



# **COASTAL WATER AUTHORITY**

## **RAW WATER SERVICE CONNECTION GENERAL REQUIREMENTS**

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(SUPERSEDES MARCH 2019 REVISION)

Issued by:

Coastal Water Authority  
1801 Main Street, Suite 800  
Houston, Texas 77002

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- A. RAW WATER SERVICE CONNECTION APPLICATION
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- D. FORM TCEQ-20700



## 1.0 GENERAL

### 1.1 THE CWA SYSTEM

The following guidelines are general in nature and can be used for initial planning and coordination of raw water service requests. Each water service request should, at a minimum, address these guidelines. The physical water service connection shall meet current Coastal Water Authority (CWA) Raw Water Service Connection General Requirements. Connection drawings must accompany each raw water service requests and shall be developed based on the specific conditions and requirements.

The CWA conveyance and distribution system performs an integral function in providing fresh water to the City of Houston (City) and surrounding communities and the continued uninterrupted operation is a vital governmental function. CWA delivers untreated water owned by the City to the City facilities and their municipal, industrial, and agricultural customers. Industrial customers must enter into a contract for the purchase of untreated water from the City, meet City meter requirements, and meet CWA requirements for connection to the CWA System.

### 1.2 RAW WATER SERVICE CONNECTION GENERAL REQUIREMENTS

CWA has developed specific requirements to help fulfill its obligation to protect the welfare, health and safety of the public’s primary water supply. These revised/updated requirements supersede all previous editions and revisions. The requirements identify the rules and guidelines that must be satisfied to encroach upon or cross a CWA right-of-way or easement when making a service connection as well as the procedures to obtain authorization for such activities. These requirements contain the following sections:

- Application Process
- Accessing Water from the CWA System

CWA rights-of-way and/or easements are identified as “CWA Corridors” in this document. Each section addresses the most common procedures and requirements related to the specific section. These requirements may not be all-inclusive depending on specific situations and circumstances. Each *Water Service Application* will be considered on an individual basis and additional information and/or precautions may be required. All *Water Service Application* reviews will focus on the protection of CWA facilities and the ability for CWA to construct, operate, maintain, repair or replace CWA facilities. These guidelines are available on the CWA website at <https://cwacrossing.org>. The Customer is responsible for becoming and remaining informed of the General Requirements. **FAILURE TO OBTAIN AN EASEMENT OR CONSENT TO ENCROACH MAY RESULT IN THE REMOVAL OF INSTALLED FACILITIES.**

**NOTE: THIS DOCUMENT PROVIDES MINIMUM REQUIREMENTS THAT MAY BE AMENDED FROM TIME TO TIME. CWA RESERVES THE RIGHT TO INCREASE THE STATED REQUIREMENTS BASED ON PROJECT SPECIFIC CIRCUMSTANCES TO PROTECT CWA FACILITIES.**



## **Raw Water Service Connection Requirements – September 2020**

The General Requirements delegate to the Executive Director approval authority for certain easements and encroachments. The General Requirements do not limit or restrict the CWA Board's exercise of any powers, duties, or jurisdiction conferred by law. The CWA Board may vote to amend or otherwise alter the General Requirements from time to time.

The references to parts, sections, and other headings in the General Requirements are for reference purposes only and will not affect the meaning or interpretation of the rules. If any one or more of the General Requirements is for any reason held to be invalid or unenforceable in any respect, the other General Requirements shall remain valid and be construed as if the invalid or unenforceable requirement was not included in the General Requirements.



## 2.0 APPLICATION PROCESS

Applications for Raw Water Service Connections should be sent to the address below. Submittals should include the completed *Raw Water Service Connection Application (Attachment A)*, design drawings and the appropriate fee.

Executive Director  
Coastal Water Authority  
1801 Main Street, Suite 800  
Houston, Texas 77002  
Attn: Raw Water Service Connection Application

## 2.1 CONTRACT WATER SERVICE REQUESTS

### A. Planning a System Connection

The following guidelines are general in nature and can be used for initial planning and coordination to obtain water service from the Coastal Water Authority. Each water service request should address the conditions described in these guidelines as a minimum. Water service connections shall also meet the applicable requirements of other Sections of this Document. Connection plans shall be developed for each request based on operational criteria, specific site conditions, and installation requirements.

### B. Application to City of Houston

To obtain raw water from CWA, the applicant request is coordinated through the **City of Houston (City) Public Works and Engineering/Planning and Development Services/Houston Water Planning (HWP)**. Potential CWA raw water customers should contact **HWP**.

### C. Receipt of Draft Contract

Upon receipt of the above information and subject to availability of water, **HWP** will send a draft contract for review. The applicant will also receive a letter giving instructions to contact CWA regarding tap location and installation requirements and to contact the **City Meter Shop** for meter location and meter type.

### D. Coordination of Functions

The City meter requirements can be obtained from **City of Houston Utility Customer Service (UCS)**. City departments provide the following functions:

1. **City Meter Shop:** Provides information to the applicant regarding appropriate meter(s), engineering drawings (by PE) of meter and tap locations on Texas coordinates, and meter inspection of existing meters, if any.
2. **City Engineer:** Reviews drawings, assists the Meter Shop in evaluation of drawings for tap and meter location. Also determines and advises **HWP** of the need, if any, for special clauses in the contract. The City determines the water availability and will require an easement for its meter location.



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3. **City Drinking Water Operations:** Reviews and approves applicant backflow/air gap and conservation plan and advises **HWP** of the need, if any, for special clauses in the contract.
4. **City Council:** Upon return of signed contracts from the applicant, **HWP** coordinates with **City Council** for approval and arranges support staffing through several City departments. **HWP** then returns an original signed contract to the applicant and advises CWA of final approval.

### E. CWA Application

1. Accessing water from the CWA system is described in Section 3.0.
2. After **HWP** notifies CWA of water availability and intent to sell, the applicant may arrange site meeting with CWA representatives where CWA will assist in identifying the connection's location and possible alternatives.
3. Upon request, CWA will provide reference drawing sheet numbers of proposed location and *CWA's Easement and Right-of-Way Encroachment General Requirements*. Applicant will be referred to CWA Engineer for pertinent drawing copies and design information needed to prepare engineer drawings.
4. Applicants requesting CWA raw water service shall submit the following:
  - a. Application (Appendix A) signed by the Applicant or the Applicant's authorized representative;
  - b. A general physical description and address of the location of the connection;
  - c. Corporate check or cashier's check for applicable fees (§ 2.3);
  - d. A certificate of insurance that meets the Insurance Requirements (§ 2.5);
  - e. Submittals including calculations, specifications, and design drawings showing plan views, profiles, and sections of the proposed project within the CWA Corridor that meet the Design Requirements of this document; and
  - f. A Certificate of Account Status, issued by the Texas Comptroller of Public Accounts, or if an Applicant was formed in another state a comparable document from the state of formation, no more than 30 days prior to date of this application. CWA may require statements and/or instruments of financial assurance of individual Applicants at the discretion of CWA's Executive Director.
5. To Facilitate the Application process, the Applicant must satisfy the following requirements, as applicable:
  - a. Obtain CWA's General Engineering Consultant (GEC) approval of all application drawings and other documents applicable under the General Requirements;
  - b. Pay all outstanding fees and complete all tasks related to CWA facility relocation(s), as the CWA GEC deems prudent and reasonable;
  - c. Obtain and provide to CWA a title report for the CWA Corridor affected by the proposed project;
  - d. Secure any additional rights from all third parties owning an interest in the CWA Corridor affected by the proposed project;



- e. Notify all owners of other pipelines, communication lines or other third-party facilities located within the CWA Corridor of CWA's grant of the application;
  - f. Provide written confirmation that Federal, State and local permitting and environmental requirements are fully addressed; and
  - g. For easement requests, the Applicant must obtain an appraisal from a Texas licensed appraiser that holds a MAI, SRPA or SRA member of the Appraisal Institute designation establishing the value of the requested easement.
6. CWA Engineer shall review drawings and specifications for approval. The CWA response, whether approved or returned for revision, may include written comments and recommendations. If necessary, the drawings and specifications must be revised until CWA approval is obtained.
  7. Once the application package is approved, a copy of the signed City of Houston water contract must be provided before the overall process can continue.
  8. On return of signed contracts from applicant, **HWP** coordinates staffing through several City departments and City Council approval. **HWP** provides an original signed contract to applicant and advises CWA of final approval. CWA will provide written approval of the application package, which will allow construction to begin in accordance with approved plans and specifications. Written approval from CWA will include a point of contact and phone number for making notification prior to start of construction.

## **2.2 NON-CONTRACT WATER SERVICE REQUESTS**

### **A. Planning for Temporary Connection**

The following guidelines are general in nature and can be used for requesting the purchase of water from CWA for temporary use such as hydrostatic testing, water for construction purposes, and similar short-term usage.

### **B. Application to City of Houston**

To obtain raw water from CWA, the applicant request is coordinated through the HWP.

### **C. Receipt of Application**

Upon receipt of the above information and subject to availability of water, the City will send a letter giving instruction regarding the location and procedure for purchase of temporary water from the CWA system.

## **2.3 CWA FEES**

### **A. Administrative Fee**

There is a non-refundable \$5,000 administrative fee for each connection in a CWA Corridor. The fee must be submitted with the initial application and does not cover costs associated with the grant of an easement, special encroachment consideration, or review requiring specialized knowledge or consideration for which additional fees may be charged.



**B. Easement Fee**

CWA may charge Applicants requesting an easement a fee based on the appraisal submitted by the Applicant along with other factors identified by CWA in an invoice. This fee is in addition to the Administrative Fee described above.

**C. Payment Method**

All fees must be paid by corporate or cashier’s check made payable to Coastal Water Authority and submitted with the application. Any fees assessed after the initial submittal must be paid within 30 days. **BANK DRAFTS ARE NOT ACCEPTABLE.**

**D. Bayport Area User**

Customers designated by the City water service contract as being “Bayport Area Users” may be charged a conveyance fee by the Coastal Water Authority. The Bayport Water System is a CWA-owned asset designed to provide facilities for the transportation of water purchased from the City of Houston. The conveyance fee allows CWA to operate the Bayport System on a self-supporting basis. To accomplish this, an annual budget is established based on estimated operation and maintenance expenses, debt services (if applicable), administrative charges, and a capital improvement fund for major rehab/replacement projects within the Bayport System. The conveyance fee rate is established based on estimated annual water consumption that will fully recover these costs.

**2.4 INDEMNIFICATION**

**THE PROJECT OWNER AGREES TO AND DOES HEREBY, INDEMNIFY AND DEFEND CWA AND ITS OFFICERS, DIRECTORS, AGENTS, SERVANTS, REPRESENTATIVES, EMPLOYEES, ENGINEERS AND ATTORNEYS (COLLECTIVELY REFERRED TO HEREIN AS THE "INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL SUITS, DEMANDS, OR CLAIMS AND ALL COSTS, LOSSES SETTLEMENTS (VOLUNTARY OR OTHERWISE), LIABILITIES, EXPENSES AND JUDGMENTS INCURRED IN CONNECTION THEREWITH, INCLUDING ATTORNEY'S FEES AND COURT COSTS; WHETHER ARISING IN EQUITY, AT COMMON LAW OR BY STATUTE (INCLUDING THE TEXAS DECEPTIVE TRADE PRACTICE ACT OR OTHER SIMILAR STATUTES), OR UNDER THE LAW OF CONTRACTS, TORTS (INCLUDING WITHOUT LIMITATIONS NEGLIGENCE OR STRICT LIABILITY WITHOUT REGARD TO FAULT) INCLUDING WITHOUT LIMITATION ALL CLAIMS, DEMANDS AND SUITS FOR DAMAGES OR INJURIES, INCLUDING DEATH TO ANY AND ALL PERSONS OR PROPERTY, WHETHER REAL OR ASSERTED, BASED UPON, IN CONNECTION WITH, RESULTING FROM OR ARISING OUT ANY ACTION OR OMISSION WHETHER NEGLIGENT OR OTHERWISE ON THE PART OF THE PROJECT OWNER OR ITS AGENTS, SERVANTS, REPRESENTATIVES, EMPLOYEES AND SUBCONTRACTORS. SUCH INDEMNIFICATION WILL INCLUDE WORKERS' COMPENSATION CLAIMS OF OR BY ANYONE WHOMSOEVER IN ANY WAY BASED UPON, IN CONNECTION WITH, RESULTING FROM OR**





**ARISING OUT OF THE PROJECT OWNER'S WORK, AND OPERATIONS IN CONNECTIONS HERewith INCLUDING OPERATIONS OF SUBCONTRACTORS ENGAGED BY PROJECT OWNER, IF ANY.**

**PROJECT OWNER'S CONTRACTUAL OBLIGATIONS OF INDEMNIFICATION WILL EXTEND TO AND COVER CLAIMS, DEMANDS AND CAUSES OF ACTION ALLEGING ACTS OF NEGLIGENCE, FAULT OR OTHER ACT OR OMISSION BY OR ON THE PART OF THE INDEMNIFIED PARTIES. HOWEVER, IN THE EVENT THAT ONE OR MORE OF THE INDEMNIFIED PARTIES ARE ADJUDICATED AT FAULT WITH RESPECT TO DAMAGE OR INJURY SUSTAINED BY A CLAIMANT, PROJECT OWNER WILL INDEMNIFY THE INDEMNIFIED PARTIES ONLY FOR THAT PORTION OF THE DAMAGE OR INJURY ADJUDICATED TO HAVE BEEN CAUSED BY PROJECT OWNER AND/OR ITS AGENTS, SERVANTS, REPRESENTATIVES, EMPLOYEES AND SUBCONTRACTORS.)**

## **2.5 INSURANCE**

### **A. Required Insurance Periods**

For all periods of time the Applicant and subcontractors are working within CWA Corridors, the Applicant and Applicant's contractors and subcontractors must provide insurance, at no cost to CWA, meeting the requirements described in this section.

### **B. Insurance Requirements**

Field activities will not be permitted without proof of insurance on a Texas Department of Insurance (TDI) approved certificate of insurance form (certificate). The certificate must be valid for as long as the consent or easement exists. The Applicant shall obtain endorsement to cover Insurance Requirements not covered by the terms of the Applicant's underlying insurance policy or contract. The certificate shall reference all endorsements applicable to the policy or contract. All policies, except Workers' Compensation coverage, shall name CWA as an additional insured. The Applicant's policy must include a waiver of subrogation in favor of CWA.

### **C. Insurer Requirements**

The Applicant shall obtain coverage from (1) an insurer with a Certificate of Authority from the Texas Department of Insurance to issue policies in Texas or (2) a non-admitted insurer eligible to issue policies in Texas with a current Best's rating of at least B+ and a Best's financial size category of class VI or better.

### **D. Policies and Minimum Limits of Liability**

The Applicant shall provide, at no cost to CWA, minimum coverage during period that the Applicant performs or authorizes work within CWA's rights-of-way or easements as described in Table 1 on the following page.

### **E. Material or Lack of Coverage**

The Applicant will provide CWA with 30 days written notice if any of the Applicant's policies or endorsements are cancelled, materially changed, or non-renewed. If CWA staff determines that Applicant's coverage does not meet the requirements of this



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section, at the sole discretion of the CWA Executive Director, CWA may (1) purchase the required insurance and invoice Applicant for the full cost; or (2) suspend the Applicant's encroachment or easement approval until CWA staff determines the Applicant's coverage meets the requirements of this section.



**Table 1**  
**Policies and Minimum Limits of Liability**

<b><u>Kinds of Insurance</u></b>	<b><u>Limits of Liability</u></b>
(A) Workers Compensation; Texas Operations	Statutory
(B) Employer’s Liability	<ul style="list-style-type: none"> <li>• Accident \$1,000,000 Each Accident</li> <li>• Disease \$1,000,000 Each Employee</li> <li>• Disease \$1,000,000 Policy Limit</li> </ul>
(C) Commercial General Liability including, but not limited to: <ol style="list-style-type: none"> <li>1. premises/operations</li> <li>2. independent contractors’ protective</li> <li>3. products and completed operations</li> <li>4. personal injury liability with employment exclusion deleted</li> <li>5. contractual</li> <li>6. owned, non-owned and hired motor vehicles</li> </ol>	<ul style="list-style-type: none"> <li>• \$2,000,000 General Aggregate</li> <li>• \$2,000,000 Products/Completed Operations Aggregate</li> <li>• \$1,000,000 Each Occurrence</li> <li>• \$1,000,000 Personal and Advertising Injury</li> <li>• \$500,000 Fire Damage Liability</li> </ul>
(D) Business Automobile Liability including All Owned, Hired and Non-owned Automobiles	\$1,000,000 Combined Single Limit Per Occurrence
(E) Umbrella Liability: Such insurance shall be excess over and be no less broad than all coverages described above and shall include a drop-down provision for exhaustion of underlying limits. This policy shall have the same inception and expiration date as the commercial general liability insurance required above.	<ul style="list-style-type: none"> <li>• \$5,000,000 Per Occurrence</li> <li>• \$5,000,000 Aggregate Bodily Injury and Property Damage</li> </ul>
(F) Builder’s Risk: An all risk policy form covering, without limitation, perils of fire and extended coverage and physical loss or damage, including theft, earthquake, hurricane, flood, windstorm, tornado, vandalism, malicious mischief, collapse, false work, testing and start-up, temporary buildings and debris removal and covering reasonable compensation for CWA’s and Engineer’s services and reasonable expenses of CWA and Engineer which are required as a result of such loss.	The initial Contract Price and any subsequent modifications thereto for the entire Work and materials stored at the site, stored offsite or being shipped to the site, on a replacement cost basis without voluntary deductibles



## **3.0 ACCESSING WATER FROM THE CWA SYSTEM**

### **3.1 GENERAL CONDITIONS**

#### **A. Reservation of Surface and Subsurface**

CWA reserves for itself and its successors and assigns the right to use of the surface and subsurface of the project area for any and all purposes that do not interfere with and are not inconsistent with rights granted by CWA. Subject to the foregoing, CWA's right to use the project area shall include, without limitation, CWA's right to: (i) maintain its existing facilities located within the project area and to install, place and maintain future facilities within or below the surface of the project area; and (ii) cross over the project area by foot or with wheel and track vehicles to the extent necessary to efficiently prosecute the work described in item (i) provided that CWA notify Customer in advance of any action CWA will undertake in the area covered by this Consent except for emergency situations.

#### **B. Right of Removal**

CWA may remove project facilities to install a new pipeline, perform maintenance on existing pipeline(s), or remove a Customer's project facilities not authorized by an easement or encroachment. CWA shall not be responsible to pay any costs incurred by Customer to replace the project facilities removed as a result of CWA's actions.

#### **C. Confirm Regulatory Compliance**

The Customer will provide written confirmation that Federal, State and local environmental requirements are fully addressed prior to the issuance of an Easement or Consent to Encroach. Throughout construction activities, all environmental requirements must be complied with and any issues resolved. Provisions will be made and enforced to prevent contamination of groundwater, surface water, or canal water during construction.

#### **D. CWA Facilities Protection**

The Customer will protect in place CWA facilities and appurtenances, such as existing blow-offs, air valves, vents, manholes and cathodic protection test stations, prior to and during construction. Upon request, CWA personnel familiar with CWA facilities, such as valves, manholes, or cathodic protection systems, will be made available to identify the locations of such facilities.

#### **E. Avoid Project Conflicts**

The Customer will construct and maintain any project facilities within the CWA Corridor to avoid conflict with CWA's existing or future facilities. Additional requirements beyond these guidelines may be imposed if CWA's concludes additional safeguards are necessary to protect CWA's existing or future facilities.

#### **F. Assumption of Risk**

The Customer assumes all risks associated with the project within CWA property rights-of-way or easements including, but not limited to, worker



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injuries, damage to CWA facilities, damage to contiguous utility lines, damages or injuries from improper installation and/or maintenance of facilities as shown in the approved design documents.

### **G. Project Adjustment**

The Customer or owner of any project facility constructed in a CWA Corridor that causes interference with the use of such corridor will be notified by CWA in writing and will remove, lower, adjust or relocate any such facility at the owner's expense.

### **H. Repair/Adjustment Cost Responsibility**

The Customer or owner of any facility constructed in a CWA Corridor shall be fully responsible for reimbursement to CWA for all cost associated with any damage to CWA facilities during construction, removal and/or replacement of the facility. In the event CWA must excavate within CWA's Corridor for future maintenance or installation of new pipelines and/or related appurtenances and this affects the Customer or owner's constructed facility, the Customer or owner is responsible for all associated constructed facility repair or reinstallation.

### **I. Venue**

Venue for any dispute between the Customer and CWA relating to an easement or right-of-way encroachment is Harris County, Texas.

### **J. Applicable Laws**

Any dispute between the Customer and CWA relating to an easement or encroachment is subject to the laws of the State of Texas, the laws of the federal government of the United States, and all rules and regulations of any regulatory body or officer having jurisdiction.

## **3.2 GENERAL DESIGN REQUIREMENTS**

In addition to the completed Raw Water Service Connection Application in Attachment A, the owner must submit design drawings to CWA for approval. Preference is to use existing unused service valves or an available air/vacuum valve riser, if CWA determines it is appropriate. A typical detail for connection to an existing service valve is provided as Attachment B and a typical detail for a raw water pump station as Attachment C. The design must include the following information/requirements and must be shown on the drawings:

### **A. Drawing Format**

Customer shall submit at least one legible 8½-inch x 11-inch copy of documents in an acceptable format. Portable document format (PDF) is the generally acceptable file format, but CWA may require files in a different format. Drawings must clearly show the proposed limits of construction.

### **B. Legal Department Drawing Requirements**

The Customer may be required to submit a metes and bounds description of the property and all relevant drawings must contain the following minimum requirements):



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1. North arrow & scale;
2. County name;
3. Survey name & abstract number;
4. Point of beginning and termination (with State Plane Coordinates if available);
5. CWA Corridor boundaries;
6. Tie to closest CWA property corner;
7. Tie to centerline of closest CWA above ground and underground facility or pipeline (showing distance and structure number) and offset or parallel distance from CWA easement or fee strip line;
8. Type and size of crossing (outer pipe diameter, width of road and ditch crossings, or area for surface sites);
9. Stationing along the proposed project;
10. Bearing and distance of crossing or longitudinal occupation;
11. If CWA will issue an easement, the easement boundaries must be shown on the drawings and easement metes and bounds description included with the submittal;
12. Locative reference – tie to a street;
13. CWA tract reference & ad joiner information, including CWA right-of-way width;
14. Reference to recorded instrument granting CWA property rights that will be affected by Customer's request;
15. Basis of bearings (and coordinates if used);
16. Reference to CWA as-built drawing(s);
17. Registered professional land surveyor's certification, seal, signature & printed name with registration number;
18. Total area or distance, separated by fee & easement, within CWA right-of-way;
19. Name address and phone number of registered professional land surveyor or firm that prepared the survey;
20. Ties to existing pipelines every 500 feet or at a change in direction and position;
21. Swales, ditches, ponds, rivers, and/or canals locations in the right-of-way; and
22. A profile of the facility if it crosses any underground facilities of CWA or others.
23. CWA project name/number and customer name



### C. Design Submittals

The design must include the following information/requirements and must be shown on the drawings:

1. Peak, average and contracted flow rates
2. Pipe size, schedule, and material
3. Valve size, and type with unique valve number
4. The “Point of Delivery” at the valve connection point to the CWA system (both on the design drawings and in the contract with the City).
5. The “Point of Measurement” at the meter site approved by the City (both on the design drawings and in the contract with the City).
6. Service Line Discharge/Termination (Storage tank, Holding Pond, Etc.)
7. Design drawings prepared and sealed by a Licensed Texas Professional Engineer

At CWA’s request, the customer shall provide all relevant design calculations for review.

### D. Service Line Routing

The horizontal alignment and vertical profile of the service line routing across the CWA right-of-way shall not impact future CWA pipeline installations. Service line criteria, such as depths, clearances, etc., are identified in *CWA’s Easement of Right-of-Way General Requirements*. The service line’s horizontal alignment and vertical profile will be evaluated on a case-by-case basis.

### E. Air Gap Requirement

Any customer provided pump station must include an air gap to atmosphere between the pump station and the CWA transmission pipeline or Point of Delivery. **Do not connect a pump directly to any CWA waterline.**

### F. Backflow Prevention Equipment

Customers shall furnish and install Backflow Prevention Equipment at the Customers own cost and expense. The Backflow Prevention Equipment must have a capacity for the quantity of water delivered and conform to City of Houston Reduced Pressure Backflow Preventer, DWG NO: 02523-01. The Backflow Preventer must be installed in a way that prevents bypass during standard operations. A bypass Backflow Preventer may also be installed at customers expense. If a bypass Backflow Preventer is installed is must conform to same testing and specifications as the main preventer. The customer shall maintain ownership, operation and maintenance in accordance with this document and any applicable COH codes.



### **3.3 RAW WATERLINE CONNECTION GUIDELINES**

#### **A. General**

The following applies to all raw water connections:

1. All connections must be installed in a vault.
2. The connection must be sized appropriately for the contracted amount of water. The maximum waterline connection size is 18-inches.
3. All downstream pipe must be restrained joint piping.
4. Provide a pipe support under the valve.
5. If not connecting to a Tee downstream of valve/blind flange, install Tee with an additional service valve/blind flange within vault.
6. Do not locate raw water flow meter, backflow preventer, or an airgap in CWA right-of-way or easement.
7. Only one customer per point of delivery connection.

#### **B. Existing Valve Condition**

The contractor is responsible to check the condition of the existing valve and notify CWA of that condition. If CWA or customer determines the valve is not in acceptable condition, customer will be responsible for the replacement or repair of the existing valve. If repair or replacement is not in the best interest of both parties a different service location will be identified.

#### **C. Valves**

The block/gate valve, to conform to AWWA C509 or C515. Gate valves shall have a ductile iron body, 125 lb. flat-faced, flanged ends, cast iron double disc gate, bronze trim, non-rising stem, extension rod, a two-inch (2”) AWWA square operating nut in lieu of an operating wheel, and a by-pass valve to equalize the pressure on both sides of the gate valve. Bolting for all valves shall be in accordance with ASTM A307, Grade B with hexagonal heads. Install valve stem and appropriate supports to operate all valves from surface.

#### **D. Pipe Alignment**

Arrange and adjust connection piping to meet the service valve at its precise angle and elevation. Force shall not be applied to the service valve to align it with connection piping. Provide fitting(s) and align connection piping exit vault below grade; make sure all piping and valves within the vault are supported. The connection pipe must span 40 foot and be cased entirely within the CWA ROW.

#### **E. Pipe Support**

A pipe support of sufficient size shall be installed under each joint within the vault to carry the combined load of the pipe and water. Pipe supports shall span across the pipe joint.





**F. CWA Pipe Excavation**

All excavation adjacent to the CWA pipes must have a CWA representative present. A 1-foot lift of cement stabilized sand may be required in the excavation bottom to provide the foundation to support the valve box and pipe supports.

**G. Backfill**

All excavations must be backfilled to original ground level with suitable fill materials as approved by CWA. Backfill must be placed in 6-inch maximum loose lifts and compacted to 95% of maximum density at optimum moisture content, plus or minus 3% as specified by ASTM D6988, or latest edition.

**H. Corrosion Protection**

The piping and valves shall be coated in accordance with CWA piping specifications to be consistent with existing corrosion protection. An insulating flange gasket in accordance with City of Houston Standard Specification Section 15640 Joint Bonding and Electrical Isolation is to be provided between the valve and the service line piping should the service line piping material be downstream of the valve be electrically conductive. If an insulating flange is provided, test leads shall be installed on the pipe on each side of the insulating flange and brought to an above ground test station. A CWA representative must verify electrical isolation before initiation of service. Customer is responsible for upkeep and repair of isolation flange. CWA is not responsible for any damage to customer pipeline or facilities as a result of electrical currents. Service will be suspended if CWA determines a customer's pipeline is not electrically isolated from CWA system.

**I. Thrust Restraint**

All service lines shall be installed with necessary thrust restraints required by the valve and piping arrangement.

**J. Ground Water Control**

The contractor shall provide necessary measures to control ground water from all sources. CWA's bedding and pipe zone backfill is sand, therefore there is a potential for groundwater to migrate along the pipeline into the excavation. The contractor is required to provide necessary measures to control groundwater without loss of pipe bedding material.

**K. Vault**

All new connections are to be installed inside a vault. If no vault is present customer is responsible for design, procurement and installation. Upon completion ownership of vault shall be turned over to CWA. CWA will be responsible for all upkeep and repairs of said vault. All vaults must be designed in accordance with Attachment B Raw Water Standard Connection Detail and meet the following design specifications: ASTM C857, ASTM C858 and ASTM C891.



### **3.4 CANAL PUMP STATION GUIDELINES**

#### **A. Canal Pumping Facilities**

Pumping facilities shall be located outside of the CWA right-of-way with the intake pipe extending through the canal embankment. Pipe, valves, manholes and appurtenant items cannot be installed aboveground within the CWA right-of-way. Installation must provide CWA access along both canal embankments and a minimum of 30 feet between the pumping facility and the canal water line. Design submittals will include:

1. Pump station plan and profile with details
2. Piping inside the canal embankment
3. A cross-section showing normal operating and maximum canal levels
4. Pipe location within the embankment
5. Pump quantity and size

A typical detail for a canal pumping station is provided as Attachment C.

#### **B. Valves**

A block/gate valve, controlled by CWA, shall be installed inside the CWA right-of-way in the pipe coming from the canal. Valves shall be Waterman AC-31 or approved equivalent gate valve designed for canal use.

#### **C. Headwalls**

Intake piping extending into the CWA canal may require protection with a concrete headwall to prevent maintenance activities from damaging pipe ends.

#### **D. Cofferdam/Canal Diversion**

A cofferdam must be designed by a licensed state of Texas professional engineer to industry standards and built to specifications. Dam must be fully removed and any damage to canal repaired upon completion of construction. Customer is responsible for evaluating the impact of the dam on downstream canal flows and provide results to CWA for evaluation prior to approval of design. If CWA determines bypass flows are not sufficient customer must redesign dam or provide a plan to temporary divert canal flows.

### **3.5 ACCESS REQUIREMENTS**

#### **A. Access Notice**

The Customer will notify CWA staff a minimum of 48 hours prior to any activity in or adjacent to CWA facilities, property, rights-of-way, or easements. Except for approved access for installation and routine maintenance, Customer must obtain CWA's consent before entering CWA's Corridor. A copy of the right of entry form can be found on the CWA Crossing Application Website (<https://cwacrossing.org/>).



**B. Installation Access**

The Customer's right of access for installation will expire 180 calendar days from the date CWA approves the application, unless otherwise noted or extended. If the Customer does not begin project installation within the approved time frame, the right of access expires, and the Customer must submit a new application in accordance with CWA's current policy.

**C. Routine Maintenance Access**

Routine maintenance activities accomplished remotely without any access or invasive activities to CWA Corridors require a 48-hour advance CWA notification, but do not require a new application CWA's prior consent. The Customer must obtain a special encroachment for routine maintenance that includes invasive activities. The CWA GEC will reasonably determine what constitutes routine maintenance and when CWA's prior consent is required.

**D. Emergency Maintenance Access**

All emergency maintenance access requires advanced or simultaneous CWA Representative notification at (281) 424-2312 or the name and phone number provided in writing by CWA staff. If CWA determines this access is a new activity, an encroachment application and associated fee will be required. Updated as-built drawings are required if the emergency maintenance activity alters the pre-access location of the installed facilities.

**E. Open Access**

CWA's ongoing operations and maintenance activities will not be disrupted due to any Customer activities. Maintenance access and roads along open canals must be kept accessible and available for CWA use at all times.

**F. Vehicle Access**

Vehicular access across all facilities or improvements will be provided to CWA personnel at all times.

### **3.6 CONSTRUCTION REQUIREMENTS**

**A. Pre-construction Conference**

CWA staff, CWA's GEC, the Customer's agent and construction inspectors must schedule and attend a pre-construction conference before any work commences on CWA's Corridor. A minimum 48-hour pre-construction meeting advance notice is required.

**B. Construction Work Plan**

The Customer may be required to submit procedures, excavation plans, schedules and the type and weight of the construction equipment to be used when working within or crossing the CWA Corridor. No equipment with a net surface loading that exceeds the equivalent of standard HS-20 loading, as



## Raw Water Service Connection Requirements – September 2020

defined by American Association of State Highway and Transportation Officials (AASHTO) will be permitted. When crossing under a CWA facility, the installation means and methods will be specified and followed during the construction phase. Means and methods revisions must be submitted to CWA prior to the start of any construction near the CWA facility.

### **C. Advanced Notification**

ADVANCE NOTIFICATION OF TWO WORKING DAYS IS REQUIRED PRIOR TO STARTING ACTIVITIES WITHIN COASTAL WATER AUTHORITY CORRIDOR. Contact the CWA Representative at (281) 424-2312 or the name and phone number provided on approval documents. **ALL WORK COMPLETED WITHIN CWA RIGHTS-OF-WAY, EASEMENTS, OR PROPERTY MUST BE MONITORED AND OBSERVED BY CWA PERSONNEL.**

### **D. Site Inspections**

Prior to construction, the condition of CWA's roads, fences, and adjacent land areas will be jointly inspected and documented by the Customer or the Customer's agent and CWA staff. Upon completion of the proposed construction activities, a final inspection will be conducted. The Customer is responsible for all costs associated with returning the site features to pre-construction conditions or better.

### **E. Customer's Inspector**

The Customer will assign a qualified inspector to be on site during construction operations within CWA's Corridors. The inspector will order the cessation of the work when so requested by CWA's field representative.

### **F. Required Communication**

The Customer will keep CWA staff advised at all times when working adjacent to or within CWA's Corridor. No work will be done on CWA's Corridor without CWA's representatives present, unless authorized by a CWA representative.

### **G. Safety**

The Customer will be responsible for creating, implementing, and following a safety program to perform the work, maintain a safe work place, and comply with the Customer's standard of care and all applicable laws bearing upon safety and any standards of care, laws, or regulations applicable to the Customer's agents, contractors, and subcontractors. These parties will perform work in a safe and reasonable manner and seek to avoid injury, loss or damage to persons or property by taking reasonable steps to protect: (a) employees and other persons at the project site, and (b) all property and structures located at the project site affected by the work or adjacent areas.



**H. Security**

If permanent fencing is removed, the area must be secured with temporary fencing or a guard when workers are not present. Permanent fencing must be reinstalled to existing or better condition when construction is complete.

**I. Site Restoration**

The Customer must remove all equipment and materials from CWA property and return property to "as before or better" condition (to be verified and approved by CWA's representative) before the expiration of the Customer's right of access for installation or special encroachment. If the Customer fails to comply, CWA will take appropriate action to return property to "as before" condition and the Customer will reimburse CWA for all associated expenses or forfeit its encroachment or easement.

**J. Record Drawings**

The Project Owner will provide CWA with record drawings showing location, horizontal coordinate values, and elevations within 60 days of project completion. These drawing must include plan and profile information, use South Central Texas State Plane Coordinate NAD 83 grid. Drawings to be submitted electronically in PDF formant, and CAD file if applicable. An ESRI shapefile including the point of delivery, point of measurement, service line routing and all easements is required upon project completion.

**3.7 SERVICE AND OPERATIONS**

**A. Maintenance Plan**

All improvements, modifications, or facilities installed within CWA Corridors must be maintained in reasonable operating condition per typical industry standards.

**B. Measuring Equipment**

During all reasonable hours, The Coastal Water Authority shall have access to the measuring equipment.

**C. Backflow Prevention Equipment**

At customers own cost and expense, customer shall have backflow prevention inspected and tested by CWA approved independent tester. Test shall be conducted on an annual basis and shall provide written notice to CWA at least 48 hours in advance indicating the time and location where the testing is to be done. Should any testing of the customers Backflow Prevention Equipment demonstrate the equipment is damaged or improperly functioning, customer is responsible for immediate repair or replacement. Upon completion of any repair, replacement or modification of customer Backflow Prevention Equipment, the equipment must be retested by an approved independent test agency. If at any time customer becomes aware of Backflow Prevention Equipment that is



damaged or improperly functioning, customer must immediately inform CWA in writing and conduct any necessary repairs or replacement.

Customers are required to have a licensed inspector submit the Texas Commission on Environmental Quality form TCEQ-20700 Backflow Prevention Assembly Test and maintenance Report, see **Attachment D**, to CWA at [backflowprevention@coastalwaterauthority.org](mailto:backflowprevention@coastalwaterauthority.org) upon completion of any testing or maintenance of backflow prevention devices. During all reasonable hours, Coastal Water Authority shall have access to the Backflow Prevention Equipment.

**D. Service Line Termination**

During all reasonable hours, The Coastal Water Authority shall have access to the customer facilities to inspect and verify water discharge location.

**E. Required Immediate Corrections**

The following practices and operation conditions require immediate correction:

1. Pressure variations that have the potential to damage the CWA System.
2. Inadequate or compromised backflow prevention devices.
3. Leaks or breakage between the Point of Delivery and the Point of Measurement.
4. Inadequate or compromised electrical isolation flanges.

### **3.8 ABANDONMENT**

**A. Installed Facilities**

Prior to abandoning any existing facilities within CWA Corridors, submit a facility abandonment request that completely describes all abandonment activities for CWA review and approval.

**B. Abandonment**

Prior to abandoning any ongoing facility installation within CWA Corridors, Customer must submit a project abandonment request that describes how any partially installed facilities will be removed, the site will be returned to preconstruction condition, and how CWA facilities will be protected during the abandonment activities for CWA review and approval.

**C. Contract Termination**

Upon termination of COH raw water contract, customer must remove all facilities from CWA corridor. CWA reserves the right to reassign service outlet upon termination of contract.

# ATTACHMENT A

Coastal Water Authority

Raw Water Service Connection Application

# Raw Water Service Connection Application

Coastal Water Authority  
1801 Main Street, Suite 800  
Houston, TX 77002-8120  
Attn: Executive Director

Phone: (713) 658-9020  
<http://www.coastalwaterauthority.org/>

**REQUESTOR INFORMATION:** *(Print or Type Only)*

Date \_\_\_\_\_

Individual Name \_\_\_\_\_ Company Name \_\_\_\_\_ Phone Number \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Email Address \_\_\_\_\_ Site Location/Key Map (attach) \_\_\_\_\_

## **LEGAL NAME OF FACILITY OWNER REQUESTING RAW WATER SERVICE:**

Company Name \_\_\_\_\_ Raw Water Use \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Authorized Representative: Name & Title \_\_\_\_\_

State requesting company is incorporated \_\_\_\_\_

## **SUBMITTAL REQUIREMENTS**

All requestors must agree to comply with "**CWA Raw Water Service Connection Requirements – Revised September 2020**" and as amended periodically. If CWA facility relocation is required due to this request, the relocation(s) cost(s) will be borne by the requesting party and must be paid before the request is granted. The following documents will be issued per CWA property rights:

- Fee ownership: an easement will be prepared and executed by CWA
- An easement: A Consent to Encroach will be issued

It is the requestor's responsibility to secure additional needed rights from parties where CWA's rights are limited or less than a fee simple ownership. The requestor must notify owners of other pipelines, communication lines or other third-party facilities located within CWA's grant to requestor.

## **FEE**

The easement or consent to encroach fee is defined in the CWA Water Service Connection Requirements – Revised September 2020. **THE \$5,000.00 NON-REFUNDABLE ADMINISTRATIVE FEE MUST ACCOMPANY THE REQUEST SUBMITTAL.**

## **INDEMNIFICATION**

**BY SIGNING THIS APPLICATION, THE FACILITY OWNER REQUESTING WATER SERVICE IS LEGALLY BOUND BY THE INDEMNIFICATION AGREEMENT IN THE CWA Water Service Connection Requirements – Revised September 2020.**

REQUESTS SUBMITTED WITHOUT THE REQUIRED APPLICATION FEE OR THAT DO NOT CONTAIN THE SPECIFIED INFORMATION, WILL NOT BE APPROVED. Deficiencies will be identified, and a revised package can be resubmitted.

The undersigned authorizes CWA to contact the Surveying firm that prepared the attachments and **certifies that the information provided is accurate and acknowledges that incomplete information may delay processing or invalidate this application.**

By: \_\_\_\_\_  
Printed Name

Signature: \_\_\_\_\_

Title: \_\_\_\_\_



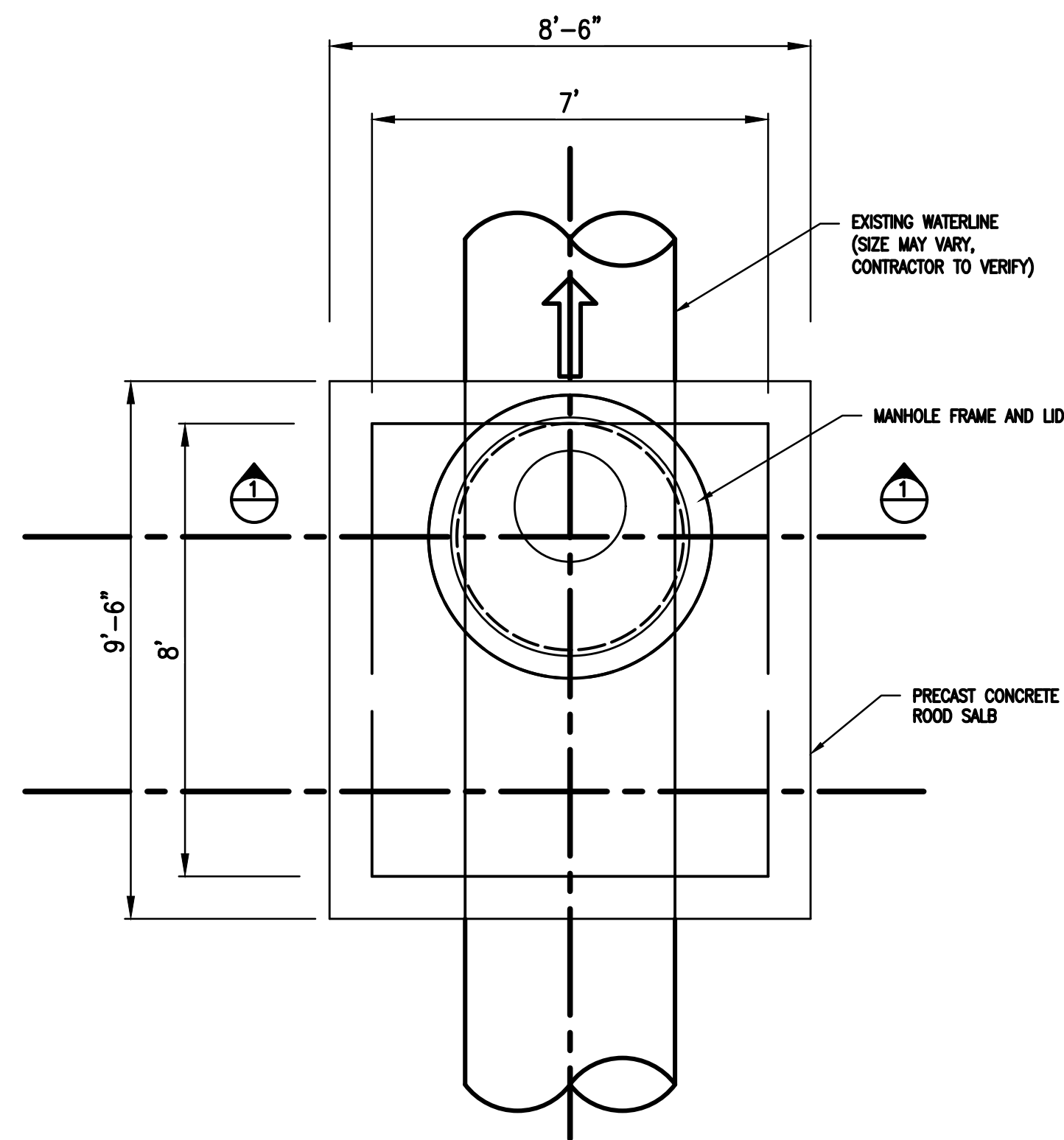
(revised September 2020)



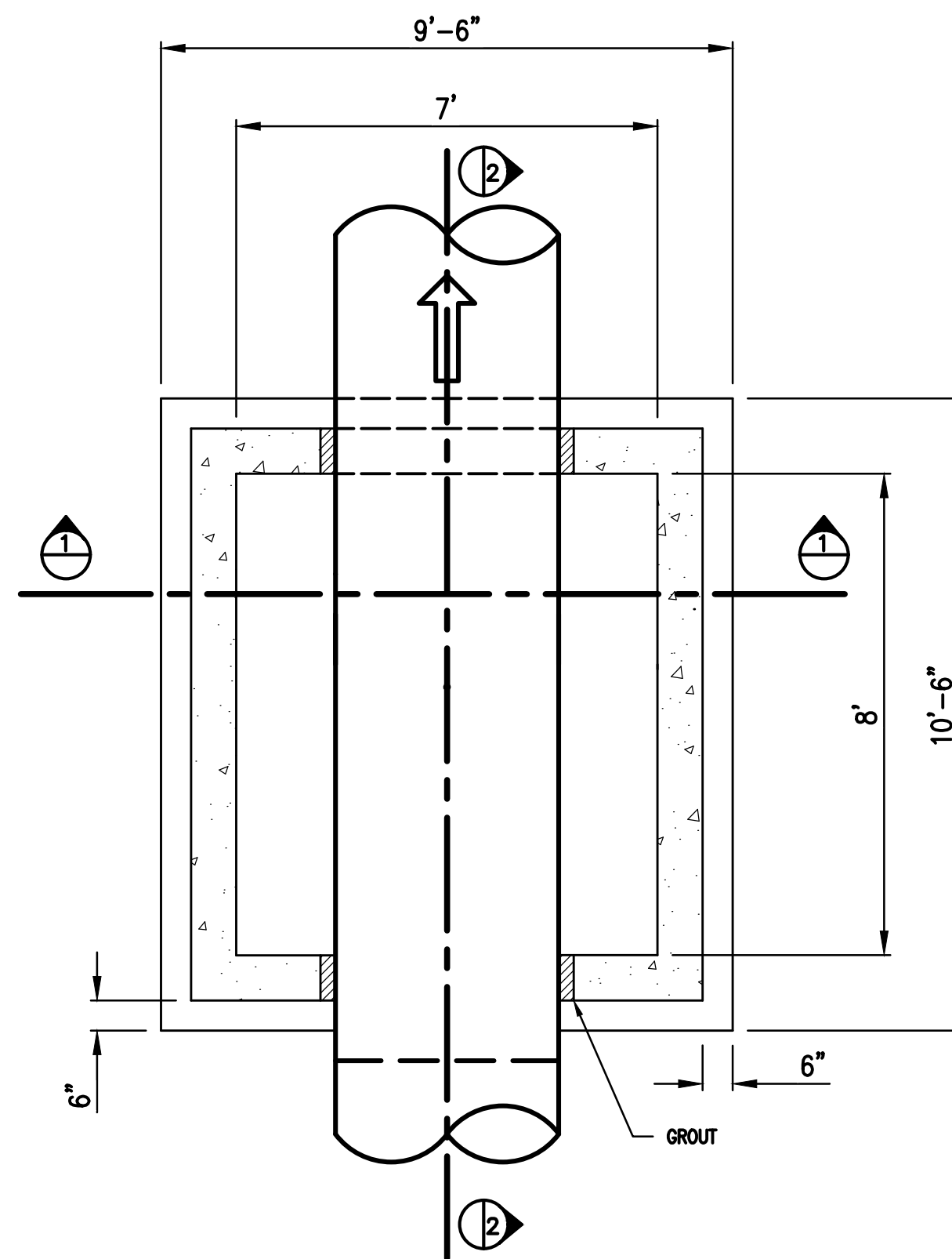
# ATTACHMENT B

Coastal Water Authority

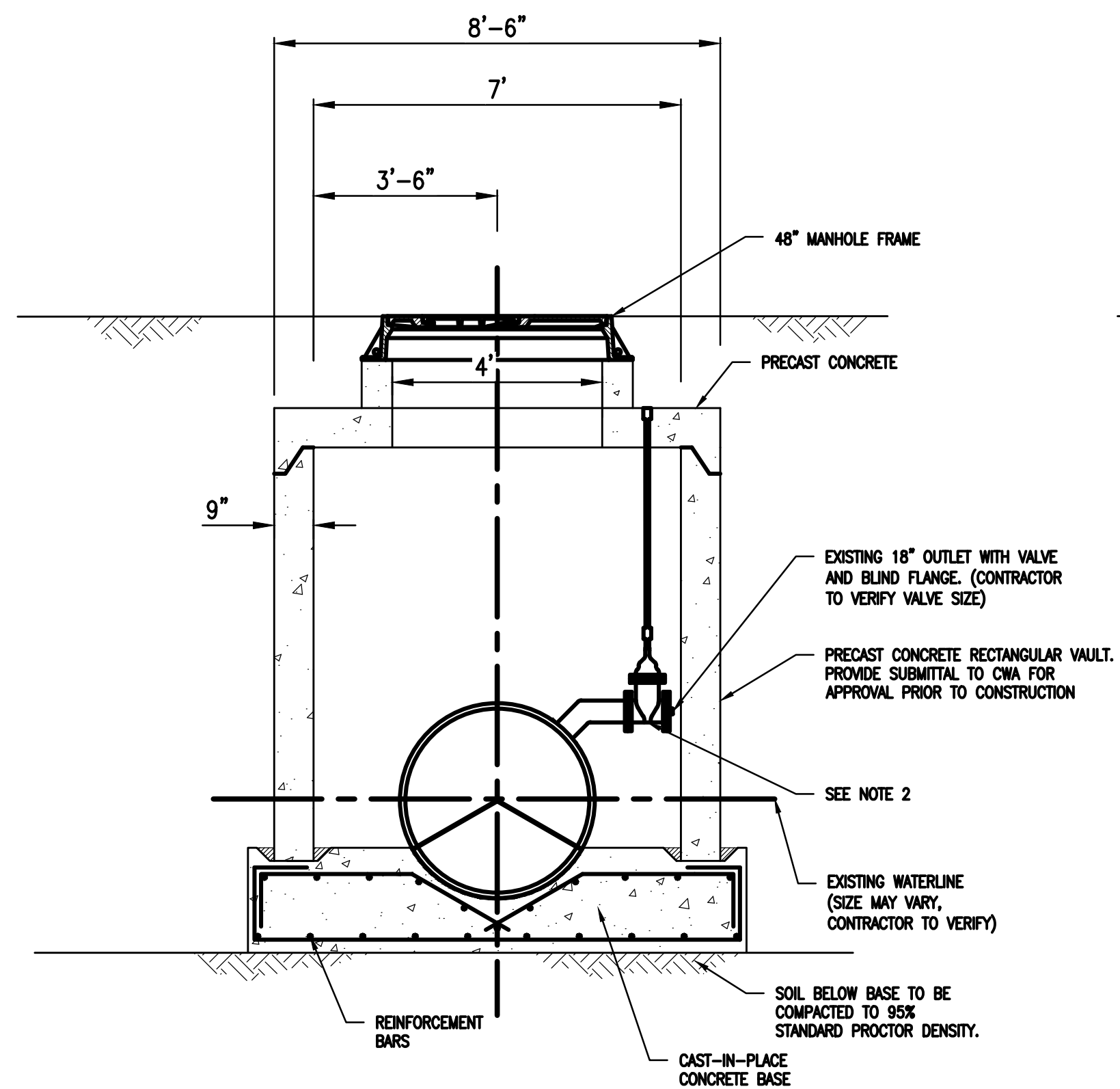
Raw Water Standard Connection Detail



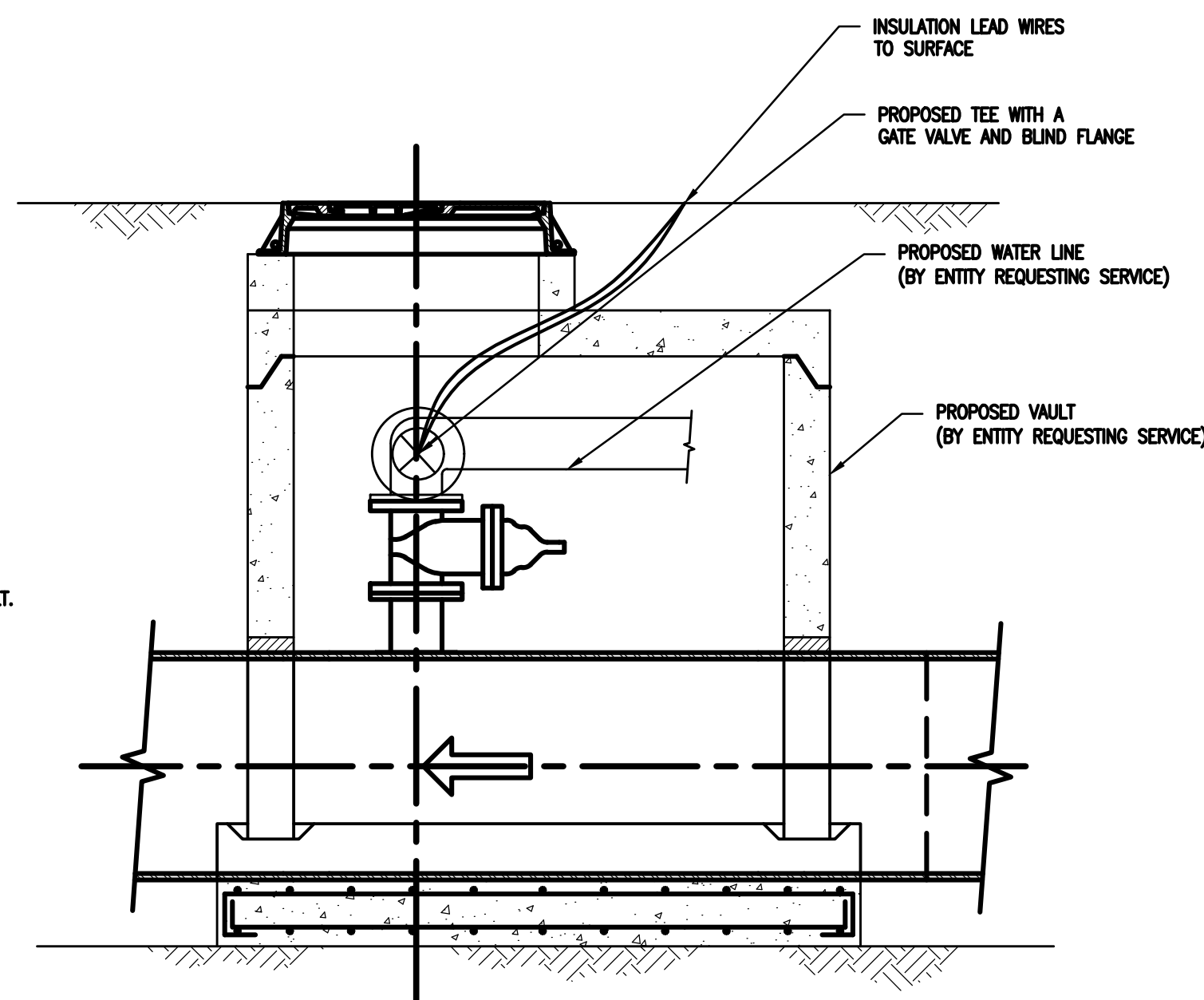
VAULT ROOF PLAN SCALE



VAULT PLAN SCALE



SECTION VIEW SCALE



SECTION VIEW SCALE

CONSTRUCTION NOTES:

1. ALL RAW WATERLINE CONNECTIONS MUST BE INSTALLED WITHIN A VAULT.
2. MAXIMUM RAW WATERLINE CONNECTION SIZE IS 18-INCH DIAMETER.
3. PROVIDE DUCTILE IRON PIPE PRESSURE CLASS 350 WITH ZINC COATING. ALL DUCTILE IRON PIPE SHALL BE RESTRAINED JOINT PIPING.
4. CONTRACTOR RESPONSIBLE TO CHECK CONDITION OF EXISTING VALVE AND NOTIFY CWA.
5. CONTRACTOR TO PROVIDE PIPE SUPPORT UNDER 18-INCH VALVE ADJACENT TO EXISTING CWA WATERLINE.
6. INSTALL A 2-INCH OPERATION NUT ON 18-INCH VALVE ADJACENT TO EXISTING CWA WATERLINE.
7. CWA DOES NOT REQUIRE AIR RELEASE VALVE ON RAW WATER CONNECTION.
8. IF NOT CONNECTING TO A TEE DOWNSTREAM OF VALVE/BLIND FLANGE, INSTALL TEE AND BLIND FLANGE TO FACILITATE AN ADDITIONAL CONNECTION WITHIN THE SAME VAULT.
9. ALL RAW WATER CONNECTIONS REQUIRE BACKFLOW PREVENTER.
10. RAW WATER FLOW METER IS NOT TO BE LOCATED WITHIN CWA RIGHT-OF-WAY OR EASEMENT.
11. POINT OF DELIVERY IS AT THE CWA WATERLINE. POINT OF MEASUREMENT IS AT THE FLOW METER LOCATION.
12. CONTRACTOR MUST CONTACT CITY OF HOUSTON FOR OTHER GUIDELINES AND REQUIREMENTS RELATED TO RAW WATER CONNECTION.
13. VALVE IS NOT CURRENTLY IN A VAULT.
14. THE INSTALLED VAULT MUST INCLUDE A SUMP.

**lan**  
**Lockwood, Andrews & Newnam, Inc.**  
 A LEO A DALY COMPANY  
 2525 Briarpark Drive Houston, TX 77042

SURVEYED BY:

**CWA OF TEXAS**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
**TRINITY WATER CONVEYANCE SYSTEM FOR THE CITY OF HOUSTON**  
**RAW WATER CONNECTION DETAILS**

DWG NO.  
 DRAWING SCALE  
 NOT TO SCALE  
 CITY OF HOUSTON PM  
 SHEET NO. XX OF XX

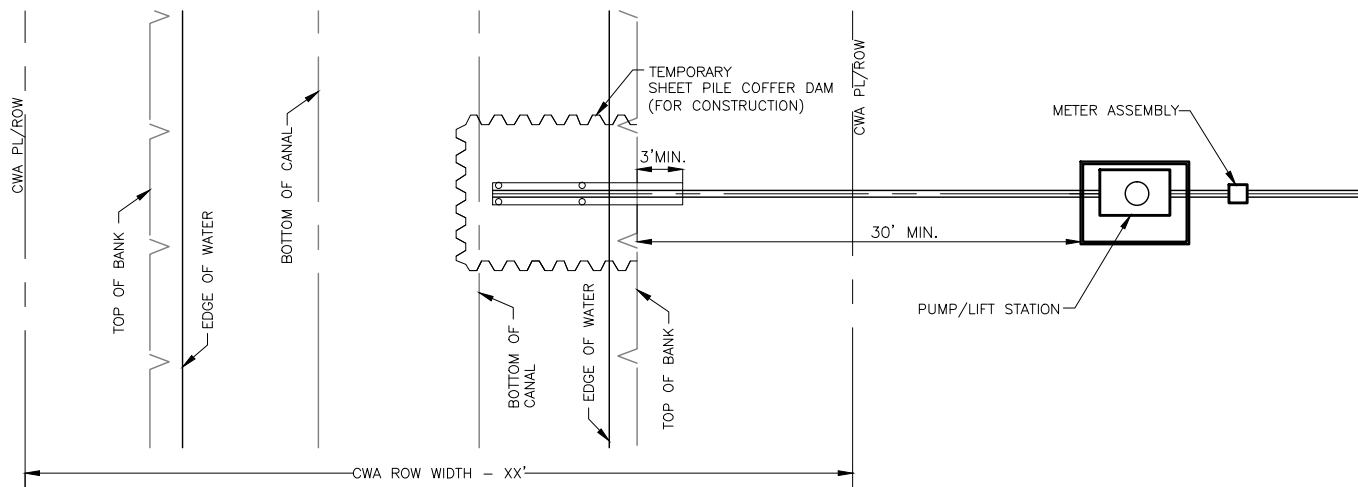
NO.	DATE	REVISIONS

USERNAME: Chintapudi, Hari C.  
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# ATTACHMENT C

Coastal Water Authority

Typical Pump Station Intake Structure Detail

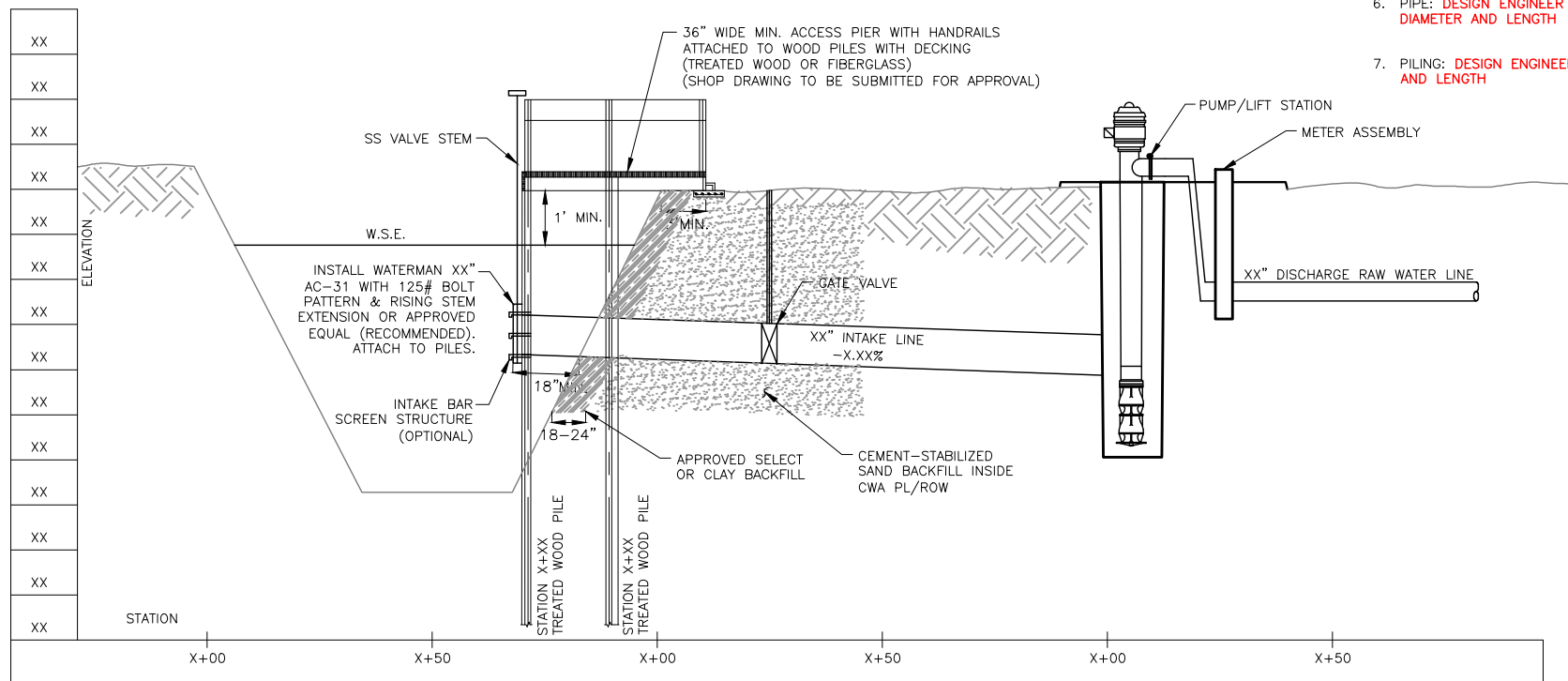


**GENERAL NOTES:**

1. THIS DETAIL ILLUSTRATES THE MINIMUM REQUIREMENTS FOR A PUMP STATION INTAKE STRUCTURE AND PROVIDES GENERAL GUIDELINES FOR THE INFORMATION TO BE INCLUDED WITH THE INTAKE APPLICATION.
2. INTAKE LINE SHALL EXTEND INTO CANAL A MINIMUM OF 18" FROM CANAL SIDE/BOTTOM.
3. ADD APPLICABLE NOTES FROM CWA EASEMENT AND RIGHT-OF-WAY ENCROACHMENT GENERAL REQUIREMENTS SECTION 3.1.C.2.

**DESIGN ENGINEER TO IDENTIFY THE FOLLOWING:**

1. PUMP STATION DATA: **DESIGN ENGINEER TO PROVIDE DESCRIPTION**
2. PUMPS: **DESIGN ENGINEER TO IDENTIFY PUMPS**
3. VALVES: **DESIGN ENGINEER TO IDENTIFY VALVES**
4. METER ASSEMBLY: **DESIGN ENGINEER TO PROVIDE METER INFORMATION**
5. CONNECTIONS: **DESIGN ENGINEER TO PROVIDE CONNECTION INFORMATION**
6. PIPE: **DESIGN ENGINEER TO PROVIDE PIPE MATERIAL, DIAMETER AND LENGTH**
7. PILING: **DESIGN ENGINEER TO PROVIDE PILE DIAMETER AND LENGTH**



**COASTAL WATER  
AUTHORITY**



**L&N** Lockwood, Andrews  
& Newnam, Inc.  
A LEO A DALY COMPANY  
2925 Briarpark Drive  
Houston, Texas 77042-3720  
Tel 713-266-6900 Fax 713-266-7596

Scale: N.T.S.

Job No. 120-11004-000

Date January 2014

Title: Typical Pump Station  
Intake Structure Detail

Exhibit: 2

ATTACHMENT D

Texas Commission on Environmental Quality

Form TCEQ-20700



**Texas Commission on Environmental Quality  
Form TCEQ-20700 - Instructions**

**General Instructions:**

The purpose of form TCEQ-20700 Backflow Prevention Assembly Test and Maintenance Report (T&M Form) is to document the results of testing a backflow prevention assembly. The form can be completed in one of two ways:

1. The form can be printed and completed by hand, or
2. The form can be completed electronically through an electronic medium (tablet, laptop computer, etc.). The yellow areas on the form can be completed electronically.

***NOTE: The form is intended to be completed on-site while testing is occurring. If the form is completed electronically, the electronic device must also be on-site for proper use of this form.***

The form must be printed and signed by the Licensed Tester that performed the work, unless TCEQ approved electronic recording keeping is in use. The hardcopy original must be provided to the Public Water System (PWS) as specified in ***Title 30 of the Texas Administrative Code 290.44(h)(4)(c).***

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**Specific Instructions:**

Please follow the instructions below when completing form TCEQ-20700:

1. Check boxes: If completing the form electronically, all check boxes can be selected to make the desired indication. Selecting a box will insert an “X” in the box.
2. When performing the test, if the “Initial Test” yields acceptable results, do not complete the “Repairs and Materials Used\*\*” or “Test After Repairs” rows on the form.
3. Remarks: If completing the form electronically, the “Remarks” section of the form is expandable, which means the final report can be more than one page. All pages of the T&M Report must be submitted to the water system.
4. Testing completed by a licensed tester must be documented on one form. Any follow-up testing performed by a different tester must be documented on a separate form.

**Things to remember:**

1. Differential pressure gauges:
  - a. In order to prevent contamination, gauges used on potable water backflow prevention assemblies must **not** be used to test non-potable backflow prevention assemblies.
  - b. Gauges need to be tested for accuracy annually and that date plus the serial number and other gauge information must be correctly recorded on the form. This allows Public water systems to ensure that the gauges are in compliance.
2. Annual testing of backflow prevention assemblies (those installed to protect against health hazards) or differential pressure gauges is to occur no more than 12 months from the last test date.
3. A tester’s license is based on the testing procedures described in the University of Southern California’s 10th edition manual. These procedures are expected to be used when testing backflow prevention assemblies.
4. Type II assemblies: This form can only accommodate a Type II assembly with a single check bypass.

**BACKFLOW PREVENTION ASSEMBLY TEST AND MAINTENANCE REPORT**

The following form must be completed for each assembly tested. A signed and dated original must be submitted to the public water supplier for recordkeeping \*purposes:

NAME OF PWS:	
PWS ID#:	
PWS MAILING ADDRESS:	
PWS CONTACT PERSON:	
ADDRESS OF SERVICE:	

The backflow prevention assembly detailed below has been tested and maintained as required by commission regulations and is certified to be operating within acceptable parameters.

**TYPE OF BACKFLOW PREVENTION ASSEMBLY (BPA):**

<input type="checkbox"/>	Reduced Pressure Principle (RPBA)	<input type="checkbox"/>	Reduced Pressure Principle-Detector (RPBA-D)	Type II	<input type="checkbox"/>
<input type="checkbox"/>	Double Check Valve (DCVA)	<input type="checkbox"/>	Double Check-Detector (DCVA-D)	Type II	<input type="checkbox"/>
<input type="checkbox"/>	Pressure Vacuum Breaker (PVB)	<input type="checkbox"/>	Spill-Resistant Pressure Vacuum Breaker (SVB)		

Manufacturer:	Main:	Bypass:	Size:	Main:	Bypass:
Model Number:	Main:	Bypass:	BPA Location:		
Serial Number:	Main:	Bypass:	BPA Serves:		

Reason for test:	New <input type="checkbox"/>	Existing <input type="checkbox"/>	Replacement <input type="checkbox"/>	Old Model/Serial #	
Is the assembly installed in accordance with manufacturer recommendations and/or local codes?				<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is the assembly installed on a non-potable water supply (auxiliary)?				<input type="checkbox"/> Yes	<input type="checkbox"/> No

TEST RESULT	Reduced Pressure Principle Assembly (RPBA)			Type II Assembly	PVB & SVB	
	DCVA		Relief Valve	Bypass Check	Air Inlet	Check Valve
	1 <sup>st</sup> Check	2 <sup>nd</sup> Check***				
<b>PASS</b> <input type="checkbox"/> <b>FAIL</b> <input type="checkbox"/>						
<b>Initial Test</b> Date: _____ Time: _____	Held at _____ psid Closed Tight <input type="checkbox"/> Leaked <input type="checkbox"/>	Held at _____ psid Closed Tight <input type="checkbox"/> Leaked <input type="checkbox"/>	Opened at _____ psid Did not open <input type="checkbox"/> Did it fully open (Yes <input type="checkbox"/> /No <input type="checkbox"/>	Held at _____ psid Closed Tight <input type="checkbox"/> Leaked <input type="checkbox"/>	Opened at _____ psid Did not open <input type="checkbox"/> Did it fully open (Yes <input type="checkbox"/> /No <input type="checkbox"/>	Held at _____ psid Leaked <input type="checkbox"/>
Repairs and Materials Used**	Main: _____ Bypass: _____					
<b>Test After Repair</b> Date: _____ Time: _____	Held at _____ psid Closed Tight <input type="checkbox"/>	Held at _____ psid Closed Tight <input type="checkbox"/>	Opened at _____ psid	Held at _____ psid Closed Tight <input type="checkbox"/>	Opened at _____ psid	Held at _____ psid

\*\*\* 2<sup>nd</sup> check: numeric reading required for DCVA only

Differential pressure gauge used:	Potable: <input type="checkbox"/>	Non-Potable: <input type="checkbox"/>
Make/Model:	SN:	Date tested for accuracy :

Remarks:	

Company Name:	Licensed Tester Name (Print/Type):
Company Address:	Licensed Tester Name (Signature):
Company Phone #:	BPAT License #
	License Expiration Date:

**The above is certified to be true at the time of testing.**

\* TEST RECORDS MUST BE KEPT FOR AT LEAST THREE YEARS [30 TAC §290.46(B)]

\*\* USE ONLY MANUFACTURER'S REPLACEMENT PARTS