

**ADDENDUM NUMBER #1**

<u>PROJECT</u>	<u>BIDS DUE</u>
City of Clare - 2023 Water Treatment Facility Upgrades GFA Project No: 22253	Date: April 27, 2023 Time: 3:00 PM Location: City of Clare 202 West Fifth Street, Clare, MI 48617

The Addendum is issued prior to the receipt of bid proposals to amend the Contract Documents as follows. Bidders shall acknowledge receipt of this addendum by means of acknowledging on Page 1 of the Bid Form (EJCDC C-410).

GENERAL

1. Mandatory Pre-Bid Meeting Minutes and Attendance (Attached)

SPECIFICATIONS

1. Wage Determination Decision Number: MI20230114 dated 04/14/2023 is attached and shall supersede and replace the existing one.
2. Wage Determination Decision Number: MI20230127 dated 04/14/2023 is attached and shall supersede and replace the existing one.
3. Specification C-111 Advertisement for Bids – Remove the word “split” from Water Treatment Facility (WTF) 2. Mechanical b.
4. Specification 01100 Summary – Remove the word “split” from Water Treatment Facility (WTF) 2. Mechanical b.
5. Specification 11200, Section 2.01 K and L shall be stricken and the following added to supersede. Also Sections M and N are now to be added and incorporated in the Specification section 2.01:
  - K. Flow Meter: Mainline Propeller meter with registration accuracy is 100% ± 2% of actual throughput within specified normal flow ranges of up to 400 GPM.
    1. Meter to be constructed of epoxy coated steel include flanged ends and mounted between class 150 flanges, rated for 150 psi. All components NSF. Capable for instantaneous and totalizing
    2. To include sealed Electronic Rate of Flow Instrument and Transmitter. The transmitter shall housed within a NEMA-4x rated enclosure. Meter capable to transit 4-20 mA for telemetry

- a. Products: Subject to compliance with requirements, provide from the following manufacturer:
    - 1) McCrometer
    - 2) Sensus or approved Equal
- L. Pressure Transducers: The transducers shall be micro-processor based with the ceramic sensor and transmitter for use in corrosive atmospheres.
1. Transducer shall be constructed of stainless steel for high to medium liquid volume measurements. The gauge shall include a ½" NPT pipe thread.
  2. Transducer shall have a range from 0 to 150 psi with 1.5 psi figure intervals.
- a. Products: Subject to compliance with requirements, provide from the following manufacturer:
    - 1) Endress-Hauser, Cerabar S PMC-71
    - 2) Rosemount 2008
    - 3) As indicated on the drawings
- M. Pressure Relief Valve: The valve shall be hydraulically operated, pilot controlled, modulating valve, in globe or angle pattern, flanged, with adjustable range from 20 to 200 psi.
1. Diaphragm Assembly: The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve separating operating pressure from line pressure. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls.
  2. Main Valve Body: No separate chambers shall be allowed between the main valve cover and body. Valve body and cover shall be ductile iron. The valve shall contain a resilient, synthetic rubber disc, with a rectangular cross-section contained on three and one-half sides by a disc retainer, forming a tight seal against a single removable seat insert. The main valve seat and the stem bearing in the valve cover shall be removable. Valve shall be constructed of stainless steel trim.
  3. Pilot Control System: The pressure relief pilot shall be a direct-acting, adjustable, spring-loaded, diaphragm valve designed to permit flow when controlling pressure exceeds the adjustable spring setting. The pilot control is normally held closed by the force of the compression on the spring above the diaphragm and it opens when the pressure acting on the underside of the diaphragm exceeds the spring setting. Pilot control sensing shall be upstream of the pilot system strainer so accurate control may be maintained if the strainer is partially blocked. Piping and fittings shall be stainless steel.
  4. Products: Subject to compliance with requirements, provide from the following manufacturer:
    - a. Cla-Val Model No. 50-01 or approved equal

N. Pipe Taps: Wherever indicated or required, pipe or fittings shall be tapped to receive a small pipe or special fittings.

6. Specification 11242 – Replace section 2.02.C.1.f. with the following:

f. Pump Process Schedule

Quantity of Chemical Metering Systems	3 Skids
Chemical Metering System Configuration	Duplex – Lead/lag
Tag Number(s)	
Chemicals	NaCl (12.5% Chlorine) F <sup>-</sup> (19.8% Fluoride) PO <sub>4</sub>
Flow Range Avg / Max (GPH)	0.86 - 2.16 0.36 – 1.7 2.16 – 5.40
Average Discharge Pressure (PSI)	55-70
Maximum Discharge Pressure (PSI)	100
Suction Head (FT)	7 +/-

7. Specification 11242 – Replace section 2.02.C.2.a.7.a. with the following:

a. Sodium Hypochlorite Flow range: 0.86 to 2.16 GPH in 0.001 GPH increments.

8. Specification 11242 – Replace section 2.02.C.2.a.7.b. with the following:

b. Fluoride Flow Range: 0.36 to 1.7 GPH in 0.001 GPH increments.

9. Specification 11242 – Replace section 2.02.C.2.a.7.c. with the following:

c. Orthophosphate Flow Range: 2.16 to 5.40 GPH in 0.001 GPH increments.

10. Specification 11440 – Remove this specification and replace with the attached in its' entirety. The specification was updated to address the Check Valve, High Service Pump Hp Sizing and allow for reuse of the existing discharge head.

11. Specification 17000, Section 2.1.A shall be stricken and replaced with the following:

A. All SCADA and Control Panel Programming will be supplied and installed by the City, unless stated otherwise. Contractor shall be responsible for installing control panels, wiring and conduit as specified of drawings and specifications.

1. All work shall be performed by Perceptive Controls (Contact: Ryan Fisher @ 259-207-4287) through SCADA and programming allowance.
2. The existing control panel in the WTF shall be reused and new internal components replaced.
3. Cost for coordination and panel installation shall be included in WTF-Bid Item No. 18
4. Scope of Services to be provided by Perceptive are attached for reference

## DRAWINGS

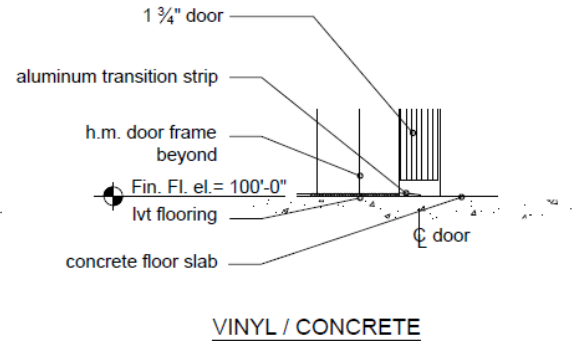
1. Sheet 1.2, Construction Schedule Notes Clarification: Contractor shall provide construction schedule to be approved by City / Engineer to ensure continual operation of facilities (no service disruption unless coordinated). The City has available two (2) elevated water tanks in the system that provides water volume / pressure to customers. The tanks provide the following amount of volume and will allow for the plant to be offline:
  - Off Season / Hours (Winter, Spring, Fall) – 10 to 12 hours
  - Peak Season / Hours (Summer) – 6 hours

Contractor shall also plan on providing temporary bypass piping as needed to allow facility to remain online. Critical infrastructure includes chemical feed and High Services Pumps located within the Plant. Costs to be included in WTF- Bid Item No. 1.

2. Sheet 1.2, General Notes Clarification: All SCADA material supply and programming shall be completed by the City (Perceptive Controls). Contractor shall be responsible to also install control panels for SCADA as required. Cost for this shall be included in WTF- Bid Item No. 18
3. Sheet 2.3, Filter Removal Clarification: The existing filter has a gross weight (empty) of approximately 30,000 lbs. As per the note, contractor shall anticipate media present in the filter and is responsible for removal and proper disposal.
4. Sheet 2.4, Detail 1 Clarification: The Contractor shall plan to support the headwall / header where the existing Filter #4 is proposed to be removed. This header is load bearing and temporary support is required and to be included in the cost of the removal. Contractor shall submit plan to City Engineer for review and approval.
5. Sheet 2.3 and 2.5, High Service Pump Clarification: The contractor shall be responsible for salvaging and overhauling the existing discharge head and not providing new. All other work shall be implemented as noted on the plans and updated Specification 11440. All costs for this work shall be included in WTF – Bid Item No. 7.
6. Sheet 2.3 and 2.6 Laboratory Clarification: The contractor shall be responsible for the demolition, removal, disposal and replacement of the flooring in addition to cabinetry and countertops. All costs for this work shall be included in WTF – Bid Item No. 16. The following note shall be added to Sheet 2.6:

New Flooring Shall be :

- Flooring shall be 12"x12" Tile, UnGlazed–Style / Color Selection By Owner
- 4" Vinyl Base to be provided – Color Selection by Owner
- Contractor to install materials compliant with Manufacturers. The following transition shall be provided: See detail to right



7. Sheet 2.6, Detail 3 Clarification: The sample tap shall be stricken from detail and only to include transducer (transmitter) and/or pressure gauge.
8. Sheets 2.11 – WTF Electrical Floor Plan and 2.12 – WTF Electrical Riser Diagrams, Schedules, and Details

The High Service Pumps are changing from 75 HP, 85 FLA to 100 HP, 112 FLA. See changes required on revised sheets 2.11 and 2.12 to reflect this change, including increasing the Variable Frequency Drives sizing. These drawings shall supersede the existing drawings.

12. Sheets 2.11 and 2.12 Feeder Wire Clarification: Drawings show 2-sets of parallel runs of 4-350MCM in the same 4" conduit that's being reused. The intent is due to unknown existing conditions and whether splices exist that it is proposed contractor installed new conductors run for both new routes: Main Disconnect to MTS and from MTS to new MCC.

This Addendum No. 1 becomes part of the Contract Documents as of this date and supersedes the information in the originally issued Contract Documents where applicable. The Contractor shall acknowledge receipt of the Addendum in the Bid Schedule included with his/her bid.

**MANDATORY PREBID MEETING ATTENDANCE RECORD**  
WATER TREATMENT FACILITY UPGRADE – CITY OF CLARE  
April 20, 2023 @ 1 PM

Name	Representing	Address	Telephone/Fax	E-Mail Address
Ziad Jah	Detroit Pump	Detroit	248-336-5265	Ziad.Jah@detroitpump.com
Dave O'Brien	Newkirk Elec.	Kalkaska / Muck	231-920-9009	dobrien@newkirk-electric.com
HARRY WEST	PERCEPTIVE	PLAINWELL	269 275 9288	hwest@PERCEPTIVE CONSULTANTS
BOB MASTERS	PEERLESS MIDWEST	ZONIA	616-690-9139	bob.masters@peerlessmidwest.com
Tom Tecey	John E Green	Saginaw	989-752-5100	tomtecey@johnsgreen.com
John Kingman	Northern Pump	LANSING	517-490-2449	JKingman@NorthernPumps.com
JIM BAKOS	Kennedy Ind	Wilson	989 412 3978	Jim.Bakos@KennedyInd.com
Brandon Biggs	Spence Brothers	Saginaw	989-752-0400	Brandon.Biggs@SpenceBrothers.com
Adam Case	RCL Construction	Sanford	517-256-7100	adam@rclconstruct.com
Brent Bock	Bock Elec.	Rhodes	989-879-4256	brent@bockelectronic.com
Gabe Granda	Voltage Electric	Clare	989-412-8301	ggranda@voltage@gmail.com
Jeff Loomis	Corbett Cont	2509 Mt Pleasant Rd	989 775 6622	jeff@corbett.com
Jeremy Zalud	Kabella Corp	2201 Commerce MP	989-772-5890	jzalud@isabella.com

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## PRE-BID MEETING MINUTES

Project: City of Clare – WTF  
Date: April 20, 2023

Project No.: 22253  
Title: Mandatory Pre-Bid Meeting

Meeting began @ 1:00 PM:

- I. Introduction of all Parties Involved
  1. GFA Employees (Engineer)
    - Jennifer Graham – Project Manager
      - All questions are to be addressed to Jennifer
  2. City (Owner)
  
- II. Project Description
  1. Scope of work to be performed was discussed
  2. This project is funded by CDBG grant through the Michigan Economic Development Corporation, and thus, attention is called to the fact that not less than the minimum salaries and wages as set forth in the Contract Documents must be paid on this project, and that the Contractor must ensure that employees and applicants for employment not discriminated against because of their race, color, religion, sex, or national origin. Bidder qualification requirements and the conditions of employment and requirements of federal prevailing wage rates, Segregated Facility, Section 3 of the HUD Act of 1968, Section 109 and Equal
  3. Project does not require AIS or BABA compliance
  
- III. Construction / Schedule
  1. Tentative start date of June 1, 2023
    - Construction Schedule is required prior to beginning work. This is an existing functioning water plant and critical to ensure operations of facility during construction. Project staging and coordination with engineer, City are required.
  2. Substantial Completion date of October 31, 2024
    - Liquidated Damages of \$500.00 will be incurred if date is exceeded
  
- IV. Bidding
  1. General
    - 5 % Bid Bond, references and list of subcontractors
    - Bid Opening is Thursday, April 27, 2023 @ 3:00 PM
    - Plans and specifications are available by contacting GFA (for a fee) or on Builders Exchange
    - All questions are to be directed to Jennifer Graham at Gourdie-Fraser either by mail, fax, email or telephone. [jennifer@gfa.tc](mailto:jennifer@gfa.tc) / 231-313-4861

- Gourdie-Fraser will issue an addendum no later than 3 days prior to the bid opening. All addendums will be posted on our website as stated in the advertisement. Addendum to be issued on Monday April 24<sup>th</sup> by 3 PM

V. Revisions / Questions / Comments regarding Plan / Specification Set

1. Some modifications that will be forthcoming in the addendum:

- HS Pump Hp change with some minor electrical revisions, clarifications on wellhouse valving, SCADA panels to be installed by the Contractor. All others will be explicitly addressed in the Addendum
2. All permits have been obtained by the Owner including SESC, EGLE, LWMD. Contractor is responsible for County Building, Plumbing, Mechanical and Electrical Permit including fees.
  3. The City of Clare has Perceptive Controls responsible to provide SCADA equipment and programming. Contractor shall be responsible for installing all control panels including SCADA. Perceptive is responsible for supply and programming and installation of modems.
  4. Updated Wage Determinations will be included in Addendum
  5. Alternates do not need pre approval and will be reviewed at the time of contract award and during the shop drawing process to ensure compliance with the specifications

Meeting was adjourned at 1:20 PM and a site visit was conducted of the Water Treatment Plan.

These minutes constitute the author's understanding of the proceeding. Any corrections to these minutes should be submitted in writing to this office within three (3) days of receipt of this document.

Prepared by Jennifer Graham, P.E.



"General Decision Number: MI20230114 04/14/2023

Superseded General Decision Number: MI20220114

State: Michigan

Construction Type: Building

County: Clare County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	02/03/2023

2 02/24/2023  
3 04/14/2023

ASBE0047-003 07/01/2022

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Pipe Insulation Only).....	\$ 34.62	18.58

BOIL0169-002 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 35.95	34.52

BRMI0009-023 08/01/2020

	Rates	Fringes
BRICKLAYER.....	\$ 30.24	19.67
PLASTERER.....	\$ 30.24	19.67
TILE SETTER.....	\$ 30.24	19.67

CARP0706-008 06/01/2020

	Rates	Fringes
CARPENTER (Acoustical Ceiling Installation, Drywall Hanging, Form Work, and Metal Stud Installation).....	\$ 27.61	21.84

CARP0706-011 06/01/2021

	Rates	Fringes
CARPENTER (Excluding Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation, and Soft Floor Layer - Carpet).....	\$ 29.48	22.00

CARP1102-003 06/01/2020

	Rates	Fringes
MILLWRIGHT.....	\$ 35.50	34.10

ENGI0324-022 06/01/2022

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 44.13	24.85
GROUP 2.....	\$ 40.83	24.85
GROUP 3.....	\$ 38.18	24.85
GROUP 4.....	\$ 36.47	24.85
GROUP 5.....	\$ 30.61	24.85
GROUP 6.....	\$ 28.13	24.85

Crane operator with main boom and jib 300' or longer: \$1.50 per hour above the group 1 rate.

Crane operator with main boom and jib 400' or longer: \$3.00 per hour above the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

- GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.
- GROUP 2: Crane operator with main boom and jib 140' or longer, tower crane, gantry crane, whirley derrick
- GROUP 3: Backhoe/Excavator; Crane; Loader; Paver; Scraper; Stiff Leg Derrick
- GROUP 4: Bobcat/Skid Loader; Fork Truck (over 20' lift)
- GROUP 5: Fork Truck (20' lift and under for masonry work)
- GROUP 6: Oiler

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IRON0025-009 04/01/2022

	Rates	Fringes
IRONWORKER, STRUCTURAL (Metal Building Erection Only).....	\$ 24.59	25.43

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IRON0025-010 06/01/2022

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 31.43	34.77
IRONWORKER, STRUCTURAL.....	\$ 34.50	38.44

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LAB01098-029 07/01/2021

	Rates	Fringes
LABORER		
Mason Tender - Brick;		
Mason Tender -		
Cement/Concrete; and		
Pipelayer.....	\$ 22.67	12.90
Sandblaster.....	\$ 23.72	12.90

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PAIN1803-001 06/01/2022

	Rates	Fringes
PAINTER: Brush, Roller and Spray.....	\$ 26.27	20.17
PAINTER: Drywall Finishing/Taping.....	\$ 26.27	20.17

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PLAS0016-036 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 23.10	12.38

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PLUM0085-004 05/04/2022

	Rates	Fringes
PIPEFITTER (Excludes HVAC Pipe and System Installation)....	\$ 40.00	21.14
PIPEFITTER (HVAC Pipe		

Installation Only).....	\$ 41.00	22.39
PLUMBER (Excluding HVAC Pipe and System Installation).....	\$ 40.00	21.14

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\* SFMI0669-003 04/02/2023

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 40.48	25.22

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SHEE0007-021 05/01/2018

	Rates	Fringes
SHEET METAL WORKER (Excluding HVAC Duct & System Installation).....	\$ 26.83	23.78
SHEET METAL WORKER (HVAC Duct & System Installation).....	\$ 26.83	23.78

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\* SUMI2011-039 02/14/2011

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 18.60	5.52
CARPENTER (Floor Laying-Carpet Only).....	\$ 19.59	7.57
ELECTRICIAN, Excludes Low Voltage Wiring.....	\$ 18.56	4.73
GLAZIER.....	\$ 16.95	4.74
LABORER: Common or General.....	\$ 17.99	4.61
LABORER: Landscape & Irrigation.....	\$ 12.84 **	0.00
OPERATOR: Bulldozer.....	\$ 22.34	1.22
OPERATOR: Grader/Blade.....	\$ 24.04	6.03
OPERATOR: Roller.....	\$ 28.02	7.07
OPERATOR: Tractor.....	\$ 19.60	7.31
ROOFER.....	\$ 15.73 **	7.41
TRUCK DRIVER, Includes Dump and Tandem Truck.....	\$ 15.65 **	3.12
TRUCK DRIVER: Flatbed Truck.....	\$ 16.80	3.97

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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

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\*\* Workers in this classification may be entitled to a higher  
minimum wage under Executive Order 14026 (\$16.20) or 13658  
(\$12.15). Please see the Note at the top of the wage

determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request

review and reconsideration from the Wage and Hour Administrator  
(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

"General Decision Number: MI20230127 04/14/2023

Superseded General Decision Number: MI20220127

State: Michigan

Construction Type: Building

County: Isabella County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	02/03/2023



ASBE0047-005 07/01/2022

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 34.62	18.58

BOIL0169-002 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 35.95	34.52

BRMI0009-017 08/01/2020

	Rates	Fringes
BRICKLAYER.....	\$ 30.00	21.24
TILE SETTER.....	\$ 29.82	15.35

CARP0706-021 06/01/2020

	Rates	Fringes
CARPENTER (Acoustical Ceiling Installation, Drywall Hanging, and Metal Stud Installation).....	\$ 27.61	21.84

CARP1102-003 06/01/2020

	Rates	Fringes
MILLWRIGHT.....	\$ 35.50	34.10

ELEC0275-006 06/01/2022

Townships of Bloomfield, Coldwater, Deerfield, Fremont, Gilmore, Nottawa, Rolland, & Sherman

	Rates	Fringes
ELECTRICIAN (Excludes Low Voltage Wiring).....	\$ 34.41	9.27+28%

ELEC0557-011 06/01/2020

Townships of Coe & Lincoln

	Rates	Fringes
ELECTRICIAN (Excludes Low Voltage Wiring).....	\$ 34.25	23.13

ELEC0692-025 06/01/2022

Townships of Chippewa, Denver, Isabella, Union, Vernon, & Wise

	Rates	Fringes
ELECTRICIAN (Excludes Low Voltage Wiring).....	\$ 35.31	38.03%+9.25

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ENGI0324-023 06/01/2022

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 44.13	24.85
GROUP 2.....	\$ 40.83	24.85
GROUP 3.....	\$ 38.18	24.85
GROUP 4.....	\$ 36.47	24.85
GROUP 5.....	\$ 30.61	24.85
GROUP 6.....	\$ 26.38	24.85

Crane operator with main boom and jib 300' or longer: \$1.50 per hour above the group 1 rate.  
Crane operator with main boom and jib 400' or longer: \$3.00 per hour above the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

- GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.
- GROUP 2: Crane operator with main boom and jib 140' or longer; tower crane; gantry crane and whirley derrick
- GROUP 3: Crane; Loader; Paver; Scraper; Stiff Leg Derrick
- GROUP 4: Bobcat/Skid Loader; Fork Truck (over 20' lift)
- GROUP 5: Fork Truck (20' lift and under for masonry work)
- GROUP 6: Oiler

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IRON0025-009 04/01/2022

	Rates	Fringes
IRONWORKER, STRUCTURAL (Metal Building Erection Only).....	\$ 24.59	25.43

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IRON0025-010 06/01/2022

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 31.43	34.77
IRONWORKER, STRUCTURAL.....	\$ 34.50	38.44

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LAB01098-030 07/01/2021

	Rates	Fringes
LABORER		
Mason Tender - Cement/Concrete and Pipelayer.....	\$ 22.67	12.90
Sandblaster.....	\$ 23.72	12.90

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PAIN1803-001 06/01/2022

	Rates	Fringes
PAINTER: Brush, Roller and Spray.....	\$ 26.27	20.17
PAINTER: Drywall Finishing/Taping.....	\$ 26.27	20.17

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PLAS0016-039 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.47	12.38
PLASTERER.....	\$ 26.32	12.88

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PLUM0085-007 05/04/2021

	Rates	Fringes
PIPEFITTER (Excludes HVAC Pipe and System Installation)....	\$ 40.00	21.14
PLUMBER (Excluding HVAC Pipe and System Installation).....	\$ 38.25	21.07
PLUMBER (HVAC Pipe Installation Only).....	\$ 38.25	21.07

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\* SFMI0669-003 04/02/2023

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 40.48	25.22

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SHEE0007-021 05/01/2018

	Rates	Fringes
SHEET METAL WORKER (Excluding HVAC Duct & System Installation).....	\$ 26.83	23.78
SHEET METAL WORKER (HVAC Duct & System Installation).....	\$ 26.83	23.78

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\* SUMI2011-052 02/14/2011

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 23.08	1.22
CARPENTER, Excludes Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation, and Soft Floor Laying-Carpet.....	\$ 21.67	3.56
FLOOR LAYER: Carpet.....	\$ 19.59	7.57
GLAZIER.....	\$ 16.95	4.74
LABORER: Common or General.....	\$ 16.72	1.22
LABORER: Landscape & Irrigation.....	\$ 12.84 **	0.00
LABORER: Mason Tender - Brick...	\$ 15.36 **	3.10
OPERATOR: Backhoe/Excavator.....	\$ 24.24	3.06
OPERATOR: Bulldozer.....	\$ 22.34	1.22
OPERATOR: Grader/Blade.....	\$ 24.04	6.03

OPERATOR: Roller.....	\$ 28.02	7.07
OPERATOR: Tractor.....	\$ 19.60	7.31
ROOFER.....	\$ 15.71 **	8.02
TRUCK DRIVER, Includes Dump and Tandem Truck.....	\$ 15.65 **	3.12
TRUCK DRIVER: Flatbed Truck.....	\$ 16.80	3.97

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example:

PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

## SECTION 11440 – VERTICAL HIGH SERVICE PUMP

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. The work to be performed under these specifications includes furnishing all labor, materials, tools, equipment, testing, start-up, and performing all operations necessary for the installation of the pumps, motors, fittings, valves, piping and equipment as shown on the drawings and hereafter specified. This specification is applicable to all work within the Water Treatment Facility.

#### 1.02 RELATED WORK

- A. SECTION 09900 –PAINTING
- B. SECTION 11200 – WELLHOUSE EQUIPMENT
- C. SECTION 17000 – INSTRUMENTATION AND CONTROLS
- D. SECTION 26 29 23 – VARIABLE FREQUENCY MOTOR CONTROLLERS

#### 1.03 SUBMITTALS

- A. Product Data: For the pump, motor, and all piping products to be used in the work.
- B. Shop drawings: Complete drawings and details of all equipment and materials to be installed.

#### 1.04 QUALITY ASSURANCE

- A. The Manufacturer shall provide a guarantee for the pumping system for a period of one year from date of start-up against defect in design, material and construction.
- B. The equipment specified under this section is to be standard pumping equipment manufactured by a company with no less than fifteen years' experience in the manufacture of such equipment. Upon request by the engineer, the manufacturer shall provide proof of such experience by providing installation lists, brochures, catalog cuts, etc.
- C. Pumping units shall be manufactured by Peerless Model 11MB/MC and supplied by Detroit Pump or Engineer approved equal.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

1. Ductile Iron Pipe: Conform to the requirements of ANSI/AWWA C115/A21.50 and ANSI/AWWA C151/A21.51, Class 53. Inside surfaces of pipe to be cement mortar lined per the requirements of ANSI/AWWA C104/A21.4. No exterior coating.
2. Ductile Iron Fittings: Standard fittings shall conform to the requirements of

ANSI/AWWA C110/A21.10, Class 53 Compact or short body fittings shall conform to the requirements of ANSI/AWWA C153/A21.53, Class 150. All fittings to be cement mortar lined per ANSI/AWWA C104/A21.4. No exterior coating.

3. Gate Valves: Conform to AWWA C509, Class 150. All valves shall open left, or counterclockwise. Valves shall be resilient wedge type with seats constructed of cast iron and encapsulated with rubber. Valves shall have ANSI 125 pound standard drill flat faced flanges and handwheel operators unless otherwise specified or shown on the drawings
4. Standard Check Valves: To be silent globe style (non-slam) and shall incorporate a center guided, spring loaded disc and have a short linear stroke that generates a flow area equal to the nominal valve size, with a minimum non-shock W.O.G. working pressure of 150 psi. Globe valve bodies shall be constructed of ASTM A126 Class B cast iron. Seat and disc shall be ASTM B584 Alloy C83600 cast bronze or ASTM B148 Alloy C95200 aluminum bronze. Compression spring shall be ASTM A313 Type 316 stainless steel with ground ends.

Valves shall be for mounting between ANSI 125 pound standard drill flat faced flanges unless otherwise specified or shown on the drawings.
5. Standard Butterfly (Isolation) Valves: Conform to AWWA C504, Class 150 and include handwheels
6. Restraints
  1. As coordinated and recommended by pump manufacturer.
7. Combination Pressure Gauges
  - a. Combination pressure gauges shall be glycerin filled with a built-in pressure snubber and have a 4 1/2" minimum diameter face and be turret style, black phenolic case with clear glass face. The movement shall be rotary, of 400 Series stainless steel with Teflon coated pinion gear and segment. The gauge shall be bottom connected and accept a 1/4" NPT female thread. Combination pressure gauge range and scale graduations shall be in psi and feet of water as follows:
  - b. Pressure gauges shall have a range from 0 to 100 psi, with 10 psi figure intervals, and with graduating marks every 2 psi. The gauge trim shall be complete with both isolating and vent valves shall be so arranged as to easily vent air and facilitate gauge removal.
    1. Products: Subject to compliance with requirements, provide from the following manufacturer:
      - 1) "Duragauge", Ashcroft, Type 1279

## 2.02 PUMP & MOTOR

- A. Pumps and Motors: The pumps shall have the necessary characteristics and be properly selected to perform under the following operational consideration:
- B. Each motor shall have a sufficient horsepower rating to operate the pump at any point on



- the pump's head-capacity curve without overloading the nameplate horsepower rating of the motor, regardless of service factor. The motor shall have a service factor of at least 1.15. The service factor is reserved for variations in voltage and frequency and are IEEE rated.
- C. The pump shall be the vertical turbine multi-stage pumps as per plans.
  - D. All pumps shall be ANSI/NSF 61 Annex G listed for drinking water and low lead requirements.
  - E. The head-capacity curve shall have a steady rise in head from maximum to minimum flow within the preferred operating region. The shut-off head shall be a minimum of 20% higher than the head at the best efficiency point.
  - F. The pump, base, coupling, and electric motor shall be factory assembled at the pump manufacturer's facility. The pump manufacturer shall have complete unit responsibility.
  - G. All pump bearings shall be lubricated by the pumped liquid.
  - H. Suction and discharge ports for pressure measurement shall be provided on request.
  - I. Each pumping unit shall be provided with a stainless-steel nameplate, which shall contain the following information:
    - a. Manufacturer's name, address, and telephone number
    - b. Model number
    - c. Serial number
    - d. Head, capacity and rpm at rated condition
    - e. Motor horsepower, rpm and frame size
  - J. Pumping units within each type of service shall be identical in every respect with all parts being interchangeable.
  - K. Pump rotating assemblies shall be balanced in accordance with the requirements of ANSI S2.19, G2.5.
  - L. Vibration, when measured at the pump bearing housing shall not exceed the limitations specified by the Hydraulic Institute Standards.
  - M. Pump performance shall be stable and free from damaging cavitation, vibration, and noise within the operating head range. The performance of each pump with an enclosed impeller shall be based on a radial running clearance between the bowl wearing ring and the impeller of not less than 6 mils, or 0.5 mil per inch of wearing ring diameter, whichever is greater. The performance of each pump with an open impeller shall be based on a radial running clearance between the bowl and the impeller of not less than 15 mils.
  - N. At any operating speed, the ratio of rotative speed to the critical speed of a unit or its components shall be less than 0.8 or more than 1.2.

2.03 HYDRAULIC DESIGN CRITERIA

A. Rated Conditions: Each motor shall have a sufficient horsepower rating to operate the pump at any point on the pump's head-capacity curve without overloading the nameplate horsepower rating of the motor, regardless of service factor. The motor shall have a service factor of at least 1.15. The service factor is reserved for variations in voltage and frequency and are IEEE rated.

- 1. Capacity = 600 US GPM @ 180 TDH
- 2. Capacity = 1200 US GPM @ 198 TDH

B. The pump is to provide water service to a closed distribution system at a constant pressure. Two service pumps are provided. System pressure is controlled by varying the speed in inverse ratio to the discharge pressure.

C. Operating Characteristics

- 1. Minimum Efficiency = 75%
- 2. Maximum Brake Horsepower = 100 hp
- 3. Maximum Operating Speed = 1800 rpm

Rotation shall be Left. The pumps shall be rated for continuous service and shall be stainless steel fitted construction suitable for pumping a liquid with the following characteristics:

Liquid Handled	Water
Specific Gravity	1.00
Temperature	60°F
Viscosity of liquid at pumping temp	1.105 cP
NPSHr	5.90 ft.
Bowl Stages	5
Bowl Size	Fit Existing Column, MAX 11.25"
Existing Bowl Diameter (OD)	11.25" (Floway 11JKH bowls with 8" column)

D. The pump motors shall be of the type specified and shall be suitable for 460 volt, 3 phase, 60 hertz, 4 wire electrical service.

2.04 DETAILS OF PUMP CONSTRUCTION

A. Bowl Assembly

- 1. The pump bowl assembly shall be Peerless Pump model 11MC/MB or engineer approved equal. The pump bowls shall be constructed of the material as listed under the subsection "materials of construction". The water passages on bowl sizes 4" through 15" shall be lined with porcelain enamel and larger sizes shall be fusion bonded epoxy lined type (Skotchkote 134) to reduce friction losses. The waterways and diffusion vanes shall be smooth and free from nodules, bumps & dips and shall be cast of high quality free of blow holes, sand holes and other detrimental defects. The bowls shall be accurately machined and fitted with lateral seal ring and dual rubber/bronze bowl bearing. The bearings shall be sleeve type of the material listed in the subsection "materials of

- construction” and are to be lubricated by the product being pumped. The bearings are to be located above and below each impeller. The suction bearing shall be permanently packed with food grade grease, and shall have a length not less than 2 times the shaft diameter. The bowls are to be of threaded connection for sizes up to & including 8” diameter, and are to be flanged with machined rabbet fit connections for sizes larger than 8” diameter. When applicable, the bowl bolting material shall be as listed in the subsection “materials of construction”.
2. The impellers shall be cast in one piece and constructed of the material listed in the subsection “materials of construction”. The impellers shall be statically balanced. The impeller shall be securely fastened to the shaft with taper split bushings (collets) of the material listed in the subsection “materials of construction”. Impellers shall be adjusted vertically by external means and shall have sufficient axial clearance for reliable service in accordance with the specified operating conditions.

#### B. Column Assembly

1. The outer column pipe diameters 4” thru 14” shall be of ASTM A53 Gr. B steel pipe in interchangeable sections not over 10’ in length for 1800RPM and maximum 5’ lengths for pumps running at 3,600RPM. The top and bottom sections of column pipe for product lubricated pumps shall not exceed 5’. The ends of each section shall be faced parallel and machined with 8 straight threads per inch permitting the ends to butt and insuring alignment when connected by standard mill steel couplings. The weight of the column pipe shall be no less than that stated in ANSI/AWWA Specification E103, Section 5.1 “Standard Specifications for Discharge Column Pipe”. The column size shall be such that friction loss will not exceed 5’ per 100’, based on the design capacity of the pump or as listed under the subsection “service conditions”.
2. The column line shaft shall be turned and ground and manufactured of the material listed in the subsection “materials of construction”. They shall be furnished in interchangeable sections not over 10 feet in length. The butting faces shall be machined square to the axis of the shaft with maximum permissible misalignment of the thread axis with the shaft axis 0.002” in 6”. The size of the shaft shall be no less than that determined by ANSI/AWWA-E101 Specifications, Section 5.5 and shall be such that elongation due to hydraulic thrust will not exceed the axial clearance of the impellers in the pump bowls. Maximum run out shall not exceed 0.005” in 10 feet. The line shaft bearings shall be sleeve type provided of the material listed in the subsection “materials of construction”. Line shaft bearing spacing shall be such that shaft first critical frequency shall be safely above or below the operating frequency.
3. Threaded shaft couplings are to be supplied for shafts less than 2-3/4” diameter and shall be sized per ANSI/AWWA E101 section A-4.1.4. They shall utilize left-hand threads to tighten during operation.
4. Bearing retainers shall be of the drop-in type, held in place by compression of the butted ends of the column pipe. The bearing retainers are to be on the material listed in the subsection “materials of construction”.

#### C. Discharge Head

1. The Contractor shall be responsible to overhaul and reuse existing Discharge Head ( Existing Model: Layne TF-8 and TF-10). Overhaul includes but not limited to Removal, cleaning, sandblasting, painting (epoxy coating) and installation. Inspection of discharge head integrity and functionality is required. Factory to submit a written test report upon inspection to the engineer. Factory to coordinate with the Engineer and City in a situation where the discharge head fail to meet industry standard or affect pump over all performance. The headshaft shall be coupled to the top lineshaft beneath the motor to facilitate ease of assembly and maintenance. All couplings and other moving or rotating parts shall be covered on all sides by an OSHA approved coupling guard. Coupling guards shall be fabricated from 16 USS gage or thicker galvanized or aluminum-clad steel or from 1/2 inch mesh expanded metal. Each guard shall be designed for easy installation and removal. All necessary supports and accessories shall be provided for each guard. The pump shall be furnished with a(n) Aluminum nameplate securely mounted to the discharge head. At a minimum it shall contain information providing (design flow, design TDH, HP, RPM, bowl model number, number of stages, manufacturer serial number, pump type & impeller setting dimension).
2. A threaded coupling constructed of the same material as the top line shaft shall be provided to couple the motor shaft to the pump shaft. Impeller adjustment shall be provided by means of a bronze adjusting nut located on top of the motor and constructed of ASTM B16 alloy C36000. After adjustment the nut shall be positively locked in position to the motor clutch.
3. The standard cast iron stuffing box shall be rated for 150# discharge pressure and shall be fitted with graphite acrylic packing and have either a greased lantern ring or grease chamber below the first packing ring. The throttle bearing shall be of bismuth tin bronze (UNS C89835). The packing gland shall be of stainless steel ASTM A743 GR CF-8M with stainless steel studs and with brass or stainless steel adjusting nuts. Sealing between the stuffing box and the discharge head shall be accomplished by means of an "O" ring. Packing box is to be secured in place with a minimum of eight cap screws. The packing box shall utilize a split type packing gland to allow ease of packing removal & installation.

#### D. Factory Coating

- A. The bowl assembly OD, column ID & OD, and the existing discharge head ID shall be factory painted with a NSF 61 approved two part epoxy coating, such as Carboguard 891. The coating shall be applied in two coats of 4-6 mils DFT, with a final dry film thickness no less than 10-12 mils. Prior to coating, all surfaces are to receive a commercial blast meeting SSPC-SP10 and shall be primed.

#### E. Special Tools and Accessories

1. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments and accessories, required for proper maintenance. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

#### F. Standard Pump Materials

- a. Pump Bowls, Cast Iron,  
ASTM A48 c130 – Enamel Lined

- b. Bowl Assembly Shaft Stainless steel,  
AISI 431 or 318 LN
- c. Bowl Bearings, Bismuth Tin Bronze  
UNS C89835
- d. Impellers, diffuser chambers, outer sleeve  
Stainless steel, AISI 304 or 316
- e. Discharge Head – Reuse Existing
- f. Line Shaft, line coupling,  
Stainless Steel, 416SS ASTM A582-88a
- g. Bearing Retainers  
Styrene Butadiene Rubber
- h. Collets, Steel  
ASTIM A108-90a GR1215

G. Pump Motor

The motor shall be vertical and in accordance with the latest NEMA standards, and shall have the following characteristics:

- Number of Phases....Three
- Cycles.....60 Hz.
- Voltages.....460 Volt
- Speed.....1770 RPM
- Horsepower.....100 hp

- b. The motor shall have a sufficient horsepower rating to operate the pump at any point on the pump's head-capacity curve without overloading the nameplate horsepower rating of the motor, regardless of service factor. The motor shall have a service factor of at least 1.15. The service factor is reserved for variations in voltage and frequency and are IEEE rated.
- c. Motor shall meet scheduled horsepower, speed, voltage, and enclosure design. Pump and motor shall be factory aligned, and shall be realigned after installation by the manufacturer’s representative.
- d. Motors shall be suitably sized per ISO5199 and shall meet NEMA specifications and conform to the standards outlined in EISA 2007.
- e. Standard motors shall to be provided with the following basic features:
  - i. Motors must be C or D-faced directly coupled to the pump.
  - ii. Motors shall be designed for inverter duty operation, VFD rated, NEMA design A or B with a service factor rating no less than 1.15.
  - iii. Totally Enclosed Fan Cooled Motors are to be furnished with class “F” insulation. Open Drip Proof Motors are to be furnished with class “F” insulation.
  - iv. Open Drip Proof (ODP) motors shall have drip covers.
  - v. Motors over 50 lbs shall having lifting provisions to enable motor to be lifted from the pump end.

## 2.05 FACTORY TESTING

Each pump shall undergo factory testing as a complete pump unit, including but not limited to, bowl assembly, discharge column and discharge head assembly before disassembly and shipping pump to job site

- A. Pump Design Points and Acceptance Grade
  - a. Primary (single pump): 600 gpm @ 180' TDH, 1U acceptance grade.
  - b. Secondary (single pump): 1,200 gpm @ 198' TDH, 3B acceptance grade.
  - c. Tertiary (pumps operating parallel) : 1,500 gpm @ 210' TDH, 3B acceptance grade
  - d. Maximum allowable shut-off head: 321 ft.
  - e. Maximum NPSH required for runout point : 13 ft.
- B. Each pump shall undergo a certified hydrostatic test at 150% of the pressure developed at shut-off head.
- C. A certified performance test shall be performed on each unit utilizing its specified drive. If variable frequency drives are specified, one drive of each rating shall be shipped to the pump manufacturer's plant for testing as a complete unit.
- D. All tests shall be performed in accordance with the Hydraulic Institute Test Standards for Centrifugal Pumps - 1.6 (1988).
- E. Six evenly spaced test points shall be taken and shall include conditions at shut-off (zero flow) and the operating points specified herein. Preliminary test data must be submitted to the owner seven days prior to the actual test date.
- F. The engineer and/or a representative of the owner shall be given sufficient notice of the testing dates and shall have the opportunity to witness these tests.

## 2.07 VARIABLE FREQUENCY DRIVES

- A. Refer to specification 26 29 23 Variable Frequency Motor Controllers.
- B. Equipment installation by Contractor. Electrical/telemetry service wiring, conduit, and connections shall be supplied and installed by Contractor as shown on the engineering drawings and specifications. Contractor shall be responsible to complete VFD registration card to ensure and fulfill warranty obligations.
- C. VFD to be supplied and installed by contractor.

## 2.08 WARRANTY

- A. The manufacturer of the pumping units shall provide a written warranty covering the entire pumping unit. The warranty period shall be a non-prorated period of 24 months from date of installation, not to exceed 30 months from date of manufacture.

## PART 3 - EXECUTION

## 3.01 INSTALLATION

- A. Ductile Iron Piping: Ductile iron piping, valves and fittings shall be used for all piping 3-inch diameter and larger. Ductile iron flanged or grooved piping, valves and fittings shall be used for all interior exposed piping. Pipe, valves, and fittings shall be carefully laid to line and grade. Care shall be taken to keep the pipe clean and free from dirt and other foreign materials. Saddles, posts, wall brackets, pipe hangers, or other devices shall adequately support piping along floors, walls, or ceilings.
- B. Galvanized Steel Piping: Galvanized steel pipe shall be used for 2 ½" and smaller. Grooved couplings and fittings may be used in lieu of threaded malleable iron fittings.
- C. All piping, fittings and valves shall be installed per the manufacturer's latest published directions.
- D. The pumps shall be realigned by contractor, according to the standards of the Hydraulics Institute, after grouting of the base and connection of piping.

## 3.02 ACCEPTANCE TESTING

- A. Pressure Testing: All piping and equipment shall be pressure tested and have bacteriological testing procedures performed in accordance with Section 9 Union Township specifications.
- B. Disinfection: All piping and equipment shall be disinfected in accordance with AWWA C653. The contractor shall obtain two acceptable bacteriological samples within 24 hours of each other.
- C. Pump Testing: Each centrifugal pump furnished under these specifications shall be tested at the factory to verify individual performance. Certified copies of all test reports shall be submitted to the Engineer for approval prior to shipment. Each unit shall be hydrostatically tested in accordance with the Hydraulic Institute Standards.

## 3.03 FACTORY FIELD SERVICE

- A. The Contractor shall arrange for the Pump Manufacturer to provide a factory-trained representative as required for the purpose of supervising installation, start-up, final field acceptance testing, and providing instruction to the owner's operating personnel in the proper operation and maintenance of the equipment in this section. Cost is to be included with the cost of the project.
- B. The time specified shall require at least two trips to the project site. One trip for supervision during the installation of the units and one trip for operator training shall be provided.

END OF SECTION 11440



Subject: Quote, Water Control Panel Upgrades, Clare

Quote: 20230327LW01

Date: 3/27/2023

### **Perceptive Controls, Inc**

#### **Scope**

- Replace current SCADA panels using GROOV epic controls and touch screen.
  - All Water SCADA panels to be replaced with GROOV Epic control system.
  - 6" touch screen (Except Water treatment plant).
  - Add UPS battery back-up system.
  - Adequate spacing for future I/O expansion.
  - Cell modem installed for each control panel.
- (1) main SCADA Water Treatment Plant control panel.
  - 23.8" Hope industrial panel mounted touch screen to replace small touch screen.
  - Centralized SCADA information from remote sites.
- (8) Remote SCADA control panels at the following locations (1 for each location):
  - 300,000 Gallon Water Tower.
  - 500,000 Gallon Water Tower.
  - McEwan Booster Station.
  - Wells, #6, #7, #8, #9, #10.

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#### **Deliverables**

- (1) main PCP panel at Water Treatment Plant
- (8) remote control panels as described above.

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#### **Services**

- Engineering and submittals.
- Design and Cadd schematics.
- Build and Testing.
- Onsite Start-up.

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#### **Terms**

- Schedule of Values.

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#### **Notes**

- Number of control panels required based on schematic below.

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#### **Exceptions**

- Installation and field wiring not included.
- Conduit and field consumables not included.





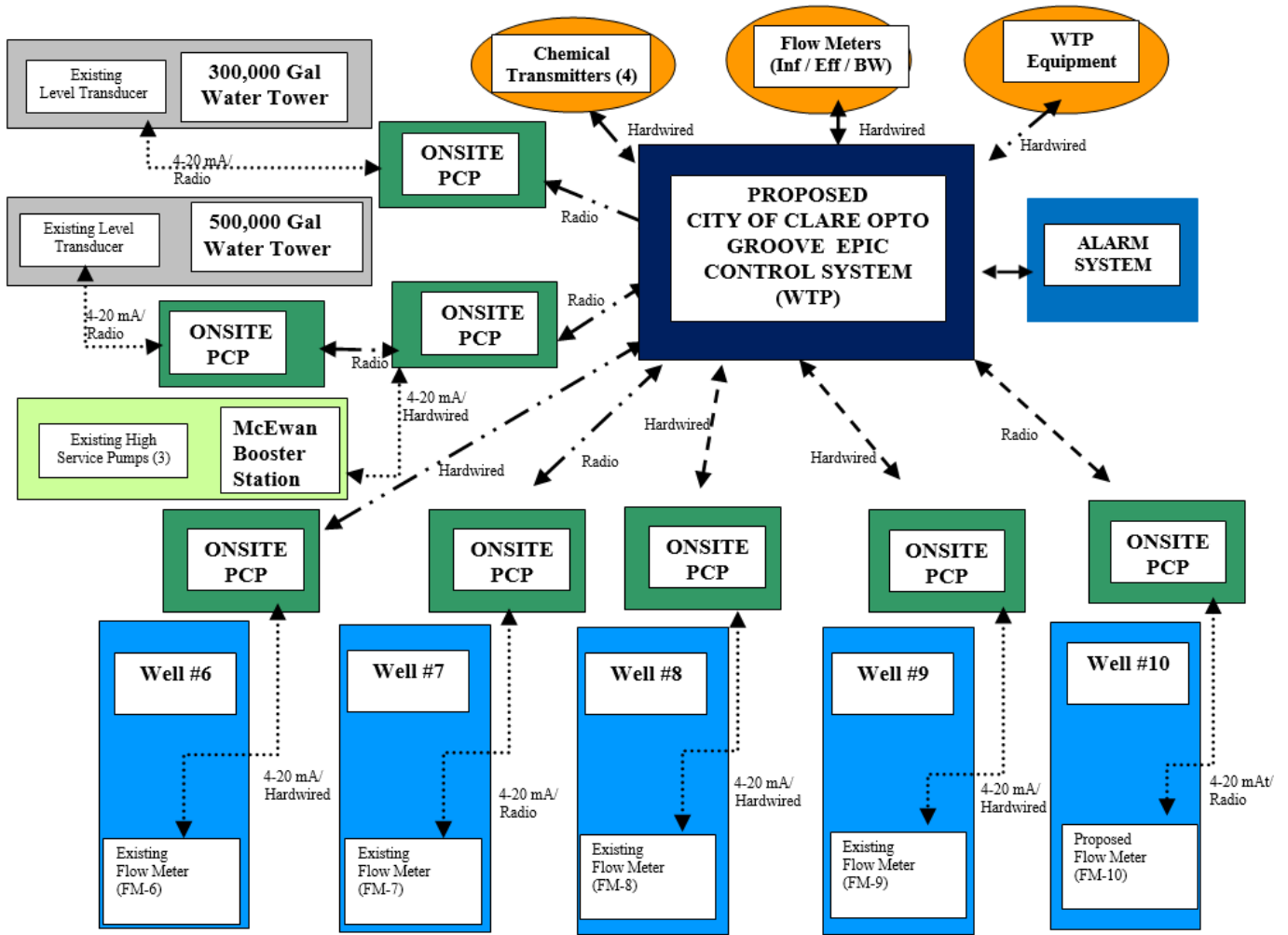
Best Regards,

*Lawrence West*

Lawrence "Larry" West

[lwest@perceptivecontrols.com](mailto:lwest@perceptivecontrols.com)

269-275-9358



WTP INSTRUMENTATION & CONTROLS UPGRADES

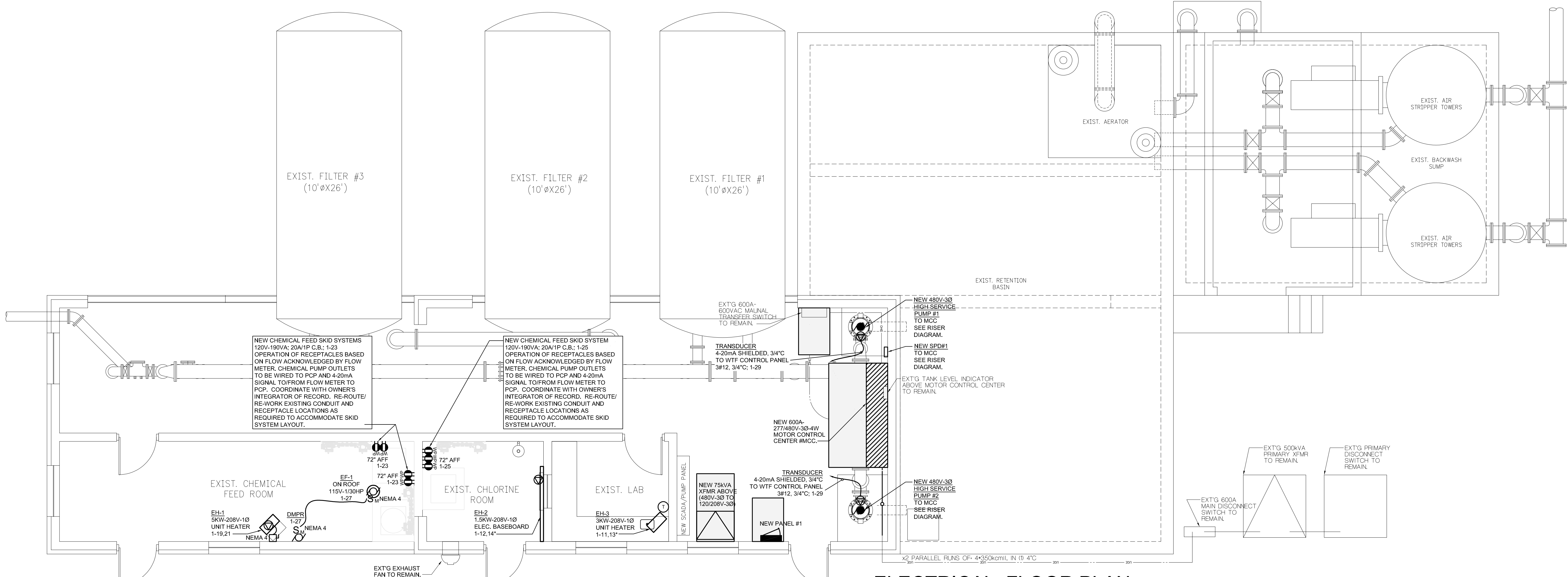
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New Motor Control Center #MCC						
VOLTAGE: 480/277V-3PH-4W		MOUNTING: SURFACE				
AMPERAGE: 600 MLO						
FED FROM: EXTG Manual Transfer Switch						
KEY	CIR	CB/P	DESCRIPTION	CB/P	SURF	KEY
1						2
3	200/3		HIGH SERVICE PUMP #1 (100 HP)		200/3	4
5						6
7						8
9						10
11						12
13						14
15	100/3		XFMR #1 - 75kVA - PANEL #1		200/3	16
17						18
19						20
21	100/3		AGGRESSIVE PANEL AIR STRIPPER BUILDING		100/3	22
23						24
25						26
27	60/3		AIR STRIPPER HEAT EXCHANGER		100/3	28
29						30
31						32
33	60/3		POWERLOGIC ACCUSINE HARMONIC FILTER			34
35						36
37						38
39						40
41						42

New Panel #1										
VOLTAGE: 120/208V-3PH-4W		MOUNTING: SURFACE								
AMPERAGE: 225A MCB										
FED FROM: NEW 75kVA XFMR #1										
KEY	CIR	CB/P	DESCRIPTION	LOAD	P	LOAD	DESCRIPTION	CB/P	CIR	KEY
1	20/1		PLUGS - PUMP ROOM		A		LIGHTS - PUMP ROOM		20/1	2
3	20/1		PLUGS - OFFICE		B		LIGHTS - OFFICE		20/1	4
5	20/1		GAS UNIT HEATER		C		CHLORINATOR		20/1	6
7	20/1		PLUG - BLOWER ROOM		A		LIGHTS - WELL #2		40/2	8
9	20/1		CUBICLE FEED / POLY MIXER		B					10
11	15/2		EH-3 - OFFICE HEATER	1500	C	750	EH2 - CHLORINE ROOM HEATER	15/2		12
13				1500	A	750				14
15	20/1		GFI BLOWER ROOM ROOF		B		LIGHT BLOWER ROOM		15/1	16
17	15/1		FLOOD LIGHT		C		HEATER BLOWER ROOM		20/1	18
19	15/2		EH-1 - FLUORIDE ROOM HEATER	2500	A		RET TANK LEVEL	15/1		20
21				2500	B		FLUORIDE A	15/1		22
23	20/1		FLUORIDE PUMP & ACCESSORIES	1000	C		HEAT TAPE TOWER 1	20/1		24
25	20/1		CHLORINE PUMP & ACCESSORIES	1000	A		HEAT TAPE TOWER 2	20/1		26
27	20/1		EF-1 - FLUORIDE ROOM	200	B		LEAK DETECTOR	15/1		28
29	20/1		TRANSDUCERS	300	C		FLUORIDE B	15/1		30
31			SPACE		A		SPACE			32
33			SPACE		B		SPACE			34
35			SPACE		C		SPACE			36
37			SPACE		A		SPACE			38
39			SPACE		B		SPACE			40
41			SPACE		C		SPACE			42

**GENERAL ELECTRICAL NOTES:**

- CAUTION !!!!!!!  
E.C. SHALL VERIFY ALL ROUGH-IN ELEVATIONS, LOCATIONS AND/OR HEIGHTS OF ALL LIGHT FIXTURES, RECEPTACLE OUTLETS, T.V., COMPUTER, CLOCK OUTLETS, ETC. WITH ARCHITECT/ENGINEER. FAILURE TO DO SO WILL REQUIRE E.C. TO RELOCATE RESPECTIVE ITEMS AT THE E.C.'S EXPENSE.  
  
COMMUNICATION OUTLET LOCATIONS SHALL BE COORDINATED WITH OWNER AND OWNER FURNITURE PLAN.
- FEEDS TO NEW POWER, LIGHTING, AND LOW VOLTAGE DEVICES SHALL BE ATTEMPTED IN EVERY WAY TO BE INSTALLED FLUSH-MOUNT (RECESSED BEHIND THE WALL/CEILING SURFACE).  
  
THERE SHALL BE NO EXPOSED CONDUITS, EXCEPT IN ELECTRICAL ROOMS.
- COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF LIGHT FIXTURES WITH THE INTERIOR ELEVATIONS AND REFLECTED CEILING PLANS.
- ALL PENDANT MOUNTED FIXTURES SHALL BE SECURELY HUNG FROM BUILDING STRUCTURE.
- PROVIDE KEVLAR PULL STRINGS IN ALL SPARE CONDUITS.
- E.C. SHALL COORDINATE FEEDER ROUTING WITH PLUMBING, MECHANICAL AND LOW VOLTAGE CONTRACTORS.
- ANY NEW CONDUIT PENETRATIONS THROUGH WALLS SHALL BE APPROPRIATELY FIRE-STOPPED, SMOKE-STOPPED OR CAULKED WHEN PENETRATION SIZE EXCEEDS CONDUIT SIZE, AS REQUIRED.
- NOT USED.
- NOT USED.
- COORDINATE CONDUIT SLEEVES WITHIN THE WALLS FOR DATA, TELEPHONE/PAGING, TELEVISION, SECURITY, AND CLOCK SYSTEMS WITH THE OWNER.
- CIRCUITS SHOWN ON PLANS WITH AN \* AFTER IT, INDICATE THE CIRCUIT NUMBER FROM OLD DRAWINGS OR A TAKEOFF. E.C. IS TO VERIFY ACTUAL CIRCUIT AND USE IT IF DIFFERENT THAN CIRCUIT INDICATED.
- E.C. SHALL FIELD VERIFY THAT ALL ADDITIONS AND CHANGES SHALL NOT OVERLOAD EXISTING CIRCUITS, PANELS OR TOTAL SERVICE.



**ELECTRICAL FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

1419 Industry Drive  
Traverse City, MI 49696  
P 231.933.0510 F 231.933.3215  
W www.nealisengineering.com



ENGINEERING SURVEYING TESTING & OPERATIONS  
123 West Front Street  
Traverse City, MI 49684

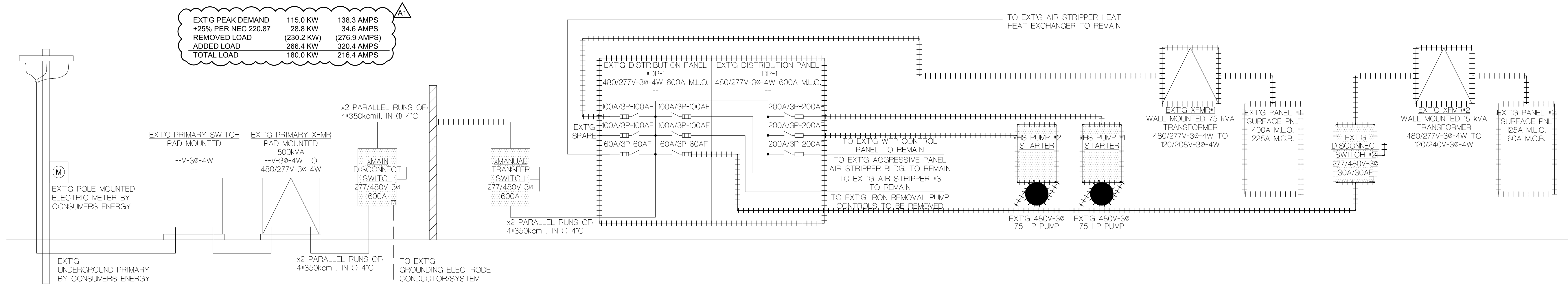
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A	03/17/2023	JAV	80% D&C REVIEW
0	03/31/2023	JAV	ISSUED FOR BIDS
A1	04/20/2023	JAV	ADDENDUM #1

**CITY OF CLARE**  
**2023 WATER TREATMENT FACILITY UPGRADES**  
**WTF ELECTRICAL FLOOR PLAN**  
**CITY OF CLARE, CLARE COUNTY, MICHIGAN**

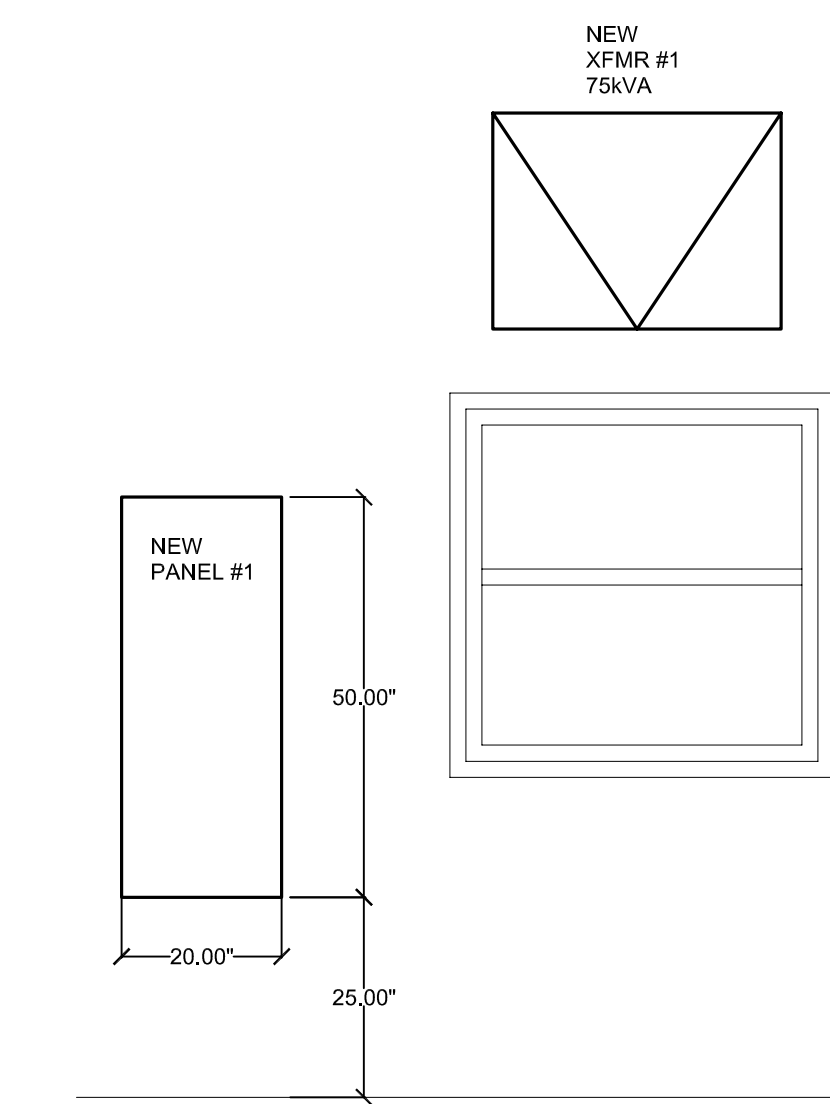
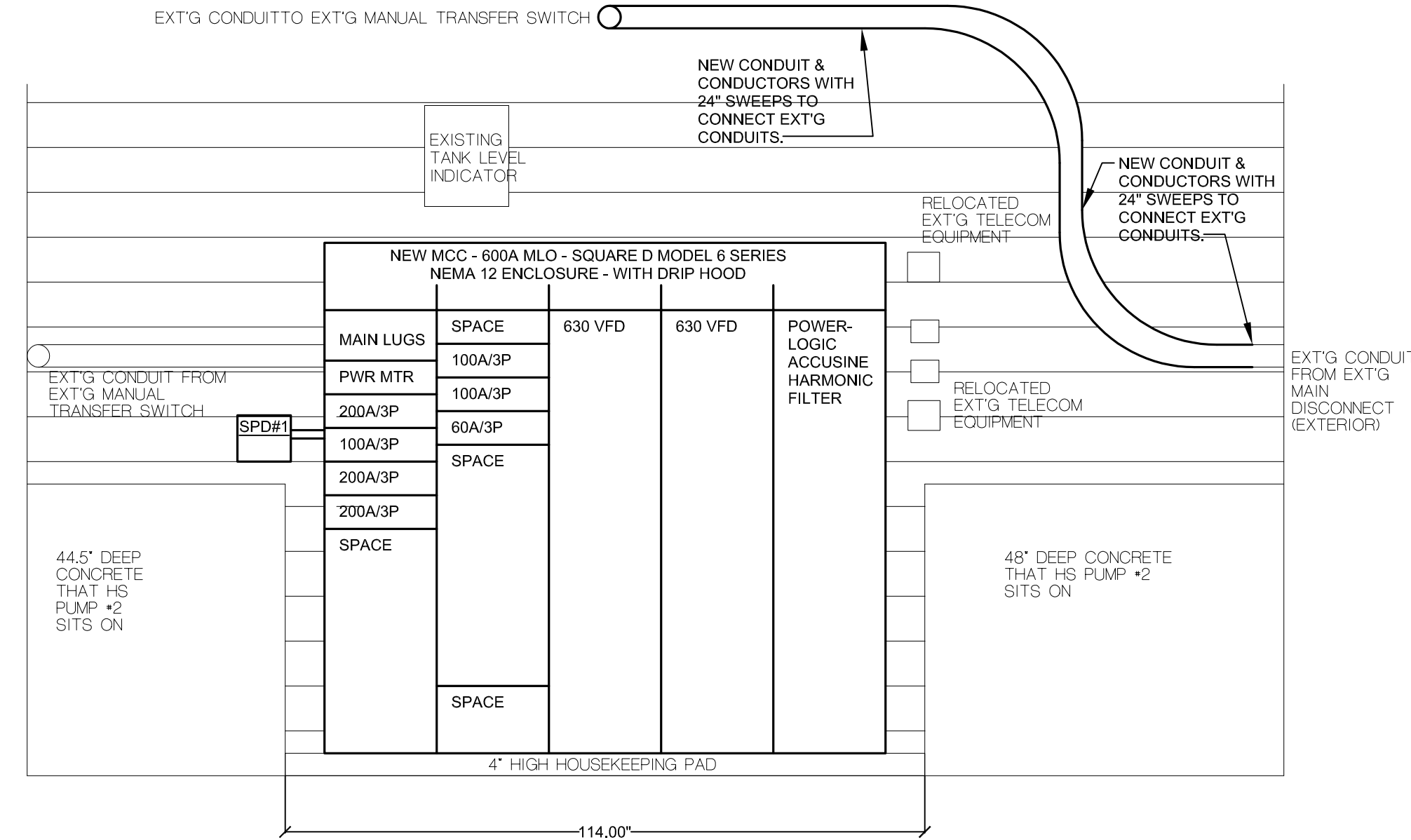
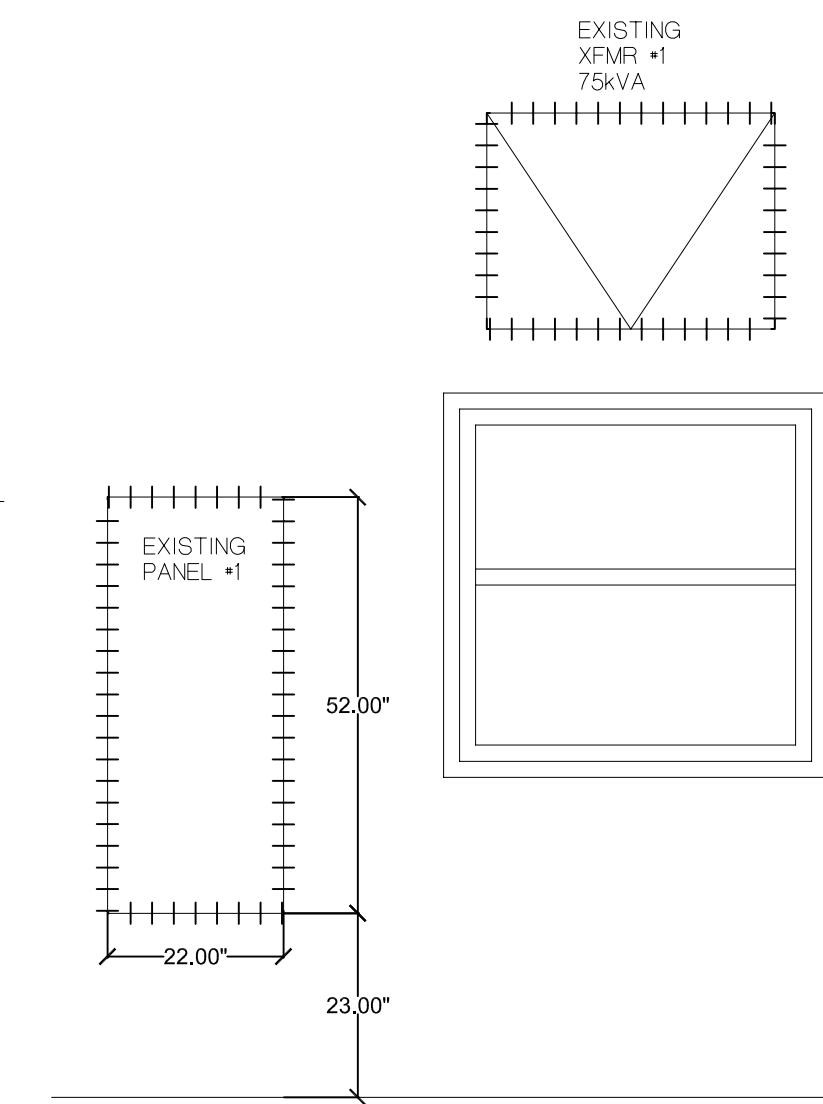
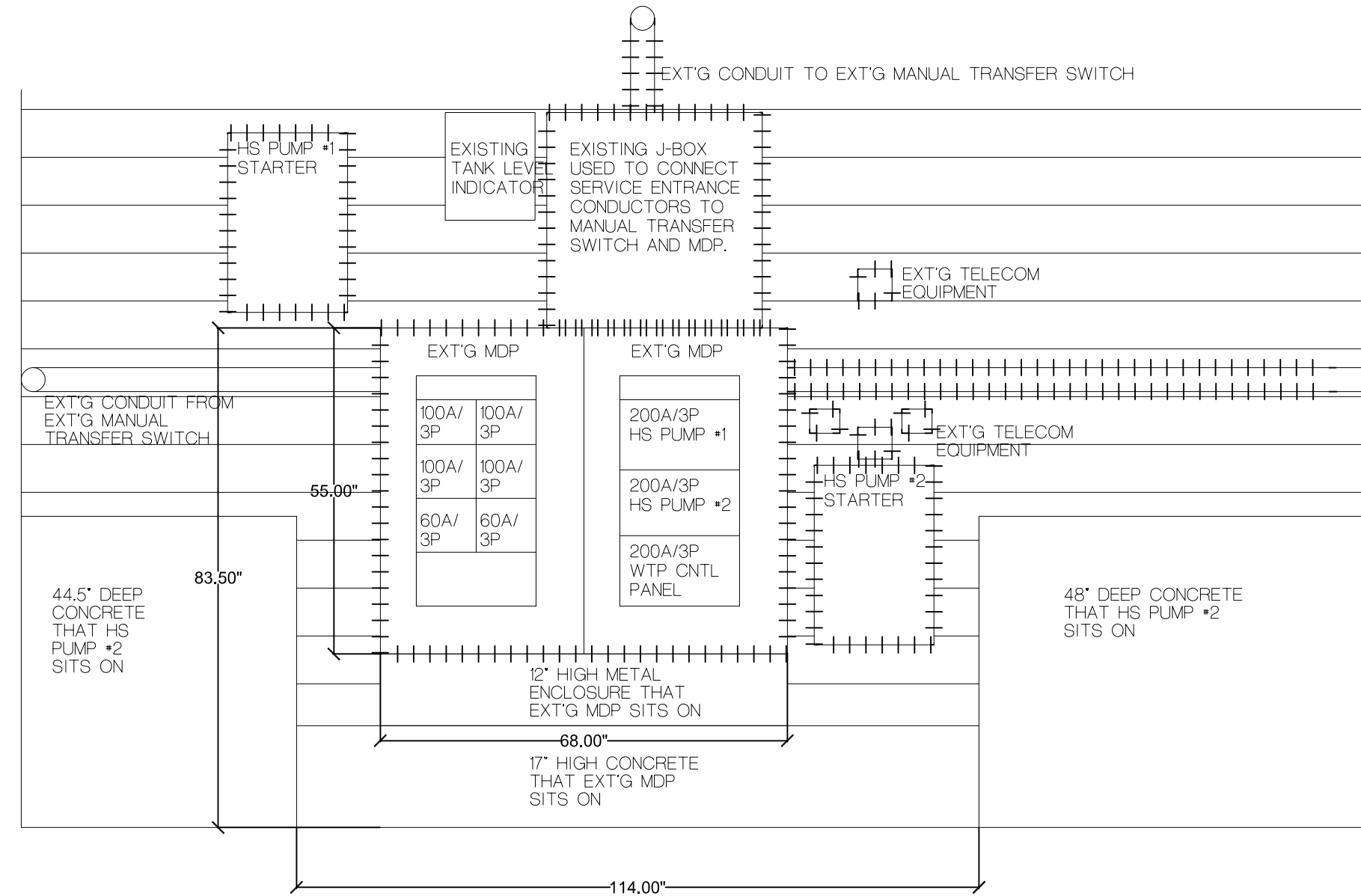
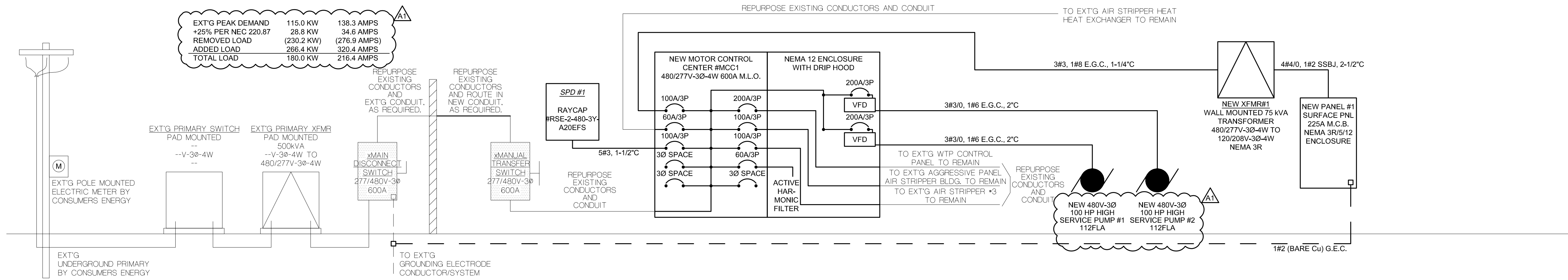
P.N.: JENNIFER GRAHAM, P.E.  
D.R.: J. VanBroeklin  
JOB NO.: **22253**  
**2.11**

These documents are prepared in accordance with the contractual terms and conditions for this project.

EXISTING ELECTRICAL RISER DIAGRAM



PROPOSED ELECTRICAL RISER DIAGRAM



REV#	DATE	BY	DESC.
A	03/17/2023	JAV	60% D&C REVIEW
0	03/30/2023	JAV	ISSUED FOR REVISION
A1	04/27/2023	JAV	ADDENDUM #1

CITY OF CLARE  
 2023 WATER TREATMENT FACILITY UPGRADES  
 WTF ELECTRICAL RISER DIAGRAMS, SCHEDULES, AND DETAILS  
 CITY OF CLARE, CLARE COUNTY, MICHIGAN

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