



City Of Carmel
Well 29

ADDENDUM 1

November 11, 2024

Planholders on the City of Carmel Well 29 project are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

SPECIFICATIONS

Replace the Bid section with the attached counterpart.

Note: The allowance amounts have been changed.

Replace Section 01010 Definition of Contract Items with the attached counterpart.

Note: The allowance amounts have been changed.

Replace 01021 Allowances with the attached counterpart.

Note: The allowance amounts have been changed.

Replace Section titled "Owner Provided Material" which was designated 01045 in the title and 01043 in the page footer (the prominently highlighted section) with the attached Section 01045 "Owner Provided Equipment".

Note: An attempt was made to clean up the formatting and clarify the scope of equipment supplied. The Cla-Valve was removed from the scope of items supplied by the Owner. No other changes were made to the listed equipment provided.

Replace Section 01320 EPMS with the attached counterpart.

Note: The cost for the EPMS has been updated.

Replace Section 01800 Construction Survey Work with the attached counterpart.

Note: The Contractor is now responsible for establishing vertical control.

BID

CONTRACT IDENTIFICATION: Well 29.

THIS BID IS SUBMITTED TO: City of Carmel, Indiana

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into the Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Time indicated in the Agreement and in accordance with the other terms and conditions of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Advertisement / Notice to Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. BIDDER will sign and submit the Agreement with the required Performance and Payment Bonds and other documents required by the Bidding Requirements within fifteen (15) days after the date of OWNER's Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

- a. BIDDER has examined and carefully studied the Bidding Documents and the following Addenda, receipt of all which is hereby acknowledged: (List Addenda by Addendum Number and Date.)

Number	Date	Number	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- b. BIDDER has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work.
- c. BIDDER is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance, or furnishing of the Work.
- d. BIDDER has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Special Conditions as provided in paragraph 4.2.1 of the General Conditions. BIDDER accepts the determination set forth in paragraph GC-4.2 of the General Conditions of the extent of the "technical data" contained in such reports and drawings

upon which BIDDER is entitled to rely as provided in paragraph 4.2 of the General Conditions. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER's purposes. BIDDER acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy of completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by BIDDER and safety precautions and program incident thereto. BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with times, price and other terms and conditions of the Contract Documents.

- e. BIDDER is aware of the general nature of the Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
 - f. BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
 - g. BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
 - h. This 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 corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.
4. BIDDER will complete the Work for the unit prices shown on the following pages:

BASE BID

The items listed herein will constitute a complete Contract. A Bid must be made on each Item with no qualifying statement. Bidder acknowledges that quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents. All specific cash allowances are included in the prices set forth below and have been computed in accordance with paragraph 11.8 of the General Conditions.

Item No.	Description	Est. Amount	Unit	Unit Price in Figures		Total Unit Price in Words	Total Estimated Cost of Item	
1A	Well Drilling in sand and gravel	85	LF					
1B	Well drilling in the bedrock	10	LF					
2	Geophysical Log of Borehole	1	LS					
3	Furnishing and Installing Well Casing	90	LF					
4	Furnishing and Installing Well Screen	15	LF					
5	Plumbness and Alignment Tests	1	LS					
6	Well Development	1	LS					
7	Well Disinfection	1	LS					
8	Test Pump Installation and Extraction	1	LS					
9A	Step Drawdown Test	3	HR					
9B	Constant Rate Aquifer Test	48	HR					
10	Water Quality Sampling and Analysis	1	LS					

Continued next page.

Continued from previous Page.

Item No.	Description	Est. Amount	Unit	Unit Price in Figures		Total Unit Price in Words	Total Estimated Cost of Item	
11	Well Platform, Vault, Site Work, Water Main and All Other Work Not Otherwise Defined	1	LS					
12A	Allowance, Electric Utilities	1	LS	\$35,000	00	Thirty-Five-Thousand-Dollars	\$35,000	00
12B	Allowance, System Integration	1	LS	\$45,000	00	Forty-Five-Thousand-Dollars	\$45,000	00
Total Estimated Base Bid Construction Cost:								

All specific cash allowances are included in the price set forth above and have been computed in accordance with paragraph 11.2 of the General Conditions.

4A. LISTED "OR-EQUAL" OR SUBSTITUTIONS

- a. The name or make of any piece of equipment or material of construction specified in Part C of the Contract Documents or indicated on the Drawings shall be used in determining the base Bid. Where two or more Equipment or Product Manufacturers are named, Bidders may use any of the named. Bidder may offer "Or-Equal" or substitutions for specified Equipment or Product Manufacturer, provided they name on the Bid Substitution List the "Or-Equal" or substitute offered together with the total amount to be added to, or deducted from the amount of their base Bid for the corresponding Project item.
- b. All provisions for review and acceptance of an offered substitute shall comply with the Contract Documents. Owner reserves the right to accept or reject any offered substitute.
- c. If the Bidder names no substitute on his "Bid Substitution List" the specified Equipment or Product Manufacturers shall be used. No additional substitutes may be offered for items on the "Bid Substitution List" subsequent to the award of the Contract.
- d. Contract award shall be evaluated by base Bid and any combination of Alternate Bid Items without regard for Substitute Equipment or Manufacturers. The Base Bid and Alternative Bid Items shall include the specified equipment or manufactures and not in clued the Substitute Equipment or Manufacturers.

BID SUBSTITUTION LIST

Section/ Subsection	Specified Equipment of Product Manufacturer	Substitute Offered	Total Addition	Total Deduction
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

5. BIDDER agrees that the Work will be substantially complete and completed and ready for final payment in accordance with paragraph 14.7.2 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

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

- a. Required Bid Security in the form of Surety Bond or Certified Check.
 - b. Indiana Revised Form 96.
7. Communications concerning this Bid shall be addressed to the address of BIDDER indicated below Bidder's signature or to the following address:

8. The terms used in this Bid which are defined in the General Conditions or Instructions will have the meanings indicated in the General Conditions or Instructions.

Submitted on _____, 20_____.

If BIDDER is:

An Individual

By _____
(Individual's Signature)

Doing business as _____
Business Address: _____

Phone No.: _____

A Partnership

By _____
(Firm Name)

(General Partner's Signature)

(Title)

Business Address: _____

Phone No.: _____

A Corporation

By _____
(Corporation Name)

(State of Incorporation)

(Printed Name and Signature of Person Authorized to Sign)

(Title)

(Corporate Seal)

Attest _____
(Secretary)

Corporate Address: _____

Phone No.: _____

Date of Qualification to do Business is: _____

A Joint Venture

By _____
(Signature)

(Address)

By _____
(Signature)

(Address)

Phone Number and Address for Receipt of Official Communications

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above).

**SECTION 01010
DEFINITION OF CONTRACT ITEMS**

PART 1 GENERAL

1.01 FOREWORD

- A. This Section describes the various Contract Items listed in the Bid.

1.02 WORK INCLUDED

- A. Under each Item the Contractor shall furnish all labor, materials, tools, plant equipment, supplies, maintenance of equipment, heating, lighting and power, insurance and bonds, coordination, and all Work and in accordance with the Specifications Parts A, B, and Divisions 1 through 16 of Part C and necessary to complete the Work in accordance with the obvious or expressed intent of the Contract Documents.

1.03 WORKMANSHIP AND MATERIALS

- A. The quality of workmanship and materials entering into any and all of the Items and the Work included shall conform to pertinent sections, paragraphs, sentences, and clauses, both directly and indirectly applicable thereto, contained in the Contract Documents, whether or not direct reference to such occurs under each Item in this Section.

1.04 ELECTRICAL AND CONTROL COORDINATION

- A. If the current requirement of any motor or piece of equipment is increased to such an extent that the wiring, conduit, or starter for that motor or equipment must be increased from that shown on the Electrical Drawings, the Contractor shall furnish and install the larger items under the Section the equipment is specified. The increased wiring, conduit, and starter cost shall be included in the motor or equipment cost under the Section the equipment is specified and no additional compensation will be allowed.
- B. Equipment and panels shall be NEMA 4X unless designated otherwise on the Drawings, or in the electrical or equipment specifications.
- C. Certain equipment furnished under the equipment Sections shall be connected to the plant control system as shown on the Drawings. Mechanical and electrical components for these connections shall be furnished, under the equipment Sections, as required to provide control functions compatible with the plant control system. These connections and any remote control connections shall be furnished and wired to clearly labeled terminal strips within the equipment control panel.
- D. If the electrical control requirements change from that specified or shown on the Drawings due to the requirements of the actual equipment furnished, the Contractor shall

perform all necessary modifications under the equipment Section and no additional compensation will be allowed. The final installation shall meet the operational intent of that specified and shown on the Drawings.

- E. Such structures are shown for the information of the Contractor, but information so given is not to be construed as a representation that such structures will in all cases be found or encountered just where shown, or that they represent all the structures which may be encountered.

1.05 PAYMENT

- A. The lump sum and unit prices stated in the Bid shall be payment in full for the completion of all work specified and described or required to be included in the Contract, complete, and ready for use.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

PART 4 SPECIAL PROVISIONS

4.01 CONTRACT ITEMS

- A. The contract items are defined on the following pages.

ITEM 1A AND 1B WELL DRILLING

1.01 DESCRIPTION

- A. Under this Item the Contractor shall drill one water supply well to the depth specified herein or as indicated on the drawings.
- B. This item includes providing all materials to complete the drilling (mud, water, etc.), collecting and performing sieve analysis of soil samples, keeping daily records, well protection and temporary capping, and removal of lost tools.

1.02 DEFINITION OF ITEM

- A. Item 1A includes all work necessary to drill a 30-in. diameter well in sand and gravel.
- B. Item 1B includes all work necessary to drill a 30-in. diameter well in bedrock.

1.03 MEASUREMENT

- A. The quantities to be paid under Item 1A shall be measured from the natural ground surface to the top of bedrock.
- B. The quantities to be paid under item 1B shall be measured from the top of bedrock to the bottom of the well.

1.04 PAYMENT

- A. The unit price stated in the Bid shall be full compensation for each lineal foot of drilling.

**ITEM 2
GEOPHYSICAL LOG OF BOREHOLE**

2.01 DESCRIPTION

- A. Under this Item the Contractor shall furnish all instrumentation, material, transportation, and labor necessary for generating a geophysical log of the borehole.
- B. The geophysical logging of the borehole shall consist of a Spontaneous Potential (SP) log and a Resistivity Log. The Contractor shall submit a graph or diagram illustrating the variation with depth of both the spontaneous potential log and the apparent resistivity of the borehole.

2.02 PAYMENT

- A. The lump sum price stated in the Bid shall be full compensation for all work required under Item 2.

**ITEM 3
FURNISHING AND INSTALLING WELL CASING**

3.01 DESCRIPTION

- A. Under this Item the Contractor shall furnish all casing material, joint materials, transportation, and labor necessary for the complete installation of the casing to the depth specified herein or indicated on the drawings.

3.02 DEFINITION OF ITEM

- A. Item 3 includes the furnishing and installation of new permanent 30-in. diameter well casing; Well 29.

3.03 MEASUREMENT

- A. The quantities to be paid under this Item shall be measured as the actual linear foot of well casing installed, including the casing extending above ground to the height as shown.

3.04 **PAYMENT**

- A. The unit price stated in the Bid shall be full compensation for each lineal foot of casing furnished and installed.

**ITEM 4
FURNISHING AND INSTALLING WELL SCREEN**

4.01 **DESCRIPTION**

- A. Under this Item the Contractor shall furnish and install the length and type of new permanent well screen as indicated on the drawings or specified herein, including all necessary fittings. This item also includes the furnishing and installation of the gravel pack.

4.02 **MEASUREMENT**

- A. The quantities to be paid under this Item shall be measured as the actual length of the screen having slots.

4.03 **DEFINITION OF ITEM**

- A. Item 4 includes the furnishing and installation of new 30-in. diameter well screen with gravel pack, as specified.

4.04 **PAYMENT**

- A. The unit price stated in the Bid shall be full compensation for each lineal foot of screen furnished and installed.

**ITEM 5
PLUMBNESS AND ALIGNMENT TEST**

5.01 **DESCRIPTION**

- A. Under this Item the Contractor shall furnish all instrumentation, material, transportation, and labor necessary for determining the plumbness and alignment of the completed and encased well.

5.02 **PAYMENT**

- A. The unit price stated in the Bid shall be full compensation for all work required under Item 5 for each well casing installed.

**ITEM 6
WELL DEVELOPMENT**

6.01 DESCRIPTION

- A. Under this item, the Contractor shall furnish all equipment, material and labor necessary to properly develop and clean the well as specified herein or as directed by the Engineer.
- B. Included in this item is the disinfection of equipment of all equipment and the well prior to development.

6.02 PAYMENT

- A. The unit price specified in the bid shall be full compensation for all Work required under Item 6 for each well developed as specified.

**ITEM 7
WELL DISINFECTION**

7.01 DESCRIPTION

- A. This Item shall include all work and material necessary to properly disinfect the well as specified herein. Disinfection shall be performed twice. The first disinfection shall take place before well development. Final disinfection shall take place immediately before the production pump is installed.
- B. It will be the contractor responsibility to assure that the results of the bacteriological samples collected and analyzed by the laboratory are negative.

7.02 WORK INCLUDED

- A. All activities incurred by the Contractor and necessary for the proper disposal/discharge of the chlorinated water from the well.
- B. This item also includes the collection of at least two (2) consecutive safe (total coliform negative) microbiological samples 24 hours apart after installation of the permanent pumping unit.

7.03 MEASUREMENT

- A. Each well must be disinfected a minimum of twice (more as needed). Payment under this item is for disinfection of the well, inclusive of all multiple times the well must be disinfected (i.e.: the OWNER will pay only once for disinfecting each well).

7.04 PAYMENT

- A. The unit price stated in the Bid shall be full compensation for all Work required under this item for each well properly disinfected. No additional charge will be allowed for multiple disinfection necessary to obtain bacteriological samples that are free of bacteria.

**ITEM 8
TEST PUMP INSTALLATION AND EXTRACTION**

8.01 DESCRIPTION

- A. Under this Item the Contractor shall provide all material, equipment, transportation, and labor, to install a provisional vertical turbine pump for completing pump/aquifer tests as specified herein. This Item also includes is the extraction of the pump once the tests are completed.
- B. Included under this item is any additional time required by the Contractor to test and determine the readiness of the equipment for performing the Well and Aquifer Performance Test.
- C. Also included is the furnishing and installing of necessary temporary discharge piping to a distance of at least 200 feet from the well and furnishing and installing engineer approved devices for accurately measuring the pumping rate, regulating the flow, and measuring water levels.

8.02 PAYMENT

- A. The unit price stated in the Bid for the installation of the pumping unit indicated in the Bid shall be full compensation for all work required under Item 8 for each well.

**ITEMS 9A AND 9B
WELL AND AQUIFER PERFORMANCE TESTING**

9.01 DESCRIPTION

- A. This Item shall include all material and labor necessary for collecting time-discharge data and time drawdown data from the well under construction and at least four other observation wells.

9.02 MEASUREMENT

- A. The quantities to be paid under this Item shall be measured as the actual time spent in pumping and recording drawdown in the wells.

9.03 DEFINITION OF ITEM

- A. 9A includes all work necessary for the Step Draw Down Test with Recovery as specified.
- B. Item 9B includes all work necessary for the Constant Rate Aquifer Performance Test w/Recovery as specified.

9.04 PAYMENT

- A. The unit price stated in the Bid shall be full compensation for each hour of pumping. No additional charge will be allowed for time used to collect recovery data, set up equipment or time expended in partial test which has been interrupted for any reason other than as requested by the Engineer.

**ITEMS 10
WATER QUALITY SAMPLING AND ANALYSIS**

10.01 DESCRIPTION

- A. This Item shall include all materials and labor necessary for the collection of water samples from the well as specified herein, and the chemical analysis of the samples by a State-approved laboratory.
- B. Water quality analysis shall be performed for those parameters required by the regulatory agency for new wells.

10.02 PAYMENT

- A. The unit price stated in the Bid shall be full compensation for the sample collection and analysis for each well as specified.

**ITEM 11
WELL PLATFORM, VAULT, SITE WORK, WATER MAIN AND ALL OTHER WORK NOT OTHERWISE
DEFINED**

11.01 DESCRIPTION

- A. These Items will include platform, stairway, landing, handrails, sump pumps, cast-in-place concrete vault, floor doors, piping, fittings, valves, plumbing, electrical, panels, and all work required to construct the platform as shown on the drawings.
- B. This item also shall include, mobilization, EPMS fees, costs for moving equipment in and out, performance and payment bonds, insurance, permits, utility connections costs,

project supervision, surveying, and other expenses associated with preparation for construction.

- C. Under these Items, the Contractor shall perform all work necessary for the installation of Owner-supplied equipment.
- D. This item also shall include cost for receiving, unloading, and installing of Owner-supplied electrical panels, including but not limited to Flow Transmitter panel, RTU panel, Isolation panel, well pump Control panel, and Service Entrance Disconnect Switch.
- E. The Contractor shall construct the raw water main, install polyethylene encasement, install valves, and make connection to existing 30-in raw water main as shown on the Drawings and specified in conformance with relevant Sections of the Specifications.
- F. Under this Item the Contractor shall furnish and install special backfill material and placement of material stored on site as shown on the Drawings, specified or ordered.
- G. Other items to be considered under this item include but not limited to stone driveways, erosion control, fire hydrant assemblies, dewatering, record documents, and all work not otherwise shown to create a complete and functional system.

11.02 DEFINITION OF ITEMS

- A. Item 11- Includes all work and appurtenances necessary to construct Well 29 except as defined under other items.

11.03 PAYMENT

- A. The lump sum price stated in the Bid shall be fully compensated for all work under item 11 performed by the Contractor.

ITEM 12A AND 12B ALLOWANCES

12.01 DESCRIPTION

- A. These Items shall include allowances intended to reimburse the Contractor for costs associated with the relocation of existing services, application for and construction of the new electrical service for the new pump. Also included under this allowance are cost associated with programming and communication work necessary to connect signals, alarms and equipment status monitored in the RTU panel.

12.02 DESCRIPTION

- A. Item 12A includes an allowance to reimburse the Contractor for costs associated with utility connections and/or relocation of existing services.

- A. Item 12B includes an allowance amount to reimburse the Contractor for costs associated with programming and communication to connect signals, alarms, and equipment.

12.03 PAYMENT

- A. Payment under these allowance items shall be in accordance with Section 01021.

END OF SECTION

This page was intentionally left blank.

**SECTION 01021
ALLOWANCES**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes the allowances which are to be furnished by the Contractor per Paragraph GC-13.02 of the General Conditions.
- B. The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. These allowances shall cover the net cost of the materials and equipment delivered and unloaded at the Site, and all applicable taxes.
- C. The Contractor's handling costs on the Site, labor installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Price and not in the allowance.
- D. The Contractor shall cause the Work covered by these allowances to be performed for such amounts and by such persons as the Engineer may direct, but he will not be required to employ persons against whom he makes a reasonable objection.
- E. If the cost, when determined, is more than or less than the allowance, the Contract Price shall be adjusted accordingly by Change Order.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Contractor shall prepare and submit proposals for the Owner to select the items included in allowance.
 - 2. Information for the Record:
 - a. Operation and maintenance manuals as may be required for items included in allowance.
 - b. Invoices and delivery slips, for items provided under the allowance, shall be submitted to the resident project representative or Engineer.

1.03 PRODUCT HANDLING

- A. The Contractor shall provide all labor, material and equipment to insure the safe delivery, handling and storage of goods until acceptance by Owner and Engineer.

1.04 GUARANTEE

- A. Contractor shall provide manufacturer's warranties to the Owner for all goods provided.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 COORDINATION

- A. Contractor shall advise Owner and Engineer of, and include in the schedule, the timing of the selection, Shop Drawing review and procurement of the goods or services required in the allowance.
- B. Contractor shall be responsible for the coordination, of all allowance item(s) provided, with the remainder of the contract work.

3.02 ERECTION, INSTALLATION AND APPLICATION

- A. Contractor shall assemble, install or apply all goods as may be required to complete the requirements of the allowance.

3.03 PROTECTION

- A. Contractor shall examine all goods on delivery. All damaged or defective goods shall be returned to the manufacturer for replacement.

PART 4 SPECIAL PROVISIONS

4.01 LIST OF ALLOWANCES

- A. New Electrical Service \$35,000.00
1. This allowance item is intended to reimburse the Contractor for costs associated with the relocation of existing services, application for and construction of the new electrical service for the new pump.
 2. Permissible costs that can be reimbursed to the Contractor under this item are: Fees or charges from AES Indiana related to the relocation of the existing services construction of the new electrical service. An invoice from AES Indiana will be required to be submitted to substantiate payment amounts claimed by the Contractor.
 3. Costs not permissible under this item shall include work to be performed on the Customer side of the meter by the Contractor of their Subcontractors. Also, not permissible are

overhead or office costs expended by the Contractor's administrative staff in applying for or coordinating the new electric service.

- | | | |
|----|--|-------------|
| B. | Telemetry Interface and Programming | \$45,000.00 |
| 1. | This allowance item is intended to reimburse the Contractor for costs associated with programming and communication work necessary to connect signals, alarms and equipment status monitored in the RTU Panel. This work will be performed by the Owner's System integrator. | |
| 2. | An invoice from System Integrator will be required to be submitted to substantiate payment amounts claimed under this allowance item. | |

END OF SECTION

THIS PAGE WAS INTENTIONALLY LEFT BLANK.

**SECTION 01045
OWNER PROVIDED EQUIPMENT**

PART 1 GENERAL

1.01 SCOPE

- A. This section includes a list of Owner provided materials and equipment.
- B. Wiring and conduit typically installed on-site (exterior to panels and equipment) is not generally included within the scope of items provided by the Owner.

PART 2 PRODUCTS

1.01 PROVIDED MATERIALS

- A. The following items will be supplied by the Owner:
- B. Well Pump
 - 1. 200 HP Pump Motor
 - 2. Pump, Pump shaft, and Pump Head
 - 3. Column Pipe
 - 4. Note: The well screen and casing are **NOT** provided by the Owner.
- C. Drain back Valve
- D. 2-inch Air Relief
- E. Ductile Iron Piping
 - 1. Tap/Saddle to connect to existing raw water main
 - 2. All proposed piping from raw water main through the vault and up the turret to the air relief hydrant.
 - 3. All proposed fittings from raw water main through the vault and up the turret to the air relief hydrant.
 - 4. All proposed valves from raw water main through the vault and up the turret to the air relief hydrant.
- F. Flow Meter
 - 1. 10-inch Badger potted mag flow meter and Amplifier
- G. Pressure Switch
- H. Electrical
 - 1. VFD Control panel
 - a. Back panel and A/C Unit

- b. VFD
- c. Miscellaneous parts
- d. Bypass contactor
- 2. Control Panel 1
 - a. Control Panel parts
 - b. SCADA Control Panel
 - c. PLC and I/O Cards
- 3. 480 vac disconnect on IPL Platform
- 4. 480 vac 3 ph – position switch on turret
- 5. 480 vac isolation panel on turret
- 6. 480 vac to 120 vac mini power zone on turret
- 7. 480 vac generator connection panel

PART 3 EXECUTION

1.01 STORAGE, TRANSPORTATION, AND LOGISTICS

- A. If there is any doubt about whether an item is provided by the Owner, Contractors are required to contact the Engineer for clarification.
- B. If there is any doubt as to whether an item is supplied by the Owner, the Contractor shall assume that the item is not provided by the Owner.
- C. The listed Owner provided equipment is stored at 4915 E 106th St, Carmel, IN 46033.
- D. All Owner provided equipment must be transported by the Contractor including loading and unloading.
- E. Equipment can be retrieved by the Contractor during normal business hours. The Contractor is required to provide a detailed written inventory of all Owner provided equipment taken from the Owner's possession. The Contractor must give the Owner or the Owner's designated representative a reasonable opportunity to verify the inventory of items before they are removed from the Owner's possession.
- F. Once the Contractor takes possession of Owner provided equipment, the equipment may not be returned to the Owner's facility.

PART 4

Some receipts and information on Owner provided equipment is appended to this specification section. The receipts and information may be incomplete.

451-7740
2024

Issued for Bid
Carmel, IN
Well 29

END OF SECTION

THIS PAGE WAS INTENTIONALLY LEFT BLANK.



VAL-MATIC VALVE AND MANUFACTURING CORP

905 RIVERSIDE DRIVE ELMHURST IL 60126
PHONE (630) 941 7600 FAX (630) 941 8042

Packing list number 293285

Page 1
11/03/21 12:58:22

Shipped from:

Company . . . : 1 VAL-MATIC CORP.
Warehouse . . . : 1

Ship Date . . . : 11/03/21
Shipment number : 314874
Control number : 0

Ship to . . : CARMEL WATER TREATMENT PLANT
4915 E 106TH
CARMEL IN 46033

Carrier/pro number	Truck/trailer number	Gross weight	U/M
FEDEX FREIGHT PRIORITY 5948383910	_____	79.000	LB
Shipping instructions :			

Items not assigned to containers

Order information:

CO 382830 11/01/21 55664200 FACO LLC

P.O. information:

P21-1466 Date . . : 11/01/21

F.O.B. - FACTORY
FREIGHT PREPAID & CHARGE

ATTN: JOHN MASCARI
#JM102121

Item number	Rel	Item description	Packed qty/ U/M	Backorder qty U/M
102ST	1	2" WSAV ASSEMBLD PER UL 300PSI	1.000 EA .000 EA	

** End of Packing List **

Received:	<i>Jm</i>
Date:	<i>11-4-21</i>
PO #:	<i>JM102121</i>
ACCT #:	<i>07.1052.11</i>
Use:	<i>Well 29 Air Release</i>

** Drop Shipped Billed Thru FACO **

FLOSOURCE

VALVES | ACTUATION | INSTRUMENTATION | STEAM SPECIALTIES

1405 Hancel Parkway
 Mooresville, IN 46158
 800-752-5959

sales@flosource.com



Packing List
Carmel Utilities/Water Operati PO# JM102221

** Reprint **

PO #	PO Date	Order #
JM102221	10/21/21	208948-00
Customer #	Page #	
1185	1	

Bill To Carmel Utilities/Water Operati 3450 W 131st St. Carmel, IN 46074	Ship To Carmel Utilities/Water Op 4916 E 106th Street Attn: John Mascari TAG: WELL 29 Carmel, IN 46280
--	--

Correspondence To FloSource, Inc. 1405 Hancel Parkway Mooresville, IN 46158

Instructions PP&A	Staging Area			
Ship Point FloSource, Inc.	Via UPS Ground	Requested 10/21/21	Shipped 10/21/21	Terms Net 30

Notes

Line	Product and Description	Bin Location	Order Quantity	Backorder Quantity	Ship Quantity	Qty UM	Recd. # Cartons
1	Singer 3/4 106 PGX Singer 3/4" 106 PGX Automatic Drainback Valv 3/4" Singer 106PGX Automatic Drainback Valve, Threaded Ends. Cat # 0003-0757	G1/B / /	2.00	1.00	1.00	each	
1	Lines Total				Total Shipped	1.00	
0	Lines Not Printed ***						

Picked By	Packed By	Checked By
	Received By:	

RECEIVED BY *[Signature]*
DATE 10-22-21
PO# JM 102221
ACCT# 07-1052011
USE well 29 Drain back valve

AbouR

PACKING LIST



UTILITY SUPPLY COMPANY

Branch: 03 USC NW INDY

6310 SOUTH HARDING STREET
INDIANAPOLIS, IN 46217

US

Pick Ticket Number	
1437368	
Date	Page
1/10/2022 15:51:01	1 of 2
ORDER NUMBER	
1407171	

Bill To:

CARMEL WATER DISTRIBUTION
3450 WEST 131ST STREET
CARMEL, IN 46074
US
317-733-2855

Ship To:

CARMEL WATER DISTRIBUTION
3450 WEST 131ST STREET
CARMEL, IN 46074
US

Ordered By: Mr. JOHN MASCARI

Customer ID: 100753

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
JM102221-A	Net 30 DAYS			

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
11/3/2021 11:10:38	1437368	ANDY NUGENT	ABEGLEY

Quantities				Item ID	UOM	Unit Size
Ordered	Shipped	Remaining	Disp.	Item Description		

Delivery Instructions: JOHN - 317-716-6624

4915 EAST 106TH STREET INDIANAPOLIS
46280

Carrier: OUR TRUCK

Tracking #:

Ordered	Shipped	Remaining	Disp.	Item Description	UOM	Unit Size
1.00	1.00	0.00		10FXF 10" FLANGE X FLANGE SPOOL 4' & 3/4" IN LENGTH W/ DOMESTIC FLANGES FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN	EA	1.0
1.00	1.00	0.00		10FXF 10" FLANGE X FLANGE SPOOL 7' 3 & 3/4" IN LENGTH W/ DOMESTIC FLANGES FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN	EA	1.0
1.00	1.00	0.00		10FXF 10" FLANGE X FLANGE SPOOL 3' & 10" IN LEGNTH W/ DOMESTIC FLANGES FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN	EA	1.0
1.00	1.00	0.00		10FXF 10" FLANGE X FLANGE SPOOL	EA	1.0

Received: Jan 20 2023
 Date: 1-27-22
 PO #: JM102221-A
 Item #: 07.1052.28
well 29 piping

PACKING LIST



UTILITY SUPPLY COMPANY

Branch: 03 USC NW INDY

6310 SOUTH HARDING STREET

INDIANAPOLIS, IN 46217

US

Pick Ticket Number	
1437368	
Date	Page
1/10/2022 15:51:01	2 of 2
ORDER NUMBER	
1407171	

Quantities				Item ID Item Description	UOM	Unit Size
Ordered	Shipped	Remaining	Disp.			
				3' & 9" IN LENGTH W/ DOMESTIC FLANGES FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN		
1.00	1.00	0.00		10X10FXPE 10 X 10FT 0IN FLANGE X PLAIN END FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN W/ DOMESTIC FLANGE	EA	1.0
1.00	1.00	0.00		286240 10" FLANGE BASE 90 ELL-PRIME-DOMESTIC	EA	1.0
1.00	1.00	0.00		285328 8" BLIND FLANGE DOMESTIC	EA	1.0
1.00	1.00	0.00		298052 10 X 2" COMPANION FLANGE - DOMESTIC	EA	1.0
1.00	1.00	0.00		275695 10" FLANGE TEE - PRIMED-DOMESTIC	EA	1.0
1.00	1.00	0.00		286813 10 X 8 FLANGE TEE C/L PRIME DOMESTIC	EA	1.0
1.00	1.00	0.00		10MFA 10" MEGA FLANGE ADAPTER	EA	1.0
1.00	1.00	0.00		10X6FXPE 10X 6FT 0IN FLANGE X PLAIN END FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN W/ DOMESTIC FLANGE	EA	1.0
1.00	1.00	0.00		10FXF 10" FLANGE X FLANGE SPOOL 4' & 2" IN LENGTH W/ DOMESTIC FLANGES FABRICATED DUCTILE IRON PIPE PRIME PAINT OUT CEMENT LINED TAR COAT IN	EA	1.0

Total Lines: 13
 Total Pieces: 13
 Total Weight: 0

Received: Jan 2023
 Date: 1-27-22
 PO #: JM 102221-A
 ACCT #: 07.1052.28
 Job: Wall 29 Piping

Unlrgnd

PACKING LIST



UTILITY SUPPLY COMPANY

Branch: 03 USC NW INDY

6310 SOUTH HARDING STREET
INDIANAPOLIS, IN 46217

US

Pick Ticket Number	
1439400	
Date	Page
1/27/2022 10:36:32	1 of 2
ORDER NUMBER	
1407257	

Bill To:

CARMEL WATER DISTRIBUTION
3450 WEST 131ST STREET
CARMEL, IN 46074
US
317-733-2855

Ship To:

CARMEL WATER DISTRIBUTION
3450 WEST 131ST STREET
CARMEL, IN 46074
US

Ordered By: Mr. JOHN MASCARI

Customer ID: 100753

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
JM102221-D	Net 30 DAYS			

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
11/3/2021 13:29:24	1439400	ANDY NUGENT	ABEGLEY

Quantities				Item ID	UOM	Unit Size
Ordered	Shipped	Remaining	Disp.	Item Description		

Delivery Instructions: JOHN - 317-716-6624

4915 EAST 106TH STREET INDIANAPOLIS
46280

Carrier: OUR TRUCK

Tracking #:

Ordered	Shipped	Remaining	Disp.	Item Description	UOM	Unit Size
1.00	1.00	0.00		452-3200X10 30"X10" 452 STYLE JCM ALL SS IAP SLEEVE	EA	1.0
1.00	1.00	0.00		10H687 10 MJ TAPPING VALVE LESS ACCESSORIES	EA	1.0
1.00	1.00	0.00		10SSFP 10" S.S. FLANGE PACK	EA	1.0
1.00	1.00	0.00		10A236123LN 10" MUELLER MJ X MJ GATE VALVE 350PSI LESS ACC. OPEN LEFT	EA	1.0
3.00	3.00	0.00		T564SCI 5 1/4 VALVE BOX WITH LID DOMESTIC 39-50	EA	1.0
				51/4CIWL 5-1/4 CI WATER LID DOMESTIC	EA	1.0
				51/4X16CITS 5 1/4 X 16 CI VALVE BOX TOP SEC	EA	1.0

Level: 1
Qty Per Assembly: 1.00
Total Qty: 3.00

Level: 2
Qty Per Assembly: 1.00
Total Qty: 3.00

1-27-22
JM 102221-D
07.1032.28
well 29 p.p.m

and sand

PACKING LIST



UTILITY SUPPLY COMPANY

Branch: 03 USC NW INDY

6310 SOUTH HARDING STREET

INDIANAPOLIS, IN 46217

US

Pick Ticket Number	
1439400	
Date	Page
1/27/2022 10:36:32	2 of 2
ORDER NUMBER	
1407257	

Quantities				Item ID	UOM	Unit Size
Ordered	Shipped	Remaining	Disp.	Item Description		
				DOMESTIC		
				51/4X36CIBS	EA	
<i>Level:</i>	3					
<i>Qty Per Assembly:</i>	1.00			5-1/4 X 36 CI VALVE BOX BOTTOM SEC 36B		1.0
<i>Total Qty:</i>	3.00					
				DOMESTIC		
3.00	3.00	0.00		POSI-CAP	EA	
				POSI-CAP VALVE BOX ALIGNING DEVICE		1.0
1.00	1.00	0.00		10X6MJHTEED	EA	
				10 X 6 MJ HYDRANT TEE DOMESTIC		1.0
1.00	1.00	0.00		A42356YSTORZ	EA	
				423-525534 5 FT BURY 6 MJ SHOE L/ACC		1.0
				5-1/4 MVO MUELLER FIRE HYDRANT 5IN		
				STORZ CONNECTION 2 - 2-1/2 NST HOSE		
				NOZZLES YELLOW OPEN LEFT		
1.00	1.00	0.00		6A236123LN	EA	
				6" MUELLER MJ X MJ GATE VALVE		1.0
				350PSI LESS ACC. OPEN LEFT		
4.00	4.00	0.00		10MJ45D	EA	
				10 MJ 45 ELL L/ ACC DOMESTIC		1.0
14.00	14.00	0.00		10ML	EA	
				10 LUG STYLE RETAINER FOR DUCTILE		1.0
14.00	14.00	0.00		10MJBOLTKITD	EA	
				10" MJ BOLT KIT - DOMESTIC		1.0
4.00	4.00	0.00		6MJBOLTKITD	EA	
				6" MJ BOLT KIT - DOMESTIC		1.0
109.08	109.08	0.00		10TYTONJT	FT	
				10 PC 350 TYTON JT DUCT IRON WATER		1.0
				MAIN		
				MAIN		
6.00	6.00	0.00		10FL	EA	
				10 SURE STOP 350 GASKET		1.0

Total Lines: 15
Total Pieces: 164.08
Total Weight: 350.

Received:	JM 2063
Date:	1-27-22
PO #:	JM102221-D
LOT #:	07.1052.28
	Well 29 piping



302 S. NEW JERSEY ST.
 INDIANAPOLIS, IN 46204
 Phone: 317-639-9308
 Fax: 317-639-4567

Shipment Confirmation

Reference Number: SH0020105
 Date: 11/3/2021
 Customer ID: CARWAT

SHIP TO:		NOTE:						
CARMEL WATER DEPT 4915 E 106TH ST CARMEL IN 46280								
ORDERED BY	SHIP VIA	FOB POINT			WAREHOUSE			
JON MASCARI	OUR TRUCK				01			
SO TYPE	SO NUMBER	TERMS		CUSTOMER P.O. NO.				
SO	SO0455935	2% 10 DAYS N/30		JM110221				
ITEM	DESC	ORDERED	SHIPPED	QTY	BIG	UOM	PRICE	EXT PRICE
10" SS B & G SET	10" SS B & G SET W/ 1/8" FF NEOPRENE GASKET	14.00	14.00	0.00		EA	97.65	1,367.10

Received: Jan 2003
 Date: 11-5-21
 PO #: JM 11 0221
 ACCT #: 07.1052.11
 Use: Bolt & Gasket kits
for well 29
Flanged pipe

Sales Total:	1,367.10
Freight & Misc.:	0.00
Tax Total:	0.00
Total (USD):	1,367.10

SHIP TO
CARMEL WATER DEPARTMENT
4915 EAST 106TH STREET PLANT 1

INDIANAPOLIS, IN 46280
US

SOLD TO
FREW PROCESS GROUP LLC

605 SHERIDAN ROAD
NOBLESVILLE, IN 46060
US



Badger Meter, Inc.
8635 Washington Avenue
Racine, WI 53406
262-639-6770
www.badgermeter.com

Packing List - Page 1 of 1

Shipped Via: YRC

Total Pieces: 1

Tracking No: 4948353730

Total Weight: 205

Date Shipped: 11/29/2021

<u>Badger Order</u> <u>Customer PO</u>	<u>Line</u>	<u>Badger P/N</u> <u>Customer P/N</u>	<u>Attn:</u> <u>Description</u>	<u>Meter Serial Numbers</u>	<u>Quantity</u> <u>Ordered</u>	<u>Quantity</u> <u>Shipped</u>
1035558 PO34793F-REVISED:2	1	100-0164	: PO# KR110121 M2000, 10" standard LL, Hard Rubber, C-Steel with 150# flanges, Alloy C with 316 Stainless Steel Grounding Rings, 110/220 VAC Remote Sub, 50ft. Standard Cable, Standard Output XX - NONE Gal/Gal Per Minute, Factory Calibrated, NSF-61-372	51666152	1	1

*See Stamped
In invoice*



Customer Price Sheet Total Only

Project name	City of Carmel Well #29	Quote Number / ID	1515994
Customer	City of Carmel	Model / Stages	GL14ME/MC / 3
Tag Number	Flanged (GL14ME) 7/25/22	Flow, rated	2,100 USgpm
Customer ref. / PO		Differential head / pressure, rated	119.00 psi
		Speed, rated	1785 rpm

Total

Grand Total		Lead Time Total	16 wks
-------------	--	-----------------	--------

Pump

Qty	Description
1	<p>GL14ME/MC</p> <p>Bowl Assembly</p> <p>Pump Type: New Pump</p> <p>Bowl Size: GL14ME</p> <p>Number of Stages: 3 stage</p> <p>Materials of Construction: Materials (Cast Iron, 316LSS)</p> <p>Bowl Material: Cast Iron</p> <p>Bowl Configuration (Connection)</p> <p>Top Bowl (Discharge Connection): Flanged Discharge</p> <p>Suction: Threaded Suction</p> <p>Line Shaft Bowl Adder: Open Line Shaft (OLS)</p> <p>Shaft, Pump: 1 15/16 inch</p> <p>Pump shaft material (Bowl Shaft): 416 Stainless Steel</p> <p>Efficiency: Standard Efficiency</p> <p>Impeller Wear Rings: None</p> <p>Bowl Wear Rings: None</p> <p>Suction Accessory: Cone Strainer</p> <p>Suction Accessory - Material: 316 Stainless Steel</p> <p>Lateral Travel in Bowl Assembly: Standard</p> <p>Bowl Bearing Materials: Standard (Bronze/Rubber)</p> <p>Impeller Balance: Static (single plane) Balance</p> <p>Dry Pit Application: No</p> <p>Suction pipe: 12</p> <p>Impeller Fastening: 303 Stainless Steel (lock collets)</p> <p>Bowl Bolting: 18-8 Stainless Steel</p> <p>Column / Line Shaft / Coupling</p> <p>Column Material: Steel</p> <p>Column Pipe Design: Flanged</p> <p>Column Diameter: 10 inch</p> <p>Column Pipe: 10 Ft Bearing Spacing</p> <p>Column Fastener Material: 18-8 Stainless Steel</p> <p>Bottom Taper Section: Yes</p> <p>Line Shaft Lubrication: Product Lubrication</p> <p>Line Shaft Sleeves: None</p> <p>Line Shaft Material: 416 SS</p> <p>Line Shaft Coupling Design: Threaded Coupling</p> <p>Line Shaft Coupling Material: 410 SS</p> <p>Bearing Retainer: Drop In</p> <p>Line Shaft Bearing Material: Standard (Rubber)</p> <p>Top Shaft Diameter: 1 11/16 inch</p>

Peerless Pump · 2005 Dr. Martin Luther King Jr. St · Indianapolis, IN 46202
 phone: (317) 925-9661 · www.peerlesspump.com



Pump

Qty	Description
	<p>Top Shaft Material: 416 SS</p> <p>Column Assembly</p> <p>OLS Flanged Column 10 inch / 1.6875 inch Shaft / 10 Ft Bearing Spacing, Length Base to Bowl 1055 inch</p> <p>Column Bottom: (1) OLS Flanged Column 10 inch, Length 60 inch, Steel</p> <p>Column Intermediate: (8) OLS Flanged Column 10 inch, Length 120 inch, Steel</p> <p>Column Top: (1) OLS Flanged Column 10 inch, Code Length to Base 35 inch, Steel</p> <p>Shaft Group of Column</p> <p>Shaft, Line, Bottom: (1) Threaded, D = 1.6875 inch, L = 60 inch, 416 SS</p> <p>Shaft, Line, Intermediate: (8) Threaded, D = 1.6875 inch, L = 120 inch, 416 SS</p> <p>Shaft, Line, Top: (1) Threaded, D = 1.6875 inch, L = 41.785 inch, 416 SS</p> <p>Shaft, Top (Motor shaft length) VHS only: (1) Threaded, D = 1.6875 inch, L = 6.5 inch, 416 SS</p> <p>Top Shaft and Nut</p> <p> Top Shaft & Nut</p> <p>Discharge Head</p> <p>Discharge Head Assembly: 10x10x20G</p> <p>Discharge Head Flange Rating: 125#</p> <p>Discharge Head Material: Cast Iron</p> <p>Discharge Location: Above Base (floor)</p> <p>Line Shaft Construction: Open Line Shaft (OLS)</p> <p>Sealing Type: Packed Stuffing Box (No Stuffing Box Sleeve - Packing Contacts the Shaft)</p> <p>Column to Discharge Head Fastener Material: 18-8 Stainless Steel</p> <p>Sole Plate: Steel</p> <p>Discharge Head Alerts</p> <p> Open Line Shaft (OLS) Settings over 50 feet require pre-lubrication.</p> <p>Discharge Head Adjustment</p> <p> Base Drilling for 125/150# ANSI Flange Mounting</p> <p> 316 SS Gland T-Bolts & Nuts</p> <p>Stuffing Box Bearing Material: Standard (Bronze)</p> <p>Driver</p> <p>Driver Supplied By: Factory</p> <p>Efficiency: Premium</p> <p>Motor (Design Types): NEMA</p> <p> BD (Base Diameter, Inches): 20</p> <p> BX (Shaft Size, Inches): 1.6875</p> <p> CD Dim: CD (Base to Top of Drive Coupling): 0.00 in</p> <p>Adapter</p> <p>Adapter Required: No</p> <p>Coating / Painting Systems</p> <p>System: Class I Coating System per Section 510, page 1 (default Tnemec 141)</p> <p>Outside Bowl Assembly: Class I Coating System</p> <p>Inside Bowl Assembly: Standard Coating: Glass or Scotchkote 134</p> <p>Outside Column: Class I Coating System</p> <p>Inside Column: Class I Coating System</p> <p>Outside Discharge Head: Class I Coating System</p> <p>Inside Discharge Head: Class I Coating System</p> <p>Testing</p> <p>Tolerance Type: Hyd Ins 14.6 Unilateral (1U)</p> <p>Performance Tests</p> <p> Factory Performance Test - Non Witness</p> <p> Guarantee Bowl Efficiency :</p> <p> Non Overloading Motor:</p> <p>Assembly / Match Marking / Shipping</p> <p>Not Factory Assembled</p>



Motor

Qty	Description
1	Driver Motor: Motor-electric, 200hp, 1785rpm, 460V, 3Ph, 60Hz, H445TP, VHS, WP1, PremEff., USEM

No Group

Qty	Description
1	Suction Pipe to be schedule 40 Top & Bottom column to be max 5' sections Column pipe to be schedule 40 INSPECTION, START#UP, AND TESTING (Per 3.01)

Commercial

Qty	Description
1	Incoterms 2020: EXW Named Place Named Place: Seller's Facility



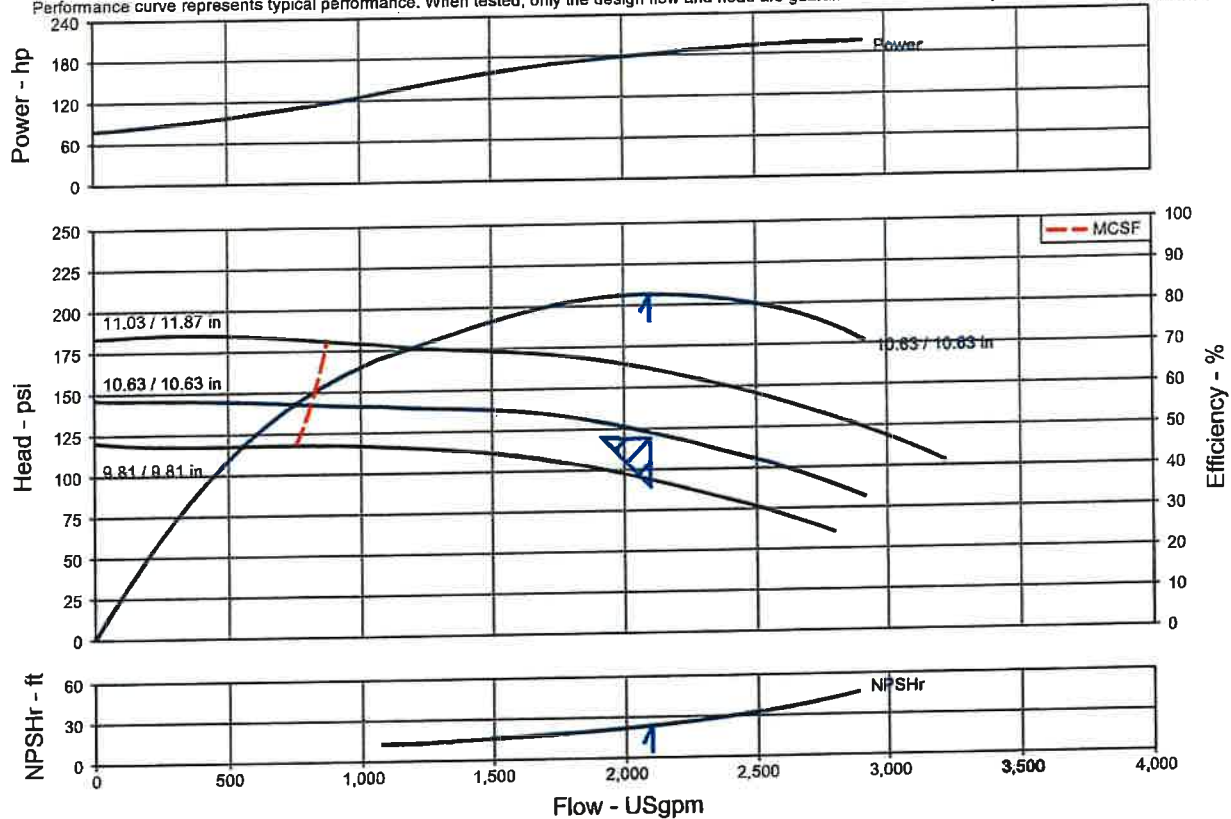
Pump Performance Curve

Bowl performance. Adjusted for construction and viscosity.

The duty point represents the head at the bowl.

Performance based on test acceptance - Hyd Ins 14.6 Unilateral (1U)

Performance curve represents typical performance. When tested, only the design flow and head are guaranteed. Contact factory for additional requirements.



Customer : City of Carmel Customer ref. / PO : Tag Number : Flanged (GL14ME) 7/25/22 Service : Quantity : 1 Quote Number / ID : 1515994 Date last saved : 07/25/2022 7:47 AM	Peerless Model : GL14ME/MC Stages : 3 Speed, rated : 1785 rpm Based on curve number : GL14MEMC4606334 Rev Dec 2019 - Prelim Efficiency (bowl / pump) : 82.64 / 80.75 % Power (bowl / pump) : 181.7 / 183.4 hp Max power (non-overloading) : 198.5 hp NPSH required : 23.6 ft Viscosity : 1.00 cP Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00
Flow, rated : 2,100 USgpm Differential head / pressure, rated : 119.00 psi Fluid density, rated / max : 1.000 / 1.000 SG	

Flow (USgpm)	Head (psi)	Efficiency (%)	Power (hp)	NPSHr (ft)	Thrust, total (lbf)
0	146.38	0.00	78.67	-	4,887
324	145.41	30.89	89.01	-	4,316
648	143.79	52.27	104.1	-	3,947
973	141.23	65.14	123.0	-	3,634
1,297	139.14	72.54	145.1	13.9	3,330
1,621	136.34	78.70	163.8	17.2	2,965
1,945	128.27	82.23	177.0	21.0	2,441
2,269	115.89	82.15	186.7	26.9	1,819
2,594	101.14	78.79	194.2	35.4	1,174
2,918	81.60	70.57	196.8	-	530



Pump Performance - Additional Data

Project name	: City of Carmel Well #29	Tag Number	: Flanged (GL14ME) 7/25/22
Commissioned	:	Service	:
Representative	:	Model	: GL14ME/MC
Customer	: City of Carmel	Quantity	: 1
Customer ref. / PO	:	Quoted By (Sales Office)	: Indianapolis (default)
Quote Number / ID	: 1515994	Quoted By (Sales Engineer)	: Matt Lory
Date last saved	: 07/25/2022 7:47 AM	Speed, rated	: 1785 rpm
Stages	: 3		

Performance Data		Stage, Speed and Solids Limits	
Head, maximum diameter, rated flow	: 161.38 psi	Stages, maximum	: 22
Head, minimum diameter, rated flow	: 93.90 psi	Stages, minimum	: 1
Head, maximum, rated diameter	: 146.38 psi	Pump speed limit, maximum	: 1800 rpm
Efficiency adjustment factor, total	: 0.99	Pump speed limit, minimum	: 1 rpm
Power adjustment, total	: 2.62 hp	Curve speed limit, maximum	: 1800 rpm
Head adjustment factor, total	: 1.00	Curve speed limit, minimum	: 1 rpm
Flow adjustment factor, total	: 1.00	Variable speed limit, maximum	: -
NPSHR adjustment factor, total	: 1.00	Variable speed limit, minimum	: -
NPSH margin dictated by pump supplier	: 0.0 ft	Solids diameter limit	: 0.00 in
NPSH margin dictated by user	: 0.0 ft		
NPSH margin used (added to 'required' values)	: 0.0 ft		

Mechanical Limits		Typical Driver Data	
Torque, rated power, rated speed	: 10.27 hp/100 rpm	Driver speed, full load	: 1780 rpm
Torque, maximum power, rated speed	: 11.12 hp/100 rpm	Driver speed, rated load	: 1782 rpm
Torque, driver power, full load speed	: 11.24 hp/100 rpm	Driver efficiency, 100% load	: N/A
Torque, driver power, rated speed	: 11.20 hp/100 rpm	Driver efficiency, 75% load	: N/A
Torque, pump shaft limit	: -	Driver efficiency, 50% load	: N/A
Radial load, worst case	: -		
Radial load limit	: -		
Impeller peripheral speed, rated	: -		
Impeller peripheral speed limit	: -		

Various Performance Data	Flow (USgpm)	Head (psi)	Efficiency (%)	NPSHr (ft)	Power (hp)
Shutoff, rated diameter	0	146.38	-	-	78.67
Shutoff, maximum diameter	0	183.66	-	-	116.2
MCSF	812	142.41	59.64	21.3	113.1
Rated flow, minimum diameter	2,100	93.90	81.61	-	140.9
Rated flow, maximum diameter	2,100	161.38	80.87	-	244.5
BEP flow, rated diameter	2,098	122.66	82.64	23.5	181.6
120% rated flow, rated diameter	2,520	104.78	79.84	33.1	192.9
End of curve, rated diameter	2,918	81.60	70.57	48.1	196.8
End of curve, minimum diameter	2,800	59.93	66.89	0.0	146.3
End of curve, maximum diameter	3,220	103.01	68.51	66.1	282.4
Maximum value, rated diameter	-	146.38	82.64	-	198.5
Maximum value, maximum diameter	-	-	81.25	-	282.4

System differential pressure	@ Density, rated	@ Density, max
Differential pressure, rated flow, rated diameter (psi)	122.6	122.6
Differential pressure, shutoff, rated diameter (psi)	146.4	146.4
Differential pressure, shutoff, maximum diameter (psi)	183.7	183.7

Discharge pressure	@ Suction pressure, rated	@ Suction pressure, max	@ Suction pressure, rated	@ Suction pressure, max
Discharge pressure, rated flow, rated diameter (psi.g)	122.6	122.6	122.6	122.6
Discharge pressure, shutoff, rated diameter (psi.g)	146.4	146.4	146.4	146.4
Discharge pressure, shutoff, maximum diameter (psi.g)	183.7	183.7	183.7	183.7

Ratios	
Maximum flow / rated flow, rated diameter	: 138.94 %
Head rated diameter / head minimum diameter, rated flow	: 130.55 %



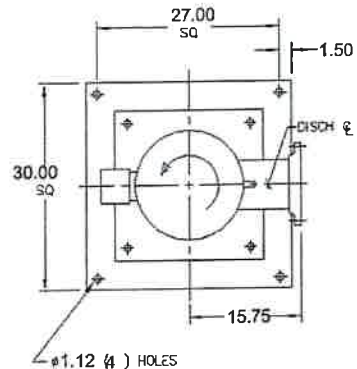
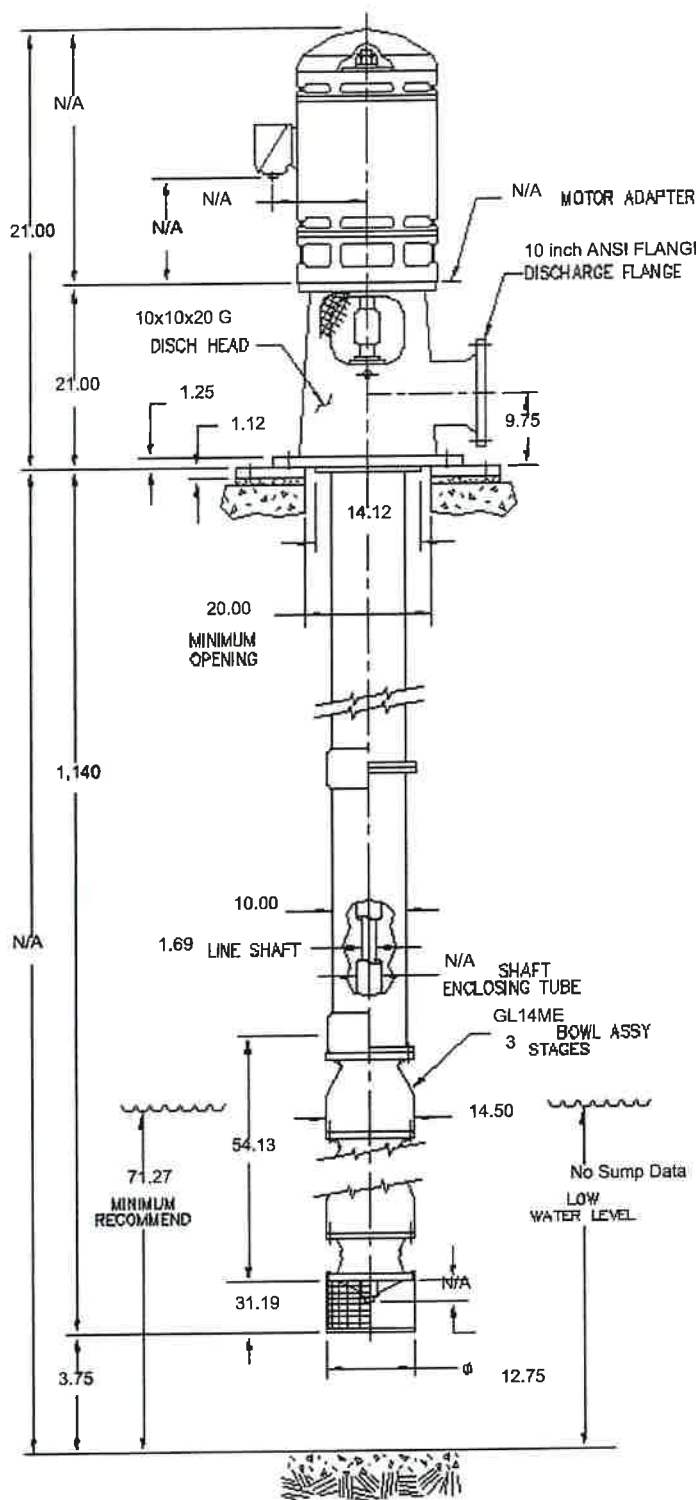
Pump Performance - Additional Data

Head and Power Losses				Dimensions		
Friction loss rate, column	: 2.36 %			Minimum clearance below suction bell lip/case	: 34.94 in	
Friction loss, column	: 0.90 psi			Minimum well diameter	: 15.00 in	
Friction loss, discharge head	: 0.35 psi			Suction nozzle centerline height	: -	
Friction loss, can/barrel	: -			Suction to first stage impeller centerline	: 9.03 in	
Friction loss, suction bell and strainer	: 0.00 psi			Bowl assembly length, first stage	: 24.88 in	
Friction loss, bowl/column adaptor	: 0.44 psi			Bowl assembly length, upper stage	: 14.63 in	
Friction loss, total	: 1.69 psi			Bowl assembly length, total	: 54.13 in	
Power loss, lineshaft bearings	: 1.29 hp			Suction bearing hub length	: 0.00 in	
Power loss, thrust bearing	: 0.40 hp			Strainer length	: 31.19 in	
Power loss, total	: 1.69 hp			Bowl to column adaptor length	: 0.00 in	
Bowl vs. Pump Performance				Discharge head stick-down	: 0.00 in	
Head (bowl / pump)	: 122.58 psi / 113.32 psi			Submersible motor adaptor length	: -	
Efficiency (bowl / pump)	: 82.64 % / 80.75 %			Submersible motor length	: -	
Power (bowl / pump)	: 181.7 hp / 183.4 hp			Column length	: 1,054.68 in	
NPSH required at first stage impeller eye	: 23.6 ft			Total pump length	: 1,140.00 in	
Weights and Down Thrust				Can / barrel length	: -	
Weight, lineshaft	: 0 lb			Stuffing box sleeve diameter	: 1.69 in	
Weight, bowl assembly rotating element	: 761 lb			Suction bell diameter	: -	
Thrust factor	: 7.60 lb/ft			Minimum submergence to prevent vortexing	: 0.00 in	
Thrust, hydraulic (rated / max)	: 2,148 / 4,887 lbf			Actual submergence (based on LLL)	: 909 in	
Thrust, bowl shaft end (rated / max)	: 0 / 0 lbf			Discharge head height	: 21.00 in	
Thrust, shaft step (rated / max)	: 60 / 60 lbf			Discharge nozzle centerline height	: 9.75 in	
Thrust, stuffing box sleeve (rated / max)	: 0 / 0 lbf			Min distance discharge nozzle centerline to suction bell	: 0.00	
Thrust, total (rated / max)	: 2,969 / 5,708 lbf			Lineshaft length	: 1,075.68 in	
Thrust bearing capacity	: -			Bowl shaft diameter	: 1.94 in	
* Rated thrust @ rated head, density, and suction pressure where applicable				Bowl diameter, outside	: 14.50 in	
* Max thrust @ max head, density, and suction pressure where applicable				Bowl diameter, exit	: 7.59 in	
Pressure Data		Maximum working pressure (psi g)	Maximum allowable working pressure (psi g)	Hydrostatic test pressure (psi g)	Column diameter, inside	: 10.19 in
Bowl		146.4	290.0	N/A	Column internal obstruction diameter	: 1.69 in
Column		146.4	-	N/A	Can/barrel diameter, inside	: -
Discharge head		139.2	200.0	N/A	Can/barrel obstruction diameter	: -
Can/Barrel		-	-	-	NPSH	
Torque Limits				NPSH at bowl (available / required)	: Ample / 23.6 ft	
Torque, lineshaft limit	:-			NPSH at low liquid level (available / required)	: Ample / -	
				NPSH at suction flange (available / required)	: - / -	
				Liquid Velocities		
				Column liquid velocity	: 8.49 ft/s	
				Discharge head liquid velocity	: 8.49 ft/s	
				Can liquid velocity	: -	
				Suction nozzle liquid velocity	: -	



Pump Performance - Additional Data					
Mixed Stage Performance	Set #1	Set #2	Set #3	Set #4	Alternate First Stage
Model	GL14ME/MC	-	-	-	-
Stages	3	-	-	-	-
Based on curve number	GL14MEMC4606334	-	-	-	-
Impeller diameter, rated	10.63 in	-	-	-	-
Impeller diameter, maximum	11.45 in	-	-	-	-
Impeller diameter, minimum	9.81 in	-	-	-	-
Limitations					
Tolerance Type	: Hyd Ins 14.6 Unilateral (1U)	Low liquid level (Measured from bottom of head)	: 200.00 in		
Head measured at	: Bowl	NPSHa measured at	: Low liquid level		
Pump type	: Complete Pump	Velocity column	: 10.00 ft/s		
Direct connect	: No	Well inside diameter (Enter a value >0 if a diameter check is required)	: in		
Length strategy	: Pump length (T Dimension)	Maximum working pressure strategy	: Maximum head, rated diameter		
Length	: 1,140.00 in				
Product Line Options					
Suction type	: Threaded Case	Drive shaft type	: VHS		
Bowl discharge type	: Flanged discharge bowl	Discharge location	: Above ground		
Bowl shaft material	: 416 SS	Discharge head material	: Cast Iron		
Bowl shaft diameter	: 1 15/16 inch	Discharge head design	: Type G		
Impeller connection type	: Taper lock	Discharge head size	: 10x10x20		
Column diameter	: 10 inch	Sealing type	: Stuffing box		
Column construction	: Flanged	Discharge flange rating	: 125lb ANSI flange		
Suction accessory	: Cone Strainer	Coupling design	: Threaded coupling		
Lineshaft material	: 416 SS	Top shaft material	: 416 SS		
Lineshaft diameter	: 1 11/16 inch	Top shaft diameter	: 1 11/16 inch		
Lineshaft lubrication	: Open Lineshaft				
Performance Adjustment Options					
Impeller polished	: Not polished	Effective impeller material for galling	: 316SS		
Impeller wear ring	: None	Effective bowl material for galling	: Cast/Ductile Iron		
Bowl wear ring	: None	Effective impeller material for polishing	: Al-Brz		

General Arrangement Drawing



- Notes
1. Unless otherwise specified, dimensions are in inches
 2. Baseplate requires support on all sides.
 3. Read instructions before beginning pump assembly or installation.
 4. Drawing is preliminary until certified by factory.

APPROXIMATE DRY WEIGHT	
Driver	0 lb
Discharge Head	515 lb
Column / Shaft	4,043 lb / 791 lb
Bowl Assembly	886 lb
Total	6,235 lb

GENERAL DATA			
Capacity	2,100 USgpm	Liquid	Cold Water
Head	119.00 psi	Specific Gravity	1.000 SG
Pump Speed	1785 rpm		
DRIVER DATA			
MFGR	-	Shaft Type	OLS
Hp	0.00 hp	Enclosure / Type	WP1
Volt / Ph / Hz	460 / 3 / 0 Hz	Frame / Model	0
Service Factor	1.15		
Customer Name	City of Carmel		
Quote No	1515994		
Item No.	Flanged (GL14ME) 7/25/22		
Project	City of Carmel Well #29		
Date	07/25/2022 7:47 AM		



1515994-Flanged (GL14ME) 7/25/22

**SECTION 01320
ELECTRONIC PROJECT MANAGEMENT SYSTEM (EPMS)**

PART 1 GENERAL

1.01 SCOPE

- A. This section describes the requirements for the Electronic Project Management System (EPMS) which will be required on this project.
- B. The EPMS shall be provided through eCommunication by Eastern Engineering, 866-884-4115; www.easternengineering.com .
- C. The Contractor shall be responsible for including the cost to the EPMS; the pricing shall be \$1,620
- D. The Contractor shall be responsible for paying the cost as a onetime payment to Eastern Engineering within 30 days of the Notice to Proceed and will be considered part of the project mobilization on the schedule of values.
- E. Engineer will implement an internet/web site based Electronic Project Management System (EPMS) for the administration of the Contract on this project. Owner, Contractors and Engineer shall be responsible to interface with EPMS and collaborating via the EPMS on this project. The EPMS is intended to supplement the Contract Documents and the provisions of the Contract Documents shall not be superseded by the EPMS.
 - 1. The EPMS is intended to provide a mode of communication which is electronic and to reduce the reliance upon printed documents. Printed documents transmitted will not be reviewed, and electronic documents emailed outside of the EPMS will not be reviewed. The Owner, Contractor and Engineer will collaborate on unique situations or circumstances in order to preserve the project electronic records.
- F. The Owner, Contractor and Engineer shall be required to provide project related information/documents via EPMS. In general, the EPMS will receive information via uploaded documents as PDF documents, in their native format (when permitted or required), or other electronic formats designated or required for functionality. The EPMS shall be a central repository for information to all project team members. The EPMS will provide viewing, printing, up/downloading of various information/documents.
- G. In general, the following is a partial list of information/documents which shall be tracked through the EPMS:
 - 1. Drawings, Specifications and Addendums (included revisions as necessary).
 - 2. Insurance.
 - 3. General Project Communication, Emails, Letters, Correspondence and Collaboration or any other document any participant wishes to make part of the project records.

4. Request for Information (RFI).
 5. Submittals (Shop Drawings, Operation and maintenance manuals, color selections etc.)
 6. Work Change Directives, Change Request and Change Orders.
 7. Schedule of Values, Pay Requests and Certified Payroll Reports.
 8. Reports and Photos (daily, monthly, etc.).
 9. Schedules (project, weekly and monthly).
 10. Meeting Agendas and Minutes.
 11. Permits and Special Inspections Reports.
 12. Laboratory Services (testing and reporting).
 13. Closeout procedures (deficiency list, warranty, substantial completion).
 14. Record Drawings.
- H. In an effort to protect proprietary information and prohibit unauthorized use or modifications, levels of access security will be assigned in order to provide safe and secure access to information with respects to involvement and responsibility on the project. The Owner, Contractor and Engineer shall establish these levels of access and rights which are appropriate for this project.
- I. Owner, Contractor and Engineer shall utilize the mark-up tool integral within the EPMS or have a PDF review software that includes the ability to mark up and apply electronic stamps (such as Adobe Acrobat, or Bluebeam PDF Revu).
- J. A high-speed internet connection is required.
- K. The EPMS will provide notifications regarding new or updated documents through an existing Email account outside of the EPMS.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 CONTRACT REQUIREMENTS

- A. All provisions of the Contract Documents are in full effect and enforcement. The submittal procedures specified in the Contract Documents are applicable with the understanding that they will be electronic documents and submitted via the EPMS.

3.02 PRINTING, REPRODUCTION AND DISTRIBUTION

- A. The Engineer will not be responsible for printing reproduction or preparation of any hard copy documents, or the cost of doing so.

2024

- B. Contractor shall produce printed copies of all submittals as required in Section 01300 and in the Contract Documents.

3.03 TRAINING

- A. One training session by the Engineer and Eastern Engineering, Inc. will be provided to the team members at the beginning of the EPMS implementation. Training will be coordinated with the Preconstruction meeting and held at the same location. There are many tutorials, help features and technical support options located on the Eastern Engineering web site.
- B. Engineer will provide project related support as needed within their ability to provide it. Technical support will be available to all project team members from Eastern Engineering, Inc.

3.04 OPERATION

- A. Contractor and all Subcontractors shall maintain a Windows-based computer system including high speed internet access and ability to create/mark-up documents using Adobe Acrobat (pdf) and to scan documents.
- B. Engineer will facilitate the implementation and overall operation of the EPMS with Eastern Engineering. Eastern Engineering will provide and maintain the EPMS server and will back up the information.

3.05 ARCHIVE PROJECT CLOSE OUT

- A. All files on the EPMS web site will be archived at the end of the project. These archives will be made available to the Owner, Contractors and Engineer for download over the internet, at the end of the warranty period.

3.06 ELECTRONIC SUBMITTAL FILE NAMING CONVENTION

- A. The Contractor shall utilize the following file name convention for PDF files submitted through eComm:
 - 1. Spec Section - Number of Submittal from Section - Number of Times Submitted.
 - a. Example: 02552-01-03.
 - 2. The example represents the first submittal from Specification Section 02552 and the third time this Submittal has been submitted.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 01800
CONSTRUCTION SURVEY WORK**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes the furnishing of all labor, materials, equipment, and services necessary for the completion of Construction Survey Work in accordance with the Contract Documents.
- B. This Work consists of the layout of all lines and grades shown on the Drawings or as altered or modified by the Engineer, control survey and of miscellaneous survey work related to construction of the project.

1.02 PROTECTION

- A. The Contractor shall protect and preserve the established reference points and monuments.
- B. Whenever monuments are encountered in the line of Work, whether shown on the Drawings or not, the Contractor shall notify the Engineer in writing at least 24 hours in advance of moving same, and under no circumstances is such a stone or other monument to be removed or disturbed by the Contractor or by any of his men without a written order of the Engineer and only when a registered surveyor representative of the Owner is present.

1.03 REPLACEMENT OF LOST SURVEY POINTS

- A. Whenever a reference point or monument is lost or destroyed or requires relocation, the Contractor shall, at his own expense, accurately relocate and replace all such points so lost, destroyed, and moved.

1.04 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Information for the Record:
 - a. Layout Sheets including, but not limited to, Benchmarks both temporary and permanent and Pipeline layout staking.
 - b. Field Notes and survey log.
 - c. Profile over Proposed Tunneled, Jacked, or Bored Pipe.
 - d. Certified Survey of Tunneled, Jacked, or Bored Pipe.

- B. Contractor shall provide the Engineer and Resident Project Representative, no later than five working days prior to installation, all Logs, reports, field notes, drawings and documentation as specified shown on the Drawings or directed.
- C. No pipeline or related Work shall be considered for payment until all logs, reports field notes drawings and documentation as specified, shown on the Drawings or directed has been submitted to the Engineer or Engineers representative.

PART 2 PRODUCTS

2.01 CONSTRUCTION STAKING

- A. All construction points shall be marked with a wooden hub and nail or a PK nails in concrete and asphalt pavements and walks.
- B. All points located in areas of heavy underbrush, inaccessible or limited site distance shall be identified with a wood lath extending a minimum of 3 feet above the ground.
- C. All points located in paved surfaces shall be clearly marked with paint. Contractor shall obtain written permission from owner to use paint for marking.

PART 3 EXECUTION

3.01 COORDINATION

- A. The Contractor shall provide field forces necessary to lay out the location, alignment, elevation, and grade of the Work shown on the Drawings and in conformance with the control points and benchmarks shown on the Drawings.
- B. The Contractor shall use competent personnel and suitable equipment for the layout of the Work required. If the layout Work involves more than a few simple distance and elevations from established reference points, the Contractor shall employ a Registered Surveyor to supervise the layout Work.
- C. Contractor shall furnish the necessary labor to assist the Engineer in checking the installation, if required.

3.02 EXISTING CONNECTION POINTS

- A. The Contractor shall verify critical elevation points of the existing utilities prior to commencing installation of Work. Critical points shall include all points where new Work connects to existing utilities and existing utilities that could be conflicts with Work. All data shall be provided to the Engineer before commencing Work.

3.03 RIGHTS-OF-WAY AND EASEMENTS

- A. Rights-of-way or easement(s) shall be staked at points along the boundaries so that at least two stakes can be seen distinctly from any point along the boundary line. The staking shall not exceed 200-feet in any direction. All points of change in width or direction of the rights-of-way or easement(s) boundary line shall be staked.

- B. When the Contractor performs construction and the zone of influence is within 10-feet of a rights-of-way or easement(s) boundary line, they shall place stakes properly identifying points of change in width or direction of the boundary line and at points along the boundary line not to exceed 25-feet.

3.04 PAVEMENT

- A. The Contractor shall establish a layout for location and grade on both sides of the road and 5-feet off the edge of the pavement or back of curb. Layout line shall consist of stakes set at station intervals necessary for the topography and environment to assure conformance to planned line and grade. Stakes shall be set at a minimum every 50-feet, at all vertical and horizontal points of curvature and points of tangent, and at all vertical high or low points.
- B. Stakes for line and grade of pavement and curb shall be set at station intervals necessary for the topography and environment, not to exceed 50-feet, and at low and high points of vertical curves to assure conformance to planned line and grade.

3.05 PIPE IN OPEN CUT

- A. The Contractor shall utilize a laser beam for establishing line and grade when installing pipeline in open-cut construction. In order to maintain control during pipeline installation and to obtain the required field data for the record documents (G.C. 6.19) the Contractor shall establish construction and layout stakes. These stakes shall be based on the contract documents and the survey control data as provided by the Engineer.
- B. The construction staking shall be placed along the pipeline route at and at location of new manholes, valves, deflections both vertical and horizontal and as specified, shown on the Drawings or as directed. All construction layout stakes shall be offset at a minimum of 10-feet and at a right angle to the pipe line route. Layout shall be referenced to the downstream manhole or valve, in addition it may reference survey of baseline stationing.
- C. Contractor shall provide to the Engineer, no later than five working days prior to the installation of the pipeline, all information of the completed construction layout staking. This information shall include but not be limited to stationing, elevations, control points, project coordinates, offset direction and distance for all deflections both horizontal and vertical, manholes and all other points as specified, shown on the Drawings and directed by the Engineer.
- D. The grade of pipe in open-cut, whether placed by laser beam or other approved methods, shall be checked using surveying equipment. The Contractor shall have a surveyor's level and level rod on the Site at all times when pipeline and appurtenances are being installed. The level rod shall be equipped with an attached "shoe" extension on the bottom for placing on the pipe invert. The pipe invert elevation shall be checked at a maximum of 50-feet intervals or more often as directed by the Engineer. Checks will

be performed by the Contractor and results, including but not limited to layout station shall be recorded in contractor's field log.

- E. The Contractor shall furnish all equipment and labor and check his alignment from the offset stakes. Contractor shall record all information in the log.
- F. Any inspection or checking of the Contractor's layout by the Engineer shall not relieve the Contractor of his responsibility to secure the proper dimensions, grades, and elevations of the Work.

3.06 PIPE INSTALLED BY DIRECTIONAL DRILLING

- A. The Contractor shall utilize, as a minimum, RF (radio frequency) transmitter mounted inside the drill bit to track line and grade when installing pilot borehole in directional drilling construction. In order to maintain control during pipe installation and to obtain the required field data as specified, shown on the drawings or directed; the Contractor shall establish construction line stakes. These stakes shall be based on the contract documents and the survey control data as provided by the Engineer.
- B. The construction line staking shall be placed along the centerline of pipeline route and at manholes, valves, deflections, PC and PT both vertical and horizontal and as specified, shown on the drawings or as directed. In addition, offset staking shall be provided at all manholes, valves, deflections and any place of excavation at a minimum of 10-feet and at a right angle to the pipeline route. Staking shall be referenced to the downstream manhole or valve, in addition it may reference survey of baseline stationing.
- C. The depth and alignment of directional drilling pilot hole for pipe shall be checked at each drill rod, using a walkover system or wireline system. The Contractor shall have a surveyor's level and level rod on the Site at all times to confirm ground elevation and borehole elevation. The pipeline elevation and alignment shall be checked at a maximum of 25-foot intervals or more often as directed by the Engineer. Checks will be performed by the Contractor and results, including the layout station the elevation was checked, and recorded in contractor's log. The Contractor's logs must be submitted to the Engineer prior to receiving any payment for the Work.
- D. Any inspection or checking of the Contractor's layout by the Engineer shall not relieve the Contractor of their responsibility to secure the proper dimensions, grades, and elevations of the Work.

3.07 TUNNELING, JACKING OR BORING PIPE

- A. Control of line and grade of pipe Work installed in tunnel or by jacking or boring shall be the responsibility of the Contractor.
- B. The line and grade of pipes installed shall be checked from lines and elevations established in the pipe and the construction shaft by a registered surveyor.
- C. The Contractor shall furnish, install, and adjust ready for use such equipment as required to check at any time the line and grade of pipe or tunnel liner being installed.

- D. Should the pipe or the tunnel liner deviate more than 0.06-feet from the proposed grade or 0.25-feet from the proposed line, the Contractor shall immediately make adjustments necessary to bring the installation back to the proposed location.
- E. Upon completion of a section of pipe or tunnel liner, the Contractor shall provide the Engineer with a certified survey by a registered surveyor showing the location and invert elevation of the installation at a maximum of 50-feet intervals.
- F. Prior to construction of sewers by tunneling, jacking, or boring, the Contractor shall provide the Resident Project Representative with ground elevations above the centerline of the proposed sewers taken at 25-foot interval stations, shaft locations, and manhole locations.
- G. The Contractor shall establish temporary benchmarks outside the tunnels zone of influence, a minimum of 50-feet each side of centerline, before commencing construction. Temporary benchmarks shall be a maximum of 2,000-feet apart with a minimum of two benchmarks per tunnel run. The Contractor shall determine the final elevation of all original benchmarks shown on the Contract Drawings at the project completion.

3.08 LOCATION OF STRUCTURES AND UNDERGROUND PIPING

- A. The location of new structures and underground utilities shall be based on the dimensions, coordinates, and requirements shown on the Drawings or specified.
- B. If it is stated on the Drawings or specified that the location and/or elevation of the new structure or underground piping shall depend on the location of existing underground or otherwise hidden facilities, those existing underground or hidden facilities shall be located by the Contractor prior to his determination of the location and/or elevation of the new facilities. This requirement shall override any other specific location dimensions or coordinates shown on the Drawings for that structure or piping.
- C. If the location or elevation determined by the Contractor, in accordance with the above requirements, appears to cause conflicts with existing structures or utilities or appears to potentially cause functional issues with either the existing or new structures or utilities, the Contractor shall notify the Engineer immediately.
- D. In no case, shall coordinates or other location information be extracted or interpolated from the electronic CAD files that may be provided to the Contractor by the Owner or Engineer without the specific approval of the Engineer.

3.09 CURB AND GUTTER ELEVATIONS

- A. In locations where the existing curb and gutter shall be removed as part of the Work, the Contractor shall be responsible for reconstructing the existing curb and gutter to match existing alignment, elevations and grades. The Contractor shall be responsible for collecting existing curb and gutter elevation information prior to commencing the Work.

3.10 BENCHMARKS/VERTICAL CONTROL

- A. The Contractor shall establish vertical control and benchmarks as necessary to complete the Work.

3.11 HORIZONTAL CONTROL

- A. The centerline stationing provided is not based upon physical control points found or established as part of the design.
- B. The Contractor shall establish horizontal control as necessary.

PART 4 SPECIAL PROVISIONS

END OF SECTION