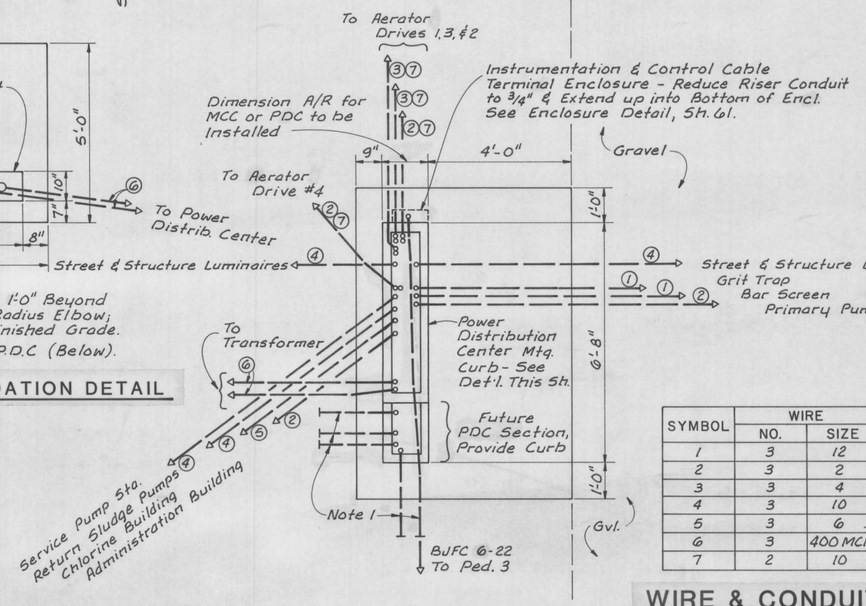
TYPICAL MCC OR PDC INSTALLALION

No Scale



NOTES:
1. Stub 3" Rigid Conduit 1'-0" Beyond Slab Edge; Use wide Radius Elbow; Place to 36" Below Finished Grade.
2. Ref. Notes 2 & 3 for P.D.C (Below).

TRANSFORMER FOUNDATION DETAIL



SYMBOL	WIRE		CONDUIT	
	NO.	SIZE	SIZE	TYPE
1	3	12	¾"	RIGID
2	3	2	1½"	"
3	3	4	1"	"
4	3	10	¾"	"
5	3	6	1"	"
6	3	400 MCM	4"	"
7	2	10	¾"	"

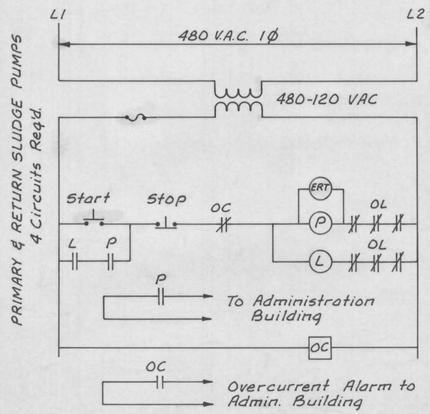
WIRE & CONDUIT SCHEDULE

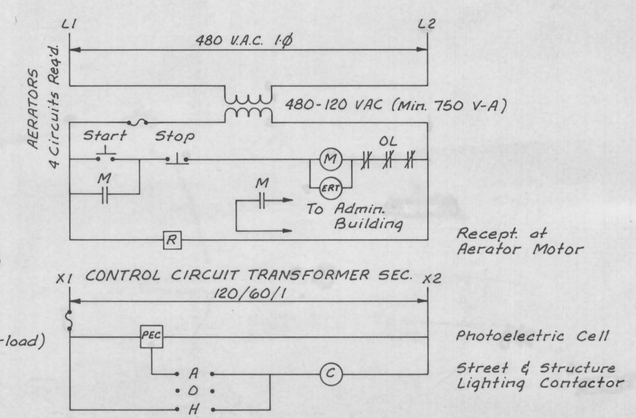
NOTES

1. Stub 1½" Rigid Conduits 1'-0" Beyond Edge of Slab.
2. All Conduits to Project 1" Above Slab - Conduits for Future use are to be Capped.
3. Concrete Slabs to be 8" Thick, Reinf. w/ #4 Bars @ 8" B.W. Chamfer all Exposed Edges x ½".
4. Anchor Distribution Center to Slab with Galv. Steel Anchor Bolts per Mfr's. Recommendations.
5. Bends in Conduit shall have a Minimum Radius as Specified in N.E.C. Table 346-10.
6. Slope Slab ¼" per foot Away from PDC in all Directions.

POWER DISTRIBUTION CENTER FOUNDATION PLAN

Scale: ½" = 1'-0"





Revised As Constructed, January '84

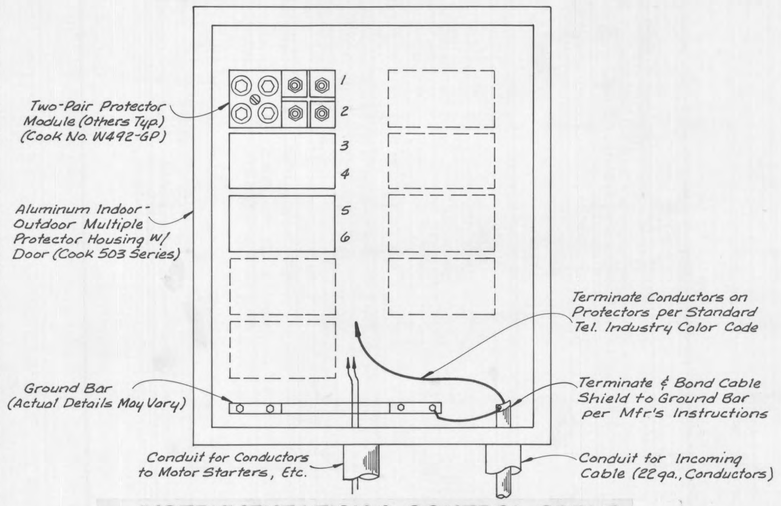
CRIST ENGINEERS INC. CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ELECTRICAL PLANS

DRAWN:	RWZ	JOB NO. C-76-15	DATE: July '79	60/62
TRACED:	SRY	SCALE: No Scale		
CHECKED:	RWZ			



INSTRUMENTATION & CONTROL CABLE TERMINAL DETAIL

NOTES
1. Enclosure May Require Punching for Conduit Entrances.
2. Use Crimp-on Spade Lugs on Conductors Larger than #18.
3. Mount Enclosures as Shown on Structure Details or Plans.

TERMINAL LOCATION *	HOUSING TYPE ** (COOK ELECTRIC NO.'S)	NO. OF PAIRS TO BE TERMINATED
Administration Bldg.	503B2	31
Chlorine Bldg.	503A	6
Grit Trap Structure	503A	6
RAS Pump Structure	503A	6
Primary Pump Structure	503A	6
Power Distribution Center	503A	6
Final Settling Basin	503A	6

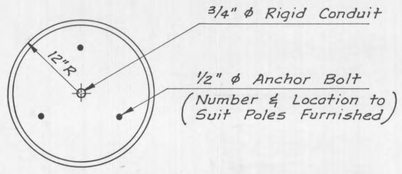
* For Locations Where Only Two Pairs are Terminated, Mount 1 Module W/Ground Bar, W/o Housing, Within the Related Equipment, Except that Protection is not Required at Remote Intercom Stations.

** Catalog No. Shown Does Not Include Protector Modules; Order W492-GP Modules Separately as Required.

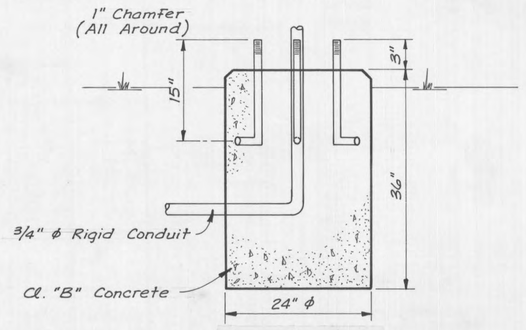
TERMINAL SCHEDULE

PAIR	PURPOSE	FROM
1	Intercom	Various
2	Wet Well High Level Alarm	Service Pump Station
3	Return Sludge Pump #1 Overload	RAS Pump Structure
4	Return Sludge Pump #1 Running	RAS Pump Structure
5	Return Sludge Pump #2 Running	RAS Pump Structure
6	Return Sludge Pump #2 Overload	RAS Pump Structure
7	Primary Pump #1 Running	Primary Pump Structure
8	Primary Pump #2 Running	Primary Pump Structure
9	Primary Pump #1 Overcurrent Alarm	Primary Pump Structure
10	Primary Pump #2 Overcurrent Alarm	Primary Pump Structure
11	Bar Screen Overtorque Alarm	Bar Screen Structure
12	Spare	Bar Screen Structure
13	Primary Flume Flow	Pri. Flume Flow Xmitter
14	RAS Flume Flow	RAS Flume Flow Xmitter
15	Spare	Grit Trap Structure
16	Aerator #1 Running	Power Distribution Center
17	Aerator #2 Running	Power Distribution Center
18	Aerator #3 Running	Power Distribution Center
19	Aerator #4 Running	Power Distribution Center
20	Spare	Power Distribution Center
21	Flow Signal To Chlorinators	Administration Bldg.
22	Final Flume Flow	Chlorine Bldg.
23	Chlorine Gas Alarm	Chlorine Bldg.
24	Chlorinator Supply Pump #1 Running	Chlorine Bldg.
25	Chlorinator Supply Pump #2 Running	Chlorine Bldg.
26	Sludge Collector #1 Running	Final Settling Basin
27	Sludge Collector #1 Overtorque Alarm	Final Settling Basin
28	Sludge Collector #2 Running	Final Settling Basin
29	Sludge Collector #2 Overtorque Alarm	Final Settling Basin
30	Spare	Final Settling Basin
31	Spare	Final Settling Basin

INSTRUMENTATION & CONTROL CABLE PAIR ASSIGNMENTS

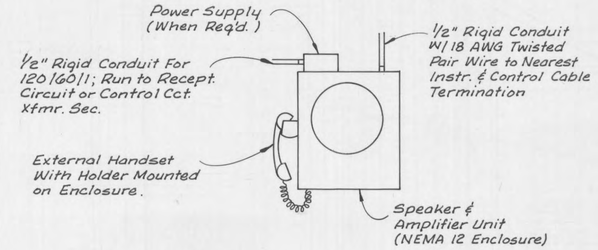


PLAN



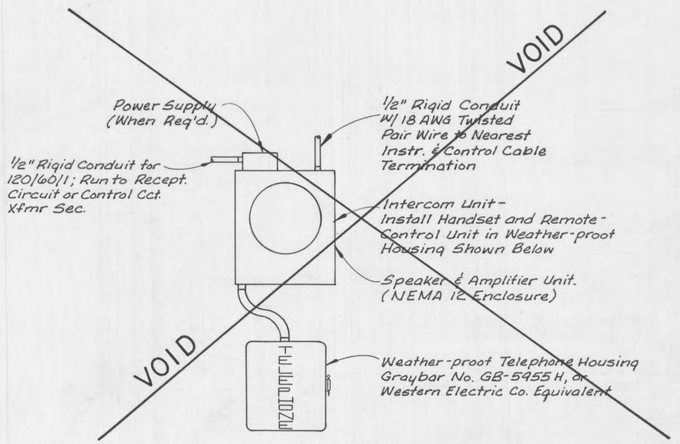
SECTION

STREET & STRUCTURE LUMINAIRE FOUNDATION DETAIL

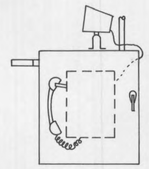


TYPICAL INDOOR INTERCOM STATION INSTALLATION

NOTE:
See Specifications for Schedule of Individual Equipment Requirements



TYPICAL OUTDOOR INTERCOM STATION INSTALLATION



TYPICAL OUTDOOR INTERCOM STATION INSTALLATION

Revised As Constructed, January '84

CRIST ENGINEERS INC. — CONSULTING ENGINEERS — LITTLE ROCK, ARKANSAS

WYNNE, ARKANSAS

SEWAGE TREATMENT PLANT

ELECTRICAL DETAILS

DRAWN: RWZ	JOB NO. C-76-15	DATE: July '79	61
TRACED: MT	SCALE: No Scale		62
CHECKED: RWZ			

		CRIST ENGINEERS CONTRACT NO. 23016 WYNNE WWTP IMPROVEMENTS - PACKAGE C RESPONSE TO QUESTIONS Through Addendum 2 7/17/2025	Updated By	CGT	
			Updated On	7/9/2025	
			Published On	7/9/2025	

Ref No.	Question	Originator	Date Requested	Formal Response	Firm Responsible	Discipline	Addendum No	Open/Closed
1	Request to postpone Wynne bid date 1 week or more.	VHC	N/A	No change to Contract Documents.	Crist	N/A	Addendum 02	**Closed**
2	Per the Advertisement For Bids, bids are to remain in effect for 60 days. Question – Can this be changed to 30 days? Holding a bid for 60 days is not easily done in today's times.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
3	Per Article 2 Bidder's Acknowledgements of Bid Recipient, bids will remain subject to acceptance for 90 days after the Bid opening. Are the bids to be held for 60 or 90 days? Can this be changed to 30 days?	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
4	Please provide any Geotechnical information that is applicable.	VHC	7/1/2025	Reference Addendum 1	Crist	N/A	Addendum 01	**Closed**
5	Bid Schedule, Item 1 you are allowing the GC to bill up to 7.5% of the total bid. However, only 65% can be paid throughout the project with the remaining 35% being held until the final payment. This is fine if you are NOT going to hold any retainage, if you intend to hold retainage this is unacceptable.	VHC	7/1/2025	No change to Contract Documents.	Crist	N/A	Addendum 02	**Closed**
6	Can the bid schedule breakdown be turned in 24 hours after the bid?	VHC	7/1/2025	No change to Contract Documents.	Crist	N/A	Addendum 02	**Closed**
7	Bid Schedule, Item 12 Safety Program – you have requested the DART on proposed Subcontractors, we will Not be able to provide the Subcontractors DART at the time of the bid. Most will not have any idea what this is. Can this be submitted 24 hrs after the bid?	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
8	Please provide the value of the Owner Provided Equipment so that we can properly provide the correct Builders Risk Insurance Coverage.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
9	SC-7.06.F, insert "If Owner requires the replacement of any subcontractor, Supplier, or other individual or entity retained by GC to perform any part of the work, then GC shall NOT be entitled to an adjustment in Contract Price or Contract Times, or both". We can not agree to this if Owner requires the use of another, we expect to be paid the difference plus profit. This change could also increase insurance and bond costs.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
10	010000-7 Normal Working Hours B.1 – please provide Labor costs, so we can multiply by 3.2 (what a killing).	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
11	013000-2 1.3.D Owner Procured Equipment – please provide brand name and equipment vendor contact for purchased equipment.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
12	014000-2 1.5 Testing Lab Services A – Contractor will appoint and employ services of an independent testing firm. Will this be paid out of the Material Testing Allowance ($60,000)?	VHC	7/1/2025	Yes	Crist	N/A	Addendum 02	**Closed**
13	015000-1 Temp Fac. D.4 – Field Offices for Engineer. Wi-Fi included. Please define exactly what this is to include, size, quantity, etc. If this is not specifically stated and listed, we cannot be held responsible for at a later date.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
14	024100-3 Demo 3.01.A – Provide list of materials and equipment to be returned to the Owner prior to bidding, so proper estimates can be made. Any material and equipment not listed prior to the bid will be removed in a manner that is not intended to be reused.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
15	With the Owner suppling the generator, is the contractor required to provide, fuel, fuel for testing, testing, site tests, load bank testing, etc. Spec 263213 does not state the generator is by Owner.	VHC	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
16	The drawings show 8" precast hollow core roof planks, please provide a specification.	VHC	7/1/2025	See Addendum 2	Wekiva	Structural	Addendum 02	**Closed**
17	312301-2 Excavation 1.3.C – Additional Excavation: When excavation has reached required subgrade elevations, notify engineer, who will make an inspection of conditions. If engineer determines that bearing materials at required subgrade elevations are unsuitable, continue excavation until suitable bearing materials are encountered and replace excavated material as directed by engineer. I assume that this would be paid for by the cubic yard removed and installed. Should unit numbers be part of the bid form for undercut removal and replacement?	VHC	7/1/2025	See Updated Bid Form	Crist	Civil	Addendum 02	**Closed**
18	312301-2 Excavation 1.3.F – Rock Excavation – Should unit numbers be part of the bid form for rock excavation?	VHC	7/1/2025	Reference Addendum 1 for Geotechnical Report	Crist	Civil / Geotech	**Addendum 01**	**Closed**
19	33141-1 Watertightness Test for Hydraulic Structures 1.1.A.2 Dry Pit. Are we to water test dry pits that do not hold water?	VHC	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
20	I did not find anything on BABA, AISA, Federal Requirements, Wage Scale, etc. I want to confirm that these items are required.	VHC	7/1/2025	These requirements are not in the project due to the type of FEMA funding on the project.	Crist	N/A	Addendum 02	**Closed**
21	Please outline the city approval process for the building permit so we can advise the prospective bidders, and if their will be a permit application cost. The permit should be in contractors name, but have had client deal with the cost differently. Contractor can pay or owner pays. Either way you pay.	Client		The City will not be imposing any building permit fees for this project. If there are applicable State fees for this project, we as the owner will be responsible for payment of said fees. See Gneeral Note, Number 3 "Permits" Drawing 00-G-02.	Crist	N/A	Addendum 02	**Closed**

22	MarMac has requested to be written in as an alternative in the specs for concrete admixtures. patrick.young@marmac.com	MarMac	7/2/2025	Declined.	Crist	Mechanical	Addendum 02	**Closed**
23	Will you consider us an equal for Submersible Pumps	Haynes	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
24	Consider us an equal for Submersible Choppers - vaughn	Haynes	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
25	Consider us an equal for screw centrifugals - vaughn	Haynes	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
26	Consider us an equal for FRP Stop Gates - warminster	Haynes	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
27	Flow Meters - ABB	Haynes	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
28	Several references to AIS requirements are made, however the RLF requirements call for Buy American procedures. What are the domestic requirements for this project?	Core & Main	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
29	Are bell joint restraints required on all push joint piping?	Core & Main	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
30	Sections 331216 and 331419 provide conflicting information about valve requirements such as opening direction, valve box type, and valve stem material. Please clarify the requirements.	Core & Main	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
31	Gate valve specification 331419 calls for C515 valves, 331216 lists C509 as acceptable. Please clarify gate valve specifications.	Core & Main	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
32	Combination ARV valve specs 331216 and 331419 provide conflicting information. Please clarify requirements.	Core & Main	7/1/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
33	Is the GREEN/BLUE stripe required for the HDPE DIPS piping? This may affect availability.	Core & Main	7/1/2025	Acknowledged	Crist	Mechanical	Addendum 02	**Closed**
34	RLF supplemental specifications, 007310, is referenced but not provided. Please provide specification section.	Core & Main	7/1/2025	See Addendum 2	Crist	N/A	Addendum 02	**Closed**
35	Section 1.3-C calls for a Grade 2B certified pump performance test. I just wanted to verify if this is required or not? We did not do this on the last lift station in Wynne and wanted to double check because it is a $3,300.00 adder for certified tests	Tencarva	7/3/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
36	The table for pump control panel under Section 2.1 calls for a NEMA 4X fiberglass enclosure, but the specs also call for a NEMA 1 SS enclosure further down below in Section 2.10-B. Gorman-Rupp's standard is NEMA 1 SS for the panel enclosures in these packages. We do have the option to upgrade the NEMA 1 SS to NEMA 3R SS or NEMA 3R steel if that is needed. Please verify which enclosure type is needed.	Tencarva	7/3/2025	See Addendum 2	Brown	Electrical	Addendum 02	**Closed**
37	Section 2.11-A-E describes a level control circuit which would use a submersible transducer, air bubbler, or ultrasonic transducer. This same section describes float switches in Section 2.11-F. I am sure they want float switches for this lift station since that is what we did for the storage basin station, but I wanted to verify.	Tencarva	7/3/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
38	Wastewater Valves 331316-11 notes Plug Valves 16" through 36" located in Area 10, 60 and 90. Appears to be incorrect sizes	VHC	7/7/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
39	Oxidation Ditch drawing 50-M-101 note 3 states to replace inoperable slide gates and operators. Does Owner or Crist have any other information on these?	VHC	7/7/2025	Reference Sheet 50-M-401			Addendum 02	**Closed**
40	Please provide design criteria and specifications for monorail crane system located in RAS/WAS pump station. 70-S-502 Detail A and D.	Tolm	6/27/2025	Issued in future Addendum	Wekiva	Structural	TBD	**Open**
41	Per detail MM 80-X-01 on sheet 00-Y-04, Contractor is to removed existing light pole base 2ft. Below grade. This is typical for the entire site. Please confirm quantity of light pole bases on site to be removed.	Tolm	6/27/2025	See Addendum 2	Crist	TBD	Addendum 02	**Closed**
42	Can Engineer confirm quantity of existing floor supports that are to be removed from aerobic digester basins? Note 1, 80-X-01	Tolm	6/27/2025	This information is not available.	Crist	Civil	Addendum 02	**Closed**
43	Can Engineer confirm estimated linear footage of damaged guard railing? What other equipment is considered "Safety Equipment" and is to be inspected and replaced by contractor? Note 1, 50-X-01	Tolm	6/27/2025	See Addendum 2	Crist	Civil	Addendum 02	**Closed**
44	Per note 4 on sheet 50-X-01, contractor is to empty basin and inspect for damage. If damage is present, how will recommended corrections be handled?	Tolm	6/27/2025	See Bid Item 25	Crist	Civil	Addendum 02	**Closed**
45	Are the construction laydown areas shown on Sheet 0-X-01 shared with the contractor of structure 140 and 150?	Tolm	6/27/2025	See Addendum 2	Crist	Civil	Addendum 02	**Closed**
46	Confirm location of generator pad. Location in Electrical Site Plan (E2) is conflicting with proposed site plan on Sheet 00-C-01	Tolm	6/27/2025	See Addendum 2	Crist / Brown	Civil / Electrical	Addendum 02	**Closed**
47	Based on the Grating Schedule in 00-SZ-06, various size Aluminum Gratings should be used. Can we standardize the Aluminum Bar Grating to 1 ¼ or 1 ½" for all Grating Sections shown in these plan sheets ? (Structure 10, 20 and 30). Some of the larger sections do have CS8X5.79 / C8x5.62 Structural Support Beams which would allow for the thinner Grating.	Tolm	6/27/2025	We prefer to maintain the grating representation. Please note the grating thickness along with the bar spacing must be sized to accommodate the loading and deflection indicated in the specification (055000). If the Contractor would prefer to make the grating all one particular thickness for a given structure then that is acceptable but it should still meet the given loading and deflection criteria.	Wekiva	Structural	Addendum 02	**Closed**
48	Please confirm that the L3x3x1/4 Support Angle and the Grating Embed in Detail A, and the reversed L3-1/2x3-1/2x5/16 Diamond Plate Angle Frame are Aluminum. If " Yes ", do these Angle Embeds require a Bituminous Coating towards the concrete side ?	Tolm	6/27/2025	Yes, all of those components noted are aluminum unless noted otherwise on individual plans (i.e. Headworks). Yes, all aluminum which is in contact with concrete shall have a coating as noted in the general notes and Section 055000.	Wekiva	Structural	Addendum 02	**Closed**
49	Please confirm that the Sump Pit shown in the large Concrete Deck requires Grating. 00-SZ-06, Detail H does not show Grating / Embeds. If " Yes ", will the 1 ¼" Aluminum Grating be sufficient ?	Tolm	6/27/2025	See Addendum 2	Wekiva	Structural	Addendum 02	**Closed**
50	The large Grating section between Column Line 1 – 1.1 and E – F2.3 will need to be supported at the adjacent Concrete Decks. Will we need to mount 4x4x1/4" Aluminum Angle along the Concrete Deck edges (Column Line E and 1.1) ?	Tolm	6/27/2025	No, ledger angle is not needed on that side (parallel to the grating span).	Wekiva	Structural	Addendum 02	**Closed**
51	Please confirm that the Aeration Division Box shown is also referred to as JB 400 - Ref 30-S-502	Tolm	6/27/2025	Confirmed	Crist / Wekiva	Mech / Structural	Addendum 02	**Closed**

52	Detail B shows an elevation of a Staircase similar to the Type T-1 shown in 00-SZ-09. Please confirm the width required for this Staircase to be 3'-3". Please confirm that these Staircases will receive top or side mounted Aluminum Handrails similar to the details shown in 00-SZ-05.	Tolm	6/27/2025	Confirmed	Wekiva	Structural	Addendum 02	**Closed**
53	Please confirm that this Staircase is similar to the Type T-1 shown in 00-SZ-09. Please confirm the width required for this Staircase to be 3'-3". Please confirm that these Staircases will receive top or side mounted Aluminum Handrails similar to the details shown in 00-SZ-05. Without an elevation showing, will this Staircase need Support Columns ? If " Yes ", how many sets and what size ?	Tolm	6/27/2025	Confirmed. No, support columns are not needed.	Wekiva	Structural	Addendum 02	**Closed**
54	Please confirm that the Aluminum Trench Grating thickness is 1 ¼" with matching Aluminum Embeds as per 00-SZ-06.	Tolm	6/27/2025	Grating shall be sized per Section 055000.	Wekiva	Structural	Addendum 02	**Closed**
55	Please clarify the Handrail style required on all the Staircases. The Handrail shown in 120-M-301 differs from any Handrails shown in this Plan Set.	Tolm	6/27/2025	Refer to detail 00-SZ-05	Crist / Wekiva	Mech / Structural	Addendum 02	**Closed**
56	120-M-301 shows a Weir Plate to be mounted inside the 3'-0" wide wall opening at EL 226.50. The Weir Plate is specified as FRP, 36"x6"x1". The Weir details in 00-MZ-05 and 06 call for a surface mounted, ¼" thick plate, without specifying material.	Tolm	6/27/2025	Issued in future Addendum	Wekiva	Mechanical	TBD	**Open**
57	Please provide specifications for hollowcore precast roof panels. Confirm whether tie beams are also precast or are intended to be cast-in-place.	Tolm	7/2/2025	See Addendum 2	Wekiva	Structural	Addendum 02	**Closed**
58	Please confirm coating schedule for interior/exterior process piping, process equipment, and related items that will require field-applied coatings.	Tolm	7/2/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
59	Verify whether service pump station slab is to be demolished and replaced with a precast slab. No reference to slab demo on sheet 130-X-01, but new precast slab is referenced on sheet 130-S-101. If required, Please provide details on the required Hatch for the pre – cast replacement Slab (see Note 2)	Tolm	7/2/2025	The existing pump station slab does not get demolished, the new slab will placed on top of the existing and cored for new penetrations.	Crist / Wekiva	Civil / Structural	Addendum 02	**Closed**
60	Please confirm that MH-E1 – E5 and MH-U1 can be either CIP, or Pre – Cast, and that the diameter for all will be 4'.	Tolm	7/2/2025	Confirmed	EEEC	HVAC	Addendum 02	**Closed**
61	05-C-101 shows a Manhole on a line going North thru the parking lot and then turning West, tying into an existing Manhole. Please provide information on this Manhole. (see email attachment WYNNE WWTP, MH-1)	Tolm	7/2/2025	See Addendum 2	Crist	Civil	Addendum 02	**Closed**
62	Would it be possible to add sections as per mark – up in 30-S-102 to clarify structural requirements. Also, please clarify what the Yellow highlighted sections in 30-S-302 represent. (see email attachment WYNNE WWTP, STRUCTURE 30-1)	Tolm	7/2/2025	Issued in future Addendum	Wekiva	Structural	TBD	**Open**
63	Please confirm that both Clarifiers will get new Aluminum Staircases, PRVs, Drop Boxes, and the CS10x6.14 Scum Box Support Channel.	Tolm	7/2/2025	Confirmed	Crist / Wekiva	Mech / Structural	Addendum 02	**Closed**
64	Please confirm that the Slab thickness in the Electrical Building is 8" with Turn – Downs around the perimeter. Detail C in 70-S-501 calls for 6".	Tolm	7/2/2025	See Addendum 2	Wekiva	Structural	Addendum 02	**Closed**
65	Please provide details for the Cross – Over Stairs, such as Make, Model, Materials etc.	Tolm	7/2/2025	See Addendum 2	Crist / Wekiva	Structural	Addendum 02	**Closed**
66	Please confirm that the Electrical Building will not receive any Equipment or house-keeping Pads.	Tolm	7/2/2025	Housekeeping pads shall be provided at all floor mounted equipment per the standard details.	Brown / Wekiva	Electrical / Structural	Addendum 02	**Closed**
67	Please confirm that the Electrical Building will not receive any Equipment or house-keeping Pads.	Tolm	7/2/2025	Housekeeping pads shall be provided at all floor mounted equipment per the standard details.	Brown / Wekiva	Electrical / Structural	Addendum 02	**Closed**
68	Please advise on the details of the stacked 4" HVAC pads (see email attachment WYNNE WWTP, HVAC-1)	Tolm	7/2/2025	See Addendum 2	EEEC	HVAC	Addendum 02	**Closed**
69	1) Please include Walker Process Equipment as a named manufacturer **Ref 1.3.A** 2) Walker Process Equipment (WPE) does not use ISO 9001 certification. WPE uses an internal quality system directed by management rather than being directed by an outside standard. Quality control is demanded and audited by top management. Please allow manufacturers with an internal quality system in addition to the ISO 9001 system specified. **Ref 1.7.B** 3) WPE has a long history of successfully providing pier supported collectors. Our drive assembly is conservatively designed to provide long service life and simple maintenance. Our drive assembly meets the specified torque and life requirements but differs from the WesTech drive specified in several features detailed below. Please allow use of the Walker Process Equipment spur gear drive assembly. **Ref 2.2.A.1** 4) WPE uses a chain drive between the primary and intermediate reducers. Chain drives are a proven technology that offer long life and ease of maintenance. Please allow use of a chain drive in the drive assembly. **Ref 2.2.A.1.a, E.1**	ISI	7/9/2025	See Addendum 2, listing Amwell Walker. Specification Modification will be addressed in Future Addednum.	Crist	Mechanical	Addendum 02	**Open**

70	Ref Spec 464318 1) WPE uses a ductile iron split internal gear design with a replaceable strip liner main bearing. Drive housings are cast iron. **Ref 2.2.B.1, D.1** 2) The WPE overload device requires the worm to float in order to measure the thrust of the worm gear. **Ref 2.2.C.1** 3) Sludge collection box is not used with spiral flight collectors. **Ref 2.4.A.1** 4) Please remove this requirement for EDI Test Data that is specific to one manufacturer. WPE does not maintain a database of side by side performance tests. **Ref 2.4.B.d**	ISI	7/9/2025	See Addendum 2, listing Amwell Walker. Specification Modification will be addressed in Future Addednum.	Crist	Mechanical	Addendum 02	**Open**
71	Ref Spec 464318 1) The sludge withdrawal ring is a competitor's proprietary design. Please allow use of a rotating sludge manifold. **Ref 2.4.E.1.b** 2) The specified sludge ring is a competitor's proprietary design. WPE uses a Rotating Sludge Manifold which we believe to be of superior design. The WPE Rotating Sludge Manifold includes two sludge withdrawal ports, each located directly in front of a spiral flight ensuring that non-diluted sludge is withdrawn from the tank at all times. Please allow use of the rotating sludge manifold in lieu of the sludge withdrawal ring. **Ref 2.4.F**	ISI	7/9/2025	See Addendum 2, listing Amwell Walker. Specification Modification will be addressed in Future Addednum.	Crist	Mechanical	Addendum 02	**Open**
72	Potable water to the washer/compactor is called out as 2" PVC on the civil sheets and equipment schedule, 1" SS on the mechanical sheets, and ½" PVC on the piping schedule. Please clarify material to be used.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
73	Drain piping at Grit Removal does not have enough information to accurately determine the materials needed. Please clarify intent/ provide additional section views.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
74	30-M-101 shows the Grit Pump discharge lines having 4 plug valves, however, the P&ID for the Grit Removal shows 6 plug valves. Please verify quantity.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
75	Grit removal pipe supports are shown as flange mounted supports on 30-m-101 and 30-m-301. 30-S-103 and 30-S-303 show a different pipe support design with channel and U-bolt. Please clarify style to be used.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
76	Removal extents for the clarifier are inconsistent between civil, mechanical, and removal sheets. Please clarify the extent of removal for piping.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
77	60-M-401 lists the vertical discharge and recirculation pipe as DIP but 432613 calls for stainless steel. Please clarify intent. Also, please clarify if the pump vendor is to supply these along with the diverter valve.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
78	The schedules on 70-m-601 and 90-m-601, lists weight and spring and double disc check valves, however 331216 only provides specifications for duckbill or L&W and 331419 for swing check. Please provide additional specification.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
79	Valve schedule provided is inaccurate. Please provide valve schedule for this project if available.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
80	WAS & TWAS piping labeling is inconsistent from the RAS/WAS Pump Building to civil sheets. Please identify piping accurately.	Core & Main	7/11/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
81	00-GI-09 shows the valve vault containing the plug valve. 60-M-401 shows the valve outside the vault. Please confirm location.	Core & Main	7/11/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
82	The blower specification lists air flow as "CFM" but does not indicate if that is SCFM or ICFRM (FAD)? Since the motor is specified to be 50HP, we are assuming this to be 1121 ICFM. Going to 1121 SCFM would require a 60HP motor.	IRCO / JTE	7/11/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
83	**Sheet 100-X-01** Note 2 Demo and remove existing concrete sidewalks and slabs. Are the walls also to be removed 1' below grade and backfilled (Sheet 00-Y-05 leads me to believe this structure is to be demolished in its entirety)? If so, please provide the depth of this structure.	VHC	7/11/2025	See Addendum 2	Crist	Civil	Addendum 02	**Closed**
84	**Sheet 105-X-01** Same questions as Sheet 100-X-01	VHC	7/11/2025	See Addendum 2	Crist	Civil	Addendum 02	**Closed**
85	**Sheet 00-Y-05** has demo details for 120-Post Aeration. Should there be a demo drawing 120-X-01? It is not listed on the Index 00-G-01.	VHC	7/11/2025	Demo per 00-Y-05.	Crist	Civil	Addendum 02	**Closed**
86	**Sheet 00-C-01** are both contractor laydown areas shown available for this contract only? Or are they to be shared or for the office project only?	VHC	7/11/2025	See Addendum 2	Crist	Civil	Addendum 02	**Closed**
87	**Sheet 70-S-101** shows a 2 ton monorail. Will you be providing a specification on this?	VHC	7/11/2025	Issued in future Addendum	Wekiva	Structural	TBD	**Open**
88	**Sheet A400** please confirm that waterproofing is not required on below grade concrete walls, it is not shown or specified. General question for new below grade concrete wall with dry areas on the interior.	VHC	7/11/2025	Issued in future Addendum	Williams-Dean	Architectural	TBD	**Open**
89	Precast 8" hollowcore roof planks are not made in the state of Arkansas (Coreslab does not build these units), the closest we can find them is in Georgia and they will not guarantee that they will provide them due to the trucking. If you went double-tees the walls might need to be raised in order to gain the floor to bottom of tee clearance, as an option.	VHC	7/11/2025	See Addendum 2	Wekiva	Structural	Addendum 02	**Closed**
90	Sheet 00-S-02 Note Contractor's Responsibility – please define what we are responsible for here.	VHC	7/11/2025	Issued in future Addendum	Wekiva	Structural	TBD	**Open**
91	Sheet 60-S-101 – Note 2 calls for the existing PRV's to be protected during construction. It is my understanding that all PRV's are to be removed and replaced. Please confirm.	VHC	7/14/2025	Issued in future Addendum	Crist / Wekiva	Mechanical	TBD	**Open**

92	Sheet 70-M-101 – Note 2 Cross Over Stairs and Platform. Please supply additional information on this item.	VHC	7/14/2025	Issued in future Addendum	Crist / Wekiva	Mechanical	TBD	**Open**
93	Sheet 60-M-101 Mark 18 Launder Covers – please provide a specification on this item.	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
94	Sheet 60-M-402 is not identified on the wonderful Bid Breakdown Form, I am planning putting this cost to the Clarifier line item, unless instructed otherwise.	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
95	\Sheet 50-M-401 is not identified on the Bid Breakdown Form, I am planning putting this cost to the Ox Ditch line item, unless instructed otherwise.	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
96	**Sheet 50-M-101** Note #2 – Access platforms and supports provided by others. You mentioned (at the pre-bid) that the contractor was to install the owner provided access bridge. The plans do not indicate this, please clarify. Provide a gate schedule similar to all the other gates required.	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
97	**Sheet 50-M-101** Note #3 – Replace inoperable slide gates and actuators. Provide more information, arrows point to 3 locations, what size? Wall mount? We cannot price this without additional information.	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
98	**Sheet 50-M-101** Note #4 Replace all damaged guardrail and install new guardrail were applicable. I assume that this only applies to the bold black line at the east end of the Ox Ditch? Approximately 200'?	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
99	**Sheet 50-M-101** Is anything being done to the following existing equipment, neither the plans nor specification section 465116 clearly provide a scope. 50BLW101 and 102 50CDH101 and 102	VHC	7/14/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
100	Is any electrical required at the northern most Ox Ditch? This is very vague. The elctrical drawings do not detail this	VHC	7/14/2025	Issued in future Addendum	Crist / Brown	Mech / Electrical	TBD	**Open**
101	Water Piping Plan 05-C-100 notes two - 2" RPZ Ref Mechanical Sheets. Could not find the details for 2" RPZ in mechanical	VHC	7/15/2025	RPZ details are located on sheet P-1	Crist	Mechanical	Addendum 02	**Closed**
102	Sheet 10-M-302 Note 3 calls out (2) dumpsters for the bar screen. These are not in the specifications, I assume that they are owner supplied. Please clarify.	VHC	7/15/2025	Owner Supplied	Crist	Mechanical	Addendum 02	**Closed**
103	Post Aeration Basin 120-M-101 existing 6'PD DIP lines Keynote 8 adds floor stand valve operator with hand crank. Are these valves existing?	VHC	7/10/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
104	Will you consider Crispin Valves as an "or equal" substitution?	Mead O'Brien	7/15/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
105	Per detail 1 on Sheet E19, "all piping must be fully insulated and weathersealed. Please confirm in more detail which pipes are to be heat traced and weathersealed/insulated. Exterior exposed process piping only?	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
106	Per 50-M-101, Note 1, Contractor to replace lower bearing assemblies on existing mixing units per specification 465116. Please confirm if the lower bearing assemblies will be owner provided or if material procurment will be contractor responsbility.	Tolm	7/15/2025	Confirmed	Crist	Mechanical	Addendum 02	**Closed**
107	50-M-101, Note 2 states that access platforms and supports provided by ohters. Please confirm whether the access platform and support material with be a contractor responsibility to provide and install. If so, please provide details.	Tolm	7/15/2025	See Addendum 2	Crist	Mechanical	Addendum 02	**Closed**
108	Please provide a mechanical equipment and gate schedule for Structure 50 - Oxidation Ditches.	Tolm	7/15/2025	See 50-M-401	Crist	Civil	Addendum 02	**Closed**
109	Please confirm size of rack is needed for Network Racks and whether NW2 and NW3 will be provide by SI or will they be provided and installed under the contracts for Package A and Package B.	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
110	Servers – Spec Section 277331 calls for 3 tower servers but it isn't clear where they will be installed. Will these be installed in each of the Network Racks?	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
111	Light Duty Graphic Printers – Spec Section 277331 calls for 2 light duty graphic printers. Will these be attached to the workstations?	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
112	Integrated Display Computers – Spec Section 277331 calls for 3 Integrated Display Computers which we understand to be mounted on the 3 Control Panels. Is this correct?	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
113	Please provide more detailed specs for Instrumentation devices listed in Div. 40 (I.E. flow meters, pressure gauges, pressure transmitters, submersible pressure transmitters, and pressure switches).	Tolm	7/15/2025	Issued in future Addendum	Crist	Civil	TBD	**Open**
114	What is the range for pressure transmitters?	Tolm	7/15/2025	Issued in future Addendum	Crist	Civil	TBD	**Open**
115	On the PID documents P2-P8, it shows an ENET device that is the same symbol as the PLC in the legend. Does this indicate the Vendor Control Panel will be connected to a local ENET device in the building, or does it represent that it will be ran directly from the VCP to the Network Rack NW1 in another location?	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
116	Is there a local panelview on vendor control panels, or do they report back to the SCADA?	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
117	Please specify the locations of the (3) servers specified in Section 277331	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
118	Is the Equipment Vendor responsible for submittals, electrical drawings HMI/SCADA screens, PLC Programming, startup, commissioning, and training on all they are providing or does that fall to the SI.	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
119	Please specify which instrumentation devices will be provided in a vendor equipment package and which will be the responsibility of the SI to provide.	Tolm	7/15/2025	Issued in future Addendum	Brown	Electrical	TBD	**Open**
120	The OIT for the UV Structure is not on the drawing. It shows it on the Network Riser Diagram but not on the PID.	Tolm	7/15/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
121	Can you please provide a specification section for the launder covers at the clarifiers?	Haren	7/16/2025	Issued in future Addendum	Crist	Mechanical	TBD	**Open**
