MONTECITO WATER DISTRICT

June 5, 2025

ADDENDUM NO. 1

TO CONTRACT DOCUMENTS FOR THE

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

Project No. P133

Dated May 2025

The following modifications, additions and/or deletions are made a part of the CONTRACT DOCUMENTS for the construction of the RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR (P133) project issued fully and completely as if same were set forth therein:

BIDDER QUESTIONS/CONTRACT DOCUMENT CHANGES

1. Question: Can the reservoir be fully out of service during construction, or are temporary tanks required?

   Answer: Yes, the reservoir can be fully drained and no temporary storage tanks are required.

2. Question: Has the reservoir been tested for lead and asbestos?

   Answer: The existing tank columns were tested for lead, for which none of the building materials sampled contained concentrations of lead greater than 1.0 milligrams per square centimeter. No asbestos testing has been performed.

MANDATORY PRE-BID ATTENDEES

See attached sign in sheet which indicates the bidders that have visited the site. This list will be updated and distributed via Addendum if additional bidders visit the site during the bid phase.

CONTRACT SPECIFICATIONS, INSTRUCTIONS TO BIDDERS, I-13.1.a – GENERAL LIABILITY

Delete in its entirety the first sentence of paragraph I-13.1.a and replace with “Contractor shall maintain commercial general liability (CGL) with a limit of not less than $5,000,000 each occurrence.”

CONTRACT SPECIFICATIONS, INSTRUCTIONS TO BIDDERS, I-13.1.b – GENERAL LIABILITY

Delete in its entirety the first sentence of paragraph I-13.1.b and replace with "Contractor shall maintain CGL and, if necessary, commercial umbrella liability insurance with a limit of not less than $5,000,000 each occurrence for a least 2 years following the issuance of the Statement of Acceptance by District pursuant to General Conditions Section 6.4.1. Continuing CGL insurance shall be written on ISO occurrence form CG 00 01 12 07 (or a substitute form providing equivalent coverage) and shall, at a minimum, cover liability arising from products-completed operations and liability assumed under an insured contract."

CONTRACT SPECIFICATIONS, INSTRUCTIONS TO BIDDERS, I-13.2.a – AUTOMOBILE LIABILITY

Delete in its entirety the first sentence of paragraph I-13.2.a and replace with "Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than $1,000,000 each accident.

CONTRACT SPECIFICATIONS, SPECIFICATION SECTION 02520, CURED-IN-PLACE THERMOSETTING RESIN PIPE LINER

Delete in its entirety Specification Section 02520, Cured-In-Place Thermosetting Resin Pipe Liner and replace with the attached Specification Section 02520, Cured-In-Place Pipe (CIPP) Lining of Water Utilities.

CONTRACT DRAWINGS – SHEET C-101, INTERIOR INLET/OUTLET PIPING – CHEMICAL SYSTEM

See attached sketch and photos for existing conditions for the chemical feed system and associated chemical feed piping and appurtenances, which shall be removed, stored and re-installed per the Contract Documents.

CONTRACT DRAWINGS – SHEET S-101, DEMOLITION PLAN

Clarification for Keynote 14. The width of the stairs is approximately 36-inches. See attached photos for additional information.

CONTRACT DRAWINGS – SHEET S-103, ROOF DECK PLAN

Delete in its entirety Sheet S-103, Roof Deck Plan and replace with the attached Sheet S-103.

CONTRACT DRAWINGS – SHEET S-301, WALL RETROFIT SECTION

Delete in its entirety Sheet S-301, Wall Retrofit Section and replace with the attached Sheet S-301.

APPROVED:

Adam Kanold, PE
Assistant General Manager/Engineering Manager

Dated: 6-5-2025

Mandatory Pre-Bid Meeting Sign-In Sheet
Seismic Retrofit and Replacement Project – Terminal
Meeting Time: June 4, 2025 @ 10:00 AM
Meeting Location: 583 San Ysidro Road, Santa Barbara, California 93108

No.	Name	Company Name	Phone Number	E-mail Address	Time In	Time Out
1.	Alex Lopez	Filanc	760-466-0509	bids@filanc.com	9:40	
2.	Luke McQuaid	Filanc	760-941-7130	bids@filanc.com	9:40	
3.	Johnny Fuentes	KIEWIT	562-236-6880	Josh.Young@kiewit.com Johnny.Fuentes@kiewit.com	9:40	
4.	JOHN SCHOCK	Schock	805 896-2889	JOHN@SCHOCKCONTRACTING.com	9:40	
5.	PATRICK ROBINSON	BOSCO	818-700-0304	RJR.BOSCO@GMAIL.com	9:40	
6.	Cade Lacroix	CUSHMAN	662-273-0931	CADE@CUSHMANCONTRACTING.com	9:48	
7.	FRED ROINESTAD	DIANI BUILDING COMP	805-925-9533	fredr@diani.com	9:50	

Pre-Bid Meeting Sign-in Sheet

No.	Name	Company Name	Phone Number	E-mail Address	Time In	Time Out
8.	JAY HALL	GATEWAY PACIFIC CONTRACTORS	(916) 665-4100	bids@gatewaypacific.com	9:59	
9.	James Smith	United Rentals Fluid Solutions	(661) 812-3411	Jsmith71@ur.com	9:58 am	
10.	Jack ostrander	United rentals	805-627-3504	Jostrander@ur.com	9:50 am	
11.	Ryan Drury	Rain For Rent	(805) 212-6493	RDrury@rainforrent.com	10:00 AM	
12.	Robert Beeter	Metro Builders & Engineers Group, Ltd.	949-515-4350	Robert@metrobuilders.com		
13.	Eric Morales	NMN Construction	714-389-2104	eric.morales@nmnconstruction.com		
14.						
15.						

No.	Name	Company Name	Phone Number	E-mail Address	Time In	Time Out
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						

No.	Name	Company Name	Phone Number	E-mail Address	Time In	Time Out
24.						
25.						
26.						
27.						
28.						
29.						
30.						
31.						

SECTION 02520
CURED-IN-PLACE PIPE (CIPP)
LINING OF WATER UTILITIES

PART 1 - GENERAL

1.01 SCOPE

A. This section covers the rehabilitation of fully deteriorated pressurized water mains, inclusive of the following:

1. Cleaning and flushing existing water pipelines.

2. Closed circuit televising (CCTV) of existing pipelines.

3. Public relation requirements.

4. Cured-In-Place-Pipe (CIPP) liner design and installation.

5. Sampling and testing requirements.

B. The CIPP liner shall be designed as a fully structural Class IV pipe, not relying on the remaining strength or water tightness of the host pipe to withstand long-term external loading and internal pressure.

C. The CIPP liner shall be used on piping systems intended for the conveyance of potable water. The proposed product shall be certified as complying with the requirements of NSF/ANSI Standard 61.

D. All work shall comply with the terms of this specification and with the manufacturer's standards set forth for cured-in-place-pipe lining method selected by the Contractor and approved by the Engineer. Under this method the Contractor shall reconstruct existing water mains by the insertion of a flexible lining tube. Prior to installation, the tube will be impregnated and saturated with a thermosetting resin. The liner shall be inserted into the existing water main by either inverting the liner and installing inside out through the use of water or air pressure (ASTM F1216) or through pulling the tube into place by winching and then inflating it (ASTM F1743). The shaping of the liner may be achieved by pushing a pig through the hose using water pressure or inflating it with water or air pressure. The thermosetting resin shall then be cured only by circulating hot water through the tube to cure the resin into a hard-impermeable pipe. Use of hot air or circulating steam shall not be permitted during installation process.

E. Any cost associated with the removal of the unsatisfactorily installed liner and the subsequent, satisfactory reinstallation of an approved liner shall be borne solely by the Contractor, and he shall not make any claim against the Owner for this additional required work.

F. Once installed, the liner shall extend from start to end points specified in a continuous tight fitting watertight pipe-within-a-pipe, and the service connections shall be re-opened. During the warranty period any defects that might affect the integrity or strength of the liner shall be

immediately repaired or replaced by the Contractor, at his expense, pursuant to the manufacturer's recommendations, and to the satisfaction of the Owner.

1.02 REFERENCE STANDARDS

A. Supply all products and perform all work in accordance with the latest applicable ASTM International (ASTM) standards.

B. The following ASTM Standards are being made part of the Specifications for the various approved processes and will be used as a minimum. Latest revisions of all standards are applicable.

1.	ASTM C581	Standard Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass Fiber Reinforced Structures Intended for Liquid Service.
2.	ASTM D543	Standard Test method for Resistance of Plastics to Chemical Reagents.
3.	ASTM D578	Specification for Glass Fiber Strands.
4.	ASTM D638	Standard Test Method for Tensile Properties of Plastics.
5.	ASTM D790	Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
6.	ASTM D2122	Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.
7.	ASTM D2990	Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics.
8.	ASTM D3567	Standard Practice for Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings.
9.	ASTM D3681	Chemical Resistance of Fiberglass Pipe in a Deflected Condition.
10.	ASTM D5035	Test Method for Breaking and Elongation of Textile Fabrics (Strip Method).
11.	ASTM D5199	Standard Method for Measuring Nominal Thickness of Geotextiles and Geomembranes.
12.	ASTM D5813	Standard Specification for Cured-in-{;aced Thermosetting Resin Sewer Piping Systems.
13.	ASTM E1252	Standard Practice for General Techniques for Qualitative Infrared Analysis.
14.	ASTM F1216	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.
15.	ASTM F1743	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP).
16.	ASTM F2019	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP).
17.	AWWA	AWWA Committee Report: Structural Classifications of Pressure Pipe Linings
18.	NSF/ANSI 61	Drinking Water System Components – Health Effects

1.03 SUBMITTALS

A. Contractor Submittals: Requirements for submittals.

B. Product Data:

1. CIPP Liners: Submit manufacturer's information on resin, resin enhancer, tube material, curing chemicals, sealant/caulking material, end seals, and lubricants.

2. Submit manufacturers' certificates certifying products meet or exceed specified requirements. Certification shall state that all CIPP materials have been manufactured in accordance with all applicable ASTM standards, and the CIPP method is suitable for the installed environment.

3. Calculations showing that the lining thickness and strength has been designed to meet the requirements of this specification including fully structural lining, Class IV.

4. Submit manufacturer's resin sample for independent testing.

5. Submit material sample test results including soil cell testing, chemical resistance, SDR, creep and long-term structural loading tests.

6. Submit NSF 61 compliance certification.

C. Shop Drawings:

1. For all liners, indicate liner dimensional information for each pipe size to be relined. Include field measurements of each host pipe section with liner design.

2. Methods and materials for sealing lateral service connections.

D. Manufacturer's Storage and Installation Instructions:

1. Submit manufacturer's requirements for receiving, handling, and storage of materials.

2. CIPP Liner: Submit detailed description of liner placement and curing procedures for piping. Submit manufacturer's recommended installation pressures and cure times, minimum and maximum, for each reach. Include description of procedures for sealing liner material at access points, valves, mains, and re-establishing service connections.

E. Contractor Qualifications:

1. Submit documentation of lining installer's experience specifically for potable water pressure pipelines.

2. Submit certification of Contractor’s licensure to install the provided lining method.

3. Submit documentation from the manufacturer that there is an established and ongoing quality control and quality assurance program for the product at the manufacturer's production facility. This should include proof that the manufacturer has the necessary equipment and trained personnel to properly implement the program.

4. The product installed shall be certified by NSF to ANSI/NSF Standard 61 and shall be listed on the NSF website accordingly. The product installed shall meet the requirements of (Section G) and shall have been commercially proven per the requirements listed in Section 1.05 of this specification.

F. Design Data: Liner thickness design calculations, in conformance with the specified design requirement, shall be submitted.

G. Field Measurements: Contractor to verify pipe materials and measure the actual diameter of each pipe section to be lined. Measurements shall be provided to Engineer. For CIPP lining, each liner section shall be manufactured per actual diameter of pipe section. Provide actual measurements and liner dimensions for each pipe section with liner design.

H. Submit a workplan that includes the following:

1. Location of lining access pits in relation to the site and in relation to the pipe(s) that the pit is being constructed to provide access to.

2. For each access pit describe the excavation boundary and dimensions at the base of the pit and at the ground surface and for off-road pits, describe the access route that will be used to reach the access pit site.

3. Schedule of access pit excavation and lining installation.

I. CIPP Resin Curing Schedule: Submit resin curing schedule indicating the time and temperature for each pipe reach per the manufacturer's requirements.

J. CCTV Inspection Records and Reports: CCTV inspections shall be provided for each installation, access point to access point.

1. Submit CCTV after cleaning and prior to lining, showing the condition of existing pipe and pipe joints, and location of existing service connections.

2. See 1.03.N.1 for post lining CCTV submittal requirements.

3. CCTV inspections shall be submitted on Digital Video Discs (DVDs).

K. Public Notification Letter: Submit public notification letter/flyer to Engineer for review and acceptance prior to distribution to public.

L. CIPP Sample Test Results: The Contractor shall submit test results from CIPP field installations to verify that the physical properties specified have been achieved. Testing submittal shall include an affidavit from a third-party testing laboratory of installation samples.

M. Traffic Control Plan, if required.

N. Closeout Submittals

1. Submit post lining CCTV within 3 days after liner installation is complete, showing entire finished liner and re-established service connections. Line shall be dry and clean

during the video inspection and CCTV shall include both ends of liner. District's representative shall be present for CCTV inspection.

2. Manufacturer's recommended method for installing a new corporation stop, tap, or tee on a water pipe that has been rehabilitated with the CIPP liner.

3. CIPP Resin Curing logs shall be submitted after the liner installation.

4. Record Drawings.

1.04 **DESIGN REQUIREMENTS**

A. GENERAL

1. Design lining material for a fully deteriorated host pipe in accordance with ASTM F1216 or ASTM F1743. Rehabilitated pipe shall have sufficient structural strength to support dead loads, live loads, and groundwater loads imposed.

2. Design liner material to provide joint less and continuous structurally sound construction.

3. The liner should be manufactured to match the geometry of the existing pipe so that no deformation or wrinkling of the liner will be formed during or after curing. Contractor to identify location and geometry of pipe bends prior to installation.

4. For any portions of the pipe to be lined is located within a roadway or parking area, the Contractor is to assume a live loading of HS-20 in these areas.

B. Cured-in-Place Pipe, Design Requirements: The cured-in-place liner thickness shall be calculated based on the following physical conditions of the existing pipe.

1. The liner shall be structurally designed for a minimum service life of 50 years.

2. The safety factor shall be 2.0.

3. Long-term modulus and strength shall be set to 50% of the initial values given in paragraph 2.01B, below.

4. Design lining material for a fully deteriorated host pipe and meet the requirements of AWWA M28 structural Class IV: Fully Structural, capable of withstanding external loads and intern design pressure for a minimum of 50 years.

5. Live loading shall be HS-20 in accordance with AASHTO requirements.

6. All pipes shall be considered to have a minimum of two percent (2%) ovality in the circumference.

7. Allowable liner deflection of five percent (5%).

8. The enhancement factor K shall not be higher than 3.5.

9. Internal working pressure shall be 150 psi.

10. The pipeline depth, diameter, and length shown on the Drawings are based on field investigation and existing records. The Contractor shall use field measurements of the pipeline length and diameter for the liner design. Any discrepancies between the Drawings and the field measurements shall be reported to the Owner.

1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum 3 years of documented experience.

B. Installer: Company specializing in performing work of this section and who is licensed and approved by the manufacturer. Company shall have a minimum of 3 years of documented experience with projects of similar size and complexity as this project; and with the installation of liner materials specified herein. Project Superintendent shall have a minimum of 3 years of experience as Superintendent or shall have installed a minimum 10,000 feet of CIPP in proposed size and range of this project.

1.06 MATERIAL DELIVERY, STORAGE AND HANDLING

A. Materials shall be transported to, and stored at, the site in such a manner that they will not be damaged, exposed to direct sunlight, or result in any public safety hazard, and per manufacturers' recommendations.

1.07 COORDINATION

A. Notify property owners and businesses in advance of expected disruption of potable water service. Notification shall be provided to each affected property owner in a written format. Submit the public notification letter/flyer to Owner for review and acceptance prior to distribution to the public.

B. Limit disruption of service to individual properties to one-time occurrence for maximum 2 hours.

C. Do not disrupt customer service between the hours of 5:00 p.m. and 7:00 a.m., unless stated otherwise on the Drawings.

1.08 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication and installation.

2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.01 CURED-IN-PLACE PIPE, POLYESTER FIBER OR GLASS REINFORCED PLASTIC

A. Materials:

1. Tube: Corrosion resistant fiberglass and/or polyester fiber fabric tube meeting the requirements of ASTM F1216 or F1743.

a. The wall color of the interior pipe surface of the CIPP after installation shall be a light reflective color so that a clear detail examination may be made of the final product.

b. The Contractor shall make allowances in determining the tube length and circumference for stretch during installation and shrinkage during curing and aging. The minimum design length shall be that which continuously spans the distance from the center of the inlet point to the center of the outlet point. The Contractor shall verify the lengths in the field before the liner tube is cut and impregnated. Individual installation runs may include one or more access point-to-access point or bend-to-bend sections as authorized by the Owner.

c. The flexible tube shall be fabricated to a size that when installed will neatly fit (minimum 99.75%) the internal circumference of the existing potable water lines (including services). Allowance shall be made for circumferential stretching during insertion so that the final cured product is snug against the wall of the host pipe.

d. The tubes shall have a uniform thickness equal to the designed nominal tube thickness.

e. The layers of the cured CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe of point of a knife.

f. Liner material shall be manufactured with the resins pre-impregnated within the liner to eliminate the possibility of air bubbles and voids.

2. Resin: Chemically resistant, low viscosity, epoxy curing resin and catalyst system compatible with curing process. Epoxy resin shall be suitable for use in potable water systems, certified to meet the NSF/ANSI Standard 61, and shall not give off any noticeable odors. Vinyl ester resins or other styrene based resins will not be allowed for use on this project.

B. Structural Requirements: The physical properties of the cured CIPP shall have minimum initial test values as defined in ASTM F1216 or F1743 or as shown in the table below, whichever is greater.

Property	Test Method	Cured Composite (per ASTM F1216 or F1743)
Flexural strength	ASTM D790	4,500 psi minimum
Flexural modulus	ASTM D790	250,000 psi minimum
Tensile strength	ASTM D836	3,000 psi

C. The tube thickness shall meet approved design calculations based on the structural and design requirements listed in paragraph 2.02B. The nominal CIPP thickness shall be at least the calculated design thickness, per ASTM F1216, except where fabric layers overlap, in which case it may be in excess of this value.

D. Chemical Resistance: The cured CIPP shall meet the chemical resistance requirements of and NSF/ANSI Standard 61. The finished in place Cured fiberglass or polyester fiber pipe liner

shall be fabricated from materials which when complete are chemically resistant to and will withstand internal exposure to potable water.

E. Manufacturers

1. Prokasro & Saertex GmbH

2. Insituform Technologies, Inc.

3. Aqua-Pipe

4. InLiner Technologies

5. Applied Felt

6. Sekisui SPR

7. Or Approved Equal

2.02 **END SEALS**

A. End seals shall create a water tight seal between the liner and the host pipe and meet the requirements of ASTM F1216 and ASTM F1743.

B. End seals shall be NSF-61 certified.

C. Acceptable manufacturers:

1. LMK

2. Or Approved Equal

PART 3 - EXECUTION

3.01 **EXAMINATION**

A. Contractor shall verify existing conditions before starting work.

B. Site verification of conditions:

1. Verify field measurements of pipe inside diameters and lengths between access points prior to design, fabrication, and delivering of liner material.

2. Verify existing pipe material changes from previous repairs.

3. CIPP Liners: Contractor to measure actual diameter of each pipe section to be lined. Measurements shall be provided to Engineer and each liner section shall be manufactured per actual diameter of pipe section. Provide actual measurements and liner dimensions for each host pipe section with liner design.

3.02 WATER MAIN REHABILITATION ACCESS PITS AND HOST PIPE ACCESS

A. Locate and construct access pits required to install the liner and rehabilitate the water main. Location of the access pits shall be based on the information represented on the Drawings, the conditions of the project site, and any design and/or manufacturing limits of the CIPP liner. Excavate and backfill the access pits in accordance with Specifications.

B. Carefully expose and remove the minimum length of host pipe and fittings necessary to accomplish liner insertion. The existing host pipe shall be cut square with no split or fractured ends. All cut faces of the host pipe shall be chamfered on the inside surface to prevent damage to the liner during or after insertion. Immediately upon opening the host pipe, the ends of the adjacent existing water main that are not to be lined shall be securely covered to prevent debris from entering during the rehabilitation work.

3.03 CLEANING, FLUSHING, AND LINE OBSTRUCTIONS

A. It is the responsibility of the Contractor to clear the line of obstructions such as roots, debris, sedimentation, and mineral deposits that will prevent or hinder the insertion of the liner prior to liner installation. Presence of obstructions in the pipeline are considered incidental to the work and are not reason for a change order. Costs for the cleaning and disposal shall be borne by the Contractor.

B. Clear obstructions, service piping protrusions more than ¼ inch and other materials from entire circumference of existing pipe to ensure inserted pipe liner contacts only existing pipe wall.

C. Pipes shall be cleaned by the Contractor, as needed, with high-velocity jet cleaners, mechanically powered equipment, cable-attached devices or fluid-propelled devices (e.g. pipe pigs). Pipeline cleaning shall be performed in accordance with SSPWC (Greenbook) 500-3.1, 3.2 and 3.3.

D. The Contractor shall flush the host pipe with clean water to remove any loose debris from the pipe surface. Wherever practical, remove standing water from the inside surfaces of the cleaned pipeline by passing oversized foam swabs through the main or use a progressive expansion method to remove standing water.

E. Water necessary for cleaning, flushing, and pressure testing will be available, at no cost, from locations (fire hydrants) identified by the Owner prior to the start of work. Water sources shall be in close proximity to the access pits. The Contractor shall provide necessary piping or flexible hoses, fittings, and approved reduced pressure backflow prevention device.

F. If the cleaning work is not satisfactory to the Owner, the Contractor shall perform additional cleaning, at the Contractor's sole cost, so that the installation of the liner pipe is not hindered.

G. All sludge, dirt, sand, rocks, and other solid or semi-solid material resulting for the cleaning operation shall be removed from the potable water system and properly disposed of by the Contractor, at the Contractor's sole cost.

H. Precautions shall be taken to ensure that the cleaning operation will not cause any damage or flooding to public and/or private property being serviced by the potable water line. The

Contractor shall bear full costs associated with any flooding or damage to basements of structure.

I. If the pre-lining video inspection reveals an obstruction such as a protruding service connection, offset joint, or a collapse that will prevent the CIPP insertion process, and it cannot be removed by conventional potable water cleaning equipment, the Contactor shall uncover and remove the obstruction through a point repair. Such excavation must be approved in writing by the Owner prior to the commencement of work. If the obstruction was not shown on the Drawings or revealed by the Contractor at the time of the bid, the work will be considered as a separate pay item by Change Order.

3.04 INITIAL VIDEO INSPECTION

A. Conduct closed-circuit video inspection in accordance with SSPWC (Greenbook) 500-3.2.2 and 500-3.4. CCTV shall be performed utilizing a rotating lens video cameral system.

B. Pipeline shall be dry during the pre-lining inspection.

C. Engineer shall be present for CCTV inspection.

D. Notify the Engineer and Owner if any of the following defects are observed:

1. Major offset of joints

2. Crushed walls

3. Other obstructions.

E. Identify sizes and locations of service entrances and service connections. Identify the addresses of all live and capped service connections.

F. If flow is resumed in the pipe prior to lining, and after the pre-lining video inspection, the Contractor is required to re-inspect the pipeline immediately before lining to ensure no debris has been introduced into the pipe.

G. Submit the initial video inspections on DVD or thumb drive to the Owner Representative for review. DO NOT start trenchless rehabilitation until the Owner has reviewed and accepted the initial video inspections. The Owner may require additional videotaping to ensure that all obstructions have been removed prior to lining.

H. Submit the video "logs" to the District Representative for review. Each service connection or tap must be documented and the following information provided:

1. Whether the service is active or "capped". Contractor shall determine by dye test, running water, or visual inspection whether connections of active or abandoned.

2. Linear distance from starting access point.

3. Circumferential position on pipe (2 o'clock, 10 o'clock, etc.).

I. Engineer and Contractor shall agree prior to liner installation which services are to be re-established. Engineer or Owner's representative will review video logs and respond to contractor with 7 calendar days with approval or required action.

3.05 PUBLIC RELATIONS

A. The Contractor is responsible for contacting property owners and businesses that are affected by the construction activities to inform them of the Work to be done and the estimated schedule and timing for the Work. Written notice shall be delivered to each home or business 2 weeks prior to installation of the liner. Notice shall include a local telephone number of the Contractor, and contact information for the Owner. Written notices must be reviewed by the Owner prior to distribution to the public.

B. Two (2) days prior to the liner installation, a follow-up notice shall be delivered to each home or business that has a service connection on the potable water pipeline that is scheduled to be lined.

3.06 INFILTRATION

A. Minor infiltration (drips or wet, blotchy areas) is a normal condition and is not to be considered a change in conditions by the Contractor. For CIPP liners, if, in the opinion of the Contractor and Engineer, infiltration is significant enough to adversely affect the curing process, the Contractor shall install chemical grout or perform other remedies to address the infiltration, as approved by the Engineer. Chemical grouting or other infiltration remedies will be considered additional work and will be paid for through a Change Order.

3.07 WATER BYPASS

A. No Water Bypass will be required during the work as it will be scheduled while the existing reservoir is out of service. The Contractor shall so schedule its construction operations so that no interference with the operation of the system will occur.

3.08 INSTALLATION, CURED-IN-PLACE PIPE – POLYESTER FIBER OR GLASS REINFORCED PLASTIC

A. Cured-In-Place Pipe installation shall be in accordance with ASTM F1216 or F1743.

1. Acceptable Installers:

a. Layne Inliner, LLC (National)

b. InsituForm (National)

c. Sanexen Environmental Services, Inc. (National)

d. Reline America (National)

e. Michels (National)

B. FinaLiner (Western Region) Resin Impregnation: The reconstruction tube shall be vacuum impregnated with curing resins in the manufacturing facility prior to installation. The manufacturer will allow the engineer or owner to inspect the manufacturing facility and

observe manufacturing process if required by the owner. The Contractor shall allow the Owner to inspect the materials prior to installation. During resin injection, resin samples shall be collected and tested for exotherm time in a "gel test bath". These tests will serve as a quality control measure for the proper catalyst-resin ratio. Samples shall be collected at the beginning and end of the resin pump based on the resin manufacturer's recommendations, as well as a minimum of two gel tests per tube and a minimum of one gel test every 2,000 pounds pumped. Evidence of proper saturation and catalyzation shall be provided with every liner installed on the job.

C. Tube Insertion: The wetout tube shall be positioned in the pipeline using a pull-in method or a direct inversion process, or a combination of the two. A power winch should be utilized and care should be exercised not to damage the tube as a result of pull-in friction. The tube should be pulled-in through an approved access point and fully extended to the next designated termination point.

D. The fiberglass or polyester fiber Liner shall be inflated in place using low-pressure air or water to the Manufacturer's specification. Cure installed liner by using appropriate medium according to manufacturer's recommended cure schedule. After inspection and complete inflation to Manufacturer's specifications, the curing process will commence at a rate specified by the Manufacturer according to the total length and diameter of the liner. Allow installed pipe liner to cool according to manufacturer instructions.

E. As the liner is curing, the curing system shall record all curing data for review by the Owner. Initial cure shall be deemed complete when the curing chain arrives at the initial entry point of insertion. The curing process must follow the steps laid out as part of the NSF/ ANSI Standard 61 potable water manufacturer's certification.

F. For potable water lines where no service connections are included, a Distributed Temperature Sensing (DTS) system that captures a continuous temperature profile along the length of the pipe shall be utilized to monitor curing. The temperature sensing device shall be placed prior to installing the lining system.

G. Manufacturer's directions for cool-down of NSF/ANSI Standard 61 certified CIPP cool-down procedures laid out in the certification shall be followed.

H. "Dimples" shall be visible where service openings are present so it is absolutely clear where the service openings are located. If dimples are not present, Contractor to use infrared device to locate potable water service connections.

I. The Contractor shall apply an annular space, hydrophilic sealant at the access point or CIPP termination point. The seal shall be of a material compatible with the CIPP material and shall be approved by the Owner or Engineer. annular

3.09 SERVICE REINSTATEMENT

A. Reinstate active potable water service connections within 24 hours after completion of the CIPP liner installation or after manufacturer's recommended cure time, whichever is sooner. Engineer and Contractor shall agree, prior to liner installation, which services are to be re-established. Generally, capped potable water service connections will not be reinstated.

B. Match invert of reinstated service with previously existing invert. Maintain minimum of 95 percent to maximum of 105 percent of original service connection opening.

C. Reinstate potable water service connection with uniform cuts free of burrs and sharp edges. The openings shall be neat, clean, circular, and concentric with the service pipe. The reactivation process can be a one or two-step method.

1. One Step Method - Cut hole using a router bit or deburring tool leaving service free of burrs and sharp edges. After inspection, if burrs or sharp edges remain a second brushing step may be required.

2. Two Step Method - Cut hole using a router bit or deburring tool and then brush with a wire brush to a neat and smooth surface free of burrs and sharp edges.

D. Where the CIPP liner does not create dimples at the service connections or in other ways indicate the locations, the exact location shall be determined from the internal inspection data and infrared device. It shall be the Contractor's responsibility to accurately locate and reinstate all service connections after the CIPP installation and curing has been completed.

E. Perform lining and re-instate service connections without need for excavation while minimizing disruptions to residences, adjacent occupied buildings and traffic.

F. Contractor may use robotic methods as a means of service re-instatement which shall conform to the following:

1. Reinstate service connections 2 inches in diameter and smaller from the interior of the water main using a television camera directed robotic cutting device that removes a small section of the liner and service plug to expose the corporation valve opening. Using open-cut excavation as the primary means of reinstating services will be allowed on a case by case basis and must be approved by the Owner in the Contractor’s Work Plan.

2. All connections that are to be reinstated robotically shall be satisfactorily opened to the size of the original opening, and to the depth required to completely open the water connection to the customer. The reinstated service connection shall be smooth and uniform with no rough edges or protrusions along the trimmed edge of the liner.

3. Open cut excavation and reinstatement of a service from the exterior of the water main may be used as the primary means of reinstating a service connection when the existing corporation stop is located in an excavation for an access pit, hydrant connection or water main tie-in. This external service reinstatement work is paid under the same pay item used for robotic reinstatement of service connections.

4. Each reinstated service connection shall be thoroughly inspected with the camera during the post rehabilitation CCTV inspection to confirm that the final fit and finish is acceptable. The CCTV inspection will include stopping at each reinstated service, pausing for a minimum of 10 seconds and viewing the entire circumference of the reinstated service. The Contractor shall provide electronic copies of inspections to the Owner.

5. Service reinstatement work shall be performed by Contractor personnel that are qualified and experienced in this type of work. The Owner may request that the Contractor personnel performing the service reinstatement work demonstrate that they are capable of completing the work in conformance with the requirements of this Section, prior to performing the service reinstatement work on the new liner installed on the project.

6. The Owner will not be responsible for paying for Work to remove and replace water services due to unsuccessful robotic reinstatements. The Contractor will be responsible for completing work on these water services, at no cost to the Owner.

3.10 FIELD QUALITY CONTROL

A. Construction Observation will be performed in accordance with applicable specifications. Provide a 5-day minimum notice so that the Engineer may witness the wet-out and installation procedures. Additional observation may be required by Engineer.

B. Access point and water valve structures shall be protected from damage.

C. When liner fails to form, remove failed liner and install new liner.

D. No infiltration of groundwater is permitted after installation of liner.

E. Confirm service connections are complete and are unobstructed.

F. Wrinkles or lifts shall not exceed 2% of the host pipe diameter, or ¼ inch, whichever is greater. Contractor shall repair or replace that section of the pipe at no additional cost to the Owner. Methods of repair shall be proposed by the Contractor and submitted to the Engineer for approval.

G. Defects such as foreign inclusions, dry spots, pinholes, delamination, and wrinkling beyond the specification allowances, as determined by the Engineer as affecting the integrity or strength of the liner, or as adversely affecting the hydraulic capacity of the pipe, shall be repaired or replaced. Contractor shall repair or replace that section of the pipe at no additional cost to the Owner. Methods of repair shall be proposed by the Contractor and submitted to the Engineer for approval.

H. Excavate for point repairs or service connections only on an emergency basis and as permitted by the Owner or Engineer.

3.11 FIELD SAMPLES

A. This section applies to Cured-In-Place Pipe for Resin Impregnated Felt and Glass Reinforced Plastic and/or Polyester Fiber.

B. Field Samples for CIPP:

1. Contractor shall submit samples as required herein. Contractor shall provide all labor and materials necessary to produce samples for laboratory and/or field testing. Contractor to contract directly with third party certified laboratory for testing as required.

2. Infrared Spectrum Analysis (Chemical Fingerprinting) - Provide access to the resin intended for the use on the project for sampling and chemical fingerprint testing. All testing will be performed in accordance with ASTM E 1252. If sample fails test, work is non-conforming.

3. The wall thickness will be measured in accordance with the applicable ASTM Standards. Test method to be determined by testing laboratory. Any liner having a measured wall thickness of less than 80% of the required thickness shall be removed and replaced with a liner meeting the minimum thickness requirements.

4. The flexural strength and flexural modulus of elasticity shall be determined in accordance with ASTM D-790. Any liner having test results with flexural strength or flexural modulus of elasticity of less than 80% of the specified flexural strength and flexural modulus shall be removed and replaced with a liner meeting the strength requirements.

5. Method for obtaining sample for 16 inch-diameter pipe or smaller pipe:

   a. Provide a flat plate sample using the method described in ASTM F1216. An affidavit shall be provided by the wet out facility for each flat plate sample. The affidavit shall state that the flat plate sample is the same as the liner it represents.

   b. Label the access point number and date of installation, and submit the sample pipe to the laboratory for testing.

6. Sample frequency:

   a. One (1) sample per every Segment (A through E as defined in the Drawings) or every 300 feet of linear installed (whichever is less).

3.12 POST-LINING VIDEO INSPECTION

A. Conduct closed-circuit video inspection in accordance with the specifications of this project regarding Video Inspection of Pipelines after cleaning and removal of line obstructions.

B. District's representative shall be present for CCTV inspection.

C. Pipeline shall be dry during the post-lining inspection and shall occur after services have been reinstated.

D. Submit the post video inspections on DVD or thumb drive to the Owner Representative for review.

E. Submit the video "logs" to the Owner Representative for review.

3.13 FLUSHING, DISINFECTION AND BACTERIOLOGICAL TESTING

A. Flushing, disinfection and bacteriological (coliform) testing shall be accomplished in accordance with Specifications.

B. The entire newly lined water main, reinstated service connections and appropriate fittings used for connecting to the existing main shall be flushed, disinfected and tested for bacteria.

C. Customer service lines shall be transferred from the temporary water system to the newly rehabilitated water main only after acceptable water samples have been obtained and satisfactorily tested and the newly lined water main is acceptable for placing back into normal operation.

3.14 CLEANING AND SITE RESTORATION

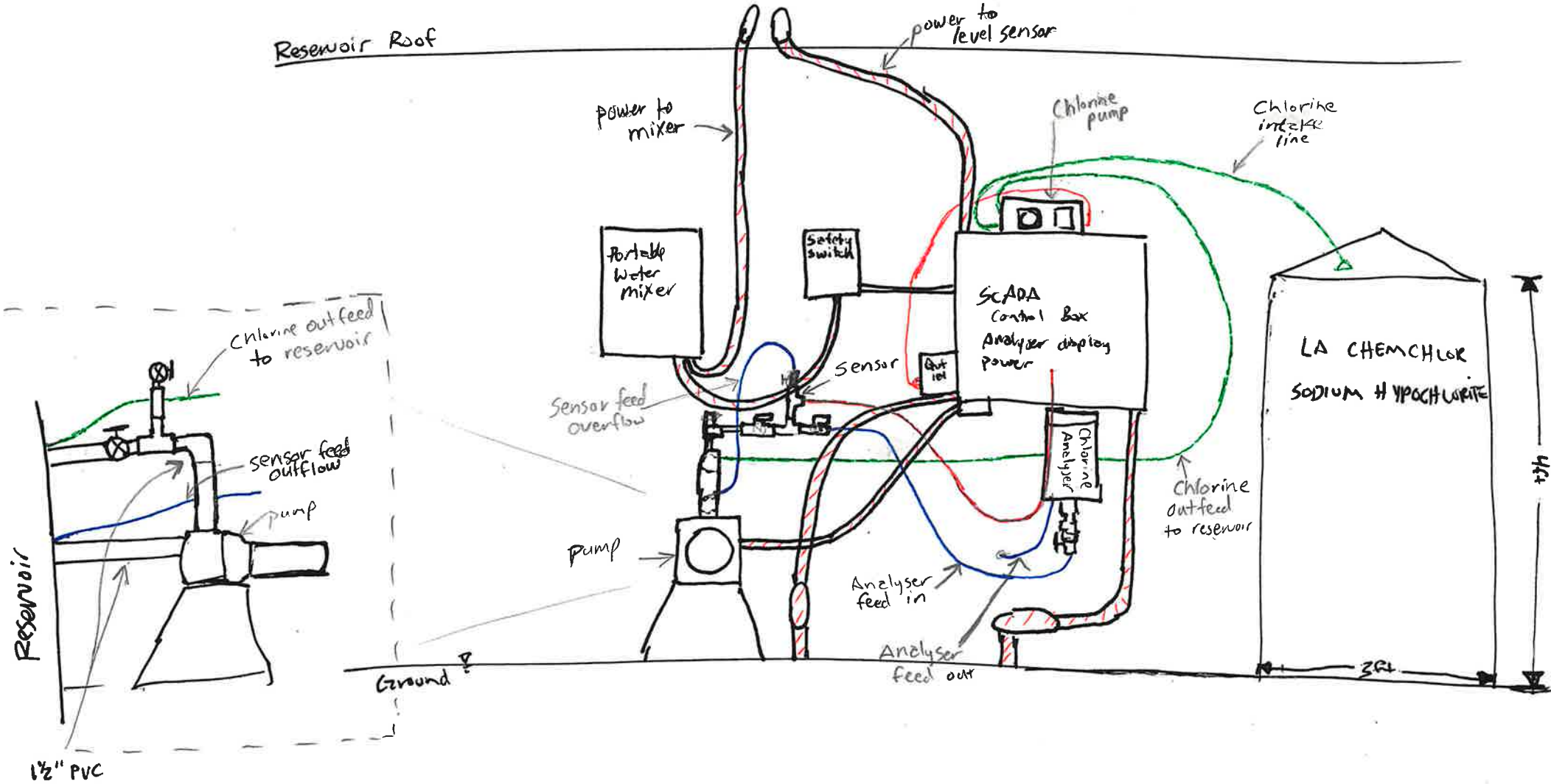
A. Remove debris resulting from work and unused materials from site and legally dispose.

B. Areas damaged or modified by the Work shall be repaired or restored to a condition equal to or better than the original condition. Site restoration is incidental to the Work and shall not be regarded as a reason for change orders.

C. Care shall be taken to avoid damage to private property (i.e. sprinkler systems, lawn areas, etc.). If damage occurs, repairs shall be completed as soon as possible. Costs associated with the repairs shall be the responsibility of the Contractor.

END OF SECTION

Terminal Reservoir Chemical Feed System



Terminal Reservoir Chemical System

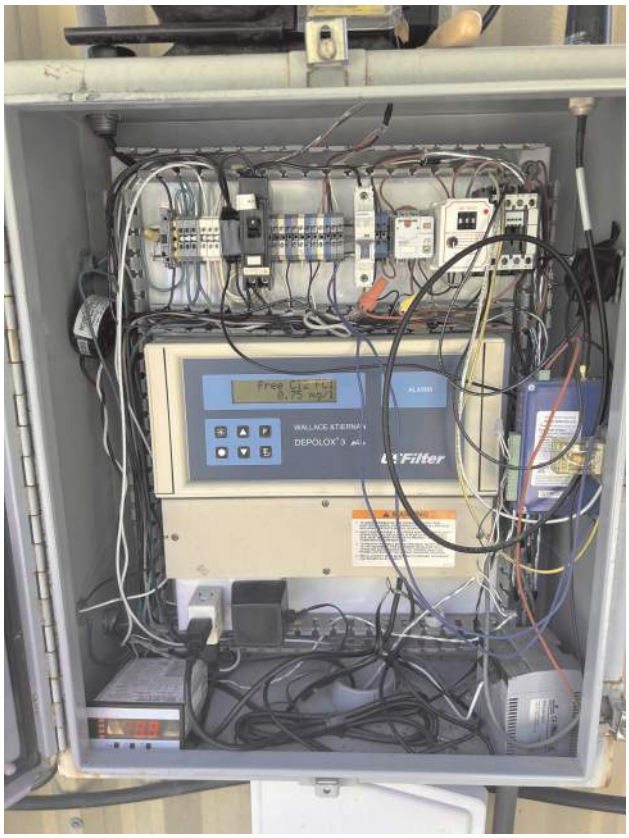
2025-05-22 09.11.17.jpg

1: -

2025-05-22 09.12.36.jpg

2: -

Terminal Reservoir Chemical System



2025-05-22 09.13.35.jpg
3: -

2025-05-22 09.13.42.jpg
4: -

Terminal Reservoir Chemical System

2025-05-22 09.13.50.jpg
5: -

2025-05-22 09.13.59.jpg
6: -

Terminal Reservoir Chemical System

2025-05-22 09.18.25.jpg

7: -

2025-05-22 09.18.34.jpg

8: -

Terminal Reservoir Chemical System

2025-05-22 09.18.38.jpg
9: -

2025-05-22 09.29.13.jpg
10: -

Terminal Reservoir Chemical System

2025-05-22 09.39.38.jpg
11: -

IMG_0316.JPG
12: -

Terminal Reservoir Chemical System

IMG_0317.JPG
13: -

IMG_0318.JPG
14: -

Terminal Reservoir Chemical System

IMG_0319.JPG
15: -

IMG_0320.JPG
16: -

Terminal Reservoir Chemical System

IMG_0321.JPG
17: -

IMG_0322.JPG
18: -

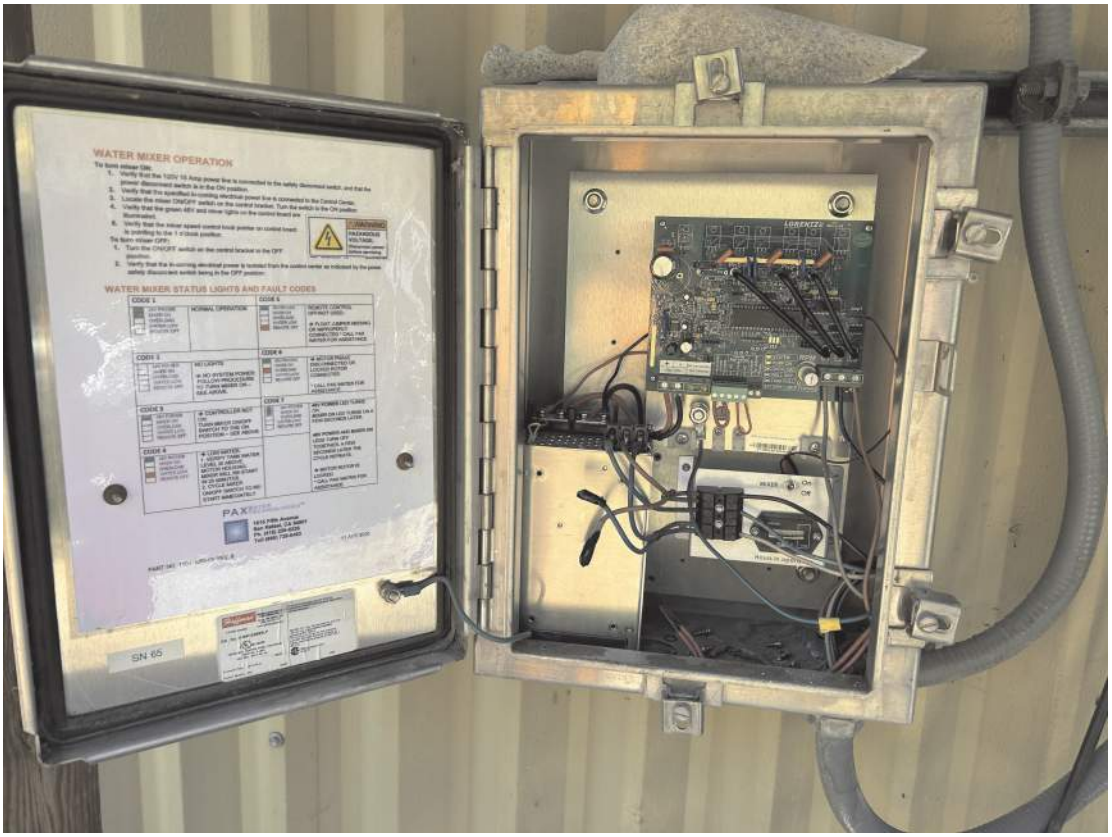
Terminal Reservoir Chemical System

IMG_0323.JPG
19: -

IMG_0324.JPG
20: -

Terminal Reservoir Chemical System

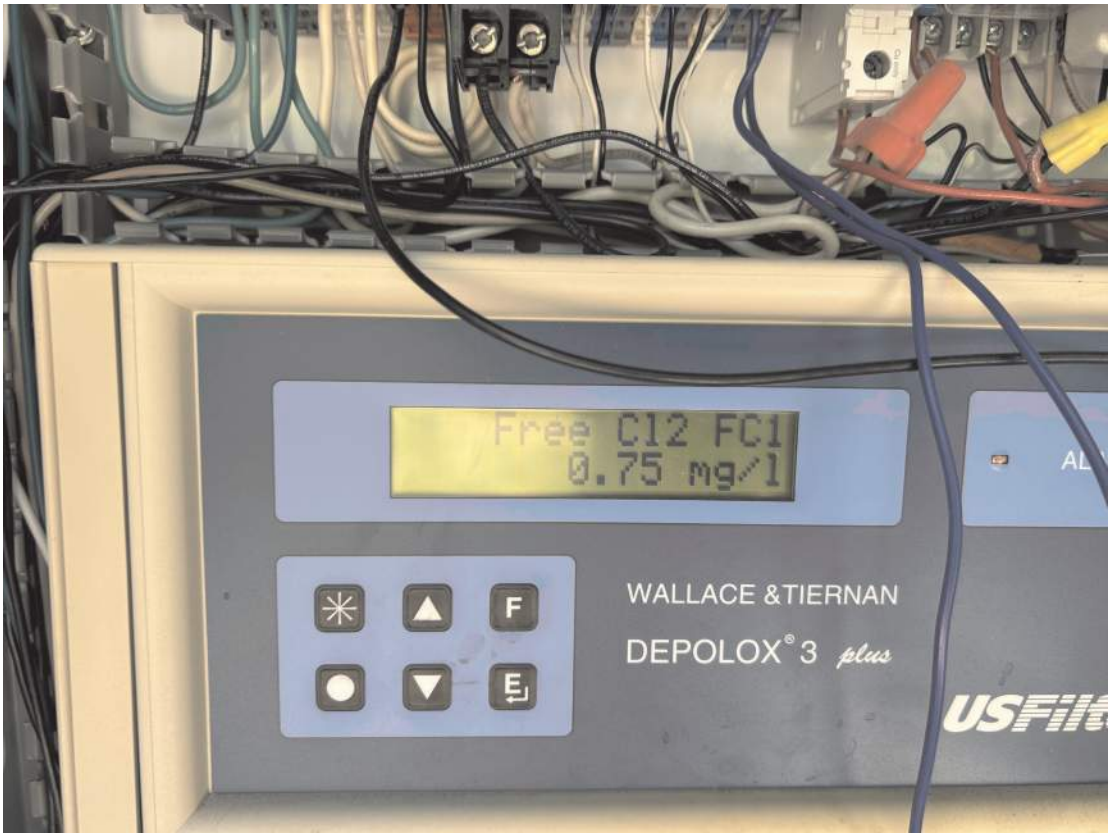
IMG_0325.JPG
21: -



IMG_0326.JPG
22: -

Terminal Reservoir Chemical System

IMG_0327.JPG
23: -



IMG_0328.JPG
24: -

Terminal Reservoir Chemical System

IMG_0329.JPG
25: -

IMG_0330.JPG
26: -

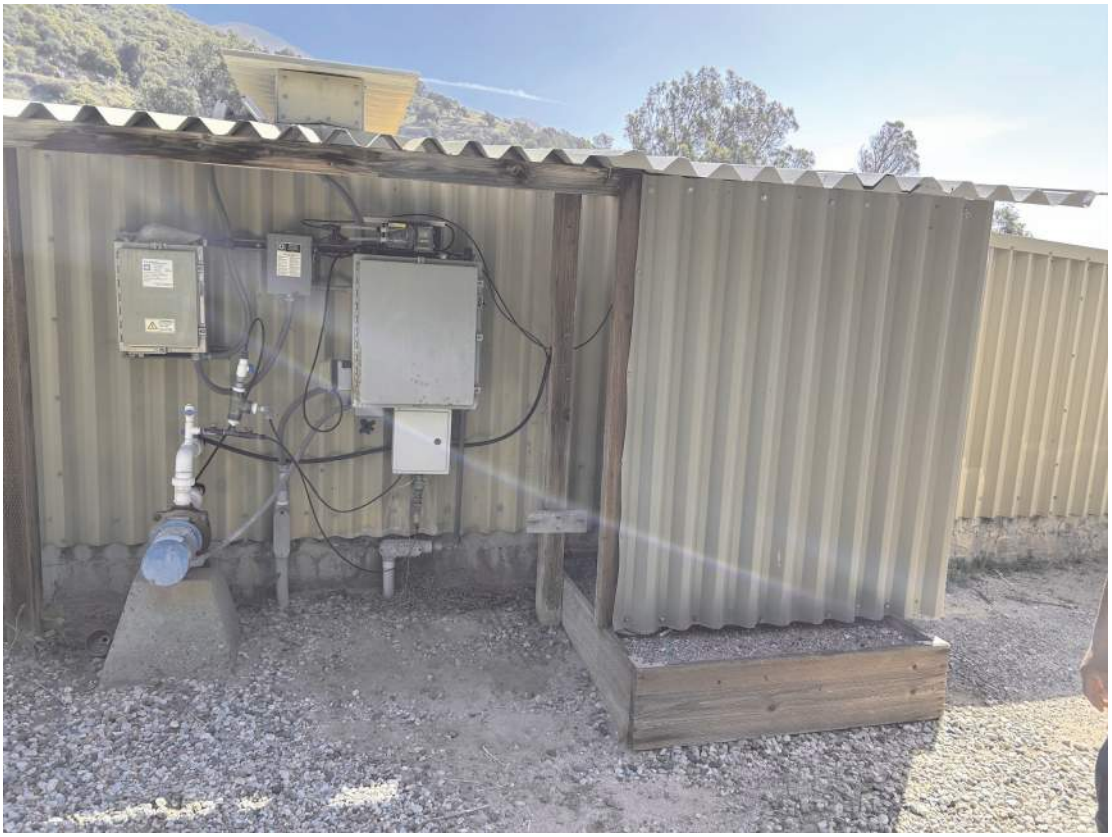
Terminal Reservoir Chemical System

IMG_0331.JPG
27: -

IMG_0332.JPG
28: -

Terminal Reservoir Chemical System

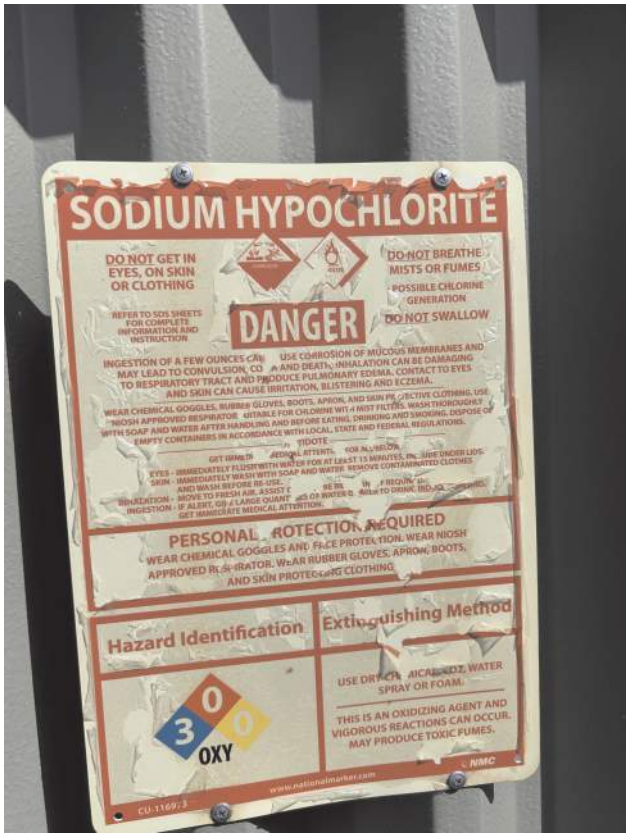
IMG_0333.JPG
29: -



IMG_0334.JPG
30: -

Terminal Reservoir Chemical System

IMG_0335.JPG
31: -



IMG_0336.JPG
32: -

Terminal Reservoir Chemical System

IMG_0337.JPG
33: -

Terminal Reservoir Stairway

IMG_8066.jpeg
1: -

IMG_8067.jpeg
2: -

Terminal Reservoir Stairway

IMG_8068.jpeg
3: -

IMG_8069.jpeg
4: -

Terminal Reservoir Stairway

IMG_8070.jpeg
5: -

IMG_8071.jpeg
6: -

Terminal Reservoir Stairway

IMG_8073.jpeg
7: -

IMG_8074.jpeg
8: -

Terminal Reservoir Stairway

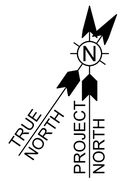
IMG_8075.jpeg
9: -

IMG_8076.jpeg
10: -

Terminal Reservoir Stairway

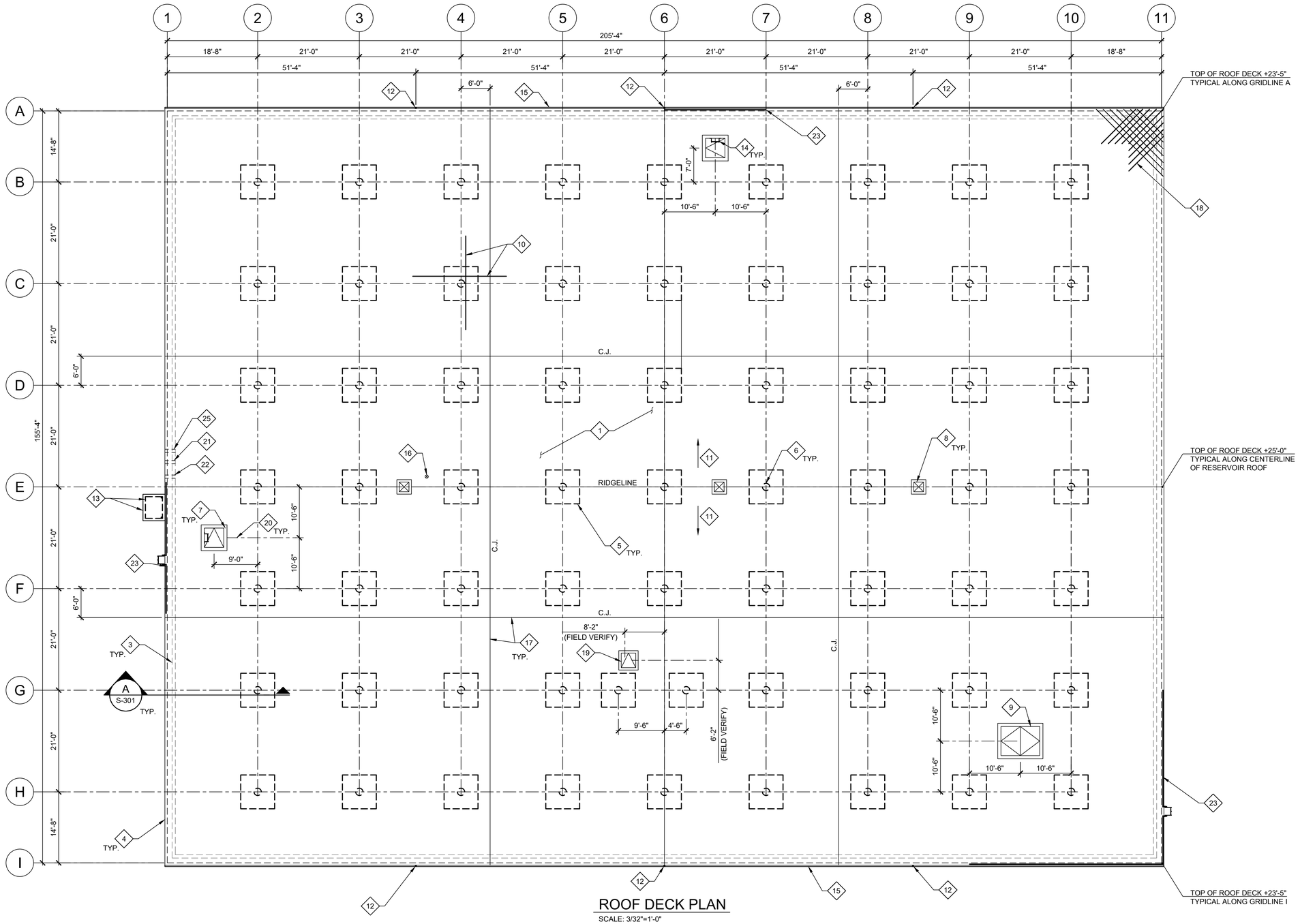
IMG_8077.jpeg
11: -

IMG_8078.jpeg
12: -



KEYNOTES:

1. 8" THICK CONCRETE ROOF SLAB WITH #6 @ 8" EACH WAY TOP AND BOTTOM
2. OUTSIDE FACE OF NEW CONCRETE WALL BELOW (TYPICAL)
3. EXISTING CONCRETE MASONRY WALL (PROTECT IN PLACE).
4. EDGE OF ROOF DECK ABOVE
5. 7'-0" SQUARE x 5 1/2" THICK CONCRETE DROP PANEL
6. 18" DIAMETER CONCRETE COLUMN BELOW
7. 4'x4' ALUMINUM FLUSH MOUNTED ACCESS HATCH, BILCO TYPE J-AL OR APPROVED EQUAL (TYPICAL 2 LOCATIONS)
8. OPENING FOR VENT PER DETAIL 5 ON SHEET S-502 (TYPICAL 3 LOCATIONS)
9. 6'-0"x8'-0" ALUMINUM FLUSH MOUNTED EQUIPMENT ACCESS HATCH, BILCO TYPE J-DAL OR APPROVED EQUAL. (TYPICAL 1 LOCATION)
10. PROVIDE 4-#6 (x10'-0") ADDITIONAL BARS EACH WAY AT EACH COLUMN. TYPICAL AT 63 LOCATIONS.
11. SLOPE ROOF DECK AT APPROXIMATELY 2%
12. 3"x4" ALUMINUM DOWNSPOUT
13. 12" THICK MIN. CONCRETE SLAB AND PREFABRICATED ALUMINUM SHADE STRUCTURE FOR EXISTING SODIUM HYPOCHLORITE TANKS (MATCH SIZE OF EXISTING)
14. STAINLESS STEEL INTERIOR ACCESS LADDER - SEE DETAIL 1 ON SHEET S-502
15. 4"x4" ALUMINUM RAIN GUTTER. SLOPE GUTTER 1/16" PER FOOT TOWARD DOWNSPOUTS
16. CONCRETE ROOF PENETRATION FOR TRANSDUCER PORT - SEE DETAIL 5 ON SHEET S-504.
17. CONSTRUCTION JOINT IN ROOF DECK, SEE DETAIL 9 ON SHEET S-501.
18. CORNER REINFORCING PER DETAIL 8 ON SHEET S-502. TYPICAL AT ALL FOUR CORNERS.
19. ACCESS HATCH FOR MUD VALVE OPERATOR, SEE DETAIL 9 ON SHEET S-502 (CENTER HATCH AT MUD VALVE OPERATOR)
20. CONCRETE CURB AROUND ROOF HATCH - SEE DETAIL 9 ON SHEET S-501
21. CONCRETE ROOF PENETRATION FOR PAX MIXER CABLE - SEE CIVIL DRAWINGS FOR SIZE AND LOCATION
22. CONCRETE ROOF PENETRATION FOR SAMPLE LINE - SEE CIVIL DRAWINGS FOR SIZE AND LOCATION
23. ALUMINUM GUARDRAIL - SEE DETAIL 4 ON SHEET S-504. (EXTEND 10'-0" BEYOND THE LADDER OF THE EDGE OF THE ROOF HATCH)
24. PREFABRICATED ALUMINUM LADDER - SEE DETAIL 3 ON SHEET S-504.
25. PIPE PENETRATION FOR FUTURE CHEMICAL PIPE - SEE CIVIL DRAWINGS FOR SIZE AND LOCATION.



ROOF DECK PLAN

SCALE: 3/32"=1'-0"

ROOF SLAB PLACEMENT NOTES:

1. ROOF SLAB SECTION SHALL BE DEFINED AS DIVIDED BY THE CONSTRUCTION JOINT AS SHOWN ON THIS DRAWING
2. ROOF SLAB SECTIONS SHALL NOT BE CAST AGAINST OTHER CONCRETE PILE CAP SECTIONS UNTIL A MINIMUM OF 3 FULL DAYS (72 HOURS) HAS ELAPSED SINCE THE PREVIOUS SECTION WAS PLACED AND FINISHED.
3. ROOF SLAB SHALL BE KEPT MOIST DURING FINISHING PERIOD BY USE OF A FOG NOZZLE. DURING CURING PERIOD, PILE CAP SHALL BE KEPT MOIST AND COVERED WITH POLYETHYLENE SHEETS. PILE CAP SHALL BE CURED FOR A PERIOD OF NOT LESS THAN SEVEN DAYS.

DATUM
DATUM (0'-0") IS AT THE FINISHED FLOOR AT THE NORTH EAST CORNER OF EXISTING RESERVOIR FLOOR SLAB AND IS AT ELEVATION 846.55

TETRA TECH
www.tetratech.com
160 East Via Verde, Suite 200
San Dimas, California, 91773
Phone: (909) 305-2930 Fax: (909) 305-2959

REGISTERED PROFESSIONAL ENGINEER MAN HONG ERIC YIEN No. 6177 STRUCTURAL STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY
1	6/2/25	ADDENDUM 1	EY

MONTECITO WATER DISTRICT

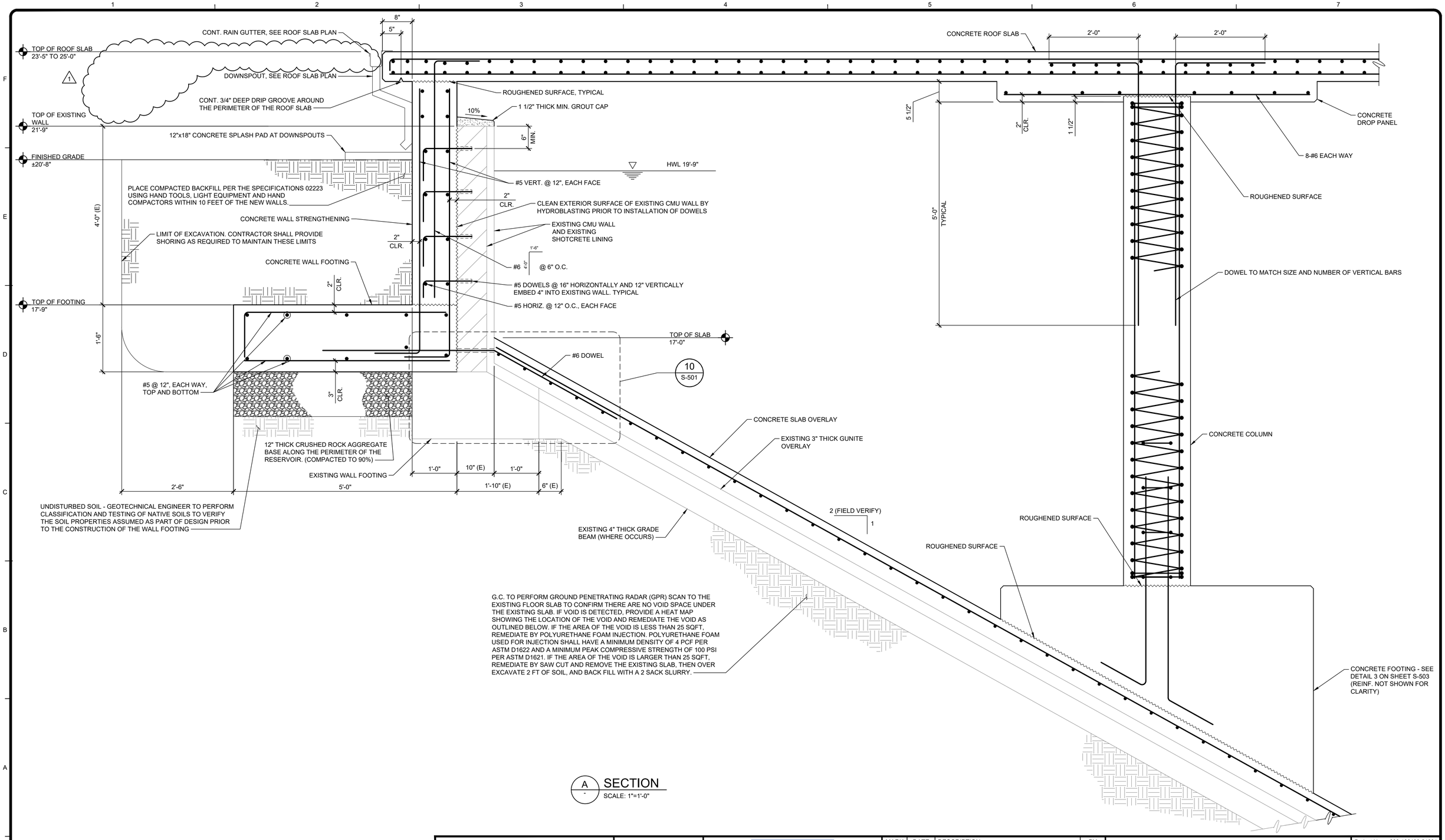
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

ROOF DECK PLAN

Project No.:	200-106490-21001
Designed By:	VMR
Drawn By:	EJH
Checked By:	VMR

S-103

Bar Measures 1 inch



A SECTION
SCALE: 1"=1'-0"

DATUM
DATUM (0'-0") IS AT THE FINISHED FLOOR AT THE NORTH EAST CORNER OF THE EXISTING RESERVOIR FLOOR SLAB AND IS AT ELEVATION 846.55

TETRA TECH
www.tetratech.com
160 East Via Verde, Suite 200
San Dimas, California, 91773
Phone: (909) 305-2930 Fax: (909) 305-2959

REGISTERED PROFESSIONAL ENGINEER
MATTHEW ERIC VIEREN
No. 6177
STRUCTURAL
STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY
1	6/2/25	ADDENDUM 1	EY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT
PROJECT FOR TERMINAL RESERVOIR

WALL RETROFIT SECTION

Project No.:	200-106490-21001
Designed By:	GH
Drawn By:	EJH
Checked By:	VMR

S-301

Bar Measures 1 inch

6/2/2025 3:34:42 PM - \\TT-LOCAL\IER\PROJECTS\IRVINE\106490\200-106490-21001\CAD\SHEETFILES\TERMINALS-301-WALLSECTION.DWG - HUTCHINS, ERIC