City of Flint

Department of Purchases & Supplies

Sheldon A. Neeley

TO: All Proposers
FROM: Jarin McGee, Chief Buyer
DATE: **July 17, 2023**
SUBJECT: **Addendum #03 –** P24-500 – Battery B Secondary Clarifier Flow Control

This addendum has been published to address the following.

The wrong contract documents have been attached. Attached is the correct document.

All other bidding terms, requirements, and conditions continue as indicated in the remaining original bid documents.
The Chief Buyer, Jarin McGee, is an officer for the City of Flint with respect to this RFP.

In the submission of their proposal, Proposer must acknowledge receipt of this addendum. Proposer shall acknowledge this addendum by signing and returning one copy of this notice with their submission.

Company Name: _____

Address: _____

City / State / Zip: _____

Telephone: _____Fax: _____ Email: _____

Print Name: _____Title: _____

Signature: _____Date: _____

Thank you.

SECTION 00 91 13
ADDENDUM NO. 02

To all prospective bidders and others concerned, YOU ARE HEREBY ADVISED THAT the Contract Documents for the above referenced Project are revised in the following particulars:

Section	Description of Change
00 01 10	Add Section 02 83 01 - Lead Paint Survey, which accompanies this Addendum, to the Table of Contents and the Project Manual.
00 01 10	Add Section 02 83 02 - Removal and Disposal of Material Containing Lead, which accompanies this Addendum, to the Table of Contents and the Project Manual.
00 42 43	Section 00 42 43 - Proposal, shall be replaced in its entirety with the revised Section accompanying this Addendum.
01 21 00	Add the following Allowance Schedule item to paragraph 1.07 of Section 01 21 00: 3. Allowance, Lead Pain Survey, Abatement and Disposal: Include an allowance for testing and abatement of lead paint as further described in the specifications. An amount of $15,000.00 shall be included in the Contract Price for this Work.
22 14 29	Section 22 14 29 - Sump Pumps, shall be replaced in its entirety with the revised Section accompanying this Addendum.
40 05 52	In Section 40 05 52 - Process Valves, add a fourth manufacturer – Orbinox – to paragraph 2.05.A.

Sheet	Description of Change
SX-100	Sheet SX-100 shall be replaced in its entirety with the revised Sheet SX-100 accompanying this Addendum. Revisions include modifications to new hatch opening and limits of demolition.
S-101	Sheet S-101 shall be replaced in its entirety with the revised Sheet S-101 accompanying this Addendum. Revisions include a change in the location of the access hatch, added safety guardrail system around hatch, and modified sheet notes.
S-102	Sheet S-102 shall be replaced in its entirety with the revised Sheet S-102 accompanying this Addendum. Revisions include modified section views.
P-101	On Sheet P-101, the duplex sump shall be renamed as SP-7.
P-601	On Sheet P-061, a High Water Alarm Float shall be added to Duplex System Submersible Sump Pump Detail. On Sheet P-061, the Pump Schedule shall be updated with TAG: SP-7, HP: 1.8 HP PER PUMP, REMARKS: DUPLEX SYSTEM, FLOATS: PUMP(S) OFF: 696.60', 1ST PUMP ON: 697.90', 2ND PUMP ON: 698.90', HIGH WATER ALARM: 699.90', PUMP MANUFACTURER TO VERIFY FLOAT ELEVATIONS

Sheet	Description of Change
D-101	Sheet D-101 shall be replaced in its entirety with the revised Sheet D-101 accompanying this Addendum.
M-101	On Sheet M-101, the exhaust fan shall be renamed as EF-68, and existing dampers shall be labeled as D-94, D-95 and D-96.
M-301	On Sheet M-301, the duplex sump system shall be renamed as S-7, the Exhaust Fan shall be renamed as EF-68, and the existing dampers shall be labeled as D-94, D-95 and D-96. On Sheet M-301, a Note shall be added to the Fan Schedule and shall read as follows: “PROVIDE NEW MOTOR ACTUATORS FOR EXISTING DAMPERS D-94, D-95, D-96. NEMA 4X CONSTRUCTION”. On Sheet M-301, a Note shall be added to the Heating and Ventilating Notes and shall read as follows: “CONTRACTOR TO COORDINATE WITH ELECTRICAL DRAWINGS FOR POWER AND WIRING.”
MX-101	On Sheet MX-101, the existing dampers shall be renamed as D-94, D-95 and D-96.
E-102	Sheet E-102 shall be replaced in its entirety with the revised Sheet E-102 accompanying this Addendum.
E-801	Sheet E-108 shall be replaced in its entirety with the revised Sheet E-801 accompanying this Addendum.

This Addendum is hereby incorporated into the original Contract Documents for the bidding referred to above and is considered as binding as though originally appearing therein. Receipt of this Addendum must be noted in the place provided in Section 00 42 43 - Proposal, dated July 14, 2023.

SECTION 00 01 10
TABLE OF CONTENTS

07 53 23 - Single Ply Roofing Fully Adhered Conventional

07 62 00 - Sheet Metal Flashing and Trim

07 92 00 - Joint Sealants

DIVISION 08 - OPENINGS

08 10 00 - Hollow Metal Doors and Frames

08 11 50 - Custom Steel Doors

08 12 13 - Custom Steel Frames

08 31 13 - Access Hatches

08 33 23 - Overhead Doors

08 70 00 - Door Hardware

08 80 00 - Glazing

DIVISION 09 - FINISHES

09 10 00 - Piping Identification Systems

09 96 00 - Painting

DIVISION 10 - SPECIALTIES

DIVISION 11 - EQUIPMENT

DIVISION 12 - FURNISHINGS

DIVISION 13 - SPECIAL CONSTRUCTION

DIVISION 14 - CONVEYING EQUIPMENT

DIVISION 21 - FIRE SUPPRESSION

DIVISION 22 - PLUMBING

22 10 00 - Plumbing Materials and Methods

22 11 23 - Domestic Water Pumps

22 13 33.13 - Submersible Wastewater Pumps with Integrated Pump Control Systems

DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

23 05 13 - Common Motor Requirements for HVAC Equipment

23 05 48 - Vibration and Seismic Controls for HVAC

23 05 93 - Testing, Adjusting, and Balancing for HVAC

23 08 00 - Commissioning of HVAC

23 31 00 - HVAC Ducts and Casings

23 33 00 - Air Duct Accessories

23 34 16 - Centrifugal HVAC Fans

23 82 00 - Convection Heating and Cooling Units

DIVISION 25 - INTEGRATED AUTOMATION

DIVISION 26 - ELECTRICAL

26 05 00 - Common Work Results for Electrical

26 05 10 - Basic Electrical Materials and Methods

DIVISION 33 - UTILITIES

33 05 13 - Manholes and Structures

33 30 00 - Sanitary Utility Sewerage Piping

33 34 00 - Sanitary Utility Force Mains

DIVISION 34 - TRANSPORTATION

DIVISION 40 - PROCESS INTEGRATION

40 05 07 - Pipe Hangers and Supports

40 05 53 - Process Valves

40 23 00 - Process Piping

40 90 00 - Process Instrumentation, Controls and Monitoring Equipment - General Requirements

40 91 00 - Instrumentation and Controls

DIVISION 46 - WATER AND WASTEWATER EQUIPMENT

46 21 83 - Septage Receiving Equipment

END OF SECTION

SECTION 00 42 43
PROPOSAL

City of Flint - Water Pollution Control Facility, Flint, Michigan48532

Project: WPCF Battery B Secondary Clarifier Flow Control

BIDDER INFORMATION

Bidder Name: _____

By (Printed Name): _____

Signature: _____

Address: _____

Phone No: _____

Email: _____

The Bidder proposes and agrees, if their Bid is accepted, to enter into an Agreement with the City of Flint in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in the Agreement, and in accordance with the Contract Documents.

In submitting their Bid, Bidder represents, as more fully set forth in the Agreement, that:

1. Bidder has examined copies of all Contract Documents, (consisting of Plans dated Ready for Bidders date and Project Manual dated Ready for Bidders date) which he understands and accepts as sufficient for the purpose, including any and all Addenda officially issued, the receipt of which has been acknowledged.

   A. Addendum _____ Acknowledged by: _____ Date: _____

   B. Addendum _____ Acknowledged by: _____Date: _____

   C. Addendum _____ Acknowledged by: _____ Date: _____

2. Bidder has examined the surface and subsurface conditions where the Work is to be performed, the legal requirements and local conditions affecting cost, progress, furnishing or performance of the Work, and has made such independent investigations as Bidder deems necessary.

3. Their Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or a corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over the Owner.

4. The Bidder agrees to complete the Work, in accordance with the Contract Documents, for the following Contract Price:

Item	Description	Quantity	Unit	Unit Price	Amount
1	Battery B Secondary Clarifier Flow Control	1	LSUM	$_____	$_____
2	Allowance, MAK Controls				$27,000.00
3	Owner-Controlled Contingency				$150,000.00
4	Allowance, Lead Paint Survey, Abatement and Disposal				$15,000.00

Total Contract Price (Items 1 through 4) $_____

5. The Bidder by submitting a Bid, thereby certifies that Bidder or a qualified designated person in Bidder's employ has examined the Contract Documents provided by the Owner for bidding purposes. Further, they certify that Bidder or Bidder's qualified employee has reviewed the Bidder's proposed construction methods and finds them compatible with the conditions which Bidder anticipates from the information provided for Bidding.
6. The Bidder by submitting a Bid agrees to complete the Work under any job circumstances or field conditions present and/or ascertainable prior to bidding. In addition, Bidder agrees to complete the Work under whatever conditions Bidder may create by Bidder's own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the Owner.
7. The Bidder by submitting a Bid, declares that Bidder has familiarized them self with the location of the proposed Work and the conditions under which it must be constructed. Also, Bidder has carefully examined the Plans, the Specifications, and the Contract Documents, which Bidder understands and accepts as sufficient for the purpose, and agrees that Bidder will Contract with the Owner to furnish all labor, material, tools, and equipment necessary to do all Work specified and prescribed for the completion of the Project.
8. The Bidder will provide a bid bond, in the amount of at least **five (5)** percent of the amount Bid, drawn payable to City of Flint as security for the proper execution of the Agreement.
9. The Bidder by submitting a Bid agrees that if awarded Contract, to sign the Agreement and submit satisfactory bonds and certificates of insurance coverage and other evidence of insurance required by the Contract Documents within 15 days after the date of Owner's Notice of Award.
10. The Bidder by submitting a Bid agrees that time is of the essence and, if awarded Contract, that the Work will be Completed on or before the dates/days as specified in the Agreement.
11. Liquidated damages, as specified in the General Conditions, Supplementary Conditions and Agreement, shall also apply to the Substantial Completion date.
12. Engineering and inspection costs incurred after the final completion date shall be paid by the Contractor to the Owner as specified in the Conditions of the Contract and Agreement.
13. Proposals may not be withdrawn for a period of 60 days after bid opening.
14. The following documents are made a condition of this Proposal:
    A. Required Bid Security
    B. Legal Status of Bidder
    C. Non-Collusion Affidavit

SECTION 02 80 01
LEAD PAINT SURVEY

PART 1 GENERAL

1.01SCOPE OF WORK

A. Provide all labor, materials, equipment, services, and incidentals necessary to conduct a lead paint survey in project areas prior to any Work.

B. Prepare and submit a written report documenting the scope and findings of the survey.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 - Submittal Procedures

B. Section 01 60 00 - Product Requirements

C. Section 01 77 00 - Closeout Procedures

1.03 REFERENCE STANDARDS

A. General Requirements:

1. Except as modified by governing codes and by this Specification, comply with the applicable provisions and recommendations of latest editions of the below listed references.

2. Where the language in any of the documents referred to herein is in the form of a recommendation or suggestion, such recommendations or suggestions shall be deemed to be mandatory under this Contract unless otherwise directed by the Engineer.

3. Conflicts: Conform to requirements of cited standard unless specified otherwise. In case of apparent conflict between standards, or between standards and the specifications herein, the more stringent shall apply unless otherwise directed by the Engineer.

B. Unless otherwise specified, the work of this Section shall conform to the applicable portions of the following Standard Specifications:

1. ASTM D3335 - Standard Test Method for Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy

2. USEPA SW-846 Test Method 3050 - Acid Digestion of Sediments, Sludges, and Soils

3. USEPA SW-846 Test Method 7000B - Flame Atomic Absorption Spectrophotometry

1.04 SUBMITTALS

A. Within thirty (30) days of the Notice to Proceed, Contractor shall submit:

1. Submit copies of all laboratory test results on samples obtained from the project areas.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 LEAD PAINT SAMPLING

A. Contractor will perform a limited lead paint survey of representative interior and exterior painted surfaces at the Site. The purpose of the survey is to identify visible, accessible, suspect lead-containing paint, which may be impacted during renovation activities, for compliance with the OSHA Lead in Construction Standard (29 CFR 1926.62). This survey is not intended to be a surface-by-surface investigation per US Department of Housing and Urban Development (HUD) guidelines.

B. Contractor will perform a visual assessment to identify suspect paint, will compile an inventory of suspect paint, will document the general location of the materials, and will assess the general condition of the materials and note areas of damaged, peeling, or flaking paint.

C. Representative samples of suspect lead-containing paint will be collected and sealed for transport to the laboratory. The on-site inspection work will result in minimal damage to some finishes. Contractor will not be responsible for repairing such damage but will attempt to minimize this damage as much as possible.

D. Each paint chip sample collected will be submitted under Commission on Cancer (COC) protocol to a laboratory accredited AIHA Laboratory Accreditation Programs, LLC under the Environmental Lead Laboratory Accreditation Program (ELLAP) recognized by the EPA National Lead Laboratory Accreditation Program (NLLAP). Paint chip samples will be analyzed for lead content by Flame Atomic Absorption Spectroscopy (FAAS) in accordance with EPA Method SW-846 Test Method 3050B or SW-846 Test Method 7000B, or equivalent. The samples will be analyzed on a 5-day turnaround time schedule, at maximum.

3.02 DATA EVALUATION AND REPORTING

A. Contractor will prepare a survey report of the findings following completion of the field work and receipt of laboratory analysis reports. The report will include a description of the scope of services, observations and findings, conclusions, and recommendations. It will also include the following items:

1. A brief narrative describing the assessment work performed.
2. Analytical data tables summarizing the sampling results.
3. Figures depicting the sampling locations and types (i.e., chip, bulk).
4. Representative photographs.
5. Laboratory analytical reports.
6. Laboratory accreditations.

END OF SECTION

SECTION 02 80 02
REMOVAL AND DISPOSAL OF MATERIAL CONTAINING LEAD

PART 1 GENERAL

1.01SCOPE OF WORK

A. Provide all labor, materials, equipment, services, and incidentals necessary for the removal of lead-based paints (LBPs) and/or lead-containing paints (LCPs) as required to permit the safe and lawful demolition, removal and disposal of the equipment, piping, conduit, and other items scheduled for demolition as shown on the Drawings or as specified. This shall include all containment, environmental monitoring, laboratory testing, medical monitoring, and other measures necessary to perform the Work in accordance with all applicable Federal, State, and local regulations.

B. In the absence of testing results, Contractor shall assume the presence of LBP and/or LCP on all surfaces, equipment, piping, etc. that are scheduled for demolition as a part of this Contract. It shall be assumed to be the complete piece of equipment or entire run of pipe. Removal of LBP and/or LCP shall be, at a minimum, six (6) inches on all sides of the location proposed for cutting, burning, power tool use and/or other work which will disturb, affect, or demolish the paint.

C. Work related to this Section, including but not limited to, environmental protection, worker protection, and hazardous waste disposal, shall be in strict compliance with all applicable Federal, State, and local laws, codes, rules, and regulations.

D. This Section presents minimum acceptable requirements for construction activities affecting materials, equipment, and structures coated with LBP and/or LCP. Perform the Work using methods commonly accepted, recognized by OSHA (OSHA (pursuant to 29 CFR 1926.62), and demonstrated to prevent emissions of lead outside of the lead control area when used in accordance with manufacturer's recommendations. Perform the Work to minimize creation of airborne dust and vapors, particularly relative to LBP and/or LCP; minimize the quantity of Hazardous Waste generated; protect the health and safety of personnel at the Site; and avoid adverse environmental impacts.

E. Coordinate and review subsequent demolition work specified under other Sections and coordinate such work with the Work under this Section.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 - Submittal Procedures

B. Section 01 60 00 - Product Requirements

C. Section 01 77 00 - Closeout Procedures

1.03 REFERENCE STANDARDS

A. General Requirements:

1. Except as modified by governing codes and by this Specification, comply with the applicable provisions and recommendations of latest editions of the below listed references.

2. Where the language in any of the documents referred to herein is in the form of a recommendation or suggestion, such recommendations or suggestions shall be deemed to be mandatory under this Contract unless otherwise directed by the Engineer.

3. Conflicts: Conform to requirements of cited standard unless specified otherwise. In case of apparent conflict between standards, or between standards and the specifications herein, the more stringent shall apply unless otherwise directed by the Engineer.

B. Unless otherwise specified, the work of this Section shall conform to the applicable portions of the following Standard Specifications:

1. ANSI Z88.2 - Practices for Respiratory Protection
2. ASTM E1553-93 - Standard Practice for Collection of Airborne Particulate Lead During Abatement and Construction Activities
3. ASTM D3335 - Standard Test Method for Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy
4. NIBS - Guide Specifications For Reducing Lead-Based Paint Hazards
5. SSPC-Guide 6 - Guide For Containing Surface Preparation Debris Generated During Paint Removal Operations
6. SSPC-Guide 7 - Guide to the Disposal of Lead-Contaminated Surface Preparation Debris
7. UL 586 - High Efficiency, Particulate, Air Filter Units
8. OSHA - Lead Exposure in Construction: Interim Final Rule 29 CFR 1926.62.
9. USEPA - Resource Conversation and Recovery Act (RCRA) - Section 3004 Hazardous and Solid Waste Amendments.
10. USEPA - Toxicity Characteristics Leaching Procedure, EPA Method 1311
11. USEPA SW-846 Test Method 3050B - Acid Digestion of Sediments, Sludges, and Soils
12. USEPA SW-846 Test Method 7082 - Test Methods for Evaluating Solid Wastes

1.04 SUBMITTALS

A. Within sixty (60) days of the Notice to Proceed, Contractor shall submit a site and location-specific work plan indicating how he will satisfy all applicable laws, codes, rules and regulations and the requirements of this Section including:

1. Paint removal, containment, visible emissions monitoring, and clean-up.
    a. The work plan shall include, at a minimum, drawings indicating the location, size, and details of lead dust control work areas, location and details of containment, decontamination facilities, sequencing of lead removal, work procedures, types of equipment, crew size, and emergency procedures for fire and medical emergencies.
2. Waste handling, testing, storage, transportation, and disposal.
3. Worker protection, including but not limited to a Lead (Heavy Metal) Health and Safety Compliance Program, which at a minimum shall address respirator protection that is in full compliance with all aspects of 29 CFR 1910.134, OSHA personal exposure assessment, including regulated area monitoring, signs to be posted in work areas, protective clothing, engineering and administrative controls, hygiene facilities and practices, decontamination, housekeeping, medical surveillance (including biological monitoring), respiratory fit tests, training certifications, waste disposal and other items to satisfy OSHA standards.
4. Submit copies of all laboratory test results on wipe samples obtained for the work.
5. Submit copies of all waste shipment records and disposal site receipts documenting that any materials classified as hazardous materials were properly disposed of.
6. Meeting minutes from Pre-Remediation Conference.

1.05 QUALITY ASSURANCE

A. The persons performing lead abatement and their supervisor shall be personally experienced in lead abatement work and shall have been regularly employed by a company performing lead abatement work for a minimum of 3 years. Submit evidence documenting worker training and

experience to the Engineer. Contractor shall obtain the services of a qualified Subcontractor, if necessary, to comply with the requirements of this Section.

1. If a Subcontractor is utilized to perform any of the work of this Section, the requirements of this Section shall apply to the Subcontractor as if specifically referred to herein and he shall comply. Contractor's use of a Subcontractor shall not relieve the Contractor of full responsibility for the work to be performed.

B. Pre-Remediation Conference:

1. Contractor and Subcontractor shall meet with Engineer to discuss in detail the lead-paint remediation Work plan including work procedures.

2. Minimum Attendance: Conference shall be attended by Contractor, Certified Industrial Hygienist, Engineer and Owner.

3. Prepare and distribute minutes of the conference to all attendees.

1.06 TERMINOLOGY

A. "Abatement" indicates abatement of LBP and/or LCP, which involves removing LBP and/or LCP or replacing surfaces containing LBP and/or LCP or demolishing lead painted or lead-containing structures and materials.

B. "Action level" is as defined in OSHA 29 CFR 1926.62, employee exposure without regard to use of respirators, to airborne concentrations of lead of "30 micrograms per cubic meter of air" refers to the action level.

C. "Amended water" is water containing at least one ounce of five percent trisodium phosphate per gallon of water.

D. "Area monitoring" is sampling of lead concentrations within and outside the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations which may reach the breathing zone of personnel potentially exposed to lead.

E. "Atomic absorption spectroscopy" is an analytical method of determining the lead content of a given sample.

F. "Certified Industrial Hygienist" or "CIH": As used in this Section, refers to an industrial hygienist employed by CONTRACTOR or Subcontractor and certified by the American Board of Industrial Hygiene (ABIH) in comprehensive practice.

G. "Change rooms" are rooms within the designated physical boundary around the lead control area set up to prevent cross-contamination and equipped with separate storage facilities for clean protective work clothing and equipment and for street clothes prevent cross contamination.

H. "Competent person" means a person capable of identifying existing and predictable lead hazards in the surrounding or working condition and who has authorization to take prompt corrective action to eliminate such hazards.

I. "Decontamination area" is an area for removal of contaminated personal protective equipment (PPE).

J. "High-efficiency particulate air filter equipment" or "HEPA filter equipment" means vacuuming equipment containing a UL 586 HEPA filter system capable of preventing passage of lead-contaminated paint dust with an efficiency of 99.97 percent of particles greater than 0.3 micron size.

K. "Inductively-coupled plasma atomic emission spectrometry" means an analytical laboratory method of determining the lead content of a given sample.

L. “Industrial hygiene technician” is a person trained and experienced in the use of environmental sampling equipment as applicable to this Project and who is under the direct supervision of the CIH.

M. “Lead” means metallic lead, inorganic lead compounds, and organic lead soaps. Excluded from this term are other organic lead compounds.

N. “Lead control area” is an emission control area to prevent the spread of lead dust, paint chips, and debris from lead-containing paint removal operations. Lead control area is isolated by physical boundaries to prevent unauthorized entry of personnel.

O. “Lead-based paint”: Paint is considered to be lead-based when it contains detectable quantity of lead to the limit of detection using USEPA Method SW 846 Method 6010.

P. “Lead-containing paint”: Any and all components, paints or surface coating material containing detectable concentrations of lead by weight in the dry solid (16 CFR 1303).

Q. “Lead waste”: Miscellaneous waste, dust or debris generated during removal of lead-containing materials, cleanup of a lead control area, or decontamination activities.

R. “Permissible exposure limit” or “PEL” is 50 micrograms per cubic meter of air as an eight-hour TWA as determined by OSHA 29 CFR 1926.62. If a person is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula: PEL = 400 micrograms per cubic meter of air/hours worked per day.

S. “Personal monitoring” means independent sampling by a qualified laboratory of lead concentrations within the breathing zone of a person to determine the eight-hour TWA concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the person’s work tasks. Breathing zones shall be considered an area in a hemisphere, forward of the shoulders, with a radius of six to nine inches and the center at the nose or mouth of the person.

T. “Physical boundary” is an area physically roped or partitioned off around a lead control area to limit unauthorized entry of personnel. As used in this Section, "outside boundary" means the same as "outside lead control area."

U. “Time-weighted average” or “TWA” is the airborne concentration of lead averaged over an eight-hour workday to which a person is exposed.

V. “Trigger activities”: Activities that involve the disturbance of lead- containing materials will trigger requirements under the OSHA Lead In Construction standard for conducting personnel exposure assessment sampling, training, medical monitoring, respiratory protection and other requirements as specified in 29 CFR 1926.62. Examples of trigger activities include abrasive blasting, welding, cutting, torch burning, manual demolition of structures, manual scraping, manual sanding, heat gun application, rivet busting, and power tool cleaning.

W. “Wipe sampling” means clearance testing procedures used for determining the amount of existing LBP and/or LCP surface dust by atomic absorption spectroscopy analysis, or inductively coupled plasma emission spectrometry expressed in micrograms of lead. Whatman filters and deionized water shall be used to sample a one square foot area.

PART 2 PRODUCTS

2.01 EQUIPMENT - GENERAL

A. Use only non-toxic, non-hazardous materials, and tools. Materials or equipment containing lead or Asbestos or other toxic or hazardous materials shall not be brought to the Site.

B. Waste Containers: Provide and use containers for storing and transporting Hazardous Waste, including LBP and/or LCP residue, that are approved by the state department of transportation or other applicable authority having jurisdiction.

C. Respirators: Select respirators approved by OSHA and the United States Department of Health and Human Services for use in areas containing LBP and/or LCP dust. Provide personnel engaged in the removal of LBP and/or LCP at a minimum with half-mask HEPA cartridge filter respirators or full face PAPR, until the CIH establishes the TWA. After the TWA has been determined, Contractor may modify respiratory protection as outlined in 29 CFR 1926.62, but the use of half-mask, HEPA cartridge filter respirators, full face PAPR, or equivalent must be maintained at a minimum throughout all abatement and other operations involving lead-containing materials.

D. Special Protective Clothing: Furnish personnel who have potential of being exposed to lead-contaminated dust with appropriate disposable protective whole body clothing, head covering, gloves, and foot coverings. Tape sleeves at the wrist and secure foot coverings at the ankles. Furnish appropriate disposable plastic or rubber gloves to protect hands. Ear muffs or other protection shall be provided and used during all removal operations with power tools unless it is demonstrated that noise levels are within OSHA standards. Eye protection shall be worn and used throughout operations involving clean up and removal of lead-containing material. The level of protection may be adjusted upon completion of initial employee exposure assessment with approval of CIH but must be maintained at levels not less than those stated in this paragraph.

E. Rental Equipment Notification: When rental equipment will be used during demolition, removals, handling, and disposal materials containing lead or coated with LBP and/or LCP, notify rental entity in writing concerning the intended use of rented equipment.

F. Filter Certifications: HEPA Filters used in filtered vacuuming equipment shall comply with UL 586 requirements and cutting tools manufacturers specifications and recommendations.

G. Polyethylene Sheeting: Polyethylene film in the largest size possible to minimize seams, and six (6) mil thick, shall be provided. Frosted, clear or black film may be used. Reinforced sheeting may be required when a contained area is exposed to the outside. All poly sheeting shall be fire retardant.

2.02 EQUIPMENT - LEAD PAINT REMOVAL

A. Use only products and tools complying with requirements presented below:

1. Use vacuum-assisted power tool system with demonstrated suitability and efficiency in preparing metal surfaces in accordance with SSPC SP-11 and with demonstrated effectiveness in maintaining lead emissions below 30 mg/m3 during abatement operations. Such systems may include dustless needle guns, dustless automatically recirculating wheel blast (rotopeens), and right angle grinders which capture all dust and debris at the cutting tool edge and transport the material under vacuum conditions to an airtight disposal container. Dustless needle guns shall be utilized on metal surfaces only.

2. System shall allow removal and replacement of collection containers under negative pressure to prevent release of dust during removal and replacement operations. System shall be equipped with feature to automatically shut off in the event of vacuum failure.

3. Monitor recovery/abrasive action tool at all times using a device capable of determining recovery at the face of each tool and automatically disabling the tool in the event recovery levels are insufficient. As a minimum, monitor shall have the following features: remote warning light, adjustable recovery set point, automatic equipment disabling capabilities, sensing range of zero to five psi, solid-state photohelic instrumentation, and remote sensing at the tool face. Calibrate safe recovery point each day before start up, and each time a new tool or vacuum source is used. Comply with manufacturers' recommendations relative to set-up and use of monitor. Maintain a daily log identifying all calibrations of recovery levels and down time as a result of insufficient recovery levels. Maintain manufacturer's operations and maintenance manual at the Site.

4. Do not use products containing crystalline silica, and do not introduce non-recoverable materials, and do not use cutting material, that introduces toxic or hazardous materials.

5. Cutting head for use on flat surfaces shall be capable of cutting to within 1.5 inches of inside corners, molding, and edges and may include rotopeen scalers, and dustless needle guns. Tools for corners and moldings shall be specifically designed for such purpose and shall conform to all inside corners, outside corners, curved, flat, and angled surfaces to be abated under this Contract while maintaining vacuum control at the work surface/cutting head interface. Shrouded HEPA vacuum fitted needle guns may be used for non-flat surfaces in accordance with manufacturer recommendations. Vacuum-assisted finishing tools, such as right angle grinders, may be used to achieve SSPC SP-11 compliance but shall not be used for primary removal.

6. Vacuum-assisted power tool systems complying with performance standards indicated in this Section may be used; upon request of Engineer submit performance documentation evidencing suitability for intended use.

2.03 LBP / LCP REMOVAL CHEMICAL STRIPPER SYSTEM

A. LBP / LCP Removal Chemical Stripper System:

1. Use an environmentally safe chemical paint stripping system with demonstrated suitability and efficiency in preparing cast-in-place concrete, metals, cement, and plaster surfaces to achieve surfaces which are free of any visible residues of LBP and/or LCP and with demonstrated effectiveness in maintaining lead emissions below 30

2. mg/m3 during abatement operations. Such systems may include non- alkaline or alkaline strippers which do not contain methylene chloride, and which provide the lowest possible level of toxicity consistent with the type of lead-based paint to be removed. Neutralization procedures and products shall be provided for alkaline stripping systems.

3. More than one product may be required to strip LBP and/or LCP. Use of multiple products shall be in accordance with acceptable use as recommended by the individual chemical paint stripping compounds.

4. Provide all chemical paint stripping compounds in the manufacturer's unopened and original containers bearing accurate information on the product contained therein with all labels intact and completely legible. Materials that do not comply with requirements shall immediately be removed from the Site and shall not be used in the Work.

2.04 TEMPORARY FACILITIES

A. Use of Owner provided facilities shall be coordinated through the Ownerand/or Contractor.

B. All hook-ups to the Owner’s existing utilities shall be the responsibility of the Contractor. Contractor shall be responsible for utilizing licensed tradesman for installation of any electrical or water hook-ups required. Such hook-ups shall not interfere, in any way, with the buildings’ tenant operations for business-occupied areas of the building and their associated utilities and facilities.

C. Contractor is responsible to remove all temporary facilities and utilities which they installed and return such facilities and utilities to their original condition.

PART 3 EXECUTION

3.01 COORDINATION

A. Contractor shall provide written notice to the Engineer prior to the start of any paint removal work.

B. Contractor shall make every effort to establish containment areas such that they do not prohibit access by Owner to Owner's facilities.

3.02 MONITORING, TESTING AND SAMPLING EQUIPMENT

A. Contractor shall properly calibrate and supply the instrumentation needed for the monitoring of workers including all equipment needed for its operation (e.g., generators, batteries, power cords, fuel, etc.) as required by OSHA.

B. Contractor shall use equipment that is free of loose dust and debris when brought onto each Work Site, and upon removal. Contractor shall vacuum using HEPA filtered vacuum shrouds and/or wet wipe the equipment with an approved cleaning solution to assure that it is clean prior to removal from the work site.

3.03 WASTE CONTAINERS

A. Hazardous Waste:

1. Contractor shall provide USDOT-approved containers in accordance with 49 CFR 178 (e.g., 17H containers in the case of 55 gallon drums) of the appropriate size and type for the Hazardous Waste generated on the project. Use containers that are resistant to rust or corrosion (painted, if constructed of steel), that have tight fitting lids or covers, and which are water-resistant and leak proof.

2. Provide the Engineer with a signed statement that the containers are labeled as required by applicable Federal, State and Local regulatory requirements.

B. Non-Hazardous Waste:

1. Contractor shall provide all containers for Non-Hazardous Waste. Use containers that are free of loose debris when brought on-site. Containers shall be watertight and corrosion resistant.

C. Spent Solvents:

1. Contractor shall provide all containers for spent solvents, whether the solvent is designated for reuse, or for disposal as Hazardous Waste, and do not mix spent solvents with spent abrasives, paint debris, water, or other waste. Containers shall be watertight and corrosion resistant.

D. Container Maintenance:

1. Contractor shall maintain all containers in good operating condition with lids and closing mechanisms intact and operational to prevent the escape of debris, spilling of the contents, or access by unauthorized personnel and observe all labeling requirements.

3.04 CONTAINMENT

A. Contractor shall provide proper containment measures in all areas where LBP and/or LCP is to be removed. LBP shall be removed without damage or contamination to adjacent areas, buildings, waterways, or the environment in any fashion. This shall include any water runoff from wet removal methods. Water runoff from wet removal methods shall not be discharged to drains.

B. Contractor shall prevent dust, paint chips, spent removal media, solvents, and other debris from entering any drain and shall immediately contain and clean up any materials which become deposited near or in any drain or come into contact with any standing or flowing water.

C. Contractor shall supply all equipment and materials needed to contain emissions, releases, waste and/or debris in accordance with OSHA standards.

D. Contractor shall establish emergency and fire exits from the containment area. Provide first aid kits and two full sets of protective clothing and respirators for use by qualified emergency personnel outside of the work area.

E. Contractor shall provide a logbook throughout the entire term of the project. All persons who enter or leave the containment area shall sign the logbook. Document any intrusion into the work area or other incident in the logbook.

3.05 REMOVAL OF LBP / LCP

A. Perform removal of LBP and/or LCPs in accordance with the approved LBP and/or LCP removal work plan.

B. Use procedures and equipment as required to limit occupational and environmental exposure to lead when LBP and/or LCP is removed in accordance with referenced standards.

C. Limit the production and dissemination of dust as much as possible.

D. LBP and/or LCP shall be removed to the extent required to perform the safe and lawful removal and disposal of the equipment or piping scheduled for demolition.

E. Torch cutting, open flame burning, power tool use and/or other work which will disturb, affect, or demolish LBP and/or LCP shall be permitted only after all visible paint has been removed from the substrate surface for a minimum distance of six (6) inches on all sides of the location proposed for cutting, burning, power tool use and/or other work which will disturb, affect, or demolish the paint.

3.06 WORK AREA CLEAN-UP AND MAINTENANCE

A. At the end of each work day, the Contractor shall visually inspect the entire work area for dust, paint chips, spent paint removal media, solvents, and other debris that have been deposited within the work area or surrounding surfaces, water or soil. If debris from the Contractor's operations is observed outside the initial inspection limits, the limits shall be expanded to include additional areas as directed by the Engineer.

B. Contractor shall clean up all visible dust, paint chips, spent paint removal media, solvents, and other debris at the end of each work day, or more frequently as directed by the Engineer.

C. Clean all surfaces within the work area and surrounding areas at the end of each work day by wet vacuuming and/or wet wiping or washing, as directed by the Engineer. When wet vacuuming, use only vacuums that are equipped with HEPA filters. Conduct wipe sampling to verify that lead levels are below the required clearance criteria. If lead levels exceed this clearance criteria, repeat clean-up procedures as necessary until wipe sampling verifies that lead levels are below the clearance criteria.

3.07 HEALTH AND SAFETY

A. Where in the performance of the work, workers, supervisory personnel or sub-contractors may encounter, disturb, or otherwise function in the immediate vicinity of contaminated items and materials, all personnel shall take appropriate continuous measures as necessary to protect all ancillary building occupants from the potential lead exposure.

1. Such measures shall include the procedures and methods described herein and shall be in compliance with all applicable regulations of Federal, State and Local agencies.

B. Contractor shall provide all necessary Personal Protective Equipment (PPE) and emergency response equipment needed for the Work as required by OSHA and State Labor Law.

1.

2. Workers must be trained as per OSHA and Department of Labor requirements, have medical clearance and must have recently received Pulmonary Function Test (PFT) and respirator fit tested by a trained professional.

a. A personal air sampling program shall be in place as required by OSHA.

b. The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

C. Contractor shall provide all medical monitoring necessary to comply with OSHA regulations.

D.

E. At the completion of LBP and/or LCP removal operations, Contractor shall provide the services of a qualified laboratory to perform post-cleaning testing of surfaces within the work area and areas adjacent to the containment area to verify that lead-based dust and other debris generated by the Contractor's operations have been properly cleaned from the area. The EngineerEngineer shall be present during all wipe testing. Contractor shall submit a letter to the Engineer certifying that the work areas have been properly cleaned.

PRE-DISPOSAL TESTING

A. Prior to disposal, test the removed materials for toxicity in accordance with EPA Method 1311, Toxicity Characteristic Leaching Procedure (TCLP).

1. Test results indicating a value greater than 5 ppm lead classifies the removed material as Hazardous Waste.

2. Removed material shall be classified according to the requirements of the receiving site and the agencies having jurisdiction.

4.02 DISPOSAL OF LBP AND/OR LCPS AND RELATED DEBRIS

A. Transport and dispose of LBP and/or LCPs and related debris classified as Hazardous Waste in accordance with the standards referenced in this Section.

B. Generated waste removed from the site must be documented, accounted for, and disposed of in compliance with all Federal, State, and local regulations.

C. In addition to any State requirements, comply with all transportation and disposal requirements of the jurisdiction of the disposal site.

4.03 RESTORATION

A. Remove temporary decontamination facilities and restore the work area to its original condition or better.

B. Restore any areas outside the work area damaged or contaminated by the Contractor's operations to their original condition or better.

4.04 RECORD KEEPING REQUIREMENTS

A. Contractor shall comply with all Federal, State, and local regulations regarding record keeping requirements concerning the handling and disposal of LBP and/or LCPs and related debris.

B. Contractor shall document the transportation and disposal of LBP and/or LCPs and related debris using four (4) copy manifests. Each manifest shall be numbered and shall document the contents of each waste container and shall record the chain of custody from the time the materials are removed from the site to the time of proper disposal.

END OF SECTION

SECTION 22 14 29
SUMP PUMPS

PART 1 GENERAL

1.01SCOPE OF WORK

A. Section includes submersible sump pump and related appurtenances.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 - Submittal Procedures

B. Section 01 77 00 - Closeout Procedures

C. Section 22 05 13 - Common Motor Requirements for Plumbing Equipment

D. Section 22 05 53 - Identification for Plumbing Piping and Equipment

E. Section 22 10 00 - Plumbing Materials and Methods

F. Section 22 10 05 - Plumbing Piping

G. Section 26 29 13 - Enclosed Motor Controllers

1.03 REFERENCE STANDARDS

A. Hydraulic Institute Compliance - Design, manufacture, and install pumps in accordance with "Hydraulic Institute Standards."

B. National Electrical Code Compliance - Components shall comply with NFPA 70 - National Electrical Code.

C. UL Compliance - Pumps shall be listed and labeled by UL and comply with UL 778 - Motor Operated Water Pumps.

D. NEMA Compliance - Electric motors and components shall be listed and labeled NEMA.

E. SSPMA Compliance - Test and rate sump and sewage pumps in accordance with the Sump and Sewage Pump Manufacturers Association (SSPMA) Standards.

1.04 SUBMITTALS

A. Submittals, including number of required copies, shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

B. Manufacturer's Literature and Data including full item description and optional features and accessories. Include dimensions, weights, materials, applications, standard compliance, model numbers, size, and capacity.

1. Pump:
    a. Manufacturer and model.
    b. Operating speed (rpm).
    c. Capacity.
    d. Characteristic performance curves.
2. Electric Motor:
    a. Manufacturer, frame and type.
    b. Speed.
    c. Current Characteristics and W (HP).
    d. Efficiency.

3. Control panel.

4. Sensors.

C. Certified copies of all the factory and construction site test data sheets and reports.

D. Complete operating and maintenance manuals including wiring diagrams, technical data sheets and information for ordering replacement parts:

1. Include complete list which indicates all components of the system.

2. Include complete diagrams of the internal wiring for each item of equipment.

3. Diagrams shall have their terminals identified to facilitate installation, operation and maintenance, and troubleshooting.

E. Operation and Maintenance Manuals: Submit in accordance with requirements of Section 01 77 00 - Closeout Procedures, operation and maintenance manuals for items included under this Section.

1.05 AS-BUILT DOCUMENTATION

A. Submit manufacturer's literature and data updated to include submittal review comments and any equipment substitutions.

B. Submit operation and maintenance data updated to include submittal review comments, substitutions and construction revisions shall be in electronic version on compact disc or DVD inserted into a three-ring binder. All aspects of system operation and maintenance procedures, including piping isometrics, wiring diagrams of all circuits, a written description of system design, control logic, and sequence of operation shall be included in the operation and maintenance manual. The operations and maintenance manual shall include troubleshooting techniques and procedures for emergency situations. Notes on all special systems or devices such as damper and door closure interlocks shall be included. A List of recommended spare parts (manufacturer, model number, and quantity) shall be furnished. Information explaining any special knowledge or tools the owner will be required to employ shall be inserted into the As-Built documentation.

C. The installing contractor shall maintain as-built drawings of each completed phase for verification; and shall provide the complete set at the time of final systems certification testing. As-built drawings are to be provided, and a copy of them in AutoCAD (version 2017 or newer) provided on compact disk or DVD. Should the installing contractor engage the testing company to provide as-built or any portion thereof, it shall not be deemed a conflict of interest or breach of the 'third party testing company' requirement.

D. Certification documentation shall be provided to Owner and Engineer at least 10 working days prior to submitting the request for final inspection. The documentation shall include all test results, the names of individuals performing work for the testing agency on this project, detailed procedures followed for all tests, and a certification that all results of tests were within limits specified.

1.06 DELIVERY, STORAGE AND HANDLING

A. Apply factory finish paint to assembled, tested units prior to shipping.

B. Preparation for Shipping: After assembly and testing, clean flanges and exposed machined metal surfaces and treat with an anti-corrosion compound. Protect flanges, pipe openings, and nozzles.

1. Store pumps in a dry location.

2. Retain shipping flange protective covers and protective coatings during storage.

3. Protect bearings and couplings against damage from sand, grit, and other foreign matter.

4. For extended storage times (greater than 30 days), dry internal parts with hot air or a vacuum-producing device. After drying, coat internal parts with light oil, kerosene, or antifreeze. Dismantle bearings and couplings, dry and coat with an acid- free, heavy oil, and tag and store in dry location.

C. Comply with manufacturer's rigging instructions for handling, if required.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Pump shall be a submersible model as manufactured by:

1. FLYGT Model CS-3045
2. Engineer approved equal

2.02 EQUIPMENT

A. Centrifugal, vertical, submersible pump and motor, designed for 140 degrees F maximum water service. Driver shall be electric motor. Support shall be rigid type. Provide perforated, suction strainer. Systems may include one, two, or more pumps with alternator as required by Contract Documents. Pumps shall be capable of continuous duty cycle.

B. Casing: cast iron, bronze, aluminum or stainless steel. Cast iron and aluminum housings for submersible pumps shall be epoxy coated. Bio-based materials shall be utilized when possible.

C. Impeller: Statically and dynamically balanced, keyed and secured to shaft, // bronze ASTM B584.

D. Seal: Ceramic-faced mechanical seal.

E. Shaft: Shaft shall be stainless steel.

F. Bearings: As required to hold shaft alignment, antifriction type for thrust permanently lubricated. Bio-based materials shall be utilized when possible.

G. Motor: Maximum 104 degrees F ambient temperature rise above the maximum fluid temperature being pumped, drip-proof hermitically sealed, lifting eye, capacitor start type, voltage and phase as shown in schedule on Electrical drawings conforming to NEMA Type 4X. Size the motor capacity to operate pump without overloading the motor at any point on the pump curve. Refer to Section 22 05 13 - Common Motor Requirements for Plumbing Equipment.

H. Automatic Control and Level Alarm: Furnish a control panel in a NEMA 4X enclosure for areas subject to water intrusion. The controls shall be suitable for operation with the electrical characteristics listed on the Electrical drawings. The control panel shall have a level control system with switches to start and stop pumps automatically, and to activate a high-water alarm. The sensors may be float type switches. The high-water alarm shall have a red beacon light at the control panel. Provide auxiliary contacts for remote communication with, and alarm monitoring to, the SCADA system using hardwired communication.

1. The circuitry of the control panel shall include:
    a. Power switch to turn on/off the automatic control mechanism
    b. HOA switches to manually override automatic control mechanism
    c. Run lights to indicate when pumps are powered up
    d. Level status lights to indicate when water in sump has reached the predetermined on/off and alarm levels
    e. Magnetic motor contactors
    f. Disconnect/breaker for each pump

g. Automatic motor overload protection

h. Wiring terminal block

i. Dead front

j. Auxiliary contacts

k. Control circuit protection

l. Fused control step down transformer

m. Disconnect/breaker for control panel

2. Sensors that detect the level of water in the sump shall be so arranged as to allow the accumulation of enough volume of liquid below the normal on-level that the pump will run for a minimum cycle time as recommended by the pump manufacturer. Sensors shall be located to activate the alarm adequately before the water level rises to the inlet pipe.

3. Wiring from the sump to the control panel shall have separate conduits for the pump power and for the sensor switches. All conduits are to be sealed at the basin and at the control panel to prevent the intrusion of moisture and of flammable and/or corrosive gases.

I. Pump Discharge Piping: Contractor shall provide discharge check and gate valve meeting the appropriate specifications.

J. Removal/Disconnect System: In a system utilizing a submersible pump, where sump depth, pump size, or other conditions make removal of the pump unusually difficult or unsafe, a manufacturer’s removal/disconnect system shall be provided. The system shall consist of a discharge fitting mounted on vertical guide rails attached to the sump or quick connect pipe fitting connection to piping. The pump shall be fitted with an adapter fitting that easily connects to/disconnects from the discharge fitting as the pump is raised from or lowered into the sump. The discharge piping shall connect to the discharge fitting so that it is disconnected without workers entering the pit. Where the sump depth is greater than five feet or other conditions exist to make the removal of the pump difficult or hazardous, the system shall include a rail guided quick disconnect apparatus to allow the pump to be pulled up out of the sump.

PART 3 EXECUTION

3.01 EXAMINATION

A. The following requirements apply only to pumps furnished under this Section. Pumps furnished under other Sections may have different requirements.

1. Examine areas, equipment foundations, and conditions for compliance with requirements for installation and other conditions affecting performance of plumbing pumps. Do not proceed with installation until unsatisfactory conditions have been corrected.

2. Examine rough-in for piping systems to verify actual locations of piping connections prior to installation.

3.02 INSTALLATION

A. Comply with manufacturer's written installation and alignment instructions.

B. Install pumps in locations and arrange to provide access for periodic maintenance, including removal of motors, impellers, couplings, and accessories.

C. Support pumps and piping separately so that the weight of the piping system does not rest on the pump.

D. Electrical wiring and connections are specified in Division 26.

3.03 STARTUP AND TESTING

A. Pump installation to comply with ANSI/HI 1.4 for sump pumps.

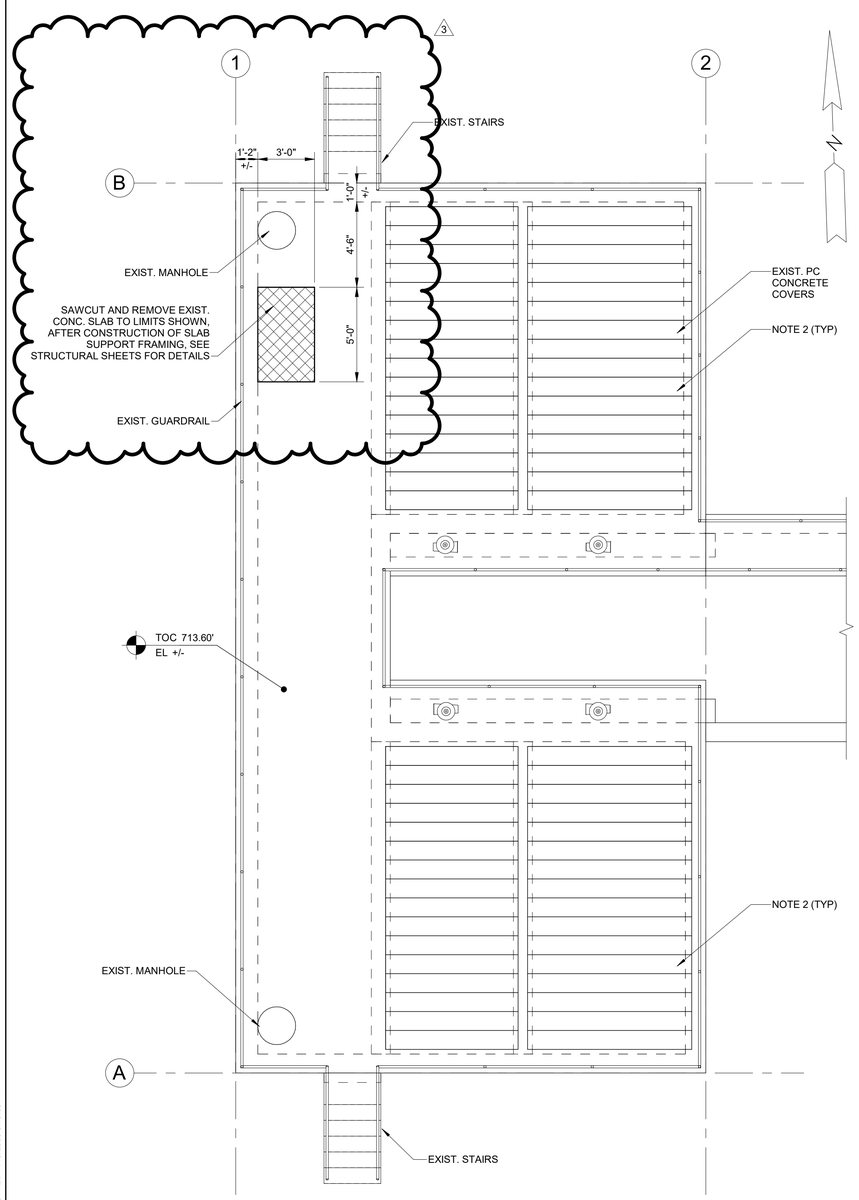
B. Leak Test: Charge piping system and test for leaks. Test until there are no leaks. Make tests as recommended by product manufacturer and listed standards and under actual or simulated operating conditions and prove full compliance with design and specified requirements. Tests of the various items of equipment shall be performed simultaneously with the system of which each item is an integral part.

C. The tests shall include system capacity and all control and alarm functions.

D. When any defects are detected, correct defects and repeat test.

E. Engineer will observe startup and contractor testing of selected equipment. Coordinate the startup and contractor testing schedules with the Owner's Representative and Engineer. Contractor shall provide a minimum of 10 working days prior to startup and testing.

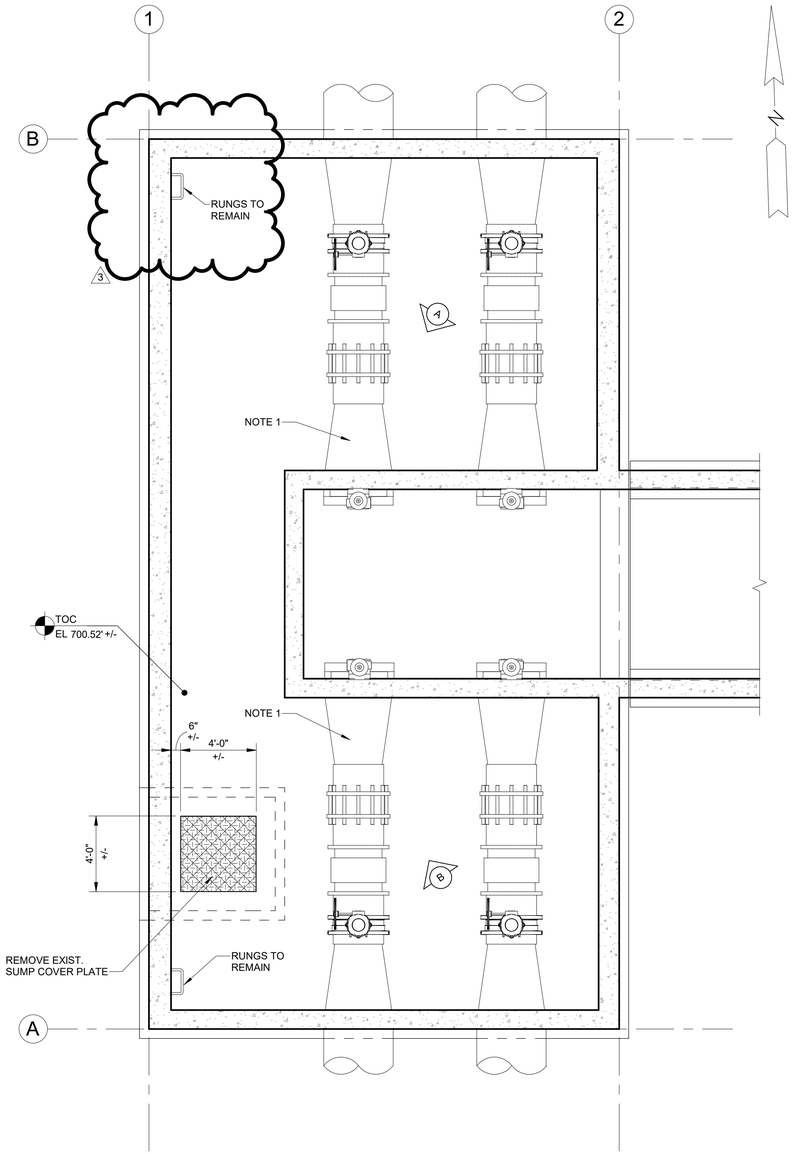
END OF SECTION



FLOW CONTROL VAULT TOP SLAB DEMO PLAN (EL 713.60-FT)

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

- EXTENT OF DEMOLITION & REMOVAL



FLOW CONTROL VAULT FDN SLAB DEMO PLAN (EL 700.52-FT)

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

- EXTENT OF DEMOLITION & REMOVAL

NOTES:

1) EXISTING STEEL STAIR AND ELEVATED PLATFORM NOT SHOWN IN PLAN, SEE PHOTOS THIS SHEET. REMOVAL AND/OR TEMPORARY MODIFICATION OF STAIR AND PLATFORM WILL BE ALLOWED. STAIR, PLATFORM, GUARDRAIL AND ACCESSORIES ARE TO BE PREPPED AND COATED, SEE SPEC 09 96 00. SUBMIT REMOVAL / MODIFICATION PLAN AND PRECONSTRUCTION VIDEO FOR REVIEW PRIOR TO BEGINNING WORK.

2) EXISTING PRECAST PLANK ROOF SECTIONS MAY BE REMOVED TO PERFORM WORK, AND MUST BE REPLACED UPON COMPLETION OF PROPOSED WORK. SEE STRUCTURAL SHEETS FOR PRECAST PLANK REINSTALLATION DETAILS.

PHOTO A:

PHOTO B:

FLOW CONTROL VAULT CROSSOVER STAIR AND PLATFORM

SCALE: NONE

2

REV#	DATE	DESCRIPTION	BY
3.	2023.07.14	ADDENDUM 2	TSW
2.	2023.07.08	ADDENDUM 1	TSW

CITY of FLINT MICHIGAN

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555 / 800.841.0342
FAX: 810.235.4975
www.wadetrim.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915
555 HULET DRIVE
BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824
PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-6312
FAX (2nd. Floor): (248) 338-2592
WEB SITE: http:// www.hrc-engr.com

CITY OF FLINT
BATTERY B SECONDARY CLARIFIER FLOW CONTROL PROJECT

STRUCTURAL DEMO - PLAN

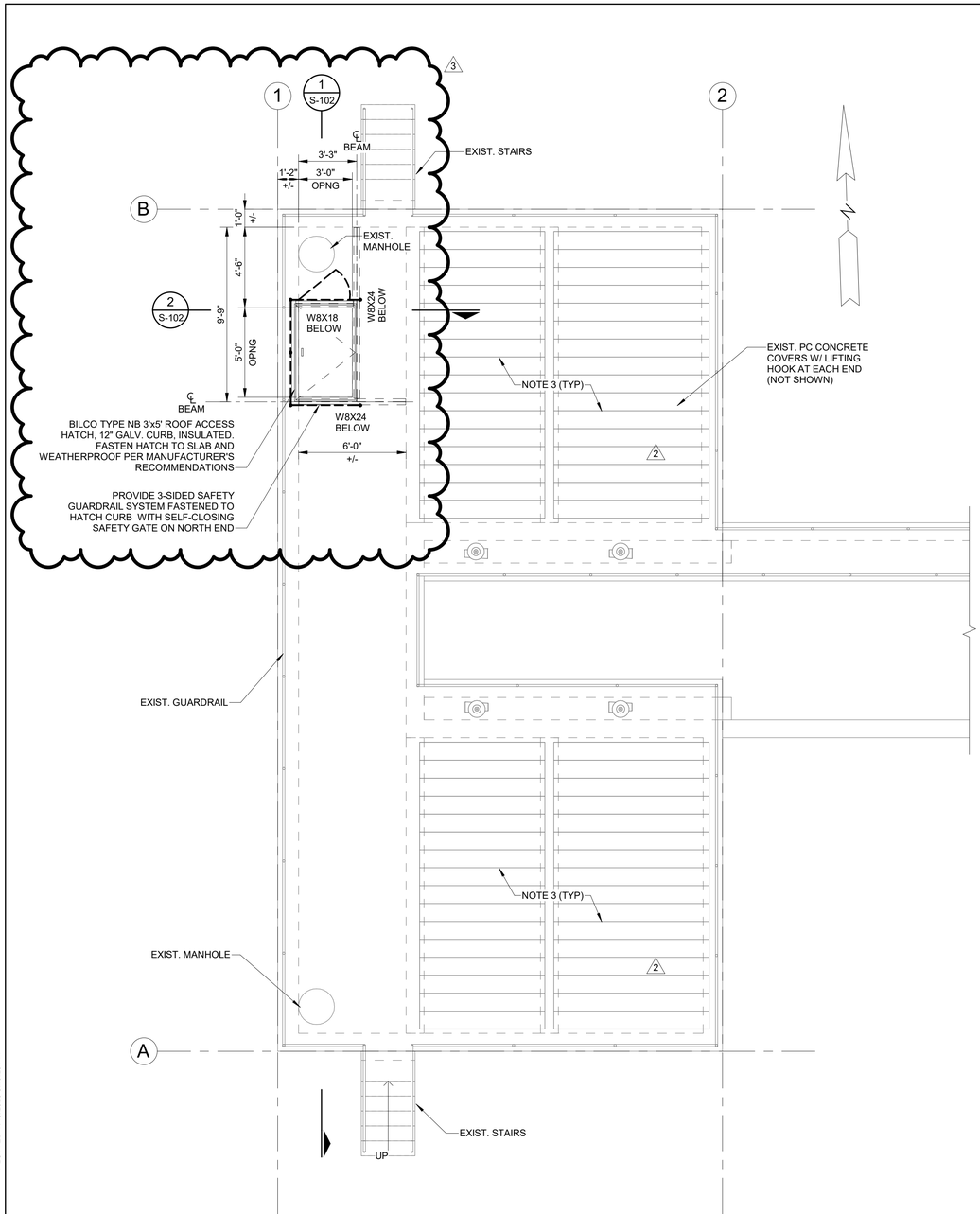
ISSUED FOR: BIDS | DATE: 2023.06.24 | BY: TSW

JOB NO. COF1077-01F

SHEET SX-100

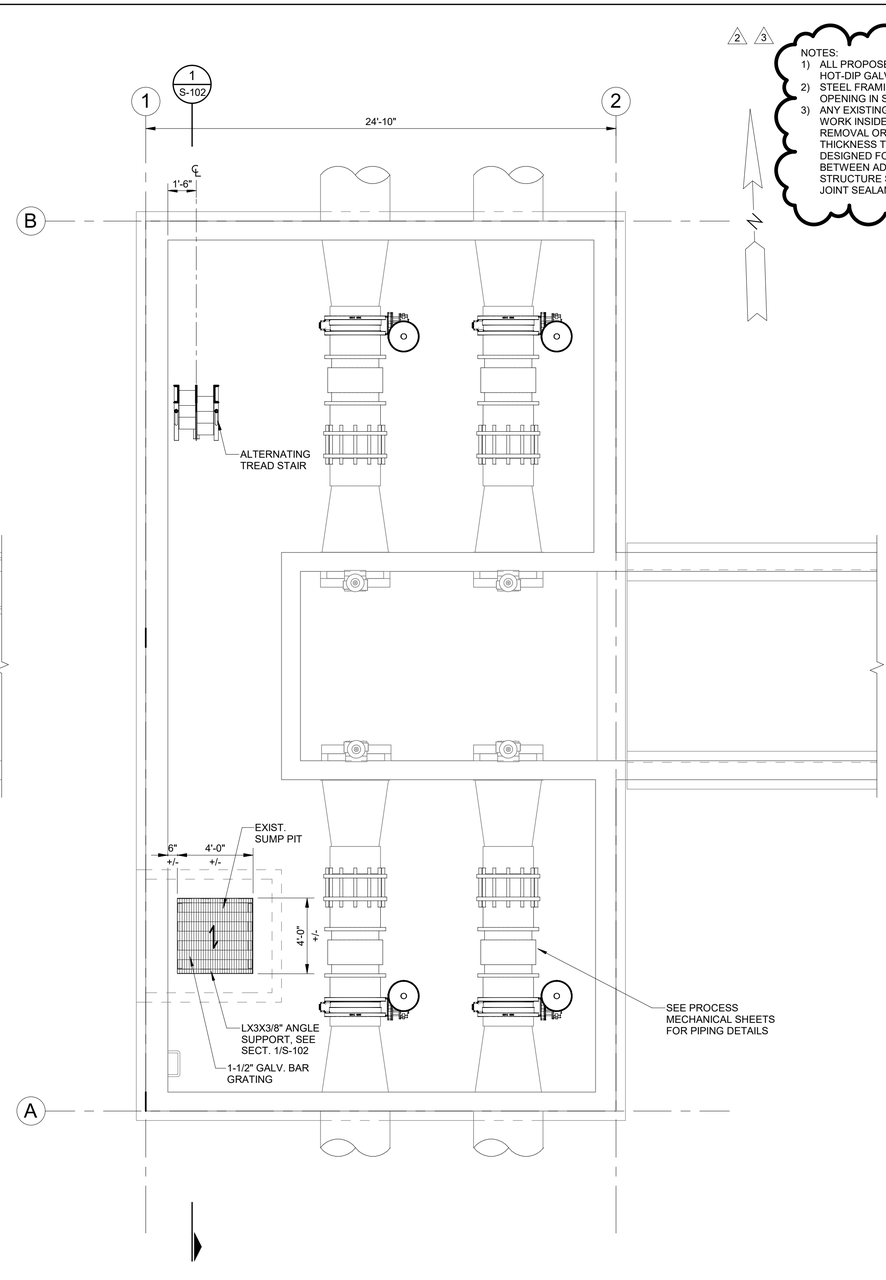
PLOTTED: 7/13/2023 3:40:23 PM

BIM 360://COF1076-7-WPCF/FC_WT_S_R21.rvt



FLOW CONTROL VAULT TOP PLAN (EL 713.60-FT)

1/4" = 1'-0"



FLOW CONTROL VAULT FDN PLAN (EL 700.52-FT)

1/4" = 1'-0"

NOTES:
1) ALL PROPOSED STEEL FRAMING, BOLTS AND CONNECTION HARDWARE TO BE HOT-DIP GALVANIZED.
2) STEEL FRAMING SHOULD BE FULLY INSTALLED BEFORE CREATING NEW OPENING IN SLAB FOR NEW ACCESS HATCH.
3) ANY EXISTING PRECAST ROOF PLANKS REMOVED TO PERFORM PROPOSED WORK INSIDE OF THE EXISTING VAULT THAT ARE DAMAGED AS A RESULT OF REMOVAL OR REPLACEMENT SHALL BE REPLACED WITH NEW PRECAST PLANKS. THICKNESS TO MATCH EXISTING, WITH LIFTING HOOKS AT EACH END, AND DESIGNED FOR A UNIFORM LIVE LOAD OF 150 PSF PLUS SELF-WEIGHT. JOINTS BETWEEN ADJACENT PRECAST PLANKS AS WELL AS THE SUPPORTING STRUCTURE SHALL BE WEATHERPROOFED, INCLUDE BACKER ROD AND ELASTIC JOINT SEALANT ALL AROUND.

REV#	DATE	DESCRIPTION	BY
3	2023.07.14	ADDENDUM 2	TSW
2	2023.07.08	ADDENDUM 1	TSW

CITY OF FLINT
MICHIGAN

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555 / 800.841.0342
FAX: 810.235.4975
www.wadetrim.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915
555 WILLET DRIVE
BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824
PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-6312
FAX (2nd. Floor): (248) 338-2092
WEB SITE: http:// www.hrc-engr.com

CITY OF FLINT
BATTERY B SECONDARY CLARIFIER FLOW CONTROL PROJECT

PLANS

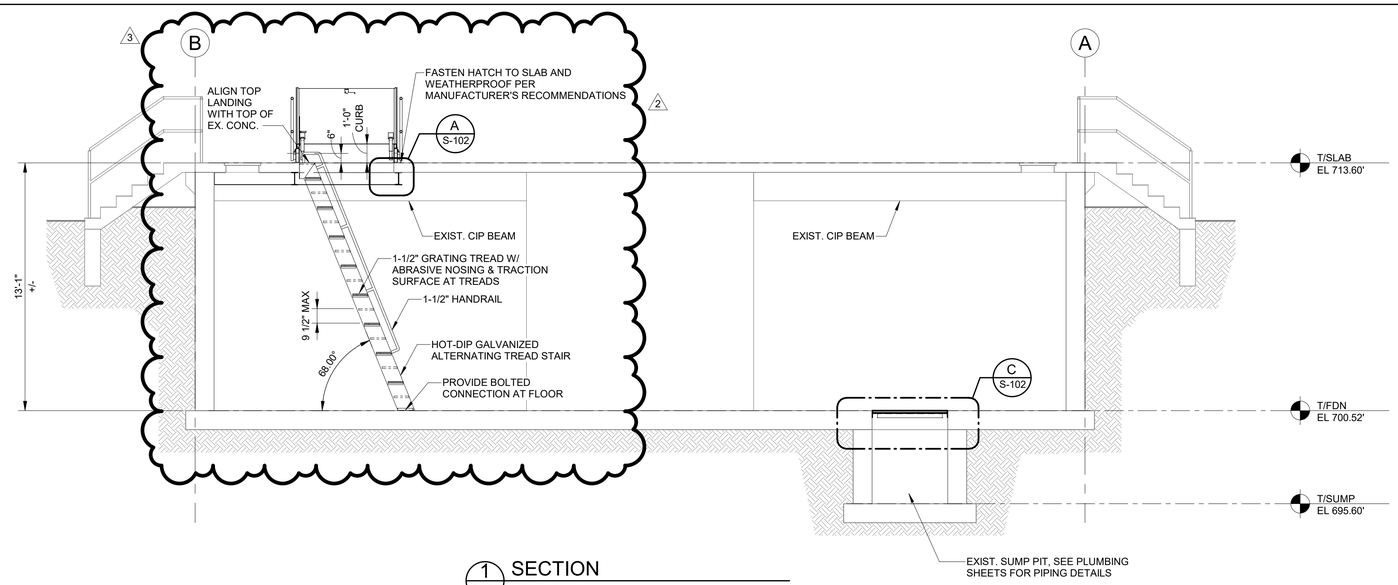
ISSUED FOR:	DATE:	BY:
BIDS	2023.06.24	TSW

JOB NO.
COF1077-01F

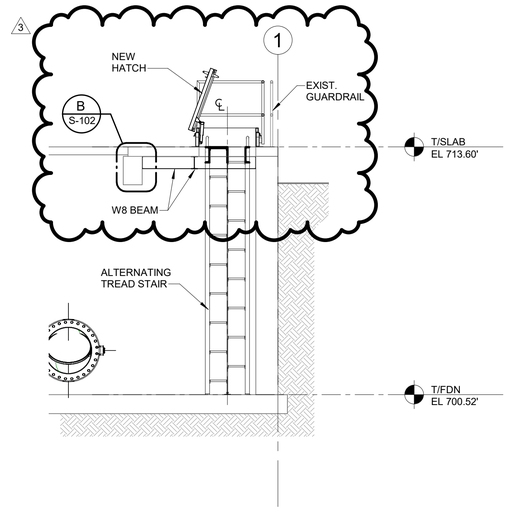
SHEET
S-101

PLOTTED: 7/13/2023 3:40:20 PM

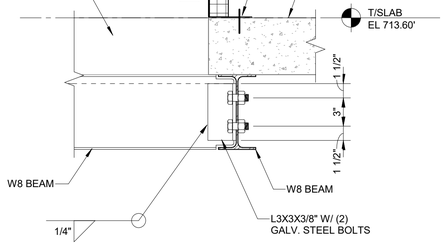
BIM 360://COF1076-7-WPCF/FC_WT_S_R21.rvt



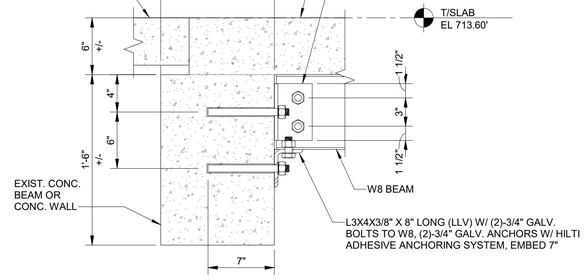
1 S-101 **SECTION**
SCALE: 1/4" = 1'-0"



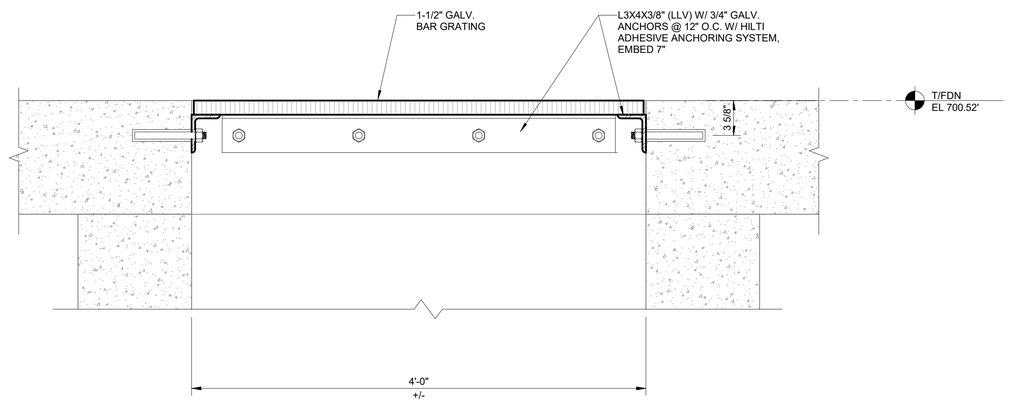
2 S-101 **SECTION**
SCALE: 1/4" = 1'-0"



A S-102 **CONNECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



B S-102 **TYP. CONC. CONNECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



C S-102 **SUMP GRATING DETAIL**
SCALE: 1 1/2" = 1'-0"

REV#	DATE	DESCRIPTION	BY
3	2023.07.14	ADDENDUM 2	TSW
2	2023.07.08	ADDENDUM 1	TSW

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555 / 800.841.0342
FAX: 810.235.4975
www.wadetrim.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915
555 HULET DRIVE
BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824
PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-6312
FAX (2nd. Floor): (248) 338-2592
WEB SITE: http:// www.hrc-engr.com

CITY OF FLINT
BATTERY B SECONDARY CLARIFIER FLOW CONTROL PROJECT

SECTIONS & DETAILS

ISSUED FOR: BIDS
DATE: 2023.06.24
BY: TSW

JOB NO. COF1077-01F

SHEET
S-102

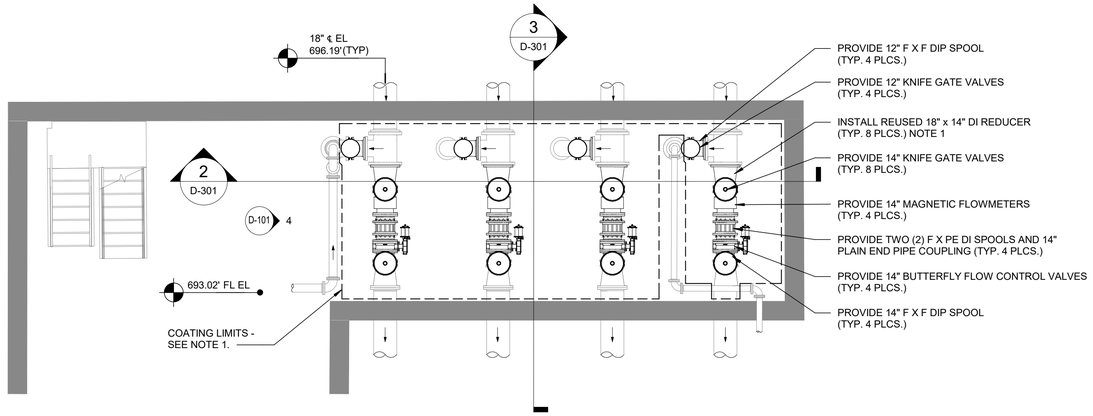
PLOTTED 7/13/2023 3:40:22 PM
BIM 360://COF1076-7-WPCFFC_WT_S_R21.rvt

NOTES:

1. PREPARE AND COAT EXISTING PIPING, PROPOSED PIPING, SUPPORTS AND VALVES PER SPECIFICATION SECTION 09 96 00. COATING LIMITS SHOWN ON PLANS. DO NOT COAT FLOW METER OR VALVE ACTUATOR.
2. EXISTING STEEL STAIR AND ELEVATED PLATFORM NOT SHOWN. SEE PHOTO THIS SHEET AND STRUCTURAL SHEET. REMOVAL AND/OR TEMPORARY MODIFICATION OF STAIR AND PLATFORM WILL BE ALLOWED. STAIR, PLATFORM, GUARDRAIL AND ACCESSORIES ARE TO BE PREPPED AND COATED - SEE SPEC 09 96 00. SUBMIT REMOVAL/MODIFICATION PLAN AND PRE-CONSTRUCTION VIDEO FOR REVIEW PRIOR TO BEGINNING THE WORK. SEE PHOTO SHEET DX-101.

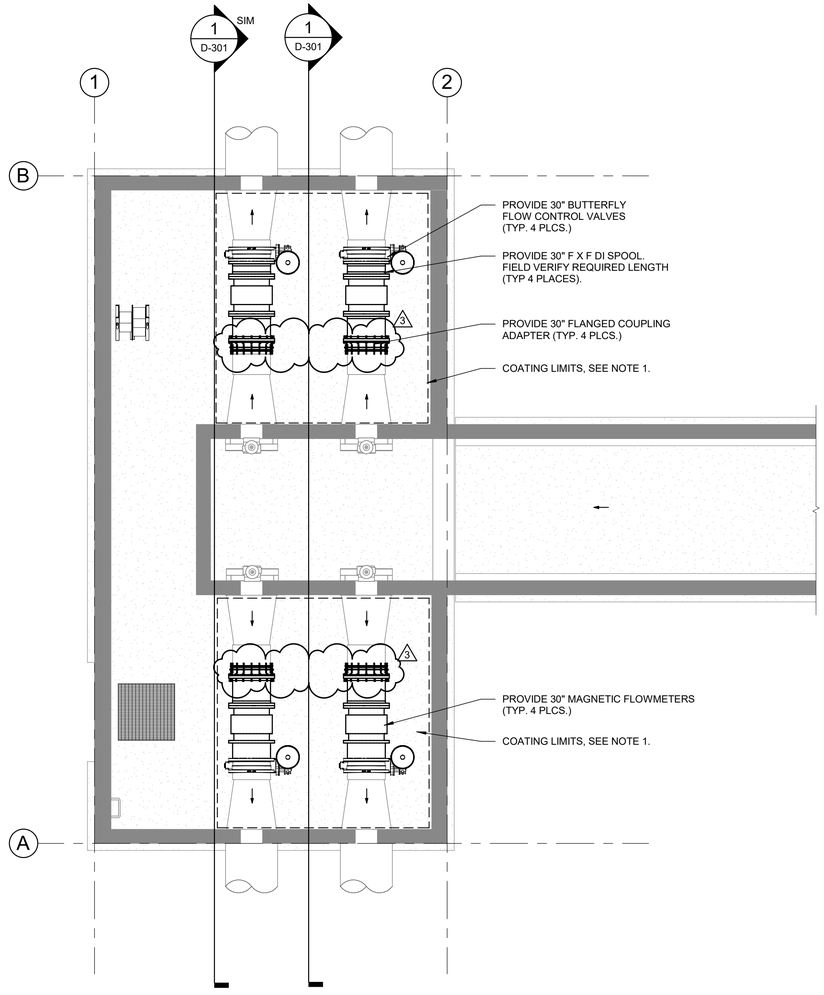
SEE NOTE 2.

4 / D-101 RAS FLOW CONTROL STAIRS AND PLATFORM
NOT TO SCALE



N

RAS FLOW CONTROL VALVE ROOM PLAN
SCALE: 3/16" = 1'-0"



N

CLARIFIER INFLUENT FLOW CONTROL VAULT T/FDN PLAN
SCALE: 3/16" = 1'-0"

REV#	DATE	DESCRIPTION	BY
3.	2023.07.14	ADDENDUM 3	TSW
2.	2023.07.07	ADDENDUM 1	TSW
1.	2023.06.24	ISSUED FOR BIDS	TSW

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555 / 800.841.0342
FAX: 810.235.4975
www.wadetrim.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING EDUCATIONS SINCE 1915
555 HULET DRIVE
BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824
PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-6312
FAX (2nd. Floor): (248) 338-2592
WEB SITE: http:// www.hrc-engr.com

CITY OF FLINT
WPCF BATTERY B SECONDARY CLARIFIER
FLOW CONTROL
FLOOR PLANS

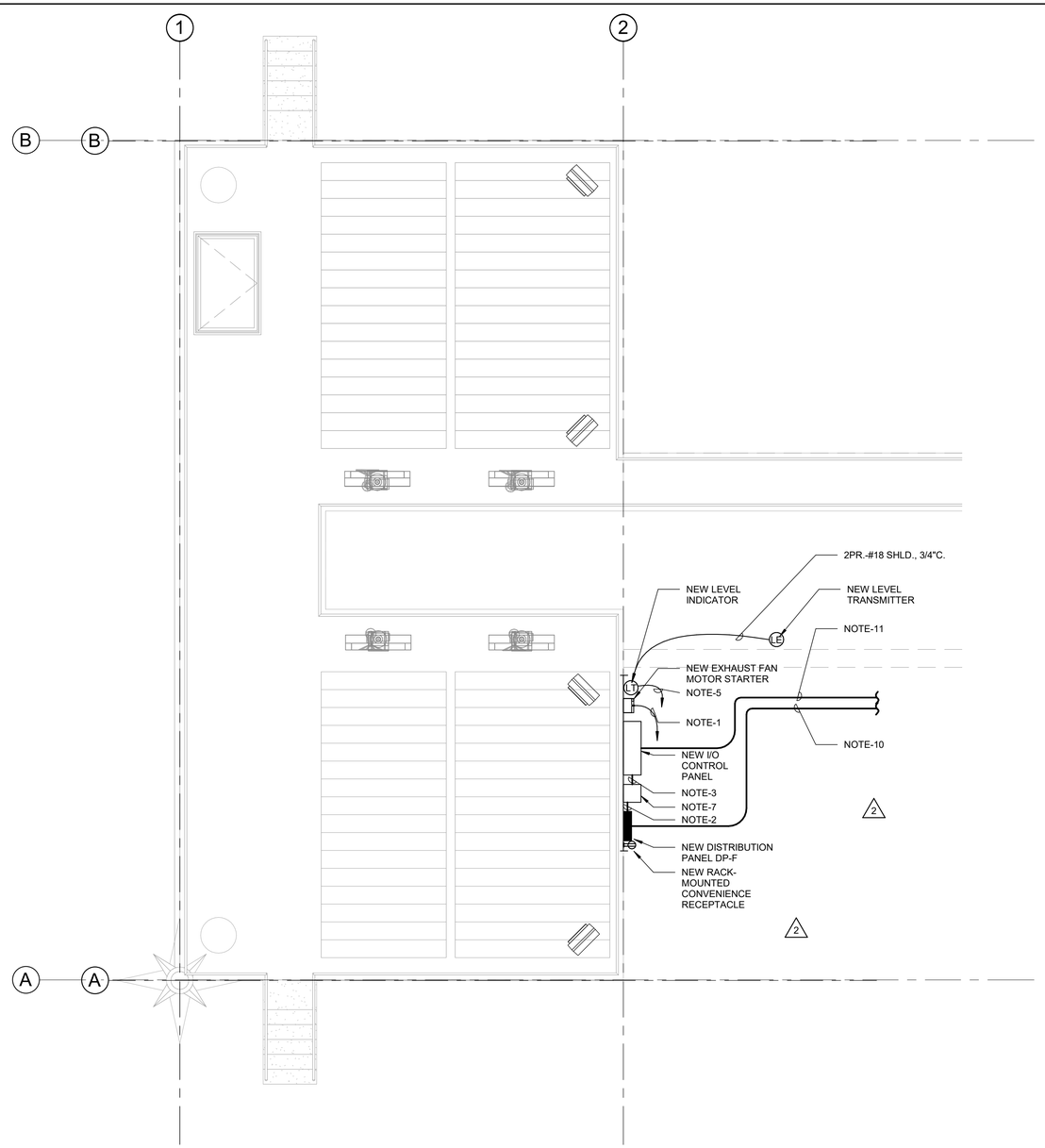
ISSUED FOR: BIDS
DATE: 2023.06.24
BY: TSW

JOB NO. COF1077-01F

SHEET D-101

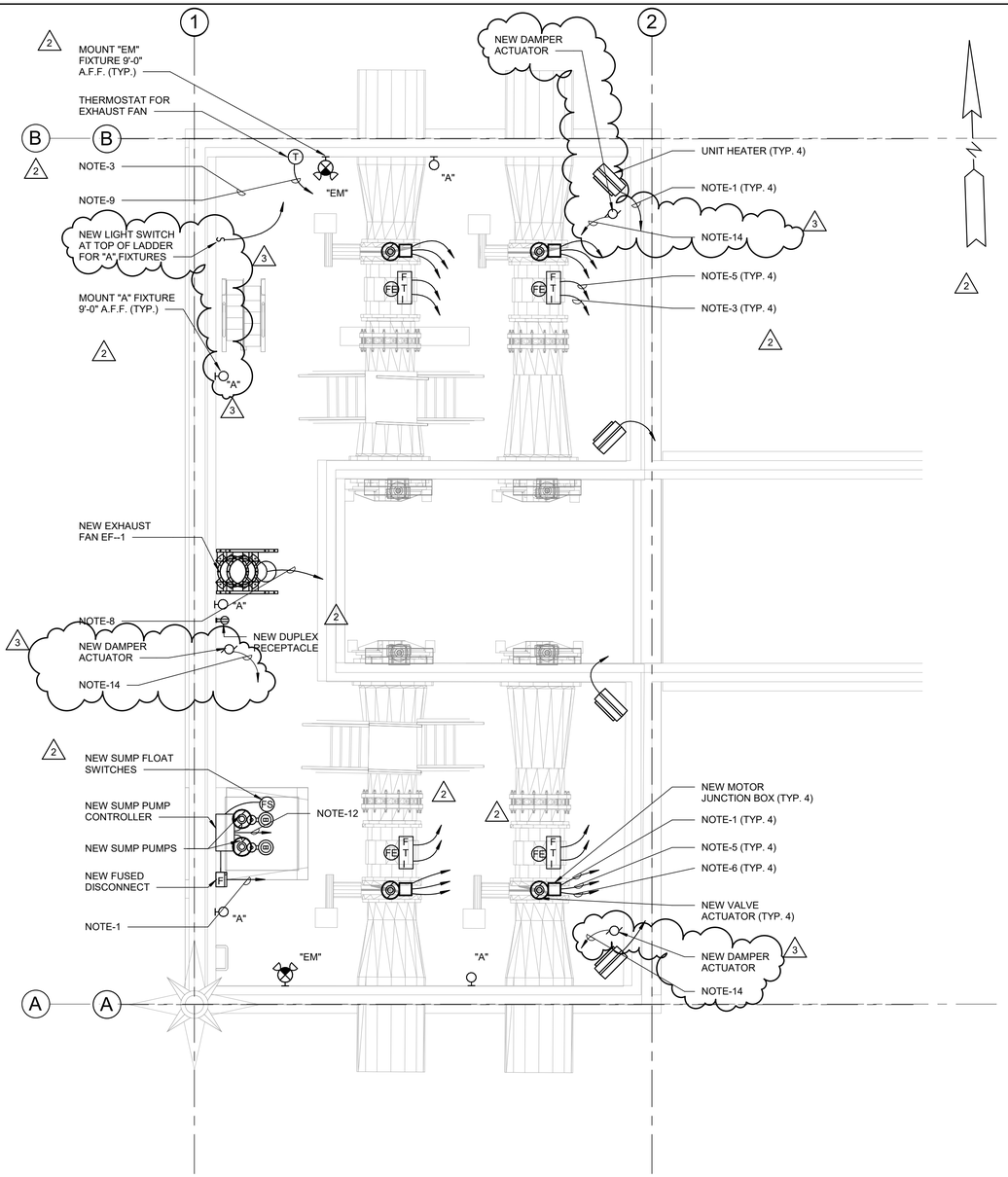
PLOTTED 7/14/2023 10:26:12 AM

BIM 360://COF1076-7-WPCF/FC_WT_D_R21.rvt



VAULT ELECTRICAL PLAN FL. EL. 715.50-FT

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



VAULT ELECTRICAL PLAN FL. EL. 700.52-FT

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

PLAN NOTES:

1. 3-#12 + GRD., 3/4"C. TO DP-F.
2. 2-#10 + 1-#10 GRD., 3/4"C.
3. 2-#12 + 1-#12 GRD., 3/4"C. TO LP-F.
4. INSTALL I/O CONTROL PANEL. PANEL FURNSHED BY OTHERS, SEE APPENDIX FOR PANEL DESCRIPTION.
5. 2PR-#18 SHLD., 3/4"C. TO I/O CONTROL PANEL.
6. 6-#14, 3/4"C. TO I/O CONTROL PANEL.
7. MINI-LOAD CENTER, 480-240/120V, 10 KVA, 1-PHASE.
8. 3-#12 + 1-#12 GRD., 3/4"C. TO EXHAUST FAN MOTOR STARTER.
9. 2-#14, 3/4"C. TO EXHAUST FAN MOTOR STARTER.
10. 3-#2 + 1-#8 GRD., 1 1/4"C. TO MCC P4E + 1-2"C. (SPARE) AND 1-1"C. (SPARE) TO MCC P4W + 1-2"C. (SPARE) AND 1-1"C. (SPARE) AND 1-1 1/4"C. (SPARE) TO MCC P4E. CAP SPARE CONDUITS AT WALL BELOW NEW PANELS.
11. 1-4 STRAND FIBER OPTIC CABLE, 1 1/4"C. TO EXISTING REMOTE I/O PANEL LOCATED IN EQUIPMENT BUILDING.
12. 2-#14, 3/4"C. TO NEW REMOTE I/O PANEL.
13. ALL EXPOSED CONDUIT, EXTERIOR AND IN VAULT, SHALL BE PVC COATED.

14. 2-#12+1-#12 GRD., 3/4" C. TO EF-1 MOTOR STARTER.

REV#	DATE	DESCRIPTION	BY
3	2023.07.13	ADDENDUM 2	TSW
2	2023.07.08	ADDENDUM 1	TSW
1	2023.06.24	ISSUED FOR BIDS	TSW

CITY of FLINT MICHIGAN

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555 / 800.841.0342
FAX: 810.235.4975
www.wadetrim.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915
555 WIGHT DRIVE
BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824
PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-6312
FAX (2nd. Floor): (248) 338-2592
WEB SITE: http:// www.hrc-engr.com

BATTERY B SECONDARY CLARIFIER FLOW CONTROL

VAULT ELECTRICAL PLAN

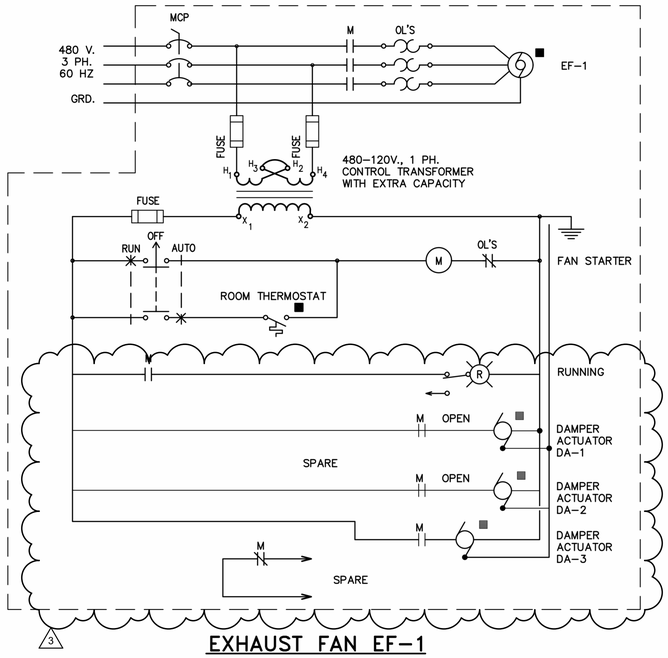
ISSUED FOR: BIDS
DATE: 2023.06.24
BY: TSW

JOB NO. COF1077-01F

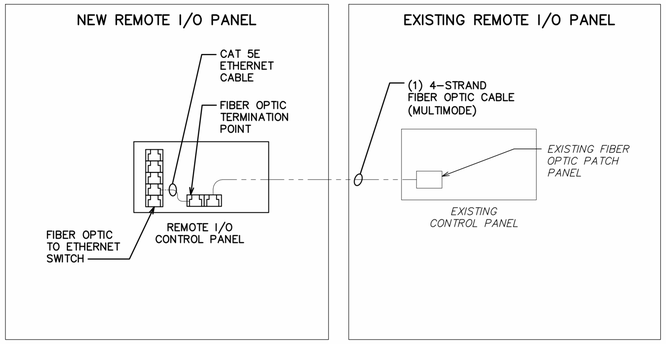
SHEET E-102

PLOTTED 7/13/2023 2:44:39 PM

BIM 360://COF1076-7-WPCF/FC_HRC_E_R21.rvt

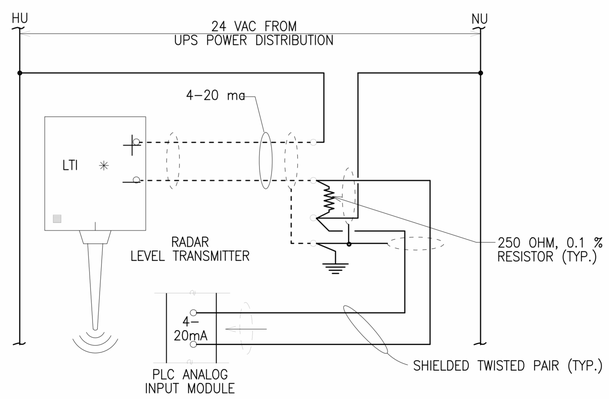


EXHAUST FAN EF-1

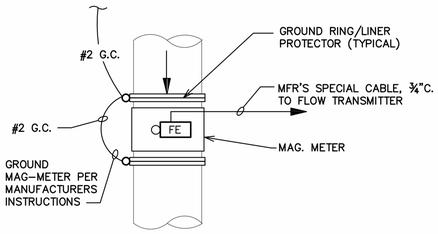


COMMUNICATIONS RISER DIAGRAM

NO SCALE

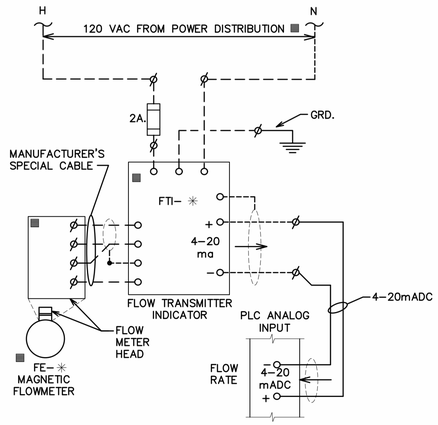


RADAR LEVEL TRANSMITTER TYPICAL WIRING DIAGRAM



TYPICAL MAGNETIC FLOW METER INSTALLATION DETAIL

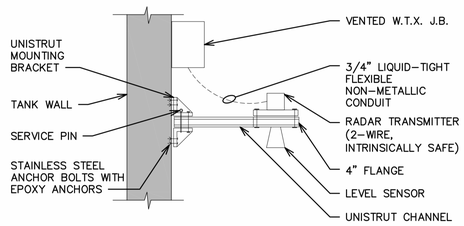
N.T.S.



MAGNETIC FLOWMETER WIRING DIAGRAM (TYPICAL)

ALL DEVICES LOCATED IN CONTROL PANEL UNLESS OTHERWISE INDICATED BY ■

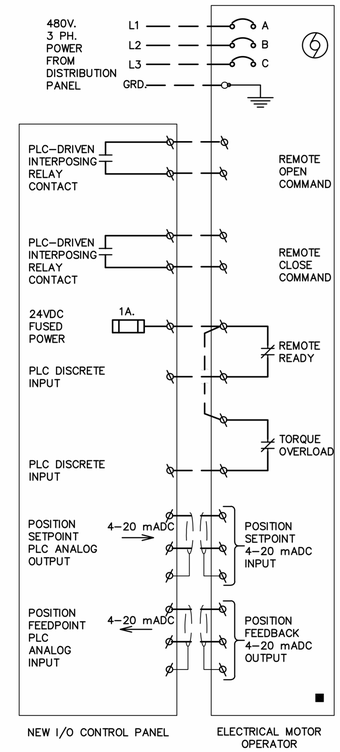
(MAGNETIC FLOWMETERS INSTALLED BELOW GRADE SHALL HAVE POTTED/SEALED HEADS, AND BE RATED SUITABLE FOR OCCASIONAL SUBMERGENCE; AS NOTED ON THE DRAWINGS)

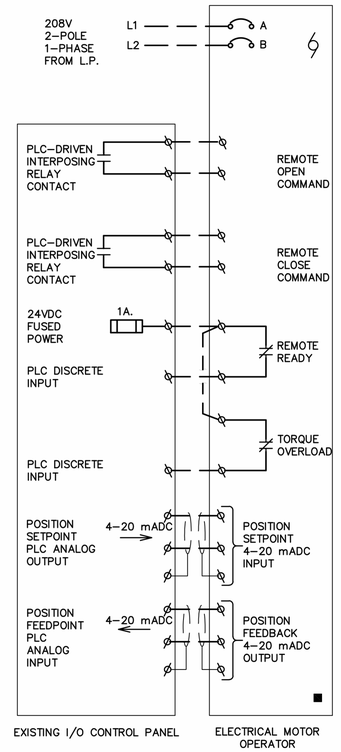


TYPICAL RADAR LEVEL SENSOR/ TRANSMITTER MOUNTING DETAIL

N.T.S.

NOTE: ALL UNISTRUT AND HARDWARE SHALL BE 316 S.S.



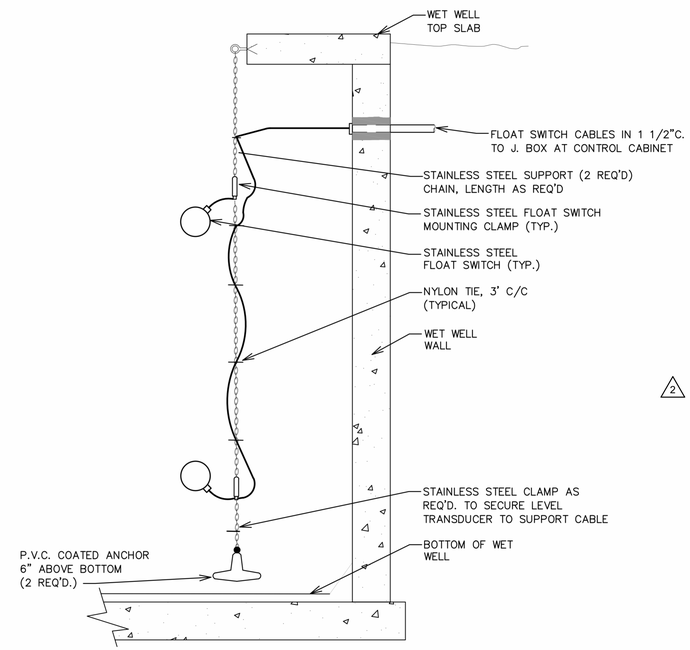


CLARIFIER VAULT VALVE OPERATOR CONNECTION DIAGRAM

NO SCALE

RAS FLOW CONTROL VALVE OPERATOR CONNECTION DIAGRAM

NO SCALE



WET WELL FLOAT SWITCH AND CABLE MOUNTING

N.T.S.

REV#	DATE	DESCRIPTION	BY
3	2023.07.13	ADDENDUM 2	TSW
2	2023.07.08	ADDENDUM 1	TSW
1	2023.06.24	ISSUED FOR BIDS	TSW

CITY of FLINT MICHIGAN

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555 / 800.841.0342
~~FAX: 810.235.4975~~
www.wadetrim.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915
555 HULET DRIVE
BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824
PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-6312
FAX (2nd. Floor): (248) 338-2592
WEB SITE: http://www.hrc-engr.com

BATTERY B SECONDARY CLARIFIER FLOW CONTROL

POWER WIRING DIAGRAMS

ISSUED FOR: DATE: BY:
BIDS 2023.06.24 TSW

JOB NO
COF1077-01F

SHEET
E-801

PLOTTED 7/13/2023 2:44:37 PM

BIM 360://COF1076-7-WPCF/FC_HRC_E_R21.rvt