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City of Portland Maine



**Scope of Work**

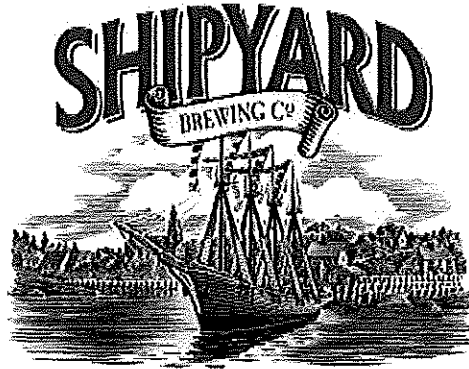
**Process  
Installation**

Issue for Bid

Revision B

**woodardcurran.com**  
COMMITMENT & INTEGRITY DRIVE RESULTS

# Revision History



## Shipyard Brewing

### Portland Plant Wastewater Improvement Project

### *Scope of Work* *Mechanical Installation*

Revision	Date	Initiated By	Description
A	March 2, 2012	Woodard & Curran	Issued for Bid (Review)
B	March 19, 2012	Woodard & Curran	Issued for Bid



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## 1. INTRODUCTION

### 1.1 PROJECT OVERVIEW

The Shipyard Brewing Company located in Portland, Maine is modifying to their wastewater discharge system. Woodard & Curran (W&C) is helping support this effort by providing the engineering design documents, engineering support during the install, and startup support. The contractor will be responsible for delivering a workable system constructed according to the required schedule, through safe practices per the drawings and specifications outlined in this scope of work.

### 1.2 INTENT OF CONTRACT DOCUMENTS

The work shall be performed and completed according to the contract documents. The contract documents provide the details for completing the Work in accordance with the terms of the Contract. Each Contract document is an integral part of the Contract, and a requirement occurring in one is as binding as though occurring in all. The Contract documents shall be interpreted as being explanatory and complementary in requiring complete work ready for use and occupancy or operation in satisfactory working condition with respect to the functional purposes of the installation.

The terms "Contractor", "The Contractor", "Mechanical Contractor" and "MC" are used interchangeably on all documents and drawings associated with this package and refer to the contractor responsible of this installation.

The Contractor shall do all of the work and furnish all labor, materials, tools, equipment, and appurtenances, except as otherwise herein expressly stipulated, necessary or proper for performing and completing the work herein required, including any Change Order work or disputed work directed by W&C in conformity with the true meaning and intent of the Contract drawings, Specifications, and all provisions of the Contract, within the time specified.

#### 1.2.1 Document Precedence

The component Contract documents are intended to provide explanation for each other. Any work shown on the Drawings and not in the Specifications, or vice versa, is to be executed as if indicated in both. In case of conflict in the Contract, the following order of precedence will govern interpretation of the Contract:

1. Written Field Instructions or other written directives
2. Specifications
3. Lists
4. Scope of Work
5. Piping and Instrumentation Diagrams
6. Layout Drawings
7. Detail Drawings



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### **1.3 REQUESTS FOR INFORMATION**

#### **1.3.1 General**

The contractor shall work with the Woodard & Curran (W&C) representative to prepare a Request for Information (RFI) when additional information, clarification, or interpretation of the Contract is required. RFI's may also be used for apparent conflicts, inconsistencies, ambiguities, or omissions. RFI information shall be submitted to the W&C representative sufficiently in advance of the work to permit time for investigation and preparation of a response. Any work undertaken prior to the receipt of a response to an RFI will be at the Contractor's risk. RFI's shall not be used for submittals of material or equipment, or for waiving of requirements.

#### **1.3.2 Procedure**

The W&C representative will work with the contractor to create RFI's on as needed basis. The intent is to have the sequentially numbered RFI's submitted to the W&C representative during progress meetings. Each RFI shall clearly describe and specifically state what is being requested. A recommendation or proposed solution may be included when appropriate or expedient. The Contractor shall keep and maintain a written log of the RFI's.



## 2. GENERAL INSTALLATION INSTRUCTIONS

1. The Contractor must comply with OSHA regulations and applicable Shipyard Brewing Company procedures.
2. The Contractor shall provide all materials, labor, equipment and services necessary to completely install all equipment, to produce a complete and 100% operational system.
3. The Contractor shall unload, uncrate, store on site as required, prepare for installation, and otherwise professionally install all required equipment described in this specification to provide a complete installation.
4. The Contractor shall move, lift and install all equipment only as per manufacturers recommended procedures. Only drawings, manuals and procedures sent with the delivery of the equipment should be used for installation purposes.
5. In the absence of vendor documentation for equipment, the Contractor shall use his best experience and know-how in determining the precise details of the installation and obtain direction from the on-site project manager before any fabrication, anchoring or support installation.
6. All elevations are in reference to the finished floor near the new installation; this is considered the benchmark for material installation. The contractor is responsible to insure all installed materials are properly leveled and field-verify all specified elevations.
7. It is the Contractor's responsibility to prime and finish paint all miscellaneous items made of carbon steel to match adjacent surfaces.
8. Contractor shall not climb upon, walk on, or otherwise carelessly damage any equipment. The contractor will repair all damages incurred at no extra cost.
9. All refuse associated with the installation shall be disposed of on a daily basis. Working areas shall be kept "broom clean". The Contractor will be responsible to provide a trash dumpster for all materials, including crating, to be removed in the installation process. It is the Contractor's responsibility to ensure that the dumpster is replaced as soon as it is full.
10. The Contractor must sign in at the beginning of each shift and sign-out at the end of each shift. The Contractor shall also provide a weekly man-hour usage report to the on-site project Manager. Sign-in sheet and location will be provided by the on-site project Manager.
11. It is the Contractor's responsibility to advise the on-site project manager of any/all discrepancies prior to installation.
12. Propane fueled equipment shall not be allowed when rigging any equipment. If the contractor requires the use of propane lifts; they must have a scrubber system to purge any fumes.
13. Equipment Installation shall be considered complete when:
  - Equipment visually checked out for installation completeness.
  - Motors bumped and rotation checked.
  - Confirm that piping is complete.
  - I/O checked.
  - Valves stroked (auto and manual).
  - Equipment piping checked for leaks.
  - Ready to start water testing operation.



- Equipment alignment checked and machines anchored.
  - Lubricants with corresponding MSDS shall be provided by the OEM.
14. Staging of equipment and materials will be coordinated with the onsite project Manager.
  15. The Contractor will be responsible for coordination of equipment delivery with applicable vendors and/or shipping companies for equipment listed in the mechanical section of the Equipment List with "MC" in the installation column.
  16. The Contractor is responsible for cleaning all construction debris from the work area. The Contractor is responsible for cleaning all equipment prior to use to the satisfaction of the Owner. All surfaces shall be vacuumed. Vacuum shall have a HEPA filter. All soiled, grease stained, or otherwise contaminated, surfaces shall be scrubbed clean using a detergent approved by the plant's onsite project Manager. After cleaning of contaminated surfaces with detergent and water, all surfaces, even those not cleaned with detergent, shall be wiped down with a cotton wipe.
  17. The Contractor shall supply and install all stainless steel supports, hangers, solid round support rods, nylok nuts and associated fittings for all piping installed by The Contractor as stated on this scope of work and on the drawings.
  18. All welds must be continuous, ground smooth, free of weld splatter or occlusions.
  19. All stainless steel components are to be cleaned, bright, free of marks, burrs, scratches, etc.
  20. Fastening hardware is to be stainless steel, nonmetallic, or corrosion-resistant.
  21. Unistruts and upturned angles are not acceptable.
  22. Remove all material protruding from floor. Grind all metal studs and anchors even with floor surface.
  23. The Contractor is responsible for all temporary power. 110-120 VAC may be pulled off available breakers in the facility.
  24. The Contractor is responsible for obtaining hot work permits and using protective screens prior to any welding.
  25. The Contractor is responsible for drilling and sealing all wall/ceiling penetrations. The Contractor shall supply and install sleeves and steel frame openings for all pipes passing through walls/ceilings. The Contractor shall fill the gap between the wall/ceiling and the pipe with appropriate sealant to maintain the wall fire rating. The Contractor shall also supply and install escutcheon plates with an inner diameter to closely fit around the pipe and an outer diameter that completely covers the opening (including the sleeve).
  26. The Contractor shall provide all measures for the protection of structure and property. The Contractor shall repair to "as new or better" condition any properties that he damages during the course of the work. For example, non-marking tires must be used on all lifting equipment.
  27. The Contractor shall make provisions as required to prevent marking, scratching, etc. of the floor while moving, rigging and locating equipment in the area. The Contractor shall also protect the floor in the work area during any cutting, pipe threading, etc.
  28. The contractor shall provide all necessary protection and materials in order to avoid disturbing plant operations and manufacturing activities. For instance, poly walls or visqueen walls when performing work in production areas, etc.



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29. The Contractor is responsible for utilizing dimensions to columns and walls as provided in the drawings.
  30. The Contractor is responsible for tagging all installed equipment, instrumentation and valving as specified in the Equipment List. Tags shall be phenolic and indelible including equipment description and tag number.
  31. The Contractor shall dispose of any and all refuse in the appropriate manner.





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## 3. DEMOLITION

### 3.1 OVERVIEW

Although demolition of existing equipment does not form an integral part of this project; the contractor is responsible for dismantling all temporary equipment and/or structures required during the installation phase of the project. Additionally, the contractor shall be responsible for coordinating sewer tie ins, as shown on the drawings, to minimize plant downtime.



## 4. INSTALLATION

### 4.1 OVERVIEW

All work associated with this project shall be accomplished in accordance with all documents listed below:

1. W&C Contract Documents
2. Scope of Work – Process Modification (this document).
3. Project Schedule
4. Drawings

Including, but not limited to, The Process Construction Specification, drawing illustrations, specifics outlined above, and any local codes and ordinances. The Process Contractor shall be responsible to perform this work.

The installation drawings are intended to represent only the general scope of work. This scope does not address the sequence of specific equipment installation. The Mechanical Contractor will be responsible for providing on-site project manager with a detailed schedule and sequence of equipment installation for completing the project within the milestones established by the Owner.

The Wastewater System Installation shall be done in accordance with the approved manufacturer's shop and/or erection drawings.

**Note:** All vendor documents submitted as part of this construction package are the most accurate available at this time and are provided as a reference only. Only final vendor drawings and installation procedures delivered with the equipment are to be used for installation. The Contractor is to install all equipment per the vendor's drawings, documentation and installation instructions provided with the equipment. Should any discrepancies between the information provided with this package and provided with the equipment, the Contractor is to notify on-site project manager immediately for resolution before proceeding.

All work required to install the listed equipment and ancillary components are included in this scope of work.



## 4.2 WASTEWATER EQUALIZATION SYSTEM INSTALLATION INSTRUCTIONS

### 4.2.1 Isolation of Sanitary Sewer from Process Wastewater

Block Flow Drawing:	WF-01/01D
P&ID Drawing:	WP-01/01D
Equipment Layout Drawing:	N/A
Pipe Routing Drawing	WR-03/01D
Detail Drawing:	N/A

#### Contractor's responsibility:

- Break and cap connections of existing sanitary sewer lines to process wastewater line.
- Install new dedicated sanitary sewer line from raw material storage area to retail store and tie in existing sanitary sewer lines. The Contractor shall provide all supplies and work to install the new dedicated sanitary sewer line including all associated piping, valves, fittings, and supports, per applicable plumbing codes.
- Install new sump system to collect sanitary waste water from the soda area bathrooms and tie into new sanitary sewer line.
- Connect the new sanitary sewer line to discharge to the City through the Hancock Street manhole.
- Isolate process wastewater from discharging to the City through the Hancock Street manhole.

### 4.2.2 Installation of New Bottling Area Sump

Block Flow Drawing:	WF-01/01D
P&ID Drawing:	WP-01/01D
Equipment Layout Drawing:	N/A
Pipe Routing Drawing:	WR-01/01D
Detail Drawing:	N/A

#### Contractor's responsibility:

- Cut existing floor and install new sump basin (T-3001).
- Connect the discharge of existing trench drain piping to the new sump basin (T-3001) and install an overflow line from the new sump basin (T-3001) to the existing sump.
- Install new sump pump (P-3001) and float switches (HLS-1101, LHC-1101, LLC-1101) in the new sump basin (T-3001).
- Install new pipe run connecting the new sump and the equalization tank. The Contractor shall provide all supplies and work to install the connecting piping and valves between new bottling area sump (T-3001) and the wastewater equalization tank (T-1001) including all associated piping, valves (V04-1101, V06-1102), and supports required to make the system operational.

### 4.2.3 Installation of Process Wastewater Header

Block Flow Drawing:	WF-01/01D
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P&ID Drawing:	WP-01/01D
Equipment Layout Drawing:	N/A
Pipe Routing Drawing:	WR-01/01D, WR-02/02D
Detail Drawing:	N/A

**Contractor's responsibility:**

- Install new process wastewater line from bottling room break area to the location of the wastewater equalization tank area. The Contractor shall provide all supplies and work to install the new process wastewater header including all associated piping, valves, fittings, and supports, per applicable plumbing codes.
- Tie the new line into the former Hancock Street wastewater line to send process wastewater to the equalization system, after the sanitary sewer is isolated.
- Tie the new line into the existing wastewater line, in the area of the wastewater equalization system, which discharges to the loading dock manhole.

#### 4.2.4 Equalization Equipment

Block Flow Drawing:	WF-01/01D
P&ID Drawing:	WP-01/01D
Equipment Layout Drawing:	WL-01
Pipe Routing Drawing:	WP-02/02D
Detail Drawing:	WD-01

**Contractor's responsibility:**

- The Contractor shall provide all supplies and work to install the Wastewater Equalization system, including all associated piping, valves, supports, instrumentation required to make the system operational. Installation tasks include, but are not limited to, the following:

##### 4.2.4.1 Tank Installation

- Install Equalization Tank (T-1001) housekeeping pad.
- Set and anchor the Wastewater Equalization Tank (T-1001) on housekeeping pad.
  - Install level instrumentation (LSH/LSHH-1001, LSL-1001, LIT-1001) on Wastewater Equalization Tank as shown on the P&ID
  - Install tank fittings on the Wastewater Equalization Tank (T-1001) as shown on the P&ID (including expansion joints, vent, and caps)

##### 4.2.4.2 Process Equipment Installation

- The Contractor shall provide all supplies and work to install the connecting piping, equipment and valves in the Wastewater Equalization Tank area as shown on the P&ID, including all associated piping, valves, supports, instrumentation required to make the system operational:
  - Install a pump stand for the recirculation and discharge pump (P-1001).



- Install and mount the recirculation and discharge pump (P-1001).
- Install control valves (V04-1012, V04-1011)
- Install pressure indicator (PI-1001) with gauge guard (E-1001)
- Install flow element and flow indicating transmitter (FE/FIT-1001)

#### **4.2.5 Cleaning and Inspection**

Cleaning and inspection shall include:

- The Contractor shall provide all supplies, material and work to fully clean the areas of work. These areas shall be left in new condition before contractor demobilization.
- The Contractor shall guarantee the modified areas are free of debris, dirt, splatter or any other material that shall impact the operation of the surrounding equipment.
- The Contractor shall allow time and materials for an inspection that shall be conducted by W&C and Shipyard Brewing Company after the work is complete. The Contractor shall be responsible for completing any punch list items that arise after such inspection.

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**End of Scope of Work**

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