CITY OF ROSEVILLE CALIFORNIA

Environmental Utilities Department
2005 Hilltop Circle
Roseville, California 95747

June 2, 2020

Ms. Stephanie White
Davis-Bacon Compliance
AIS Liaison
Loan and Grant Administration Section
Division of Financial Assistance
State Water Resources Control Board
1001 "I" Street, 16th Floor, Sacramento, CA 95814

Subject: City of Roseville Availability Waiver SRF Agreement No. D19-01012, Project No. C-06-8215-210, Pleasant Grove Wastewater Treatment Expansion and Energy Recovery Project

Dear Ms. White:

This letter serves as a request on behalf of the City of Roseville (City) to obtain an American Iron and Steel (AIS) Availability Waiver for the specified 316 Stainless Steel Seamless Tubing (tubing) required to complete the Pleasant Grove Wastewater Treatment Expansion and Energy Recovery Project (Project No. C-06-8215-210). This request is made on the basis that the specified component is not produced in sufficient quantities and in reasonably available quantities in the United States, and that no domestically manufactured alternatives can be used to meet the project requirements.

The goal of the Expansion and Energy Recovery Project is to provide an economically and environmentally beneficial means of utilizing digester gas produced by the new anaerobic digesters that are being constructed under a separate project at the Pleasant Grove Wastewater Treatment Plant. Digester gas will be treated and converted into renewable natural gas by facilities constructed under the Expansion and Energy Recovery Project. That renewable natural gas will then be compressed and used to fuel the City's compressed natural gas (CNG) solid waste truck fleet. The project has an anticipated completion date of February 2022. Timely procurement and installation of the subject tubing is critical to the project schedule because the CNG Fueling Facility is contracted as an early construction milestone to be completed by July 2021. The City has purchased CNG-fueled solid waste trucks that will be delivered in 2021, and the fueling facility must be finished to allow those vehicles to fuel.

The tubing must satisfy the conditions presented in project specification 43 10 01 (see Exhibit A); however, the metal needed for the specified tubing is not melted in the United States and therefore would not be in compliance with the AIS requirement. A waiver for stainless steel tubing was not submitted during design and bidding periods as the General Contractor, the City, and the City's design engineer inadvertently assumed

stainless steel tubing 1-inch and less may be readily procured while meeting AIS guidelines. Relevant bidding documents pertaining to AIS guidelines and the General Contractor agreement are included in Exhibit B.

Substitute pipe materials meeting AIS requirements do not meet project requirements given the high operating pressure and potentially corrosive environment. The 316 stainless steel seamless tubing is intended to convey the digester gas-derived CNG, a renewable fuel, from the new CNG fueling compressors to both CNG storage vessels and to the fuel dispensers that will fill the City's trucks. This tubing is a specialty product used for conveying 5,000 psi gas and completes the path from the anaerobic digesters to the CNG truck fuel tank. Per American Society of Mechanical Engineer (ASME) guidelines, the bursting wall pressure for tubing should include a safety factor of four times the operating pressure. Exhibit C includes 316 stainless steel seamless tubing material data for meeting the 20,000-psi pressure requirement. Additionally, stainless steel is much more resistant to corrosion than carbon steel, and corrosion resistance is essential for longevity of the piping and system safety. For these reasons, the 316 stainless steel seamless tubing that meets the project specifications is necessary to complete the project and produce renewable energy.

General Waiver Requirements

1. Description of the Material: Stainless steel tubing, which is used to supply digester gas-derived CNG from the CNG fueling compressors to CNG storage vessels and to the CNG fuel dispensers, includes the following two products.

    a. 1" Outside Diameter (OD) X 0.134" Wide (W) X 20' Lengths (316/L cold drawn seamless tube ASTM A269/A213)
    b. 3/4" OD X 0.109" W X 20' Lengths (316/L cold drawn seamless tube ASTM A269/A213)

2. Unit of Measure, Quantity, and Price:

	1" OD X 0.134W	3/4" OD X 0.109W
Unit of Measure	ft	ft
Quantity	500 ft	100 ft
Cost	[redacted]	[redacted]

3. Time of Delivery or Availability:

    a. As discussed in Exhibit D, the melting process for 316 stainless steel seamless tubing included in this waiver request does not occur domestically. Therefore, stainless steel seamless tubing that meets AIS requirements is not available. The product requested in this waiver is already procured and is awaiting approval at Pac Stainless, LTD facilities. Stainless

steel tubing is schedule to be delivered in June 2020 and installed in July 2020.

4. Location of Construction Project:

   a. The project is located at Pleasant Grove Wastewater Treatment Plant, 5051 W Park Dr, Roseville, CA 95747.

5. Name and Address of Proposed Supplier:

   a. Pac Stainless, LTD.
   1855 S 216th St.
   Des Moines, WA 98198
   Ph: 800-426-4258
   Attn: Leah Coffer

6. Justification for Use of Foreign Construction Materials

   a. AIS-compliant stainless steel tubing that meets the requirements listed in Item 1 is not reasonably available in the United States. Specifically, our project team is not aware of any facilities in the United States that melt stainless steel to form into hollows for tube production. Two of the contacted suppliers confirmed that the melting process only occurs outside the United States (See Exhibit D).

7. Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor:

   a. CWSRF and AIS compliance requirements and documentation were included in the bid documents when the City requested proposals from prospective prime contractors. Excerpts from the bid documents and the General Contractor's executed agreement that state these AIS compliance requirements are provided in Exhibit B. Furthermore, the excerpts from the executed agreement demonstrate that the General Contractor acknowledged the AIS compliance requirements.
   b. Under contract with WM Lyles (prime contractor), EFS West (CNG fueling subcontractor) contacted Swagelok, Pac Stainless, Greenville Tube, US Metal, and Fluid Gauge Company for stainless steel tubing. As shown in Exhibit D, Pac Stainless and Fluid Gauge Company were unable to provide AIS compliant stainless steel tubing. During telephone conversations, the subcontractor spoke with US Metal, who indicated they do not sell stainless steel tubing, and Swagelok, who indicated they source from the same manufacturer as Pac Stainless.

Availability Waiver Requirements

1. Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials:

    a. Suppliers listed in Section 7 above source the stainless steel tubing from two manufacturers, either Sandvik or Salem Tubing. As Pac Stainless sources from both Sandvik and Salem Tubing, the subcontractor only sought one quotation. The quotation from Pac Stainless and availability are provided in Exhibit F.

2. Project Schedule:

    a. The project's completion date is currently scheduled to be February 10, 2022. However, the project includes seven Substantial Completion Milestones, and completion of the CNG Fueling Facility is Substantial Completion Milestone #5, scheduled for July 2021. CNG tubing installation is scheduled to occur in July 2020. A delay in the tubing supply will result in a delayed completion of the CNG Fueling Facility, which will impact when the City's new Solid Waste CNG vehicles can begin using the renewable digester gas-derived CNG which are contracted to be delivered to the City in the summer of 2021. Time is of the essence on the procurement and installation of the subject tubing as portions of the tubing need to be installed below grade and must be in place prior to structural slab work for installation of the CNG Fueling Facility equipment.

3. Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials:

    a. Contract requirements including the applicable specification language and project plans for the required stainless steel tubing are provided in Exhibit A.

4. Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers:

    a. The General Contractor's Subcontractor (EFS West) contacted Pac Stainless, Fluid Gauge Company, US Metal, and Swagelok. Letters from Pac Stainless and Fluid Gauge Company are included in Exhibit D. During telephone conversations, the Subcontractor spoke with US Metal, who indicated they do not sell stainless steel tubing, and Swagelok, who indicated they source from the same manufacturer as Pac Stainless.

5. Contractor and/or supplier to provide a statement confirming the nonavailability of the domestic construction material which is sought:

    a. Statement from the Subcontractor to the General Contractor is provided in Exhibit E, and statements from the suppliers are included in Exhibit D.

6. Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?

    a. An availability waiver request for ½-inch to 1-inch stainless steel tubing was submitted by San Francisco Public Utilities Commission (SFPUC) on October 3, 2019 and approved January 27, 2020. This document including rationale for approval, is included in Exhibit G.

Sincerely,

Kenneth Glotzbach
Assistant Director of Environmental Utilities

cc: Tracie Mueller, City of Roseville, Project Manager
Joshua Fegurgur, State Water Resources Control Board
Adam Ross, Brown and Caldwell
William Pevec, Brown and Caldwell

Attachments:

Exhibit A – Stainless Steel Tubing Contract Requirements
Exhibit B – AIS Bid Requirements and Agreement
Exhibit C – Material Data
Exhibit D – Confirmation of Nonavailability
Exhibit E – Letter from EFS West (Subcontractor) to WM Lyles (Prime Contractor)
Exhibit F – Pac Stainless Quotation
Exhibit G – SFPUC Approved Memorandum

Exhibit A

Stainless Steel Tubing Contract Requirements

Contractor shall also provide trench plates as required for the traffic they may be exposed to until trenches are repaired to match surrounding grade

D. Install the CNG system equipment on equipment pads per Section 43 05 13 and as shown on the Drawings.

E. Contractor shall provide anchor bolts in accordance with Section 05 05 20.

3.02 WORKMANSHIP

A. Labor shall be performed by mechanics skilled in their particular trade. Pipe and equipment shall be installed square and plumb accessible for proper operation and service. Installation shall be consistent with completeness and appearance whether concealed or exposed.

B. Seals and Sealants
   1. Seals and sealants that are exposed to natural gas or CNG shall be compatible with natural gas as well as the diester-type compressor-lube oil as applicable.

3.03 GRADING AND PAVING

A. Not Used.

3.04 PROTECTION OF EQUIPMENT

A. General
   1. CNG compression, storage and dispensing equipment shall be protected against vehicular impact. The CNG equipment compound and dispensers shall be protected by concrete-filled pipe bollards as located on the drawings.

3.05 PIPING AND APPURTENANCES

A. General
   1. This article refers to piping and tubing that is field installed between pre-packaged equipment. Seamless stainless steel tubing, stainless steel pipe, or seamless carbon steel pipe shall be used to conduct CNG. Piping between the buffer valve panel and each CNG dispenser shall be per the Piping & Instrumentation Diagram drawing.
      a. Service Pressure. Piping, tubing and appurtenances downstream of compressor discharge shall have a manufacturer-rated working pressure of 5000 PSI, in accordance with ANSI/ASME B31.3, *Process Piping*.
      b. Shipping. While in transit, all hose and flexible metal hose and tubing, including their connections, shall be protected from wear or injury and shall be capped.
      c. Markings. Hose, metallic hose, flexible metal hose and tubing shall be distinctly marked either by the manufacturer's permanently attached tag or by distinct markings every 5 feet indicating the manufacturer's name or trademark, material grade, service and working pressure.
      d. Dissimilar Metals. Connections between dissimilar metals shall include dielectric insulation. This includes piping and other metallic connections.

e. Blowdown Tees. Within specified equipment, piping and high-pressure tubing systems and sections shall be equipped with blocking ball valves and blowdown tees or needle valves to facilitate equipment maintenance. Blowdown valves shall discharge in a manner that directs the discharging gas safely away from the person using the blowdown valve. Discharge lines on blowdown valves shall be equipped with threaded end caps to seal the line in normal service, so as to prevent accidental line depressurization and gas release. Block valves and blowdown tees shall be provided at all filter locations for safe depressurization of filter housings.

B. Pipe Routing

1. All gas, CNG and control-air piping shall be located and routed aboveground, unless shown as dashed piping on the plan drawings. Piping may be installed below grade, if it is installed in a pre-cast concrete pipe trench that is covered and rated for traffic and loads to which it may be exposed. Piping shall be ganged on common runs, racks and carriers where appropriate and shall be insulated against cathodic action and contact with dissimilar metals.

C. Piping

1. Pipe Specification. Pipe containing flammable material shall be seamless carbon steel manufactured in accordance with ASTM A-106 Grade B. All pipe, fittings and other piping components shall be suitable for the full range of pressures, temperatures and loadings to which they may be subjected with a factor of safety of at least four (4). Any material used, including gaskets and packing, shall be compatible with natural gas and its service conditions.
2. Connections.
   a. Small Pipe Connections. For 2-inch or under nominal pipe size with maximum operation pressure greater than 15 PSIG, the connections shall be socket welded in accordance with ASME/ANSI B31.3, except that twenty five (25) percent random dye-penetrant examination and one hundred (100) percent visual examination is required. Each weld shall be de-scaled and internally cleaned from any welding slag. Documentation of examination shall be transmitted to the City within 5 working days of examination. One hundred (100) percent of pipe welds made outside of the CNG-equipment area shall be inspected via dye-penetrant examination.
   b. Large Pipe Connections. For over 2-inch nominal pipe size with maximum operation pressure greater than 15 PSIG, the connections shall be butt welded in accordance with ASME/ANSI B31.3 except that twenty five (25) percent random radiographic x-ray examination and one hundred (100) percent visual examination is required. Each weld shall be de-scaled and internally cleaned from any welding slag. Documentation of examination shall be transmitted to the City within 5 working days of examination.
   c. Flange Joint. Flanges shall be in accordance with ANSI B16.5. Weldneck raised face flanges shall be used unless specified otherwise. Ring-type joints or spiral-wound metallic gaskets with centering ring shall be employed for ANSI class 900 flanges or higher.
   d. Sealing. Threaded pipe joints shall be seal welded. However, seal welding is not required on instruments or where disassembly is required for maintenance.

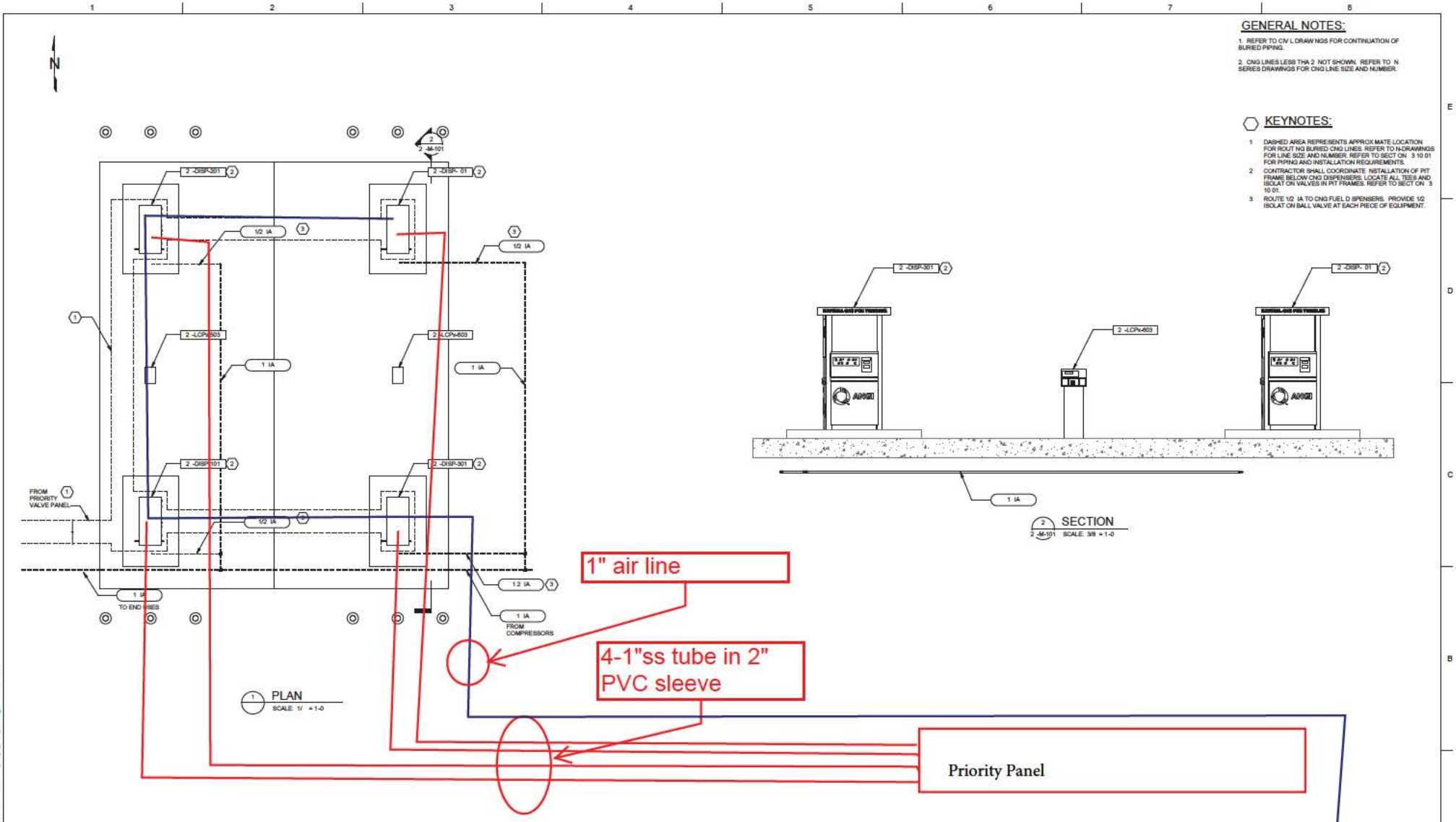
e. Pre-start Pipe Cleaning. All piping sections between packaged components that include piping or tubing shall be blown clean prior to connection to equipment. Blow out shall be achieved by closing the downstream end of pipeline with a 5000 PSI-rated ball valve, connecting a minimum 1650 PSI-source pressure vessel to the upstream end of the pipeline, opening supply valve at source so that minimum 750 PSI accumulates in pipeline, then opening outlet ball valve to atmosphere. Procedure shall be repeated until no solid or particulate matter is discharged from the pipeline.
   1) Personnel opening and closing ball valve at downstream end shall take care to keep clear of the discharge path of the blowout, and shall wear eye and ear protection during procedure.
   2) Direction of blowout flow shall be performed in both directions if possible.
   3) Contractor shall take care to clear area at pipeline discharge to prevent property damage or injury during procedure.

f. Startup Filtration. 'Witch's hat' or similar strainer devices shall be installed where practical at termination of such piping sections prior to system startup and shall be checked, cleaned and replaced by the Contractor as required until all residual pipe debris has been removed.

3. Pipe Fabrication. All internal pipe surfaces of piping between components shall be cleaned over its entire length, removing dirt, debris and loose corrosion products before pipe is lined up for welding. The open ends of all strings of pipe shall be kept securely closed to prevent the entrance of dirt, debris, water or animals into the pipe.
4. Field-applied Paint. All aboveground carbon steel pipe and pipe supports shall be painted using a suitable industrial maintenance coating. Surface preparation and selection and application of primer and finish coat shall conform to the paint manufacturer's written instructions.

D. High-Pressure Tubing
1. Tubing Specification. Gas tubing shall be stainless steel ASTM A-213 or TP 316 ASME SA213 cold drawn bright annealed seamless tubing. All tubing and tubing components shall be suitable for the full range of pressures, temperatures and loadings to which they may be subjected with a manufacturer-rated burst-safety factor of safety of at least 4.
2. Installation of Tubing and Tube Fittings. Swagelok, Parker Seal-Lok, or Hoke tube fittings shall be used. Contractor shall use tube fittings from a single manufacturer throughout a prepackaged component, so as to simplify use and consistency of appropriate repair parts. 300-series stainless steel fittings shall be used with stainless steel tubing. Manufacturers' personnel who install tubing and tube fittings shall be trained and certified by the fitting manufacturer for such activity, and proof shall be provided. Tubing shall be installed neatly and in a workman-like manner as per manufacturer's design and recommendation. All tubing shall be properly anchored, supported or pitched and shall be protected from impact. As CNG tubing dilates and contracts in response to its wide range of operating pressures, Behringer or Unistrut Cush-a-Clamp assemblies, or approved similar resilient anchors, shall be used to support gas tubing. Tubing shall be from straight "stick" stock and shall not be from rolled stock. Parker stainless steel or carbon steel fittings with Tough Shield coating Seal-lok fittings shall be used for tube fittings for tubing 3/4" or larger.
3. Valve Clearance. All valves shall be accessible for easy operation and maintenance.

Underground CNG piping



Brown AND Caldwell

USE OF DOCUMENTS

THIS DOCUMENT, INCLUDING THE INCORPORATED DESIGNS, IS AN INSTRUMENT OF SERVICE FOR THIS PROJECT AND SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF BROWN AND CALDWELL, INC.

NO.	REVISION	DATE	BY

SCALE

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REGISTERED PROFESSIONAL ENGINEER ADAM D. ROSS No. 72181 CIVIL STATE OF CALIFORNIA 10/15/16

DESIGNED: A. ROSS
DRAWN: M. MATSUMOTO
CHECKED: L. SLEZAK
APPROVED: A. ROSS

CITY OF ROSEVILLE CALIFORNIA

PLEASANT GROVE WASTEWATER TREATMENT PLANT ENERGY RECOVERY PROJECT

CNG VEHICLE FUELING STATION PLAN AND SECTION

MECHANICAL

FINAL DESIGN SUBMITTAL NOT FOR CONSTRUCTION

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PROJECT NUMBER: 1 8320

FACILITY DESIGNAT ON: CG

SHEET NUMBER: 24-M-101

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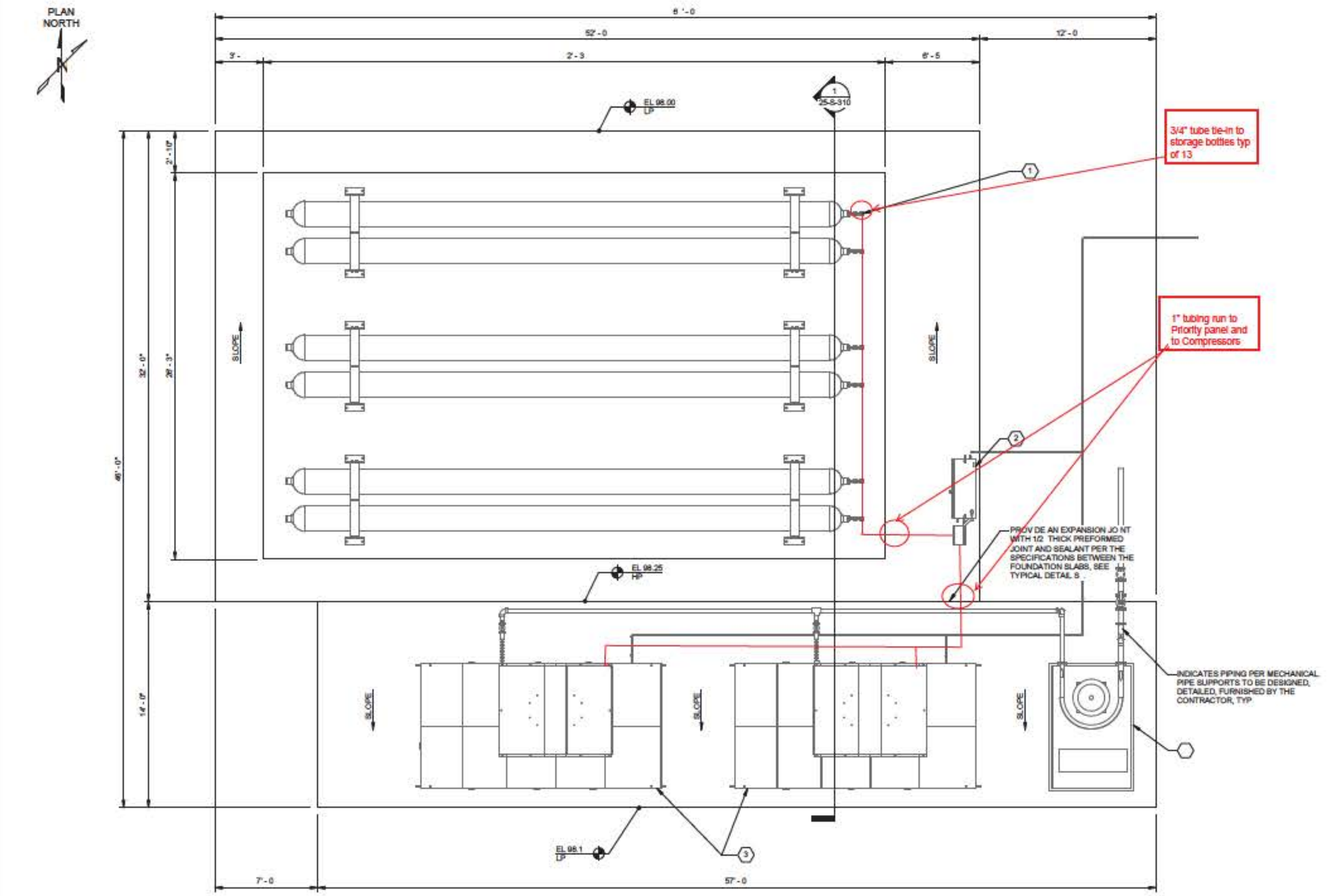

FOUNDATION PLAN

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GENERAL NOTES:

1. REFERENCE STRUCTURAL DRAWINGS 00-GS-001 THRU 00-GS-013 FOR GENERAL NOTES, TYPICAL DETAILS, AND ADDITIONAL INFORMAT ON.
2. FOR SUBGRADE PREPARATION BELOW THE FOUNDATIONS, REFER TO SHEET NUMBER 00-GS-001 FOR ADDITIONAL INFORMAT ON.
3. COORDINATE ALL PENETRATIONS WITH PLUMB NG, PROCESS, AND ELECTR CAL DRAWINGS.
. THE FOUNDAT ON SIZES SHOWN HAVE BEEN DESIGNED FOR THE PARAMETERS LISTED ON THE CONSTRUCTION DOCUMENTS. IF ANY OVERALL D MENSIONS OR WE GHTS DIFFER THAN WHAT IS SHOWN ON THE CONSTRUCTION DOCUMENTS, NOT FY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION OF THE FOUNDATIONS.
5. ALL FOUNDATIONS AND PAD SIZES SHOWN ARE PRELIMINARY BASED ON THE INITIAL S ZING OF THE EQU PMENT AND WE GHTS PROV DED. FOUNDATION D MENSIONS WILL BE FINAL ZED ONCE ANCHORAGE CALCULATION ARE SUBMITTED AND REVIEWED.
6. COORDINATE ALL PIPING AND PIPE SUPPORTS WITH THE PROCESS MECHANICAL DRAWINGS PRIOR TO ORDER NG AND FABR CAT ON.
7. ALL FOUNDATIONS, SLABS, AND STRUCTURES SHALL BE LOCATED ON THE SITE AS SHOWN ON THE CIVIL DRAWINGS.

KEYNOTES:

1 INDICATES STORAGE VESSELS (TYP OF 3). THE MAXIMUM OPERATING WE GHT SHALL NOT EXCEED 72,000 LBS (EACH STACK). THE SIZE OF THE EQUIPMENT PADS SHOWN IS PRELIM NARY AND THE F NAL SIZE SHALL DEPEND ON THE F NAL ANCHORAGE SUBMITTAL CALCULATION EDGE DISTANCE. THE ANCHORAGE SHALL BE DESIGNED, DETAILED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.

2 INDICATES ELECTR CAL PANEL. THE MAXIMUM OPERATING WEIGHT SHALL NOT EXCEED 1,000 LBS. THE SIZE OF THE EQUIPMENT PADS SHOWN IS PRELIMINARY AND THE FINAL SIZE SHALL DEPEND ON THE F NAL ANCHORAGE SUBMITTAL CALCULATION EDGE DISTANCE. THE ANCHORAGE SHALL BE DESIGNED, DETAILED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.

3 INDICATES COMPRESSOR UNITS. THE MAXIMUM OPERATING WEIGHT SHALL NOT EXCEED 18 000 LBS (EACH). THE SIZE OF THE EQUIPMENT PADS SHOWN IS PRELIMINARY AND THE FINAL S ZE SHALL DEPEND ON THE FINAL ANCHORAGE SUBMITTAL CALCULATION EDGE DISTANCE. THE ANCHORAGE SHALL BE DESIGNED, DETAILED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.

INDICATES GAS DRYER SKID. THE MAXIMUM OPERATING WEIGHT SHALL NOT EXCEED 7,200 LBS. THE SIZE OF THE EQUIPMENT PADS SHOWN IS PRELIMINARY AND THE FINAL SIZE SHALL DEPEND ON THE F NAL ANCHORAGE SUBMITTAL CALCULATION EDGE DISTANCE. THE ANCHORAGE SHALL BE DESIGNED, DETAILED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.

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USE OF DOCUMENTS

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DESIGNED: P. BOURDANIOTIS
DRAWN: M. GLUSHKO
CHECKED: W. ROSE
APPROVED: A. ROSS

CITY OF ROSEVILLE CALIFORNIA

PLEASANT GROVE WASTEWATER TREATMENT PLANT ENERGY RECOVERY PROJECT

CNG COMPRESSION AND STORAGE SYSTEM PLAN

STRUCTURAL

FINAL DESIGN SUBMITTAL NOT FOR CONSTRUCTION

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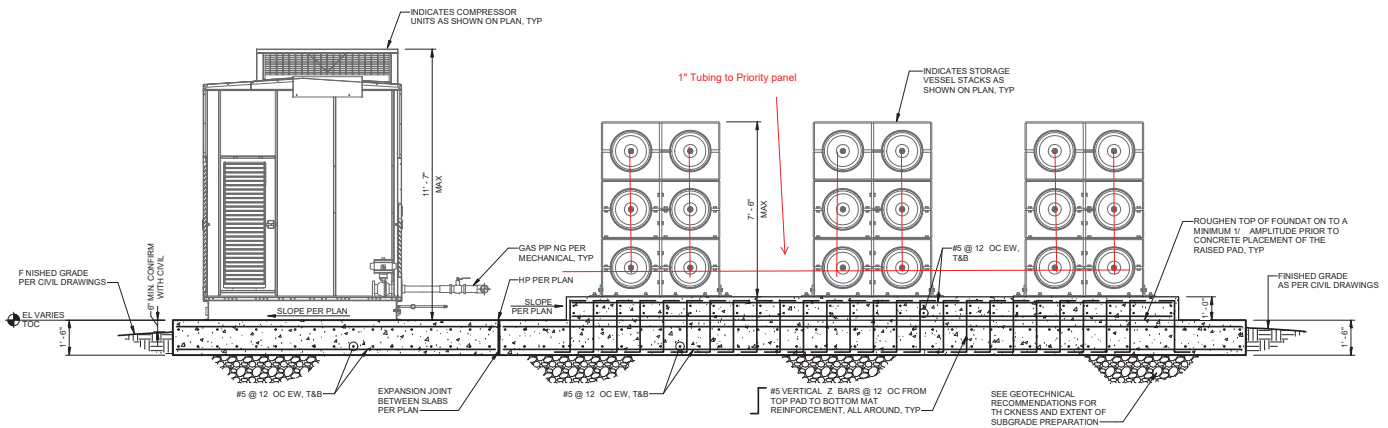

1 SECTION
25-S-110 SCALE: 3/8 = 1'-0

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DESIGNED: P. BOURDANIOTIS
DRAWN: M. GLUSHKO
CHECKED: W. ROSE
APPROVED: A. ROSS

CITY OF ROSEVILLE CALIFORNIA

PLEASANT GROVE WASTEWATER TREATMENT PLANT
ENERGY RECOVERY PROJECT

CNG COMPRESSION AND STORAGE SYSTEM SECTIONS

STRUCTURAL

FINAL DESIGN SUBMITTAL
NOT FOR CONSTRUCTION

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