

ADDENDUM NO. 1
TO
PROCUREMENT AND CONTRACTING REQUIREMENTS
FOR
NineStar CR200 Sewer – Division I
FOR
NINESTAR CONNECT
Issue Date: October 25th, 2023

BIDS ARE DUE BY
Thursday November 9th, 2023
10:00 AM (Local Time)
Attn. Alan Martin, Manager of Water and Wastewater Utilities, NineStar Connect – 2243 E Main
Street; Greenfield, IN 46140

This addendum consists of four (4) pages and the following attachments:

- | | |
|--------------------------|-------------------------|
| Attachment No. 1: | Replaced Specifications |
| Attachment No. 2: | Revised Plan Sheets |
| Attachment No. 3: | Supplementary Documents |

The following, as additions to and modifications in the Bidding Requirements and Contract Documents, will be included in, and become a part of the **NineStar CR200 Sewer – Division I**. This Addendum forms a part of the Contract Documents. Bidders are, therefore, instructed to take the following into account in rendering any Bid for this work. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

CHANGES TO PRIOR ADDENDA: (N/A)

CHANGES TO PROCUREMENT REQUIREMENTS: (N/A)

CHANGES TO CONTRACTING REQUIREMENTS: (N/A)

CHANGES TO SPECIFICATIONS:

1. **PLEASE NOTE:** *“Or equal” items will be considered for all products, including products not explicitly stated. We acknowledge that lead times are volatile and that certain product types may be more readily available or cost effective. If exceptions are needed to standards, they will be considered for approval on a case-by-case basis.*
2. Replace the following specifications in their entirety with **Attachment No. 1** of this addendum:

- a. "Specification 00 00 01 – Table of Contents" (Updated specification titles to match footnotes of specification sections.)
- b. "Specification 00 41 13 – Bid Form" (Updated title of Item Number 5 to match contract items specification.)
- c. "Specification 00 73 00 – Supplementary Conditions" (Added clarifying information about the American Rescue Plan Act (ARPA) acronym. Deleted and updated exhibits as needed to match the correct requirements.)
- d. "Specification 26 32 13.13 – Diesel-Engine-Driven Generator Sets" (Added specification in its entirety.)
- e. "Specification 33 32 19 – Public Utility Wastewater Pumping Stations" (Adjusted minimum efficiency requirement based on designed pumps.)

CHANGES TO DRAWINGS:

1. Revised Plan Sheets – **Attachment No. 2** of this addendum:
 - a. Sheet T001 - Title Sheet (Updated Index and fixed typographical error in project overview map.)
 - b. Sheet C601 – Boulders Lift Station Site Plan (Updated site to include protective bollards as well as appropriate sized areas for controls, new generator, and transformer.)
 - c. Sheet C900 – Details (Included Bollard Detail on sheet.)
 - d. Sheet E101 – Philadelphia WWTP Headworks Electrical Details (Added note to confirm location and installation of ultrasonics with manufacturer.)
 - e. Sheet E200 – Boulders Lift Station Site Plan (Added notes about generator, transformer pad and bollards.)
 - f. Sheet E201 – Boulders Lift Station One-Line Diagram (Added permanent generator and ATS.)
 - g. Sheet E202 – Boulders Lift Station Electrical Details (Site detail modified for generator addition, coupling in vented channel removed.)
 - h. Sheet E203 – Boulders Pump Control Panel Layout Details (Added note about AC/Unit Heater.)
 - i. Sheet E204 – Boulders Pump Control Panel Wiring Details (Updated pump electrical information.)
 - j. Sheet E205 – Boulders Pump Control Panel Wiring Diagram (OL1 and OL2 removed as there is no motor starter. Removed "pilot light" from alarm beacon circuit note.)
 - k. Sheet E206 – Boulders PLC Control Panel Layout Details (Added note for owner approved alternate.)
 - l. Sheet E207 – Boulders PLC Control Panel Wiring Details (Added generator alarms and ATS in emergency power)
 - m. Sheet E209 – Boulders PLC Control Panel Wiring Details Cont (Added generator.)
 - n. Sheet E301 – CR300 Lift Station One-Line Diagram (Updated pump electrical information.)
 - o. Sheet E302 – CR300 Lift Station Electrical Details (Coupling in vented channel removed.)

- p. Sheet E303 – CR300 Pump Control Panel Layout Details (Added note about AC/Unit Heater)
- q. Sheet E304 – CR300 Pump Control Panel Wiring Details (Adjusted pump size.)
- r. Sheet E305 – CR300 Pump Control Panel Wiring Diagram (OL1 and OL2 removed as there is no motor starter. Removed “pilot light” from alarm beacon circuit note.)
- s. Sheet E402 – Sugar Creek Lift Station Electrical Details (Coupling in vented channel removed.)
- t. Sheet E403 – Sugar Creek Pump Control Panel Layout Details (Added note about AC/Unit heater.)
- u. Sheet E404 – Sugar Creek Pump Control Panel Wiring Details (Updated pump FLAs)
- v. Sheet E405 – Sugar Creek Pump Control Panel Wiring Details Cont (OL1 and OL2 removed as there is no motor starter. Removed “pilot light” from alarm beacon circuit note.)
- w. Sheet E406 – Sugar Creek Pump Control Panel Wiring Details Cont (Added generator alarms and ATS for emergency power alarm)
- x. Sheet E408 – Sugar Creek Pump Control Panel Wiring Details Cont (Ensured generator in overview.)
- y. Sheet E500 – Overall Network Architecture (Added information about Valve Control Vault PLC to network overview.)
- z. Sheet E600-E603 –Valve Control Vault Sheets (Updated Sheet Numbers to be in separate electrical division. Previously sheets E140-E143.)

CHANGES TO MISCELLANEOUS DOCUMENTS:

- 1. Included as an attachment this addendum (**Attachment No. 3**) is the Pre-Bid Conference Meeting Minutes and Sign-In Sheet.

SUBMITTED QUESTIONS/REQUESTS & RESPONSES:

1. Pre-Bid Meeting Questions

- a. Q: Are IDOA/INDOT prequalification required for associated work?
 - i. A: Yes, as that is state statute.
- b. Q: Are Davis-Bacon prevailing wages required?
 - i. A: No

2. Emailed Questions

- a. Q: Please consider adding Sulzer pumps to the Lift Station Specification?
 - i. A: We will not be adjusting the 33 32 19 Specification to include any more pumps prior to bid; HOWEVER, when a contractor is selected, they may submit “or-equal” pumps

to be reviewed as shop drawings. If pumps are found to be of equal (or greater) performance, quality, and practicality, those pumps will be approved at that time.

- b. Q: Please confirm the pre-bid and bid dates for the project?
 - i. A: Pre-Bid is 10/19/2023 and is not mandatory. The bid date is 11/9/2023.
- c. Q: Is there a construction estimate for Divisions I and II?
 - i. A: Yes; however, we cannot share it prior to bid.
- d. **Q: Please confirm which set of information to follow for control panel specifications: Section 33 32 19, Division 25 and SDA Drawings, or NineStar Standards?**
 - i. **A: The most accurate controls and electrical information is on the drawings and in Division 25 of the specifications.**
- e. Q: Can a contractor bid on just one division bid package?
 - i. A: Yes, each division is bid separately.
- f. Q: Will the pump manufacturer be required to provide panels with float and other SCADA controls or just the pump control panel?
 - i. A: The integrator bidding to build the pump control panel should also be responsible for the PLC programming or arrange to collaborate for those services as a part of their service offering.
- g. Q: The panel rack layout drawing, sheet E202 for Boulders for reference, shows there to be a flow meter display inside of the SCADA panel. Yet the SCADA panel layout E206 drawing doesn't show this being inside of this panel?
 - i. A: E202 shows (2) flow meters in the valve vault – one in each pipe. The FIT for each from meter is mounted on the control rack (not in the control panel) and I&C wiring goes from the FITs back to the PLC in the control panel. You can also see that wire specified on E201.
- h. Q: From what information I have, NineStar currently has active OmniSite units on these lift stations. Is the goal of the project to move them away from OmniSites and to the SCADA that Sims and Durkin has designed or stay with OmniSites?
 - i. A: Each of the lift stations will be connected to fiber and will use SCADA to communicate back to the WWTP rather than using OmniSite units. The Sugar Creek lift station is currently connected to fiber – and the new Lift Station will follow that pattern.
- i. Q: Does NineStar have a preferred integrator for their SCADA?
 - i. A: In the past, NineStar has used the Wessler SCADA integration team for their projects.

+ + END OF ADDENDUM + +

PLEASE ACKNOWLEDGE THIS ADDENDUM IN THE BID FORM YOU SUBMIT.



Certified: _____

Engineer

Date: 10/25/2023

Attachment No. 1

Specifications

**NINESTAR CONNECT
NINESTAR CONNECT CR 200 W SEWER – DIVISION I**

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APPENDICES TO THE SPECIFICATIONS

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BID FORM

NINESTAR CONNECT

CR 200 W Sewer – Division I

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ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is submitted to:

NineStar Connect

2243 East Main Street

Greenfield, IN 46140

- 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 of 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.

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:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- 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 any thing 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

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 Contract.

ARTICLE 5 – BASIS OF BID

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

ITEM	Description	Unit	Estimated Quantity	Unit Price	Total Price
1	Sugar Creek WWTP and Lift Station, Complete	LS	1		
2	CR300 Lift Station, Complete	LS	1		
3	Combination Valve Vault, Complete	LS	1		
4	Boulders Lift Station, Complete	LS	1		
5	Philadelphia WWTP Work, Complete	LS	1		
6	Maintenance of Traffic	ALLOW	N/A	N/A	

Total Base Bid Price

\$ _____

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
 - B. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. List of Project References;
 - E. Bidder’s License No.: _____ demonstrating evidence of authority to do business in the state of Indiana.

- F. Required Bidder Qualification Statement (Form 96) with supporting data;
- G. American Iron and Steel Certification;
- H. Good Faith Efforts Worksheet ;
- I. E-Verify Affidavit

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:

Fax Number:

Contact Name and e-mail address:

Bidder's License No.:

(where applicable)

(NO TEXT FOR THIS PAGE)

SECTION 00 73 00 - SUPPLEMENTARY CONDITIONS

GENERAL

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

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 thereto.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY*SC-1.01.A. Defined Terms*

Add new paragraph 1.01.A.49 and 1.01.A.50 immediately after paragraph 1.01.A.48 of the General Conditions which shall read as follows:

49. "Additional Insureds", except where otherwise expressly defined, shall mean:

NineStar Connect
RQAW Corporation
Atlas Technical Consultants, LLC
Sims Durkin Associates Engineering Company
JPS Consultants

ARTICLE 2 – PRELIMINARY MATTERS*SC-2.02 Copies of Documents*

SC-2.02.A. Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor two (2) copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

ARTICLE 3 – DOCUMENT: INTENT, REQUIREMENTS, REUSE*SC-3.01 Intent*

SC-3.01.E. Add new Paragraph 3.01.E.1 immediately after Paragraph 3.01.E:

1. Engineer will issue, within five working days of receipt, such written clarifications or interpretations of the requirement of the Contract Documents (in a form as determined by Engineer) as Engineer may determine necessary, which shall be consistent with the intent of and reasonably inferable from Contract Documents. If Engineer determines,

based upon the nature of the requested clarification or interpretation, that the response cannot be furnished in five working days, Engineer will advise the Contractor giving a schedule for furnishing the information.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01 Commencement of Contract Times; Notice to Proceed

SC-4.01.A Delete Paragraph 4.01.A. in its entirety and insert the following new paragraph in its place:

- A. The Contract Times will commence on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement.

SC-4.04 Progress Schedule

SC-4.04.C And new Paragraph 4.04.C. immediately after Paragraph 4.04.B.:

- C. Provide an updated Progress Schedule with each Application for Payment. Engineer may deny Application for Payment if an updated Progress Schedule is not received.

SC-4.05 Delay's in Contractor's Progress

SC-4.05.A Delete Paragraph 4.05.A. in its entirety and insert the following new paragraph in its place:

- A. No claim for payment, compensation or adjustment of any kind (other than the extensions of time provided for herein) shall be made or asserted against the Owner or Engineer by the Provider for damages caused by hindrances or delays from any cause, whether such hindrances or delays be avoidable or unavoidable, and the Provider shall make no claim for damages by reason of any such hindrances or delays, and will accept in full satisfaction of such hindrances or delays an extension of time to complete the performance of the Work as specified.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.B:

- C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:
 - 1. Report dated November 18, 2021, prepared by Atlas Technical Consultants, LLC., Indianapolis, IN., entitled:
Geotechnical Engineering Investigation
Proposed County Road 200 West Sewer Project
County Road 200 West and County Road 300 North

Greenfield, Hancock County, Indiana
Atlas Project No. 170GC01273

The report listed above is appended to the Contract Documents, but is not considered part of the Contract Documents. The Technical Data contained therein upon which the Contractor is entitled to rely as provided in Paragraph 5.03.B of the General Conditions and as identified and established above are incorporated therein by reference.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.01 *Performance, Payment and Other Bonds*

Add new paragraph 6.01.A.1. immediately after paragraph 6.01.A of the General Conditions which shall read as follows:

1. Contractor shall submit the Maintenance Bond within ten (10) days of acceptance of the project by the Owner, for an amount equal to ten percent (10%) of the final contract amount, guaranteeing for a period of one (1) year after the date of acceptance of the project by the Owner.

SC-6.02 *Insurance—General Provisions*

Add new paragraph 6.02.A.1. immediately after paragraph 6.02.A of the General Conditions which shall read as follows:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

SC-6.03 *Contractor's Insurance*

Add new paragraph 6.03.J immediately after paragraph 6.03.K of the General Conditions which shall read as follows:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall 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 6.03.A.1 and A.2 of the General Conditions:	
State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Employer's Liability:	<u>\$1,000,000</u>
Foreign voluntary worker compensation	<u>Statutory</u>

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions which shall include complete operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Provider:

General Aggregate	\$ <u>3,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person	\$ <u>500,000</u>
Each accident	\$ <u>1,000,000</u>

Property Damage:

Each accident	\$ <u>1,000,000</u>
Combined Single Limit of	\$ <u>1,000,000</u>

4. Excess or Umbrella Liability:

Per Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>3,000,000</u>

5. Contractor's Professional Liability:

Each Claim	\$ <u>1,000,000</u>
Annual Aggregate	\$ <u>3,000,000</u>

SC-6.04 Owner's Liability Insurance

Delete Paragraphs 6.04.A and 6.04.B in their entirety and insert the following:

- A. Contractor shall purchase and maintain until the date of final acceptance, Owner's and Contractor's Protective Liability Insurance to protect Owner, including its employees, officers, and agents against claims which may arise from the operations of the Contractor, or his subcontractors. The coverage shall be for not less than the following amounts or greater where required by law or regulation:

Combination of Primary and Umbrella Coverage	\$ <u>5,000,000</u>
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This insurance shall also cover the Engineer, RQAW Corporation, RQAW Corporation's subconsultants or such other engineer or engineers as may act under the Contract, against similar claims.

B. Not Used.

SC-6.05 Property Insurance

Delete Paragraphs 6.05.A.13 and 6.05.B in their entirety and insert the following:

13. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

B. Not used.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.01 Supervision and Superintendence

Add new paragraphs 7.01.C and 7.01.D immediately after paragraph 7.01.B of the General Conditions which shall read as follows:

- C. The Superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of the Contractor. All communications given to or received from the Superintendent shall be binding on Contractor.
- D. Prior to the Acceptance of Contractor's Bid, the Owner will require Contractor to submit the identity and related experience of the Contractor's proposed Superintendent and Project Management Personnel to better evaluate the Contractor's past performance. Submitted information shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such individual. If Owner or Engineer, after due investigation, has objection to any proposed Personnel, Owner may, before the Notice of Award is given, request Contractor to submit a substitute, without an increase in the Bid Price. Any Personnel so listed and against which Owner or Engineer makes no written objection prior to the giving of Notice of Award will be deemed acceptable to Owner and Engineer. The Contractor's proposed replacement of the Superintendent or Project Management Personnel shall also be subject to these requirements.

SC-7.02 Labor; Working Hours

SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.B:

1. Work Hours: Perform work between 7:00 a.m. and 6:00 p.m. Emergency work may be performed anytime without the Owner's written consent required in paragraph 7.02.B.
2. Work After Hours: Night work may be established by Contractor as regular procedure with written consent of Owner. Such consent, however, may be revoked at any time by Owner if Contractor fails to maintain adequate equipment and supervision for proper prosecution and control of night work.
3. Owner's legal holidays are New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, Christmas Day

SC-7.02.C. Add the following new paragraph immediately after Paragraph 7.02.B:

Contractor is responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.08 Permits

SC 7.08 Add a new paragraph immediately after Paragraph 7.08.A:

B. Prior to construction beginning, Owner will have obtained the following permits:

1. Indiana Department of Environmental Management - Application for Construction Permit for Wastewater Treatment Plant Construction.
2. Indiana Department of Environmental Management - Construction/Land Disturbance Storm Water General Permit.
3. Indiana Department of Transportation (INDOT) – Right-of-way Permit(s).

SC-7.09 Taxes

SC 7.09 Add a new paragraph immediately after Paragraph 7.09.A:

B. Owner is exempt from payment of sales and compensating use taxes (Indiana Gross Retail Tax) of the State of Indiana and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.
2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-7.10 Laws and Regulations

SC 7.10 Add a new paragraph immediately after Paragraph 7.10.C:

D. Financing of the project will be through American Rescue Plan Act (ARPA).

SC-7.12 Safety and Protection

SC 7.12 Add the following new paragraphs 4., 5., 6., and 7. immediately after Paragraph 7.12.A.3.:

4. No Duty. The duty of the Owner or Engineer to observe Contractor's performance does not include any review of the adequacy of Contractor's safety measures in, on, or near the Work site or sites. Engineer has not been retained or compensated to provide design and construction review services

relating to Contractor's safety precautions required for Contractor to perform the Work.

5. No Liability. Neither the Owner, nor an official or employee of the Owner, nor the Engineer, or any authorized assistant or agent of any of them, shall be responsible for safety precautions and programs in connection with the Work or any liability arising therefrom.
6. Protection of Operations. The Contractor shall take all necessary precautions so as to cause no unauthorized interruption in any essential part of the distribution system operations. Shutdowns for construction Work shall be scheduled in advance (minimum 14 days notice), carefully planned, and shall be carried out in close cooperation with the Owner.
7. Special Requirements for Structural Design. All structures to be provided by the Contractor, that require structural design shall be designed and constructed under the observation of a structural engineer, registered in the State of Indiana, acting for and retained by the Contractor. Drawings and calculations for such structures shall be prepared and sealed by the structural engineer and submitted to the Engineer and Owner for record. A clear outline of the proposed construction procedure shall be shown on the drawings. A statement in writing by the structural engineer attesting that said engineer has visited the Work site or sites, that the design does satisfy the conditions as actually encountered and that the actual construction conforms to the drawings and calculations, as submitted, must be submitted to the Engineer before the Work related to such structures will be considered complete.

All temporary structures, including sheeting and bracing for excavations, that affect the safety of the public, workmen, inspectors, or Owner's or Engineer's personnel shall be regarded as structures that require structural design.

SC-7.16 Shop Drawings, Samples, and Other Submittals

SC 7.16 Delete paragraph 7.16.D.8. in its entirety and insert the following:

8. Furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than two submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawing, sample, or other item requiring approval, and Provider shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Provider to secure reimbursement for such charges.

SC 7.16 Add the following new paragraph 9. immediately after Paragraph 7.16.D.8.:

9. Engineer, generally, will process shop drawings and return them to the Contractor in not more than 10 working days from day of receipt. If the nature of the shop drawings is such that the review cannot be completed in 10 working days, Engineer will advise the Contractor giving a schedule for performing the review.

ARTICLE 8 – OTHER WORK AT THE SITE**SC-8.02** *Coordination*

SC-8.02 Add the following new Paragraph 8.02.C. immediately after Paragraph 8.02.B.:

- C. Should Contractor cause damage to the Work or property of any separate contractor at the site, or should any claim arising out of Contractor's performance of the Work at the site be made by any separate contractor against Contractor, Owner, Engineer, Engineer's Consultants, or any other person, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner, Engineer, and Engineer's Consultants harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against Owner, Engineer, or Engineer's Consultants to the extent based on a claim arising out of Contractor's performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of Work by any separate contractor at the site give rise to any other claim, Contractor shall not institute any action, legal, or equitable, against Owner, Engineer, or Engineer's Consultants or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer, or Engineer's Consultants on account of any such damage or claim. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a claim for an extension of times in accordance with Article 11. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, Engineer, and Engineer's Consultants for any delay, disruption, interference, or hindrance caused by any separate contractor. This paragraph does not prevent recovery from Owner, Engineer, or Engineer's Consultants for activities that are their respective responsibilities.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**SC-10.03** *Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall

generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. Liaison:
 - a. The RPR will generally serve as the Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
3. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
4. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
5. Records:
 - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
 - c. Maintain records for use in preparing Project documentation.
 - 6. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
 - 7. Completion:
 - a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. The RPR shall not:
 - 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
 - 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
 - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
 - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
 - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs regarding the activities or operations of Owner or Contractor.
 - 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
 - 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
 - 8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK*SC-11.07 Execution of Change Orders*

SC 11.07.C Add the following new paragraph immediately after Paragraph 11.07.C.:

- D. After execution of a Change Order, Contractor shall update the Project Schedule and/or Schedule of Values to reflect the agreed upon changes in Contract Price and/or Contract Time.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK*SC-14.02 Tests, Inspections, and Approvals*

SC 14.02.B Delete Paragraph 14.02.B. in its entirety and insert the following in its place:

- B. Contractor shall employ and pay for the services of an independent testing laboratory to perform all inspections, test or approvals required by the Contract Documents except as otherwise specifically provided in the Contract Documents.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD*SC-15.01 Progress Payments:*

SC 15.01.B Add the following new subparagraph to Paragraph 15.01.B.1.:

- a. Submit three copies of each application on a form approved by the Owner. Present required information in typewritten form or on electronic media printout.

SC 15.01.B Add the following new Paragraph 15.01.B.4. immediately after Paragraph 15.01.B.3.:

4. Stored Materials - Individual items with value of not less than \$10,000 are eligible for payment by Owner as stored materials. Contractor may request payment of stored materials as approved by the Owner, submit a separate schedule for Materials Stored showing line item, description, previous value received, value incorporated into the work, and present value. Payment for stored materials is not guaranteed.

SC 15.01.C Add the following new Paragraph 15.01.C.7. immediately after Paragraph 15.01.C.6.:

7. Keep all record drawings up to date. Engineer's review and recommendation for payment to the Owner is subject to the Contractor maintaining all record drawings are in alignment with the progress of the Work.

SC 15.01.D Delete Paragraph 15.01.D in its entirety and insert the following in its place:

1. Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

SC-15.03 Substantial Completion

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by the Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

ARTICLE 18 – MISCELLANEOUS*SC-18.12 American Iron and Steel*

SC-18.12 Add the following new paragraph immediately after Paragraph 18.11.

18.12 American Iron and Steel

- A. SRF materials regarding the American Iron and Steel provision applicable to this project are attached as Exhibit A to the Supplementary Conditions.

SC-18.13 Disadvantaged Business Enterprise

SC-18.13 Add the following new paragraph immediately after Paragraph 18.12.

18.13 Disadvantaged Business Enterprise

- A. Take all necessary affirmative steps to assure that minority and women's business enterprises are used when possible. Affirmative steps shall include taking the following actions for all of these two (2) types of enterprises:
 1. Placing qualified enterprises on solicitation lists:
 2. Assuring that these enterprises are solicited whenever they are potential sources.
 3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by these enterprises.
 4. Establishing delivery schedules, where the requirement permits, which encourage participation by these enterprises.
 5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
 6. Requiring each subcontractor to take the affirmative steps 1. through 5. above.

Disadvantaged Business Enterprise forms and guidance are attached as Exhibit B to the Supplementary Conditions.

SC-18.14 Prohibition of Discrimination

SC-18.14 Add the following new paragraph immediately after Paragraph 18.13.

18.14 Prohibition of Discrimination

B. The Contractor agrees:

1. That in the hiring of employees for the performance of work under this Contract or any subcontract hereunder, no contractor, or subcontractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, religion, color, sex, national origin or ancestry, discriminate against any citizen of the State of Indiana who is qualified and available to perform the work to which the employment relates;
2. That no contractor, subcontractor, or any person on his/her behalf shall in any manner, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of race, religion, color, sex, national origin or ancestry;
3. That there may be deducted from the amount payable to the Contractor under this Contract, a penalty of five dollars [\$5.00] for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the Contract; and
4. That this Contract may be cancelled or terminated by the Owner and all money due to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the Contract.

SC-18.15 Severability

SC-18.15 Add the following new paragraph immediately after Paragraph 18.14.

18.15 Severability

- A. If any portion of the Contract Documents is invalid or unenforceable pursuant to applicable law, such portion shall be void in the jurisdiction where it is invalid or unenforceable, and the remainder of the Contract Documents shall remain binding upon the parties hereto.

SC-18.16 Compliance with E-Verify Program

SC-18.16 Add the following new paragraph immediately after Paragraph 18.15.

18.16 Compliance with E-Verify Program

- A. Pursuant to IC 22-5-1.7, Contractor shall enroll in and verify the work eligibility status of all newly hired employees of Contractor through the E-Verify Program ("Program"). Contractor is not required to verify the work eligibility status of all newly hired employees through the Program if the Program no longer exists.
- B. Contractor and its subcontractors shall not knowingly employ or contract with an unauthorized alien or retain an employee or contract with a person that Contractor or its subcontractor subsequently learns is an unauthorized alien. If Contractor violates this Section 18.16, Owner shall require Contractor to remedy the violation not later than thirty (30) days after Owner notifies Contractor. If Contractor fails to remedy the violation within the thirty (30) day period, Owner shall terminate the Contract for breach of contract. If Owner terminates the Contract, Contractor shall, in addition to any other contractual remedies, be liable

to Owner for actual damages. There is a rebuttable presumption that Contractor did not knowingly employ an unauthorized alien if Contractor verified the work eligibility status of the employee through the Program.

- C. If Contractor employs or contracts with an unauthorized alien but Owner determines that terminating the Contract would be detrimental to the public interest of public property, Owner may allow the Contract to remain in effect until Owner procures a new contractor.
- D. Contractor shall, prior to performing any work, require each subcontractor to certify to Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and has enrolled in the Program. Contractor shall maintain on file a certification from each subcontractor throughout the duration of the Project. If Contractor determines that a subcontractor is in violation of this Paragraph 18.16, Contractor may terminate its contract with the subcontractor for such violation. Such termination may not be considered a breach of contract by Contractor or the subcontractor.
- E. With the Agreement, Contractor shall submit executed affidavits stating they will not knowingly employ illegal aliens.
- F. Contractor's subcontractors shall, prior to performing any work, submit executed affidavits which state they will not knowingly employ illegal aliens.

SC-18.17 Engaging in Activities with Iran

SC-18.17 Add the following new paragraph immediately after Paragraph 18.16.

18.17 Engaging in Activities with Iran

- A. Pursuant to IC 5-22-16.5, Contractor shall not engage in investment activities in the country of Iran.

SECTION 26 32 13.13 – DIESEL-ENGINE-DRIVEN GENERATOR SETS

PART 1 - GENERAL

1.1 SUMMARY

- A. Extent of diesel emergency power generator work is indicated by drawings and specification herein, and is hereby defined to include, but not be limited to, Diesel engine, electrical alternator, engine starting system including batteries and charger, instrument control panel, automatic exerciser control, fuel tank, remote emergency shut-off, output contacts and wiring to remote annunciator, engine block heater, critical class exhaust silencer, reach-in outdoor weather-proof enclosure, emergency power system wiring, and all accessories required for a complete installation. The generator shall be designed and rated for standby power/emergency power applications.
- B. Refer to other Division-26 sections for wires/cables, electrical boxes and fittings, panelboards, and wiring devices which are required in conjunction with engine-generator and emergency power system work.
- C. Operational Test and Full Load Test: Conducted after installation to ensure satisfactory operation and compliance with specification.
- D. Operating Instructions: Provided to Owner as specified herein.
- E. Instruction of Personnel: Manufacturer's representative, in cooperation with Contractor, shall instruct Owner's personnel in the operation and maintenance of the plant.
- F. Factory Fabricated Assembly: Complete engine generator set, fuel system, silencer, accessories shall be delivered to the job site fully assembled, factory tested, and ready to be set in place.
- G. Provide a 5 year warranty for the generator and accessories; starting at date of substantial completion.

1.2 SUBMITTALS:

- A. Product Data: Submit manufacturer's data on engine-driven generator set and components, fuel system, transfer switch, and all accessories.
- B. Wiring Diagrams: Submit wiring diagrams for engine-driven generator unit showing connections to control panels, automatic transfer switches, remote indication, and ancillary equipment. Differentiate between portions of wiring that are manufacturer-installed and portions that are field-installed. Coordinate with contractor for exact wiring requirements of the submitted equipment.
- C. Reinforced concrete housekeeping/mounting pad.

PART 2 PRODUCTS

2.1 DIESEL-ENGINE-DRIVEN GENERATOR SET

- A. Latest commercial design, complete with four-stroke Diesel engine, complete with components and features described in Section 1.01 of this specification.
- B. Manufacturers: Generac, Caterpillar/Olympian, Cummins/Onan, MTE/Detroit Diesel, or Kohler.
- C. Electrical Characteristics:
 - 1. KW – (provide KW rating as indicated on project drawings).
 - 2. Nominal RPM: 1800
 - 3. Power Factor: 0.8

4. Frequency: 60 Hz
 5. 277/480 VAC, 3 Phase, 4 Wire, field connectable for different voltages.
 6. Maximum Starting Voltage Dip: 30%
 7. Maximum Running Surge Voltage Dip: 20%
 8. Maximum Frequency Dip: 10%
- D. Engine shall be water cooled with 50% glycol antifreeze coolant, four stroke design with electronic governor, engine safety controls, thermostatically controlled water jacket heater, fuel and oil filters, engine driven fuel pump and oil pump, 12 volt or 24 volt DC starting, charging, and battery system.
- E. Engine instrument panel shall be engine mounted and shall include water temperature gauge, lube oil pressure gauge, running hour meter, voltage and ampere meters, local operating control switches, frequency meter, phase selector switch, rheostat for AC voltage adjustment, interface for remote automatic control via automatic transfer switch, battery system charging/status indicators, and fuel leak detection status. Instrument panel and all integral controls shall be pre-wired and tested at the factory. Provide a fuel quantity gauge either integral to control panel or separately mounted within engine-generator compartment.
1. Per NFPA 37, a remote means of shutting down the engine shall be provided. Provide identification nameplate.
 2. Provide a Modbus communication network interface and software drivers for integration of all annunciation and control features on the plant SCADA system.
 3. Provide remote status communicator and #14 instrument wires when indicated on the drawings.
- F. Manufacturer shall provide input/output terminations and field wiring for status and alarms via Modbus/TCP over ethernet, plus dry contact relay(s) for common generator warning signal and common generator fail signal, for remote control. Manufacturer shall provide input/output terminations and field wiring for local control and annunciation. Contractor shall provide field wiring from emergency generator dry contact relay(s) to remote PLC panel, and emergency generator ethernet wiring to associated ethernet switch at PLC panel. Coordinate the wiring type required with the generator manufacturer. The remote PLC panel and Ethernet switch shall be wall or floor mounted at location noted on the drawings. Remote status and alarms shall include, but not be limited to the following:
1. Run.
 2. Prewarning for low oil pressure.
 3. Prewarning for high coolant temperature.
 4. Low oil pressure shutdown.
 5. High coolant temperature shutdown.
 6. Overcrank shutdown.
 7. Overspeed shutdown.
 8. Switch off/not in automatic start mode.
 9. Low coolant temperature.
 10. High battery voltage.
 11. Low battery voltage.
 12. Normal battery voltage.
 13. Fuel leak detection status.
 14. Unit ON-OFF-AUTO controls.
 15. Low Fuel
 16. Common Generator Warning – dry contact relay
 17. Common Generator Fail – dry contact relay

- G. Remote Control Capabilities: Arrange controls so that it shall be possible to start-stop the emergency generator and control the position of the automatic transfer switch via the ATS local controls. Control shall be independent of normal power status. It shall be possible to locally lock out remote control for servicing and safety.
- H. Exhaust gas emissions shall meet or exceed all current EPA, IDEM, and local ordinances.
- I. Engine mounted circuit breaker shall be molded case type, three phase, of ampere rating indicated on drawings, metal enclosed, and shall provide manual disconnect, overload protection, and short circuit protection functions. Provide electronic adjustable trip units when indicated on the drawings.
- J. Cooling system shall be an engine mounted coolant radiator, engine driven fan, and engine driven water pump; fully assembled and filled with 50% glycol coolant at the factory. Cooling system capacity shall be suitable for full load continuous operation at 120 degrees F ambient air temperature. Coolant shall be protected to -30 degrees F. Cooling system shall have an electrically operated jacket heater with thermostat, rated for a 30 Ampere (maximum load of 32A), 208 V or 240 V branch circuit, provided with local disconnect switch provided by generator manufacturer, located inside engine-generator enclosure.
- K. Fuel system shall have a sub-base mounted steel tank, with fuel gauge, venting, fill line, engine driven fuel pump, fuel filter, fuel lines, injectors, high and low fuel warning contacts. Entire system shall be factory assembled. Manufacturer's Dealer shall fill with fuel and shall refill after on-site load test so that Owner receives full fuel capacity at time of substantial completion.
 - 1. Fuel tank shall be of double-wall construction and shall have fuel leak detection system. Provide alarm contact for monitoring leak detection on the plant SCADA system.
 - 2. Fuel system and tank shall comply with all current EPA, IDEM, and local ordinances.
 - 3. Fuel tank shall have a 2" safety buffer above required fuel capacity fill line; fuel fill line shall end at required fuel capacity line. A .125" fuel drainback orifice shall be required in the fuel fill line at 1" above the required fuel capacity line (to allow drainback of fuel fill line into tank).
 - 4. Fuel Capacity: Provide fuel capacity for a minimum 24 hours of operation at 100% of generator rated load.
- L. Exhaust system shall include a critical type silencer and stainless steel flexible fittings, exhaust shall be insulated with high temperature filomat fiber blanket and installed completely, including mechanical support, independent of engine. Exhaust silencer and piping size shall be large enough so that engine backpressure limits are not exceeded.
- M. Complete assembly shall mount to a heavy-duty steel skid base, which shall be epoxy anchor bolted to a new reinforced concrete pad. Isolation pads shall be provided between engine/generator and the skid.
- N. Provide a completely assembled and factory finished weather-tight outdoor enclosure. Provide access doors for servicing on both sides. Provide air intake and radiator exhaust louvers.
- O. Housing shall be corrosion resistant, weatherproof, with air intake and exhaust louvers, manufacturer's standard painted finish, with hinged and lockable doors, and air intake and exhaust louvers designed for required flow and silencing. Enclosure shall be sized for reach-in operation and servicing.
- P. Batteries and Charger:
 - 1. Emergency generator manufacturer shall furnish and install Lead Acid type batteries for engine starting. Size for three consecutive starting attempts of ten seconds duration each, minimum, at low temperature.

2. Emergency generator manufacturer shall furnish and install automatic battery charger for Lead Acid batteries; solid state, regulated output and alarm output. Locate battery charger inside the engine enclosure and provide with cord and plug set.
 3. Provide a battery heater with integral thermostat and cord and plug set.
 4. Electrical contractor shall provide two 20A, 120V, GFI duplex receptacles with in-use weather covers, inside the enclosure for the above plug-in items. Provide two separate 20A, 120V circuits.
- Q. Generator shall have a Network Card, protocol converters, accessories, etc. to make generator capable of networking with Allen Bradley Compact Logix PLC, or, ML1400 PLC, as specified on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Contractor shall install engine generator system in accordance with approved shop drawings and manufacturer's instructions. Coordinate with all trades with regard to scheduling of work. Protect from damage during remaining construction activities.
- B. Provide steel reinforced concrete housekeeping pad with crushed stone or pea gravel base, designed for the actual generator furnished. Submit shop drawings of the housekeeping pad.

3.2 START-UP AND OPERATIONAL TEST

- A. Furnish all fluids (by Manufacturer's Dealer) not factory installed, including fuel.
- B. Check out of final installation, connections and start-up shall be performed by factory authorized technical personnel.
- C. Load bank test shall be performed by manufacturer's dealer, as scheduled below. Operating parameters recorded and submitted to Engineer for approval. Factory technicians shall submit statement of acceptance before final acceptance by Engineer and Owner.
 1. Load Bank Testing Schedule:
 - a. 25% for 30 min.
 - b. 50% for 30 min.
 - c. 75% for 30 min.
 - d. 100% for 1 hour
 2. Demonstrate that all accessories are operating properly.
 3. Demonstrate that automatic transfer switch is functioning properly.
 4. Schedule start-up, check out and testing a minimum of 7 days in advance with Owner/Engineer.
 5. Demonstrate that all remote indication and remote control features are functioning properly.
 6. Refill fuel to capacity after completion of testing.
- D. Conduct Owner training (by manufacturer's dealer). Provide 4 hours of training for Owner's personnel.
- E. Submit as-built record drawings and specifications, and submit Operation and Maintenance Manuals to Engineer for approval and forwarding to Owner (both Contractor and manufacturer).

END OF SECTION

SECTION 33 32 19 - PUBLIC UTILITY WASTEWATER PUMPING STATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Public wastewater pumping station.
2. Initial operation of public pumping station.
3. Pump station valve vault.

B. Related Requirements:

1. Section 31 23 17 - Trenching.
2. Section 31 23 23 - Fill.
3. Section 33 05 13 - Precast Concrete Wastewater Utility Structures.

1.2 REFERENCE STANDARDS

A. ASTM International:

1. ASTM A48 - Standard Specification for Gray Iron Castings.
2. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
3. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
4. ASTM F594 - Standard Specification for Stainless Steel Nuts

B. National Electrical Manufacturers Association:

1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures.

B. Product Data:

1. Submit to the utility for review and approval three (3) sets of shop drawings for each pumping station.
 - a. Manufacturer catalog data for basin, cover, hinged door, slide rail assembly, discharge piping and fittings, valves, junction box, level controls, and control panel.
 - b. Manufacturer pump catalog data, performance curve, breakaway fittings data, and access frame data.
 - c. Control panel data and panel wiring schematic.

- d. Certificate of compliance with the drawings and specifications, noting all deviations from the drawings and specifications.
 - e. Dimensional cross section drawings of pump.
 - f. Parts list with materials of construction identified.
 - g. Equipment weights and lifting points.
 - h. Spare parts list.
 - i. Warranty.
 - j. Painting procedure.
 - k. Recommendations for short and long-term storage.
 - l. ISO 9001 Certification.
- C. Test and Evaluation Reports: Submit written report showing that factory pump inspections and tests have been successfully performed.
- D. Manufacturer Instructions: Submit manufacturer's instructions for basin, pump, panel systems, valves, and installation procedures.
- E. Source Quality-Control Submittals: Indicate results of shop tests and inspections. Provide certified performance curves for each pump. Results shall be certified by a registered Professional Engineer.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Project Record Documents: Record actual locations of pumping stations, including basins and control panel. Record actual locations and inverts of buried pipe, components, and connections.
- C. Submit executed certification of pumping stations after performance testing.
- D. Operation and Maintenance Data: Submit operating and maintenance requirements for pumping station and schedule of recommended maintenance.

1.5 QUALITY ASSURANCE

- A. Perform Work according to State of Indiana and Owner standards.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.
- B. Installer: Company specializing in performing Work of this Section with minimum five years' documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Transport and handle precast concrete units with equipment designed to protect units from damage. Do not place concrete units in position to cause overstress, warping, or twisting.
- D. Store materials according to manufacturer instructions.
- E. Protection:
 - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
 - 2. Provide temporary end caps and closures on piping and fittings, and maintain in place until installation.
 - 3. Provide additional protection according to manufacturer instructions.
- F. Deliver and store valves in shipping containers with labeling in place.

1.8 AMBIENT CONDITIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.
- B. Do not install basin when bedding is wet or frozen.
- C. Dewater to keep excavations dry.

1.9 SPARE PARTS

- A. General: Furnish the following spare parts:
 - 1. One lot of:
 - a. Mechanical seals
 - b. O-rings
 - c. Gaskets

1.10 WARRANTY

- A. General: The manufacturer is to warranty the equipment supplied to the Owner against defects in material and workmanship for a period of at least one (1) year. Warranty period commences at date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Pumping Stations:

1. Configurations: All lift stations on this project are duplexes: CR 300, Boulders, and Sugar Creek.
2. Assembly: Field.
3. Wet Well: Precast concrete structure per Section 33 05 13 - Precast Concrete Wastewater Utility Structures.
4. Controls:
 - a. Multiple.
 - b. Automatic.

- B. General: Provide pumping units of the submersible, non-clog, centrifugal, solids-handling type (or chopper type where indicated), each driven by an explosion proof electric motor. Install the pumping equipment in a suitable arrangement for installation in the spaces shown without appreciable revision of the piping. Provide the pumping units design to prevent premature wear and clogging.

- C. Fluid Character: Provide pumping units to pump raw unscreened sanitary sewage that can pass 3-inch solids without clogging.

- D. Operating Characteristics: Design each pump to have a continuously rising characteristic curve from the rating point specified to shutoff. Design the pump to have a characteristic curve passing through the rating point and certified to meet or exceed the specified heads and capacities, all within the Hydraulic Institute test tolerances. Provide a pump motor that is non-overloading at the specified duty point.

2.2 PERFORMANCE AND DESIGN CRITERIA

- A. Operating Requirements: Provide pumps certified to operate at the specified capacities and heads over the range of specified operating conditions without cavitation, undue noise or vibration. Furnish pumps meeting the following requirements:

<u>Item Description</u>	<u>CR 300 Lift Station</u>	<u>Boulders Lift Station</u>	<u>Sugar Creek Lift Station</u>
Number of Pumps	2	2	2
Pump Designations	CR300-1	BLDR-1	SC-1

	CR300-2	BLDR-2	SC-2
Capacity at rating point, gpm	1150	1710	300
Total dynamic head at rating point, feet	134	98	76
Shutoff head, feet	187 - 230	146 - 204	100 - 157
Pump guaranteed efficiency, percent	55 +	55 +	55 +
Pump discharge diameter, inches	4" (w/4" x 8" re-ducer)	4" (w/4" x 8" re-ducer)	3" or 4"(w/ re-ducer)
Pump speed, approximate, RPM	1,750	1,750	1,750 or 3,495
Motor speed, maximum, RPM	1,780	1,780	1780 or 3600
Motor Horsepower, max HP	70	70	11

- B. Wet Well Wall: Sufficient to withstand water-saturated sand load of 120 pcf.
- C. Wet Well Cover: Support live load of 150 psf.
- D. Operation Sequences: Pump station controls are to be set-up in a lead/lag configuration. The Lead and Lag pumps shall switch designation on each pump cycle. Coordinate with Owner on further requirements regarding their standard Omni-site system.
- E. Sound, Vibration, and Thermal Control:
 - 1. Dampen or suppress noise.
 - 2. Absorb vibration.
 - 3. Accommodate thermal expansion and stresses.
 - 4. Adjust or correct for misalignment in piping systems.

2.3 WET WELL

- A. Description:
 - 1. Submersible duplex basin system, including cover with vent and door, rail assemblies, discharge and fittings, ball valves, junction box, and level controls.
 - 2. Gravity Sewer Inlet Size: As shown on Drawings.
 - 3. Pump Discharge Sizes: As shown on Drawings.
- B. Concrete Wet Well:
 - 1. Description: Precast reinforced concrete wet well, as specified in Section 33 05 13 – Precast Concrete Wastewater Utility Structures.
 - 2. Minimum wall thickness: As shown on Drawings.
 - 3. Diameter: As shown on Drawings.
- C. Concrete Cover: Reinforced concrete as specified in Section 33 05 13 - Precast Concrete Wastewater Utility Structures.

- D. Access Hatch: As shown on Drawings.
- E. Station Piping: As shown on Drawings.
- F. Rail System: Slide rail assembly consisting of Type 316 stainless-steel upper and lower rail brackets and pump guide brackets.
- G. Junction Box: NEMA 250 Type 6, with cable grips for incoming direct-burial cable. Provide only as required, see Paragraph 2.4 – L. of this Section.
- H. Electrical:
 - 1. Provide cable grips for direct-burial cable for field installation.
 - 2. Provide explosion-proof equipment, supplies, and fittings.
- I. Float Bracket: As shown on Drawings.
- J. Coating:
 - 1. Inside of wet well shall be coated or impregnated with a material to discourage grease buildup and or decalcification by hydrogen sulfide.

2.4 PUMPS

- A. Manufacturers:
 - 1. Pentair Hydromatic-S8LXP (CR300 and Boulders)
 - 2. Flygt NP3202 HT 3~ 466 (CR300)
 - 3. Flygt NP3202 HT 3~ 456 (Boulders)
 - 4. Pentair Hydromatic-C4SP (Sugar Creek)
 - 5. Flygt NP3127 SH 248 (Sugar Creek)
 - 6. Or equal as approved by engineer.
- B. Description:
 - 1. Submersible non-clog effluent pumps with vertical discharge, fittings, piping, check valve, and pump brackets.
 - 2. Maximum Effluent Temperature: 140 degrees F.
 - 3. At least one (1) pump should be equipped with a mix-flush valve similar to Flygt to minimize grease buildup.
 - 4. Station pumps with greater than 10 HP shall be furnished with variable frequency drives (VFD) to reduce system hydraulic surges.
 - 5. Pumps shall be equipped with sliding brackets or rail guides attached to each pump.
- C. Volute:
 - 1. Material: Gray cast iron.
 - 2. Comply with ASTM A48, Class 30.

3. Shall be fit with a replaceable bronze wear ring to minimize wear on the impeller and help achieve longer balance operating life.
- D. Motor Housing:
1. Material: Gray cast iron.
 2. Comply with ASTM A48, Class 30.
 3. Insulation utilized in the stator windings shall be Class F with maximum temperature capability of 155 degrees Celsius.
 4. Housing shall be filled with a high dielectric oil to give superior heat transfer and allow the bearing to run in a clean, well lubricated environment or the housing shall be filled with grease lubricated bearing.
- E. Seal Housing:
1. Material: Gray cast iron.
 2. Comply with ASTM A48, Class 30.
- F. Impeller:
1. Design: 2-vane, enclosed, non-clog, statically and dynamically balanced, ISO G6.3, and or ductile iron material.
 2. Volute Case Wear Ring: 85-5-5-5 red brass or 80-10-10 bronze.
 3. Slip or taper fit with key to lock impeller to driving shaft.
 4. Capable of handling a minimum three (3) inch sphere solids, fibrous material, heavy sludge, and other matter found in normal sewage applications
 5. Fasteners must be made of Type 316 stainless steel
- G. Pump Mounting Base
1. ANSI 125 lb. flange
 2. Mating surfaces with watertight sealing: nitrile rubber O-rings
 3. Base plates shall be anchored in place utilizing epoxy type anchors with stainless steel studs and nuts as manufactured by HILTI Fasteners, Inc. or equal.
- H. Shaft: Type 416 stainless steel.
1. Supported by ball bearings
- I. Hardware: Type 316 stainless steel.
1. Where anchor bolts are required provide Hilti HY 200 epoxy with 316 stainless steel threaded rod.
- J. Paint:
1. Refer to Section 09 96 00.
- K. Seal:

1. Description:
 - a. All mating surfaces shall be machined and fitted with nitrile rubber O-rings.
 - b. The seals shall require neither maintenance nor adjustment and shall be easily inspected and replaceable.
 - c. The shaft sealing system shall be capable of operating submerged to pressures equivalent to two hundred (200) feet.
 - d. No seal damage shall result from operating the pump unit out of its liquid environment.
 2. Design: Tandem mechanical, oil-filled reservoir.
 - a. Lower Seal: One (1) stationary seat and one (1) rotating ring held by a spring. Removable without disassembling the seal chamber.
 - b. Upper Seal: One (1) stationary seat and one (1) rotating ring held by a spring.
 - c. Provided lower and upper seals with their own independent spring systems.
 3. Materials:
 - a. Rotating Faces: Silicon-Carbide.
 - b. Stationary Faces: Silicon-Carbide.
 - c. Hardware: Type 300 stainless steel.
 4. Seal leak detection probe and warning system.
 - a. The seal chamber shall also be equipped with a seal failure sensor probe which will sense water intrusion through the lower seal. This sensor is to be connected to an alarm in the control panel to indicate lower seal failure.
- L. Electrical Cable:
1. Length: Length to be coordinated in the field. Provide cable of sufficient length to eliminate the need for a splice or junction box between the pumps and the Control Panel.
 2. Nitrile O-ring on beveled edge at cord cap assembly where bolted to the connection box assembly and to the motor to assure proper sealing.
- M. Speed: 1750 rpm+
- N. Upper Bearing:
1. Design: Single row, ball.
 2. Lubrication: Dielectric oil.
 3. Load: Radial.
 4. Minimum B-10 Life: 100,000 hours.
- O. Operation:
1. Electrical Characteristics:
 - a. Voltage: 480 volts, three phase, 60 Hz.

- b. Controls: Mount double electrode in seal chamber to actuate remote alarm when water is detected in seal chamber.

P. Motors:

1. Premium efficiency, NEMA B Design
2. Stator, rotor and bearings mounted in a sealed submersible type housing.
3. Stator windings: Class H insulation (155°C or 311°F) and a dielectric oil-filled motor, and on-winding thermal sensors. Air-filled motor designs are not acceptable.
4. Capable of being operated partially or completely submerged in the liquid being pumped.
5. Provide stators secured with removable end ring and threaded fasteners so they may be easily removed.
6. Heat sensors: low resistance, bi-metal disc, temperature sensitive; mounted directly on the stator windings and sized to open at 120°C and automatically reset at 30–35°C differential. The sensors shall be connected in series with motor starter coil so that the starter shall be equipped with 3 leg overload heaters making all normal overloads protected by the starter.

Q. Lifting Device: 316 Stainless steel lifting chain.

1. Provide a stainless-steel lifting chain or manufacturer's pump removal system similar to the Flygt lift of adequate length for the basin depth for each pump.
2. Each pump shall be equipped with a permanent stationary lifting handle with a minimum clearance of 12 inches between the top of the pump and the bottom of the handle.

R. Rail System

1. Rail system must ensure easy removal of the pump and motor assembly for inspection and service
2. System shall not require a man to enter the wet well to remove the pump and motor assembly.
3. Provide two (2) guiderails T-bar or other suitable guide system for each pump.
4. One (1) intermediate guide rail support is required for each nine (9) feet of guide rail length for FRP I-Beam rail.

S. Warranty

1. Pump warranty shall be provided by the pump manufacturer and shall warrant the units being supplied against defects in workmanship and materials for a period of five (5) years under normal use, operation and service.
2. A copy of the warranty statement shall be submitted with the approval drawings.

2.5 VALVE VAULT

A. Description:

1. Precast concrete box with access hatch, containing discharge lines from the wet well pumps, each line with:
 - a. Lever and weight wing arm check valve.

- 1) In accordance with the Drawings and as follows:
 - a) General: Provide single disc swing check valves designed to allow a full diameter passage and to operate with a minimum loss of pressure. Provide check valves that meet the requirements of AWWA C508.
 - b) Design: Equip check valves with bronze renewable seat rings, bronze discs or disc rings and bronze disc hinge bushings and pins. Carefully mount discs and provide discs that swivel in disc hinges. Provide pins, discs and other parts that are noncorrosive, non-sticking and properly cured to operate satisfactorily within a temperature range of 34 to 100 degrees Fahrenheit and with the fluids or gases specified.

b. Shut-off plug valve.

- 1) In accordance with the Drawings and as follows:
 - a) General: Provide quarter turn valves having an eccentric action that causes the plug to rise off the seat contact during the opening movement rather than sliding from its seat.
 - b) Plugs: Provide plug valves with Buna-N faced plugs.
 - c) Materials: Construct plug valves of cast iron or semi-steel at least equal to ASTM A126, Class B. Construct the body seats with a welded-in overlay, of not less than 90 percent pure nickel, on all surfaces contacting the plug face. Make the overlay a minimum of 1/16-inch thick. Provide zinc plated bonnet bolts, studs, and nuts.
 - d) Seat Adjustment: Make the water-tightness of the valve seating adjustable. Provide a seating adjustment device that is external to the valve and that can be used without the need to remove the valve from the piping and with the valve under pressure.
 - e) Lubrication: Furnish plug valves with oil impregnated, permanently lubricated, Type 316 stainless steel bearings in the upper and lower journals.
 - f) Stem Seal: Provide a stem seal consisting of multiple, self-adjusting and replaceable chevron type packing rings and a packing gland or provide two replaceable, self-adjusting, U-cup seals. Make the stem seal adjustable and replaceable without removing the valve from the piping and without the need to disassemble the valve and operator. For buried or submerged service, provide a sealed enclosure to keep the stem seal clean.
 - g) Valve Port: Construct the valve with a minimum port area of 100 percent of the full area of the pipe in which the valve is installed.
 - h) Position Indicator: Equip plug valves, except for buried or submerged service, with external visible indication of the plug position.
 - i) Operators: Equip valves with lever operators with a gearbox.
- 2) A minimum clearance of twelve (12) inches shall be allowed from the bottom of the valves to invert of the pipe.

- 3) Air release valve.
 - a) Provide a 2-inch Val-Matic 48A wastewater air release valve or approved equal.
- B. Precast Concrete Vault Structure: Precast reinforced concrete basin, as specified in Section 33 05 13 – Precast Concrete Wastewater Utility Structures.
 1. Precast reinforced concrete must meet the requirements of ASTM C-478.
 2. Minimum valve vault diameter shall be 6'-0".
 3. All joints between valve vault sections shall be made with an approved rubber O-ring in accordance with ASTM C-443 and a 12-inch diameter non-asphaltic mastic conforming to AASHTO M-195 and Federal Specification SS-521-A.
 4. Outside of precast concrete sections to be coated with a waterproofing material.
 5. Basin and valve vault shall be enclosed at grade level with a reinforced concrete pad rectangular in shape and extending a minimum of 1'-0" from the chambers outside dimension.
- C. Access Hatch
 1. Pump supplier shall provide aluminum door access hatch frame and door assemblies to be installed in the concrete basin top.
 - a. Door assemblies must provide lifting handle, safety latch to hold door open in the key position and a hasp suitable for padlock.
 - b. Doors shall have a nonskid finish and be designed for light, medium or heavy duty, depending on the location of the pumping station.
 2. Minimum opening for the valve box entry shall be thirty-six (36) inch by thirty-six (36) inch.
 3. Single doors or dual opening door of dual-door assemblies shall open towards the control panel to provide a physical barrier between the control panel and the wet well.
- D. Piping Inside Vault: Ductile iron, as shown on the Drawings.

2.6 CONTROL PANEL

A. Description.

1. One (1) duplex control panel built in NEMA 4X stainless steel enclosure with lock hasp and door fasteners. Panel will include: two 200 AMP main interlocked breakers; 200 AMP Crouse-Hinds generator receptacle with 45° angle adapter; TVSS; Level Indicator Transmitter; Rhino Power supply; one circuit breaker for each pump; two NEMA rated motor starters with ambient compensated overload relays; circuit breaker for control circuit; two H-O-A switches; two green run lights; alternating relay; terminal strip; and 2KVA transformer to provide 120 volt for all control components. The control panel also includes: seal failure alarm lights to indicate lower seal failure of each pump; condensate heater; alternator switch; Current Guard surge protector; phase monitor relay; and GFI convenience outlet.

2. Level Control: One MultiTrod or FOG Rod level probe with mounting bracket.
 - a. PVC Fabrication
 - b. 10 sensors, spaced every 6 inches along the length of the probe.
 - c. Provide with a squeegee pad at the mounting bracket for self-cleaning when removed from the wet well.
 - d. Cable: Braided shield. Verify length in the field.
 - e. Warranty: 10 years from the date of Substantial Completion.
3. High Water Monitoring: Two (2) mercury float control switches with 50' cord and one stainless steel float mounting bracket. Floats will be connected to Omnisite remote monitor as high water indicators.
 - a. High-water alarm shall consist of a flashing alarm light with red plastic cover or red glass globe with metal guard mounted on top of the enclosure such that it is visible from all directions.
4. Disconnect: One (1) 200 AMP disconnect breaker switch mounted in a NEMA 4X stainless steel enclosure. Provide with an external operation handle.
5. Panel Stand: One (1) aluminum panel stand suitable for mounting the control panel, disconnect switch and the meter base.
6. Remote Monitor: Omnisite XR-50EN with NEMA 4X polycarbonate enclosure. Omnisite to be provided by the Owner during construction. Sufficient space shall be provided within the control panel to install the Omnisite.
7. Breakers: Two (2) Square D 200 AMP main interlocked breakers, Two (2) Square D pump circuit breakers, One (1) for each pump, two (2) Square D NEMA rated motor starters with Square D Motor logic overload relays, Square D circuit breakers for control circuit.
 - a. Pump circuit breakers must include three (3) leg overload protection and manual reset for each pump.

2.7 MATERIALS

A. Bedding, Ballast, and Backfill.

1. Bedding: Structural fill as specified in Section 31 23 23 – Fill.
2. Soil Backfill to Finish Grade:
 - a. As specified in Section 31 23 23 – Fill.

2.8 ACCESSORIES

A. Anchor Bolts, Nuts, and Washers:

1. Bent Anchor Bolts: Comply with ASTM F593.
2. Nuts: Comply with ASTM F594.

3. Washers: Comply with ASTM F593.
 4. Epoxy adhesive: Hilti HY200
- B. Fresh Water Supply: As indicated on Drawings.

2.9 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for testing, inspection, and analysis.
- B. Inspection:
1. Verify that motor voltage and frequency are as shown on nameplate.
 2. Verify that motor and cable insulation test for moisture content or insulation defects comply with UL 83.
- C. Pump Shop Tests: Perform a certified shop test on each pumping unit in accordance with the test code of the Hydraulic Institute, except as modified herein. Drive each pump by its own drive unit during the shop test.
1. Test at rated speed to determine the curves of head brake horsepower, and efficiency as a function of capacity. Take a minimum of 6 points, including shutoff. Take at least one point as near as possible to each specified condition of head and capacity. Take the remaining points at capacities necessary to provide a uniform distribution of data. Express capacity in gallons per minute and express total dynamic head in feet of water. Furnish certified copies of the curves, raw test data, calculated results and sufficient information for computation and plotting of the curves.
 2. Subject each pump to a hydrostatic test in the shop. Use a test pressure of not less than 1.5 times the shutoff head of the pump as shown by the characteristic curve. Under this test pressure, demonstrate that no part shows undue deflection or leakage or other defects. Provide certification of the hydrostatic tests.
- D. Eccentric Plug Valve Leakage Test: Perform a plug leakage shop test on each eccentric plug valve with the plug in the closed position. Unless otherwise specified, perform the leakage test with a minimum pressure of 150 pounds per square inch (gauge) applied sequentially to both the upstream and downstream faces of the plug. Perform the test for a minimum duration of 15 seconds. Demonstrate that there is no leakage past the plug.
- E. Eccentric Plug Valve Hydrostatic Test: Perform hydrostatic shop pressure tests on each eccentric plug valve, hydrostatic shop pressure tests with the plug open and with the plug closed. Perform the hydrostatic tests with a minimum pressure that is at least equal to the test pressure specified for the pipeline in which the valve is installed. Perform the test for a minimum duration of 30 seconds. Demonstrate with the hydrostatic tests that the valve is structurally sound and that there are no leaks through the external surfaces of the valve.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Verify that inlet and discharge piping connections size, location, and elevation as indicated on Drawings.

3.2 PREPARATION

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Establish minimum separation of 10 feet from water utility lines. For other utilities, establish minimum separation distances in accordance with utility's standards.
- C. Protect piping systems from entry of foreign materials and water by using temporary covers, completing sections of Work, and isolating parts of completed system.

3.3 INSTALLATION

- A. Excavation:
 - 1. Excavate to required elevation to install basin on undisturbed subgrade as specified in Section 31 23 16 – Excavation.
- B. Wet Well Basin and Valve Vault:
 - 1. Install as specified in Section 33 05 13 – Precast Concrete Wastewater Utility Structures.
 - 2. Seal cover penetrations with industrial silicone sealant.
 - 3. Set cover frames and covers level, without tipping, to correct elevations.
 - 4. Assemble basin components, including inlet hub/fitting, discharge hub, cover, pump support rail system, level controls, and junction box.
 - 5. Connect to inlet and discharge piping with flexible connector.
 - 6. Seal joints watertight where inlet and discharge pipes penetrate sump wall.
- C. Pumps:
 - 1. Install pumps, including fittings, brackets, discharge piping, valves, lifting device, and discharge.
 - 2. Wire pump to junction box.
- D. Valves:
 - 1. Eccentric Plug Valves: Install eccentric plug valves with the plug and shaft in orientations recommended by the manufacturer.

E. Control Panel:

1. Mount and wire control panel for pumping station operation, including duplex motor controls, circuit breaker, starter, control transformer, fuse box, terminal block, alternator, alarm, running lights.
2. Wiring:
 - a. Comply with requirements of NEC.
 - b. 16 AWG control wiring for control circuits, and white for neutral grounded conductors.
 - c. Minimum 14 AWG black power wiring.
 - d. Number each conductor.
 - e. Tin ends of wires with 60/40 lead tin alloy solder.
3. Locate and connect direct-burial cable from control panel to basin junction box.

F. Backfilling:

1. Backfill basin and direct-burial cable as specified in Section 31 23 23 - Fill.
2. Maintain optimum moisture content of fill material to attain required compaction density.
3. After hydraulic test, evenly backfill around entire periphery of basin by hand, place backfill material and hand tamp in 6-inch compacted layers to finish grade, and compact to 95% Standard Proctor Density.
4. Do not use wheeled or tracked vehicles for tamping.

3.4 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements.

B. Pre-operational Checks:

1. Check pump and motor alignment.
2. Check for proper motor rotation.
3. Check pump and drive units for proper lubrication.
4. Check valves for proper operation.

C. Startup and Performance Testing:

1. Notify Engineer and Owner, three days prior to flow rate testing.
2. Startup and Initial Testing: Coordinate and operate pumps in conjunction with other construction.
3. Hydraulically test station to performance requirements by receiving, pumping, and discharging 600 gal of water to and from basin.
4. Confirm general sequencing of pump, MultiTrobe, and float operations at basin and control panel are according to performance requirements.
5. Document and certify startup results in startup report.

D. Equipment Acceptance:

1. Adjust, repair, modify, or replace system components failing to perform as specified and rerun tests.
2. Make final adjustments to equipment under direction of manufacturer's representative.
3. Document adjustments, repairs, and replacements in manufacturer's field services certification.

E. Document and certify startup and testing results in written report.

F. Compaction Testing: As specified in Section 31 23 23 - Fill.

3.5 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements.

B. Adjust basin, pump, and control panel systems such that station operates to performance requirements and according to Specifications.

3.6 DEMONSTRATION

A. Section 01 70 00 - Execution and Closeout Requirements.

B. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Owner's personnel.

END OF SECTION 33 32 19

Attachment No. 2

Drawings

PRINT DATE: 10/17/23
PLOT SCALE: 1:186.01
DRAWING FILE: P:\21-400-357-1 NINESTAR CR 200 W SEWER\5 ACAD\PLAN SHEETS & WORKING DRAWINGS\T001 - TITLE SHEET.DWG
EDIT DATE: 10/9/23 - 2:32 PM
EDITED BY: RHUNT

SHEET INDEX :	
SHEET #	SHEET NAME
T001	TITLE SHEET
G001	GENERAL NOTES AND SYMBOLS
C100 - C101	CR300 LIFT STATION SITE PLAN AND DETAILS
C300	COMBO VAULT SITE PLAN AND DETAILS
C600	EXISTING BOULDERS LIFT STATION DEMOLITION
C601	BOULDERS LIFT STATION SITE PLAN
C602	BOULDERS LIFT STATION DETAILS
C700	SUGAR CREEK WWTP DEMOLITION
C701	SUGAR CREEK WWTP IMPROVEMENTS
C702	SUGAR CREEK LIFT STATION DETAILS
C703	PROCESS FLOW DIAGRAM & HYDRAULIC PROFILE
C704	DEMOLITION PLAN
C705	PHILADELPHIA WWTP IMPROVEMENTS - SITE PLAN
C706	PROPOSED HEADWORKS GRADING PLAN
C707	PROPOSED HEADWORKS
C708	PROPOSED HEADWORKS ELEVATION VIEWS
C800 - C802	EROSION CONTROL PLAN
C803	EROSION CONTROL DETAILS
C804	SWPPP
C900 - C902	DETAILS
E100 - E102	PHILADELPHIA WWTP ELECTRICAL SHEETS
E200 - E209	BOULDERS LIFT STATION ELECTRICAL SHEETS
E300 - E309	CR300 LIFT STATION ELECTRICAL SHEETS
E400A - E408	SUGAR CREEK LIFT STATION ELECTRICAL SHEETS
E500	OVERALL NETWORK ARCHITECTURE
E600 - E603	COMBO VAULT ELECTRICAL SHEETS
S001	STRUCTURAL GENERAL NOTES
S100	STRUCTURAL PLANS AND DETAILS
S300 - S301	STRUCTURAL DETAILS

FLOOD NOTE:
THE ACCURACY OF ANY FLOOD HAZARD DATA SHOWN ON THESE PLANS IS SUBJECT TO MAP SCALE UNCERTAINTY AND TO ANY OTHER UNCERTAINTY IN LOCATION OR ELEVATION ON THE REFERENCED FLOOD INSURANCE RATE MAP. THE WITHIN DESCRIBED TRACT OF LAND LIES WITHIN FLOOD HAZARD ZONE A & AE AS SAID TRACT PLOTS BY SCALE ON COMMUNITY PANEL NUMBERS 18059C0136D, 18059C01137D, AND 18059C0129D DATED 12/04/2007 FOR THE FLOOD INSURANCE RATE MAPS FOR HANCOCK COUNTY, INDIANA (UNINCORPORATED AREAS).

DISCLAIMER:
EXISTING CONDITIONS/SURVEY INFORMATION PROVIDED BY COOR CONSULTING. RQAW IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING CONDITION/SURVEY INFORMATION PROVIDED. CONTRACTOR TO FIELD VERIFY LOCATION AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND CONTACT ENGINEER AND OWNER IF DISCREPANCIES OCCUR.

REVISIONS :		
REVISION #	REVISION DESCRIPTION	DATE
1	ADDENDUM #1	10/09/2023



CALL 2 WORKING DAYS BEFORE YOU DIG
1-800-382-5544
CALL TOLL FREE
PER INDIANA STATE LAW IC8-1-26,
IT IS AGAINST THE LAW TO EXCAVATE WITHOUT
NOTIFYING THE UNDERGROUND LOCATION SERVICE
TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

CONSTRUCTION PLANS FOR: NINESTAR CONNECT CR 200 W SEWER - DIVISON I GREENFIELD, HANCOCK COUNTY, INDIANA

PLANS PREPARED FOR:

NINESTAR CONNECT
2243 E MAIN STREET
GREENFIELD, INDIANA 46140
TELEPHONE: (317) 323-2035
CONTACT PERSON: ALAN MARTIN, MANAGER
OF WATER & WASTEWATER UTILITIES
AMARTIN@NINESTARCONNECT.COM

PLANS PREPARED BY:

RQAW CORPORATION
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FISHERS, INDIANA 46038
TELEPHONE: (317) 588-1772
CONTACT PERSON: AARON CROW
EMAIL: ACROW@RQAW.COM

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GREENFIELD, IN 46140
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ALAN MARTIN
MANAGER OF WATER & WASTEWATER UTILITES

CABLE UTILITY
COMCAST CABLE
TELEPHONE: (317) 275-6443
WILL MORRIS

ELECTRICAL/POWER AUTHORITY
NINESTAR CONNECT
2243 E. MAIN ST.
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ERIC MEYER

STORM SEWER AUTHORITY
CITY OF GREENFIELD
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GREENFIELD, IN 46140
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DAN MILLER
STORMWATER UTILITY MANAGER

WATER AUTHORITY
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MANAGER OF WATER & WASTEWATER UTILITES

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NINESTAR CONNECT
2243 E. MAIN ST.
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TELEPHONE: (317) 326-3141
GEORGE PLISINSKI

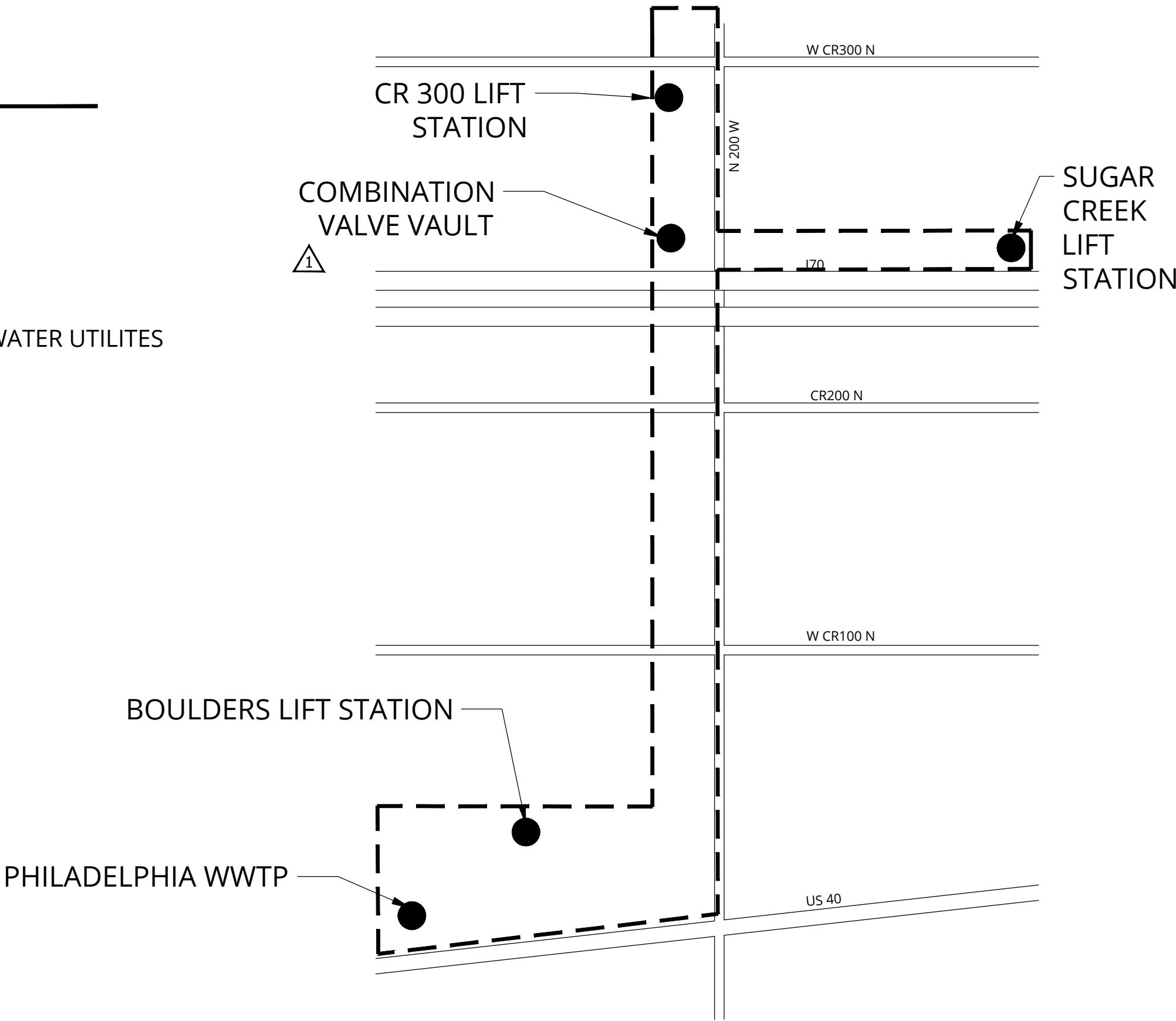
COMMUNICATIONS UTILITY
ZAYO BANDWIDTH
9209 CASTLEGATE DR.
INDIANAPOLIS, IN 46256
TELEPHONE: (765) 341-1199
WAYLON HIGGINS



SITE LOCATION
HANCOCK COUNTY

SITE VICINITY MAP

NOT TO SCALE



SITE LOCATION MAP

NOT TO SCALE



CONSTRUCTION SET

NINESTAR CONNECT
CR 200 W SEWER -
DIVISION I

GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10/09/23

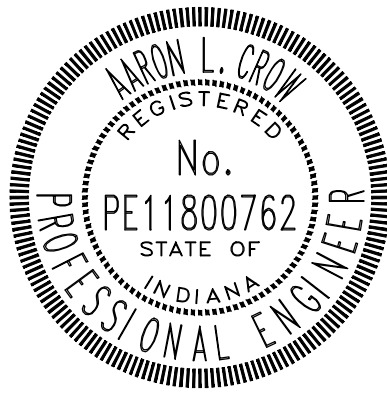
Project #: 21-400-357-1

Designed By: WMW

Drawn By: RLH

Checked By: ALC

Date: 10/02/2023



Aaron Crow

TITLE SHEET

T001

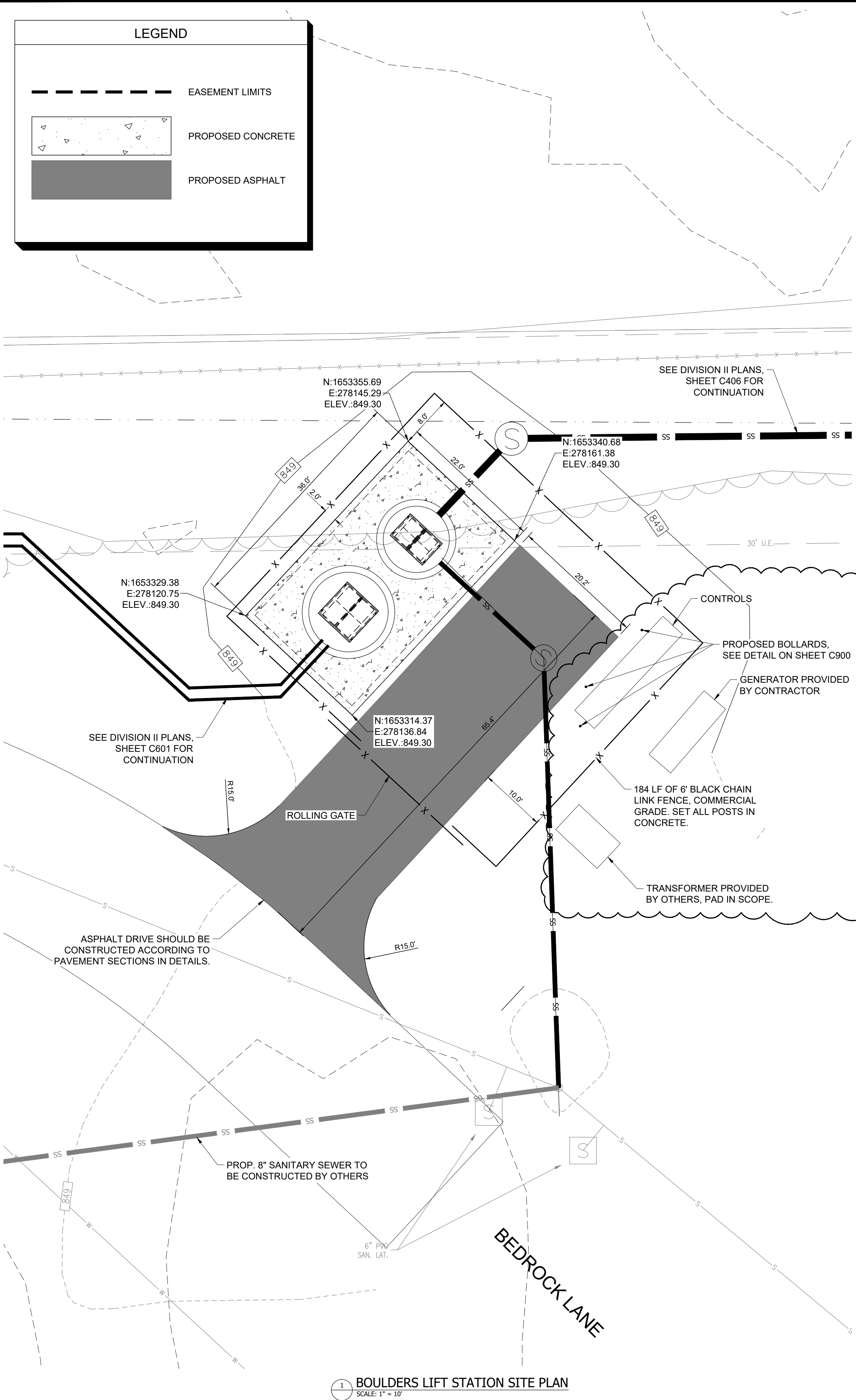
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LEGEND

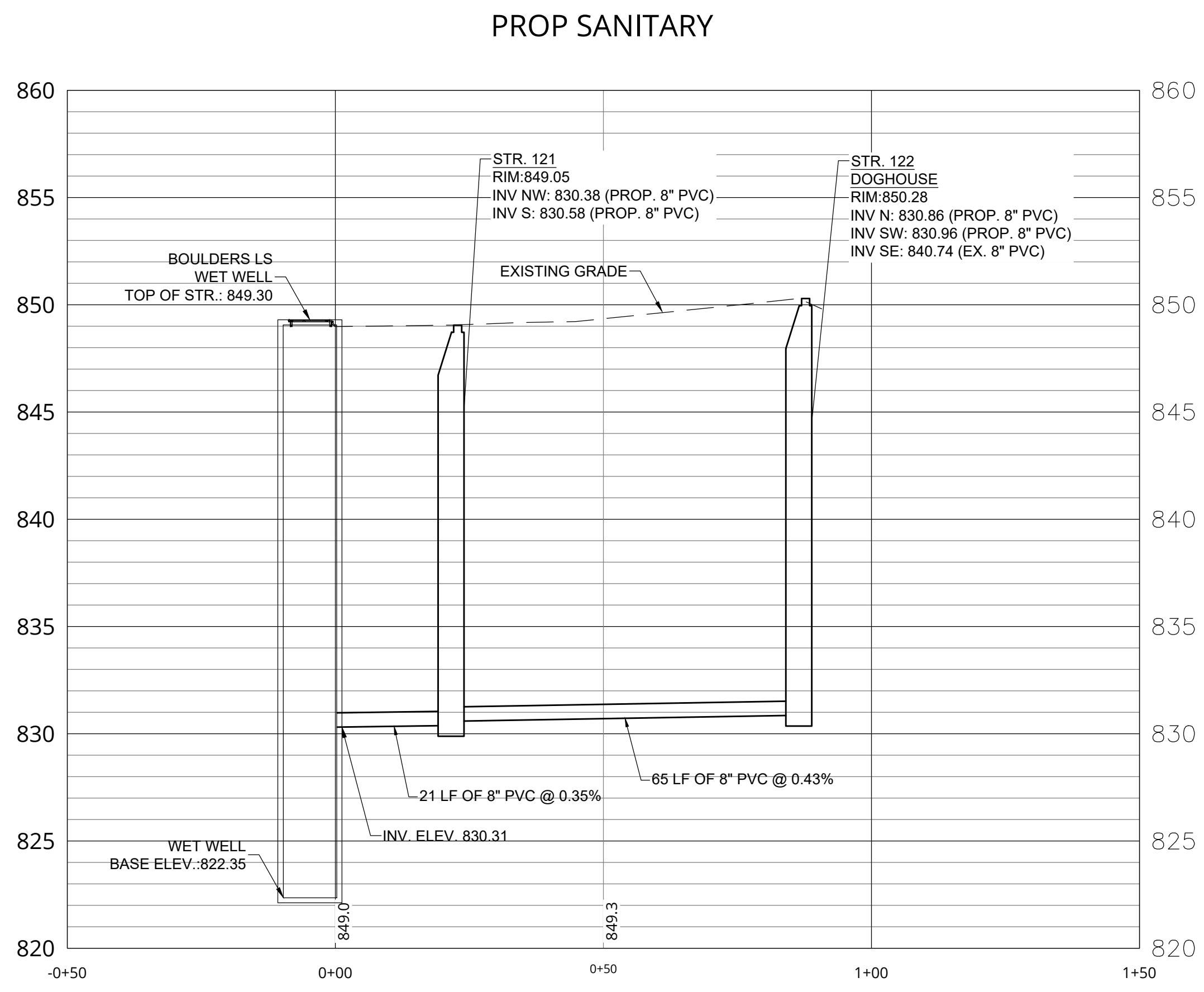
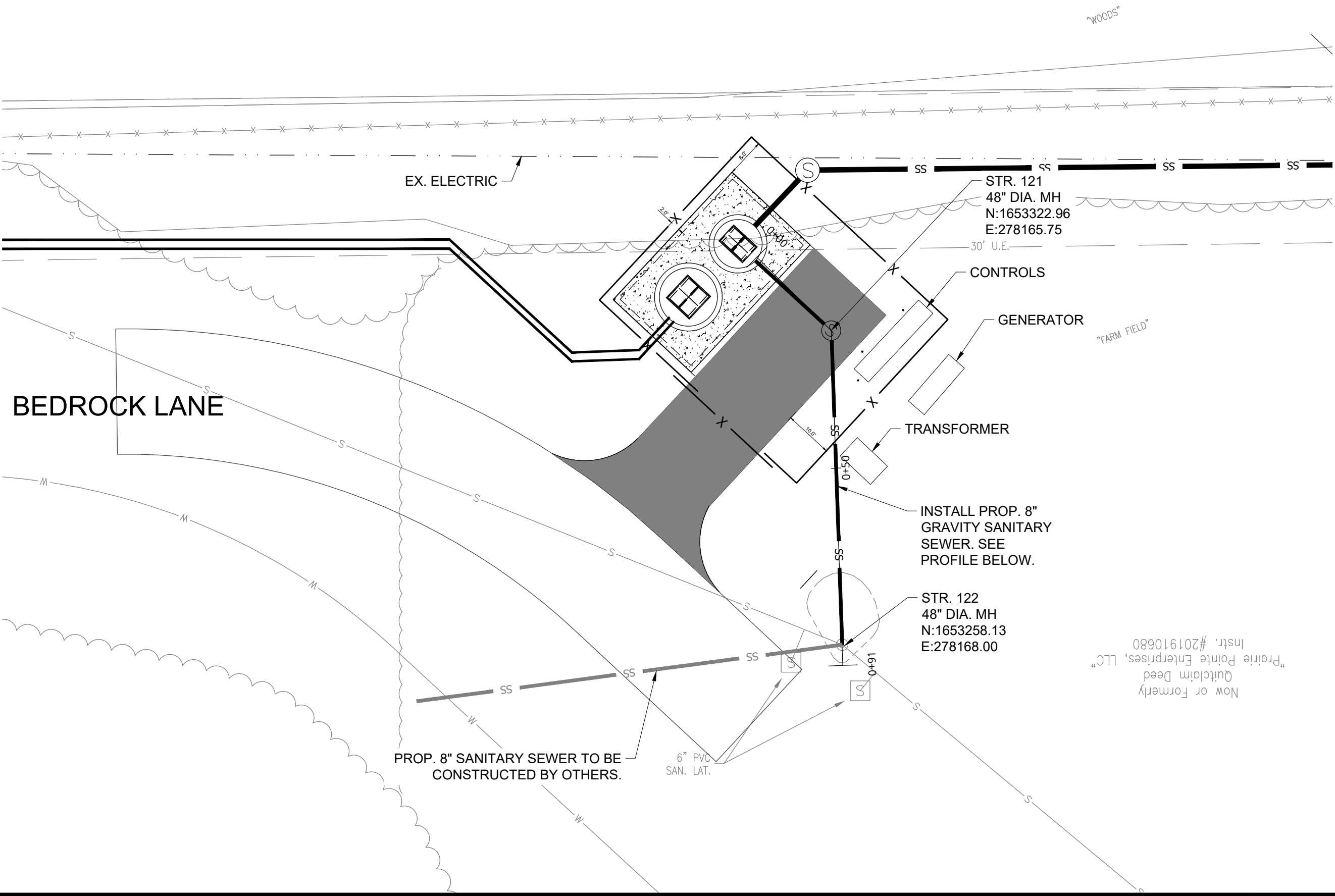
EASEMENT LIMITS

PROPOSED CONCRETE

PROPOSED ASPHALT



1 BOULDERS LIFT STATION SITE PLAN
SCALE: 1"=10'



CONSTRUCTION SET
NINESTAR CONNECT
CR 200 W SEWER -
DIVISION I
GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10/09/23

Project #: 21-400-357-1
Designed By: WMW
Drawn By: RLH
Checked By: ALC
Date: 10/02/2023

ARON L. CROW
REGISTERED
No.
PE11800762
STATE OF
INDIANA
PROFESSIONAL ENGINEER

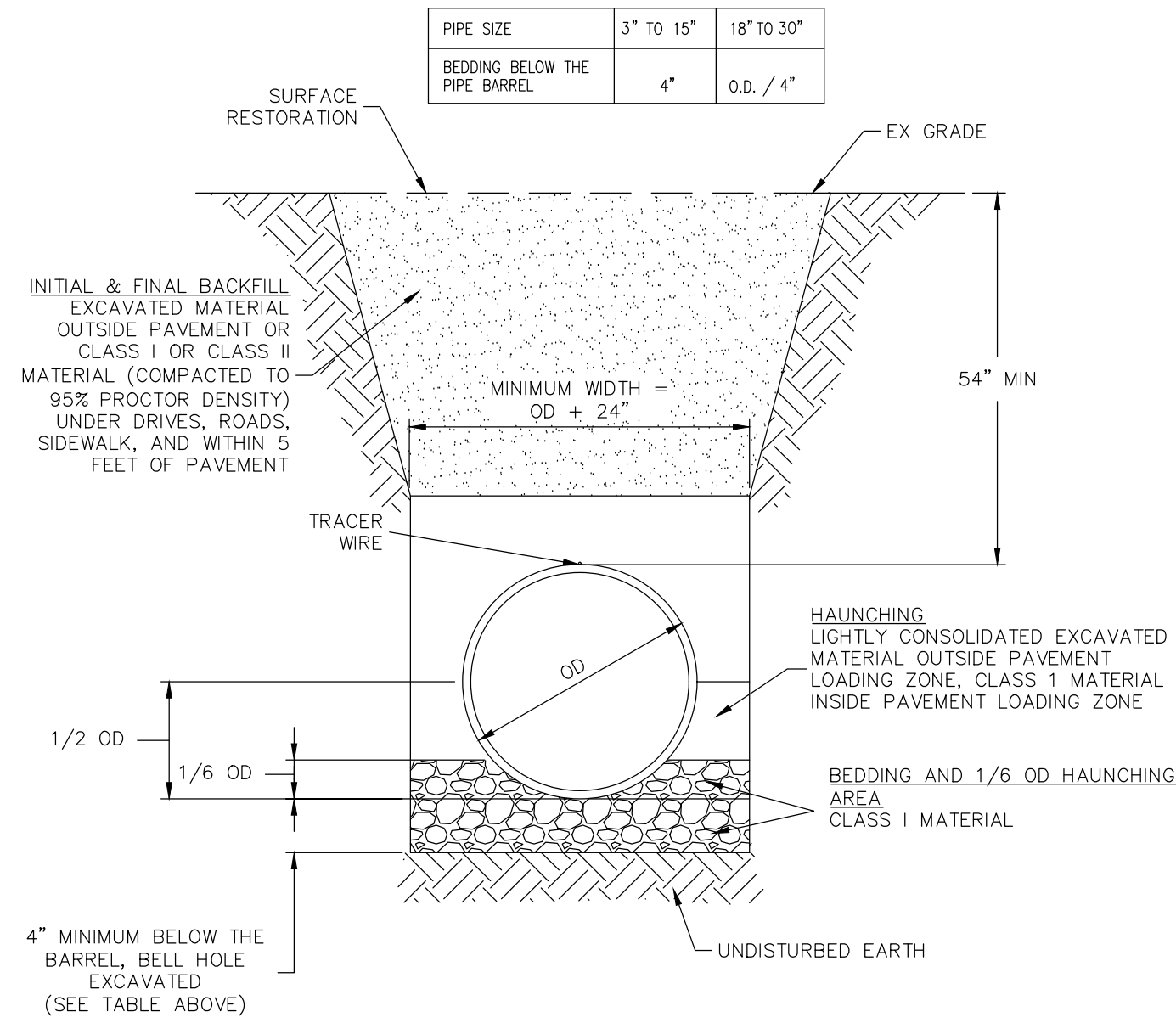
Araron Crow

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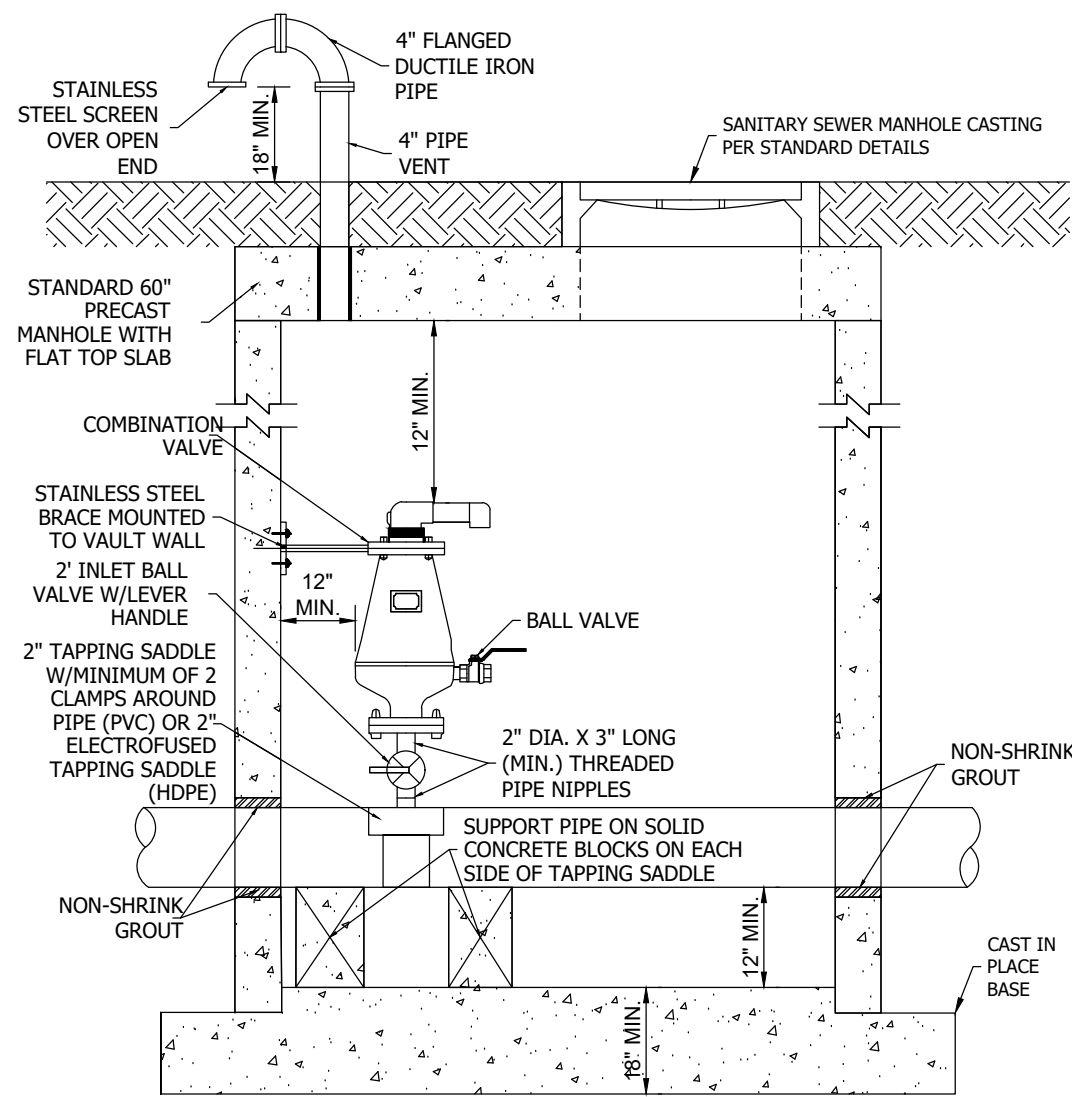
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GRAPHIC SCALE

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PLOT SCALE: 1:186.91
EDIT DATE: 10/9/23 - 2:30 PM
EDITED BY: RHUNT
DRAWING FILE: P:\21-400-357-1 NINESTAR CR 200 W SEWER\5 ACAD\PLAN SHEETS & WORKING DRAWINGS\C900 - DETAILS.DWG

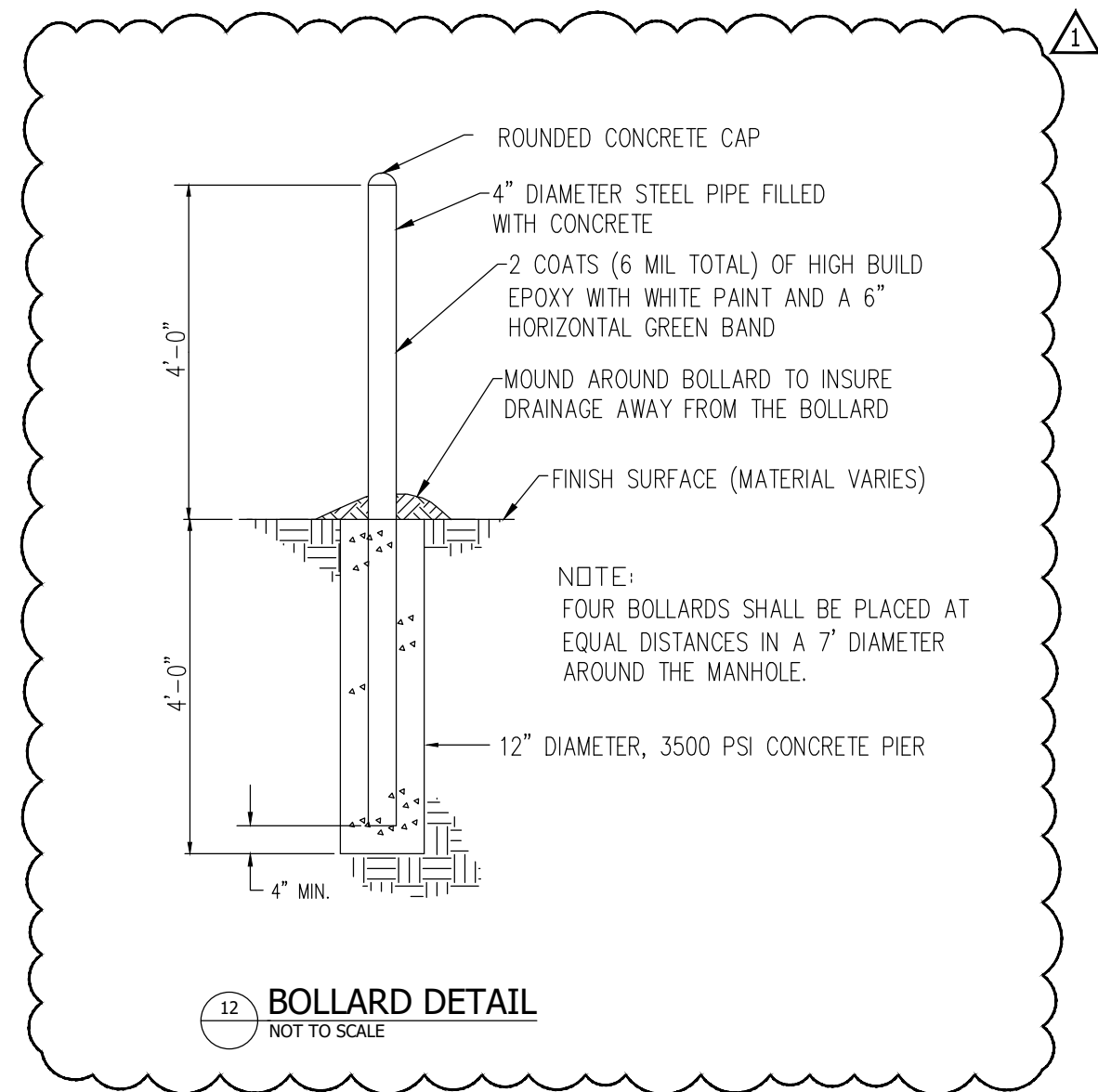


1 DUCTILE IRON (DI) PIPE TRENCH
NOT TO SCALE

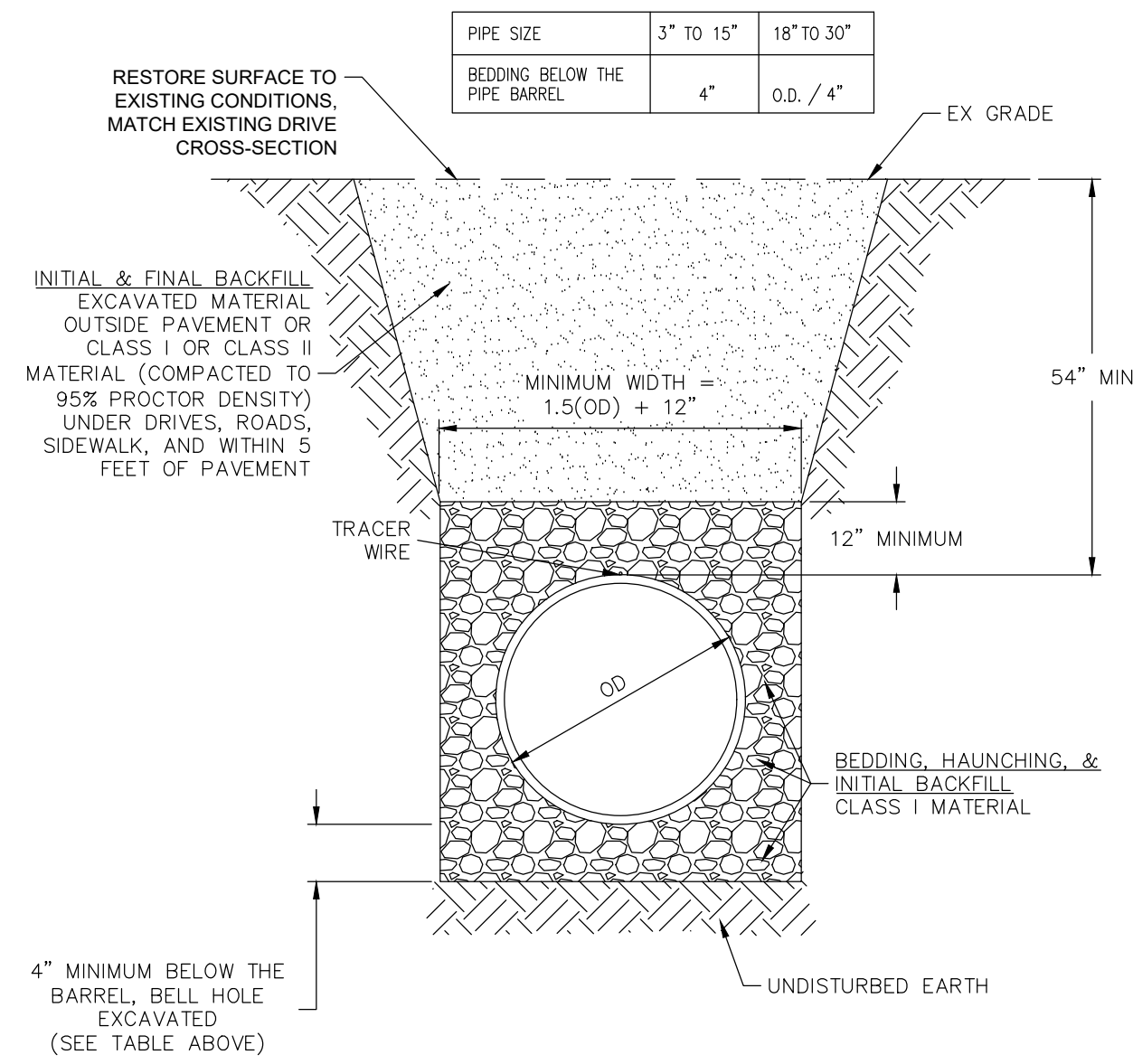


- NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING VALVE TO PREVENT ANY TYPE OF MOVEMENT
 2. CONTRACTOR SHALL INSTALL COMBINATION VALVE OFFSET FROM CENTER OF STRUCTURE AND OPPOSITE SIDE OF MANHOLE ACCESS TO PROVIDE UNIMPEDED ACCESS TO STRUCTURE
 3. WEIGHT OF COMBINATION VALVE SHALL NOT BE SUPPORTED BY THE FORCE MAIN PIPE.
 4. PROJECT ENGINEER SHALL PROVIDE VALVE MODEL AND SIZE.
 5. MINIMUM CLEARANCE OF STRUCTURE SHALL BE 6 FT. FROM FLOOR TO STRUCTURE CEILING.
 6. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTROLLING MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR CONSTRUCTION AND IS THEREFORE RESPONSIBLE FOR CONTROLLING THE QUALITY OF WORK.

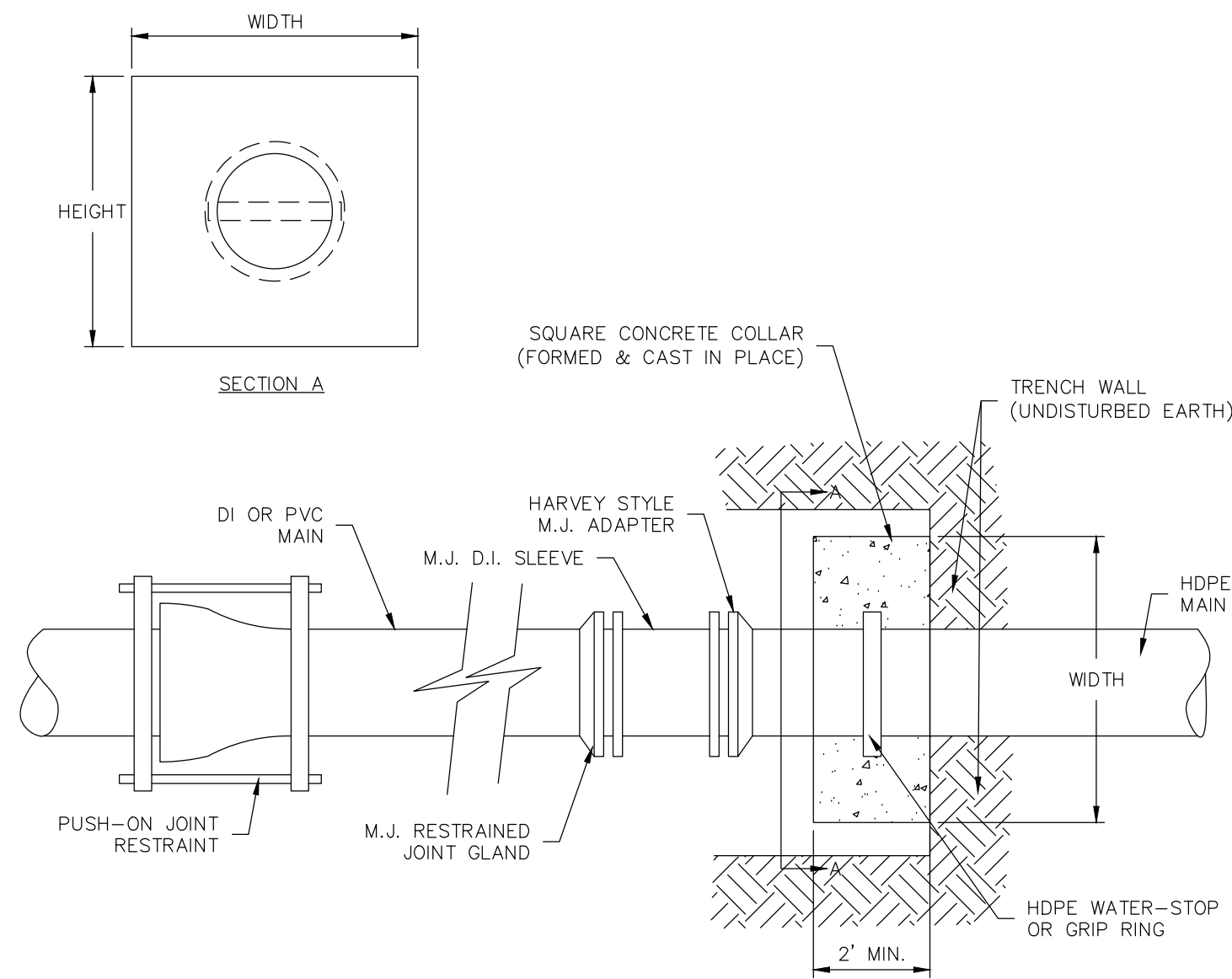
3 SANITARY SEWER AIR RELEASE VALVE
NOT TO SCALE



12 BOLLARD DETAIL
NOT TO SCALE



2 PLASTIC (PVC OR HDPE) PIPE TRENCH
NOT TO SCALE



PIPE SIZE	WIDTH MINIMUM	HEIGHT MINIMUM	BRACING AREA OF CONCRETE COLLAR
6"	3'-0"	3'-0"	9 SQ. FT.
8"	3'-0"	3'-0"	9 SQ. FT.
10"	4'-0"	3'-6"	14 SQ. FT.
12"	4'-6"	4'-0"	18 SQ. FT.
16"	5'-0"	4'-0"	20 SQ. FT.
18"	5'-0"	4'-6"	25 SQ. FT.
20"	5'-0"	5'-0"	25 SQ. FT.

4 HDPE PIPE TRANSITION
NOT TO SCALE

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Designed By: WMW

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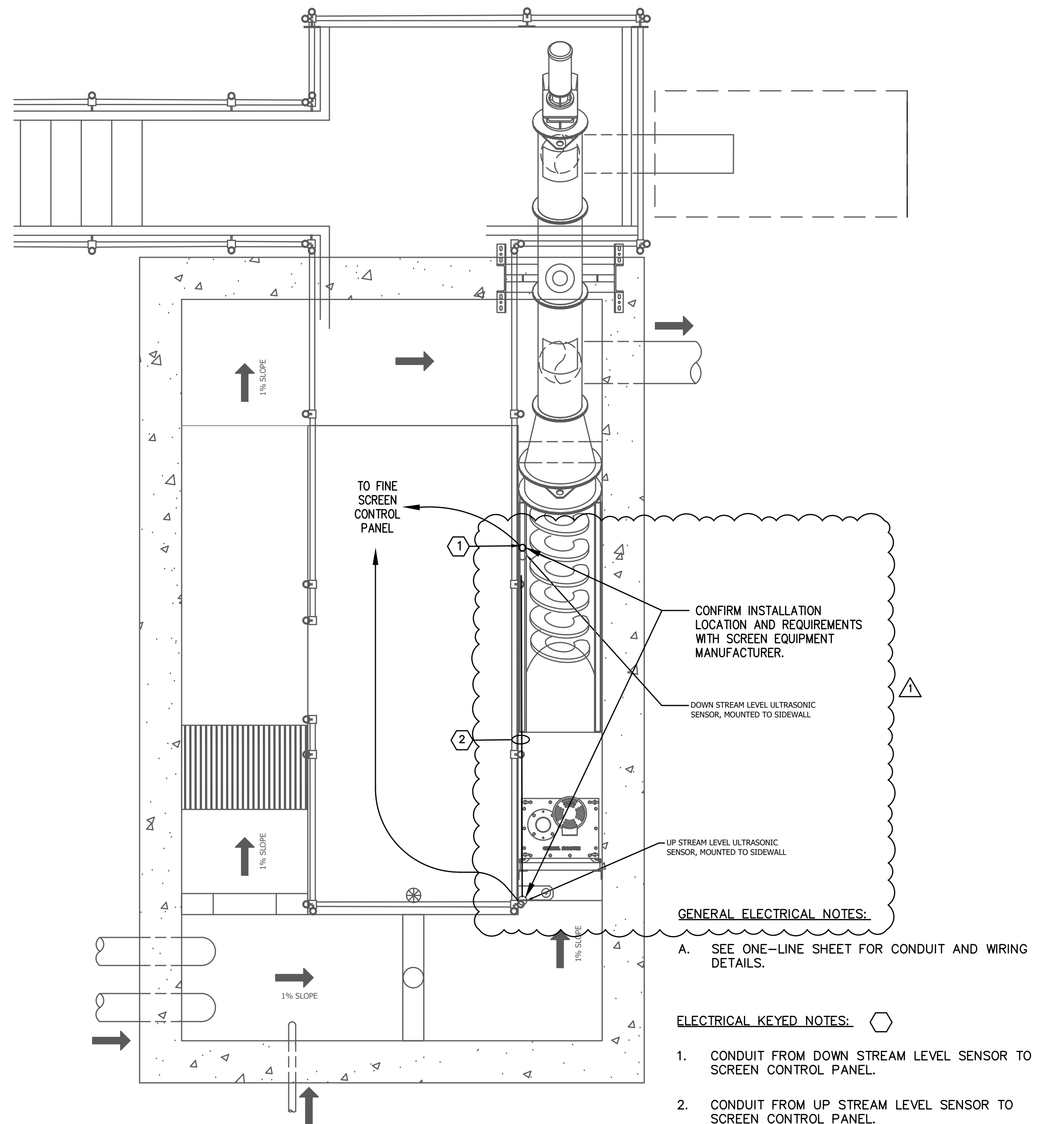
Date: 10/02/2023



Aaron Crow

DETAILS

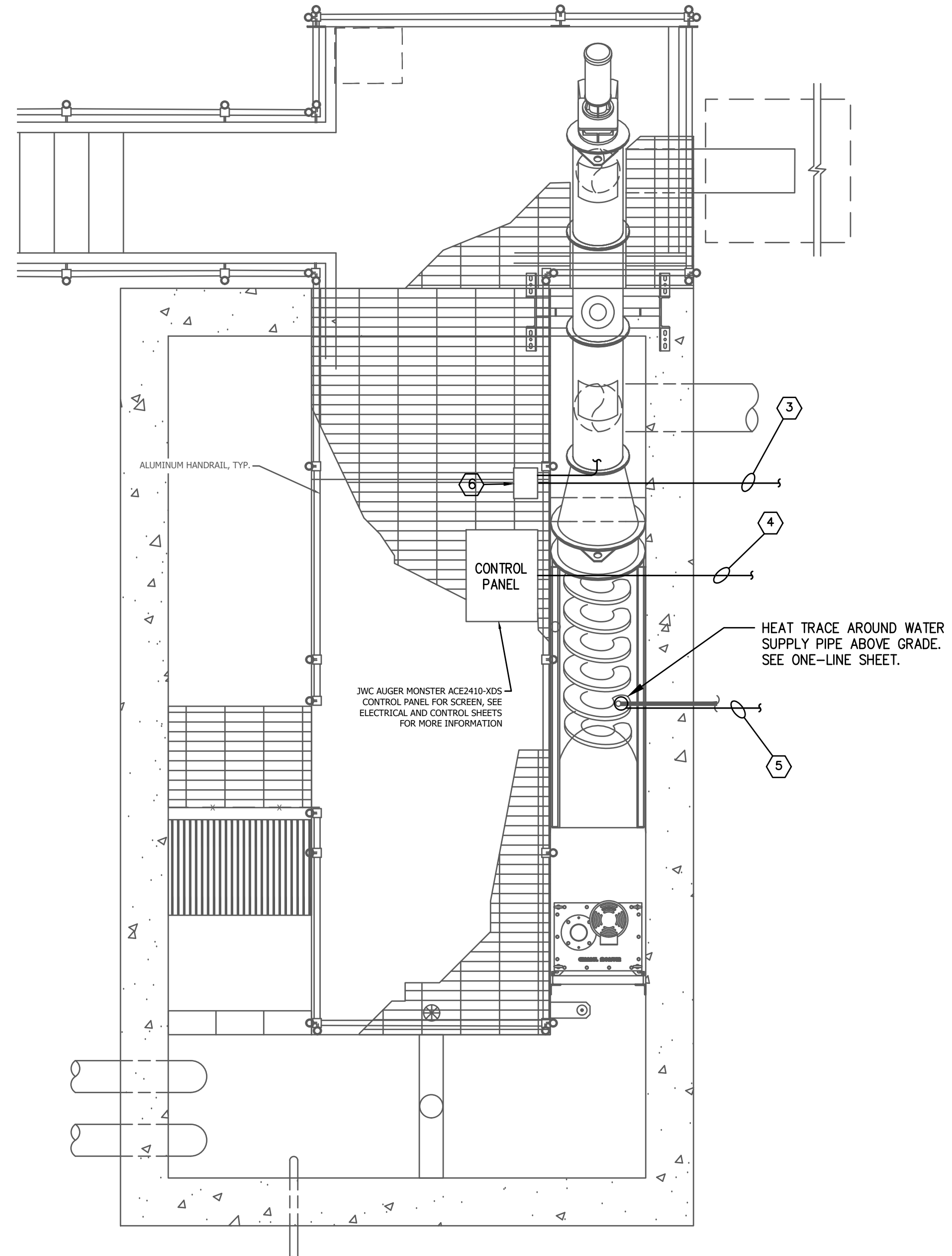
C900



ELECTRICAL KEYED NOTES:

1. CONDUIT FROM DOWN STREAM LEVEL SENSOR TO SCREEN CONTROL PANEL.
2. CONDUIT FROM UP STREAM LEVEL SENSOR TO SCREEN CONTROL PANEL.
3. CONDUIT FROM AUGER WEATHER PROTECTION SYSTEM TO MECHANICAL ROOM
4. CONDUIT FROM SCREEN CONTROL PANEL TO MECHANICAL ROOM.
5. CONDUIT FROM HEAT TRACE TO MECHANICAL ROOM.
6. AUGER WEATHER PROTECTION CONTROL PANEL.

HEADWORKS STRUCTURE CHANNEL PLAN
1/2" = 1'-0"



HEADWORKS STRUCTURE TOP PLAN
1/2" = 1'-0"

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SDA PROJECT NUMBER: 2021143

BIDDING DRAWINGS
NINESTAR CONNECT
CR 200 W SEWER

#	Revision	Date
1	ADDENDUM #1	10-6-23

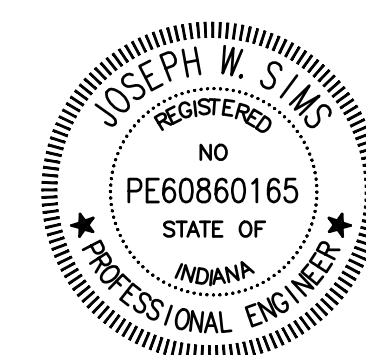
Project #: 21-400-357-1

Designed By: WRK/JAK

Drawn By: JLK

Checked By: JWS

Date: 09/08/2023



Joseph W. Sims

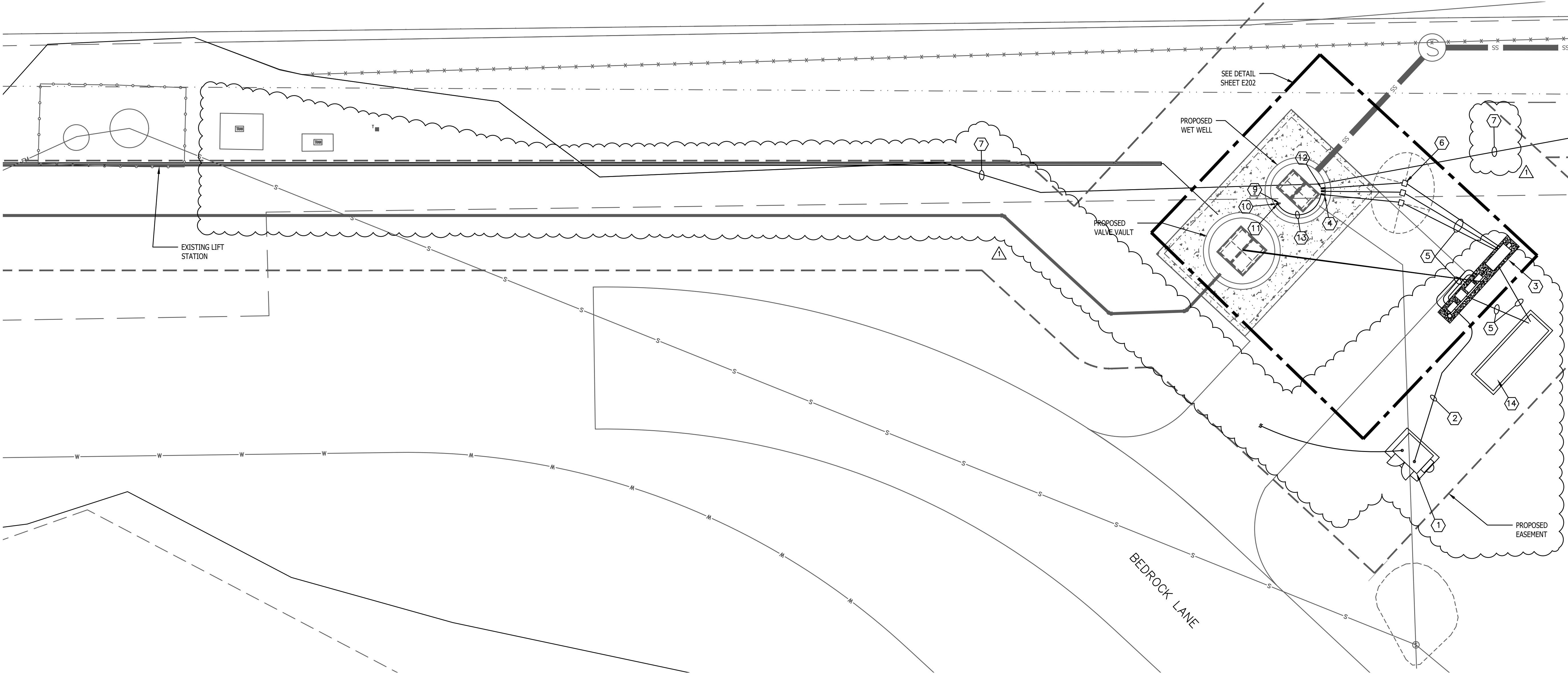
GENERAL ELECTRICAL NOTES:

- A. SITE LIGHTING TO BE PROVIDED BY OTHERS.
B. FOR WIRING DETAILS, SEE ONE-LINE DIAGRAM.

ELECTRICAL KEYED NOTES:

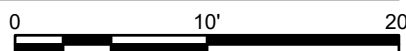
1. NEW TRANSFORMER BY UTILITY MIN (150 KVA).
2. NEW UNDERGROUND SECONDARY SERVICE LATERAL FROM UTILITY TRANSFORMER TO NEW MAIN UTILITY SERVICE DISCONNECT.
3. NEW CONTROL PANEL AND ELECTRICAL EQUIPMENT MOUNTED ON A HEAVY DUTY GALVANIZED STEEL EQUIPMENT RACK ON A 4" CONCRETE PAD, CHAMFER EDGES. SEE DETAILS SHEET.
4. PROVIDE LINK SEAL FOR EACH WET WELL PENETRATION.
5. NEW UNDERGROUND WIRING AND CONDUIT, TYPICAL. SEE ONE-LINE SHEET AND DETAILS SHEET.
6. NEW VENTED TERMINAL BOXES (3 TYPICAL). 5' MINIMUM CLEARANCE FROM VENTS REQUIRED. SEE DETAILS SHEET.
7. COORDINATE WITH UTILITY TO RELOCATE ELECTRICAL LINES.
8. NEW UTILITY PRIMARY. LOCATION TO BE DETERMINED BY UTILITY.

9. DIRECT ACTING, NON-MERCURY FLOAT SWITCHES ENCASED IN AN ELLIPSE-SHAPED MOLDED PLASTIC FLOAT, CONNECTED TO A FACTORY INSTALLED CABLE. THE FLOATS SHALL BE SUSPENDED BY THEIR CABLES BY MEANS OF A WEIGHT KIT, AS INDICATED IN THE EQUIPMENT DATA.
10. 6" SCH 80 PVC STILLING WELL FOR SUBMERSIBLE LEVEL TRANSMITTER. COORDINATE BEST LOCATION DURING CONSTRUCTION. STILLING WELL TO HAVE THE LOWER 2' PERFORATED WITH 1/2" HOLES AND VERY BOTTOM CUT AT A 45 DEGREE ANGLE.
11. SUBMERSIBLE LEVEL TRANSMITTER.
12. UTILIZE KELLUM GRIPS FOR EACH CABLE SUSPENDED FROM BOX.
13. FLOAT SWITCH AND SUBMERSIBLE TRANSMITTER MANUFACTURER CABLES. ALL CABLES TO BE LONG ENOUGH TO REACH VENTED TERMINAL BOXES. NO SPLICES ALLOWED.
14. NEW 225KW STANDBY DIESEL GENERATOR WITH 24-HOUR SUBBASE FUEL TANK ON REINFORCED CONCRETE PAD.



BOULDERS LIFT STATION SITE PLAN

SCALE: 1"=10'-0"



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1	ADDENDUM #1	10-06-2023

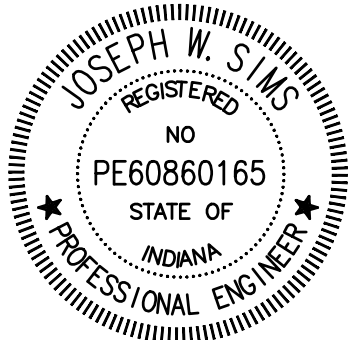
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Designed By: WRK/JAK

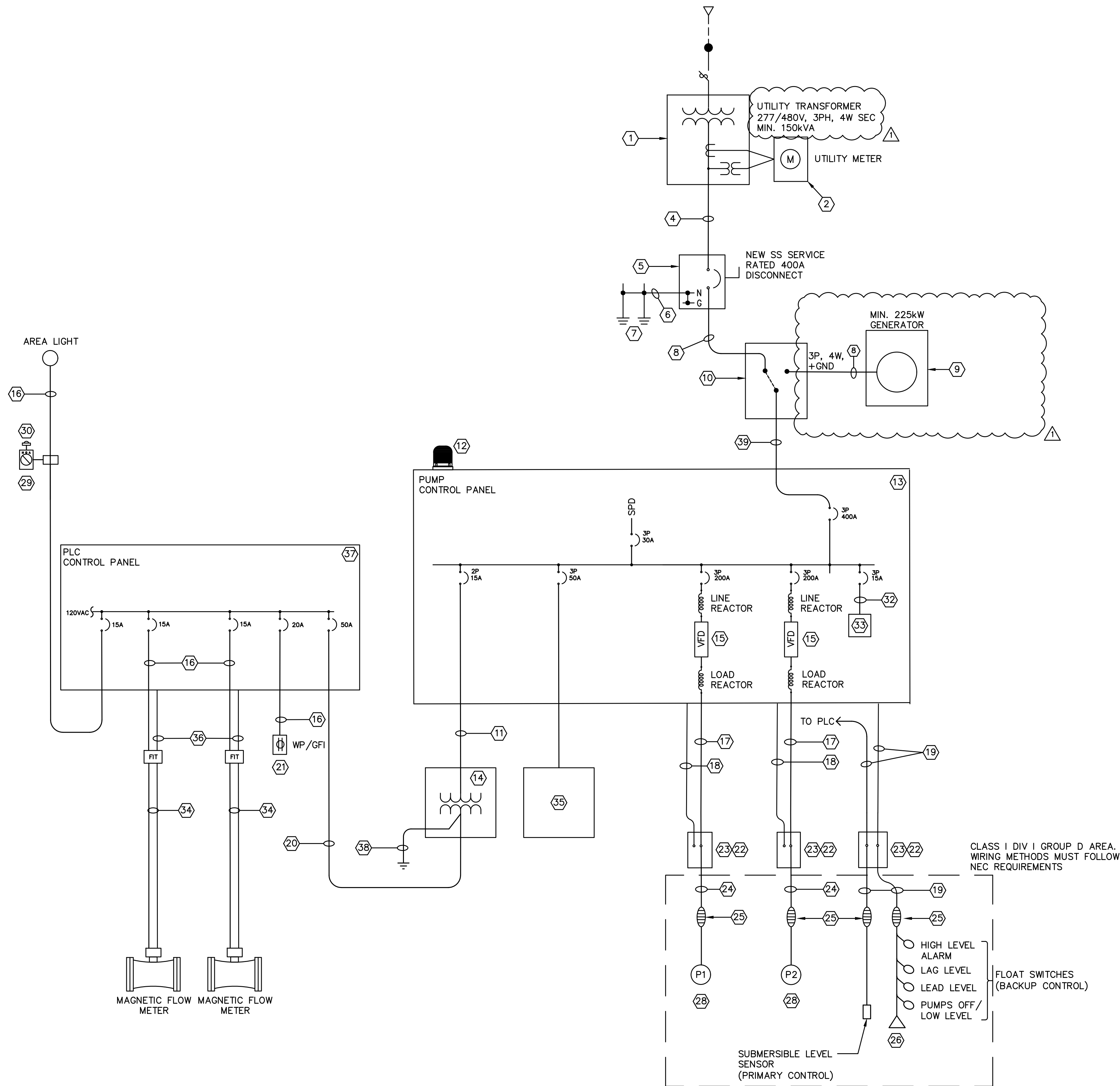
Drawn By: JLK

Checked By: JWS

Date: 09/08/2023



Joseph W. Sims



BOULDERS LIFT STATION ONE-LINE DIAGRAM

NOT TO SCALE

CONDUIT REQUIREMENT NOTES:

- RIGID ALUMINUM (RA) FOR ALL CONDUIT ABOVE GRADE.
- ALL MOUNTING, CONDUIT RUNS, CONNECTIONS AND OTHER SHALL BE AESTHETICALLY APPEALING AS THIS IS A RESIDENTIAL AREA. POORLY INSTALLED EQUIPMENT SHALL BE REJECTED AND RE-WORKED.
- MEYERS HUBS OR SEALING LOCKNUTS FOR ALL NON-CLASSIFIED CONDUIT INSTALLATION.
- PROVIDE LINK SEAL WITH STAINLESS HARDWARE FOR ALL CONDUIT PENETRATIONS INTO LIFT STATION WET WELL.
- PROVIDE STAINLESS STEEL HARDWARE FOR ALL EQUIPMENT INSTALLED IN WET WELL; THIS INCLUDES BUT NOT LIMITED TO KELLEM'S CABLE GRIPS, CABLE RACKS, MOUNTING BRACKETS, BOLTS AND NUTS.
- WET WELL CLASSIFICATION IS CLASS 1 DIVISION 1 GROUP D; ALL WIRING METHODS SHALL COMPLY.
- WITHIN A 5' RADIUS OF ANY VENTED OPENING ATTACHED TO THE WET WELL SHALL BE CLAS 1 DIVISION 2 GROUP D RATED.
- ALL BELOW GRADE CONDUIT, EXCEPT FOR THE SERVICE ENTRANCE, SHALL BE GALVANIZED RIGID STEEL. ALL ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM; INCLUDING TRANSITION TO ABOVE GRADE. COAT ALL RIGID ALUMINUM CONDUITS WHERE IN CONTACT WITH EARTH, CONCRETE, WITH OXIDATION RESISTANT COATING OR DISSIMILAR METALS

ELECTRICAL KEYED NOTES:

- PAD MOUNT TRANSFORMER BY UTILITY.
- METER FURNISHED AND MOUNTED TO TRANSFORMER BY UTILITY.
- NOT USED.
- 4-#600MCM CU, 5" SCH 80 PVC C, BY CONTRACTOR.
- NEW 400A SERVICE ENTRANCE RATED MAIN UTILITY CIRCUIT BREAKER (35KAIC), 277/480V, 3PH, 4W, WITH GND, NEMA 4X STAINLESS STEEL (SS). BOND NEUTRAL TO GROUND AT THIS DEVICE.
- #1/0 BARE CU GROUND ELECTRODE CONDUCTOR, 3/4" C.
- (2) 3/4" X 10' CU CLAD GROUND RODS. BURIED 12" BELOW GRADE. CAD WELD CONNECTIONS 10' APART.
- 4-#500MCM CU, 1-#3 CU GND, 4" C.
- 225kW MINIMUM DIESEL STANDBY GENERATOR WITH 24-HOUR SUBBASE FUEL TANK, 277/480V, 3PH, 4W.
- 400A AUTOMATIC TRANSFER SWITCH, ASCO300 277/480V, 3PH, 4W, WITH GND, SOLID NEUTRAL, MINIMUM 22KAIC.
- 4-#12 CU, 1-#12 CU GND, 3/4" C.
- ALARM BEACON, MOUNTED TO PANEL.
- BOULDERS LIFT STATION CONTROL PANEL. REFER TO CONTROL PANEL LAYOUT SHEET AND MOTOR CONTROL WIRING DIAGRAM SHEET, FURNISHED AND INSTALLED BY CONTRACTOR.
- 5 KVA, 480V:120V, NEMA 4X SS EXTERNAL CONTROL POWER TRANSFORMER.
- 75 HP 480V ABB ACS880-01 VFD INVERTERS, 110.4A MIN RATING.
- 2-#12 CU, 1-#12 CU GND, 3/4" C.
- 3-#1/0 XHHW-2 CU, 1-#6 THWN-2 CU GND, 2" C.
- 4-#14 CU, 1-#14 CU GND, 3/4" C. SEAL FAIL AND OVERTEMP CABLES FOR EACH PUMP.
- LEVEL TRANSMITTER AND FLOAT SWITCH CABLES, LEVEL TRANSMITTER IN 1" C. AND FLOAT SWITCHES IN 1 1/2" C. PVC BELOW GRADE AND RIGID ALUMINUM ABOVE GRADE. INSTALL GALVANIZED RIGID STEEL CONDUIT WITHIN THE WET WELL. CABLES SHALL BE CONTINUOUS TO VENTED BOX AND NOT SPLICED. PROVIDE ADEQUATE LENGTH FROM MANUFACTURER. FLOAT CABLES GO TO PUMP CONTROL PANEL AND LEVEL TRANSMITTER CABLE GOES DIRECT TO PLC CONTROL PANEL.
- CIRCUIT TO PUMP CONTROL PANEL FOR 120VAC LOADS BY CONTRACTOR 2-#6 CU, 1-#8 CU GND, 3/4" C.
- 20A WEATHERPROOF/GFI RECEPTACLE MOUNTED ON NEW RACK.
- CONDUIT SEALS.
- STAINLESS STEEL VENTED WIRE WAY AND TERMINATION BOX. (TYPICAL - SEE DETAILS SHEET.)
- PUMP CABLE IN 2" CONDUIT FURNISHED BY MANUFACTURER, INSTALLED BY CONTRACTOR. FINAL CABLE LENGTH SHALL BE DETERMINED BY CONTRACTOR.
- ALL CABLE SUPPORTS SHALL BE WITH KELLUM GRIPS.
- WEIGHT TO ANCHOR THE FLOATS.
- 3-#12 1-#12 GND, 3/4" C.
- 70HP SUBMERSIBLE PUMPS, 87 FLA, 460V, 3PH.
- WEATHERPROOF-COVERED ON-OFF SWITCH FOR AREA LIGHT.
- PHOTOCELL FOR AREA LIGHT.
- NOT USED.
- 3-#12 CU, 1-#12 CU GND.
- AIR CONDITIONING UNIT WITH HEATER.
- MAGNETIC FLOW METER CABLING PROVIDED BY MANUFACTURER IN 1" C.
- FUTURE PHANTOM ODOR CONTROLLER. BREAKER TO BE PROVIDED AT THIS TIME.
- #16-TSP, ANALOG SIGNAL WIRING, 3/4" C EACH.
- PLC CONTROL PANEL.
- #6 BARE CU GROUND ELECTRODE CONDUCTOR, 3/4" C.
- 4-#500MCM CU, 1-#3 CU GND, 3-1/2" C.

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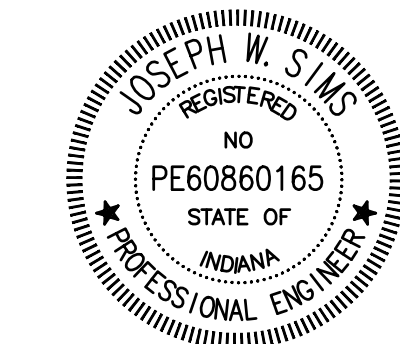
Project #: 21-400-357-1

Designed By: WRK/JAK

Drawn By: JLK

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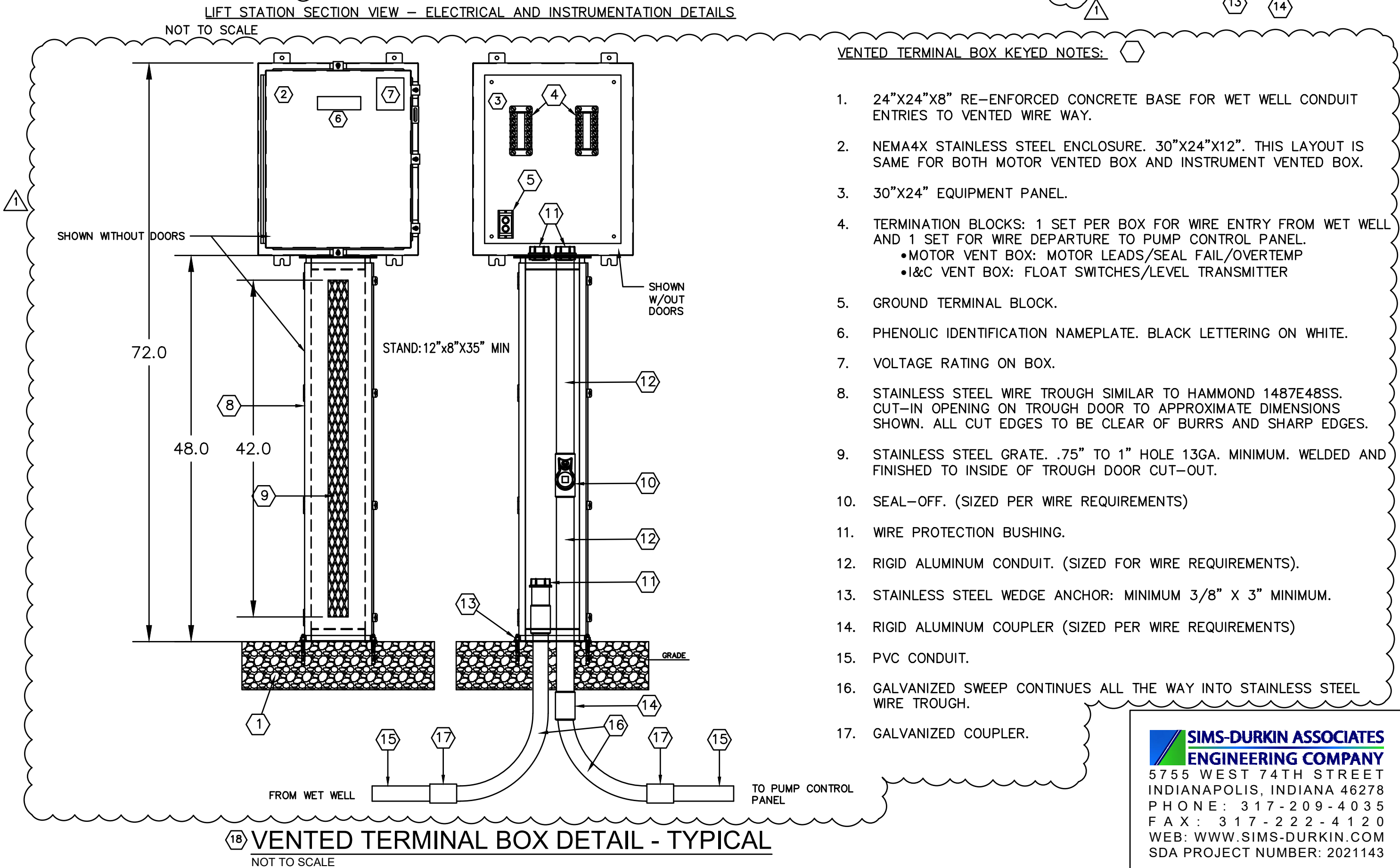
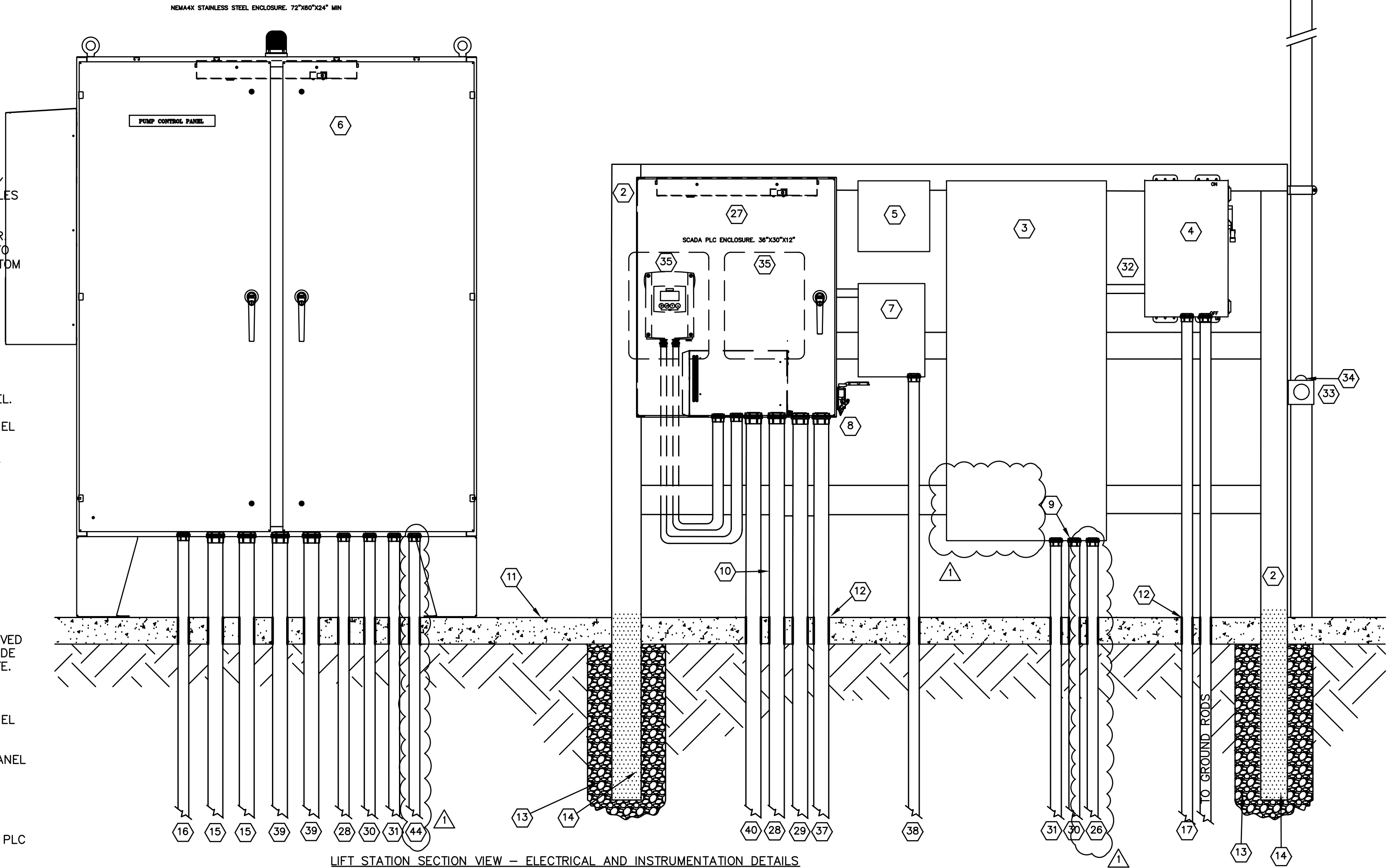
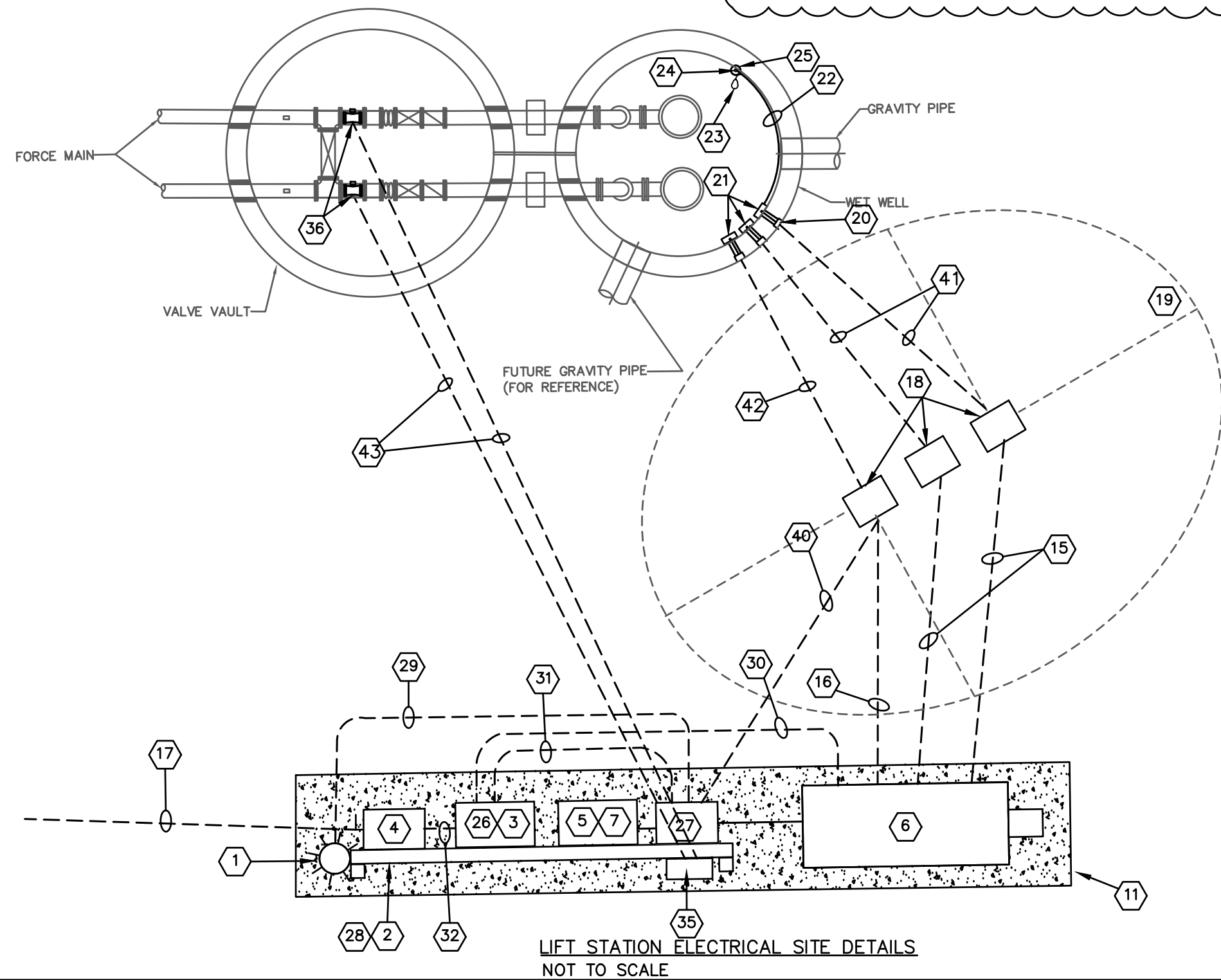
Joseph W. Sims

GENERAL ELECTRICAL NOTES:

- A. SEE ONE LINE DIAGRAM FOR ADDITIONAL DETAILS AND REQUIREMENTS.
- B. PROVIDE LINK SEAL WITH STAINLESS HARDWARE FOR ALL CONDUIT PENETRATIONS INTO LIFT STATION WET WELL.
- C. PROVIDE STAINLESS STEEL HARDWARE FOR ALL EQUIPMENT INSTALLED IN WET WELL; THIS INCLUDES BUT NOT LIMITED TO KELLEM'S CABLE GRIPS, CABLE RACKS, MOUNTING BRACKETS. BOLTS AND NUTS.
- D. WET WELL CLASSIFICATION IS CLASS 1, DIVISION 1, GROUP D – ALL WIRING METHODS SHALL COMPLY.
- E. ALL BELOW GRADE CONDUIT SHALL BE GALVANIZED RIGID STEEL. ALL ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM; INCLUDING TRANSITION TO ABOVE GRADE. COAT ALL RIGID ALUMINUM CONDUITS WHERE IN CONTACT WITH EARTH, CONCRETE, WITH OXIDATION RESISTANT COATING OR DISSIMILAR METALS. ALL PANEL AND WIRE TRAY PENETRATIONS SHALL USE MEYER HUBS

ELECTRICAL SITE DETAILS KEYED NOTES:

1. STANCHION MOUNTED AREA LIGHT. LED TYPE MOUNTED ON 10' ALUMINUM MAST ON OR NEAR EQUIPMENT RACK. LIGHT FIXTURE SIMILAR TO LITHONIA RSXF1 LED.
2. HEAVY DUTY GALVANIZED STEEL EQUIPMENT RACK. ALL RISERS TO HAVE CAPS TO PREVENT WATER PENETRATION.
3. 400A AUTOMATIC TRANSFER SWITCH, 480V, 3PH, 4W, WITH GND, SOLID NEUTRAL. ASCO 300 OR EQUIVALENT.
4. STAINLESS STEEL DISCONNECT SWITCH. SEE ONE-LINE SHEET.
5. FIBER PATCH PANEL.
6. NEW DUPLEX PUMP CONTROL PANEL. SEE ONE-LINE SHEET AND PUMP CONTROL PANEL DETAILS DRAWINGS.
7. NEW EXTERNAL CONTROL POWER TRANSFORMER IN NEMA 4X SS ENCLOSURE.
8. 20A WEATHERPROOF GFCI COURTESY OUTLET WITH IN-USE COVER. BULKHEAD STYLE WITH TRIP BREAKER AND ETHERNET PORT. SIMILAR TO ZP-PGA-32-201
9. GASKETED LOCKNUTS FOR PANEL ENTRY AND WIRE TRAY ENTRY. TYPICAL. SEE GENERAL NOTE E.
10. RIGID GALVANIZED STEEL CONDUIT – ABOVE GRADE. TYPICAL. SEE GENERAL NOTE E.
11. 4" HOUSEKEEPING CONCRETE PAD. CHAMFER EDGES.
12. RIGID STEEL CONDUIT THROUGH CONCRETE TO WIRE TRAY. TYPICAL. SEE GENERAL NOTE E.
13. 36" DEEP X 16" CONCRETE PEDESTAL BASE.
14. ALUMINUM POSTS SHALL HAVE A CORROSION PROTECTIVE COATING. SEE GENERAL NOTE E.
15. UNDERGROUND POWER WIRING AND CONDUIT FROM PUMP CONTROL PANEL TO PUMPS.
16. UNDERGROUND INSTRUMENTATION AND CONTROL WIRING AND CONDUIT FROM CONTROL PANEL TO FLOAT SWITCHES.
17. UNDERGROUND SECONDARY SERVICE FEEDER FROM UTILITY TRANSFORMER TO MAIN SERVICE DISCONNECT.
18. VENTED TERMINAL BOXES (3). SEE DETAIL THIS SHEET.
19. MAINTAIN MINIMUM 5' DISTANCE FROM ALL VENTED OPENINGS.
20. PROVIDE LINK SEAL FOR EACH WET WELL PENETRATION.
21. PULL BOXES WITH GASKETS. UTILIZE KELLUM GRIPS FOR EACH CABLE SUSPENDED FROM BOX.
22. FLOAT SWITCH AND SUBMERSIBLE TRANSMITTER MANUFACTURER CABLES. ALL CABLES TO BE LONG ENOUGH TO REACH VENTED TERMINAL BOXES. NO SPLICES ALLOWED.
23. DIRECT ACTING, NON-MERCURY FLOAT SWITCHES ENCASED IN AN ELLIPSE-SHAPED MOLDED PLASTIC FLOAT, CONNECTED TO A FACTORY INSTALLED CABLE. THE FLOATS SHALL BE SUSPENDED BY THEIR CABLES BY MEANS OF A WEIGHT KIT, AS INDICATED IN THE EQUIPMENT DATA.
24. 6" SCH 80 PVC STILLING WELL FOR SUBMERSIBLE LEVEL TRANSMITTER. COORDINATE BEST LOCATION DURING CONSTRUCTION. STILLING WELL TO HAVE THE LOWER 2' PERFORATED WITH 1/2" HOLES AND VERY BOTTOM CUT AT A 45 DEGREE ANGLE.
25. SUBMERSIBLE LEVEL TRANSMITTER.
26. UNDERGROUND POWER WIRING CONDUIT FROM ATS TO GENERATOR.
27. NEW PLC CABINET. SEE ONE-LINE SHEET AND PLC CONTROL PANEL DETAILS DRAWINGS.
28. UNDERGROUND I&C WIRING FROM PLC TO/FROM PUMP CONTROL PANEL.
29. UNDERGROUND POWER WIRING AND CONDUIT FROM PLC CONTROL PANEL TO STANCHION LIGHTING.
30. UNDERGROUND INSTRUMENTATION AND CONTROL WIRING AND CONDUIT FROM ATS TO PUMP CONTROL PANEL.
31. UNDERGROUND POWER WIRING AND CONDUIT FROM ATS TO PUMP CONTROL PANEL.
32. WIRING AND CONDUIT FROM MAIN SERVICE DISCONNECT TO ATS.
33. WEATHERPROOF COVERED ON-OFF LIGHT SWITCH FOR AREA LIGHT.
34. PHOTOCELL FOR AREA LIGHT.
35. REMOTE FLOW METER TRANSMITTER IN PRECISION DIGITAL PDA2300-SERIES STAINLESS STEEL WINDOWED ENCLOSURE OR APPROVED EQUIVALENT, PROVIDED BY FLOW METER MANUFACTURER, ON BACK SIDE OF EQUIPMENT PANEL, SPECIFIC LOCATION TO BE DETERMINED ON SITE.
36. MAGNETIC FLOW METER.
37. UNDERGROUND POWER WIRING AND CONDUIT FROM PLC CONTROL PANEL TO MAGNETIC FLOW METERS.
38. UNDERGROUND POWER WIRING AND CONDUIT FROM PUMP CONTROL PANEL TO EXTERNALLY MOUNTED TRANSFORMER.
39. UNDERGROUND MOTOR SENSOR WIRING AND CONDUIT FROM PUMP CONTROL PANEL TO PUMPS.
40. UNDERGROUND CONTROL WIRING & CONDUIT FROM LEVEL SENSOR TO PLC CONTROL PANEL.
41. MANUFACTURER PROVIDED PUMP CABLE. UNDERGROUND CONDUIT BY CONTRACTOR.
42. UNDERGROUND FLOAT & LEVEL SENSOR CABLE IN CONDUIT.
43. UNDERGROUND FLOW ANALOG SIGNAL & CONDUIT.
44. UNDERGROUND CONTROL WIRING AND CONDUIT FROM GENERATOR TO PUMP CONTROL PANEL.



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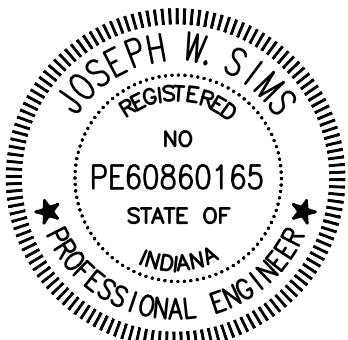
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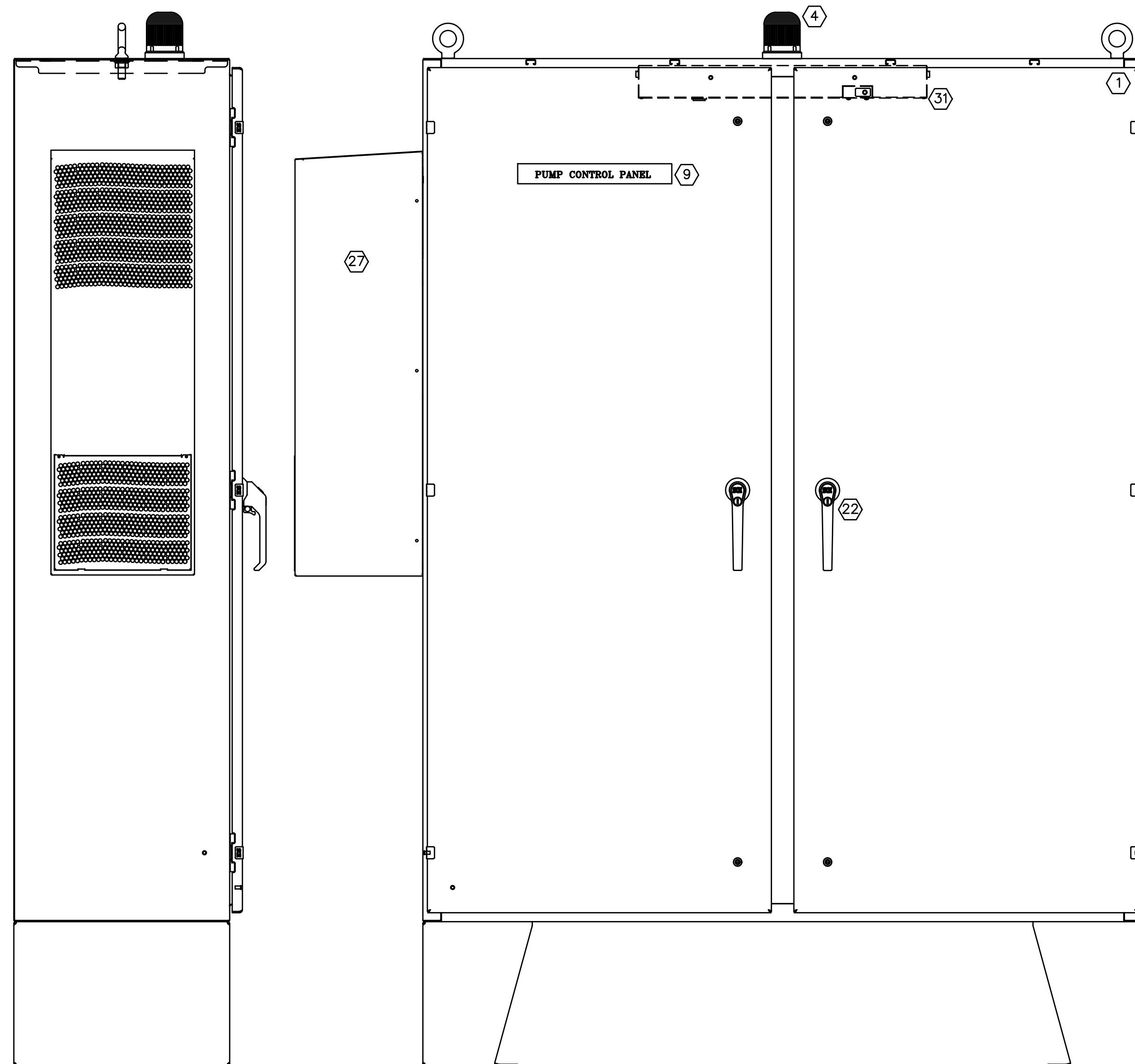


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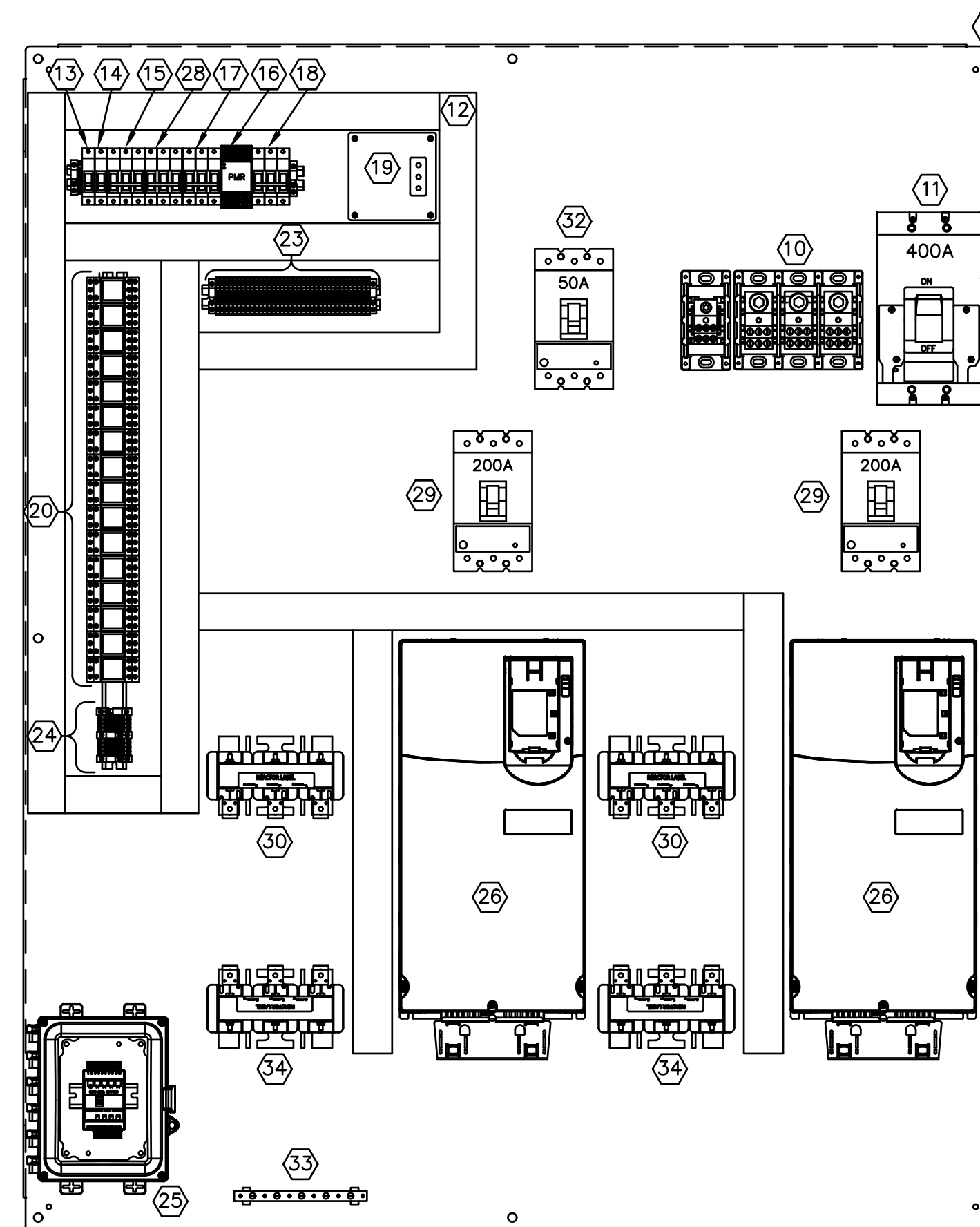
- THE CONTRACTOR/PANEL FABRICATOR SHALL BE RESPONSIBLE FOR THE FINAL SELECTION OF COMPONENTS, LAYOUT, FABRICATION, WIRING AND TESTING, ALL SUBJECT TO SHOP DRAWING REVIEW. THESE DETAILS ARE INTENDED TO INDICATE SCOPE OF WORK, QUALITY REQUIREMENTS, AND EXPECTATIONS.
- SAGINAW CONTROL AND ENGINEERING (SCE): ENCLOSURE, EQUIPMENT PANEL AND DEAD FRONT SWING PANEL SHOWN FOR REFERENCE.

1. NEMA 4X STAINLESS STEEL ENCLOSURE, 72"x60"x24" MINIMUM.
2. 72"x60" EQUIPMENT PANEL.
3. DEAD FRONT SWING PANELS.
4. ALARM STROBE LIGHT.
5. GREEN PUSH-TO-TEST AND AMBER PUST-TO-TEST PILOT LIGHTS, TYPICAL FOR EACH PUMP. 30.5MM NEMA4X.
6. 3 POSITION HOA SWITCH, TYPICAL FOR EACH PUMP. 30.5MM NEMA4X.
7. MOTOR PROTECTION RELAYS - FLUSH MOUNT. MATCH PUMP MANUFACTURER SPECIFICATIONS. FLYGT MINICAS II SHOWN.
8. 2 POSITION SELECTOR SWITCH FOR PLC OR FLOAT MODE SELECTION.
9. NAME PLATES. WHITE WITH BLACK LETTERS. TYPICAL.
10. THREE PHASE DISTRIBUTION BLOCK.
11. 400A MAIN PANEL CIRCUIT BREAKER.
12. WIRE DUCT - AS REQUIRED.
13. 15A 1P CONTROL POWER CIRCUIT BREAKER.
14. SPARE 1P CIRCUIT BREAKER - 15A.
15. 3 POLE 15A POWER TRANSFORMER CIRCUIT BREAKER.
16. PHASE MONITOR RELAY.

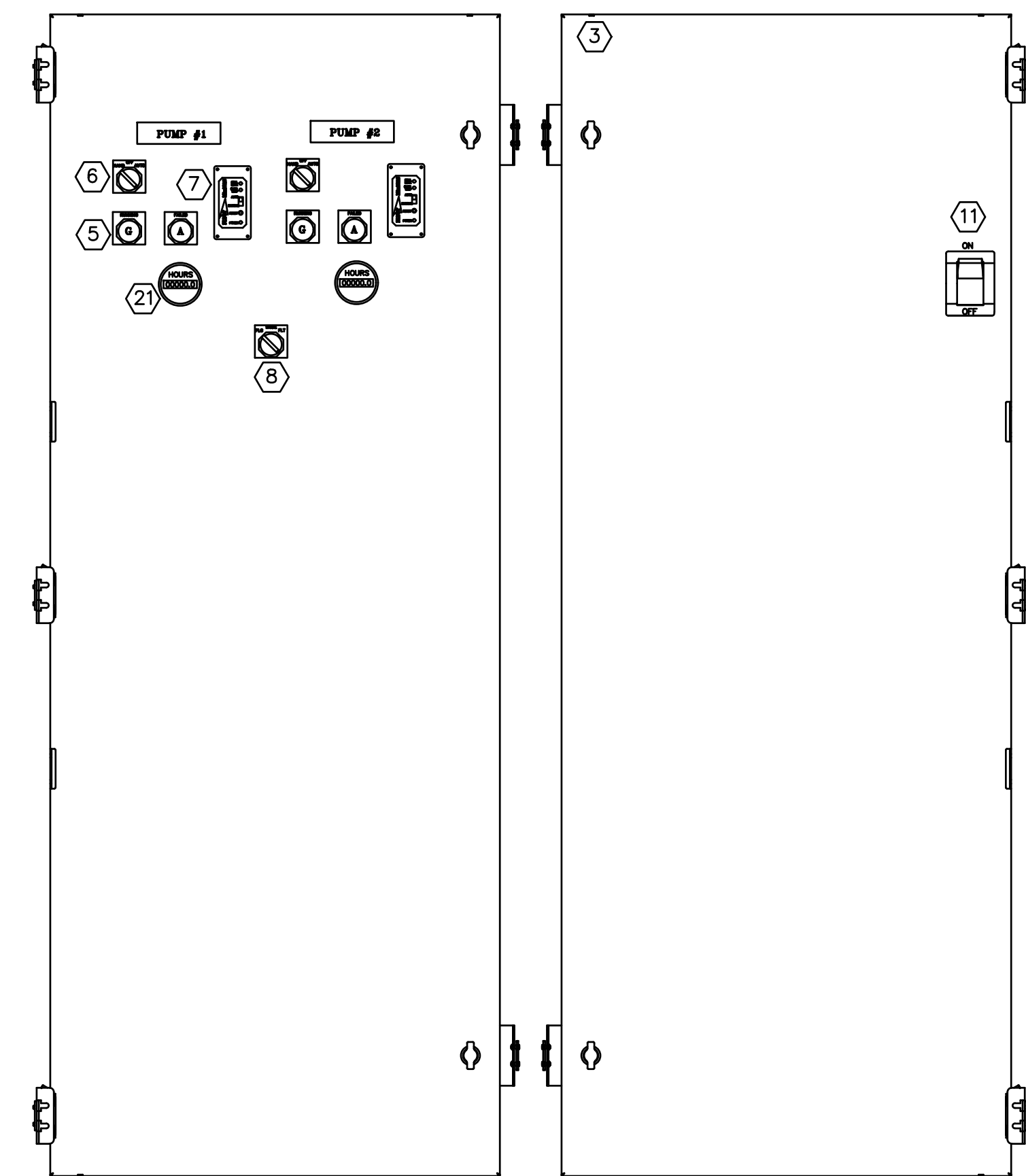
17. 3 PHASE MONITOR RELAY CIRCUIT BREAKER.
18. 3 PHASE SURGE PROTECTOR DEVICE (SPD) CIRCUIT BREAKER.
19. 3 PHASE SPD.
20. CONTROL RELAYS, 120VAC COIL AND 10A MIN. CONTACT RATING. DPDT TYPICAL.
21. RUNTIME HOUR METER. TYPICAL.
22. LOCKABLE HANDLE.
23. FIELD WIRING AND SWING PANEL COMPONENT INTERFACE WIRING TERMINAL BLOCKS.
24. SEAL FAIL MODULE FIELD WIRING TERMINAL BLOCKS.
25. INTRINSICALLY SAFE BARRIER (ISB) BOX WITH 4—CHANNEL DIGITAL ISB FOR FLOAT SWITCHES.
26. TWO 75 HP 480V ABB ACS880—01 VFD INVERTERS, 110.4A MIN RATING. TO BE CONNECTED TO FUTURE 70HP PUMPS.
27. AIR CONDITIONING UNIT WITH HEATER, SCE—AC3400B460VSS OR SIMILAR. IF OTHER AC UNIT IS SELECTED AND IT DOES NOT INCLUDE INTEGRATED HEATER, A PANEL HEATER SHALL BE INCLUDED.
28. 3P CIRCUIT BREAKER FOR AIR CONDITIONING UNIT.
29. 200A MOTOR PROTECTION CIRCUIT BREAKERS.
30. TCI LOAD REACTOR. MATCH WITH MOTOR HP.
31. ENCLOSURE LED LIGHTING.
32. 50A CIRCUIT BREAKER FOR FUTURE ANUE PHANTOM ODOR CONTROL SYSTEM.
33. EARTH GROUND TERMINAL BLOCK.
34. TCI LINE REACTORS IF REQUIRED BY MANUFACTURER.



PUMP CONTROL PANEL OUTER DOOR VIEW



PUMP CONTROL PANEL EQUIPMENT PANEL VIEW



PUMP CONTROL PANEL SWING DOOR VIEW

NOT TO SCALE

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SDA PROJECT NUMBER: 2021143

#	Revision	Date
1	ADDENDUM #1	10-06-2023

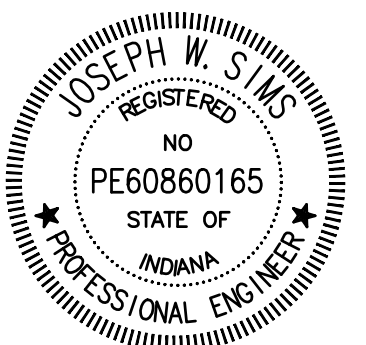
Project #: 21-400-357-1

Designed By: WRK/JAK

Drawn By: JLK

Checked By: JWS

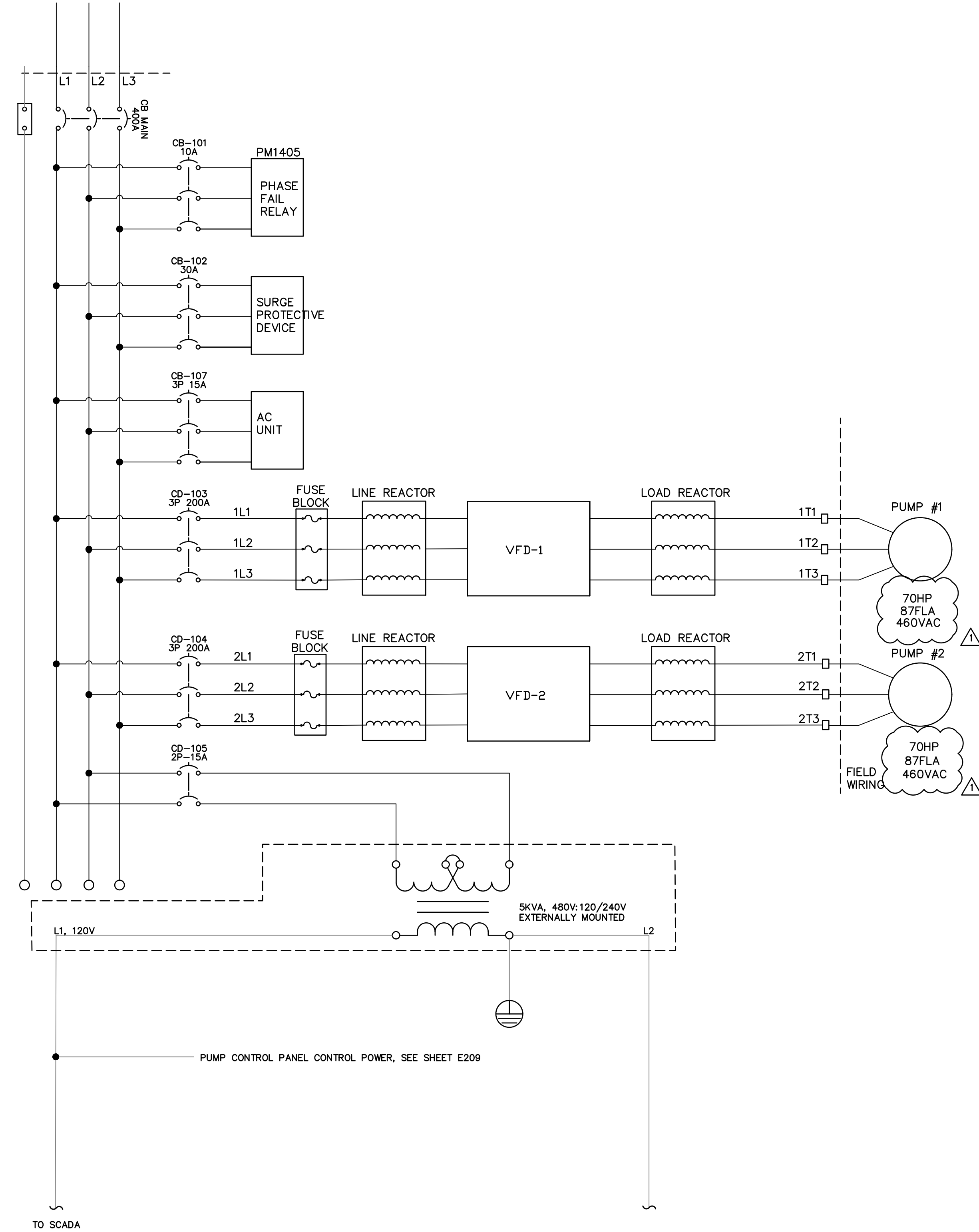
Date: 09/08/2023



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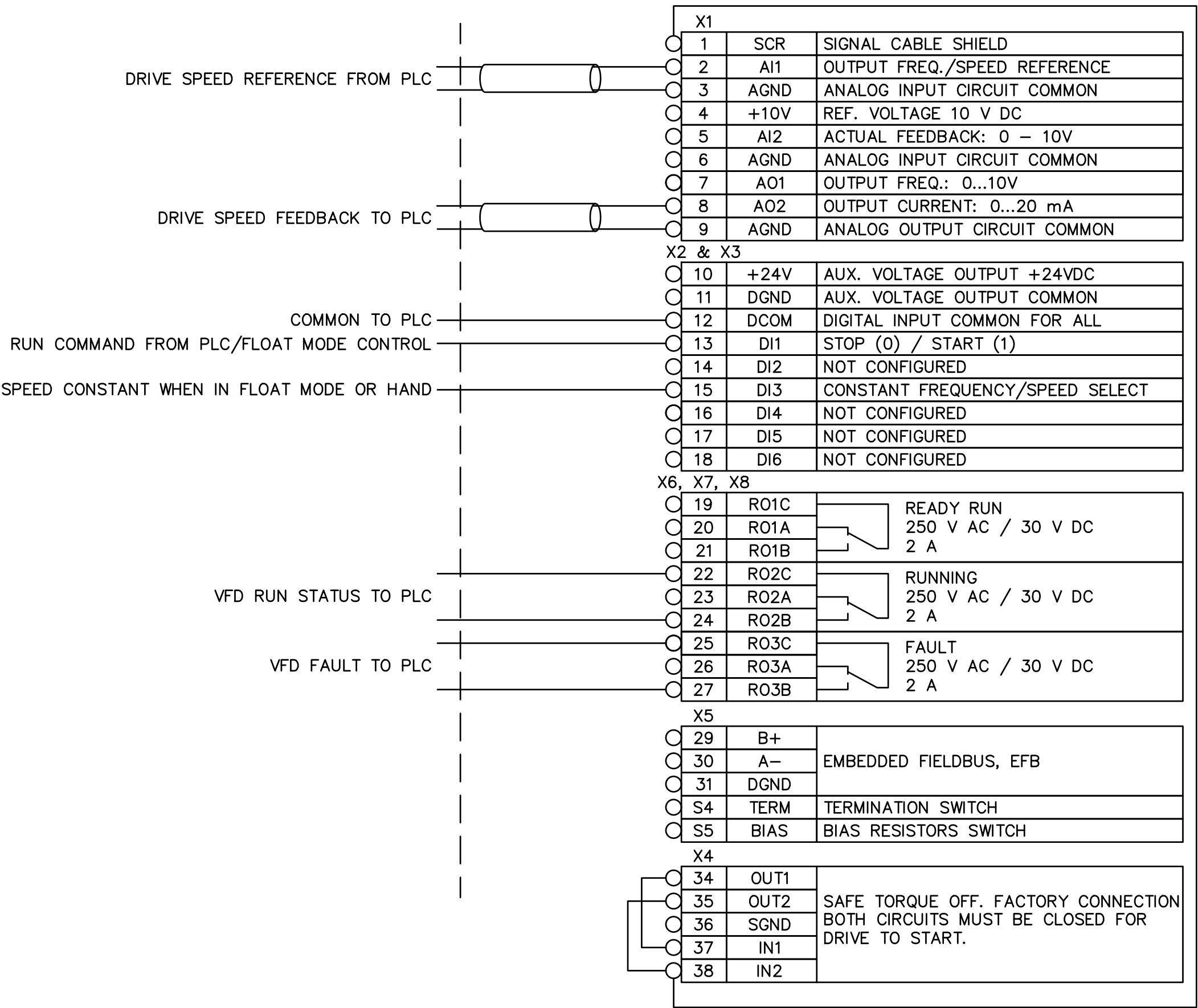
E203

UTILITY
277/480VAC, 400A, 3PH, 60Hz



VFD GENERAL NOTES:

1. TERMINAL BLOCK ID MAY VARY. CONSULT DRIVE MANUFACTURER LITERATURE FOR ALL TERMINATION REQUIREMENTS.
2. VFD SHALL BE PROGRAMMED TO RUN BASED ON SPEED INPUT IF NORMAL OPERATION DRIVE ENABLE SIGNAL IS RECEIVED FROM PLC CONTROL PANEL.
3. VFD SHALL BE PROGRAMMED TO RUN AT A SET SPEED (INITIALLY SET TO 100%) IF BACKUP OPERATION DRIVE ENABLE SIGNAL IS RECEIVED FROM PLC CONTROL PANEL. THIS SHALL OVERRULE NORMAL OPERATION DRIVE ENABLE SIGNAL.
4. IT SHALL ALSO BE POSSIBLE TO MANUALLY CONTROL VFD SPEED VIA THE VFD KEYPAD ON THE FRONT OF THE ENCLOSURE.



DRIVE WIRING DETAILS (VARIES BY MANUFACTURER - SHOWN FOR REFERENCE ONLY)

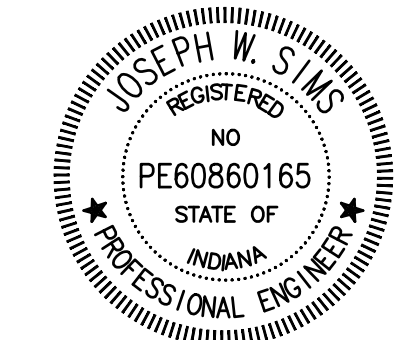
BOULDERS PUMP CONTROL PANEL WIRING DETAILS

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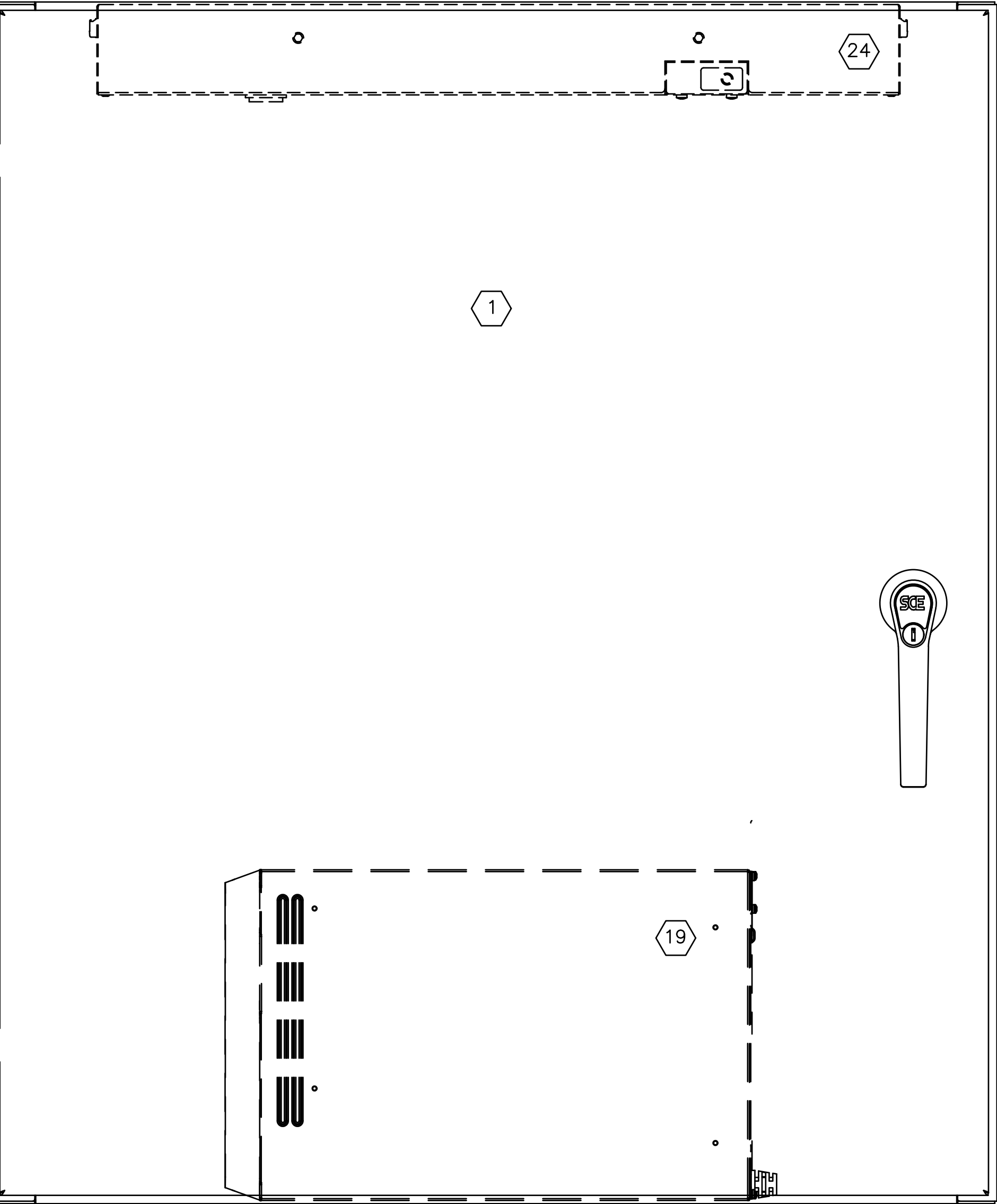
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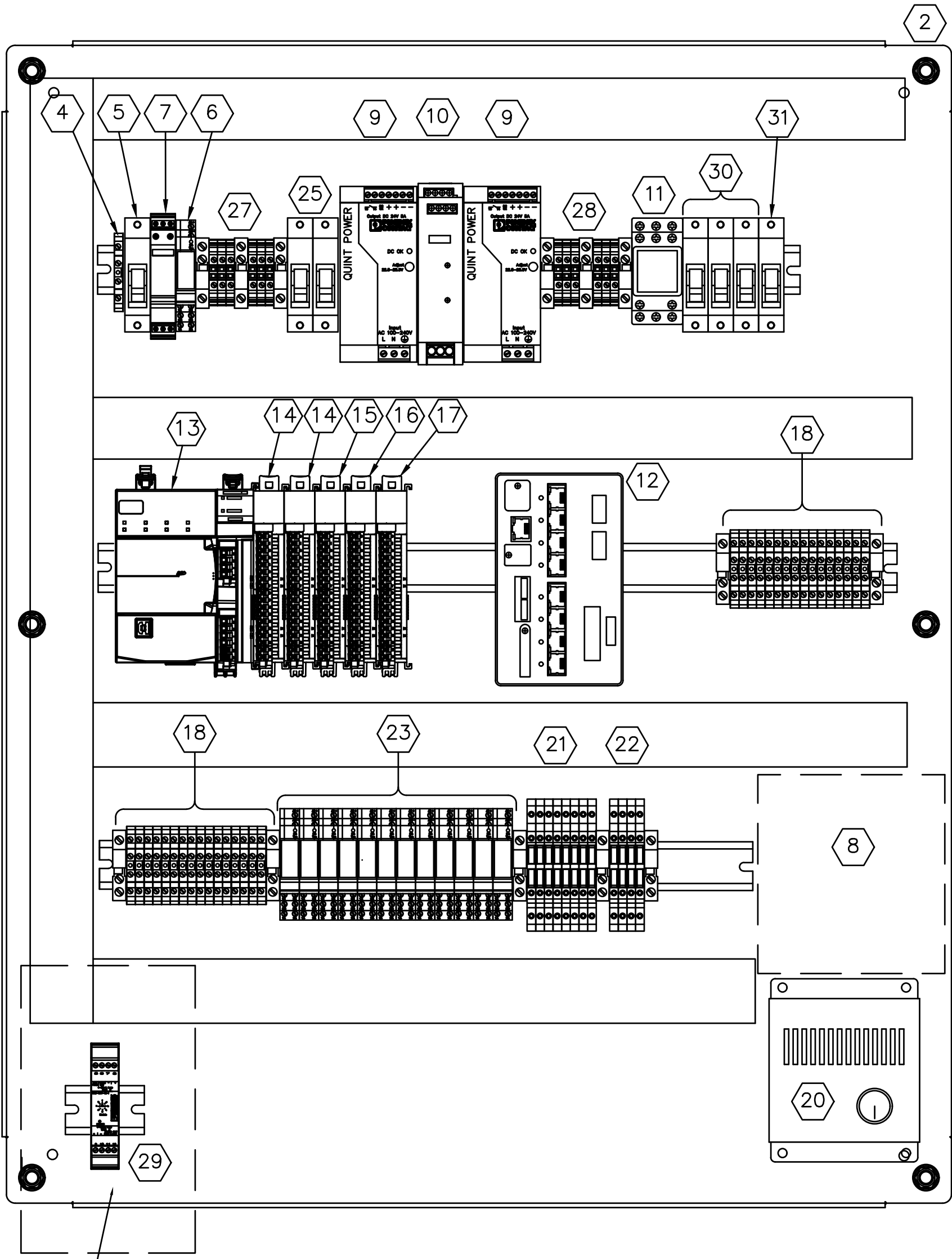
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NOTE:

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ENCLOSURE EXTERIOR VIEW



INTERIOR EQUIPMENT PANEL

INTRINSICALLY SAFE AREA

ELECTRICAL KEYED NOTES: ⬡

1. NEMA4X STAINLESS STEEL ENCLOSURE. 36"X30"X12".
2. INTERIOR EQUIPMENT PANEL AND SWING PANEL - 36"X30".
3. DEADFRONT SWING PANEL FOR HMI MOUNTING.
4. GROUND BLOCK.
5. MAIN 120VAC 50A POWER CIRCUIT BREAKER.
6. POWER FAIL RELAY. RELAY TO REPORT TO SCADA UPON LOSS OF POWER.
7. PHOENIX CONTACT PLUGTRAB SURGE PROTECTION DEVICE.
8. HEAT SAFETY AREA, BLOCK OUT ACCORDING TO MANUFACTURER CLEARANCE.
9. 5A REDUNDANT 24VDC POWER SUPPLY.

10. POWER SUPPLY REDUNDANCY MODULE.
11. UPS BYPASS CONTACTOR.
12. CISCO NETWORK SWITCH. IE-3300-8P2S. NO SUBSTITUTE.
13. COMPACTLOGIX 5069-306ER. OWNER APPROVED ALTERNATE PLC - COMPACTLOGIX L24ER AND ANY ASSOCIATED MODULES.
14. COMPACTLOGIX 16 PT DIGITAL INPUT MODULE. 5069-IA16.
15. COMPACTLOGIX 16 PT DIGITAL OUTPUT MODULE. 5069-OA16.
16. COMPACTLOGIX 8 PT ANALOG INPUT MODULE. 5069-IF8.
17. COMPACTLOGIX 4 PT ANALOG OUTPUT MODULE. 5069-OF4.
18. DIGITAL INPUT FIELD TERMINAL BLOCKS.

19. 1000VA UPS. APC BACK-UPS PRO. PROVIDED BY NINESTAR CONNECT.
20. 100W PANEL HEATER.
21. ANALOG INPUT FIELD TERMINAL BLOCKS.
22. ANALOG OUTPUT FIELD TERMINAL BLOCKS.
23. DIGITAL OUTPUT ISOLATION RELAYS.
24. PANEL LIGHT.
25. 3A POWER SUPPLY CIRCUIT BREAKERS.
26. 12" INDUCTIVE AUTOMATION SITE SERVER/HMI.
27. 120V BUS TERMINAL BLOCKS.
28. 24VDC BUS TERMINAL BLOCKS.
29. ANALOG INTRINSICALLY SAFETY BARRIER FOR LEVEL TRANSMITTER.
30. 15A CIRCUIT BREAKER.
31. 20A CIRCUIT BREAKER FOR GFCI RECEPTACLE.

BOULDERS PLC CONTROL PANEL LAYOUT DETAILS

SCALE: NONE

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BIDDING DRAWINGS
NINESTAR CONNECT
CR 200 W SEWER

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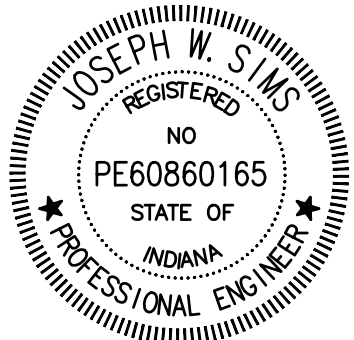
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BIDDING DRAWINGS

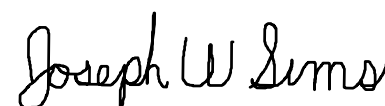
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NINESTAR CONNECT
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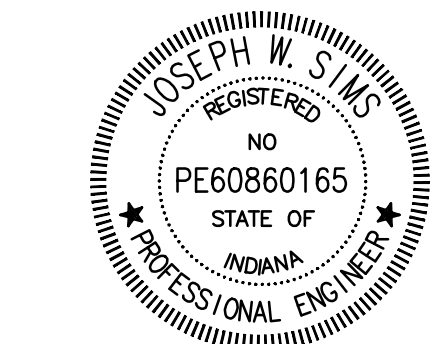
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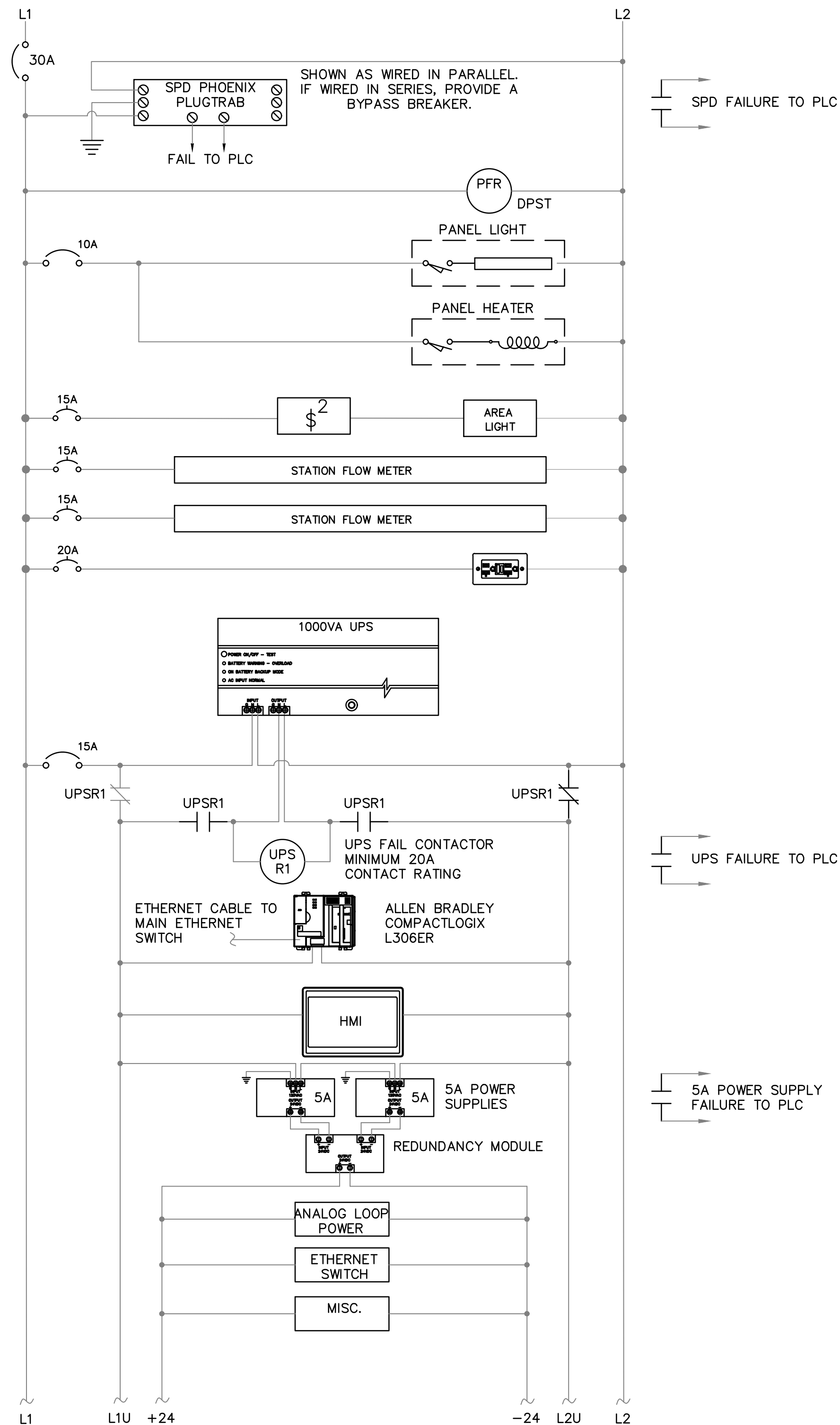


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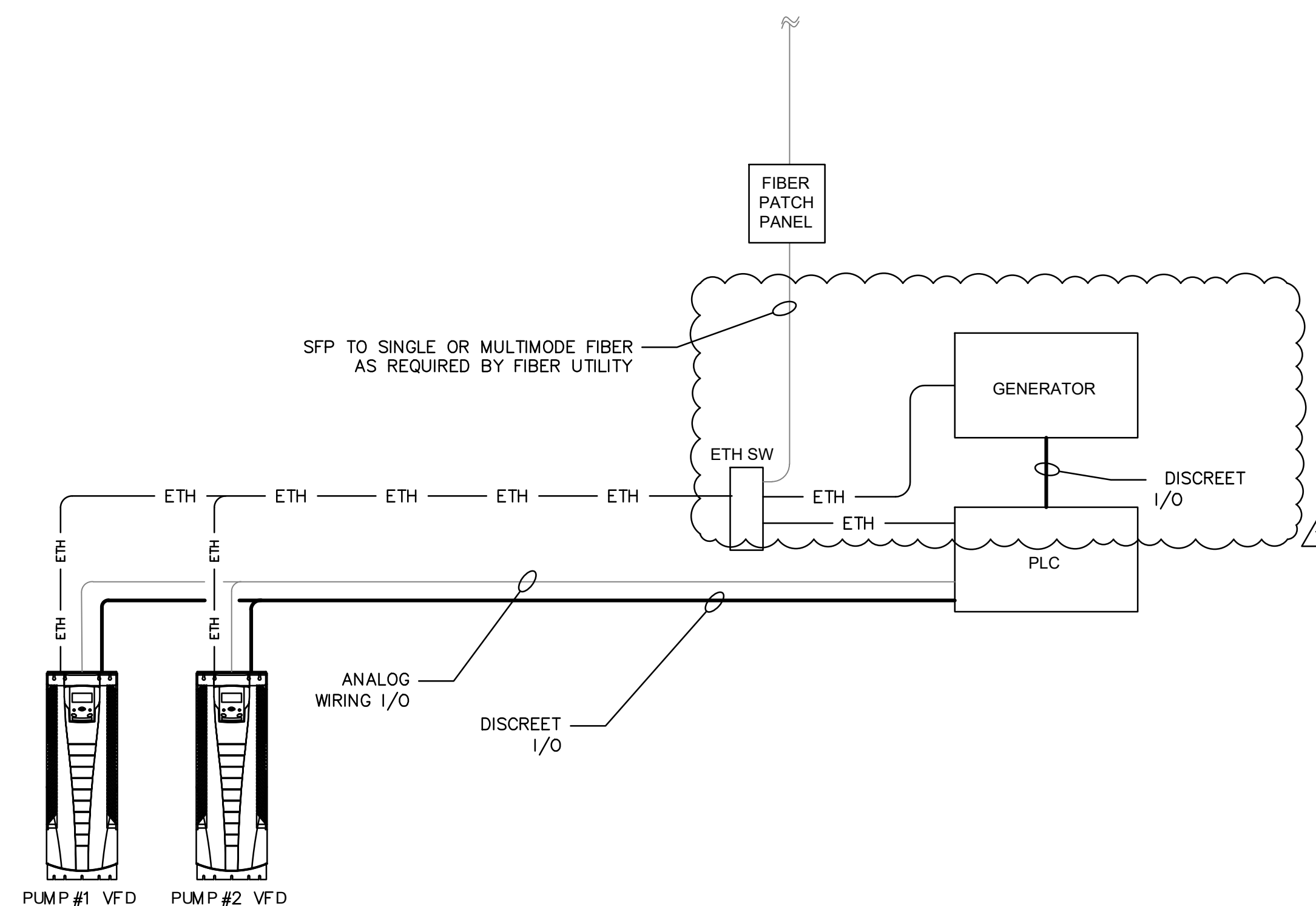
BOULDERS PLC CONTROL
PANEL WIRING DETAILS
CONT

E209

FROM TRANSFORMER

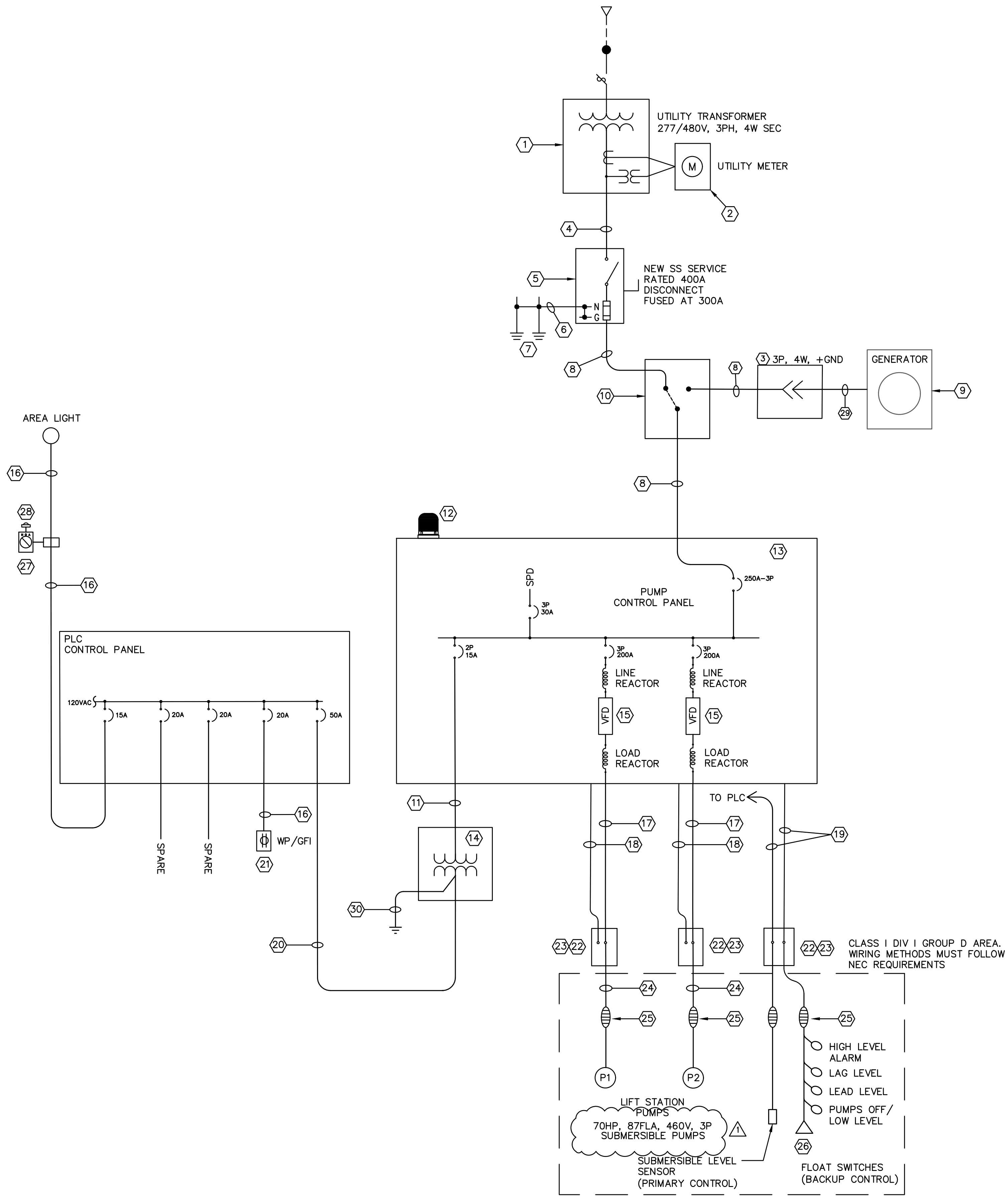


POWER WIRING DIAGRAM



BOULDERS PLC CONTROL PANEL WIRING DETAILS

SCALE: NONE



CR300 LIFT STATION ONE-LINE DIAGRAM

NOT TO SCALE

CONDUIT REQUIREMENT NOTES:

- PROVIDE (FURNISH AND INSTALL) RIGID ALUMINUM (RA) FOR ALL CONDUIT ABOVE GRADE.
- ALL MOUNTING, CONDUIT RUNS, CONNECTIONS AND OTHER SHALL BE AESTHETICALLY APPEALING AS THIS IS A RESIDENTIAL AREA. POORLY INSTALLED EQUIPMENT SHALL BE REJECTED AND RE-WORKED.
- PROVIDE (FURNISH AND INSTALL) MEYERS HUBS OR SEALING LOCKNUTS FOR ALL NON-CLASSIFIED CONDUIT INSTALLATION.
- PROVIDE LINK SEAL WITH STAINLESS HARDWARE FOR ALL CONDUIT PENETRATIONS INTO LIFT STATION WET WELL.
- PROVIDE STAINLESS STEEL HARDWARE FOR ALL EQUIPMENT INSTALLED IN WET WELL; THIS INCLUDES BUT NOT LIMITED TO KELLEM'S CABLE GRIPS, CABLE RACKS, MOUNTING BRACKETS. BOLTS AND NUTS.
- WET WELL CLASSIFICATION IS CLASS 1 DIVISION 1 GROUP D; ALL WIRING METHODS SHALL COMPLY.
- WITHIN A 5' RADIUS OF ANY VENTED OPENING ATTACHED TO THE WET WELL SHALL BE CLAS 1 DIVISION 2 GROUP D RATED.

ELECTRICAL KEYED NOTES:

- PAD MOUNT TRANSFORMER BY UTILITY.
- METER FURNISHED AND MOUNTED TO TRANSFORMER BY UTILITY.
- GENERATOR CONNECTOR BOX WITH CAM LOCK CONNECTORS. ASCO 400A SERIES 300 QUICK CONNECT POWER PANEL OR EQUIVALENT WITH FEMALE CAMLOCK CONNECTORS.
- 4-#350MCM CU, 3" C.
- NEW 400A RATED MAIN SERVICE DISCONNECT FUSED AT 300A (35KAIC), 277/480V, 3PH, 4W, WITH GND, NEMA 4X STAINLESS STEEL (SS). BOND NEUTRAL TO GROUND AT THIS DEVICE.
- #2 BARE CU GROUND ELECTRODE CONDUCTOR, 3/4" C.
- (2) 3/4" X 10' CU CLAD GROUND RODS. BURIED 12" BELOW GRADE. CAD WELD CONNECTIONS 10' APART.
- 4-#350MCM CU, 1-#4 CU GROUND, 3" C.
- MOBILE GENERATOR BY OWNER.
- 300A MANUAL TRANSFER SWITCH, 277/480V, 3PH, 4W, WITH GND, SOLID NEUTRAL ASCO 300 OR APPROVED EQUAL.
- 4-#12 CU, 1-#12 CU GND, 3/4" C.
- ALARM BEACON, MOUNTED TO PANEL.
- CONTROL PANEL. REFER TO CONTROL PANEL LAYOUT SHEET AND MOTOR CONTROL WIRING DIAGRAM SHEET. FURNISHED AND INSTALLED BY CONTRACTOR.
- 5 KVA, 480V:120/240V, NEMA 4X SS EXTERNAL CONTROL POWER TRANSFORMER.
- TWO (2) 75 HP 480V ABB ACS880-01 VFD INVERTERS, 110.4A MIN RATING.
- 2-#12 CU, 1-#12 CU GND, 3/4" C.
- 3-#2 CU XHHW-2, 1-#8 CU THWN-2 GND, 1-1/4" C. FOR EACH PUMP.
- 4-#14 CU, 1-#14 CU GND, 1" C. SEAL FAIL AND OVERTEMP CABLES FOR EACH PUMP.
- LEVEL TRANSMITTER AND FLOAT SWITCH CABLES, LEVEL TRANSMITTER IN 1" C. AND FLOAT SWITCHES IN 1-1/2" C. PVC BELOW GRADE AND RIGID ALUMINUM ABOVE GRADE. CABLES SHALL BE CONTINUOUS TO VENTED BOX AND NOT SPLICED. PROVIDE ADEQUATE LENGTH FROM MANUFACTURER. FLOAT CABLES GO TO PUMP CONTROL PANEL AND LEVEL TRANSMITTER CABLE GOES DIRECT TO PLC CONTROL PANEL.
- CIRCUIT TO PLC CONTROL PANEL FOR 120VAC LOADS BY CONTRACTOR 2-#6 CU, 1-#10 CU GND, 3/4" C
- 20A WEATHERPROOF/GFI RECEPTACLE MOUNTED ON NEW RACK.
- CONDUIT SEALS.
- STAINLESS STEEL VENTED WIRE WAY AND TERMINATION BOX. (TYPICAL - SEE DETAILS SHEET)
- PUMP CABLE IN 2" CONDUIT FURNISHED BY MANUFACTURER, INSTALLED BY CONTRACTOR. FINAL CABLE LENGTH SHALL BE DETERMINED BY CONTRACTOR.
- ALL CABLE SUPPORTS SHALL BE WITH KELLUM GRIPS.
- WEIGHT TO ANCHOR THE FLOATS
- WEATHERPROOF-COVERED ON-OFF SWITCH FOR AREA LIGHT.
- PHOTO CELL FOR AREA LIGHT.
- GENERATOR CABLE BY GENERATOR MANUFACTURER.
- #6 BARE CU GROUND ELECTRODE CONDUCTOR 3/4" C.

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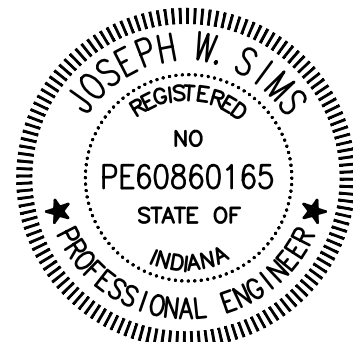
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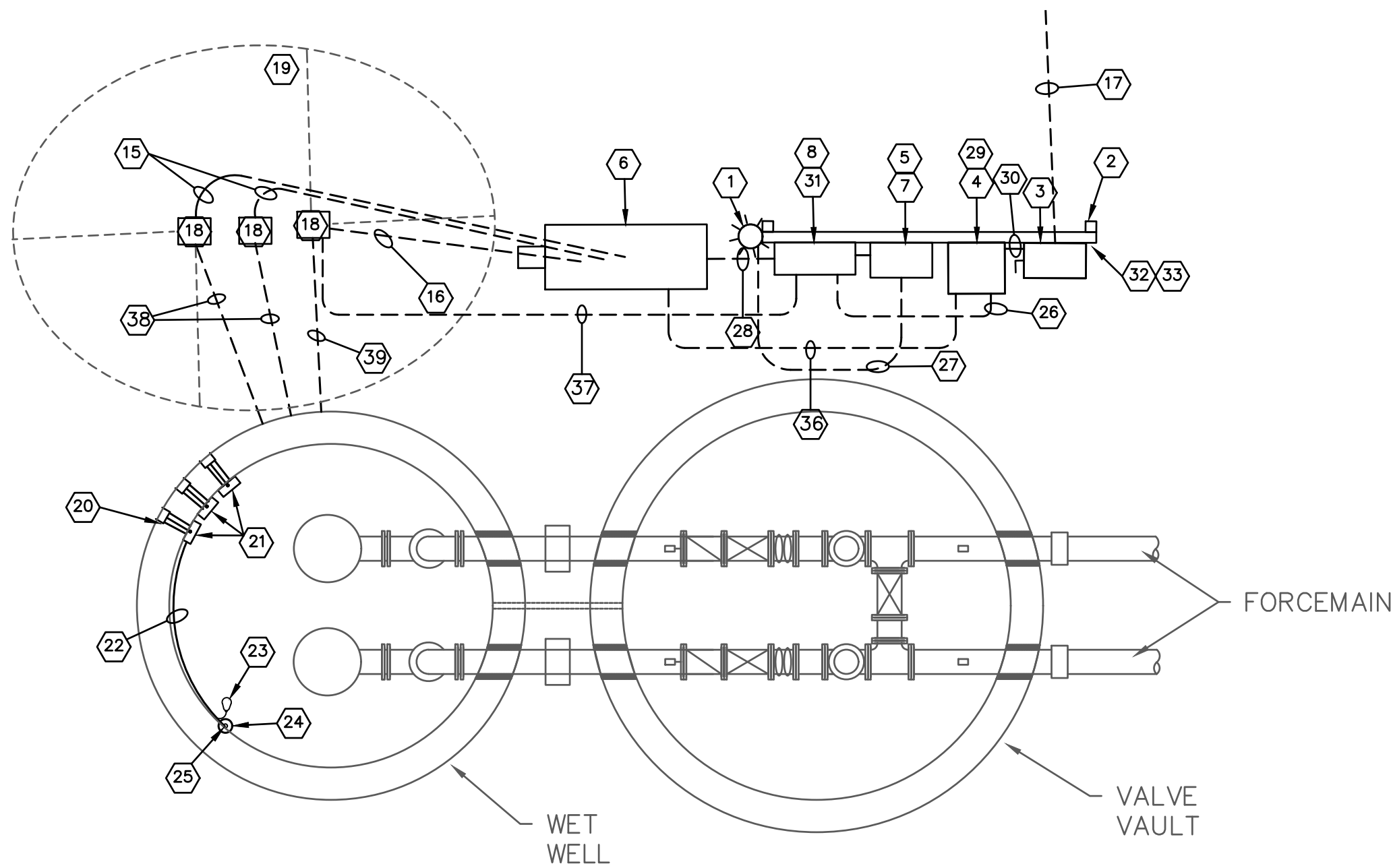
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GENERAL ELECTRICAL NOTES:

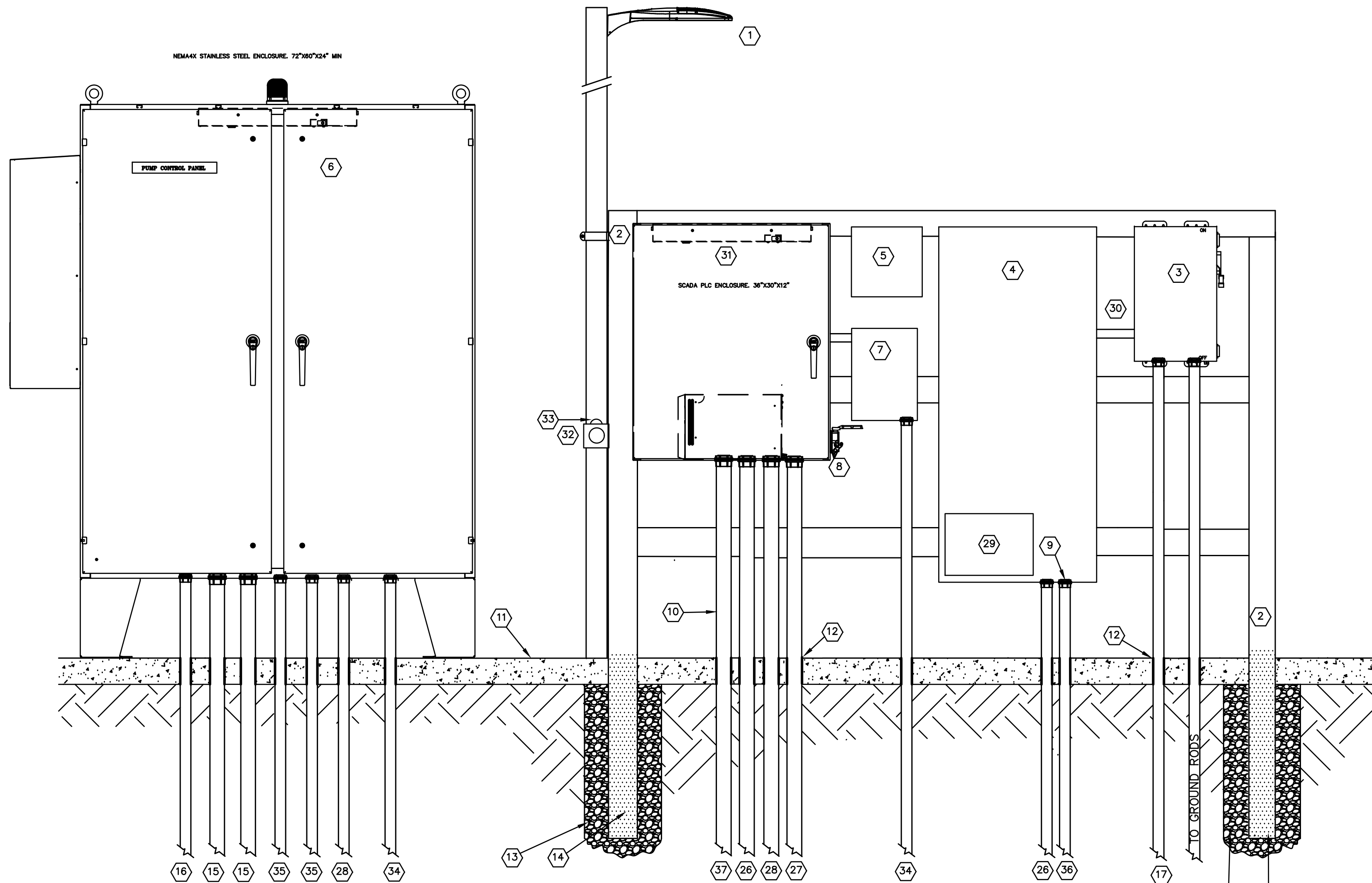
- A. SEE ONE LINE DIAGRAM FOR ADDITIONAL DETAILS AND REQUIREMENTS.
- B. PROVIDE LINK SEAL WITH STAINLESS HARDWARE FOR ALL CONDUIT PENETRATIONS INTO LIFT STATION WET WELL.
- C. PROVIDE STAINLESS STEEL HARDWARE FOR ALL EQUIPMENT INSTALLED IN WET WELL; THIS INCLUDES BUT NOT LIMITED TO KELLEM'S CABLE GRIPS, CABLE RACKS, MOUNTING BRACKETS. BOLTS AND NUTS.
- D. WET WELL CLASSIFICATION IS CLASSIFIED CLASS 1, DIV 1, GROUP D. ALL WIRING SHALL COMPLY.
- E. ALL BELOW GRADE CONDUIT SHALL BE GALVANIZED RIGID STEEL. ALL ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM; INCLUDING TRANSITION TO ABOVE GRADE. COAT ALL RIGID ALUMINUM CONDUITS WHERE IN CONTACT WITH EARTH, CONCRETE, WITH OXIDATION RESISTANT COATING OR DISSIMILAR METALS.

ELECTRICAL SITE DETAILS KEYED NOTES:

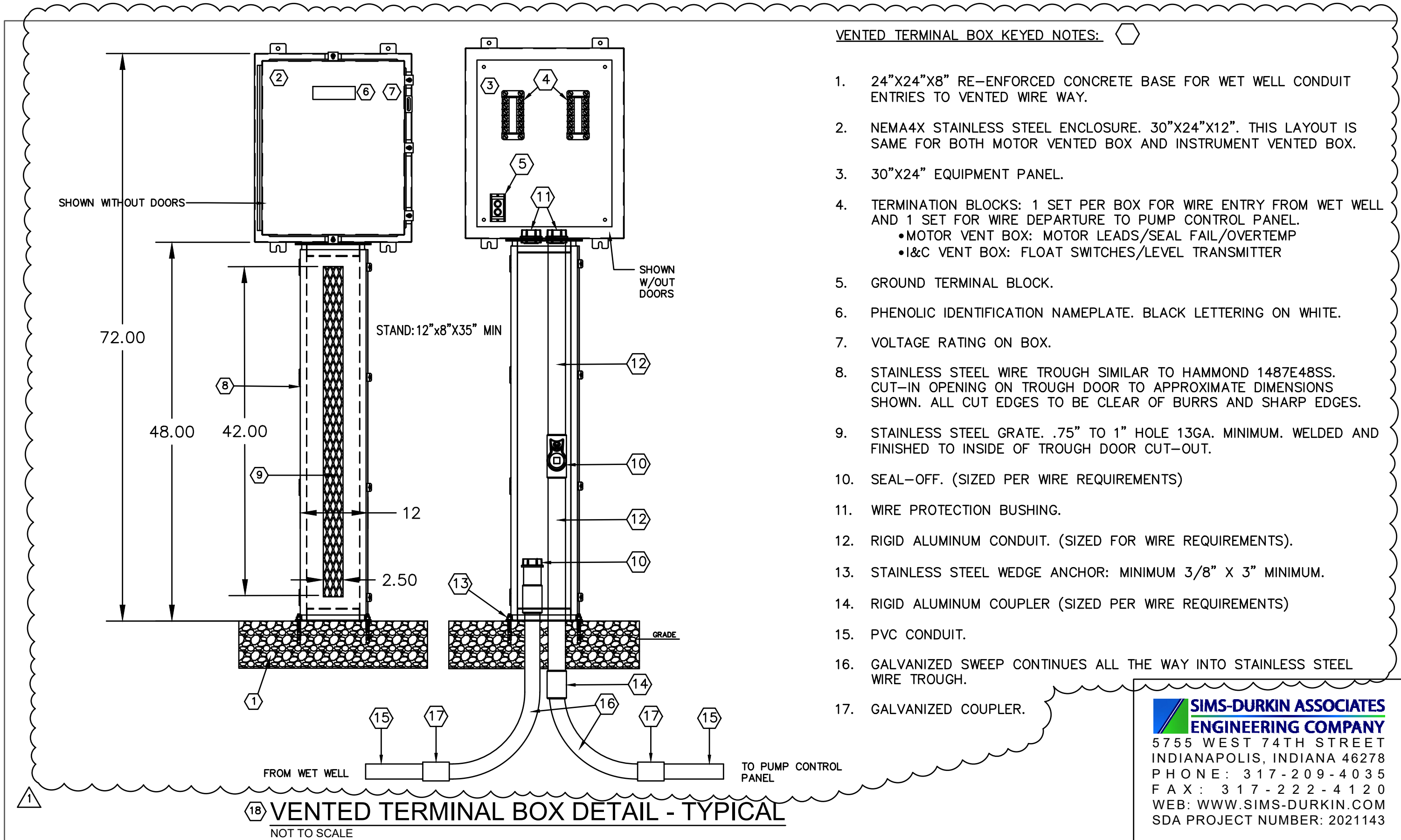
1. STANCHION MOUNTED AREA LIGHT. LED TYPE MOUNTED ON 10' ALUMINUM MAST ON OR NEAR EQUIPMENT RACK. LIGHT FIXTURE SIMILAR TO LITHONIA RSXF1 LED.
2. HEAVY DUTY GALVANIZED STEEL EQUIPMENT RACK. ALL RISERS TO HAVE CAPS TO PREVENT WATER PENETRATION.
3. STAINLESS STEEL DISCONNECT SWITCH.
4. 300A MANUAL TRANSFER SWITCH, 480V, 3PH, 4W, WITH GND, SOLID NEUTRAL. ASCO 300 OR APPROVED EQUAL.
5. FIBER PATCH PANEL..
6. NEW DUPLEX PUMP CONTROL PANEL. SEE ONE-LINE SHEET AND PUMP CONTROL PANEL DETAILS DRAWINGS.
7. EXTERNALLY MOUNTED TRANSFORMER IN NEMA 4X SS ENCLOSURE.
8. 20A WEATHERPROOF GFCI COURTESY OUTLET WITH IN-USE COVER. BULKHEAD STYLE WITH TRIP BREAKER AND ETHERNET PORT. SIMILAR TO ZP-PGA-32-201
9. GASKETED LOCKNUTS FOR PANEL ENTRY AND WIRE TRAY ENTRY. TYPICAL.
10. RIGID GALVANIZED STEEL CONDUIT - ABOVE GRADE. TYPICAL.
11. 4" CONCRETE SURFACE WITH CHAMFER EDGES.
12. RIGID STEEL CONDUIT THROUGH CONCRETE TO WIRE TRAY. TYPICAL.
13. 36" DEEP X 16" CONCRETE PEDESTAL BASE.
14. ALUMINUM POSTS SHALL HAVE A CORROSION PROTECTIVE COATING.
15. UNDERGROUND POWER WIRING AND CONDUIT FROM CONTROL PANEL TO VENTED TERMINAL BOX.
16. UNDERGROUND INSTRUMENTATION AND CONTROL WIRING AND CONDUIT FROM CONTROL PANEL TO FLOAT SWITCHES.
17. UNDERGROUND SECONDARY SERVICE FEEDER FROM UTILITY TRANSFORMER TO MAIN SERVICE DISCONNECT.
18. VENTED TERMINAL BOXES (3). SEE DETAIL THIS SHEET.
19. MAINTAIN MINIMUM 5' DISTANCE FROM ALL VENTED OPENINGS.
20. PROVIDE LINK SEAL FOR EACH WET WELL PENETRATION.
21. UTILIZE KELLUM GRIPS FOR EACH CABLE SUSPENDED FROM BOX.
22. FLOAT SWITCH AND SUBMERSIBLE TRANSMITTER MANUFACTURER CABLES. ALL CABLES TO BE LONG ENOUGH TO REACH VENTED TERMINAL BOXES. NO SPLICES ALLOWED.
23. FLOAT SWITCHES. SECURE TO STILLING WELL WITH SS MOUNTING STRAPS OR OTHER ACCEPTABLE MEANS. FLOATS WILL HAVE NO RESTRICTION OF MOVEMENT.
24. 6" SCH 80 PVC STILLING WELL FOR SUBMERSIBLE LEVEL TRANSMITTER. COORDINATE BEST LOCATION DURING CONSTRUCTION. STILLING WELL TO HAVE THE LOWER 2' PERFORMED WITH 1/2" HOLES AND VERY BOTTOM CUT AT A 45 DEGREE ANGLE.
25. SUBMERSIBLE LEVEL TRANSMITTER.
26. UNDERGROUND INSTRUMENTATION AND CONTROL WIRING AND CONDUIT FROM ATS TO PLC CONTROL PANEL.
27. UNDERGROUND POWER WIRING AND CONDUIT FROM PLC CONTROL PANEL TO STANCHION LIGHTING.
28. UNDERGROUND I&C WIRING FROM PLC TO/FROM PUMP CONTROL PANEL.
29. ASCO SERIES 300 QUICK CONNECT POWER PANEL WITH FEMALE CAMLOCK CONNECTORS.
30. WIRING AND CONDUIT FROM MAIN SERVICE DISCONNECT TO ATS.
31. PLC CABINET. SEE ONE-LINE SHEET AND PLC CONTROL PANEL DETAILS DRAWINGS.
32. WEATHERPROOF COVERED ON-OFF LIGHT SWITCH FOR AREA LIGHT.
33. PHOTOCELL FOR AREA LIGHT.
34. UNDERGROUND POWER WIRING AND CONDUIT FROM PUMP CONTROL PANEL TO EXTERNALLY MOUNTED TRANSFORMER.
35. UNDERGROUND MOTOR SENSOR WIRING AND CONDUIT FROM PUMP CONTROL PANEL TO PUMPS.
36. UNDERGROUND POWER AND CONDUIT FROM ATS TO PUMP CONTROL PANEL.
37. UNDERGROUND CONTROL WIRING AND CONDUIT FROM PLC CONTROL PANEL TO LEVEL SENSOR.
38. UNDERGROUND CONDUIT FOR PUMP CABLE.
39. UNDERGROUND CONDUIT FOR FLOAT & LEVEL SENSOR CABLE.



LIFT STATION ELECTRICAL SITE DETAILS
NOT TO SCALE



LIFT STATION SECTION VIEW - ELECTRICAL AND INSTRUMENTATION DETAILS
NOT TO SCALE



VENTED TERMINAL BOX KEYED NOTES:

1. 24"x24"x8" RE-ENFORCED CONCRETE BASE FOR WET WELL CONDUIT ENTRIES TO VENTED WIRE WAY.
2. NEMA4X STAINLESS STEEL ENCLOSURE. 30"x24"x12". THIS LAYOUT IS SAME FOR BOTH MOTOR VENTED BOX AND INSTRUMENT VENTED BOX.
3. 30"x24" EQUIPMENT PANEL.
4. TERMINATION BLOCKS: 1 SET PER BOX FOR WIRE ENTRY FROM WET WELL AND 1 SET FOR WIRE DEPARTURE TO PUMP CONTROL PANEL.
•MOTOR VENT BOX: MOTOR LEADS/SEAL FAIL/OVERTEMP
•I&C VENT BOX: FLOAT SWITCHES/LEVEL TRANSMITTER
5. GROUND TERMINAL BLOCK.
6. PHENOLIC IDENTIFICATION NAMEPLATE. BLACK LETTERING ON WHITE.
7. VOLTAGE RATING ON BOX.
8. STAINLESS STEEL WIRE TROUGH SIMILAR TO HAMMOND 1487E48SS. CUT-IN OPENING ON TROUGH DOOR TO APPROXIMATE DIMENSIONS SHOWN. ALL CUT EDGES TO BE CLEAR OF BURRS AND SHARP EDGES.
9. STAINLESS STEEL GRATE. .75" TO 1" HOLE 13GA. MINIMUM. WELDED AND FINISHED TO INSIDE OF TROUGH DOOR CUT-OUT.
10. SEAL-OFF. (SIZED PER WIRE REQUIREMENTS)
11. WIRE PROTECTION BUSHING.
12. RIGID ALUMINUM CONDUIT. (SIZED FOR WIRE REQUIREMENTS).
13. STAINLESS STEEL WEDGE ANCHOR: MINIMUM 3/8" X 3" MINIMUM.
14. RIGID ALUMINUM COUPLER (SIZED PER WIRE REQUIREMENTS)
15. PVC CONDUIT.
16. GALVANIZED SWEEP CONTINUES ALL THE WAY INTO STAINLESS STEEL WIRE TROUGH.
17. GALVANIZED COUPLER.

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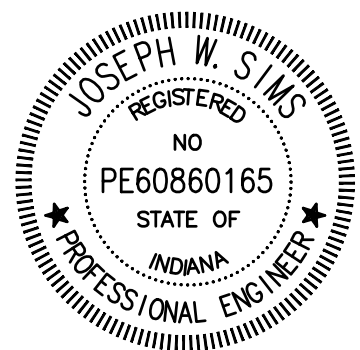
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Date: 09/08/2023



Joseph W. Sims

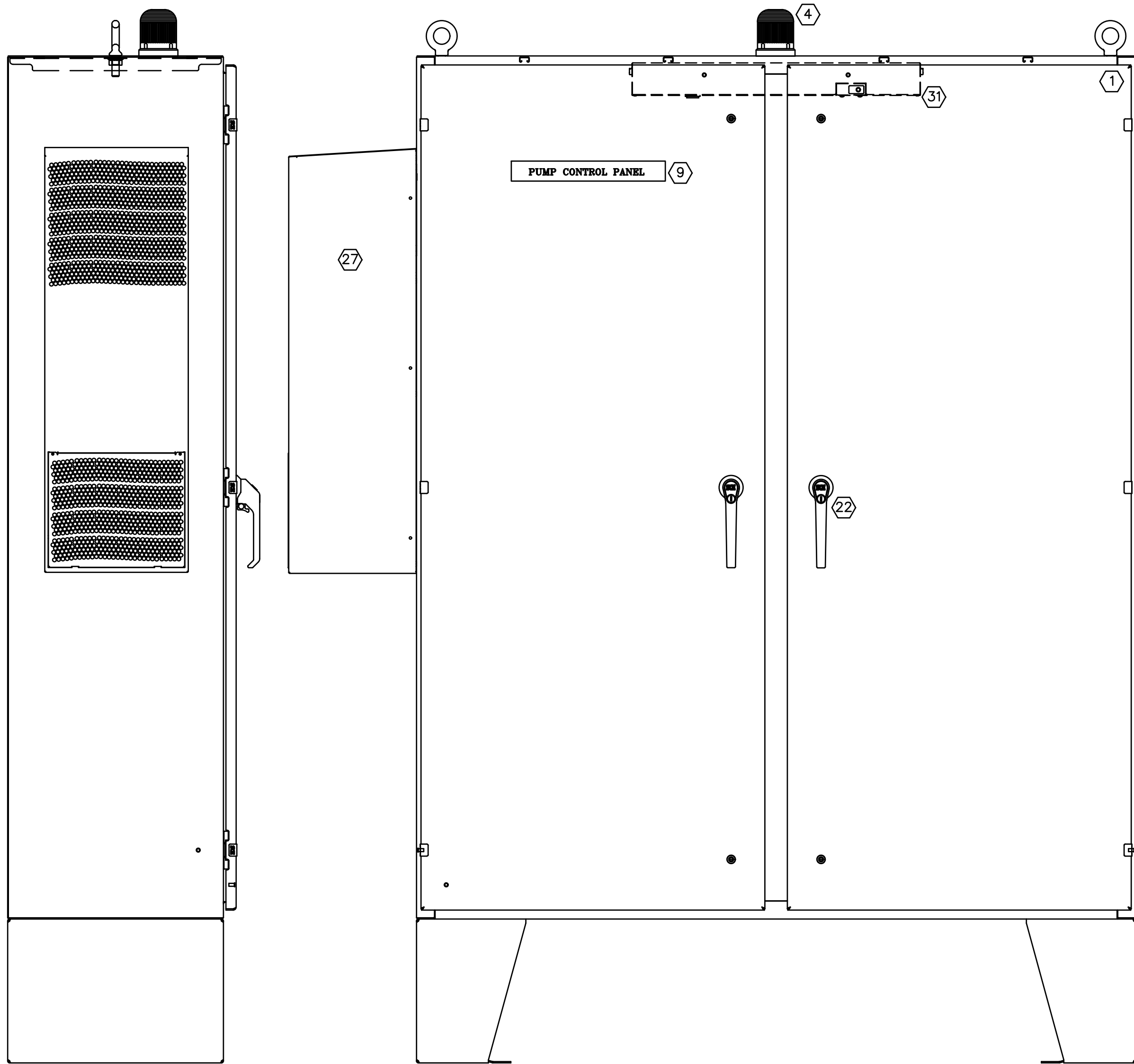
NOTE:

- THE CONTRACTOR/PANEL FABRICATOR SHALL BE RESPONSIBLE FOR THE FINAL SELECTION OF COMPONENTS, LAYOUT, FABRICATION, WIRING AND TESTING; ALL SUBJECT TO SHOP DRAWING REVIEW. THESE DETAILS ARE INTENDED TO INDICATE SCOPE OF WORK, QUALITY REQUIREMENTS, AND EXPECTATIONS.
- SAGINAW CONTROL AND ENGINEERING (SCE): ENCLOSURE, EQUIPMENT PANEL AND DEAD FRONT SWING PANEL SHOWN FOR REFERENCE.

ELECTRICAL KEYED NOTES:

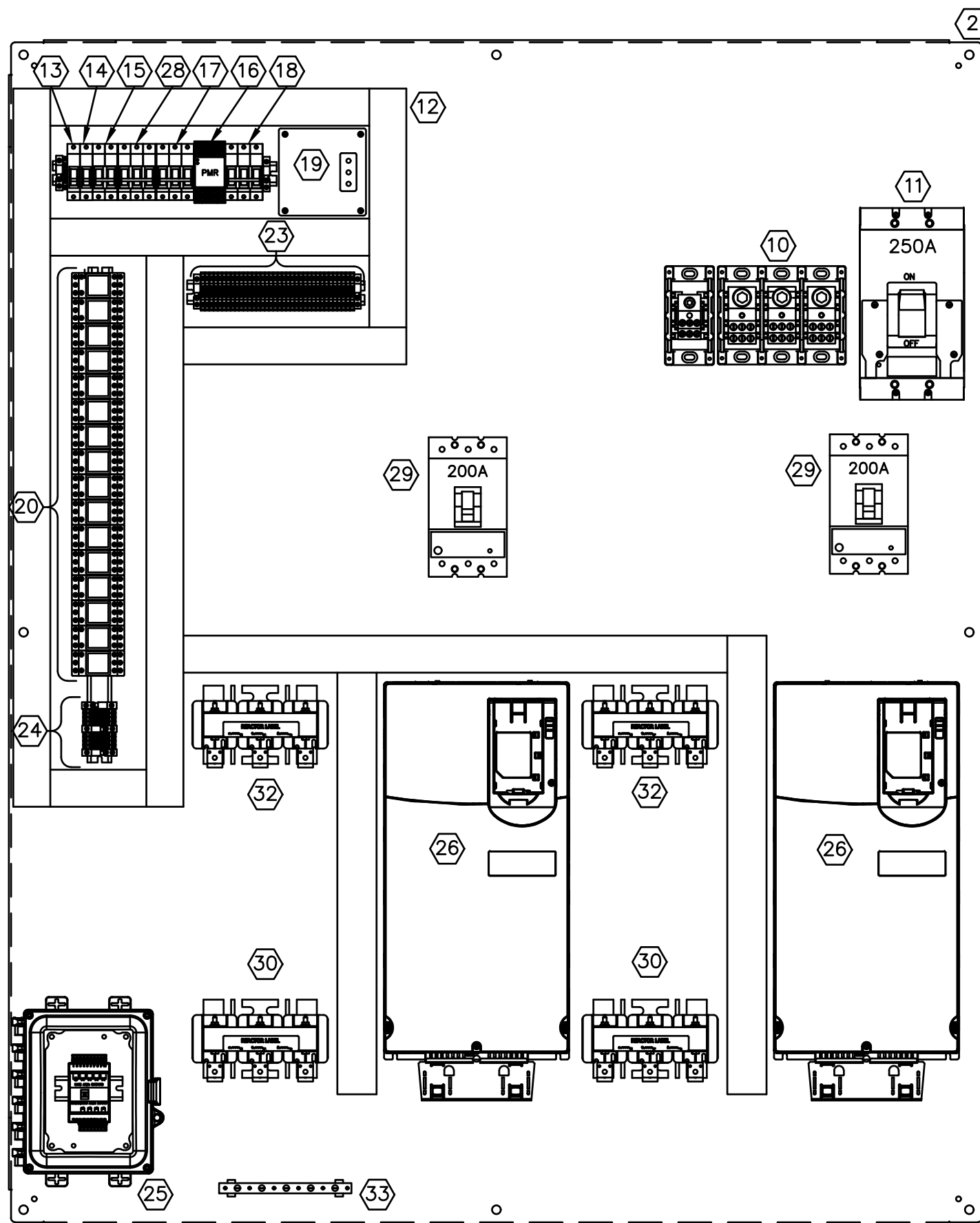
1. NEMA 4X STAINLESS STEEL ENCLOSURE, 72"x60"x24" MINIMUM.
2. 72"x60" EQUIPMENT PANEL.
3. DEAD FRONT SWING PANELS.
4. ALARM STROBE LIGHT.
5. GREEN PUSH-TO-TEST AND AMBER PUST-TO-TEST PILOT LIGHTS, TYPICAL FOR EACH PUMP. 30.5MM NEMA4X.
6. 3 POSITION HOA SWITCH, TYPICAL FOR EACH PUMP. 30.5MM NEMA4X.
7. MOTOR PROTECTION RELAYS – FLUSH MOUNT. MATCH PUMP MANUFACTURER SPECIFICATIONS. FLYGT MINICAS II SHOWN.
8. 2 POSITION SELECTOR SWITCH FOR PLC OR FLOAT MODE SELECTION.
9. NAME PLATES. WHITE WITH BLACK LETTERS. TYPICAL.
10. THREE PHASE DISTRIBUTION BLOCK.
11. 250A MAIN PANEL CIRCUIT BREAKER.
12. WIRE DUCT – AS REQUIRED.
13. 15A 1P CONTROL POWER CIRCUIT BREAKER.
14. SPARE 1P CIRCUIT BREAKER – 15A.
15. 3 POLE 15A POWER TRANSFORMER CIRCUIT BREAKER.
16. PHASE MONITOR RELAY.
17. 3 PHASE MONITOR RELAY CIRCUIT BREAKER.
18. 3 PHASE SURGE PROTECTOR DEVICE (SPD) CIRCUIT BREAKER.
19. 3 PHASE SPD.
20. CONTROL RELAYS, 120VAC COIL AND 10A MIN. CONTACT RATING. DPDT TYPICAL.
21. RUNTIME HOUR METER. TYPICAL.
22. LOCKABLE HANDLE.
23. FIELD WIRING AND SWING PANEL COMPONENT INTERFACE WIRING TERMINAL BLOCKS.
24. SEAL FAIL MODULE FIELD WIRING TERMINAL BLOCKS.
25. INTRINSICALLY SAFE BARRIER (ISB) BOX WITH 4-CHANNEL DIGITAL ISB FOR FLOAT SWITCHES.
26. 75HP 480V ABB ASC880-01 VFD INVERTER, 110.4A MIN RATING.
27. AIR CONDITIONING UNIT WITH HEATER, SCE-AC3400B460VSS OR SIMILAR. IF OTHER AC UNIT IS SELECTED AND IT DOES NOT INCLUDE INTEGRATED HEATER, A PANEL MOUNT HEATER SHALL BE INCLUDED.
28. 3P CIRCUIT BREAKER FOR AIR CONDITIONING UNIT.
29. 200A MOTOR PROTECTION CIRCUIT BREAKERS.
30. TCI LOAD REACTORS. MATCH WITH MOTOR HP.
31. ENCLOSURE LED LIGHTING.
32. TCI LINE REACTORS IF REQUIRED BY VFD MANUFACTURER.

33. EARTH GROUND TERMINAL BLOCK.

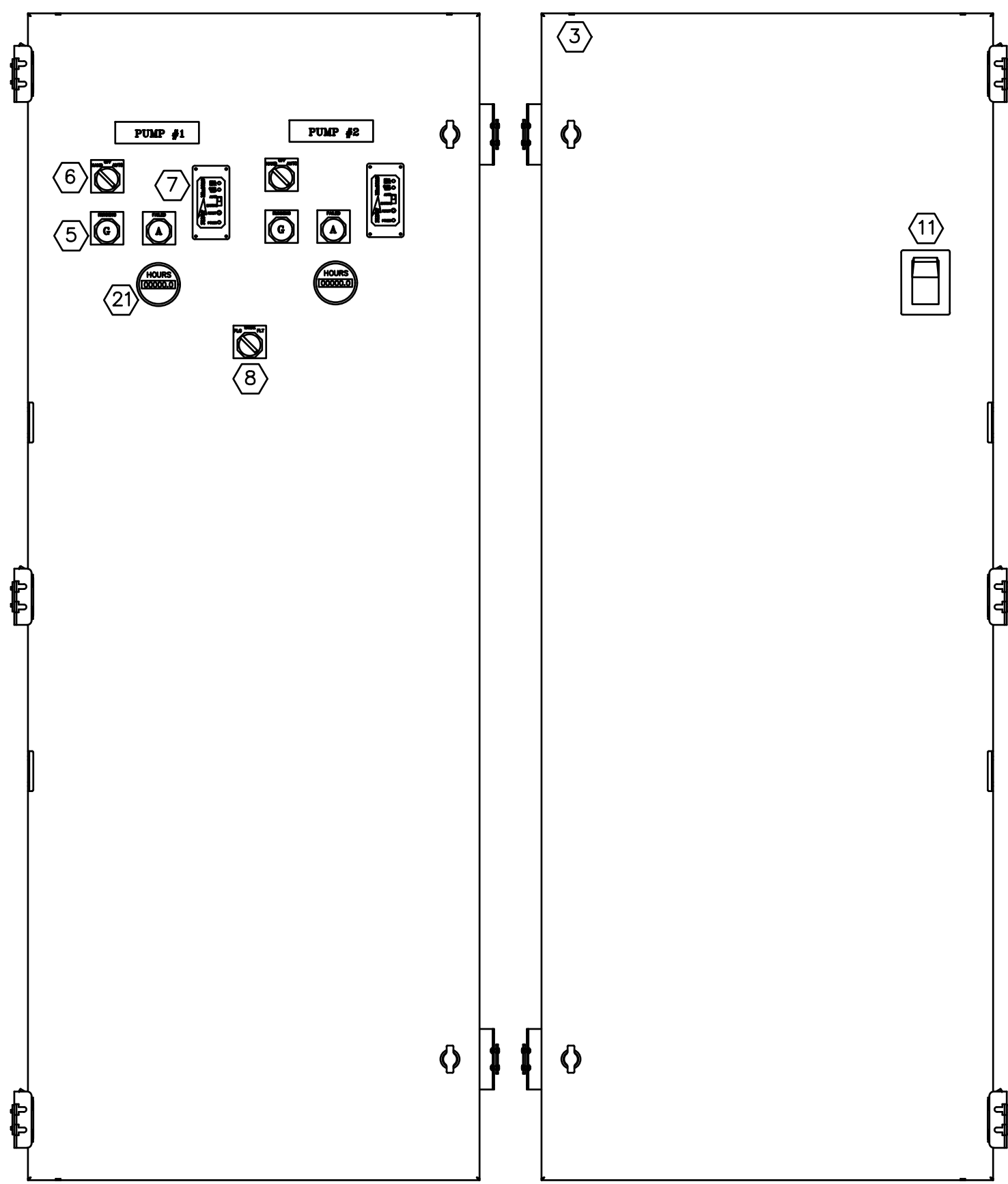


PUMP CONTROL
PANEL SIDE VIEW

PUMP CONTROL PANEL OUTER DOOR VIEW



PUMP CONTROL PANEL EQUIPMENT PANEL VIEW



PUMP CONTROL PANEL SWING DOOR VIEW

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SDA PROJECT NUMBER: 2021143

RQAW
INTENTIONAL INNOVATION

BIDDING DRAWINGS
NINESTAR CONNECT
CR 200 W SEWER

#	Revision	Date
1	ADDENDUM #1	10-06-23

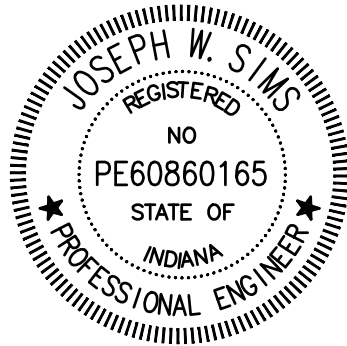
Project #: 21-400-357-1

Designed By: WRK/JAK

Drawn By: JLK

Checked By: JWS

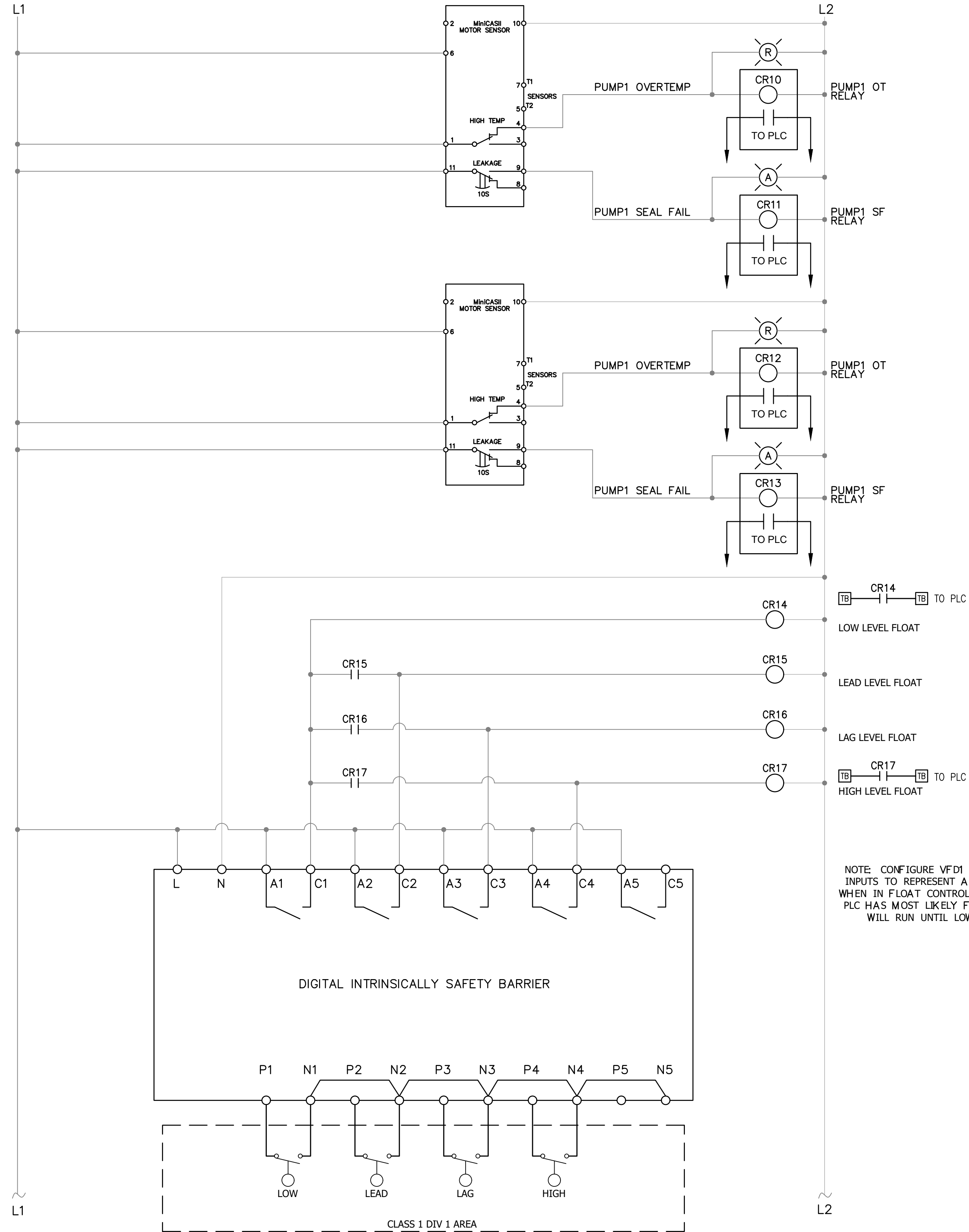
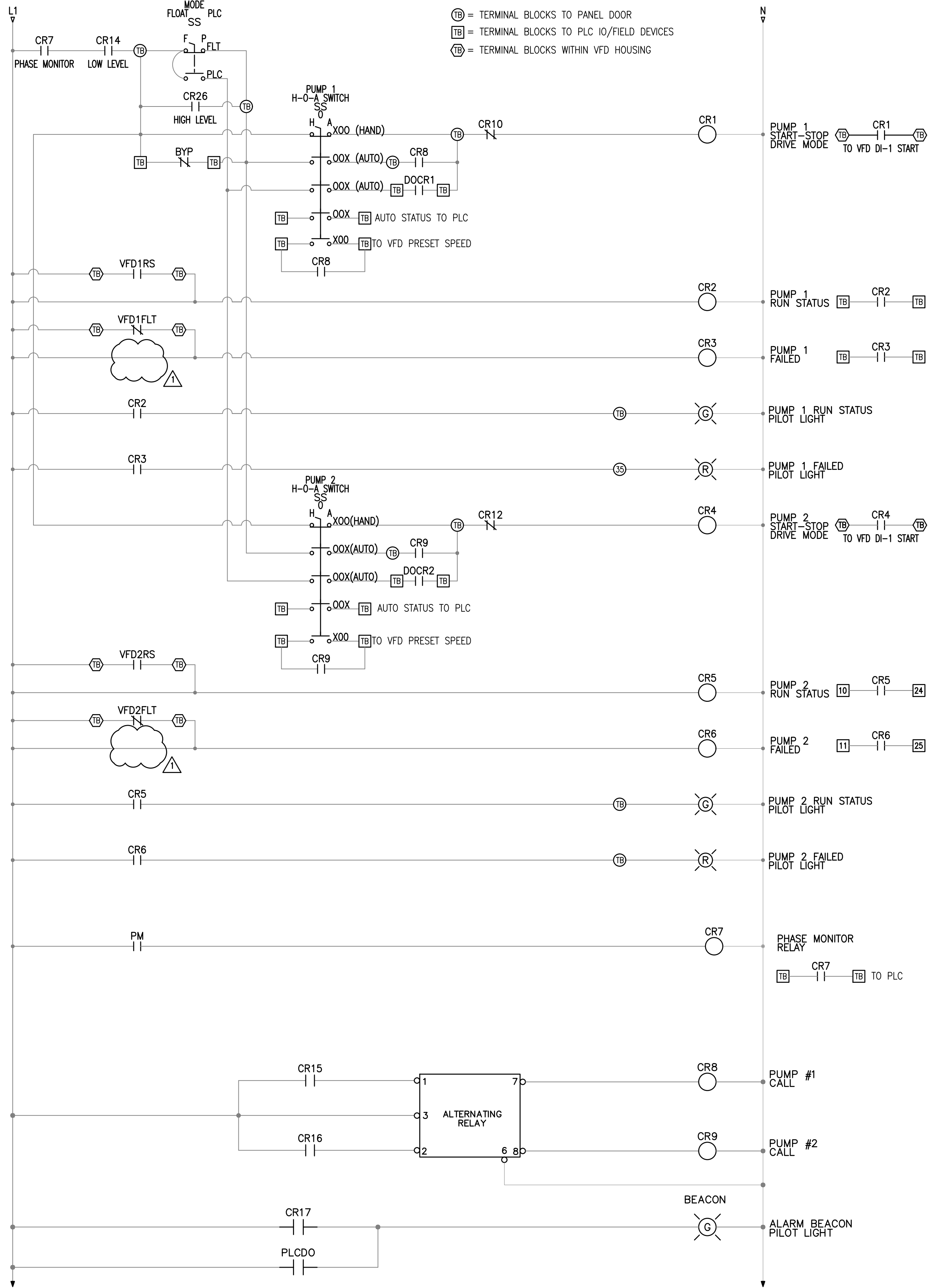
Date: 09/08/2023



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CR300 PUMP CONTROL
PANEL LAYOUT DETAILS

E303



NOTE:
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BIDDING DRAWINGS

NINESTAR CONNECT

CR 200 W SEWER

#	Revision	Date
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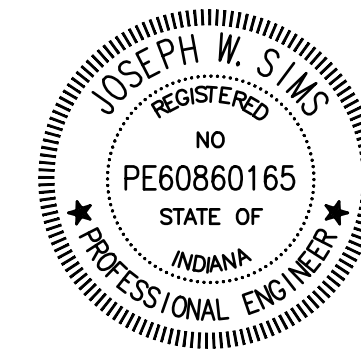
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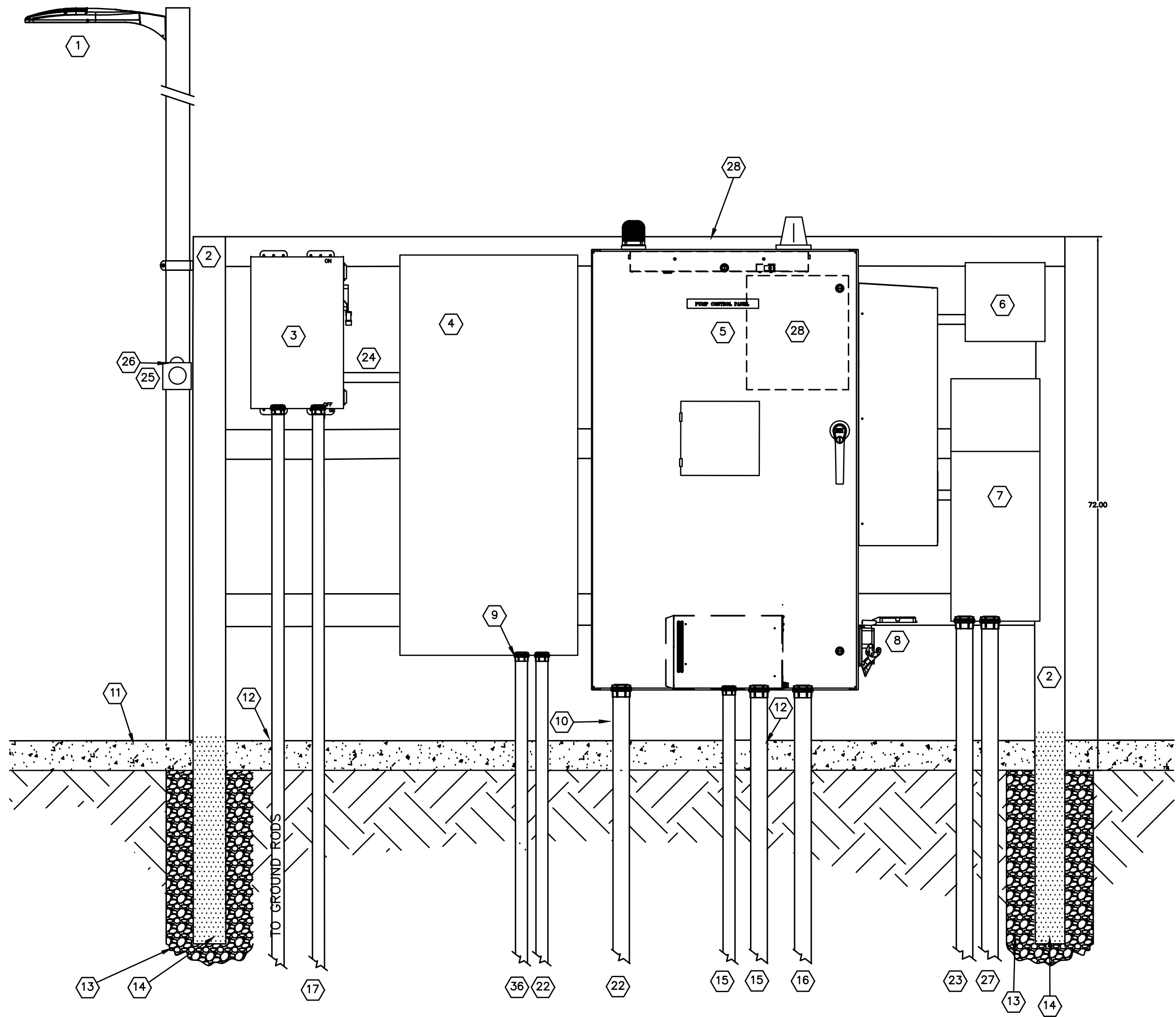


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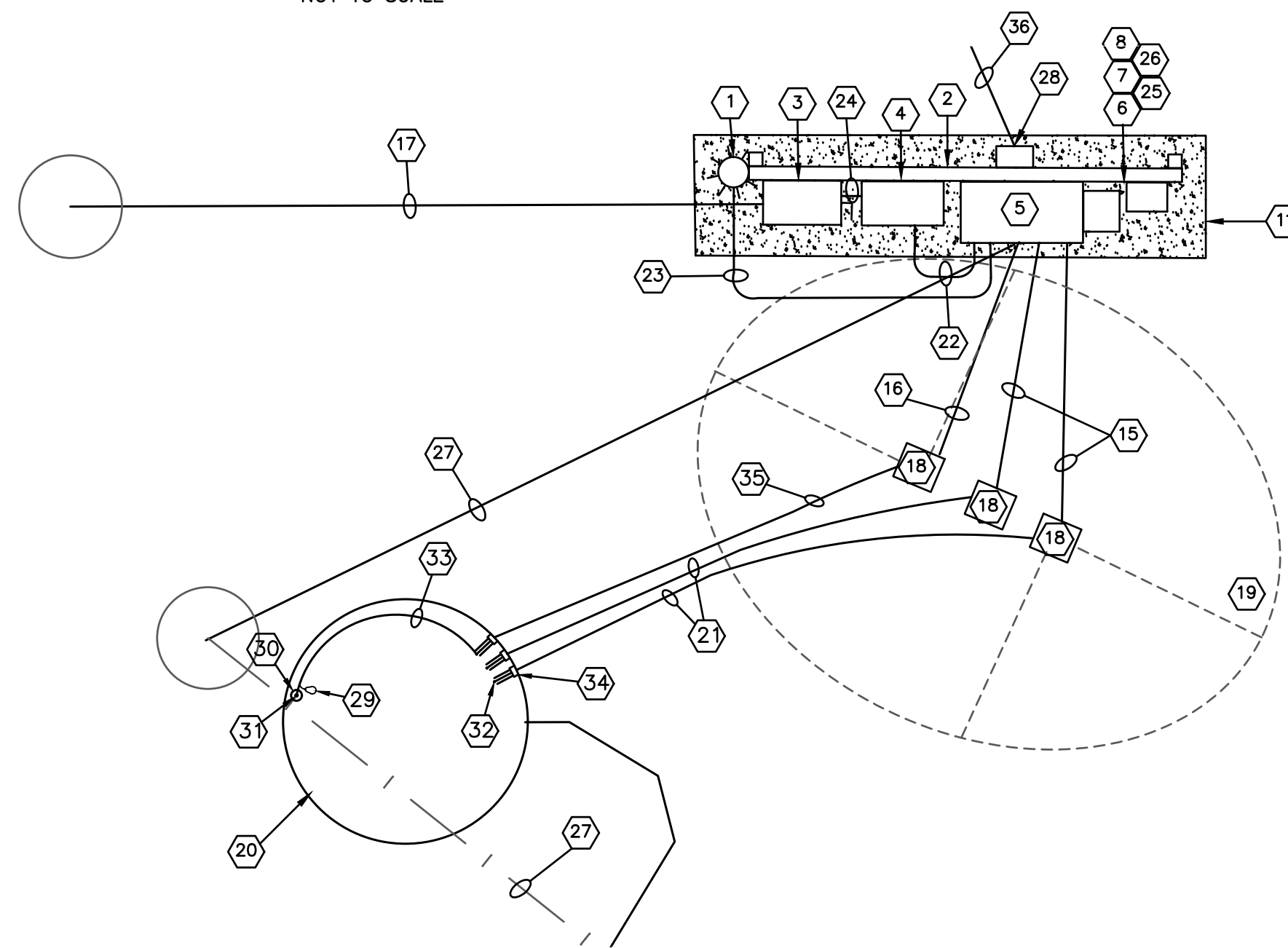
CR300 PUMP CONTROL
PANEL WIRING DIAGRAM

E305

PRINT DATE: 10/6/23
PLOT SCALE: 1:186.9116
EDIT DATE: 10/5/23 - 2:16 PM
EDITED BY: CORY GRAVES
DRAWING FILE: Z:\PROJECTS\2021\2021143 NINESTAR CR 200 W SEWER\13 WORKING DRAWING FILES\400 SUGAR CREEK LIFT STATION ELECTRICAL DETAILS.DWG



LIFT STATION SECTION VIEW - ELECTRICAL AND INSTRUMENTATION DETAILS
NOT TO SCALE



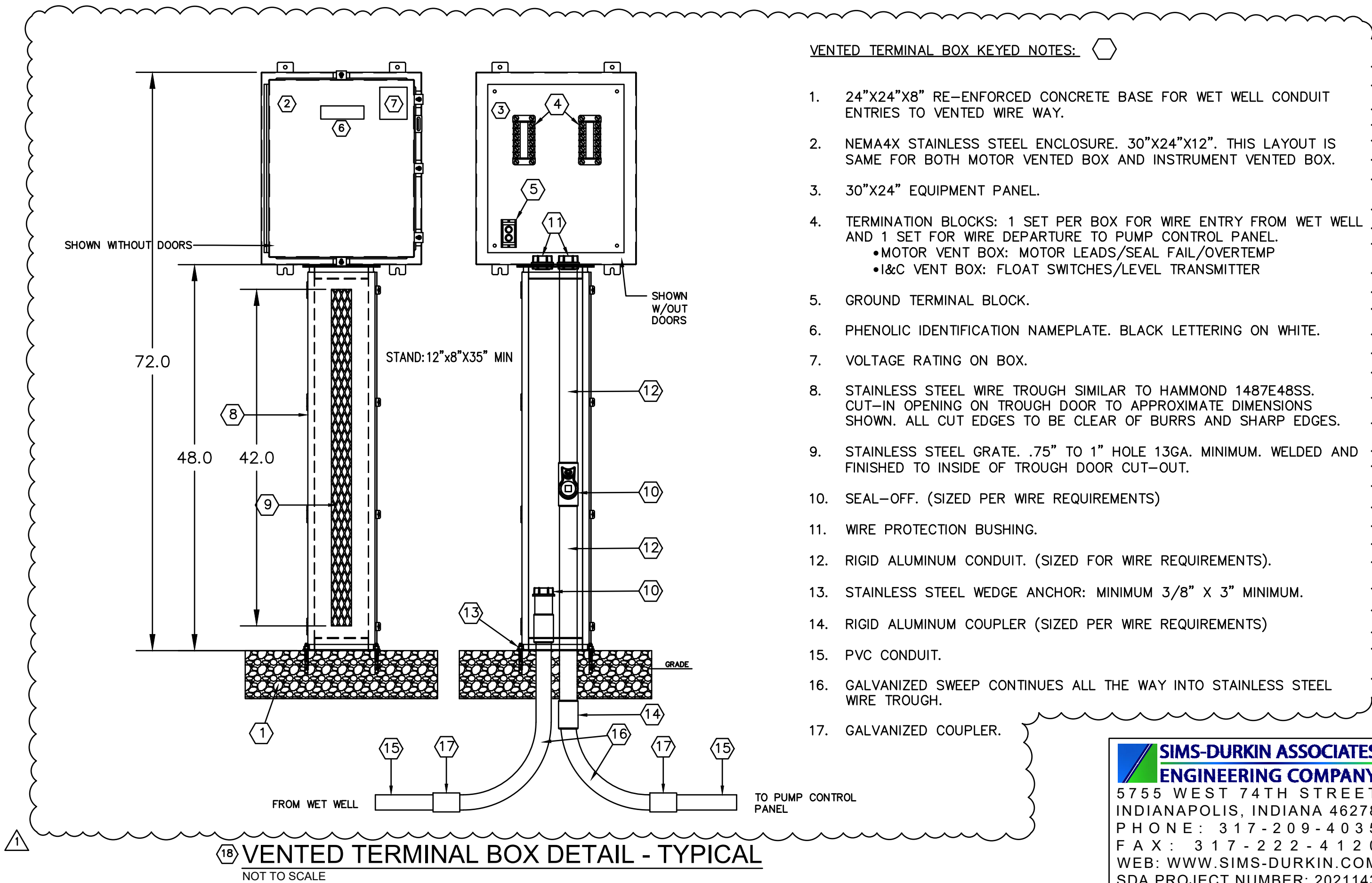
LIFT STATION ELECTRICAL SITE DETAILS
NOT TO SCALE

GENERAL ELECTRICAL NOTES:

- SEE ONE LINE DIAGRAM FOR ADDITIONAL DETAILS AND REQUIREMENTS.
- PROVIDE LINK SEAL WITH STAINLESS HARDWARE FOR ALL CONDUIT PENETRATIONS INTO LIFT STATION WET WELL.
- PROVIDE STAINLESS STEEL HARDWARE FOR ALL EQUIPMENT INSTALLED IN WET WELL; THIS INCLUDES BUT NOT LIMITED TO KELLEM'S CABLE GRIPS, CABLE RACKS, MOUNTING BRACKETS, BOLTS AND NUTS.
- WET WELL CLASSIFICATION IS CLASSIFIED CLASS 1, DIVISION 1, GROUP D. ALL WIRING SHALL COMPLY.
- ALL BELOW GRADE CONDUIT SHALL BE GALVANIZED RIGID STEEL. ALL ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM; INCLUDING TRANSITION TO ABOVE GRADE. COAT ALL RIGID ALUMINUM CONDUITS WHERE IN CONTACT WITH EARTH, CONCRETE, WITH OXIDATION RESISTANT COATING OR DISSIMILAR METALS.

ELECTRICAL SITE DETAILS KEYED NOTES:

- STANCHION MOUNTED AREA LIGHT. LED TYPE MOUNTED ON 10' ALUMINUM MAST ON OR NEAR EQUIPMENT RACK. LIGHT FIXTURE SIMILAR TO LITHONIA RSXF1 LED.
- HEAVY DUTY GALVANIZED STEEL EQUIPMENT RACK. ALL RISERS TO HAVE CAPS TO PREVENT WATER PENETRATION.
- STAINLESS STEEL DISCONNECT SWITCH.
- 100A ASCO 7000 ATS W/ DTTs OR EQUIVALENT, 480V, 3PH, 4W, WITH GND, SOLID NEUTRAL.
- NEW DUPLEX PUMP CONTROL PANEL. SEE ONE-LINE SHEET AND PUMP CONTROL PANEL DETAILS DRAWINGS.
- FIBER PATCH PANEL.
- NEW MINI POWER ZONE WITH 5kVA TRANSFORMER IN NEMA 4X SS ENCLOSURE.
- 15A WEATHERPROOF GFCI COURTESY OUTLET WITH IN-USE COVER, BULKHEAD STYLE WITH TRIP BREAKER AND ETHERNET PORT. SIMILAR TO ZP-PGA-32-201
- GASKETED LOCKNUTS FOR PANEL ENTRY AND WIRE TRAY ENTRY. TYPICAL.
- RIGID GALVANIZED STEEL CONDUIT - ABOVE GRADE. TYPICAL.
- 4" HOUSEKEEPING CONCRETE PAD. CHAMFER EDGES.
- RIGID STEEL CONDUIT THROUGH CONCRETE TO WIRE TRAY. TYPICAL.
- 36" DEEP X 16" CONCRETE PEDESTAL BASE.
- ALUMINUM POSTS SHALL HAVE A CORROSION PROTECTIVE COATING.
- UNDERGROUND POWER WIRING AND CONDUIT FROM CONTROL PANEL TO VENTED TERMINAL BOX.
- UNDERGROUND INSTRUMENTATION AND CONTROL WIRING AND CONDUIT FROM CONTROL PANEL TO FLOAT SWITCHES AND LEVEL SENSOR.
- UNDERGROUND SECONDARY SERVICE FEEDER FROM UTILITY TRANSFORMER TO MAIN SERVICE DISCONNECT.
- VENTED TERMINAL BOXES (3). SEE DETAIL THIS SHEET.
- MAINTAIN MINIMUM 5' DISTANCE FROM ALL VENTED OPENINGS.
- EXISTING 6' WET WELL.
- UNDERGROUND CONDUIT FOR PUMP CABLE.
- UNDERGROUND INSTRUMENTATION AND CONTROL WIRING AND CONDUIT FROM ATS TO PUMP CONTROL PANEL.
- UNDERGROUND POWER WIRING AND CONDUIT FROM POWER ZONE TO STANCHION LIGHTING.
- WIRING AND CONDUIT FROM MAIN SERVICE DISCONNECT TO ATS.
- WEATHERPROOF COVERED HOA LIGHT SWITCH FOR AREA LIGHT.
- PHOTOCELL FOR AREA LIGHT
- 120V CIRCUIT TO UTILITY SHED. UNDERGROUND CONDUIT FROM POWER ZONE TO EXISTING POLE. OVERHEAD LINE FROM POLE TO UTILITY SHED.
- TRITON+ FLOW MONITORING SYSTEM XIO CONTROL PANEL MOUNTED TO BACK OF EQUIPMENT RACK.
- DIRECT ACTING, NON-MERCURY FLOAT SWITCHES ENCASED IN AN ELLIPSE-SHAPED MOLDED PLASTIC FLOAT, CONNECTED TO A FACTORY INSTALLED CABLE. THE FLOATS SHALL BE SUSPENDED BY THEIR CABLES BY MEANS OF A WEIGHT KIT, AS INDICATED IN THE EQUIPMENT DATA.
- 6' SCH 80 PVC STILLING WELL FOR SUBMERSIBLE LEVEL TRANSMITTER. COORDINATE BEST LOCATION DURING CONSTRUCTION. STILLING WELL TO HAVE THE LOWER 2' PERFORATED WITH 1/2" HOLES AND VERY BOTTOM CUT AT A 45 DEGREE ANGLE.
- SUBMERSIBLE LEVEL TRANSMITTER.
- UTILIZE KELLUM GRIPS FOR EACH CABLE SUSPENDED FROM BOX.
- FLOAT SWITCH AND SUBMERSIBLE TRANSMITTER MANUFACTURER CABLES. ALL CABLES TO BE LONG ENOUGH TO REACH VENTED TERMINAL BOXES. NO SPLICES ALLOWED.
- PROVIDE LINK SEAL FOR EACH WET WELL PENETRATION.
- UNDERGROUND CONDUIT FOR FLOAT & LEVEL SENSOR CABLE.
- UNDERGROUND WIRING AND CONDUIT TO TRITON+ FLOW METER LOCATED NORTH OF CONTROL PANEL.



VENTED TERMINAL BOX DETAIL - TYPICAL
NOT TO SCALE

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SDA PROJECT NUMBER: 2021143

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1	ADDENDUM #1	10-06-23

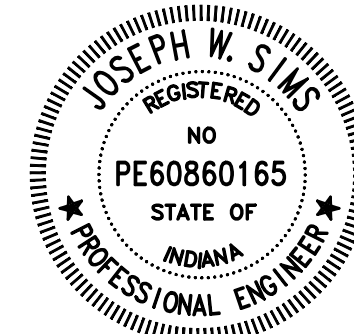
Project #: 21-400-357-1

Designed By: WRK /JAK

Drawn By: JLK

Checked By: JWS

Date: 09/08/2023

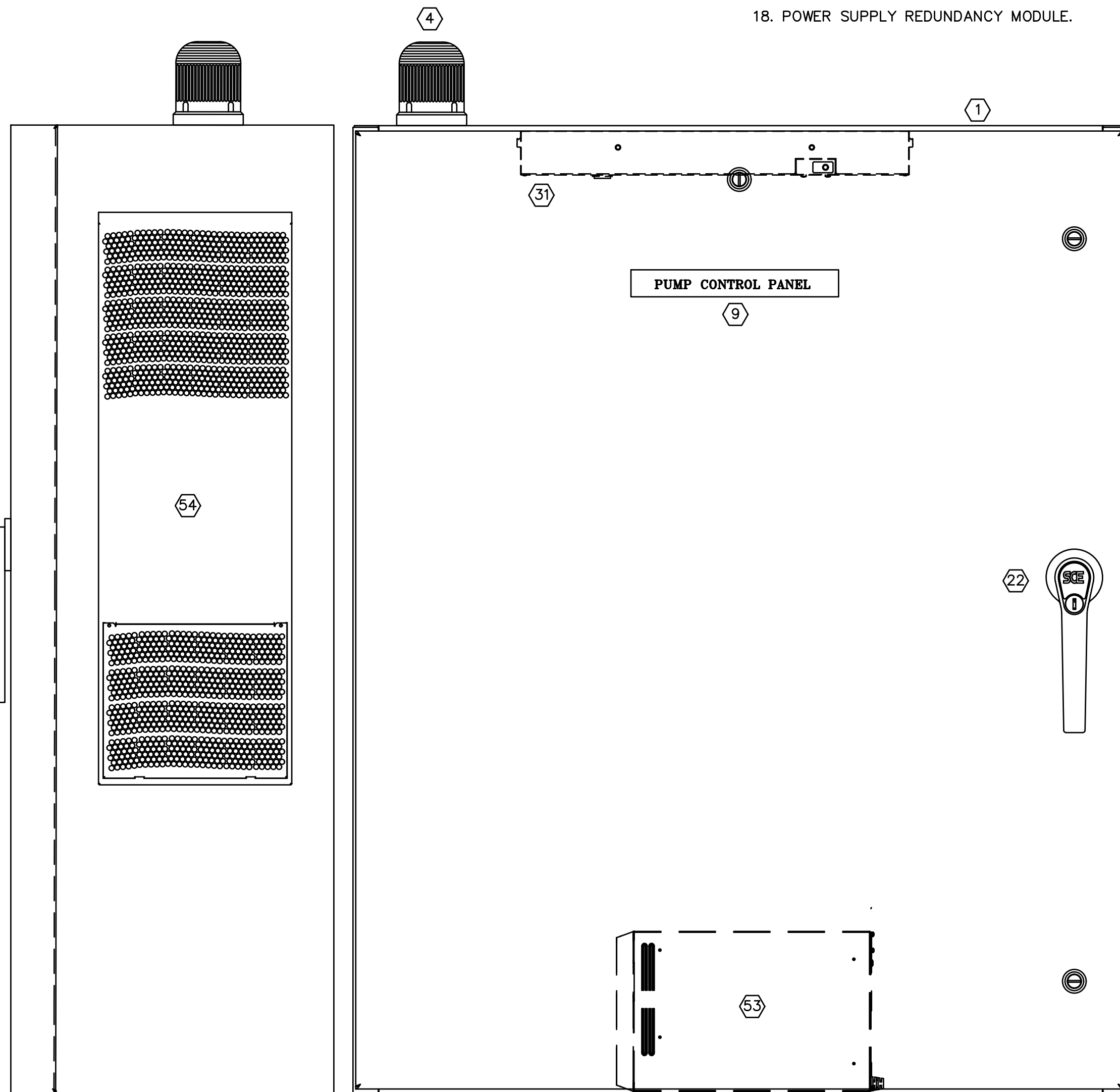


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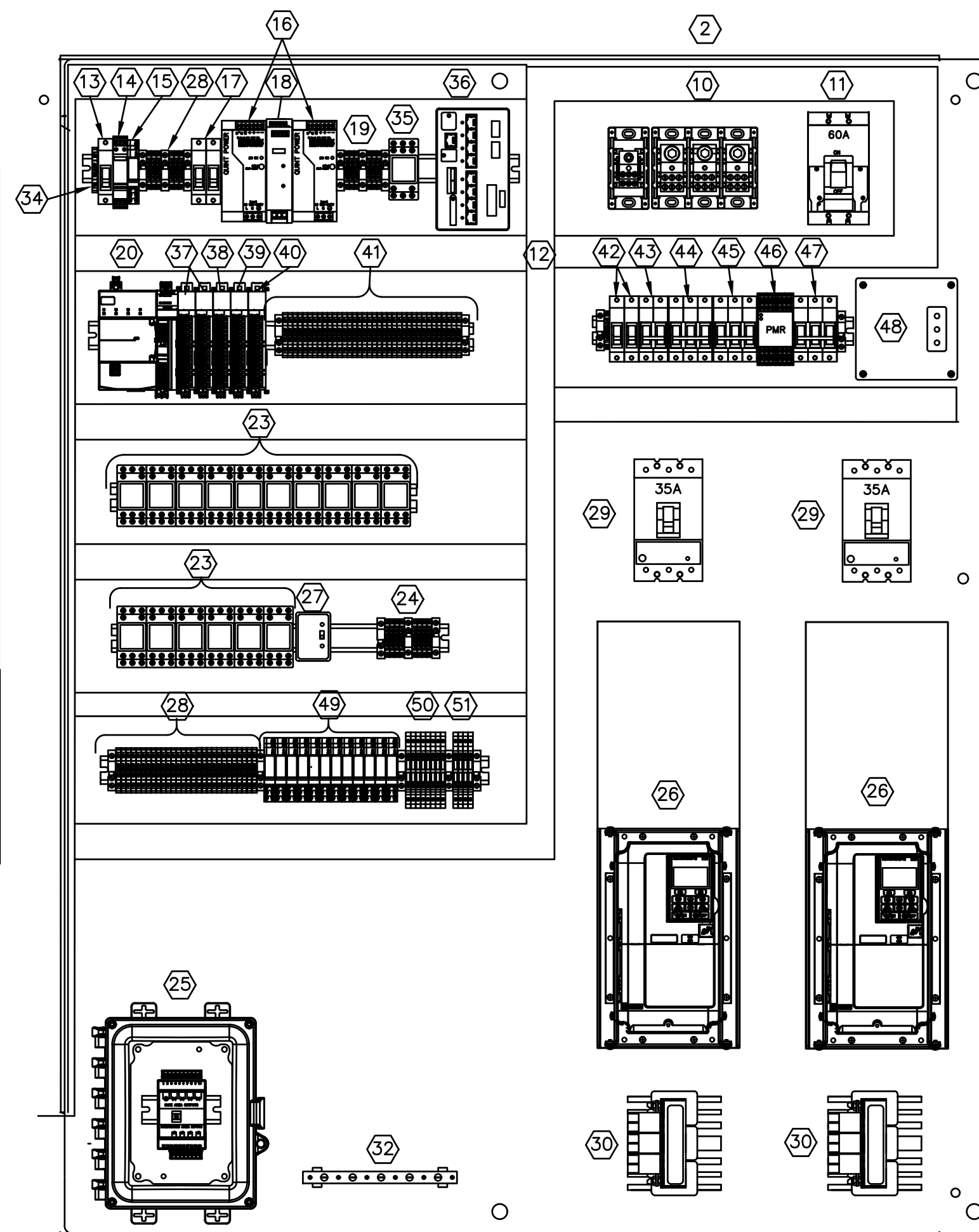
1. NEMA 4X STAINLESS STEEL ENCLOSURE, 48"X36"X15" MINIMUM.
2. 48"X36" EQUIPMENT PANEL.
3. DEAD FRONT SWING PANEL.
4. ALARM STROBE LIGHT.
5. GREEN PUSH-TO-TEST AND AMBER PUST-TO-TEST PILOT LIGHTS, TYPICAL FOR EACH PUMP. 30.5MM NEMA4X.
6. 3 POSITION HOA SWITCH, TYPICAL FOR EACH PUMP. 30.5MM NEMA4X.
7. MOTOR PROTECTION RELAYS – FLUSH MOUNT. MATCH PUMP MANUFACTURER SPECIFICATIONS. FLYGT MINICAS II SHOWN.
8. 2 POSITION SELECTOR SWITCH FOR PLC OR FLOAT MODE SELECTION.
9. NAME PLATES. WHITE WITH BLACK LETTERS. TYPICAL.
10. THREE PHASE DISTRIBUTION BLOCK.
11. 60A MAIN PANEL CIRCUIT BREAKER.
12. WIRE DUCT – AS REQUIRED.
13. 15A 1P CONTROL POWER CIRCUIT BREAKER.
14. PHOENIX CONTACT PLUGTRAB SURGE PROTECTION DEVICE.
15. POWER FAIL RELAY. RELAY TO REPORT TO SCADA UPON LOSS OF POWER.
16. 5A REDUNDANT 24VDC POWER SUPPLY.
17. 3A POWER SUPPLY CIRCUIT BREAKERS.
18. POWER SUPPLY REDUNDANCY MODULE.

38. COMPACTLOGIX 16 PT DIGITAL OUTPUT MODULE. 5069-0A16
39. COMPACTLOGIX 8 PT ANALOG INPUT MODULE. 5069-IF8.
40. COMPACTLOGIX 4 PT ANALOG OUTPUT MODULE. 5069-OF4.
41. FIELD WIRING AND SWING PANEL COMPONENT INTERFACE WIRING TERMINAL BLOCKS.
42. 'SPARE 1P 15A CIRCUIT BREAKERS.
43. 3 POLE 15A POWER TRANSFORMER CIRCUIT BREAKER.
44. SPARE 3P CIRCUIT BREAKER.
45. 3 PHASE MONITOR RELAY CIRCUIT BREAKER.
46. PHASE MONITOR RELAY.
47. 3 PHASE SURGE PROTECTOR DEVICE (SPD) CIRCUIT BREAKER.
48. 3 PHASE SPD.
49. DIGITAL OUTPUT ISOLATION RELAYS.
50. ANALOG INPUT FIELD TERMINAL BLOCKS.
51. ANALOG OUTPUT FIELD TERMINAL BLOCKS.
52. NOT USED.
53. 1000VA UPS. APC BACK-UPS PRO. PROVIDED BY NINESTAR CONNECT.
54. AIR CONDITIONING UNIT WITH HEATER, SCE-AC3400B460VSS OR SIMILAR. SIZE BASED ON COOLING STUDY. IF OTHER AC UNIT IS SELECTED AND IT DOES NOT INCLUDE INTEGRATED HEATER, A PANEL MOUNT HEATER SHALL BE INCLUDED.

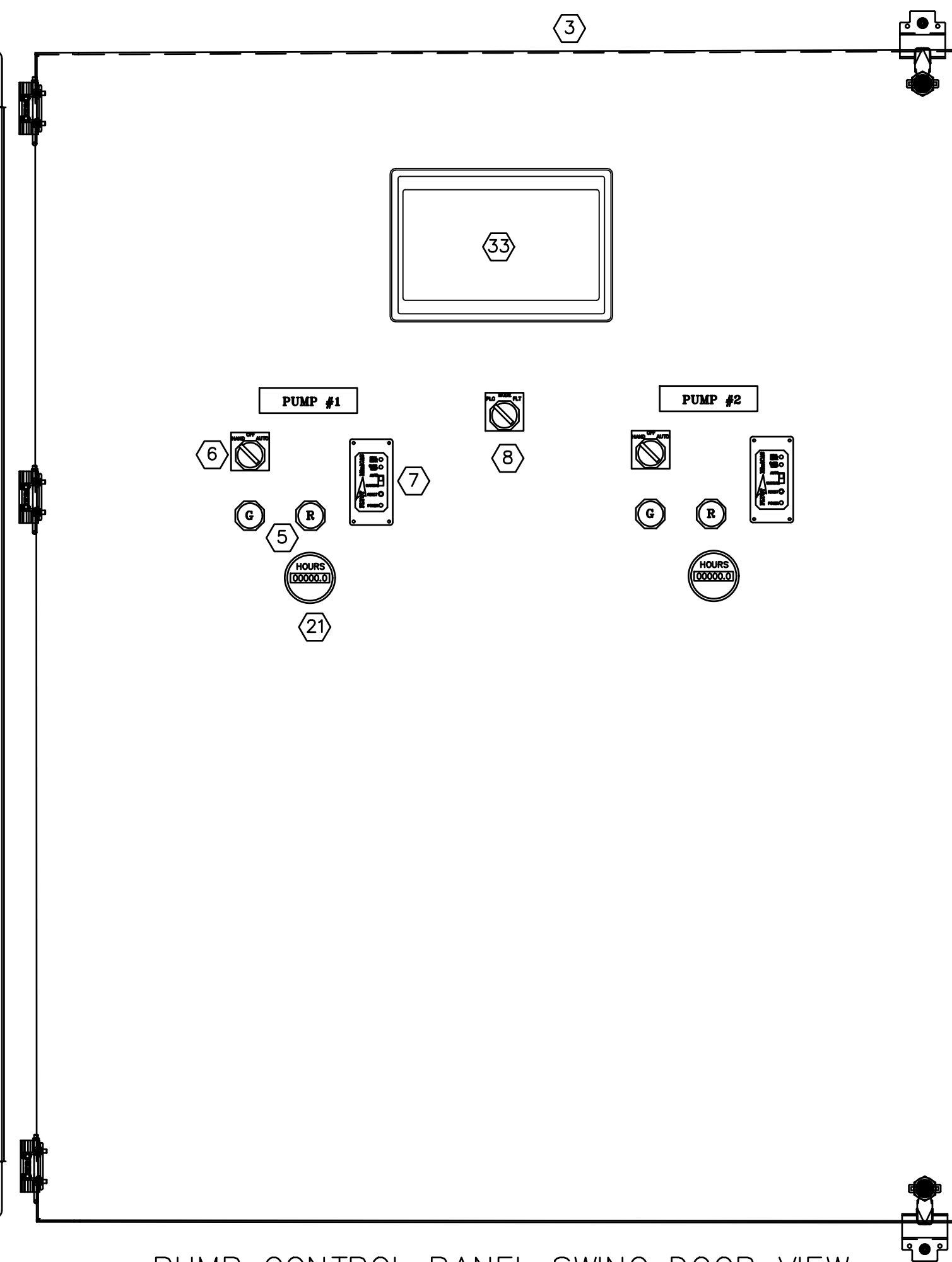


PUMP CONTROL
PANEL SIDE VIEW

PUMP CONTROL PANEL OUTER DOOR VIEW

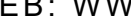


PUMP CONTROL PANEL EQUIPMENT PANEL VIEW



PUMP CONTROL PANEL SWING DOOR VIEW

SUGAR CREEK PUMP CONTROL PANEL LAYOUT DETAILS



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 SDA PROJECT NUMBER: 2021143

PERMIT SET
NINESTAR CONNECT
CR 200 W SEWER

PERMIT SET

GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10-06-23

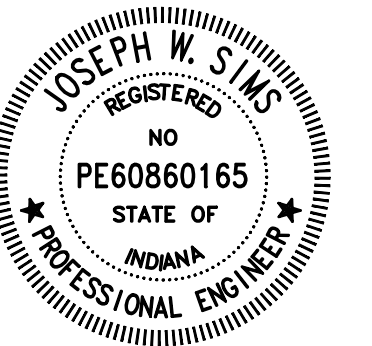
Project #: 21-400-357-1

Designed By: WRK /JAK

Drawn By: JLK

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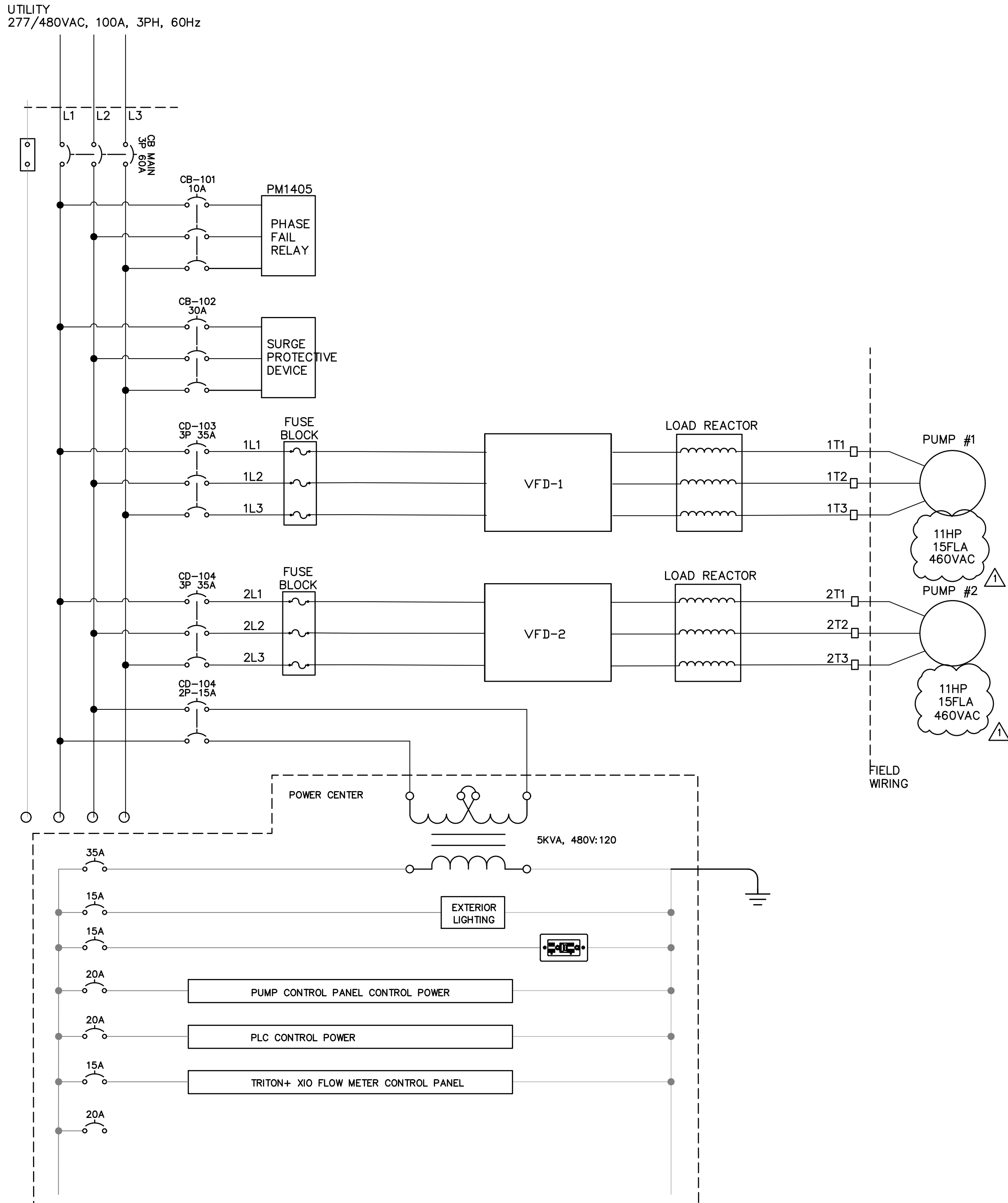
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SUGAR CREEK PUMP CONTROL PANEL LAYOUT DETAILS

E403

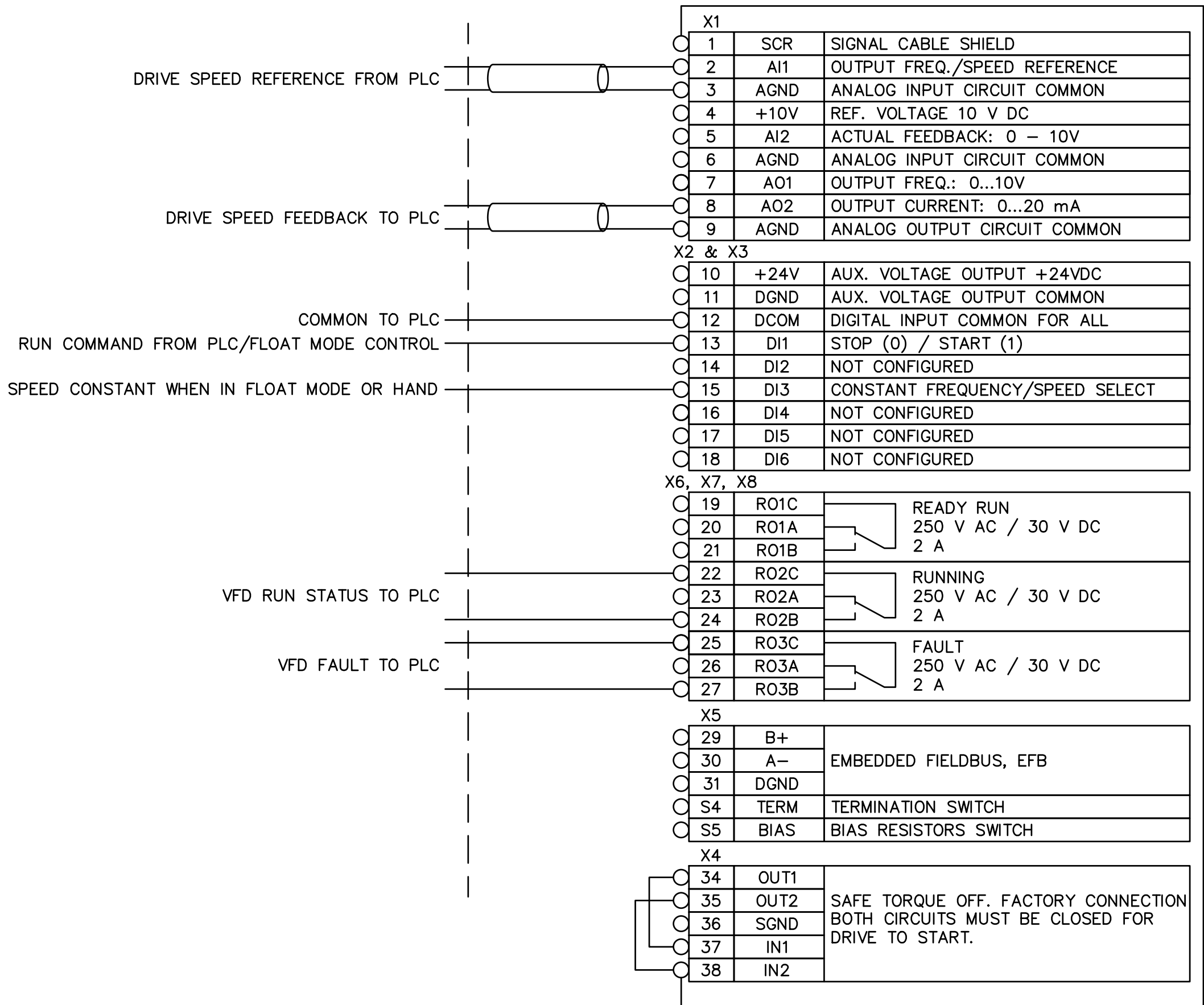
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PLOT SCALE: 1:186,912

PRINT DATE: 10/6/23
PLOT SCALE: 1:1863116
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EDITED BY: CORY GRANES
EDIT DATE: 10/5/23 2:36 PM



VFD GENERAL NOTES:

1. TERMINAL BLOCK ID MAY VARY. CONSULT DRIVE MANUFACTURER LITERATURE FOR ALL TERMINATION REQUIREMENTS.
2. VFD SHALL BE PROGRAMMED TO RUN BASED ON SPEED INPUT IF NORMAL OPERATION DRIVE ENABLE SIGNAL IS RECEIVED FROM PLC CONTROL PANEL.
3. VFD SHALL BE PROGRAMMED TO RUN AT A SET SPEED (INITIALLY SET TO 100%) IF BACKUP OPERATION DRIVE ENABLE SIGNAL IS RECEIVED FROM PLC CONTROL PANEL. THIS SHALL OVERRULE NORMAL OPERATION DRIVE ENABLE SIGNAL.
4. IT SHALL ALSO BE POSSIBLE TO MANUALLY CONTROL VFD SPEED VIA THE VFD KEYPAD ON THE FRONT OF THE ENCLOSURE.



DRIVE WIRING DETAILS (VARIES BY MANUFACTURER - SHOWN FOR REFERENCE ONLY)

PERMIT SET

NINESTAR CONNECT
CR 200 W SEWER

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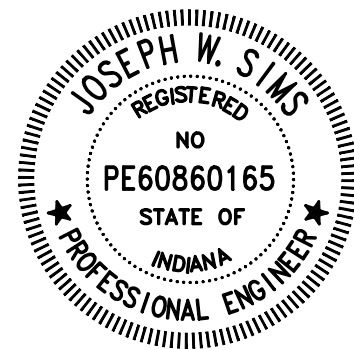
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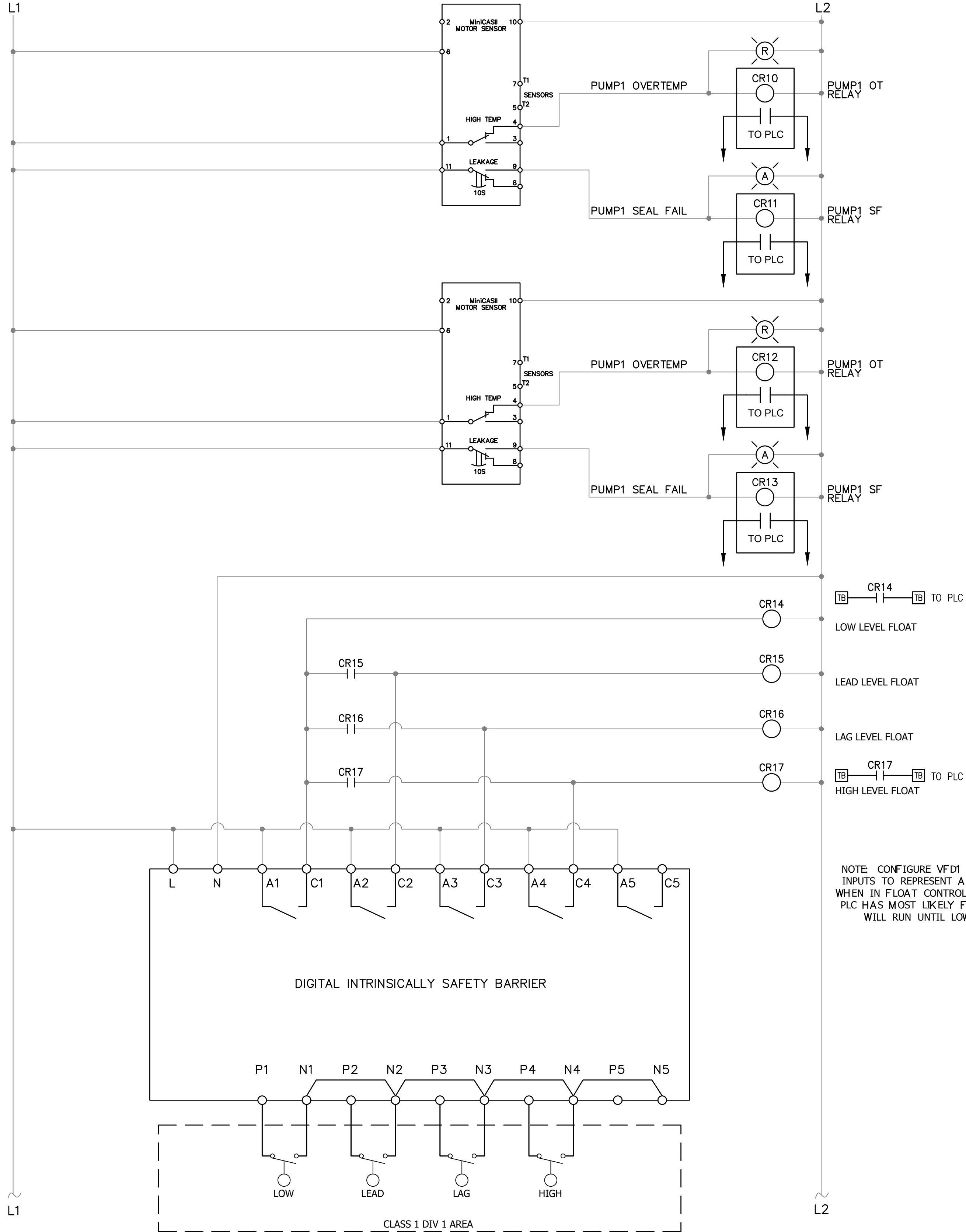
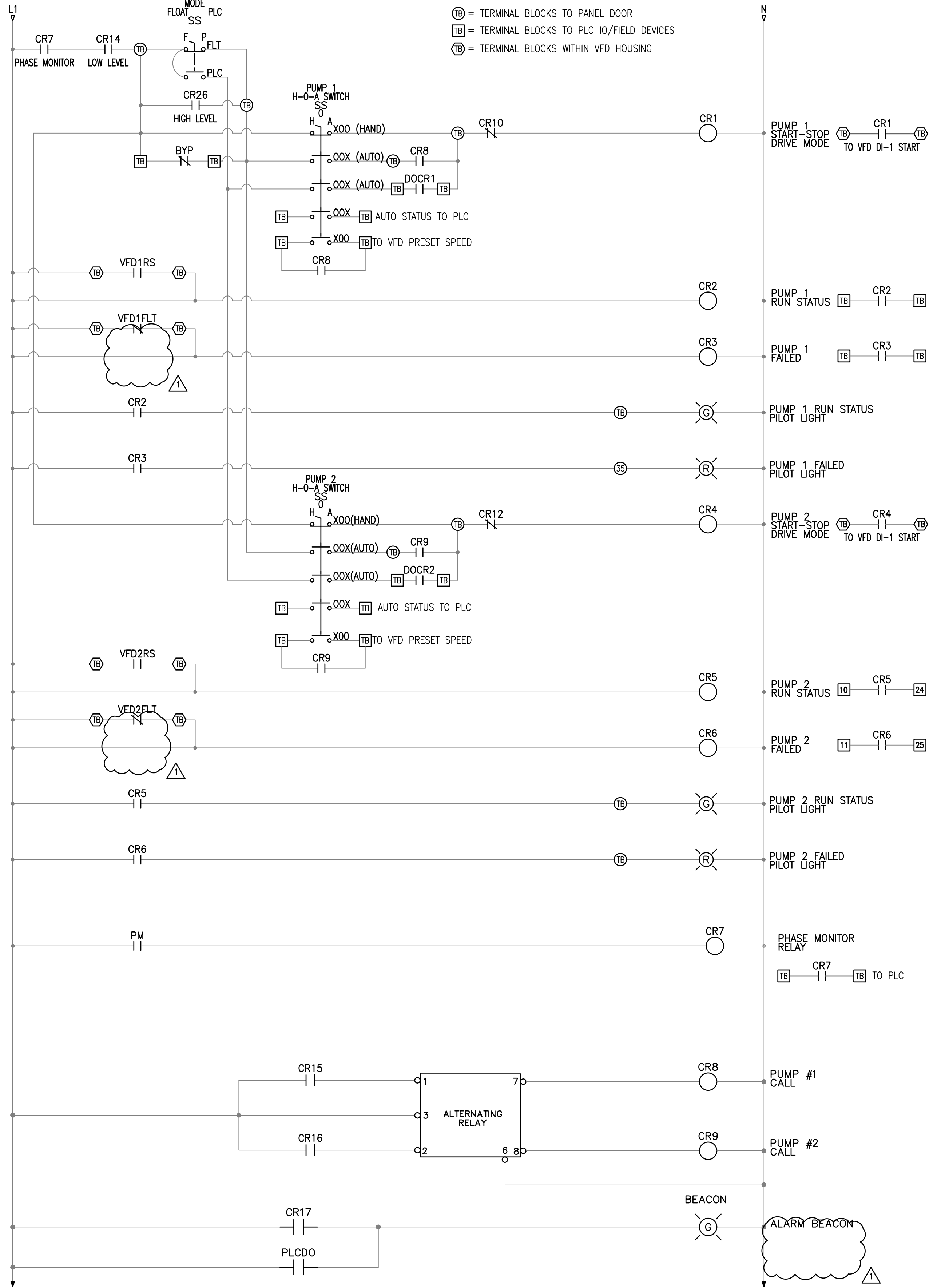


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**SUGAR CREEK PUMP
CONTROL PANEL
WIRING DETAILS**

E404

PRINT DATE: 10/6/23 EDIT DATE: 10/5/23 - 2:36 PM EDITED BY: CORY GRAVES DRAWING FILE: Z:\PROJECTS\2021\2021143 NINESTAR CR 200 W SEWER LIFT STATION\E405 - SUGAR CREEK PUMP CONTROL PANEL WIRING DETAILS CONT.DWG PLOT SCALE: 1:186-9116



NOTE: CONFIGURE VFD1 AND VFD2 DIGITAL INPUTS TO REPRESENT A PRESET RUN SPEED WHEN IN FLOAT CONTROL MODE. THIS MEANS PLC HAS MOST LIKELY FAULTED AND PUMPS WILL RUN UNTIL LOW LEVEL FLOAT.

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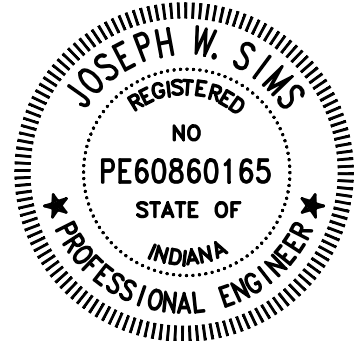
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Drawn By: JLK

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SUGAR CREEK PUMP
CONTROL PANEL WIRING
DETAILS CONT

E405

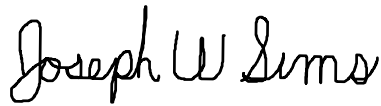
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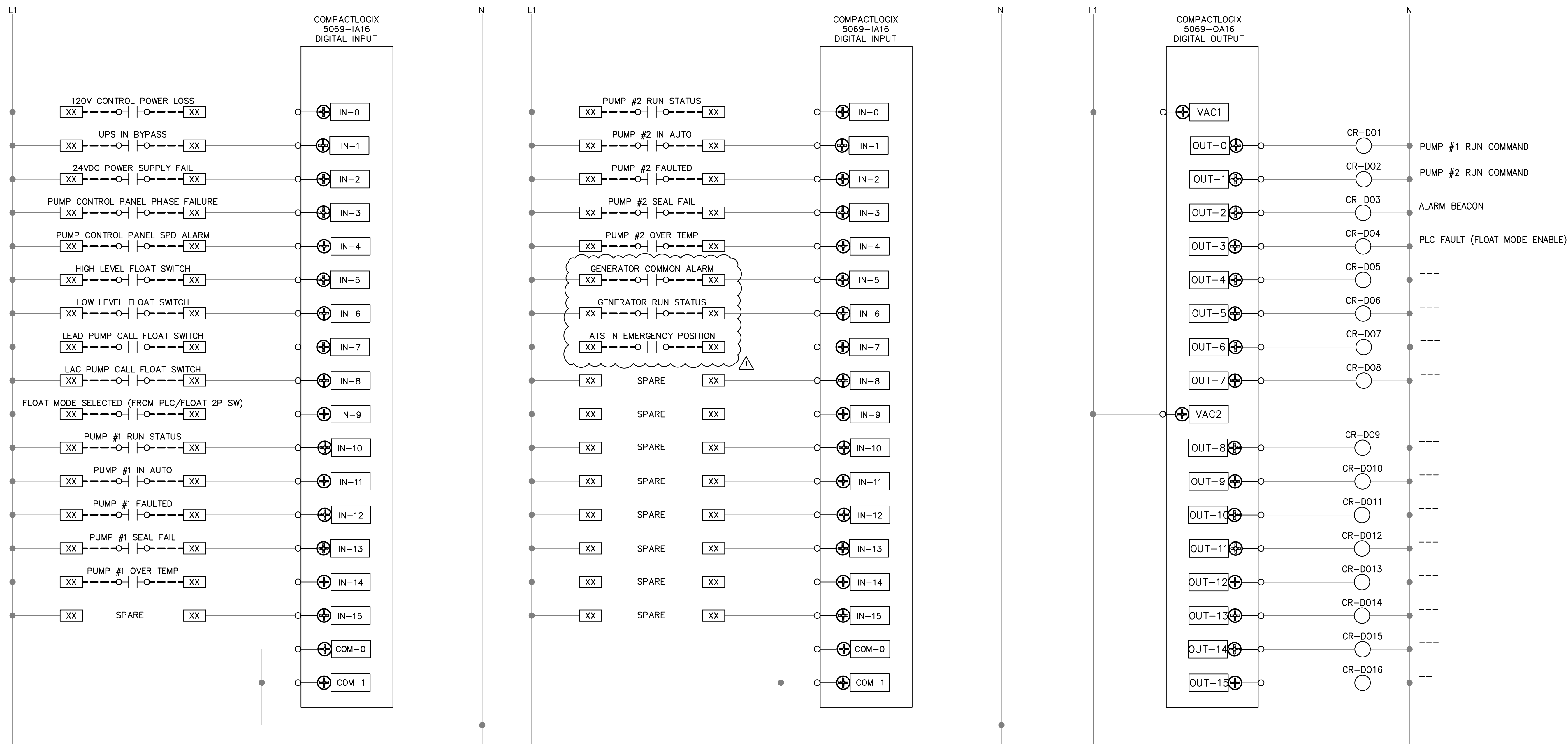
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E406

SUGAR CREEK PUMP CONTROL PANEL WIRING DETAILS CONT

SCALE: NONE



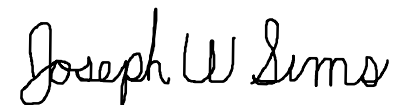
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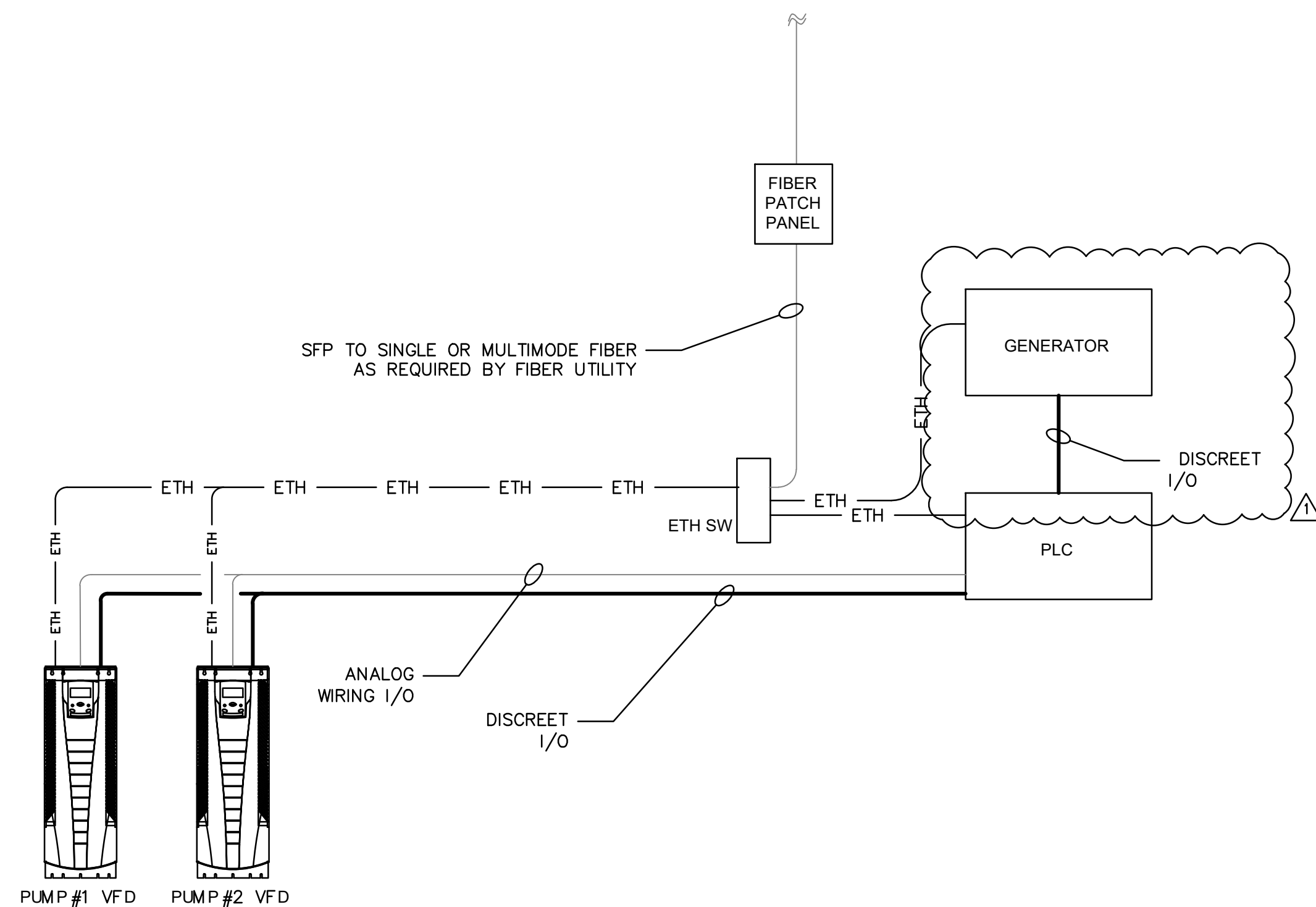
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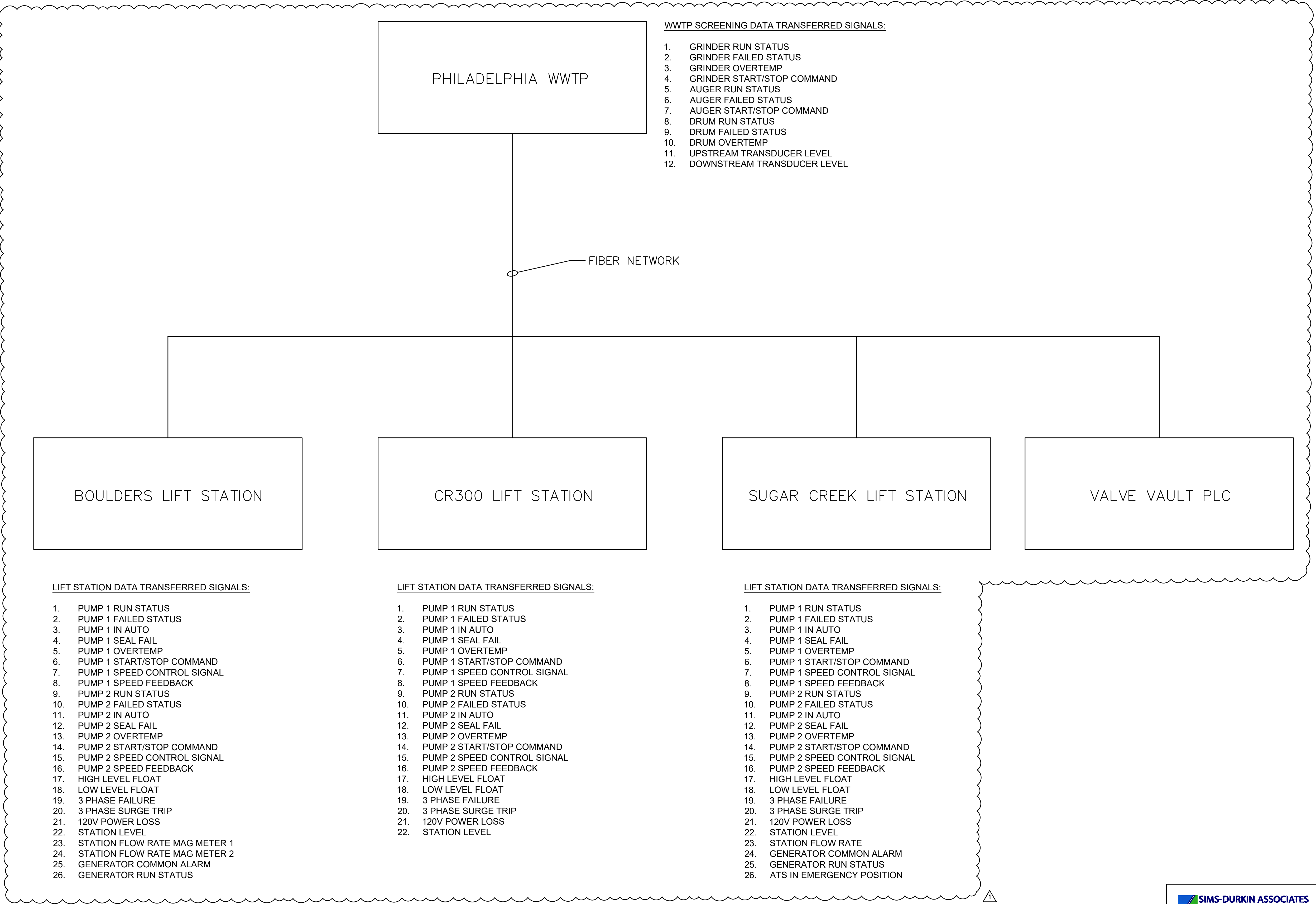
SUGAR CREEK PUMP CONTROL PANEL WIRING DETAILS CONT



GENERAL ELECTRICAL NOTES:

A. THE INCLUDED LIST OF SCREEN, SIGNALS ALERTS, AND ALARMS ARE PROVIDED AS GUIDELINES.

B. INTEGRATORS AND SCADA DEVELOPERS ARE TO COORDINATE FINAL LIST OF SCREENS, SIGNALS, ALARMS, AND ALERTS FROM ALL SITES WITH MANAGERS OF FACILITIES AND WITH OTHER INTEGRATORS TO MAKE SURE ALL RELEVANT SIGNALS ARE INCORPORATED INTO THE NEW INTENDED SCREENS AND NOTIFICATIONS.



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FAX: 317-222-4120
WEB: WWW.SIMS-DURKIN.COM
SDA PROJECT NUMBER: 2021143

#	Revision	Date
1	ADDENDUM #1	10-06-23

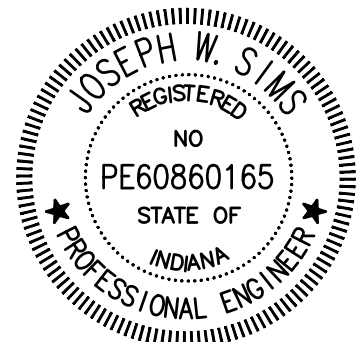
Project #: 21-400-357-1

Designed By: WRK/JAK

Drawn By: CG

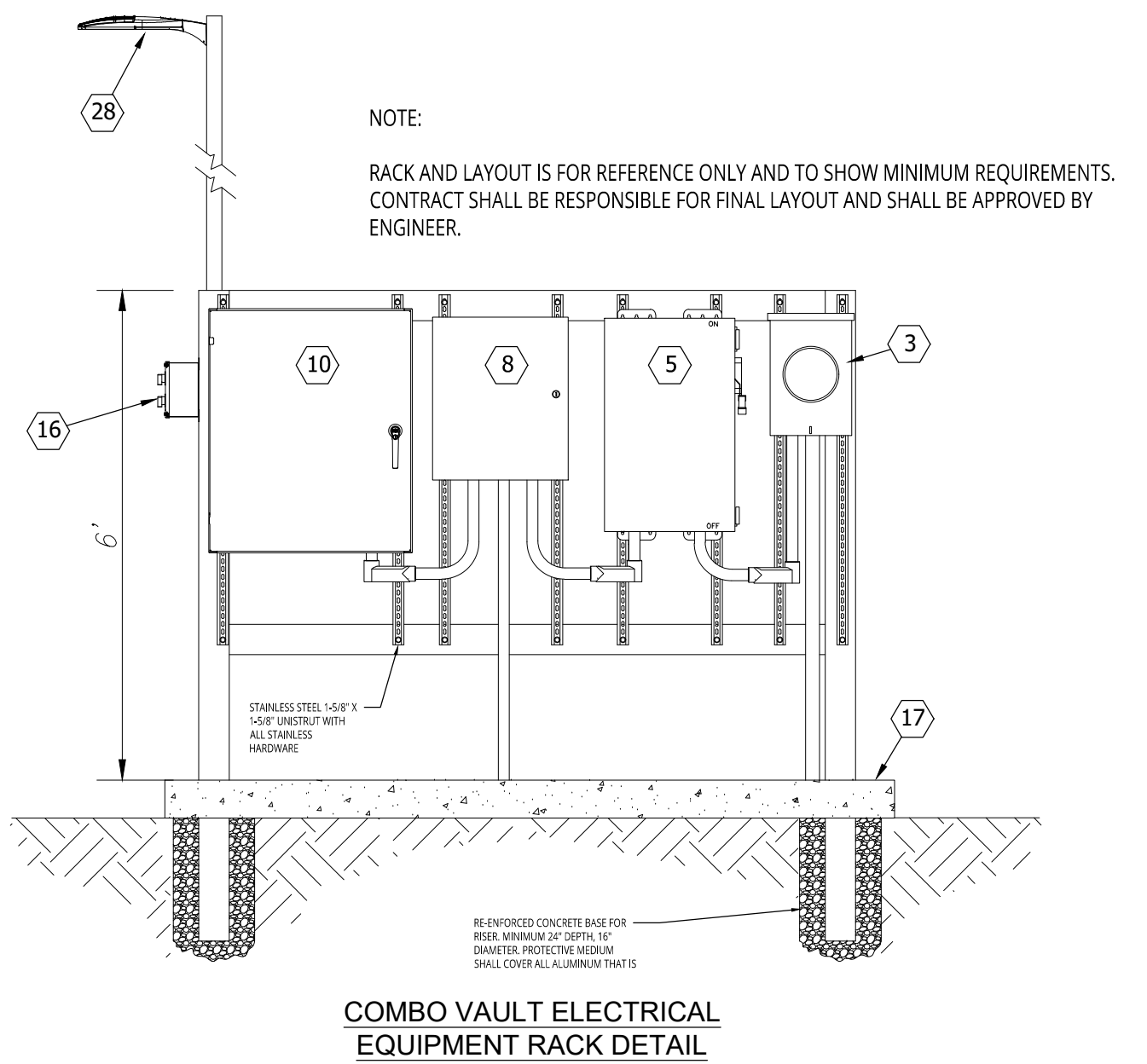
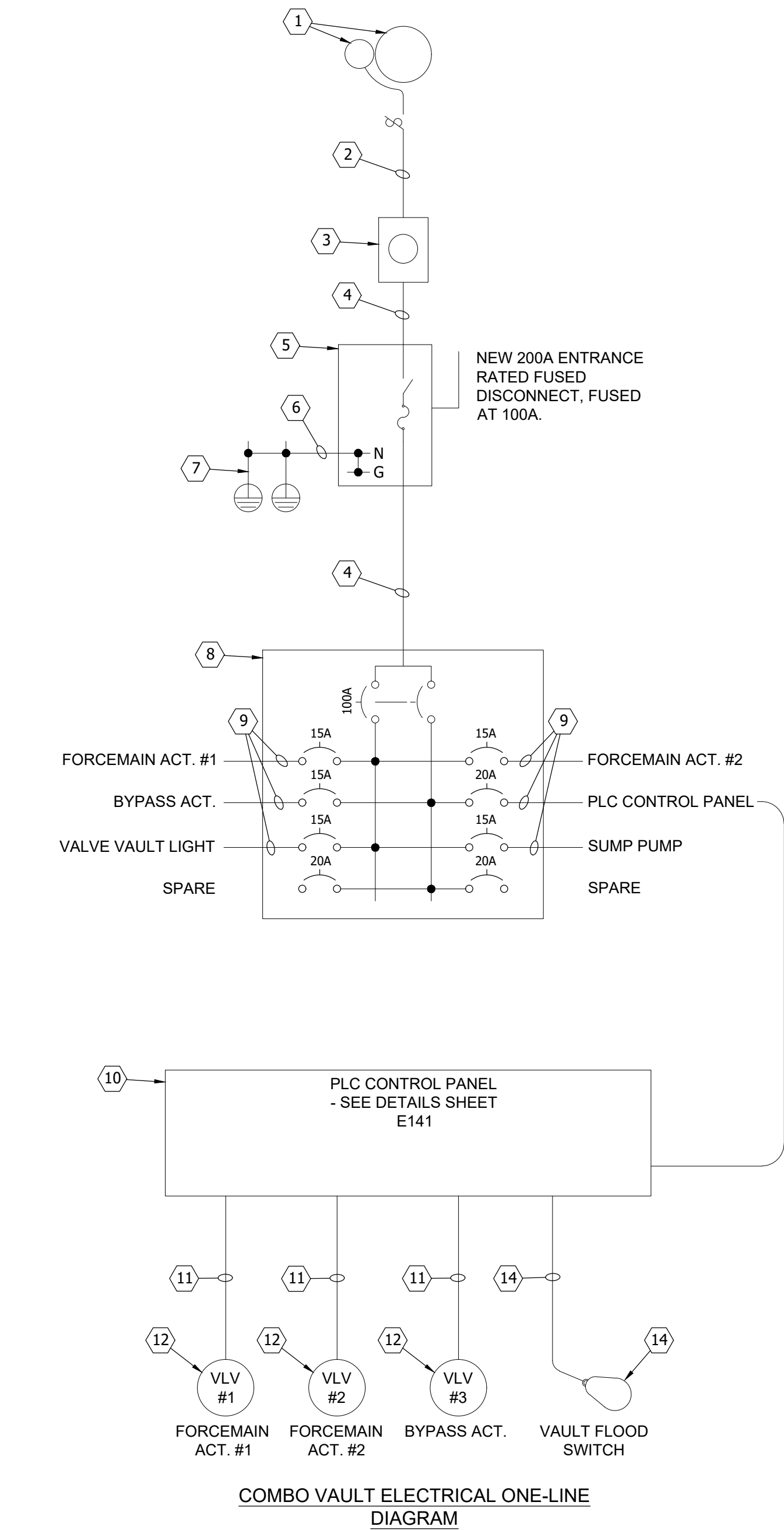
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Date: 09/08/2023



Joseph W. Sims

PRINT DATE: 10/09/23
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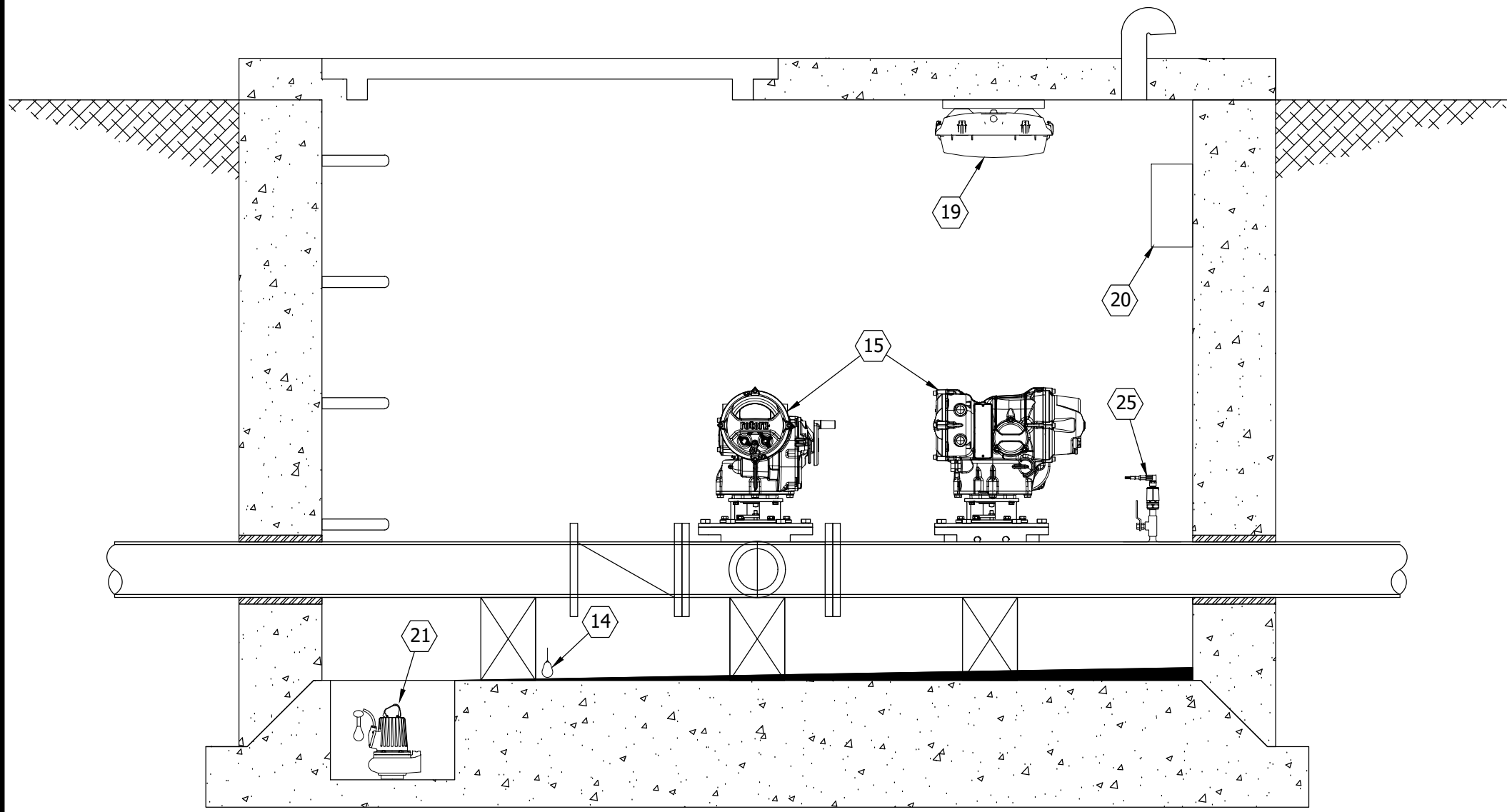
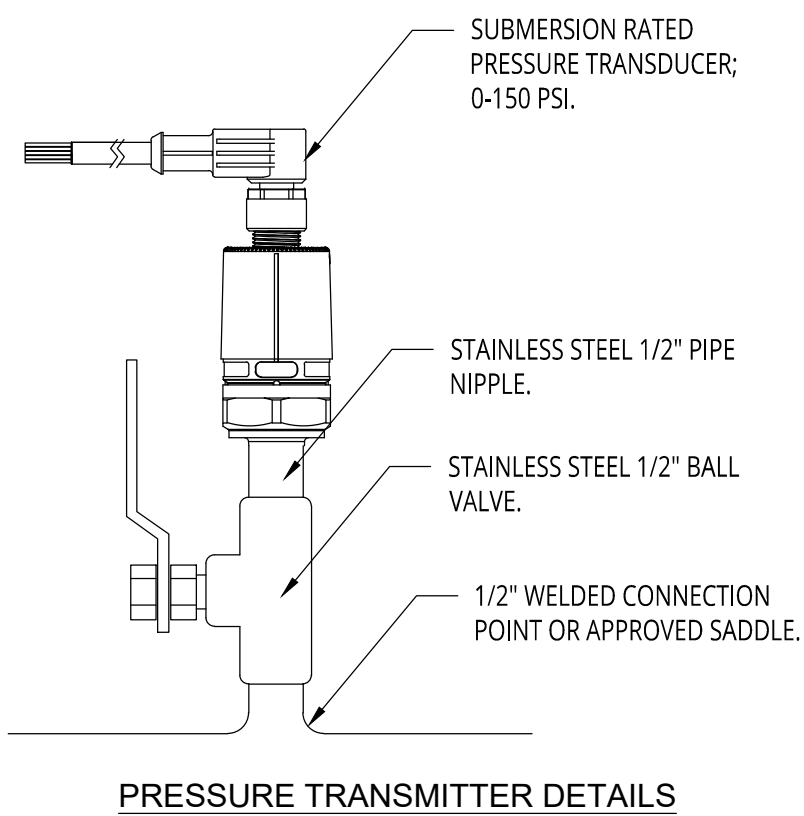


GENERAL NOTES:

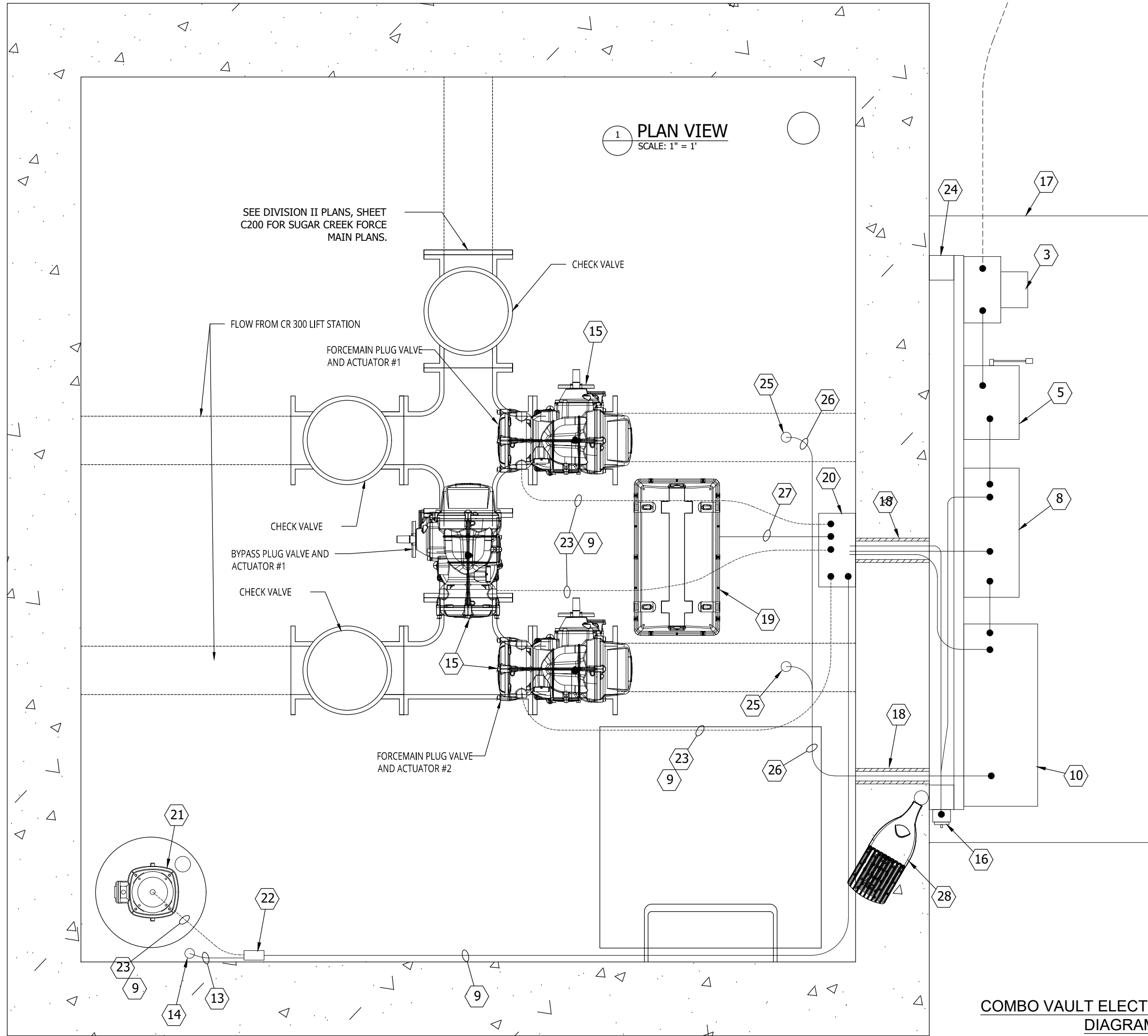
- ALL EXTERIOR, ABOVE GRADE CONDUIT SHALL BE RIGID ALUMINUM.
- ALL BELOW GRADE CONDUIT SHALL BE SCHEDULE 80 PVC. TRANSITIONS FROM BELOW GRADE TO ABOVE GRADE SHALL BE GALVANIZED RIGID STEEL.
- DO NOT TRENCH OR DIG WITHOUT LOCATES BY ALL UTILITIES.

KEYED NOTES:

- EXISTING UTILITY POLE AND SERVICE. DUKE ENERGY POLE 811-2515.
- NEW LATERAL TO NEW UTILITY METER BY UTILITY (COORDINATE WITH DUKE ENERGY). CONTRACTOR TO PROVIDE 6' OF 2" SCH 80 PVC CONDUIT AT METER BASE FOR UTILITY CONNECTION.
- NEW 200A METER BASE AND MOUNT BY CONTRACTOR.
- 3 - #2/O CU THHW, 1 - #1 CU GND, 2" C.
- FUSED ENTRANCE RATED 200A DISCONNECT SWITCH. STAINLESS STEEL.
- #6 BARE CU GROUND ELECTRODE CONDUCTOR. 3/4" C.
- (2) 3/4" X 10' CU CLAD GROUND RODS. BURY 12" BELOW GRADE AND CAD WELD CONNECTIONS. RODS TO HAVE 10' SEPARATION.
- NEW NEMA4X STAINLESS STEEL, 12 SPOT, 120/240V 1PH, PANEL BOARD. SIMILAR TO EATON S4XPB SERIES.
- 2 - #12 CU, 1 - #12 CU GND, 3/4" C. ACTUATOR POWER.
- PLC VALVE CONTROL PANEL. SEE DETAILS SHEET E141.
- CONTROL/MONITORING: 12 - #14 CU. COMMAND OPEN, COMMAND CLOSE, OPENED STATUS, CLOSED STATUS, FAILED STATUS.
- ROTORK OR EQUAL ELECTRIC ACTUATORS.
- MANUFACTURER SUBMERSION RATED CABLE. RUN TO PLC CONTROL PANEL, NO SPLICES.
- NON-MERCURY TYPE FLOAT SWITCH.
- ELECTRIC ACTUATOR, NON-MODULATING. ROTORK IQT1000 SERIES OR APPROVED EQUAL. 120/240V 1PH.
- STAINLESS STEEL NEMA4X DUAL HOLE CONTROL STATION BOX WITH NEMA4X 30MM 2 POSITION SWITCHES FOR VAULT LIGHT AND SITE LIGHT.
- CONCRETE KEEPING PAD.
- VAULT CONDUIT ENTRY 4" LINK SEAL.
- NEMA4X VAULT LED LIGHT. CEILING MOUNT NEXT TO HATCH OPENING, SIMILAR TO LITHONIA FHE-L24 SERIES (2').
- PVC PULL BOX, 16" X 16" X 6".
- FLOOR SUMP PUMP WITH INTEGRAL FLOAT SWITCH.
- JUNCTION BOX.
- PVC FLEXIBLE SEAL TIGHT WITH IP69 RATED CONNECTORS.
- EQUIPMENT RACK. 3" X 3" ALUMINUM RISERS AND WELDED HORIZONTAL CROSS PIECES. EQUIPMENT MOUNTED WITH ALL STAINLESS STEEL HARDWARE. USE STAINLESS STEEL UNI-STRUT IF REQUIRED.
- FORCEMAIN PRESSURE TRANSMITTER. STAINLESS STEEL SUBMERSION TYPE. INCLUDE 1/2" BALL VALVE. SEE DETAILS THIS PAGE.
- #16 TSP (TWISTED SHIELDED PAIR), 1" C.
- 2 - #12 CU, 1 - #12 CU GND, 3/4" C. LIGHT POWER FROM SWITCH.
- SITE LIGHT, LED TYPE MOUNTED ON ALUMINUM STANCHION. LIGHT TO COVER VAULT ENTRANCE AND EQUIPMENT RACK.



COMBO VAULT ELECTRICAL SECTION VIEW



COMBO VAULT ELECTRICAL LAYOUT DIAGRAM

CONSTRUCTION SET
NINESTAR CONNECT
CR 200 W SEWER -
DIVISION I
GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10/09/23

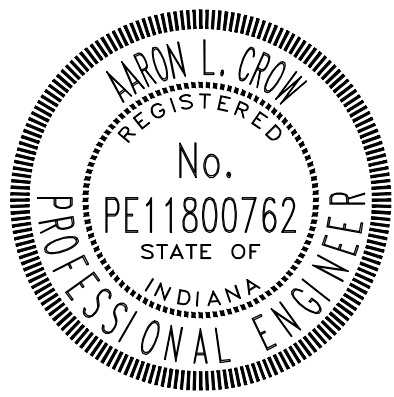
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Designed By: WMW

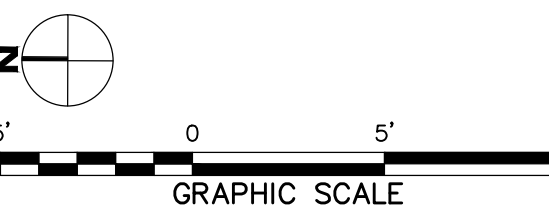
Drawn By: RLH

Checked By: ALC

Date: 10/02/2023



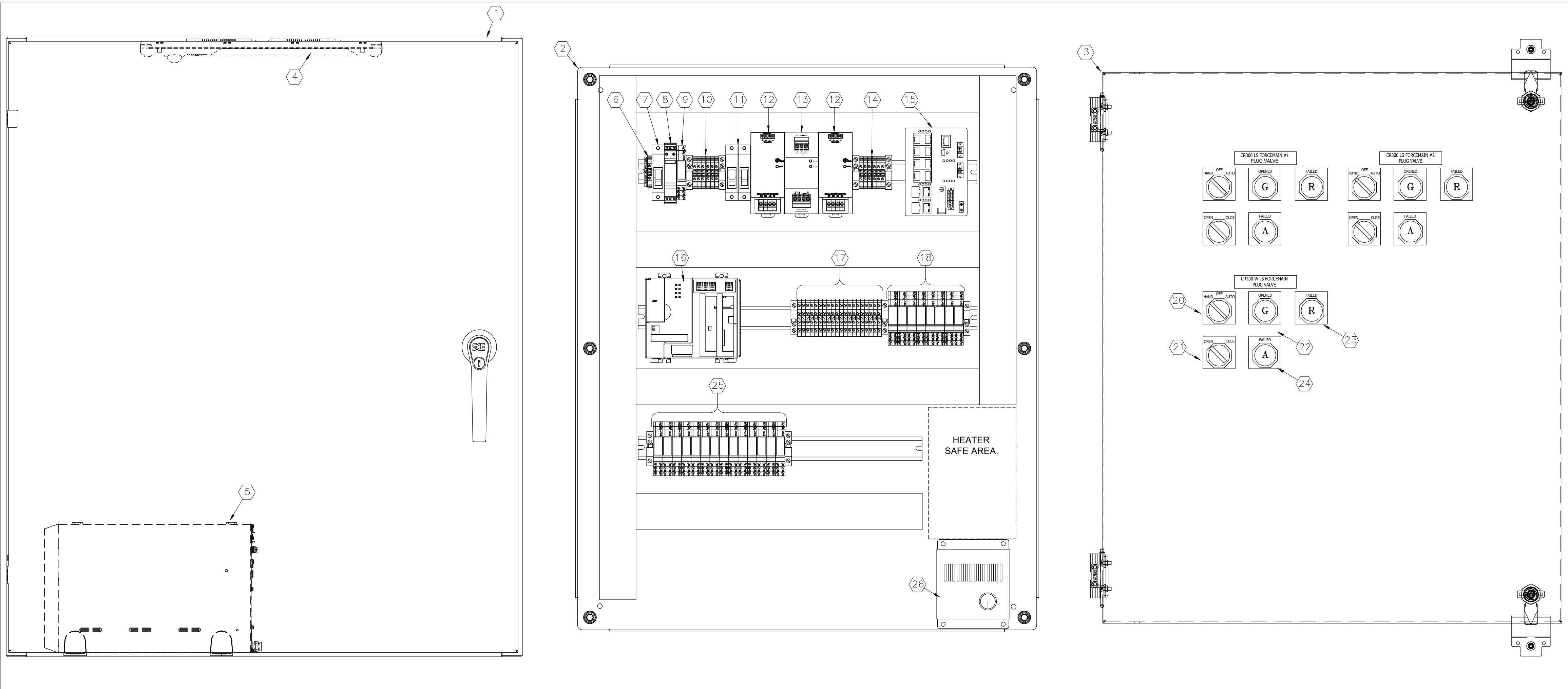
Aaron Crow



COMBO VAULT ELECT
LAYOUT DETAILS

E600

PRINT DATE: 10/09/23
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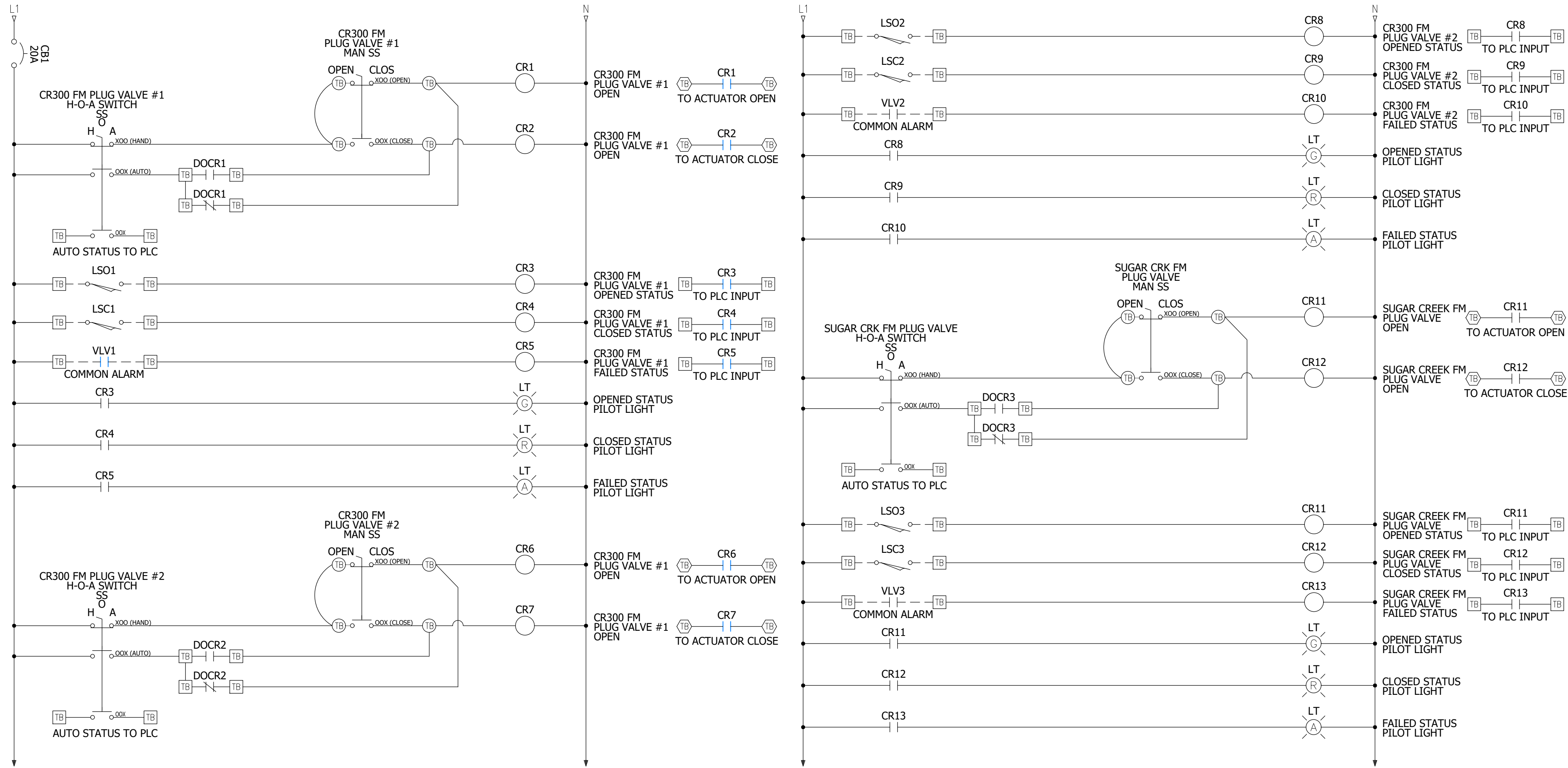


GENERAL NOTES:

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KEYED NOTES:

- STAINLESS STEEL NEMA4X ENCLOSURE: MINIMUM 36"X30"X12".
- 36" X 30" EQUIPMENT PANEL. STEEL, PAINTED WHITE.
- 36" X 30" DEADFRONT SWING PANELS.
- 14" LED ENCLOSURE LIGHT.
- UNINTERRUPTIBLE POWER SUPPLY (UPS). APC BACK-UPS PRO 1000VA. PROVIDED BY NINESTAR CONNECT.
- 120V CONTROL POWER GROUND AND NEUTRAL TERMINAL BLOCKS.
- 120V CONTROL POWER 20A CIRCUIT BREAKER.
- 120V CONTROL POWER SURGE PROTECTION DEVICE.
- 120V CONTROL POWER FAIL RELAY.
- 120V CONTROL POWER DISTRIBUTION TERMINAL BLOCKS.
- 24VDC POWER SUPPLY CIRCUIT BREAKERS. FED FROM UPS POWER.
- 24VDC DUAL POWER SUPPLIES, 3A MINIMUM.
- 24VDC POWER SUPPLY REDUNDANCY MODULE WITH FAIL ALARM CONTACTS.
- 24VDC DISTRIBUTION TERMINAL BLOCKS.
- FIBER TO ETHERNET CONVERTER/SWITCH. CISCO IE-3300=8P2S, PROVIDED BY NINESTAR CONNECT.
- ALLEN BRADLEY COMPACTLOGIX L24ER-QBFC1B OR OPTIONALLY 5069-L306ER. 1R L306, INCLUDE (1) 5069-1A16 DIGITAL INPUT MODULE AND (1) 5069-0A16 DIGITAL OUTPUT MODULE. NO SUBSTITUTE.
- DIGITAL INPUT TERMINAL BLOCKS.
- DIGITAL OUTPUT 24VDC INTERPOSING RELAYS.
- NOT USED.
- HAND-OFF-AUTO (HOA) 3 POSITION 30MM SELECTOR SWITCH. TYPICAL.
- OPEN/CLOSE 2 POSITION 30MM SELECTOR SWITCH. TYPICAL.
- GREEN 30MM LED PUSH-TO-TEST PILOT LIGHT FOR OPENED INDICATION. TYPICAL.
- RED 30MM LED PUSH-TO-TEST PILOT LIGHT FOR CLOSED INDICATION. TYPICAL.
- AMBER 30MM LED PUSH-TO-TEST PILOT LIGHT FOR FAILED INDICATION. TYPICAL.
- CONTROL RELAYS.
- ENCLOSURE CONDENSATION HEATER WITH INTEGRATED FAN AND THERMOSTAT.



CONSTRUCTION SET

NINESTAR CONNECT
CR 200 W SEWER -
DIVISION I

GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10/09/23

Project #: 21-400-357-1

Designed By: WMW

Drawn By: RLH

Checked By: ALC

Date: 10/02/2023

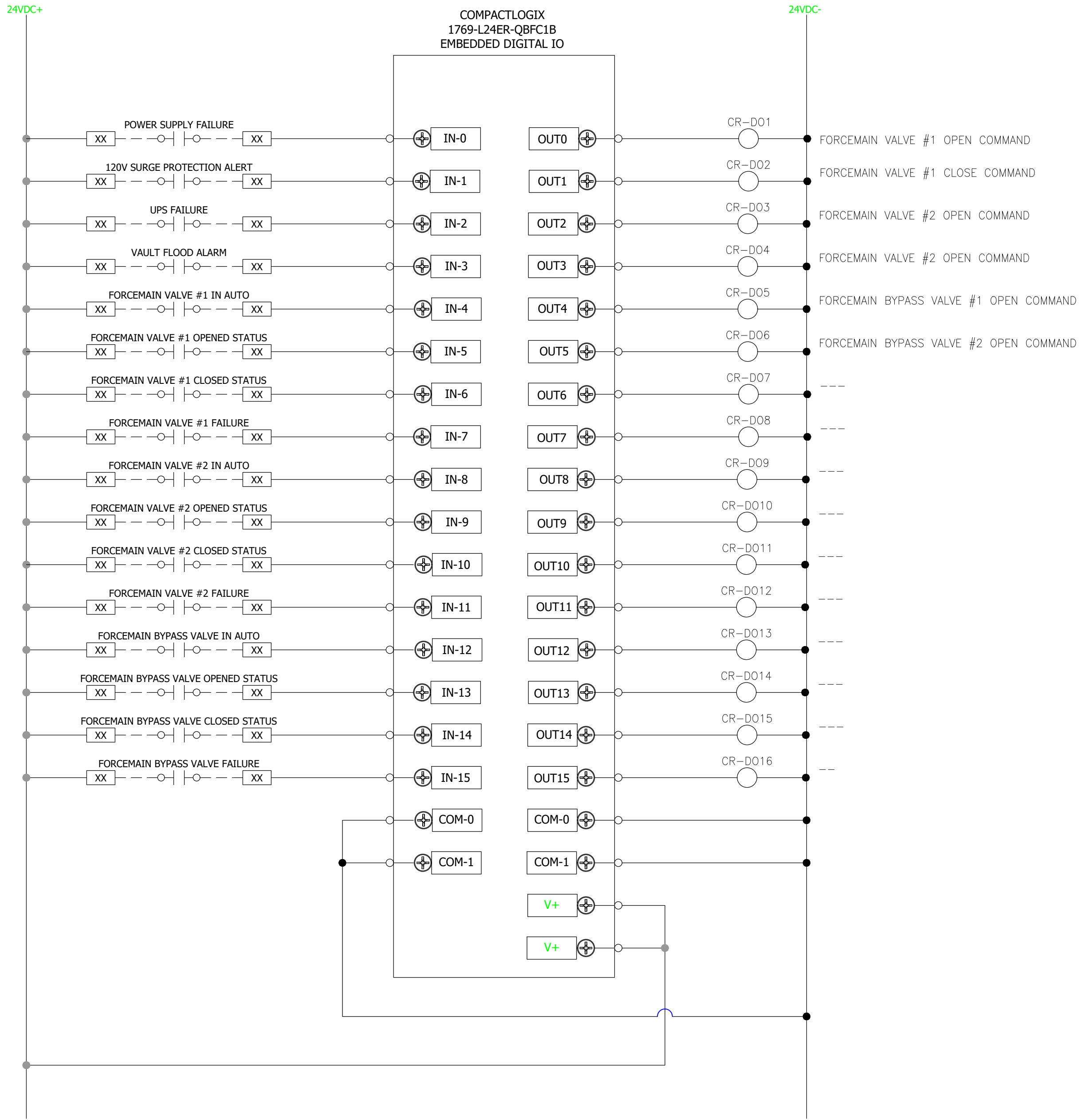
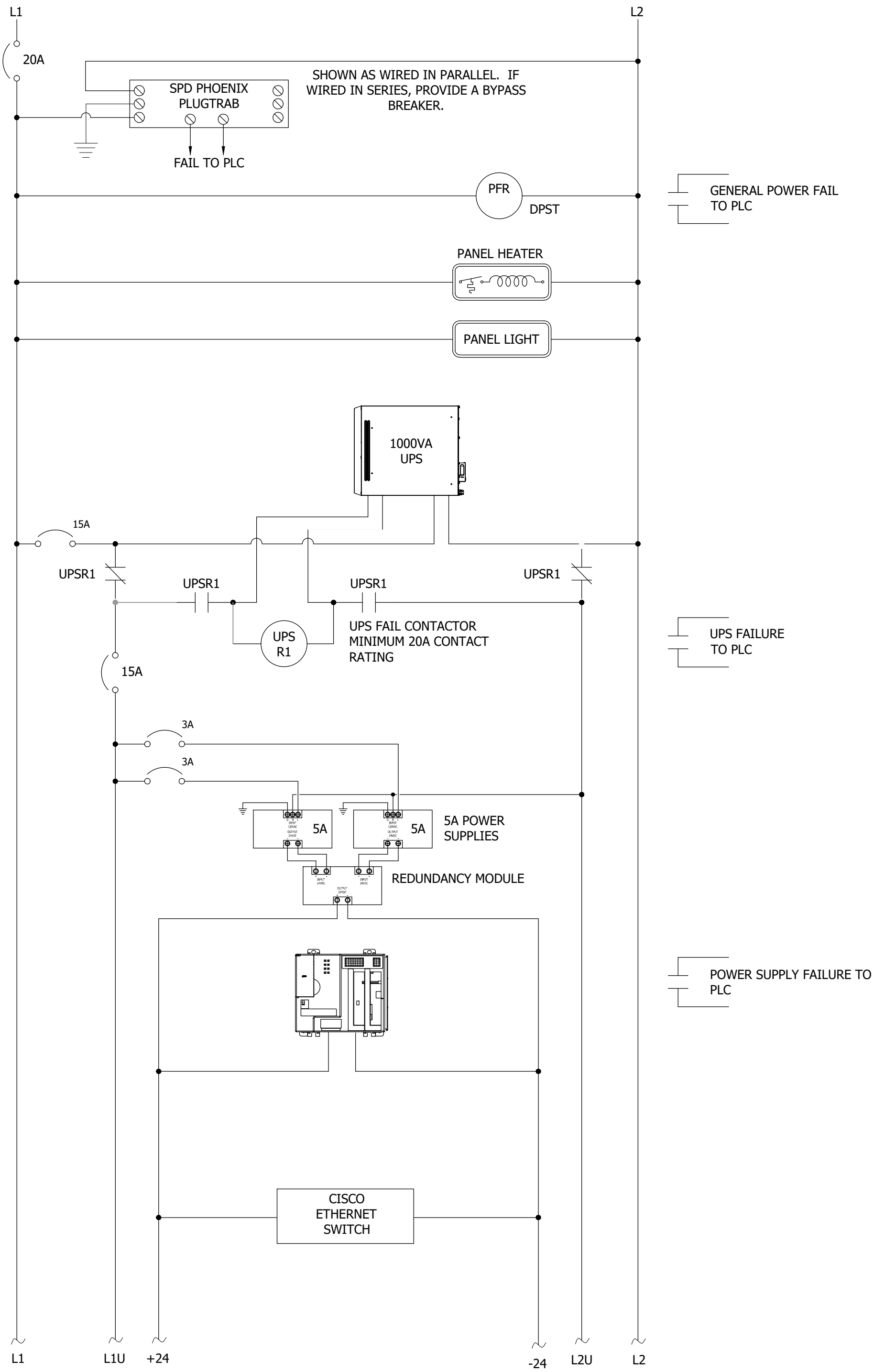


Aaron Crow



COMBO VAULT PLC
CONTROL PANEL
LAYOUT DETAILS
E601

PRINT DATE: 10/9/23
PLOT SCALE: 1:18651
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EDIT DATE: 10/9/23 - 3:03 PM
EDITED BY: RHUNT



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CONSTRUCTION SET

NINESTAR CONNECT

CR 200 W SEWER -

DIVISION I

GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10/09/23

Project #: 21-400-357-1

Designed By: WMW

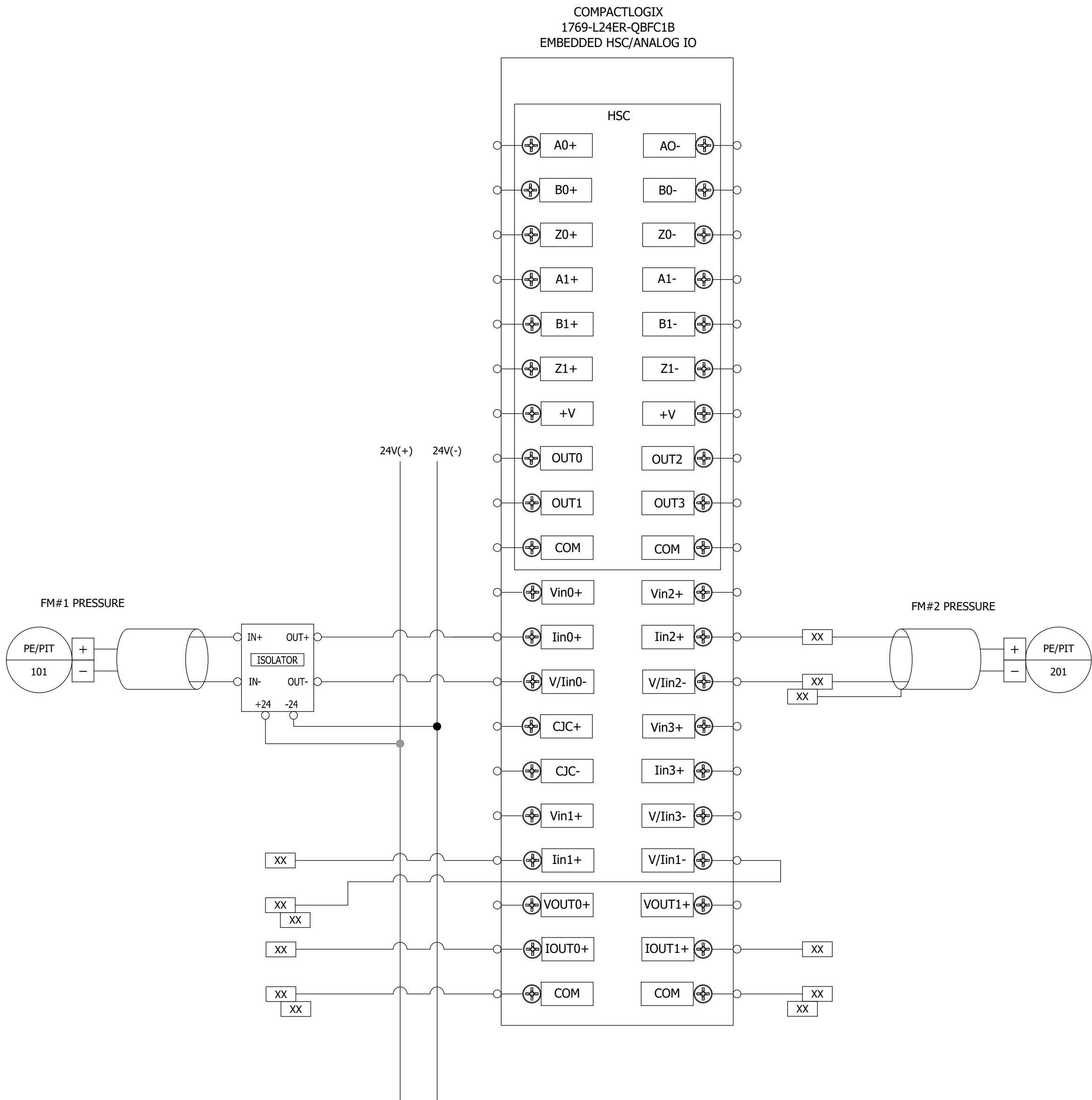
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Date: 10/02/2023



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COMBO VALVE VAULT PROCESS DESCRIPTION:

- A. THE COMBINATION VALVE VAULT AND ITS THREE PLUG VALVE ELECTRICAL ACTUATORS SHALL BE COORDINATED AND CONTROLLED BY THE OPERATIONS OF THE LIFT STATIONS AT CR300 AND SUGAR CREEK. EACH OF THOSE SITES AND THIS SITE SHALL HAVE PLC CONTROLLERS CONNECTED TOGETHER ON THE SAME NETWORK VIA FIBER OPTIC CABLES AS PROVIDED BY NINESTAR CONNECT. THE COMBO VAULT PLC SHALL RECEIVE PERMISSIVE FROM CR300 AND SUGAR CREEK LIFT STATIONS TO CONTROL THE ELECTRICALLY ACTUATED VALVES. THE LOCAL PLC SHALL BE PROGRAMMED AS DESCRIBED BELOW. CR300 AND SUGAR CREEK LIFT STATION PLC CONTROLLERS AND HMI UNITS SHALL HAVE INFORMATION DISPLAYED TO INCLUDE THE OTHER LIFT STATION AND COMBO VAULT INFORMATION.
- B. ALL INFORMATION FROM THE COMBO VAULT AND THE LIFT STATIONS SHALL BE INTEGRATED INTO THE PLANT SCADA SYSTEM.
- C. THE COMBO VAULT PLC SHALL RECEIVE PUMP RUN STATUSES FROM CR300 AND SUGAR CREEK. THESE PUMP STATUSES SHALL OPERATE THE ACTUATORS AS FOLLOWS AND SEND PERMISSIVE SIGNALS BACK AND FORTH:
- IF BOTH LIFT STATIONS ARE 'ALL PUMPS OFF' AND IF A PUMP AT CR300 IS CALLED TO RUN, SUGAR CREEK LIFT STATION SHALL NOT BE ALLOWED TO RUN A PUMP AND BE LOCKED OUT WHILE CR300 PUMPS ARE RUNNING. LOCALLY, THE BYPASS VALVE SHALL BE CLOSED AND BOTH FORCEMAIN (FM1 AND FM2) VALVES SHALL BE OPENED.
 - IF SUGAR CREEK LIFT STATION HAS A PUMP RUNNING AND CR300 IS CALLING FOR A PUMP TO RUN, ALLOW SUGAR CREEK TO PUMP UNTIL IT EITHER SHUTS OFF OR CR300 REACHES IT'S LAG SETPOINT. IF CR300 LAG SETPOINT IS REACHED BEFORE SUGAR CREEK STOP LEVEL, THEN FORCE SUGAR CREEK PUMPS TO OFF. ONCE SUGAR CREEK INDICATES ALL PUMPS OFF, ALLOW CR300 PUMPS TO RUN. IF THE LAG SETPOINT HAS BEEN REACHED, STAGGER START THE PUMPS WITH A 15 SECOND DELAY BETWEEN THE STARTS. LOCALLY, BYPASS VALVE IS CLOSED, FM1 AND FM2 ARE OPEN.
 - IF CR300 HAS PUMPS RUNNING AND SUGAR CREEK IS LOCKED OUT, MAINTAIN THIS CONTROL UNLESS SUGAR CREEK REACHES A HIGH LEVEL SETPOINT (THIS SHOULD BE PRIMARILY A SETPOINT SLIGHTLY LOWER THAN THE ACTIVATION ALARM SETPOINT WITH THE SECONDARY OPTION BEING THE HIGH LEVEL FLOAT). ONCE SUGAR CREEK REACHES HIGH LEVEL, FORCE CR300 PUMPS OFF AND ALLOW SUGAR CREEK PUMPS TO RUN, STAGGER START CALLED PUMPS. LOCALLY, BYPASS VALVE CLOSED, FM1 OPEN AND FM2 CLOSED.
 - IF SUGAR CREEK LIFT STATION IS CALLED TO RUN AND CR300 IS NOT RUNNING. SUGAR CREEK PUMPS TO OPERATE UNDER NORMAL PROGRAMMING FOR LEAD / LAG CONTROL. LOCALLY, BYPASS VALVE CLOSED, FM1 OPEN AND FM2 CLOSED. FOR EACH FULL RUN CYCLE, ALTERNATE VALVE OPERATION FROM THIS SCENARIO TO BYPASS OPENED, FM1 CLOSED, AND FM2 OPEN TO KEEP VALVES EXERCISED.
 - VALVE OPERATION SHALL NOT ALLOW FOR FM1 AND FM2 TO BE CLOSED AT THE SAME TIME. THESE TWO VALVES SHALL BE CONFIGURED FOR FAIL OPEN WHILE THE BYPASS VALVE IS FAIL AS IS. IF CLOSED STATUS FOR BOTH FM1 AND FM2 APPEAR SIMULTANEOUSLY FOR A SHORT DELAY TIME OF 10 SECONDS, THEN GENERATE AN ALARM. ALSO, IF A VALVE IS CALLED TO OPEN OR CLOSE AND WITHIN A 20 SECOND TIME DELAY THE PLC DOES NOT RECEIVE THE APPROPRIATE STATUS FROM THE VALVE, GENERATE A 'FAIL TO OPEN' OR 'FAIL TO CLOSE' ALARM.
 - EACH VALVE ACTUATOR SHALL HAVE A HAND-OFF-AUTO (H-O-A) SWITCH ON THE SWING OUT PANEL AND OPERATE AS FOLLOWS:
 - HAND: VALVE SHALL IGNORE PLC COMMANDS AND OPERATE BASED ON POSITION OF THE OPEN/CLOSE POSITION SWITCH ON SWING PANEL.
 - OFF: VALVE SHALL NOT OPEN/CLOSE BY PLC OR OPEN/CLOSE SWITCH.
 - AUTO: VALVE SHALL RESPOND TO PLC COMMANDS ONLY.
 - WITHIN PROGRAMMING AND DISPLAYED ON THE HMI SHALL BE A SOFT MANUAL/AUTO SWITCH. THIS SHALL ALLOW THE OPERATOR TO PLACE THE PROGRAM IN FULL AUTO MODE WHEN SELECTED OR FORCE THE VALVE OPEN OR CLOSED BY SELECTING A OPEN OR CLOSE BUTTON WHEN MANUAL MODE IS SELECTED. THE SOFT MANUAL/AUTO WILL ONLY WORK IF THE PHYSICAL H-O-A SWITCH IS IN AUTO.
 - TWO FORCEMAIN PRESSURE TRANSMITTERS SHALL BE INSTALLED ON BOTH FM1 AND FM2 ON THE PLANT SIDE OF THE VALVES. THESE SHALL BE MONITORED BY THE LOCAL PLC. AN OPERATION RANGE (TBD) SHALL BE CONFIGURED AND DISPLAYED ON THE HMI AND SCADA AND BE USER CONFIGURABLE. THIS RANGE SHALL BE NORMAL OPERATION. IF A FORCEMAIN BREAKS THE PRESSURE SHOULD DROP BELOW THE NORMAL RANGE. IF THIS OCCURS, THEN START A DELAY TIMER FOR 15 SECONDS. IF THE LOW PRESSURE IS ACTIVE FOR THE DURATION OF THIS DELAY TIME, GENERATE A ALARM WARNING TO THE SCADA SYSTEM SO THAT AN OPERATOR KNOWS TO CHECK INTO THIS ISSUE. AT THIS POINT, THE OPERATOR CAN OPERATE THE VALVES IN SOFT MANUAL MODE.
 - A SUMP PUMP SHALL BE PROVIDED FOR THE VAULT IN THE SUMP PIT. PROVIDE A FLOOD ALERT VERTICAL FLOAT SWITCH. THIS FLOAT SHALL BE LOCATED NEAR THE SUMP PIT AT THE LOWEST POINT IN THE VAULT. IF THE FLOAT TRIPS, CREATE AN ALARM TO NOTIFY THE PLANT THAT WATER IS BUILDING UP WITHIN THE VAULT INDICATING THAT THE SUMP PUMP MAY NOT BE WORKING.

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CONSTRUCTION SET

NINESTAR CONNECT

CR 200 W SEWER -

DIVISION I

GREENFIELD, HANCOCK COUNTY, INDIANA 46140

#	Revision	Date
1	ADDENDUM #1	10/09/23

Project #: 21-400-357-1

Designed By: WMW

Drawn By: RLH

Checked By: ALC

Date: 10/02/2023



Aaron Crow



COMBO VAULT PLC
WIRING DETAILS
CONT'D
E603

Attachment No. 3

Pre-Bid Meeting Notes and Sign-In Sheet

Notes from meeting provided.

PRE-BID MEETING

Client: NineStar Connect

Project Name: CR200 Sewer Division I and Division II

Project ID: 21-400-357-1

Meeting Location: 2243 E Main Street; Greenfield, IN 46140

Date: October 19th, 2023 at 10:00 AM

Goals

- Introductions
- Scope of Work
- Document Availability
- Contract Milestones
- Addenda
- Special Considerations
- General Questions/Discussion

Introductions

- NineStar Connect
- RQAW
 - Sub-consultants
- Sign-in Sheet
 - *Sign-in sheet attached.*

Scope of Work

- Division I:
 - Sugar Creek WWTP Lift Station Retrofit
 - *Includes new valve vault.*
 - CR 300 Lift Station Site
 - Combination Valve Vault Site
 - Boulders Lift Station Site
 - *There is an existing lift station to be demolished. A new lift station will be constructed as well as a part of this project.*
 - Upgrades to Philadelphia WWTP Headworks
 - *Includes new screening structure.*
- Division II:
 - Gravity Sewer System with Manholes

- Force Main
- INDOT and Sugar Creek Crossings

Document Availability

- RQAW Online Plan Room
 - Electronic documents can be downloaded from: <https://rqaw.com/public-documents/>

Milestone	Date
Pre-bid Meeting	October 19 th , 2023
Last Day for Questions	November 6 th , 2023
Final Addendum	November 7th, 2023
Open Bids	November 9th, 2023
Close of Loan and Anticipated NTP	January 2024

Project is funded by American Rescue Plan Act (ARPA) through county granting. January anticipated NTP date is based on a 60-day bid hold. This date may be sooner.

Bid Overview

- Bids Due – **Thursday November 9th, 2023 at 10:00 AM**
 - Bid Location – Sealed bids submitted to the attention of Alan Martin at the NineStar Connect; 2243 E Main Street; Greenfield, IN 46140
 - *Drop all bids off at front desk.*
 - Bid Opening will occur at 10:00 AM at the NineStar Connect Greenfield Office
 - *Bid opening will be in public training room and will be open to contractors.*
- Contract
 - Division I
 - Unit Price Contract by Lump Sums of Work at Each Site
 - Division II
 - Unit Price Contract
- Documents due at Bid (**PER DIVISION SUBMITTING FOR. ONE BID PACKAGE PER DIVISION**)
 - Completed Bid Form – Section 00 41 13
 - Required Bid Security
 - List of Proposed:
 - Subcontractors
 - Suppliers
 - List of Project References
 - Evidence of Bidder's Authority to do business in the State of Indiana
 - Bidder's state or contractor license number

- Acknowledgement of Addendum(s)
- Contractor's Bid for Public Work – Form 96
- American Iron and Steel Certification
 - *Attachment in specifications to fill out (worksheet). No BABA requirements for this job.*
- Good Faith Efforts Worksheet
- E-Verify Affidavit
- Bids remain in effect for 60 days

Contract Milestones

- Final Completion 7/1/2025 – as directed by the specifications
- Substantial Completion 6/1/2025 – as directed by the specifications
 - *Timeline driven by potential development near CR300.*
- Liquidated Damages: \$1,500 per day for missing Substantial Completion. \$750 per day for missing Final Completion

Addenda

- All questions to be sent in writing to Aaron Crow or Gretta Preston no later than Tuesday October 31st, 2023:
 - Email: gpreston@rqaw.com
 - Mail: 8770 North St., Ste. 110, Fishers, IN 46038
- Addendum No. 1
 - Planned to Issue October 26th
 - Updates
 - Electrical Updates (Permanent Generators) – Division I
 - Bollards at Select Sites – Division I
 - Q/As and Notes from Pre-Bid – Both Divisions

General Questions/Discussion

- Funding by ARPA and NineStar Connect
- IDEM permits have been submitted and are in process, where applicable.
- Utility locations will need to be confirmed in the field.
- Potential Staging Areas
- Site Tours
 - A site tour will be conducted immediately after the Pre-Bid Meeting as requested.
 - All other site tours need to be coordinated individually with Alan Martin at 317.694.7299
 - *Contact Alan for access to any locked sites if this is needed (Sugar Creek and Philadelphia sites both fenced).*
 - *Questions provided from meeting on Addendum #1.*

Pre-Bid Meeting Sign-in Sheet

NineStar Connect

CR200 Sewer Project – Divisions I and II

10/19/2023



NAME	INITIAL	ORGANIZATION	TITLE	PHONE NUMBER	EMAIL
ALAN MARTIN	AM	NINESTAR CONNECT	MANAGER OF WATER AND WASTEWATER UTILITIES	317-323-2035	AMARTIN@NINESTARCONNECT.COM
AARON CROW	ALC	RQAW CORPORATION	PROJECT MANAGER	317-588-1772	ACROW@RQAW.COM
WILLIAM KASSEBAUM	WK	SDA	SR PROJECT MANAGER	317-506-7931	WKASSEBAUM@SIMS-DURKIN.COM
WHITNEY WEIDENBENNER	WMW	RQAW CORPORATION	PROJECT ENGINEER	618-792-0400	WWEIDENBENNER@RQAW.COM
John Kindred	JK	Kindred EX		317-750-8402	Kindredexcavating@hotmail
Jon Sweet	JS	United Construction Services	PM	765-238-1989	jon.sweet@unitedconserv.com
Brandon Buck	BLB	United Construction		765-278-6246	brandon.buck@unitedconserv.com
Josh Snyder	JS	Mersin	Account Mgr	219-221-2617	Joshua.Snyder@MersinO.com
Bill Watson	BW	WATSON EXC.		765-362-2651	bill.watson.exc@GMAIL.COM
Will Watson	WW	WATSON EXC.		317-741-8684	clarence.watson82@gmail.com
Andrew Graves	AG	Graves Construction		812-659-3138	Andrew@gravesinc.net
BOB STINDT	BS	LYKINS CONTRACTING INC		812-623-2244	JCOOK@LYKINSINC.COM
Garnet Jespersen	G.J	TSW Utility Solutions	CM	812-639-3529	gjespersen@tswutility.com
GEORGE PLUSINSKI	G.P.	NINE STAR CONNECT	DIRECTOR OF TELECOM OPERATIONS	317-323-2078	GPLUSINSKI@NINESTARCONNECT.COM
Nick Shear	NS	EDCO	PM	317-696-9308	nshear@edcoconstruction.com
Steve Jackson	SJ	Daystar	Superintendent	765-744-2769	Steve@daystardrilling.com
Barb Box	BB	Morphey Construction		317-430-2419	bbox@morpheyconstruction.com