CITY AND COUNTY OF SAN FRANCISCO
Port of San Francisco

Contract No. 2852
Amador Street Infrastructure Improvements

ADDENDUM No. 05
Issued: August 22, 2024

The following clarifications, changes, additions or deletions are incorporated into the Bid Documents as if a part of the original released Bid Documents. All other terms and conditions of the Bid Documents remain in full force and effect. Respondents to the Advertisement for Bids solicitation must acknowledge receipt of this addendum in their submittal by submitting a signed and completed copy of Section 00 43 20 (Acknowledgement of Receipt of Addenda).

CHANGES TO SPECIFICATIONS:

1) **Section 00 11 13:**

   - BID EXTENSION: Bid opening date moved to 8/29/24 @ 10:00 A.M.
   - Reinserted CRITICAL MILESTONE requirement to complete interim electrical work by 7/31/25

2) **Section 00 73 02:**

   - Reinserted CRITICAL MILESTONE and associated LIQUIDATED DAMAGES to complete interim electrical work by 7/31/25

3) **Section 01 11 00:**

   - Reinserted CRITICAL MILESTONE requirements to complete interim electrical work by 7/31/25

4) **Section 33 41 00.10:**

   - Revisions to address QBD 36 related to ASTM requirements and pipe casting.

PORT OF SAN FRANCISCO
TEL 415 274 0400 TTY 415 274 0587 ADDRESS Pier 1
FAX 415 274 0551 WEB sfport.com San Francisco, CA 94111

If the Bidder has any questions regarding this addendum, please contact Noel Aquino, Project Manager, at (415) 653-9517.

REMINDER: Bidders are required to acknowledge receipt of this addendum in Document 00 43 20.

Bids are due 08/29/24 at 10:00 A.M.

DocuSigned by:
Uday Prasad
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8/22/2024

Uday Prasad
Acting Chief Harbor Engineer, Engineering
Port of San Francisco
Pier 1, SF, CA 94111

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SECTION 00 11 13
Addendum 05
ADVERTISEMENT FOR BIDS
CITY & COUNTY OF SAN FRANCISCO
PORT OF SAN FRANCISCO

This Document includes a facsimile of the legal notice informing all qualified Bidders of the City's intent to solicit and receive Bids for the construction of the Project covered by the Bid Documents as defined herein for Contract No. 2852.

INVITATION FOR BIDS
For
Contract No. 2852
Amador Street Infrastructure Improvements

Optional Online Only Pre-Bid Meeting: July 23rd, 2024 10:00 AM-11:30 AM,
Optional Site Visit: July 23rd, 2024 1:30 PM to 2:30PM

Join on your computer, mobile app or room device
Click here to join the meeting
Meeting ID: 229 608 200 089
Passcode: 7ycTQ4
Download Teams | Join on the web
Or call in (audio only)
+1 415-906-4659,,863704401# United States, San Francisco
Phone Conference ID: 863 704 401#

Bids shall be submitted via email to **constructionbids@sfport.com** prior to the due date and time with the following in the **Subject: "AMADOR STREET INFRASTRUCTURE IMPROVEMENTS: BID CONTRACT NO. 2852".**

Hard copy bids shall be postmark stamped by due date or earlier. For more details see Section 00 21 13, Article 1.14.

3

Bids will be opened and read in public via Microsoft Teams meeting on August 29, 2024, 10:00 AM-10:30 AM

Join on your computer, mobile app or room device
Click here to join the meeting
Meeting ID: 293 270 761 175
Passcode: Vy4pNn
Download Teams | Join on the web
Or call in (audio only)
+14159064659,,721043473 United States, San Francisco
Phone Conference ID: 220 134 1#

The Port of San Francisco (the "Port") announces an Invitation for Bids ("IFB") for construction on AMADOR STREET INFRASTRUCTURE IMPROVEMENTS in San Francisco, CA. The work is to perform infrastructure improvements to replace gravity sewer and storm drains, roadway pavement, landscape, the existing defunct Amador Street sanitary pump station, associated discharge force main pipe, fittings and appurtenances that end at Amador Street utility corridor, and all related and incidental work. The new sanitary pump station shall be equipped with automated, redundant instrument controls with provisions for future system expansion.

For more information, contact the Project Manager, Noel Aquino (415) 274-0526 noel.aquino@sfport.com.

Contract Estimate:	$ 9,125,000
Buy America Requirements	Refer to Section 00 73 80 for Buy America Requirements.
Time Allowed for Completion: 2	Substantial Completion 639 consecutive Calendar Days., beginning with and including the official date of the Notice to Proceed set by the City. **Critical Milestone: Interim Electrical Work (See Section 01 11 00) is a Critical Milestone in this Project; it must be completed and ready for energization no later than July 31, 2025.** Final Completion no later than sixty (60) consecutive calendar days after the date of City's issuance of Notice of Substantial Completion. (Refer to Section 00 73 02)
Liquidated Damages:	Varies, refer to Section 00 73 02 for details
Contract Basis:	Refer to Bid Schedule under Section 00 41 00
License Required:	Class "A" California Contractors License
Goal for Disadvantaged Business Enterprise (DBE) Subcontracting Requirement:	DBE = 22.2% Female Participation Goal = 6.9% Minority Participation Goal = 25.6%
Wage Determinations:	State Wage Determination: 2024-1 Federal Wage Determination: CA20240018 (Note: Modification number may change if contract is awarded >90 days after bid advertisement date.)
Partnering Requirements:	Partnering Level 2 Refer to Section 01 31 33 for details.

Bidders are advised that this is a federal-aid project subject to equal employment opportunity provisions and Caltrans Race Conscious Disadvantaged Business Enterprise (DBE) program. Only Caltrans certifications can be used to calculate the DBE participation. The CMD Bid Discount is not applicable to this Contract.

In addition, the Port of San Francisco seeks to promote diversity within its contracting opportunities. As such, the City recommends that Bidders consider the composition of their teams in terms of gender, age, ethnicity, and race, and to utilize teams that include a diverse mix of staff at all organizational levels

If necessary, the Port will issue bid date changes by addendum and will post current date for receiving bids on the Bids and Contracts page at the Port's website address: https://sfport.com/business/contract-opportunities.

This notice is for information only. Please refer to the bid documents for specific requirements.

Insurance Requirements: Please refer to Section 00 73 16. The winning bidder will be required to submit requisite insurance documentation within ten (10) working days after the date on which the contract is awarded.

Schedule: Contractor shall be responsible for fully understanding scheduling constraints associated with certain marine construction activities and the Port approvals and permits from applicable government agencies, including the San Francisco Bay Regional Water Quality Control Board and U.S. Army Corps of Engineers. In accordance with these requirements, in-water work is permitted only between June 15 and November 30.

Contractor Qualifications: : The Bidders for this contract must meet the following minimum qualifications to be considered:

1. Valid contractor's license for Class "A" issued by the California Contractor's State Licensing Board with at least five (5) years of experience working on related projects,
2. Contractor shall have documented experience in performing a minimum of three (3) projects involving pavement renovation in an urban environment, sewer pipeline replacement, and pump station installation.
3. Contractor shall have documented experience in performing a minimum of three (3) water and/or wastewater pump station and/or treatment facility projects of similar scope and complexity within the last five (5) years.
4. Contractor shall have documented experience in performing a minimum of three (3) water main pipeline projects within the last eight (8) years from the date of Bid opening of this contract. Each qualifying project must include installation of at least 2,000 linear feet of 8-inch or larger diameter underground ductile iron pipe with restrained push-on joints for water distribution of transmission main.
5. Contractor shall have documented experience in performing a minimum of least three (3) sewer replacement projects of pipelines up to 36-inch diameter with substantial completion dates within eight (8) years from the bid date of this contract, including satisfactory installation of at least one thousand (1,000) linear feet to 21- inch (minimum) diameter sewer pipe at a depth of at least 10 feet (includes excavation and shoring support) per project.
   or
   at least one thousand (1,000) linear feet of 12-inch (minimum) diameter sewer pipe at a depth of at least 10 feet (includes excavation and shoring support) per project for the City and County of San Francisco with substantial completion within the last three (3) years from the bid date of this contract.
6. Safety Qualification: Complete the Safety Pre-Qualification Form (Prequalify for Construction | SFPUC), and submit the required OSHA 300A forms to prequal@sfwater.org.

Bid security in the form of a corporate surety bond or an irrevocable letter of credit (or certified check if required bid security is $15,000 or less) for ten percent (10%) of the amount bid must accompany each bid. For information on the City's Surety Bond Program, call Jennifer Elmore at (415) 217-6578.

In accordance with San Francisco Administrative Code Chapter 6, no bid is accepted and no contract in excess of $1,000,000 is awarded by the City and County of San Francisco until such time as (a) the Port Commission approves the contract for award and (b) the Port Executive Director or designee then issues an order of award. Pursuant to Charter Section 3.105, all contract awards are subject to certification by the Controller as to the availability of funds.

In accordance with San Francisco Administrative Code Chapter 6, Section 6.4, Contractor shall use to the maximum extent possible, recycled content materials, rather than virgin materials.

All contractors and subcontractors who bid or work on a public works project must register and pay an annual fee to the California Department of Industrial Relations ("DIR"). No contractor or subcontractor may be listed in a bid for a public works project unless registered with the DIR as required by Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)]. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the DIR pursuant to Labor Code section 1725.5.

This Project is subject to compliance monitoring and enforcement of prevailing wage requirements by the California Department of Industrial Relations and/or the San Francisco Office of Labor Standards Enforcement.

Minimum wage rates for this project must comply with the current requirements for payment of General Prevailing Wages as determined by the State Department of Industrial Relations. Minimum wage rates other than applicable General Prevailing Wages must comply with San Francisco Labor and Employment Code, Article 111, Minimum Compensation Ordinance.

This contract utilizes federal funding, which requires that the current David-Bacon wage rates for the applicable trades for this project need to be updated as of 10 days prior to the bid date. At the time of the bid the David-Bacon wage rates in place shall remain throughout the contract. If the State of California prevailing minimum wages are higher than the David-Bacon wage rates then the higher of the two shall be used. See Section 00 52 00-5.05 and Section 00 73 73 APPA for additional details.

Pursuant to San Francisco Administrative Code Section 6.25, "Clean Construction is required for the performance of all work unless a waiver of all or part of the requirements of that Chapter has been granted under Sections 25.5 or 25.7."

The Port reserves the right to reject any or all bids and waive any minor irregularities in any bid.

By Order of the San Francisco Port Commission,

DocuSigned by:
Uday Prasad
96F54B9756EC4DD...

8/22/2024

Uday Prasad, Acting Chief Harbor Engineer
Port of San Francisco
City and County of San Francisco

END OF SECTION

SECTION 00 73 02
ADDENDUM 05
CONTRACT TIME AND LIQUIDATED DAMAGES

1.1 SUMMARY

A. This Document specifies the limits of Contract Time and amounts of liquidated damages agreed to be assessed should the Work be incomplete after the limits of Contract Time.

1.2 CONTRACT TIME

A. The Work shall be commenced within 5 calendar days from issuance of the Notice to Proceed by the City, prosecuted diligently thereafter, and brought to Substantial Completion within the time limit of **639** consecutive calendar days, beginning with and including the official date of the Notice to Proceed set by the City.

1. The date of the Notice to Proceed will be set by the City within 14 calendar days after the certification of the Contract.

2. The time allowed for achieving Substantial Completion as specified above shall include the time required for public notification, application and approval for all required permits, and submittals prior to start of construction work.

2

Critical Milestones: Contractor shall complete Construction Work at the milestone within the Construction Time Limits as specified in paragraph [1.5] of Section 01 11 00 - Summary of Work. Critical Milestone: Interim Electrical Work (See Section 01 11 00) is a Critical Milestone in this Project; it must be completed and ready for energization no later than July 31, 2025.

B. Final Completion shall occur no later than **60** consecutive calendar days after the date of Notice of Substantial Completion.

1.3 LIQUIDATED DAMAGES

A. Failure to timely achieve Substantial Completion: The City and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay the City and County of San Francisco the sum of **one thousand** dollars (**$1,000.00**) for each calendar day that transpires with the Work not Substantially Completed after the time limit for achieving Substantial Completion specified in Paragraph 1.2A.

2

B. Failure to timely complete Critical Milestones: The City and Contractor agree as liquidated damages for delay (but not as a penalty), that the Contractor shall pay the City and County of San Francisco the sum of **six thousand and seven hundred** dollars (**$6,700.00**) for each calendar day that transpires with the Interim Electrical Work not completed by July 31, 2025, as specifed in Paragraph 1.2A.3.

C. Failure to timely achieve Final Completion: In addition, Contractor shall pay the sum of **two hundred fifty** dollars (**$250.00**) for each calendar day that transpires with the Project not Finally Completed after the time limit for achieving Final Completion specified in Paragraph 1.2B.

D. See Section 00 73 03 for Additional Liquidated Damages, which summarizes, but not

limited to, the other liquidated damages included in this Contract.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION

SECTION 01 11 00

SUMMARY OF WORK
ADDENDUM 05

PART 1 - GENERAL

1.1 SUMMARY

A The work to be done under this contract is located at Amador Street, City and County of San Francisco. This project is to perform infrastructure improvements to replace gravity sewer and storm drains, roadway pavement, landscape, the existing defunct Amador Street sanitary pump station and associated discharge force main pipe, fittings and appurtenances that ended at Amador Street utility corridor. The new sanitary pump station shall be equipped with automated, redundant instrument controls with provisions for future system expansion. and all related and incidental work.

1.2 SCOPE OF WORK

A Sewer Work includes, but is not limited to:

1. Mobilization and demobilization work.
2. Performing excavation and trench support work related to sewer work.
3. Constructing 6-inch diameter HDPE SDR 17 with fused joints force main and fittings on crushed rock encasement wrapped in geotextile fabric.
4. Constructing 6-inch diameter HDPE SDR 17 with fused joints force main in 10-inch diameter steel casing by pipe jacking method, and filling annular space with non-shrink grout.
5. Constructing manholes with new frame and cover.
6. Installing HDPE cleanouts.
7. Abandoning or removing existing sewers.
8. Removing existing railroad track facilities within sewer and storm drain trench.
9. Exploratory holes.
10. Modifying and reinstating existing laterals and culverts as necessary and as per City Representative to construct force main.
11. Saw cutting, removing and disposal of existing pavement.
12. Excavation, backfilling and compaction of sewer and force main trench.
13. Restoring pavement inside and outside of sewer and force main trench with 2-inch thick asphalt concrete wearing surface over 10-inch thick concrete base as necessary per excavation code.
14. Handling, transportation and disposal of hazardous excavated materials and contaminated soils, if necessary.
15. Supporting, working around and protecting certain San Francisco Water Department, Fire Department and other utility agency and company facilities in conjunction with the work under this contract; and all appurtenant work required in accordance with the Contract Documents and in accordance with San Francisco DPW Standard Specifications, latest edition.
16. Furnishing and placing of backfill material, if necessary.
17. Handling all drainage and ground water.
18. Performing incidental traffic routing and submitting Special Traffic Permit application and fee, if required.
19. Constructing 12-inch and 15-inch diameter Class V RCP on crushed rock bedding wrapped in geotextile fabric.

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B. Mechanical Work includes, but is not limited to:

1. A temporary gravity sewer shall be installed to accomplish the continuous operation of sewage pump station. The existing pump station will remain operation until the new pump station is successfully completed, start-up and commissioning. Subsequently, existing facilities can be demolished and removed.
2. Furnish and install four (4) sewage pumps (SP-1, SP-2, SP-3, & SP-4) as shown on the contract drawings. Furnish and install force main piping including but not limited to check valves, plug valves, valve boxes, air release valves, cleanout, vent pipe and necessary fittings for a complete operable sewage pump station. All piping shall be supported by stainless steel hardware.
3. Furnish and install one (1) dewatering pump (DW-1) and supply one (1) additional dewatering pump (DW-2) as spare pump as shown on contract drawings.
4. Furnish and install a permanent ladder inside the sewage sump for access per Port Plumbing Code requirements.
5. Furnish and install pump control to have two stage operation. Furnish and install all the necessary but not limited to pump control, float sensors and alarm for a complete pump control package.
6. Furnish and install gravity sewage main from existing manhole to the new sewage sump.
7. Partial or complete demolition of the existing pump station sump/sanitary collection structure and force main.

C. Structural Work includes, but is not limited to:

1. Temporary relocation of existing concrete blocks between the pump station and waste concrete dump station. Demolition of the existing concrete containment structure, slab on grade, and saw cut and demolish section of existing concrete screen wall for new opening.
2. Installation of dewatering system.
3. Installation of permanent sheet pile shoring system, and excavation within for new pump station structure.
4. Installation of torque-down piling.
5. Installation of reinforcing steel and placement of concrete for new pump station structure, and slabs on grade.
6. Installation of structural steel beams, checkered plate deck, ~~chain link fence, and rolling gate~~.
7. Demolish top portion of existing wet well and backfill abandoned wet well.

D. Electrical Work includes, but is not limited to:

1. Furnishing, installing, testing, and commissioning all elements required to establish a new 240V, 3-phase utility power system, including underground service conduits, service pedestal with transfer switch and generator connection, metering hardware, system grounding and bonding, and other items as may be required to form a complete, functional, and code compliant system.

2. Relocation of existing fuel system devices, including coordination with owner, and furnishing all required conduit, wiring, and appurtenances as required to re-establish the fuel system functionality at another location.

3. Furnishing and installing all required conduit (both encased and surface mounted), conductors, cables, conduit seals, sump termination panel, and other hardware, as shown in the E-series drawings or as required to form a complete, functional, and code compliant system.

4. Fabrication, installation, testing, programming, calibrating, and commissioning of a free-standing pump station control panel, including Programmable Controller (PLC), Human-Machine Interface (HMI), “smart” motor controllers, radar-based level sensor, sump level switches, wireless communications module, network switches, interfaces, cables, terminals, protective devices, and other elements as shown in the drawings and as required for the system to function as intended.

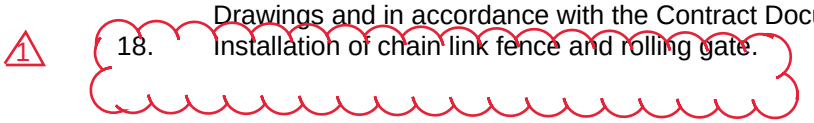
E. Paving Work includes, but is not limited to:

1. Mobilization and demobilization work.
2. Incidental traffic control work.
3. Excavating, removing and disposing of existing pavement, concrete base, parking strip, curb and sidewalk.
4. Supporting and working around existing utilities.
5. Handling all drainage or ground water.
6. Removing surplus material.
7. Cleaning project site.
8. Furnishing and placing of backfill material.
9. Full depth planning per 2-inch depth of cut.
10. Constructing 2-inch thick asphalt concrete wearing surface over 10-inch thick concrete base, concrete roadway swale,18-inch wide concrete swale, 6-inch thick concrete driveway pavement, and 6-inch wide concrete curb.
11. Removing railroad tracks.
12. Adjusting City-owned manhole frame and cover to grade.
13. Adjusting City-owned catch basin frame and casting to grade.
14. Adjusting City-owned hydrant and watermain valve box casting cover to grade.
15. Performing all related and incidental work, all where and as shown on the Drawings and in accordance with the Contract Documents.

F. Landscape Work includes, but is not limited to:

1. Excavating, removing and disposing of existing asphalt paving, baserock and soil to a depth of 18”.
2. Sawcutting existing asphalt paving and removing and disposing of paving materials, baserock and soil to a depth of 36”.
3. Sawcutting existing concrete gutter and removing and disposing of concrete, baserock and soil to a depth of 42”.
4. Installing permeable unit pavers on top of 2” thick gravel leveling course, 6” thick gravel base and 28” thick gravel reservoir on top of compacted subgrade.
5. Picking up granite curbs at City of San Francisco salvage yard and delivering to the job site without any damage occurring during hauling, handling and unloading of the curbs.
6. Installing recycled, mortared granite curbs set in concrete footings around stormwater planters.
7. Installing mortared cobble at bioretention inlets at each stormwater planter.
8. Installing structural soil to a depth of 36” at each stormwater planter.
9. Rough grading and compacting soils to compaction levels per Contract Documents.
10. Preparing planting areas in accordance with the Contract Documents including importing soils, off-hauling soils, installing cardboard mulch and other mulches in planting areas.

11. Procuring and planting 24” box trees at each stormwater planter with cardboard sheet mulch, 3” layer of crushed rock mulch and tree stakes.
12. Procuring and planting 24” box trees at property at 701 Amador Street, behind property fence.
13. Procuring and planting stormwater planters with specified plant material.
14. Procuring and planting streetscape planting areas with specified plant material.
15. Applying 3” layer of crushed rock mulch in all planting areas.
16. Performing a landscape maintenance program for the 1095-day Maintenance Period and requesting Maintenance Observations by City Representative at every specified progress maintenance milestone through Final Acceptance in accordance with the Contract Documents.
17. Performing all related and incidental work, all where and as shown on the Drawings and in accordance with the Contract Documents.
18. Installation of chain link fence and rolling gate.



1.2 CONTRACT

A The Project will be governed by a single lump sum contract under direction of a single designated Prime Contractor as described in the Agreement Forms.

B Responsibility for installation and completion of the work is upon the designated Prime Contractor with whom the City enters into a Contract for the work herein described.

1.3 CONTRACTOR’S QUALIFICATIONS

A Contractors shall have completed a minimum of 5 projects similar in scope and complexity or greater in the past 5 years. If bidder does not meet the experience requirements stated in this specification, the City may determine the bidder to be unqualified to perform the work under this contract.

1.4 SUBMITTALS, PUBLIC NOTIFICATION, AND MEETINGS BEFORE NOTICE TO PROCEED (NTP)

A. Contractor is encouraged to submit the required Traffic Control Plans as soon as possible after the date of the Award in order to ensure that the said plans get approved by the City prior to start of actual field work.

B. In addition, Contractor is encouraged to send out the required 30-Day Public Notification letters as soon as possible after the date of the Award, provided that the said notices are sent out no more than 60 calendar days before the start of work. Refer to DPW Order No. 176,707, Regulations for Excavating and Restoring Streets in San Francisco, for more details.

C. The City Representative will schedule a Pre-Construction meeting as soon as possible after the date of the Award in order to discuss schedules and sequence of operations with the Contractor.

1.5 SEQUENCING OF CONSTRUCTION

A After award and certification of the contract, a pre-construction meeting will be scheduled with the Contractor to determine the official date for commencement of the work. No fieldwork can begin prior to the Contractor’s receipt of written permission from the City Representative. The City shall have full jurisdiction and responsibility of the property until the commencement date for fieldwork.

B Contractor shall be familiar with the terms, conditions, and payment schedule required by suppliers prior to submitting bid. Any delays to the custom fabricated item procurement schedule caused by incomplete or inaccurate shop drawing submittals and/or failure to comply with these terms, conditions and payment schedule required by the material suppliers, shall be the responsibility of the Contractor.

2 C An interim milestone has been set to complete the work involved related to Bid Item 34A and as described in Section 01 20 00 no later than July 31, 2025

1.6 WORK SCHEDULING

A Contractor shall coordinate its operations with the City and shall incorporate in its Progress Schedule activities for all special events that will require Contractor to suspend its operations at the project site.

B The Contractor's working hours shall be as specified in Section 00 72 00 – General Conditions, subparagraph 1.01A.63, except as specified otherwise in these Specifications.

C The Contractor shall not commence site work prior to receiving the Engineer's approval of the Construction Schedule. No Work shall commence prior to the approval of applicable traffic control plans, storage and parking plans, and flagger resumes and certificates. The Contractor will be levied damages, as specified in Section 00 73 03, Additional Liquidated Damages, of the Project Manual, for delay of Work.

1 D The Contractor shall not commence any excavation in the public right-of-way without a valid Encroachment permit issued by the Port of San Francisco. ~~excavation permit issued by the San Francisco Department of Public Works, Bureau of Street Use and Mapping.~~ The Contractor shall submit a copy of the encroachment permit.

1.7 CONTRACTOR USE OF SITE

A Use of Site: Limit use of the site for construction operations necessary to perform the Work indicated on the Drawings. Obtain prior written approval from the City for access to areas of the site occupied by the City. Protect and repair or restore to the existing condition surrounding areas damaged by Contractor's operations.

B Contractor's Work Area: The Contractor's work area is limited to the areas included within the limit of work as shown on the Contract Drawings and as adjusted by the temporary construction fencing.

1. Refer to Section 01 50 00 – Temporary Facilities and Controls for work area maintenance requirements.

C Additional Staging and Storage:

1. Provide additional staging and storage areas as necessary for Contractor's operations at no cost to the City.
2. Do not utilize City streets for additional staging and storage areas.
3. Do not enter upon or use any property not under control of the City until a written temporary construction easement agreement has been executed by the Contractor and the property owner, and a copy of said agreement furnished to the City Representative prior to said use. Neither the City nor the City Representative shall be liable for any claims or damages resulting from Contractor's unauthorized trespass or use of any such properties.

D Maintenance of Work Area: Maintain the work areas in a safe condition at all times. Remove all graffiti and accumulated rubbish and debris material deposited within the construction site at the end of each work day. The Contractor is responsible to maintain

the project area for the entire duration of the Contract. Clean and restore the work site at completion of the work to the condition that existed prior to the start of work.

E Security Of Contractor's Work Areas: Security of Contractor's work areas and its property, equipment, construction materials and all other items contained in Contractor's staging areas or elsewhere on the construction site shall be Contractor's sole responsibility at all times.

1.8 SPECIAL INSTRUCTIONS

A. The Contractor shall submit a Port of San Francisco (Port) Application for Encroachment Permit prior to the start of the work. Permit application is available through the link:

http://sfport.com/sites/default/files/Business/Docs/Permit%20Services/Applications/Encroachment%20Permit%20Application_060917.pdf

The Contractor shall provide a Performance Deposit of $25,000 with the Application for Encroachment Permit. The City will return the deposit fully, after the work is satisfactorily completed and approved by the City Representative.

B. The Contractor shall perform exploratory hole or pothole work prior to installation of 24-inch diameter steel casing by trenchless method. The Contractor shall notify the City Representatives of any conflicts with existing utilities and other obstructions prior to trenchless work.

C. The Contractor shall coordinate with the Port through the City Representative for requirements when working within the limits of active railroad tracks.

1.9 CITY'S USE OF EQUIPMENT PRIOR TO COMPLETION OF CONTRACT

A During the course of construction and before final acceptance of the work of the Contract, City personnel may be required to use various major systems and sub-systems installed under this Contract as provided in Paragraph 9.06 of the General Conditions.

B Such use or occupancy by City personnel will be limited to the starting and stopping of such systems, and Contractor shall be solely responsible to provide all interim repair and maintenance of such equipment as recommended by the equipment manufacturers. Contractor's responsibility for repair and maintenance shall continue from the date of beneficial use by the City of any equipment or system installed under this Contract until the date of the City's acceptance of Contractor's Application for Final Payment.

1. Submit a Certificate of Guarantee secured by Contractor's Performance Bond binding the Contractor to perform all repair and routine maintenance tasks as described above. Refer to Section 01 78 36 - Warranties.
2. Provide written endorsement from Contractor's insurance carrier and Surety to the City Representative permitting the operation of equipment by City personnel as described above.

C Use and occupancy by the City shall not be deemed to constitute a waiver of claims on behalf of the City against the Contractor.

D The City will not accept any materials, equipment, systems or sub-systems furnished under this Contract which have been used by Contractor for construction purposes during the course of the Work.

1.10 ENVIRONMENTAL, HAZARDOUS OR CONTAMINATED MATERIALS WORK

A. Work will involve working in contaminated soils and environments. The Contractor shall adhere to the following requirements as written in its specific section:

1. Available Project Information – Refer to Section 00 31 00
2. Environmental Procedures - Refer to Section 01 35 43
3. Additional Environmental Procedures - Refer to Section 01 35 50.
4. Regulatory Requirements - Refer to Section 01 41 00.
5. Health & Safety Criteria - Refer to Section 01 35 45.
5. For Stormwater, Erosion and Sediment Controls requirements - Refer to 01 35 43
6. Excavation area limits (at any given time) that shall trigger additional requirements of the San Francisco Department of Public Health (SFDPH) Dust Control Ordinance - Article 22B, and the California Code of Regulations, Title 17, Section 93105 - Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations in areas of Serpentine containing Naturally Occurring Asbestos (NOA), and Cal/OSHA. Refer to Sections 02 81 05 and 02 81 10.
7. For soil profiling, environmental training, manifest requirements, stockpiling, re-use of excavated soils, import fill criteria handling, transportation and disposal of excavated materials and contaminated soils - Refer to Section 02 81 10.
8. The Contractor is alerted that soils containing Serpentine (Naturally Occurring Asbestos) shall be encountered at the site during the excavation phase of this Contract. Refer to Sections 02 81 05 and 02 81 10.
9. For dewatering requirements during construction refer to Section 31 23 19.
10. As per the Survey report: *Asbestos Survey Report, Reinforced Concrete Structure, Amador Pump House, Envirosurvey Inc., July 2016*, the Pump Station west perimeter wall was found to contain trace (<1%) asbestos, Refer to Section 02 41 00 Demolition to handle this concrete meeting regulatory compliance.

B. The Contractor shall refer to the following environmental and geotechnical reports:
1. Geotechnical Investigation, Amador Street Sanitary Pump Station Improvements, T&R/RYCG, July 2011
2. Geotechnical Investigation, Pier 94 Backlands Improvements, T&R/RYC, July 2012

C. The Contractor is strongly advised to familiarize itself as to the actual site conditions that may be encountered during construction by all means available to it including, but not limited to, the use of USGS geologic maps.

D. If the Contractor by its means and methods disturbs, grades or excavates more than one half acre surface area (21780 sq ft) at any given time, then the Contractor shall submit a

Site-Specific Dust Control Plan (including Air Monitoring Protocols) for the review and approval from the City Representative and the San Francisco Department of Public Health, prior to start of construction. The Contractor at its own cost shall then furnish all labor, equipment, and means required to conduct the ambient and perimeter air monitoring as required by the San Francisco Department of Public Health (SFDPH) Dust Control Ordinance - Article 22B, and the Air Quality Monitoring Guidelines for San Francisco Health Code (SFHC) Article 22B, Real Time Dust Monitoring and Reporting. Refer to Section 01 57 30.

E. If the Contractor by its means and methods disturbs, grades or excavates more than one acre (43560 sq ft) of the site at any given time in an area containing Serpentine/Naturally Occurring Asbestos (NOA), then the Contractor at its own cost shall then furnish all labor, equipment, and means to comply with the BAAQMD's requirements, terms of approval of the Asbestos Dust Mitigation Plan (ADMP) and California Code of Regulations, Title 17, Section 93105. Refer to Section 02 81 05.

F. Unforeseen hazardous/contaminated material work: In the event that unforeseen hazardous/contaminated material is discovered beyond the above referenced reports, the Contractor shall immediately notify the City Representative both verbally and in writing. In the event that unforeseen Hazardous material is discovered, all work in the affected area will stop pending further direction from the City Representative. Upon receipt of such notification, the City, at its sole option, may either

1. Stop all work in the affected area pending further direction from the City Representative

2. The City Representative shall determine whether the remediation/abatement and hazard removal process requires suspension of all, none or any part of the work under this Contract.

3. The City will perform the remediation/abatement work using its own forces or using an outside contractor specializing in remediation/abatement work or

4. Direct the Contractor to perform all or any part of the remediation/abatement and hazardous materials removal work.

5. If the City Representative directs the Contractor to perform the unforeseen remediation/abatement and removal of the hazardous materials, the City Representative will do so by change order, and the Contractor must promptly provide a properly licensed and insured subcontractor (with CSLB hazardous substance removal certification and C-22 license pertinent to the task as per applicable law) to perform remediation/abatement work.

6. Refer to Section 00 73 16 – Insurance Requirements for a description of the Contractor's required insurance.

G. All work that affects intact paint with any level of lead will be performed by the Contractor or its sub contractors under the Cal/OSHA Lead in Construction Standard 8 CCR 1532.1 as well as all Federal, State, and local regulations at no additional cost. If personal exposures to the workers exceed the 8-hr Permissible Exposure Level (PEL) of 50 micrograms/cubic meter, such worker(s) must have received training as a CDPH Certified Lead Worker (as per 17 CCR Division 1, Chapter 8).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 33 41 00.10

REINFORCED CONCRETE PIPE

Addendum 05

PART 1 - GENERAL

1.1 SUMMARY

This section covers the material specifications, factory and field testing for the reinforced concrete pipe (RCP).

1.2 RCP AND FITTINGS

Precast reinforced concrete pipe and fittings will be installed under the requirements of Section 33 33 00 and the applicable requirements in Section 304 of the Standard Specifications.

1.3 SUBMITTALS

A. Refer to Section 01 33 00 for submittal procedures.

B. Within a minimum of five (5) working days prior to commencement of plant testing, the Contractor shall notify the City Representative so that tests may be witnessed if desired. Three edge bearing testing of RCP shall be in accordance with ASTM C76.

C. Shop Drawings and Design Calculations: Detailed shop drawings showing the D-load, cement type, concrete strength, and details of the wall class, and fittings. These details shall include the type of cage or cages, the location of the cage or cages in the pipe wall, the size and spacing of circumferential and longitudinal reinforcing steel, and the cross-sectional area of reinforcing steel in each cage per lineal foot of pipe. Submit design calculations.

1. The gasket details shall include the diameter of the cross-section and the unstretched diameter and volume. Pipeline layout drawings shall include pipe numbers, where applicable, stationing, manhole and structure locations, and all other pertinent details required to construct locations, and all other pertinent details required to construct the pipeline. No pipe manufacturing will be allowed prior to acceptance of the calculations and drawings by City Representative.

2. Product Data: Gaskets.

3. Certifications: Test certificates guaranteeing that the pipe furnished hereunder is in compliance with the requirements of the Specifications.

D. The Contractor shall prepare, submit for review, and not begin trench construction, until given approval by the City Representative of a Joint Layout Plan of the entire pipe under this contract. This plan shall include all details necessary for the construction. Such details shall be in accordance with the standards of the respective manufacturing industry, ASTM, AWWA, etc., except as modified by requirements within these Specifications.

E. The Joint Layout Plan shall include but not be limited to the following:

1. Steel wall bell detail including gasket spigot pipe connecting to reinforced concrete structures.
2. Rubber or Neoprene rubber gaskets.

3. All RCP bells shall be placed in the same direction unless otherwise approved by the City Representative.

4. Closing joint detail including coupling as necessary.

5. Proposed pipe delivery schedule.

6. Layout plan for proposed alignment showing customized spigot end pipe length, graphical layout and spreadsheet count of pipes.

F. Submit for review test reports of the physical properties of the profile gaskets. 2

G. The Contractor's installation drawings, after approval by the RE, shall be used to supplement the Contract Drawings. The installation and detail drawings shall utilize an identification system for piping elements that will ensure their correct placement when received in the field.

1.4 QUALITY ASSURANCE

Quality control records of tests required by the Specifications.

1.5 MAKING OF PIPE

A. Each pipe section shall be identified by indicating the following:

1. Name of manufacturer.
2. Date of manufacture.
3. Inside diameter of pipe, in inches.
4. Length of pipe, in feet.
5. Class of pipe or D-loading in pounds.
6. Top of pipe if elliptical reinforcing is used.
7. Sequential numbering of each piece of pipe.

PART 2 - PRODUCTS

2.1 CLASS V RCP

RCP materials designated on Plans as Class V shall conform to the requirements of latest ASTM Designation C76 and the applicable requirements of Section 304 of the Standard Specifications. The designated D-load to produce a 0.01-inch crack of pipe shall be 2000. The D-load to produce the ultimate load shall be 3000. Class V RCP shall be designed and manufactured with concrete strength at 5000 psi with wall C design. The RCP shall be vertically cast (dry cast) pipe. **Concrete shall have a minimum slump of 2 ½ inches and pipe shall remain in the form for a minimum of 6 hours.** 2

2.2 GENERAL REQUIREMENTS FOR ALL RCP

All RCP shall be designed and manufactured with minimum wall B Design. For all RCP, double circular steel reinforcements shall be provided. The area of the outer cage steel reinforcement shall not be less than 75 percent of the inner cage. Joints of RCP shall be of Deep Bell (Flared Bell) with gasket type. Design calculations shall be submitted for approval. No wire fabric/mesh or welded wire design shall be allowed. All pipe to pipe connections shall be of a water-tight bell/spigot connection. No cast-in-place joint connections will be allowed.

2.3 LONGITUDINAL BARS

Not less than 12 longitudinal bars at approximately equal spacing shall be provided for each cage. A minimum 3/8-inch diameter size shall be used for the longitudinal bars.

2.4 CONCRETE COVERING

A minimum 1-1/2 inches concrete covering over reinforcing steel from the outside and one inch from the inside surface of the pipe shall be provided. Cement shall be Type II conforming to ASTM C150.

2.5 INTERNAL WORKING PRESSURE

Internal working pressure shall be designed for 20 feet.

2.6 PIPE JOINTS

A. The pipe shall be furnished with bell-spigot ends for the open cut construction. Pipe joints of 12-inch and 15-inch shall be single gasket design. Refer to 3.14 of this Section for details on hydostatically testing single gasket joints.

B. The joint surfaces shall be of such shape and dimensions that the joints will be self-centering when the pipes are laid, so that the gasket will not be required to support the weight of the adjoining pipe. The joint shall be designed and made so that when completed, the pipe will form a continuous line without projections, indentations, offsets, or irregularities of any kind, and shall be capable of satisfying the pressure and leakage requirements specified.

C. Gaskets shall be rubber profile in accordance with ASTM C443 specifications. Only manufacturer-recommended lubricants shall be used. 2

D. Steel pipe wall bells or fittings to be encased in the reinforced concrete structures shall be fabricated as shown on Plans.

2.7 PIPE LENGTH

The length of each pipe section shall be determined by the Contractor based on the field conditions. Pipe ends shall be square with the axis of the pipe within 1/4 inch except when beveled ends are furnished. In areas where the pipe ends connect to RC structures, the first joint on both sides of the structure must be a maximum of 4’ from the edge of structure. Pipe joints shall not be located where an existing side sewer or culvert is supposed to reconnect.

2.8 BEDDING

Bedding material and details shall be as shown on H-drawings.

PART 3 - EXECUTION

3.1 DISTRIBUTING MATERIALS

Distribute materials along the trench only as will be used each day unless otherwise approved by the City Representative. Store materials in a manner that will not be a hazard to traffic or to the public in general, will not obstruct access to adjacent property, or will not obstruct other Contractor's working in the area.

3.2 HANDLING AND TRANSPORTATION

A. During loading, transportation, unloading, storage, and laying, every precaution shall be taken to prevent damage to the pipe. Trucks, trailers, or railway cars used for transporting coated pipe shall be provided with bolsters between each layer of pipe curved to fit the outside of the pipe.

B. Lifting of pipe during unloading shall be done using two slings placed at the quarter points of the pipe sections. Pipe may be lifted into the trench using one sling near the center of the pipe, provided the pipe is guided to prevent uncontrolled swinging and no damage will result to the pipe or harm to the workers. The slings shall bear uniformly against the pipe. When not being handled, the pipe shall be supported on timber cradles or on properly prepared ground, graded to eliminate all rock points and to provide uniform support along the full length. Any unit of pipe that, in the opinion of the City Representative, is damaged beyond repair shall be removed from the site of the work and replaced with another unit.

C. Pipe and fittings shall not be stored on rocks or gravel, or other hard material which might damage the pipe or lining and coating. No pipe shall be allowed to rest on the bell end of the pipe. This shall include storage areas and along the pipe trench.

D. Heavy canvas, or nylon slings of suitable strength shall be used for lifting and supporting materials; do not use chains or cables.

3.3 RUBBER GASKET STORAGE

A. Store all rubber gaskets in a cool, well-ventilated place and do not expose to the direct rays of the sun. Do not allow contact with oils, fuels, petroleum, or solvents.

3.4 PIPE PREPARATION AND HANDLING

A. Each pipe and fitting shall be carefully inspected before being installed. The interior and exterior shall be inspected, and all damaged areas patched in the field with material equal to the original. Any pipe or coating system which, in the opinion of the City Representative, is damaged beyond repair shall not be used and shall be promptly removed from the site. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after installation.

B. Use proper implements, tools, and facilities for the safe and proper protection and installation of the pipe. Carefully handle pipe in such a manner as to avoid any physical damage to the pipe. Do not drop or dump pipe into trenches under any circumstances.

3.5 PREPARATION OF TRENCH

A. Line and Grade:

1. For pipelines intended to be straight, do not deviate more than 1 inch from line or 1/8 inch from grade. Measure for grade at the pipe invert, not at the top of the pipe, because of permissible variation in pipe wall thickness.

2. Grade the bottom of the trench by hand to the line and grade to which the pipe is to be laid, with proper allowance for pipe thickness and pipe base. Remove hard spots that would prevent a uniform thickness of bedding. Before laying each section of the pipe, check the grade with a straightedge and correct any irregularities found. The trench bottom shall form a continuous and uniform bearing and support for the pipe at every point between bell holes, except that the grade may be disturbed for the removal of lifting tackle.

3. Geo-Fabric, if required, shall be placed inside the trench and thoroughly compacted as shown on Plan before any bedding to be put on.

4. Pipe bedding shall be compacted in a single lift to a minimum of 90 percent relative compaction. Thickness shall conform to the Drawings.

   If during pipe installation it is found that a pipe section will be at an incorrect grade, that piece shall be removed and the base regraded to the proper elevation.

B. Bell (Joint) Holes: At the location of each joint, dig bell (joint) holes of ample dimensions in the bottom of the trench and at the sides as required to permit the joint to be made properly and to permit easy visual inspection of the entire joint and checking the joint gap and the gasket with a feeler gauge.

C. Removal of Water: The trench shall be kept dry until the pipe laying and jointing are completed.

D. Corrosion protection, if required, shall be used to protect pipe from corrosion in areas of soil contamination.

3.6 PREPARING PIPE FOR TRENCH

A. Inspect each pipe and fitting before the pipe and/or fitting is lowered into the trench.

B. Damaged portions of coating or lining shall be cleaned and repaired by experienced personnel, so that the protective coating or lining is equal to the original. Manufacturer's recommendations for repairs shall be followed.

C. Wipe the joints of pipe, fittings, and appurtenances clean of all dirt, grease, and foreign matter before the pipe is lowered into trench.

3.7 LAYING PIPE

A. Installation: All pipe, fittings, and appurtenances shall be installed in accordance with the manufacturer's instructions and these Specifications.

B. Laying Plan: The pipe and fittings shall be laid in accordance with the laying plan, except as modified by the City Representative.

C. All pipe shall be prepared as herein before specified and shall be laid on the prepared pipe bedding and bedded to ensure uniform bearing. No pipe shall be laid in water or when, in the opinion of the City Representative, trench conditions are unsuitable. Joints shall be made as specified for the respective types.

D. Where the pipe is connected to concrete structures or manholes, the connection shall be made as shown. A standard pipe joint shall be located no more than 18 inches from the structure or manhole.

E. Joining Pipe: Assemble joint in accordance with manufacturer's instructions, or as modified by these Specifications. As the next section of pipe is being readied for laying, clean the bell of the previously laid pipe of all foreign material and apply a thin film of the specified lubricant to the entire surface of the bell ring. At the same time, lubricate the gasket and install in the spigot groove. The gasket tension shall be uniform around the groove before placing the pipe in the trench. Lower the pipe section to be laid into the trench until it is

approximately in line with the previously laid pipe section and the spigot is centered in the bell. Then force the pipe home and secure to proper alignment and grade with the specified pipe zone material, well tamped. The gasket position shall be checked with a feeler gauge, furnished by the pipe manufacturer, to assure proper seating.

F. The Contractor shall submit a procedural description of how he intends to effectively make field connections of joints without damaging the neoprene gasket or the pipe. The Contractor's submittal must include a structure or method that positively centers and concentrically controls the closing of the joint without damaging the neoprene gaskets or the pipe.

G. In the event that the Contractor cannot adequately demonstrate the ability of not damaging the neoprene gasket, even with absolute control for centering and concentrically making the joint connection, the City Representative may require all concrete surfaces in contact with the neoprene gasket to be coated with an approved epoxy to reduce the abrasive effect from the concrete.

H. Prevent foreign material from entering the pipe while it is being placed in the trench. Remove all foreign material from the pipe or joint ring before the next pipe is placed. If the pipe laying crew cannot put the pipe into the trench and in place without getting earth into the pipe, the City Representative may require that snugly fitted, tightly woven canvas bags be placed over each end before lowering the pipe. The bags shall be left in place until the connection is to be made to the adjacent pipe. During laying operations, keep debris, tools, clothing, or other materials out of the pipe.

I. Take all precautions necessary to prevent the "uplift" or floating of the line prior to the completion of the backfilling operation.

J. Follow pipe laying operations closely with backfilling of the trenches with sufficient material to prevent the pipe from moving. Place backfill carefully and simultaneously on both sides of the pipe to avoid displacement of the pipe and damage to the joints and coating.

K. Bell End to Face Direction of Laying: Unless otherwise allowed, lay pipe with bell end facing in the direction of the laying.

3.8 PERMISSIBLE DEFLECTION AT JOINTS

Where it is approved by the City Representative to deflect pipe from a straight line, either in the vertical or horizontal plane, do not exceed 50 percent of the amount of deflection recommended by the pipe or coupling manufacturer and as reviewed by the City Representative.

3.9 PIPE ZONE MATERIAL

A. Particular attention must be given to the area of the pipe zone from the flow line to the centerline of the pipe to ensure that firm support is obtained to prevent any lateral movement of the pipe during the final backfilling of the pipe zone.

B. Place the pipe zone backfill material around the pipe in even lifts on each side of the pipe not exceeding 8 inches prior to compaction, then compact to 90 percent relative compaction. Operate compaction equipment in such a manner as to prevent damage to the pipe. The limits of the pipe zone backfill material shall be as shown on the Drawings.

3.10 PIPELINE CLOSING

Take the necessary precautions required to prevent excavated or other foreign material from entering the pipe during the laying operation. At all times, when laying operations are not in

progress, at the close of the day's work, or whenever the workers are absent from the job, close and block the open end of the last laid section of pipe with a watertight plug to prevent entry of foreign material or creep of the gasket joints. End closure shall be sufficient to prevent trench water from entering pipe. Keep water out of the trench.

3.11 PIPELINE

Pipelines shall not be used as conductors for trench drainage during construction.

3.12 SIDE SEWER AND CULVERT CONNECTIONS

Side sewer and culvert connections to RCP shall be constructed per detail on H-drawings.

3.13 INSPECTION, TESTS AND ACCEPTANCE

A. Acceptance will be on the basis of the successful results of the tests of materials, the required D-load bearing tests, pressure tests, and inspection of the complete product. The quality of all materials used in the pipe, the process of manufacture, and the finished pipe shall be subject to inspection by the City Representative. Inspection may be conducted at the place of manufacture, or at the work site after delivery, or both. The pipe shall be subject to rejection at any time due to failure to meet any of the specification requirements, even though sample units may have been accepted as satisfactory at the place of manufacture. All pipe which is rejected shall be immediately removed from the project site by the Contractor.

B. Certified copies in triplicate of test results will be required for the materials and the finished pipe units as described herein. In addition, the City reserves the right to have any or all pipe units inspected or tested, or both, by an independent testing laboratory at either the manufacturer’s plant or elsewhere. Such additional inspection and/or tests shall be at the City’s expense and shall be the test results of record. The Contractor shall notify the City Representative minimum 5 working days in advance prior to the D-load testing. Pipe units to be tested may be selected at random at the option of the City Representative.

3.14 HYDROSTATICAL TEST FOR DOUBLE GASKET JOINT – **NOT USED**

3.15 HYDROSTATICALLY TESTED FOR SINGLE GASKET JOINT

A. The Contractor shall submit his joint testing procedure and equipment for the City Representative’s review prior to testing.

B. All pipe shall be tested for leakage and thoroughly cleaned of any obstructions or debris. Pipes shall be tested and retested, at the Contractor’s cost, per the following paragraphs until acceptance by the City Representative. All pipe shall be joint-tested prior to backfill.

C. Prior to placement of backfill, the joint shall be tested in a sequential operation with tests conducted on each joint as they become available two or three pipe sections behind the last section being installed, as directed by the City Representative, in order that the pipe laying operations shall have no adverse effect upon the security of the completed joint after testing.

D. Joints shall be tested in accordance with ASTM C-1103-03.

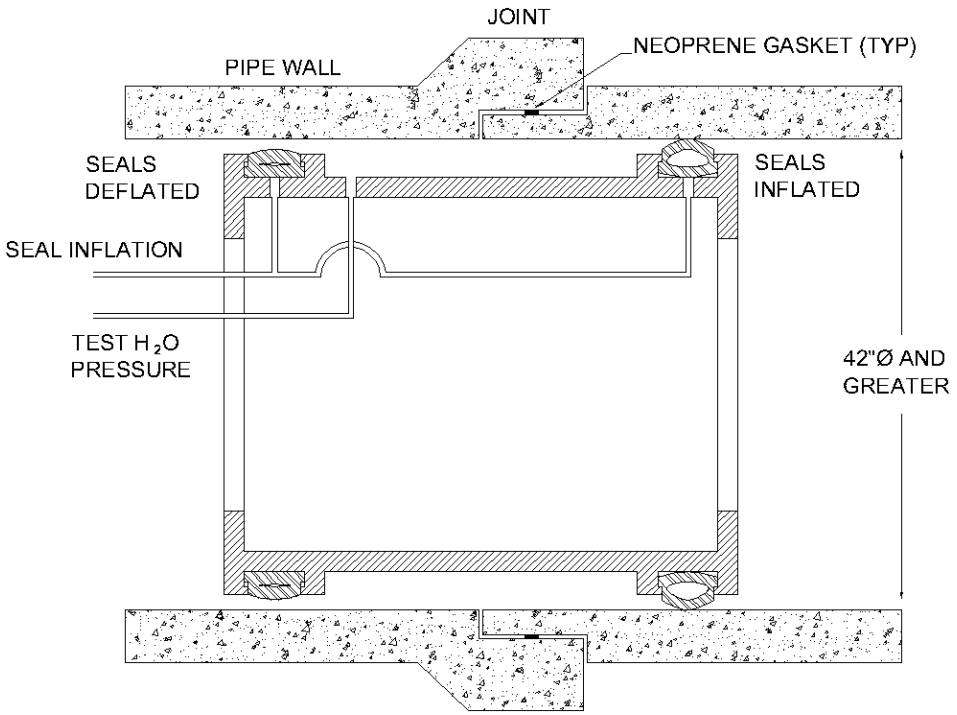
Joints which show leakage shall be repaired or the joint relayed subject to the approval of the City Representative, and the joint retested. All joints shall have been tested and shall comply with the above leakage requirement prior to acceptance of the work.

E. The Contractor shall maintain a current log of all pipe testing, including, but not limited to, the following information:

- Type of test: i.e., hydrostatic, initial test, or retest number.
- Time, beginning, and end.
- Maximum pressure and pressure drop over test time.
- All special precautions, considerations, or remarks concerning the particular test.

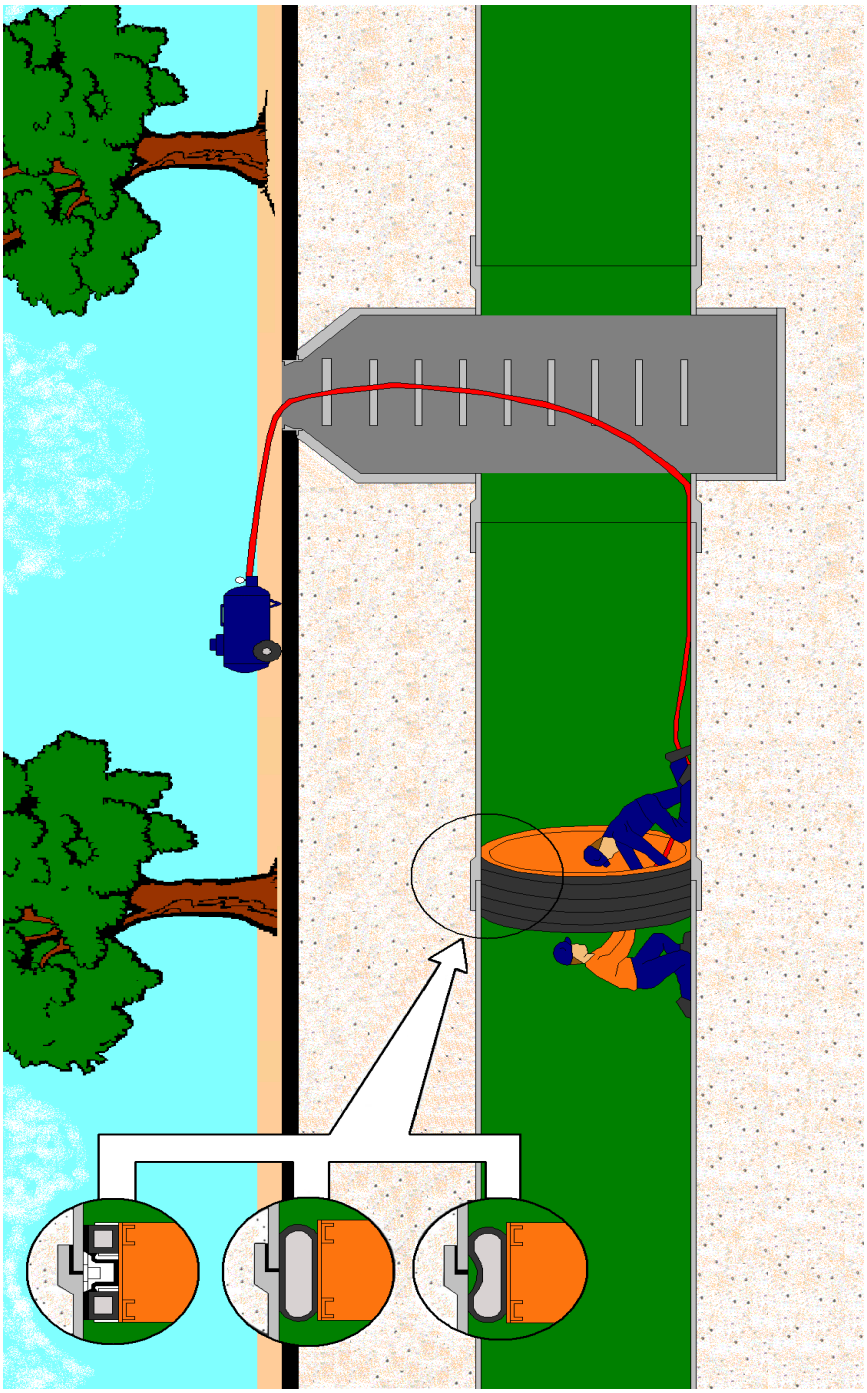
. See Exhibit “A" and “B”

END OF SECTION



TYPICAL PIPE JOINT TESTER FOR PIPES
42"Ø AND GREATER (NOT TO SCALE)

EXHIBIT “A” (NOT USED)



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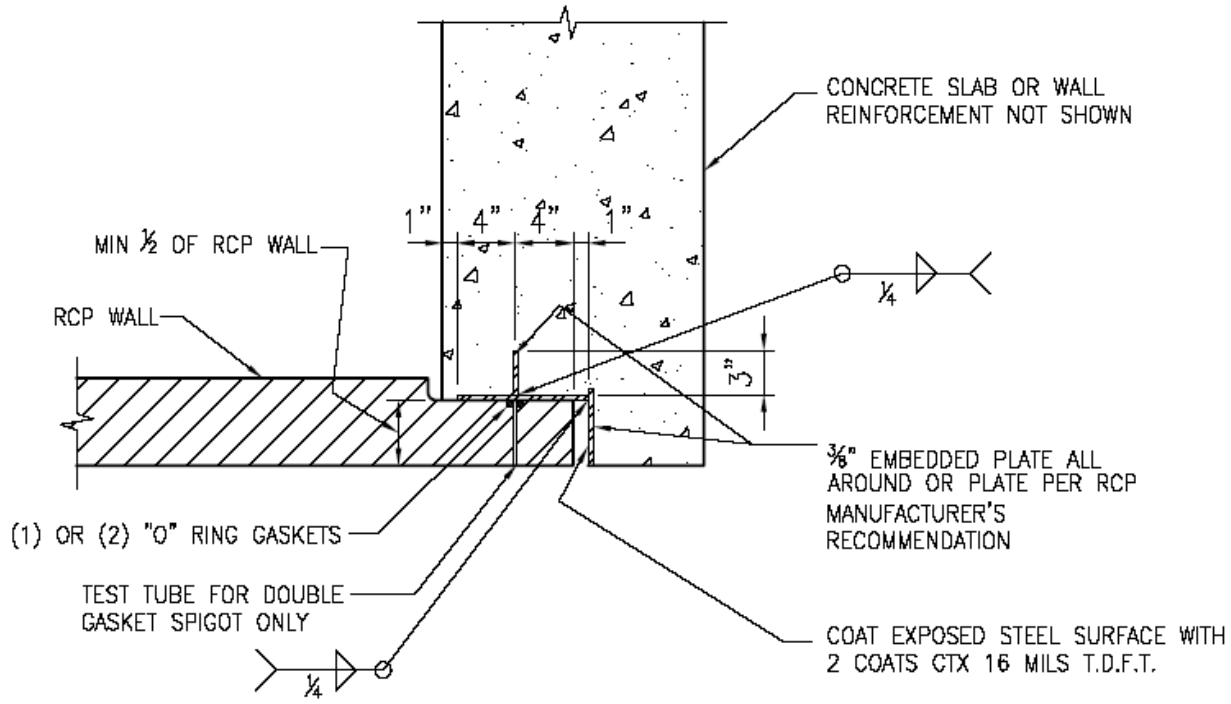

STEEL WALL BELL DETAIL

SCALE: N.T.S.

NOTE: DETAIL TO BE USED W/ ALL CAST-IN-PLACE RCP STRUCTURES CONNECTING TO 42" ø RCP OR GREATER, INCLUDING DPW STANDARD PLANS 87,182 AND 87,183.

DETAIL NO. 1