

NOTE:

This waiver submission may include references to proprietary items and brand name products. These references have been retained to provide context for the waiver submission. EPA does not evaluate a waiver based on a proprietary item but reviews the performance-based specifications for the project/ products. As such, any references to brand or proprietary items are reviewed on an "or equal" basis by EPA.



June 6, 2024

Yared Girmai
Portfolio Manager, WIFIA Program
U.S. Environmental Protection Agency
via electronic submittal: girmai.yared@epa.gov

Items and pages may have been intentionally redacted or excluded by the EPA. Contact WIFIAWaiver@epa.gov for more information if necessary.

City Hall
Public Works
456 West Olive Avenue
Sunnyvale, CA 94088-3707
408-730-7500
Sunnyvale.ca.gov

Re: Project Waiver for American Iron and Steel Requirements for Couplings

Dear Mr. Girmai,

The City of Sunnyvale (City) has a current WIFIA loan for the Sunnyvale Cleanwater Program Phase 2 (WIFIA — N18121CA). The City is requesting a project specific waiver of the AIS requirements due to lack of availability of the following:

- (56) 12” Victaulic coupling

Project Description

The City assessed its Water Pollution Control Plant and determined that, due to the age of the facilities, many of them need to be rehabilitated or replaced to maintain permit compliance and reliability. The Phase 2 Program includes an Existing Plant Rehabilitation package, which will keep some existing facilities functional until they are replaced during later phases. Improvements include replacing equipment (such as pumps, valves, and motors), restoring deteriorated concrete, and modernizing the automation system at the western half of the Plant.

Project Schedule

The City’s project schedule is attached. It includes several construction packages which constitute the Phase 2 Program.

Walsh is the contractor, and Orthos Liquid Systems is the supplier for the product listed above. Walsh conducted a thorough materials network search to identify possible domestic resources for products to meet the project’s technical provisions in compliance with AIS requirements and was unable to find suitable domestic products. The following supporting documentation has been included for your review:

- Supplier request for Availability Waiver
- Project specification for products
- Project plan drawings
- Correspondence in search for domestic sources

Please let us know if you need any additional information to process this project specific waiver. You can contact me at ABoyer@sunnyvale.ca.gov or (408) 730-7516 if you have any questions.



Sunnyvale

Sincerely,

Allison Boyer

Digitally signed by Allison Boyer
DN: C=US,
E=aboyer@sunnyvale.ca.gov,
O=City of Sunnyvale,
OU=Department of Public Works,
CN=Allison Boyer
Date: 2024.06.10 16:16:04-07'00'

Allison Boyer, PE
Assistant City Engineer
City of Sunnyvale, Department of Public Works
456 W. Olive Avenue
Sunnyvale, CA 94086

Couplings

Specification Section 15286

SECTION 15286

STAINLESS STEEL PIPE AND TUBING

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Stainless steel piping and tubing.

1.02 REFERENCES

- A. American Society of Mechanical Engineers (ASME):
1. B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through 24.
 2. B16.11 - Forged Fittings, Socket-Welded and Threaded.
 3. B31.3 - Process Piping.
 4. B36.19 - Stainless Steel Pipe.
- B. ASTM International (ASTM):
1. A182 - Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
 2. A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.
 3. A194 - Standard Specification for Carbon and Alloy Steel Nuts and Bolts for High Pressure or High Temperature Service, or Both.
 4. A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 5. A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 6. A276 - Standard Specification for Stainless Steel Bars and Shapes.
 7. A312 - Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.
 8. A351 - Standard Specification for Castings, Austenitic, for Pressure-Containing Parts.
 9. A380 - Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems.
For installation in the City of Sunnyvale subject to code requirements and City of Sunnyvale approval.
 10. A403 - Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings.
The standards of this specification shall not be held to without the written approval of the Division of any provision of any City or State Law.
 11. A743 - Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application.
For installation in the City of Sunnyvale subject to code requirements and City of Sunnyvale approval.
 12. A774 - Standard Specification for As-Welded Wrought Austenitic Stainless Steel Fittings for General Corrosive Services at Low and Moderate Temperatures.
 13. A778 - Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products.

STAINLESS STEEL PIPE AND TUBING

14. A790 - Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe.
15. A928 - Standard Specification for Ferritic/Austenitic (Duplex) Stainless Steel Pipe Electric Fusion Welded with Addition of Filler Metal.
16. A967 - Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts.
17. F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.

1.03 DESIGN REQUIREMENTS

- A. Piping layout: Lay out and fabricate piping systems with piping sections as long as possible, while still allowing shipment, so that joints are minimized.
 1. Piping design indicated on the Drawings illustrates piping layout and configuration and does not indicate the location of every joint and flexible coupling that may be needed to connect piping sections fabricated in the shop.
 2. Add joints and flexible couplings in a manner that achieves intent of maximizing size of individual piping sections.
- B. Shop fabrication: Fabricate piping sections in the shop and pickle and passivate at point of manufacture.
- C. Field assembly:
 1. Field welding is prohibited.

1.04 SUBMITTALS

- A. Submit as specified in Section 01340 - Shop Drawings, Product Data and Samples.
- B. Product data: As specified in Section 15052 - Common Work Results for General Piping.
- C. Shop drawings:
 1. Detailed layout drawings:
 - a. Dimensions and alignment of pipes.
 - b. Location of valves, fittings, and appurtenances.
 - c. Location of field joints.
 - d. Location of pipe hangers and supports.
 - e. Connections to equipment and structures.
 - f. Location and details of shop welds.
 2. Thickness and dimensions of fittings and gaskets.
 3. Photographs, drawings, and descriptions of pipe fittings, welding procedures, and pickling and passivating procedures.
 4. Material specifications for pipe, gaskets, fittings, and couplings.
 5. Data on joint types and components used in the system including flanged joints, grooved joint couplings and screwed joints.

PART 2 PRODUCTS

STAINLESS STEEL PIPE

General:

1. Pipe sizes specified in the Specifications and indicated on the Drawings are nominal.

B. Welding:

Specified in Section 15052 - Common Work Results for General Piping.
 Piping 3 inches in nominal diameter and greater:

For general service applications with pressures less than 250 pounds per square inch gauge, pipe diameter 24-inches or less, minimum wall thickness corresponding to Schedule 10S.

- b. For piping for a filter backwash air header, minimum wall thickness corresponding to Schedule 10S.

C. Piping material

Manufacturing:

1. Comply with requirements outlined in the following table:

Service	Stainless Steel Grade	Pipe Manufacturing Process
Piping 3 inches in nominal diameter and larger	316L stainless steel in accordance with ASTM A240	Type 316L in accordance with ASTM A778
Piping less than 3 inches in nominal diameter	Type 316L stainless steel in accordance with ASTM A312	Type 316L in accordance with ASTM A312

D. Fittings for piping 3 inches in nominal diameter and greater:

1. Material: In accordance with ASTM A240 stainless steel, grade to match the pipe.
2. Manufacturing standard: In accordance with ASTM A403, Class W774.
3. Wall thickness of fitting: In accordance with ASTM A403, Class W6.19 for the schedule of pipe specified.
4. End configuration: As needed to comply with specified type of joint.
5. Dimensional standards:
 - a. Fittings with weld ends: In accordance with ASME B16.11.
 - b. Fittings with flanged ends: In accordance with ASME B16.5, Class 150.

E. Fittings for piping less than 3 inches in nominal diameter:

1. Material: In accordance with ASTM A240 stainless steel match the pipe.
2. Manufacturing standard: In accordance with ASTM A403, Class W774.
3. Wall thickness and dimensions of fitting: In accordance with ASME B16.11 as required for the schedule of pipe specified.
4. End configuration: As needed to comply with specified type of joint
5. Forgings in accordance with ASTM A182, or barstock in accordance with ASTM A276. Match forging or barstock material to the piping material.

STAINLESS STEEL PIPE AND TUBING

ng joints:

Joint types, piping greater than 2 inches in diameter, general:

- a. Where type of joint is specifically indicated on the Drawings or specified, design and shop-fabricate piping sections utilizing type of joint illustrated heduled.
e type of joint is not specifically indicated on the Drawings or as ied in Section 15052 - Common Work Results for General Piping, design and shop-fabricate piping sections utilizing any of the fol types:
 - 1) W s.
 - 2) F nts.
 - 3) Grooved joint
- c. Joints at valves a purtenances:
 - 1) Provide flang and flanged pipe appurtenances in stainless steel piping sys h flanged ends.
 - 2) Design and fabricate pip ions to make connections with flanged valves and pipe ances using flanged coupling adapters or flanged joint
 - a) Flexible couplings and flanged coupling adapters: Provide stainless steel construction wit matching the piping system, and conforming to req as specified in Section 15121 - Pipe Coupling ernal Joint Restraints.

2. Welded joints:

- a. Pipe 12 inches and larger in diameter: Automatically s using gas tungsten-arc procedures.
- b. Piping 4 inches through 12 inches in diameter: Doub welded joints.
- c. Piping less than 4 inches in diameter: Single butt-welded joints.
- d. Mark each weld with a symbol that identifies the welder.

3. Flanged joints: Conforming to the requirements in accordance with ASME B16.5, Class 150.

4. Grooved joints:

- a. Pressure less than 500 pounds per square inch:
 - 1) Cut grooves from Schedule 40 or higher.
- b. Heavier schedule pipe sections used for cut groove ends:
 - 1) Tapered inside diameter to transition from the inside diameter of the lighter schedule pipe.
- c. Butt welds connecting pipes of different schedules that leave an abrupt change in inside diameter are not allowed.

d. Couplings:

- 1) Rigid type cast from ductile iron, Victaulic Style 07 or equal.
- 2) Type 316 (Grade 316) stainless steel in accordance with ASTM A 312, and A 722
 - a) Bolts: Stainless steel in accordance with ASTM F593, Group 2, Condition C.
 - b) Nuts: Stainless steel.
 - c) Manufacturers: One of the following or equal:
 - (1) Piedmont Pacific Corp.
 - (2) Victaulic Style 489 Rigid Coupling.

Gaskets:

1. Aeration air service: As specified in Section [REDACTED] - Common Work Results for General Piping.
2. All other service applications: EPDM, nitrile, or other materials compatible with the process fluid.

H. Flanges:

and nuts: Type 316 stainless steel in accordance with ASTM A193 heavy head.

Bolt length such that after installation, end of bolt projects 1/8-inch to 3/8-inch beyond outer face of nut.

- b. Nuts: In accordance with ASTM A194 heavy hex pattern.

I. Fabrication Conditions:

1. Welding: In accordance with ASME B31.3.
2. Weld seams:
 - a. Full penetration welds free of oxidation, crevices, pits and cracks, and without undercut
 - b. Provide weld thickness of 1/16 inch with tolerance of plus 1/16 inch and minus 1/32 inch.
 - c. Where internal weld seam is not accessible, use gas tungsten-arc procedures with internal gas
 - d. Where internal weld seam is accessible, weld seams inside and outside using manual shielded metal arc procedures.
3. Dual media filter backwash air pipe shall be fabricated in sections that can fit through 30-inch access manhole and into manholes indicated on the Drawings.

J. Cleaning (pickling) and passivation:

1. Following shop fabrication of pipe sections, straight spools, fittings, and other piping components, clean (pickle) and passivate fabrications.
2. Clean (pickle) and passivate in accordance with ASTM A778-967.
 - a. If degreasing is required before cleaning to remove oil, iron oxide, and other contaminants, cleaning (pickling) treatments with citric acid are permitted.
 - 1) However, these treatments must be followed by inorganic passivation treatments such as nitric acid/hydrofluoric acid.
 - b. Passivation treatments with citric acid are not allowed.
3. Finish requirements: Remove free iron, heat tint oxides, weld scale, impurities, and obtain a passive finished surface.

For installation in the City of Sunnyvale subject to code requirements

DIGITAL SET APPROVED

By Daniel Reyna

PLUMBING-ELECTRICAL-MECHANICAL

The stamping of this plan shall not be held to permit or to be an approval of the violation of any provision of any City or State Law.

2.02 SOURCE QUALITY CONTROL

- A. Visually inspect pipe for welding defects such as crevices, pits, cracks, protrusions, and oxidation deposits.
- B. Provide written certification that the pipe as supplied are in accordance with ASTM A778. Supplemental testing is not required.

STAINLESS STEEL PIPE AND TUBING

- C. Provide written certification that the fittings as supplied are in accordance with ASTM A774.
 - 1. Supplementary testing is not required.
- D. Thoroughly clean any equipment before use in cleaning or fabrication of stainless steel.
- E. Storage: Segregate location of stainless steel piping from fabrication of any other piping materials.
- F. Shipment to site:
 - 1. Protect all flanges and pipe ends by encapsulating in dense foam.
 - 2. Securely strap all elements to pallets with nylon straps. Use of metallic straps is prohibited.
 - 3. Cap ends of tube, piping, pipe spools, fittings, and valves with non-metallic plugs.
 - 4. Load pallets so no tube, piping, pipe spools, fittings, or valves bear the weight of pallets above.
 - 5. Notify Engineer when deliveries arrive so Engineer may inspect the shipping conditions.
 - 6. Engineer may reject material due to improper shipping methods or damage during shipment.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install piping in such a manner as not to impart strain to connected equipment.
- B. Slope horizontal lines so that they can be drained completely.
- C. Provide valve drains at low points in piping systems.
- D. Install eccentric reducers where necessary to facilitate draining of piping system.
- E. Provide access for inspection and flushing of piping systems to remove sediment, deposits, and debris.

Building Safety Division
City of Sunnyvale

Jun 12 2023

3.02 FIELD ASSEMBLY OF SHOP-FABRICATED PIPING SECTIONS

- A. Join shop-fabricated piping sections together using backing flanges, flexible couplings, flanged coupling adapters, grooved couplings, or flanges.

By Daniel Reyna

BUILDING-PLUMBING-ELECTRICAL-MECHANICAL

approval of the violation of any provision of any City or State Law.

JOB COPY

These plans must be kept on the job site at all times.

CITY OF SUNNYVALE

3.03 FIELD QUALITY CONTROL

- A. Test piping to pressure and by method as specified in Section 15286 - Common Work Results for General Piping.
 - 1. If pressure testing is accomplished with water:
 - a. Use only potable quality water.
 - b. Piping: Thoroughly drained and dried or place immediately into service.
- B. Visually inspect pipe for welding defects such as crevices, pits, cracks, protrusions, and oxidation deposits.

3.04 PROTECTION

- A. Preserve appearance and finish of stainless steel piping by providing suitable protection during handling and installation and until final acceptance of the Work.
 - 1. Use handling methods and equipment to prevent damage to the coating, include the use of wide canvas slings and wide padded skids.
 - 2. Do not use bare cables, chains, hooks, metal bars, or narrow skids.
 - 3. Store stainless steel piping and fittings away from any other piping or metals. Storage in contact with ground or outside without protection from bad weather is prohibited.
 - 4. Protect stainless steel piping and fittings from carbon steel projections (when grinding carbon steel assemblies in proximity) and carbon steel contamination (do not contact stainless steel with carbon steel wire brush or other carbon steel tool).

END OF SECTION

Building Safety Division
City of Sunnyvale

Jun 12 2023

For installation in the City of Sunnyvale subject to code requirements
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The stamping of this plan shall not be held to permit or to be an approval of the violation of any provision of any City or State Law.

JOB COPY

These plans must be kept on the job site at all times.

CITY OF SUNNYVALE