WATER TANKS REHABILITATION PROJECT

REHABILITATION AND RECOATING OF INTERIOR AND EXTERIOR OF THREE POTABLE WATER TANKS

CAPITAL PROJECT #24W04

FEBRUARY 11, 2025

REQUEST FOR BIDS

MAMMOTH COMMUNITY WATER DISTRICT

MAMMOTH LAKES, CALIFORNIA

TANK REHABILITATION PROJECT

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1 BIDDING REQUIREMENTS

1.1 Invitation to Bid

Sealed proposals will be received at the office of the Mammoth Community Water District, located at Mammoth Community Water District, 1315 Meridian Boulevard, Mammoth Lakes, CA 93546, until 4:00 pm local time on **Thursday March 6 2025**, or such later date as may be set by addendum, and then will be publicly opened and read for the construction of the following public works project:

Tank Rehabilitation Project

The Mammoth Community Water District is soliciting bids for the rehabilitation of T-7 (aka "Bluffs Tank", 1 Million Gallons) and Lake Mary Water Treatment Plan Backwash Tank (50,000 Gallons). One additional tank, Tank T-2 (aka "Juniper Ridge Tank", 0.5 Million Gallons) is included as Bid Alternate A. If Bid Alternate A is awarded, it will be rehabilitated in early 2026 (late May or early June) after a winter suspension. The District and the contractor will agree upon a schedule for the work via the schedule submittal and approval process. All bidders must be able to perform the project within this time frame.

The scope includes replacing existing interior and exterior coatings, addressing corrosion and mill scale, applying NSF-approved epoxy coatings, patch welding any compromised interior locations, replacing damaged fasteners, vent screens, manway gaskets, and other tank components to ensure structural integrity. The work involves detailed surface preparation, abrasive blasting, caulking, containment control of dust and debris, disinfection, ensuring proper curing, and adhering to environmental and safety standards, as further described in the Contract Documents.

The contract documents for the Project, including the public works construction contract, instructions to bidders, bid forms, and plans and specifications, may be examined at the District office, with prior notice to the District's representative, located at 1315 Meridian Blvd, Mammoth Lakes, CA 93546. A copy of contract documents may be obtained at the District's office upon request and are also available online at the District's website: www.mcwd.dst.ca.us. Bidders must comply with the Instructions to Bidders.

Each Bid must be submitted on the prescribed forms and accompanied by cash, a cashier's check, certified check or bid bond executed on the prescribed form payable to the District in an amount not less than 10 percent of the amount bid.

The sites are located in the Town of Mammoth Lakes, with access via paved roads. The District strongly encourages prospective bidders to schedule a pre-bid site visit to familiarize themselves with the sites and site access. It is suggested that each prospective bidder review the bid documents and project site prior to the pre-bid walk. To schedule a pre-bid site visit please email Nolan Ferguson at: **nferguson@mcwd.dst.ca.us.**

The successful bidder will be required to furnish a payment bond and faithful performance bond each in the full amount of the Contract price, and insurance with certificates and endorsements of insurance, as provided in the Contract Documents. The

required bonds must be provided only by a surety insurer who is admitted to do business by and in good standing with the California Department of Insurance.

Bidders are hereby notified that in accordance with Public Contract Code section 22300, securities may be substituted for any monies that the District may withhold pursuant to the terms of this Contract to ensure performance.

The successful bidder must possess the following classification or type of contractor's license issued by the Contractors State License Board: Class **C-33** California Painting License or Class A General Engineering License.

To be qualified to bid on this Project, bidders must be registered and qualified to perform public work with the Department of Industrial Relations pursuant to section 1725.5 of the Labor Code. All subcontractors listed in a qualified bidder's bid as performing any portion of the work also must be registered and qualified with the Department of Industrial Relations.

To qualify to bid on this Project, bidders must submit to the District copies of valid Certificates of Reported Compliance, as described in section 2449(n) of Title 13 of the California Code of Regulations, for the fleet selected to perform such work proposed in the bid. If applicable, subcontractors must submit copies of valid Certificates of Reported Compliance, as well. If a bidder does not submit the necessary Certificates of Reported Compliance with their bid, the bid will be disqualified.

Bids that equal or exceed $1,000,000 must be accompanied by an Iran Contracting Act certification in the form provided in section 1.9.

The attention of bidders is directed to the requirements and conditions of employment to be observed and prevailing wage rates to be paid to all workers employed under the Contract in accordance with Labor Code sections 1770 and following. Copies of the prevailing rate of per diem wages are on file at the District's office, and will be made available to any interested party on request. In accordance with Labor Code section 1771.4(a)(1), this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The District reserves the right to reject all bids. Any bid not conforming to the intent and purpose of the Contract Documents may be rejected. The District may extend the time to award the Contract.

Dated: 2/7/2025

Mammoth Community Water District

By: Nolan Ferguson

Nolan Ferguson, Staff Engineer

1.2 **Bid**

TO: Mammoth Community Water District, 1315 Meridian Boulevard, Mammoth Lakes, CA 93546

The undersigned states and declares as follows:

That the Bidder has carefully examined the location of the proposed work; that the Bidder has examined the Contract Documents entitled: **Tank Rehabilitation Project**; the Addenda Numbers ___ to ___, if any; that the Bidder has read the accompanying Short Form Public Works Contract (Section 2); that the Bidder hereby proposes to begin work and complete the project in accordance with the schedule and deadlines in the Contract Documents; that the Bidder hereby proposes to furnish all labor, materials, tools, and equipment, and to perform all work required, complete in place, in compliance with all terms and conditions and requirements of all Contract Documents; and that the Bidder will take in full payment for the work the prices set forth in the accompanying bid schedule.

The Bidder acknowledges that the following quantities are approximate only, being given as a basis for the comparison of proposals, that the District does not expressly or by implication agree that the actual amount of the work will correspond therewith, and that the District reserves the right to increase or decrease the amount of any class or portion of the work, as may be deemed necessary or advisable by the Engineer.

The following surety or sureties have agreed to furnish payment and faithful performance bonds to the Bidder if it is awarded the contract:

Name of Performance Bond Surety: _____

Name of Payment Bond Surety: _____

Bidder Information

Bidder Name: _____

Type of Business Entity and State of Incorporation (e.g., corporation, limited liability company, partnership): _____

Contractor's License No.: _____

DIR Public Works Contractor Registration No.: _____

Expiration Date: _____

Type of license: _____

Name under which license is held: _____

Status of license: _____

The Bidder's authorized officer identified below hereby declares that the representations in this Bid are true and correct and of my own personal knowledge, and that these representations are made under penalty of perjury under the laws of the State of California.

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

Address: _____

_____

Phone:_____

Fax: _____

Email: _____

1.3 Bid Schedule

Base Bid - T7 (Bluffs Tank 1 MG Tank)

Item	Description	Quantity	Units	Unit Price	Amount
1	Mobilization/Demobilization	1	LS		$
2	Implement SWMP	1	LS		$
3	Interior Abrasive Blasting to SSPC-SP 5	1	LS		$
4	Interior Coating System (Application of Sherplate 600 & Sherplate PW Epoxies or Equal)	1	LS		$
5	Exterior Surface Preparation (Water Blasting, & Spot Priming)	1	LS		$
6	Exterior Coating System Application	1	LS		$
7	Dehumidification Equipment (Installation, Maintenance, and Operation)	1	LS		$
8	Disposal of Waste (Abrasive Blast Media, Hazardous Materials Testing, Transport, and Disposal)	1	LS		$
9	Roof & Rafter Wedge Installation During Preparation and Coating	1	LS		$
10	Furnish and install a gasket on the roof hatch.	1	LS		$
11	Manway Gasket, Hardware and Vent Screen Replacement	1	LS		$
12	Shell-to-Roof Junction Caulking	1	LS		$
13	Disinfection and Cleaning of Interior After Coating	1	LS		$
14	VOC and Bacteriological Testing	1	LS		$
15	Warranty Inspection (First Anniversary Including Floor Protection, Scaffolding, and Lighting)	1	LS		$
16	Environmental Controls (Containment and Dust Control Measures)	1	LS		$
17	Safety and Compliance (Scaffolding, Air Monitoring, and Worker Protections)	1	LS		$
18	Plate welding 4”x4”x ¼” plate seal welded	2	EACH		$
19	Tank Welding Repair per Pit (estimated)	10	EACH		$
20	Tank Welding Repair per Linear foot (estimated)	5	LF		$
21	Replace Safety Railing on Roof of Tank. Modify existing rial assembly to have 6’ extensions that extend radially toward the center of the tank on both existing perimeter handrail assemblies.	19	LF		$
				Subtotal 1:	$

Base Bid – Lake Mary Backwash Tank (50,000 Gallons)

Item	Description	Quantity	Units	Unit Price	Amount
1	Interior Abrasive Blasting to SSPC-SP 5	1	LS		$
2	Interior Coating System (Application of Sherplate 600 & Sherplate PW Epoxies or Equal)	1	LS		$
3	Exterior Surface Preparation (Water Blasting, & Spot Priming)	1	LS		$
4	Exterior Coating System Application	1	LS		$
5	Dehumidification Equipment (Installation, Maintenance, and Operation)	1	LS		$
6	Disposal of Waste (Abrasive Blast Media, Hazardous Materials Testing, Transport, and Disposal)	1	LS		$
7	Roof & Rafter Wedge Installation During Preparation and Coating	1	LS		$
8	Furnish and install a gasket on the roof hatch.	1	LS		$
9	Manway Gasket, Hardware and Vent Screen Replacement	1	LS		$
10	Shell-to-Roof Junction Caulking	1	LS		$
11	Disinfection and Cleaning of Interior After Coating	1	LS		$
12	VOC and Bacteriological Testing	1	LS		$
13	Warranty Inspection (First Anniversary Including Floor Protection, Scaffolding, and Lighting)	1	LS		$
14	Environmental Controls (Containment and Dust Control Measures)	1	LS		$
15	Safety and Compliance (Scaffolding, Air Monitoring, and Worker Protections)	1	LS		$
16	Plate welding 4”x4”x ¼” plate seal welded	4	EACH		$
17	Tank Welding Repair per Pit (estimated)	10	EACH		$
18	Tank Welding Repair per Linear foot (estimated)	5	LF		$
				Subtotal 2:	$

Bid Alternate A – T-2 (Juniper Ridge 0.5 MG Tank)

Item	Description	Quantity	Units	Unit Price	Amount
A.1	Mobilization/Demobilization	1	LS		$
A.2	Implement SWMP	1	LS		$
A.3	Interior Abrasive Blasting to SSPC-SP 5	1	LS		$
A.4	Interior Coating System (Application of Sherplate 600 & Sherplate PW Epoxies or Equal)	1	LS		$
A.5	Exterior Surface Preparation (Water Blasting, & Spot Priming)	1	LS		$
A.6	Exterior Coating System Application	1	LS		$
A.7	Dehumidification Equipment (Installation, Maintenance, and Operation)	1	LS		$
A.8	Disposal of Waste (Abrasive Blast Media, Hazardous Materials Testing, Transport, and Disposal)	1	LS		$
A.9	Roof & Rafter Wedge Installation During Preparation and Coating	1	LS		$
A.10	Furnish and install a gasket on the roof hatch.	1	LS		$
A.11	Manway Gasket, Hardware and Vent Screen Replacement	1	LS		$
A.12	Shell-to-Roof Junction Caulking	1	LS		$
A.13	Disinfection and Cleaning of Interior After Coating	1	LS		$
A.14	VOC and Bacteriological Testing	1	LS		$
A.15	Warranty Inspection (First Anniversary Including Floor Protection, Scaffolding, and Lighting)	1	LS		$
A.16	Environmental Controls (Containment and Dust Control Measures)	1	LS		$
A.17	Safety and Compliance (Scaffolding, Air Monitoring, and Worker Protections)	1	LS		$
A.18	Plate welding 4”x4”x ¼” plate seal welded	4	EACH		$
A.19	Tank Welding Repair per Pit (estimated)	10	EACH		$
A.20	Tank Welding Repair per Linear foot (estimated)	5	LF		$
				Subtotal 3:	$

Bidder’s Grand Total (Sum of Subtotals 1-3): _____

Acknowledge Addenda

Addendum #:_____ Signed: _____

Addendum #:_____ Signed: _____

Addendum #:_____ Signed: _____

Addendum #:_____ Signed: _____

1.4 **Designation of Subcontractors**

In compliance with Public Contract Code section 4100 et. seq. each bidder shall set forth below the: (a) name, location of the mill, shop, or office, and California contractor's license number of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work or improvement to be performed under these specifications in excess of one-half of 1% of the Contractor's total bid, (b) description of the type of work to be performed by each such subcontractor, and (c) portion of the work (expressed in dollar amount) that will be performed by each such subcontractor.

If the Contractor fails to specify a subcontractor for any portion of the work to be performed under the Contract, it shall be deemed to have agreed to perform such portion itself, and it shall not be permitted to subcontract that portion of the work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work in excess of one-half of 1% of the Contractor's total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after making a written finding as a public record of the District setting forth the facts constituting the emergency or necessity.

Subcontractor (name, address, Subcontractor's CSLB License Number, Subcontractor's DIR Public Works Contractor Registration Number)	Description of Subcontractor Work	Portion of Work ($)

Additional pages attached: _____

1.5 Bid Bond

KNOW BY ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED _____, Contractor or Principal; and _____, as Surety, are hereby held and bound unto Mammoth Community Water District, hereinafter called the District, in the sum of $_____, which sum is equal to at least ten percent of the total amount of the Bid, payment of which sum, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the District a certain Bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing, for the construction of the following public works project:

Tank Rehabilitation Project

The rehabilitation of a 1 MG welded steel potable water tank and a 50,000 gallon backwash tank., including surface prep, new interior and exterior coating system, patch welding and new miscellaneous hardware. The project also includes an alternate bid for a 0.5 MG potable water tank.

NOW, THEREFORE,

(a) If the Bid is rejected, or in the alternate,

(b) If the Bid is accepted and the Principal shall sign and deliver a Contract, in the form of the Contract attached hereto and shall execute and deliver Performance and Payment Bonds in the forms attached hereto and shall deliver proof of insurance (all completed in accordance with the Contract Documents), and shall in all other respects perform the agreement created by the acceptance of the Bid;

Then, this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all default of the Principal hereunder shall be the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the District may accept such Bid, and said Surety does hereby waive notice of any such extension.

IN WITNESS THEREOF, the above bounded parties have executed this instrument under their several seals this _____ day of _____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

For Contractor or Principal

_____

Name: _____

Title: _____

For Surety:

_____

Name: _____

Title: _____

(Seal)

1.6 **Experience Qualification**

The Bidder has been engaged in the contracting business, under the present business name for _____ years. Experience in work of a nature similar to that covered in the Bid extends over a period of _____ years.

The Bidder, as a contractor, has never failed to satisfactorily complete a contract awarded to it, except as follows:

_____

_____

_____

_____

The following contracts have been satisfactorily completed in the last three years for the persons, firm or entity indicated:

Year	Owner	Type of Work	Contract Amount

The following is a list of plant and equipment owned by the Bidder, which is definitely available for use on the proposed work as required.

Quantity	Name, Type, and Capacity	Condition	Location

Please select one of the following:

- ❑ The proposed equipment includes Off-Road Diesel Vehicles. The Contractor's required California Air Resources Board (CARB) Certificates of Reported Compliance documentation is attached, per section 2.7 of the Short Form Public Works Contract (section 2).
- ❑ The proposed equipment does not include CARB Off-Road Diesel Vehicles.

Executed on _____, at _____, _____

BIDDER

Company Name: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

1.7 Noncollusion Declaration to be Executed by Bidder and Submitted with Bid

(Public Contract Code Section 7106)

The undersigned declares:

I am the _____ (Title) of _____ (Bidder), the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, of the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, join venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ _____, at _____, _____.

Authorized Signature: _____

Printed Name: _____

1.8 Acknowledgement of Insurance and Bonding Requirements

By signing below Bidder acknowledges the insurance requirements as listed in Short Form Public Works Contract (section 2), section 2.33 "Insurance". By this acknowledgement, the Bidder and its insurance provider(s) and surety(ies) certify that they have read and understand the insurance and bonding requirements in their entirety, including limits of coverage, additional insureds and endorsements, and bonding requirements, and that the Bidder can provide the insurance coverage and bonds as required in the Contract documents without exception.

Bidder understands that if the insurance coverage provided in section 2.33 of the Short Form Public Works Contract (section 2) and the Contract Bonds cannot be provided, its bid is subject to rejection by the District as non-responsive.

BIDDER

Company Name: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

SURETY PROVIDER/SURETY REPRESENTATIVE

Surety Name: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

Bidder Must Provide This Acknowledgment for Each Insurer or Surety Providing Insurance Coverage or a Bond under this Contract

1.9 Iran Contracting Act Certification

Pursuant to Public Contract Code (PCC) section 2204, the following Iran Contracting Act certification is required if your bid totals $1,000,000 or more.

If your bid totals $1,000,000 or more, you must complete only one of the following two paragraphs. To complete paragraph 1, check the corresponding box and complete the certification. To complete paragraph 2, simply check the corresponding box.

☐ 1. We are not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services (DGS) pursuant to PCC 2203(b), and we are not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on

_____ (date),

at _____ (city), _____ (state).

_____ (signature)

_____ (printed name)

OR

☐ 2. We have received written permission from the District to submit a bid pursuant to PCC 2203(c) or (d). A copy of the written permission from the District is included with our bid.

2 MCWD SHORT FORM PUBLIC WORKS CONSTRUCTION CONTRACT

Name of Project	**Tank Rehabilitation Project**
Contractor Name, Address and Capacity (e.g., corporation, partnership)	
List and Title of Contract Exhibits	Attachment 1 – Technical Specifications Attachment 2 – As-Builts for Tanks T7 and T2 Attachment 3 – Dive Inspection Reports Attachment 4 – Location Maps Attachment 5 – Dive Inspection Videos
Type of Required California Contractor's License Classification	C-33 or Class A General Engineering
Total Contract Price	$
Daily Liquidated Damages Amount (insert zero if none)	$1,000/day
District Representative Name, Title, and Address	Nolan Ferguson, Staff Engineer, 1615 Meridian Blvd. Mammoth Lakes CA
Date of Contract	

This contract is made by and between Mammoth Community Water District and the Contractor named above, who agrees as follows:

2.1 Scope of Work

This Public Works Construction Contract, the Contract exhibit(s) listed above, approved Change Orders, and, if applicable, the notice inviting bids, addenda, Contractor's bid and bid forms constitute the "Contract" between the parties. For purposes of this Contract, the "Work" shall mean the scope of work as described in the exhibit(s).

2.2 Time of Completion

Tank T-7 must be completed within 14 weeks of its start date. Lake Mary Backwash tank must be completed within 4 weeks of its start date. The District and the contractor will agree upon a schedule for the work via the schedule submittal and approval process. The project start time is critical to ensure work is complete prior to mid-October when weather conditions generally are not conducive to material curing. If Bid Alternate A is awarded, it

will be rehabilitated after a winter suspension in early 2026 (starting late May or early June) due to operational constraints. If Bid Alternate A is selected, the contractor shall have 12 weeks to complete Tank T-2. The contractor shall perform the work diligently and as expeditiously as possible consistent with good and safe construction practices and the orderly progress of the work. The parties agree that time is of the essence for the performance of this Contract.

2.3 Contractor's Performance

Contractor shall construct, install, perform and do the Work, and shall furnish, provide and pay for all labor, equipment, materials, tools, supplies, transportation, permits, sales and taxes, and shop drawings necessary or appropriate to complete the Work. Contractor shall perform in the Work in a good and workmanlike manner, and such Work shall be done to the approval and satisfaction of District.

2.4 Contract Price and Payments

(a) If Contractor performs the Work in accordance with this Contract and to the satisfaction of District, District shall pay Contractor in the amount and manner as set forth in the Bid Schedule; however, the total Contract price shall not exceed the sum stated above, unless otherwise agreed to in writing by the District. No payment, including all progress payments and the final payment, shall be made to Contractor in excess of 95% of the percentage of Work actually completed plus a like percentage of the value of material delivered on the ground or stored subject to, or under control of, District. The five percent not paid shall be withheld by District until final completion and acceptance of the Work. However, in lieu of withholding of money, and in accordance with the provisions of California Public Contract Code section 22300, Contractor may substitute securities to ensure performance under the Contract.

(b) If payment is to be made by progress payments, then, in accordance with California Public Contract Code section 20104.50, a written payment request from Contractor shall be reviewed by District as soon as practicable in order to determine whether it is proper. If District determines it not to be a proper payment request suitable for payment, then District shall return it to Contractor with a written explanation of the deficiencies as soon as practicable, but not later than seven days after receipt of the payment request. If District determines the payment request to be properly submitted and undisputed, the District shall make the payment to Contractor within 30 days after receipt of the payment request. If District does not pay a properly submitted and undisputed payment request within this 3-day period, then District shall pay interest on the overdue amount to Contractor at the legal rate set forth at California Code of Civil Procedure section 685.010. This subsection shall not apply if District funds are not available for payment of the payment request or if payment is delayed due to an audit inquiry by the financial officer of District.

(c) No progress or final payment shall be considered or construed to be an approval or acceptance of any Work, materials or equipment, or a waiver of any breach or default. Estimated amounts and values of Work done and materials and equipment incorporated into the Work will be conformed with actual amounts and values as they become available in subsequent progress payments and the final payment. All payments will be subject to correction in subsequent progress payments and the final payment.

2.5 Compliance with Laws

Contractor shall give all notices and comply with all federal, state and local laws, statutes, regulations and ordinances applicable to the performance of the Work. Contractor is responsible for the safety of its workers and Contractor shall comply with, and require its workers to comply with, all applicable federal and state worker and job site safety-related laws and regulations, including, but not limited to, applicable federal Department of Labor, Occupational Safety and Health Administration ("OSHA") regulations and California Department of Industrial Relations (including the Division of Occupational Safety and Health and Occupational Safety and Health Standards Board ("Cal/OSHA")) regulations and safety orders. Contractor shall promptly notify District's Representative in writing of any specification at variance therewith and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations and without such notice to District's Representative, it shall bear all costs arising therefrom.

2.6 Permits and Licenses

Permits, licenses, and easements necessary for the performance of the Work shall be obtained and paid for by Contractor, unless otherwise provided in the exhibit(s). Contractor must hold the current and valid type of California contractor's license classification described above for the duration of the Work.

2.7 Certificates of Reported Compliance

Section is intentionally omitted.

2.8 Bonds

Promptly upon execution of this Contract and prior to the commencement of any Work, Contractor shall obtain at its sole cost and expense and provide to District a performance bond and payment bond each in the amount of 100% of the amount of this Contract. The bonds must be issued by a surety admitted in California and be in a form acceptable to District. The bonds must comply with California Civil Code section 9550 and 9554 and applicable provisions of the California Bond and Undertaking Law (Code Civ. Proc. § 995.010 et. seq.).

2.9 Authority of District and District's Representative

(a) The District's representative listed above is the representative of the District for purposes of this Contract and has full authority to interpret the Contract, to conduct the construction review and inspection of Contractor's performance, and to decide questions which arise during the course of the Work. His/her decisions on these matters shall be final and conclusive. District's Representative has the authority to reject all Work and materials which do not conform to the Contract, and has the authority to stop the Work whenever such stoppage may be necessary to ensure the proper execution of the Contract. District's Representative's right and authority is limited to rejection of unsatisfactory Work or methods. District and the District's Representative do not bear any responsibility for Contractor's safety practices or procedures. Any order given by District's Representative, not

otherwise required by the Contract to be in writing shall, on request of Contractor, be given or confirmed by District's Representative in writing. Whenever Work, methods of procedure, or any other matters are made subject to direction or approval of District, such direction or approval will be given by District's Representative.

(b) Except as provided elsewhere in the Contract, neither District nor District's Representative will be responsible for or have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work. Except as provided elsewhere in the Contract, neither District nor District's representative will be responsible for or have control or charge over the acts or omissions of Contractor, or any of their subcontractors, agents or employees, or any other persons performing any of the Work. Any general control of the Work exercised by the District or its authorized representatives shall not make Contractor an agent of District, and the liability of Contractor for all damages to persons and/or to public or private property arising from Contractor's execution of the Work shall not be lessened because of such general control.

2.10 **Contractor's Understanding**

Contractor acknowledges that it has, by careful investigation and inspection, satisfied itself as to the nature and location of the job site; the ground, character, quality and quantity of the materials and conditions to be encountered, including subsoil conditions, if applicable; the character and amount of labor, equipment, supplies and materials needed preliminary to and during the performance of the Work; and all other matters which can in any way affect the Work under this Contract. Contractor further acknowledges that neither District nor District's Representative have made any representations whatsoever concerning job site conditions, except for such representations that may have been made in writing in this Contract.

2.11 **Subcontractors**

All subcontractors and suppliers engaged in work will be considered as employees of Contractor, and Contractor shall be held responsible for their work, which shall be subject to the provisions of the Contract. Contractor will provide the following information (a) the name and the location of the place of business, and California contractor's license number of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work or improvement, and of each subcontractor who, under subcontract to Contractor, is to specifically fabricate and install or provide a portion of the work or improvement according to the Contract, in any amount in excess of ½ of 1 percent of the Contract amount. Contractor shall ensure that all subcontractors employed on the work comply with all applicable laws and regulations, including payment of prevailing wages, employment of apprentices, and preparation and submission of accurate and complete payrolls. Contractor shall be fully responsible to District for the acts or omissions of its subcontractors and of the persons either directly or indirectly employed by them. Nothing contained in this Contract shall create any contractual relationship between any subcontractor and District. Each subcontract shall contain a suitable provision for the suspension or termination thereof with or without cause. If a legal action, including arbitration and litigation, against District is initiated by a subcontractor or supplier, Contractor shall reimburse District for the amount of legal, engineering and all other

expenses incurred by District in defending itself in said action. District and District's Representative reserve the right to approve all subcontractors.

Contractor shall not utilize, or allow work by, any subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to California Labor Code section 1777.1 or 1777.7. (See California Public Contract Code section 6109.) The California Division of Labor Standards Enforcement publishes a list of debarred contractors and subcontractors on the Internet at www.dir.ca.gov/DLSE/debar.html.

2.12 Changes in the Work

District may, at any time, by written change order make changes in the Work, or extend the time to complete the Work, as deemed necessary by District. If such changes cause an increase or decrease in Contractor's cost of, or time required for, performance of the Contract, there shall be an equitable adjustment in the Contract price. The price adjustment shall be determined by one of the following methods in the order of precedence listed:

(a) Based on the unit prices contained in the Bid Schedule.

(b) Mutually agreed-upon lump sum or unit price adjustment.

(c) Contractor's actual cost of labor (wages and benefits), materials (actual purchase price, sales tax, freight & delivery) and equipment/tools (at actual or fair/prevailing rental rates) directly engaged in the performance of the extra work plus 15% mark-up for overhead and profit. For price adjustments under this section, Contractor shall provide to District an itemized breakdown of the quantities and prices used in the extra work, and it shall make available all source documents, including payroll records, invoices, purchase orders, contracts and lease agreements.

2.13 Guarantee

(a) Contractor unconditionally guarantees all materials and workmanship furnished under this Contract, and agrees to replace at its sole cost and expense, and to the satisfaction of District, any and all materials which may be defective or improperly installed. Contractor shall repair or replace to the satisfaction of District any or all such Work that may prove defective in workmanship or materials, ordinary wear and tear excepted, together with any other Work which may be damaged or displaced in so doing. This guarantee shall remain in effect for one year from the date of District's acceptance of the Work. The District shall have the right to call for inspection or inspections of the work before the end of the one-year guarantee period and Contractor shall attend and participate in such inspection(s) upon request of District. This guarantee does not excuse Contractor for any other liability related to defective Work discovered after the guarantee period. Contractor shall transfer to District all manufacturer and supplier warranties relating to the Work, if any, upon completion of the Work and prior to final payment. Any products/completed operations insurance coverage shall be maintained after completion of the project for the full guarantee period.

(b) In the event of failure to comply with the above stated conditions within a reasonable time, District may have the defect repaired and made good at the expense of Contractor, which shall pay the costs and charges for such repair immediately upon demand,

including any reasonable management and administrative costs, and engineering, legal and other consultant fees incurred by District in enforcing this guarantee.

2.14 Suspension of Work

District may suspend the Work wholly or in part, for such period as District may deem necessary, due to unsuitable weather or to any other conditions District considers unfavorable for the suitable performance of the Work, including the improper performance of the Work by Contractor. Contractor shall immediately comply with such written order of District to suspend the Work wholly or in part and shall be paid for the Work performed to the date of suspension, except for improperly performed Work. The suspended Work shall be resumed only when ordered by District.

2.15 Termination

(a) This Contract may be terminated with or without cause at any time by District by giving 10 days' advance written notice to Contractor. In the event of such termination, Contractor shall be compensated for actual Work performed to the date of termination as calculated by District based on the Contract price and payment provisions above.

(b) If District terminates the Contract because of Contractor's failure to do the Work with such diligence as will ensure the completion of the Work within the time specified in the Contract, then District may take over the Work and pursue the same to completion by using another contractor or any other method District deems expedient. In this event, District may also take possession and control of, and utilize in completing the Work, any and all materials, supplies, tools and equipment delivered to the site of the Work by Contractor or by its suppliers or subcontractors. The materials, supplies, tools and equipment remaining after completion of the Work shall be returned to Contractor.

2.16 Prevailing Wages

Contractor agrees to pay all workers employed on this Work not less than the general prevailing rate of per diem wages for Work of a similar character in the locality of District, and not less than the general rate of per diem wages for holiday and overtime work, as established pursuant to the California Labor Code (in particular sections 1770-1780) and applicable regulations and orders. A copy of the applicable prevailing rate of per diem wages is available to the contractor at the administrative offices of District. Contractor shall obtain and post a copy of such prevailing wage rates at the job site. Contractor shall also comply with the provisions of California Labor Code section 1775, including provisions which require Contractor to (a) forfeit as penalty to District not more than $200 for each calendar day or portion thereof for each worker (whether employed by Contractor or any subcontractor) paid less than the applicable prevailing wage rates for any work done under this Contract in violation of the provisions of the California Labor Code, and (b) pay to each worker the difference between the prevailing wage rate and the amount paid to each worker for each calendar day or portion thereof for which said worker was paid less than the prevailing wage.

2.17 Labor Nondiscrimination

In accordance with California Labor Code section 1735, throughout the performance of the Contract, Contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age (over 40), or sexual orientation (as those discrimination bases are defined in California Government Code sections 12926 and 12926.1) of such persons, except as provided in California Government Code section 12940. Any contractor violating this nondiscrimination provision shall be subject to penalties that may be imposed pursuant to Division 2, Part 7, Chapter 1 of the California Labor Code.

2.18 Eight-Hour Day Limitation

(a) Contractor agrees that 8 hours labor shall constitute a day's work, and no worker, in the employ of the Contractor, or any subcontractor, doing or contracting to do any part of the Work under this Contract, shall be required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week; provided that subject to California Labor Code section 1815, a worker may perform work in excess of 8 hours per day or 40 hours per week at not less than one and one-half times the basic rate of pay.

(b) Except as provided above for overtime, Contractor shall forfeit as a penalty to District the sum of $25 for each worker employed in the execution of this Contract by it or by any subcontractor under it for each calendar day during which such worker is required or permitted to Work more than 8 hours in any one day and 40 hours in any one calendar week in violation of California Labor Code sections 1810 through 1815.

2.19 Payroll Records

Contractor and each subcontractor shall keep an accurate payroll record showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Work, and shall make such payroll record available for inspection, in accordance with the requirements of California Labor Code section 1776. Contractor shall be responsible to ensure compliance with section 1776. Failure to comply with that section may result in the Labor Commissioner's assessment of a penalty of $100 per day per worker.

2.20 Employment of Apprentices

Contractor shall comply with, and take such actions as necessary to effectuate, the apprentice employment requirements as set forth at California Labor Code sections 1777.5, 1777.6 and 1777.7.

2.21 Character of Worker

If any employee of Contractor or any of its subcontractors shall be incompetent or act in a disorderly or improper manner, such employee or subcontractor shall be removed from the Work immediately, and such person or subcontractor shall not again be employed on the

Work. Such discharge shall not be the basis for any claim for compensation or damages against District, or any of its officers or agents.

2.22 **Superintendence**

Contractor shall designate in writing before starting Work an individual as authorized representatives who shall have the authority to represent and act for Contractor. This authorized representative shall be present at the Work site at all times while Work is actually in progress. When Work is not in progress and during periods of Work suspension, arrangements acceptable to District's Representative shall be made for any emergency work that may be required.

2.23 **Inspection and Testing of Work**

(a) Unless otherwise provided, all equipment, supplies, materials, and Work shall be subject to inspection and testing by District's Representative. District's Representative will observe the progress and quality of the Work and determine, in general, if the Work is proceeding in accordance with the Contract. District's Representative shall not be required to make comprehensive or continuous inspections to check the quality of the Work, and he or she shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work. Observations, inspections or testing by District's Representative shall not relieve Contractor of its obligation to conduct comprehensive inspections of the Work and to furnish proper materials, labor, equipment and tools, and perform acceptable Work, and to provide adequate safety precautions, in conformity with the Contract.

(b) Contractor shall provide access to District's Representative and other agents of District, and agents of the federal, state, or local governments at all reasonable hours for inspection and testing to ascertain compliance with the Contract and applicable laws and regulations. Contractor shall cooperate in providing such access, and shall, upon request by District's Representative, promptly provide safe and convenient facilities, labor and materials reasonably needed by District's Representative for performing all inspections and tests.

(c) If, after any inspection or testing by District's Representative, District finds any of the Work to be unacceptable, defective or nonconforming, then Contractor at its sole cost and expense shall replace or repair the Work to the satisfaction of District's Representative. If any Work required to be tested or inspected was installed, covered, or buried without inspection or testing, then, upon request by District's Representative, Contractor shall at its sole cost and expense remove or uncover the Work such that it may be inspected or tested, and replace the Work after completion of the inspection or testing. Upon failure of Contractor to comply with any order of District's Representative made under this section, District may cause the unacceptable, defective or nonconforming Work to be remedied, removed, or replaced, and may deduct the costs therefor from any monies due or to become due Contractor.

2.24 Trade Names and Alternatives

For convenience in designation in the Contract, certain articles or materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer. The use of an alternative article or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, so long as Contractor shows to the satisfaction of District's Representative that the acceptable quality and suitability of the alternative(s).

2.25 Protection of Work and Safety

(a) Contractor shall be responsible for the care of all Work until its completion and final acceptance by District; and it shall at its own expense replace damaged or lost materials or supplies and repair damaged parts of the Work.

(b) District's Representative's construction review and inspection of Contractor's performance shall not include any review of the adequacy of Contractor's work methods, equipment, bracing or scaffolding or safety measures, in, on, or near the job site.

(c) Contractor shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours. Safety procedures and practices shall conform to all applicable federal, state, and local laws, ordinances, and codes. Contractor shall carefully instruct all personnel as to potential dangers and shall provide such necessary safety equipment and instruction as may be necessary to prevent injury to personnel and damage to property. Contractor shall provide and maintain, in accordance with California Labor Code section 6708, OSHA and Cal/OHSA requirements, adequate emergency first aid treatment for its employees and anyone else who may be injured in connection with the work.

(d) Contractor shall have an Injury/Illness Prevention Program (IIPP) in place to protect the safety of its employees and ensure that its subcontractors also have an IIPP or comply with Contractor's program. The Contractor's IIPP shall comply with and be at least as effective as the requirements of section 3203 of Title 8 of the California Code of Regulations. The Contractor and subcontractors must implement all requirements of and Injury and Illness Prevention Program regulation, unless they can demonstrate that they are exempt from certain specific provisions in the regulation. The Contractor shall submit a copy of its IIPP to the District prior to any work being performed on District property.

(e) If the Work includes the construction, alteration, improvement, or maintenance of electric power generation, control transformation, transmission or distribution lines or equipment within the meaning of Code of Federal Regulations title 29, section 1910.269 or 1926.950, then the Contractor will implement and comply with the requirements of the "contract employer" as described and set forth in section 1910.269 and 1926.950, including, but not limited to, the obligations to properly train the Contractor workers on safety-related work practices and procedures, exchange information with the District concerning unique hazardous conditions presented by the Work, instruct the Contractor workers about the hazardous conditions relevant to the Work, and coordinate with the District on safety-related work rules and procedures. The Contractor also shall be responsible for transmitting safety-

related information under sections 1910.269 and 1926.950 with any subcontractors retained by it to perform electrical-related Work under the Contract.

2.26 Protection of Public and Property

(a) Contractor shall take all necessary or appropriate precautions to prevent damage to all existing improvement, including above ground and underground utilities, pipelines, conduits, trees, shrubbery, fences, signs, mailboxes, driveways, sidewalks, gutters, streets, parking lots or other pavement, levees or embankments, survey markers and monuments, buildings, structures, District's property, adjacent property, and any other improvements or facilities within or adjacent to the job site. If any such improvement or property damaged or destroyed by reason of Contractor's operations, it shall be replaced or restored, at Contractor's sole cost and expense, to a condition at least as good as that prior to the start of Contractor's performance under this Contract.

(b) Contractor shall adopt all practical means to minimize interference to traffic and public inconvenience, discomfort or damage from the Work. All obstructions to traffic shall be guarded by barriers illuminated at night. For any Work on, adjacent to, or interfering with any street, the conditions and limitations applicable to such Work shall be determined by those public agencies or other entities responsible for maintenance of the affected street. Contractor shall determine the nature and extent of all such requirements, and shall comply with all permit and other requirements. As required at any street crossing, Contractor shall provide all necessary flag persons, guardrails, barricades, signals, warning signs and lighting to provide for the safety of existing roads and detours. Immediately after the need for temporary detours ceases, or when directed, Contractor shall remove such detours and perform all necessary cleanup work, including replacement of fences, removal of pavement, necessary replacement of existing roadway appurtenances, grading, soil stabilization and dust control measures.

2.27 Clean-Up

During the progress of the Work, Contractor shall maintain the job site and related structures, grounds and equipment in a clean, orderly condition and free from unsightly accumulation of rubbish. Upon completion of Work and before final payment, Contractor shall at its own cost and expense clean-up and remove from the vicinity of the Work all rubbish, debris, trash, unused materials and supplies, concrete forms, and temporary bridging and other like materials, belonging to it or used under its direction during the construction of the Work. Where the construction has cross yards or driveways, they shall be restored by Contractor to the complete satisfaction of District's Representative, at Contractor's sole expense.

2.28 Water Pollution

Contractor shall exercise every reasonable precaution to protect streams, lakes, reservoirs, and canals from pollution with fuels, oils bitumens, calcium chloride, and other harmful materials and shall conduct and schedule its operations so as to avoid or minimize muddying and silting of said streams, lakes, reservoirs, and canals. Care shall be exercised to preserve vegetation beyond the limits of construction. Contractor shall comply with California Fish and Game Code section 5650 and all other applicable statutes and regulations

relating to the prevention and abatement of water pollution. If the Work is subject to the NPDES general permit for stormwater discharges from construction activities, Contractor will comply with all terms and conditions of any applicable special condition, specification or addendum issued by District related to implementation of the Storm Water Pollution Prevention Plan for the Work.

2.29 **Underground Work**

If the Work includes excavation and/or trenching deeper than four feet underground, then the following provisions shall apply:

(a) Protection of Underground Utilities. Prior to conducting any excavation or trenching, Contractor shall contact the appropriate regional notification center as required by California Government Code sections 4216 and following. In accordance with California Government Code section 4215, District shall be responsible for the timely removal, relocation or protection of existing main or trunkline utility facilities located on the project site and not shown on the plans and drawings. Contractor shall be compensated for the costs of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating existing main or trunkline utility facilities not indicated on the plans and drawings with reasonable accuracy, and for the equipment on the project necessarily idled during such work; provided that Contractor shall first notify District before commencing work on locating, repairing damage to, removing or relocating the utilities. Contractor shall not be assessed liquidated damages for delay in completion of the project, when the delay was caused by the failure of District or the owner of the utility to provide for removal or relocation of the utility facilities not shown on the plans and drawings.

(b) Sheeting and Shoring Plan. If the total amount of the Contract exceeds $25,000 and the Work involves the excavation of any trench or trenches five feet or more in depth, then, in accordance with California Labor Code section 6705, Contractor shall submit to District for acceptance, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any such trench or trenches. The plan shall comply with applicable United States Department of Labor regulations (29 C.F.R. 1926) and OSHA and Cal/OSHA construction safety orders and shoring system standards or be prepared by a registered civil or structural engineer who certifies that the plan is not less effective than the shoring, bracing, sloping, or other provisions of the construction safety orders and shoring system standards.

(c) Unusual Underground Conditions. In accordance with California Public Contract Code section 7104, the following provisions shall apply to any work that involves digging trenches or other excavations:

(i) If, during any such digging or excavation, Contractor discovers (a) material Contractor believes may be material that is hazardous waste, as defined in California Health & Safety Code section 25117, that is required to be removed to a Class I, II, or III disposal site, (b) subsurface or latent physical conditions at the site differing from those indicated, or (c) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided in the Contract, then Contractor shall promptly notify District's Representative in

writing and shall not disturb the area of the subject digging or excavation until notified by District's Representative.

(ii) Upon receipt of any notice pursuant to the foregoing subsection, District's Representative shall promptly investigate the conditions, and if he or she finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of the Work, or any part of the Work, it shall issue a change order pursuant to this Contract.

(iii) If there is a dispute between District and Contractor over whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of the Work, Contractor shall not be excused for the scheduled completion date, but shall proceed with all work to be performed under the Contract. Contractor shall remain any and all rights provided by this Contract or by law that pertain to the resolution of disputes and protests between the parties.

2.30 **Hazardous Materials; Hazard Communication**

(a) Proposition 65 and the California Health and Safety Code require businesses to provide warnings prior to exposing individuals to materials listed by the Governor as chemicals "known to cause cancer or reproductive toxicity." District may use chemicals on the Governor's list at many of its facilities. In addition, many of these chemicals are present at non-District-owned facilities and locations. Accordingly, in performing the Work under this Contract, Contractor, its employees, agents, and subcontractors may be exposed to chemicals on the Governor's list. Except as provided in subsection (b), Contractor is responsible for notifying its employees, agents, and subcontractors that work performed hereunder may result in exposures to chemicals on the Governor's list.

(b) Before starting work, Contractor shall have a written Hazard Communication Program ("HCP") in place that complies with the requirements of section 5194 of Title 8 of the California Code of Regulations, including the requirements of 8 C.C.R. section 5194(e). The information in Contractor's HCP must include the methods by which Contractor shall communicate to District which hazardous substances it will use and store on the job site(s) to which District's and Contractor's employees and subcontractors may be exposed. Contractor shall submit its HCP to District at the same time as submittal of its initial project schedules or other time designated by District. Contractor will provide copies of safety data sheets ("SDS") for all hazardous substances brought onto and used or stored on the job site(s). Contractor also will ensure that all hazardous substances are marked with Proposition 65 and any other visible warning labels as required by law. Whenever possible, Contractor shall provide SDS for all hazardous substances to District prior to brining a hazardous substance onto a job site, but will provide all SDS by no later than the time the hazardous substance is physically brought onto the site. District will communicate Contractor's HCP and SDS information to District's employees who work on or will enter the job site. District will provide Contractor with a copy of District's HCP and SDS information specific to District operations on the job site. Contractor shall, in turn, convey this information to its employees and subcontractors. During the course of the work, Contractor will keep copies of both its and District's HCP, SDS and other relevant information at Contractor's job site office.

2.31 **Contractor's License Notice**

Statement required by California Business & Professions Code section 7030: "Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826."

2.32 **Indemnification**

To the fullest extent permitted by law, Contractor shall protect, defend, indemnify and hold harmless District and, if applicable, District's Representative, and their respective officers, directors, agents, employees, volunteers, representatives, boards, and consultants from and against all penalties and fines imposed by law and all loss, claim, cause of action, demand, suit, judgment, cost, damage, expense, and liability (including but not limited to court or arbitration costs and reasonable attorneys' and expert witness fees) resulting from injury to or death of persons, including without limitation employees of the District, District's Representative and Contractor, or damage to or loss of property, caused by, arising out of or in any way connected with the Contractor's or its subcontractors' or suppliers' performance, operations or activities under this Contract, except to the extent the sole negligence, active negligence or willful misconduct of an indemnified party proximately causes the loss, claim, demand, cost, suit, judgment, penalty, fine, cause of action, damage, expense, or liability.

(a) Contractor's duty to defend is a separate and distinct obligation from Contractor's duty to indemnify. Upon the request of an indemnified party hereunder, Contractor shall defend any suit asserting a claim covered by this indemnity and shall pay any costs and expenses that may be incurred by an indemnified party in enforcing this indemnity. Contractor shall defend any suit asserting a claim covered by this indemnity and shall pay any costs and expenses that may be incurred by an indemnified party in enforcing this indemnity. Contractor shall be obligated to defend, in all legal, equitable, administrative, or special proceedings, the District and, if applicable, District's Representative, and their respective officers, directors, agents, employees, volunteers, representatives, boards, and consultants, immediately upon tender to Contractor of the claim in any form or at any stage of an action or proceeding, whether or not liability has been established. The obligation to defend extends through final judgment, including exhaustion of any appeals. In all cases, District shall have the right to approve counsel selected by Contractor in the defense of any legal action or with respect to any claim, which approval shall not be unreasonably withheld. In addition, the indemnified party shall have the right to participate in and be represented by counsel of its own choice and at its own expense in any legal action with respect to any claim.

(b) In any and all claims against the District or District's Representative, and each of their officers, directors, employees and agents by any employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under this section shall not be limited in any way by any limitation on the amount or type of damages, compensation or

benefits payable by or for Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable under Workers' Compensation statutes, disability benefit statutes or other employee benefit statutes.

(c) Neither termination of this Contract, completion of the acts to be performed under this Contract, nor District's Representative's approval or District's acceptance of the work shall release Contractor from its obligations to indemnify and defend District and District's Representative, and their respective officers, directors, agents, employees, volunteers, representatives, boards and consultants.

(d) Submission of insurance certificates or submission of other proof of compliance with the insurance requirements in this Contract does not relieve Contractor from liability under this indemnification provision. The obligations of this section shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

2.33 **Insurance**

(a) The Contractor shall procure and maintain for the duration of the Contract and for five years thereafter, the following insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

(i) General Liability – Commercial General Liability (CGL) – Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars ($2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to District) or the general aggregate limit shall be twice the required occurrence limit.

(ii) Automobile Liability – Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) with limit of one million dollars ($1,000,000) for bodily injury and property damage each accident.

(iii) Workers' Compensation Insurance – The Contractor shall provide workers' compensation coverage as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

(iv) Builder's Risk – (Course of Construction) – insurance utilizing an "All Risk" (Special Perils) coverage form with limits equal to the completed value of the project and no coinsurance penalty provision.

The above minimum insurance coverage limits can be met through provision of umbrella or excess policy insurance coverage consistent with the provisions of this section.

(b) If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum of insurance and coverage shall be available to the District. Furthermore, the above minimum insurance coverage limits can be met through provision of umbrella or excess policy insurance coverage consistent with the provisions of this section 2.33.

(c) Any deductibles or self-insured retentions must be declared to and approved by District. At the option of District, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects District, its officers, officials, employees and volunteers; or Contractor shall procure a bond or other security guaranteeing payment of losses and related investigations, claim administration and defense fees, costs and expenses. All policies that include a self-insured retention shall include a provision that payments of defense costs and damages (for bodily injury, property damage, personal injury or any other coverages included in the policy) by any party, including additional insureds and insurers, shall satisfy the self-insured retention limits.

(d) The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

(i) Waiver of Subrogation (also known as Transfer of Rights of Recovery Against Others to Us): The Contractor hereby agrees to waive rights of subrogation to obtain endorsement necessary to affect this waiver of subrogation in favor of the District, its directors, officers, employees, and authorized volunteers, for losses paid under the terms of this coverage which arise from work performed by the Name Insured for the District; this provision applies regardless of whether or not the District has received a waiver of subrogation from the insurer.

(ii) District, and its officers, officials, employees, agents and volunteers are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of Contractor, products and completed operations of Contractor; premises owned, occupied or used by Contractor; or automobiles owned, leased, hired or borrowed by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to District, its officers, officials, employees, agents or volunteers. The additional insured coverage or endorsement shall comply with California Insurance Code section 11580.04.

(iii) For any claims related to this project, Contractor's general and automobile liability coverage shall be primary insurance as respects District, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by District, its officers, officials, employees, agents or volunteers shall be excess to Contractor's insurance and shall not contribute with it.

(iv) Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, and its officers, officials, employees, agents or volunteers.

(v) Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(vi) Each insurance policy required by this section shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, or reduced in coverage or in limits except after 30 days' prior written notice by U.S. mail has been given to District, or after 10 days' written notice in the case of cancellation for non-payment of premium.

(e) Course of construction policies shall contain, or be endorsed to contain, the following provisions: (a) District shall be named as loss payee; and (b) the insurer shall waive all rights of subrogation against District.

(f) Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-:VII or equivalent and that are authorized to do business in California, unless otherwise approved by District. In the case of Workers' Compensation and Employer's Liability insurance, coverage provided by the California State Compensation Insurance Fund is acceptable.

(g) Before commencing work, Contractor shall provide to District the following proof of insurance: (a) certificate(s) of insurance on ACORD Form 25-S (or insurer's equivalent) evidencing the required insurance coverages; and (b) endorsement(s) on ISO Form CG 20 10 (or insurer's equivalent), signed by a person authorized to bind coverage on behalf of the insurer(s) and certifying the additional insured coverages, or equivalent additional insured blanket endorsement. District reserves the right to require complete copies of all required insurance policies and/or endorsements affecting required insurance coverage at any time.

(h) Contractor shall include all actions and activities of its subcontractors as insureds under its policies, or shall require each subcontractor to provide insurance coverage consistent with the foregoing and to furnish separate endorsements or certificates to District. All coverages for subcontractors shall be subject to all of the requirements stated in this section.

(i) Contractor shall maintain all required insurance coverages for the period provided in this section. If any of the required coverages expire during the coverage period, Contractor shall obtain renewal or replacement coverages and deliver certificates for the renewed or replacement coverages and any required endorsements to District at least 10 days before the expiration date of the existing coverage.

(j) Any products/completed operations insurance coverage shall be maintained after completion of the Work for the full guarantee period.

(k) The requirements as to the types, limits, and Districts approval of insurance coverage to be maintained by Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by Contractor under the Contract.

(l) In addition to any other remedy District may have, if Contractor or any of its subcontractors fails to maintain the insurance coverage as required in this section, District may obtain such insurance coverage as is not being maintained, in form and amount

substantially the same as required herein, and District may deduct the cost of such insurance from any amounts due or which may become due Contractor under this Contract.

(m) Contractor shall execute and file with District the attached Contractor's Workers' Compensation Certificate in accordance with California Labor Code section 1861.

2.34 Final Acceptance and Date of Completion

(a) Whenever Contractor shall deem all Work under this Contract to have been completed, it shall so notify District's Representative in writing, and District's Representative or other District representative shall promptly ascertain whether the Work has been satisfactorily completed and, if not, shall advise Contractor in writing of specific defects and any additional Work required.

(b) Neither the final payment nor any part of the retained percentage shall become due until Contractor, if required, shall deliver to District, a complete release of all liens and claims arising out of this Contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as it has knowledge or information the releases and receipts include all the labor and material for which a lien or claim could be filed; but Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to District, to indemnify the District against any lien or claim. If any lien or claim remains unsatisfied after all payments are made, Contractor shall refund to District all monies that the latter may be compelled to pay in discharging such a lien, or claim, including all costs and reasonable attorneys' fees.

(c) When all the provisions of the Contract have been fully complied with to the satisfaction of District, District will accept the Work in writing and make the final payment to Contractor. As a condition of receiving the final payment, Contractor must execute and deliver to District, as appropriate, a Conditional Waiver and Release Upon Final Payment or Unconditional Waiver and Release Upon Final Payment in the form provided in Civil Code sections 8136 or 8138, respectively.

(d) Except for any sum required to be withheld by law or allowed to be held under this Contract, the 5% retention shall be paid 35 days after District's acceptance of the Work. In accordance with California Public Contract Code section 7107(c), in the event of a dispute between the parties, District may withhold from the final payment to Contractor an amount not to exceed 150% of the disputed amount.

2.35 Right to Withold Payments

(a) In addition to all other rights and remedies of District provided by law and this Contract, District may withhold the whole or any part of any progress or final payment to such extent as may reasonably be necessary to protect District from loss on account of: (a) unacceptable, defective or nonconforming Work not remedied; (b) claims or liens filed or reasonable evidence indicating probably filing of claims or liens including, but not limited to, claims under sections 1775, 1776 and 1777.7 of the California Labor Code or the public works stop notice provisions in the California Civil Code; (c) failure of Contractor to make payments properly for labor, materials, equipment, or other facilities, or to subcontractors and/or suppliers; (d) a reasonable doubt that the Work can be completed for the balance then

unearned; (e) failure of Contractor to clean up the job site, repair or replace damaged or affected improvements or property; or (f) damage to job site, completed Work, or other real or personal property.

(b) Whenever District withholds any monies pursuant to this paragraph, written notice of the amount withheld and the reasons for the withholding will be given to Contractor. After Contractor has corrected the enumerated deficiencies to the satisfaction of District, District will promptly pay to Contractor the amount so withheld. When District withholds monies to protect District against claims under the public works stop payment notice provisions of the California Civil Code, District may at its discretion permit Contractor to deliver a surety bond in terms and amount satisfactory to District, indemnifying District against any loss of expense, and upon acceptance thereof by District, District shall release to Contractor monies so withheld.

2.36 State Audit Contingency

Contractor acknowledges that this Contract, and performance and payments under this Contract, are subject to examination and audit by the State Auditor General for three years following final payment under this Contract pursuant to California Government Code section 8546.7.

2.37 Liquidated Damages

If Contractor does not complete the Work, as determined by the schedule set forth and agreed upon by the District and the Contractor, before the expiration of the Contract time limit, or within any time extension granted by District, then District will sustain damage, and that it may be impracticable to determine the actual amount of damage by reason of the delay. The parties therefore agree that Contractor shall pay District as damages $1,000 for each and every day's delay in finishing the Work beyond the Work completion deadline. The parties agree that this liquidated damages provision is reasonable under the circumstances existing at the time the Contract was made. District shall have the right to deduct the amount of liquidated damages from any money due or to become due Contractor.

2.38 Waiver of Interest

District shall have no obligation to pay and Contractor hereby waives the right to recover interest with regard to monies which District must withhold by reason of judgment, order, statute or judicial process, or which it may withhold pursuant to this Contract.

2.39 Claims and Resolution of Disputes

(a) General. The parties intend that differences between the parties, arising under the Contract, be brought to the attention of the District at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The parties agree to initially strive to resolve all disputes amicably and in an informal manner. Any dispute resolved informally shall be documented by the District, and if the dispute resolution involves a change in the contract work, increase or decrease in the compensation due the Contractor, or adjustment in the time of completion of the Work, then the informal dispute resolution shall be confirmed by a Change Order pursuant to section 2.12. Informal

discussions or negotiations with the District or its representatives concerning informal resolution of a dispute shall not toll or suspend the claim filing and other deadlines provided below, unless so provided by the District in writing. Willingness of the District to engage in any such discussions is not a waiver of the District's right to deny a claim or dispute based on lack of merit, or procedural deficiency, or both.

(b) Compliance Required. Contractor shall not be entitled to any additional time to complete Work or the payment of any additional compensation for claimed extra work (or otherwise on account of any claim of any additional compensation for claimed extra work occurrence) unless either District has issued a Change Order pursuant to section 2.12 or a claim has been timely filed and approved pursuant to this section. If the Contractor fails to file a written claim within the claim deadline in section 2.39(d), then the Contractor agrees that it was waived any right or remedy to thereafter pursue the claim against the District in any administrative, arbitration or litigation proceeding, and the District may elect to document this waiver.

(c) Scope of Claims. A claim for purposes of this section means a separate demand by the Contractor for (a) a time extension (including a demand for relief from damages or penalties for delay assessed by the District under the Contract), (b) payment of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the Contractor is not otherwise entitled to, or (c) an amount the payment of which is disputed by the District.

(d) Filing of Contract Claim; Contents; Filing Deadline

(i) The Contractor shall file any "Contract Claim" with the District. A Contract Claim must (a) be in writing, (b) be labeled or clearly indicated as a claim under the Contract, (c) set forth in detail the reasons why the Contractor believes additional compensation or a time extension is or may be due, the nature of the costs involved, and, insofar as possible, the amount of the claim, and (d) include (or reference earlier provided) documents that support and substantiate the claim as both entitlement and quantification of time, money, or both.

(ii) A Contract Claim must be submitted to the District within the following claim following deadlines:

A. if a deadline is set forth in the Contract for filing of the particular claim, then the claim must be filed by the specified time;

B. if the claim relates to extra, additional or unforeseen work for which the Contractor intends to demand additional compensation, a time extension, or both, notice shall be given to the District prior to the time that the Contractor commences performance of the work giving rise to the potential claim for additional compensation or time extension, and Contractor shall not proceed with that work until so directed by the District; and

C. for all other claims not included within (a) or (b), the claim must be filed on or before 15 days after the date of the occurrence, event or circumstance giving rise to the claim. In no event shall a Contract Claim be filed later than the date of final payment.

(e) Processing of Claims, Generally. This Contract provides for two types of Contract Claims, which will be processed and resolved under different subsections. Any claim for money or damages or for a time extension (i.e., any claim subject to Public Contract Code section 20104) shall be processed and resolved in accordance with section 2.39(f). Any Contract Claim sent to District by registered mail or certified mail with return receipt requested (i.e., any claim subject to Public Contract Code section 9204) shall be processed and resoled pursuant to section 2.39(g).

(f) Claims for Money, Damages, or for Time Extension

(i) District Response to Contract Claim. The District shall respond in writing to the Contract Claim within 60 days of receipt of the claim (or within 45 days of receipt for claims of less than $50,000), or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the District may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subsection, upon mutual agreement of the District and the Contractor. The District's written response to the claim, as further documented, shall be submitted to the Contractor within 30 days after receipt (or 15 days after receipt for claims of less than $50,000) of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater. The District shall not fail to pay money as to any portion of a Contract Claim that is undisputed except as otherwise provided in the Contract.

(ii) Meet and Confer. If the Contractor disputes the District's written response, or the District fails to respond within the time prescribed, the Contractor my notify the District, in writing, either within 15 days of receipt of the District's response or within 15 days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon such a demand, the District shall schedule to meet and confer conference within 30 days for the parties to consider settlement of the dispute. If the Contractor fails to timely demand a meet and confer conference within the applicable 15-day period, then the Contractor shall be deemed not to dispute the District's written response to the Contract Claim and the District's decision on the Contract Claim shall be final, conclusive and binding, and the Contractor shall be deemed to have waived all its rights to further protest, judicial or otherwise.

(iii) Government Code Claim. Following the meet and confer conference, if the Contract Claim or any portion remains in dispute, the Contractor may file a Government Code Claim as provided in Government Code title 1, division 3.6, part 3, chapters 1 (commencing with section 900) and 2 (commencing with section 910). The running of the period of time within which Contractor must file a Government Code Claim shall be tolled from the time the Contractor submits a timely Contract Claim pursuant to section 2.39(d) until the time that the Contract Claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process. The District shall respond to any Government Code Claim in accordance with the Government Claims Act.

(iv) Lawsuit. If the claim is not resolved pursuant to this section, the Contractor may file a lawsuit on the claim within the limitations period provided by the Government Claims Act. If the Contractor fails to timely file a lawsuit within the limitations period of the Government Claims Act, then the District's response to the Government Code Claim shall be final, conclusive and binding on the Contractor, and the Contractor thereafter shall be barred from filing a lawsuit on the claim.

(v) Mediation. If the Contractor timely files a lawsuit, then within 60 days, but no earlier than 30 days, following the filing of responsive pleadings, the court shall submit the matter to non-binding mediation (unless waived by mutual stipulation of both parties). The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator. The mediator's fees and expenses shall be split and paid equally between the parties. The court may, upon request by any party, order any witnesses to participate in the mediation process.

(vi) Arbitration. If the matter remains in dispute following the mediation or if the parties waive the mediation, then the case shall be submitted to judicial arbitration pursuant to Code of Civil Procedure part 3, title 3, chapter 2.5 (commencing with section 1141.10), notwithstanding section 1141.11 of that code. The Civil Discovery Act of 1986 (Code of Civil Procedure part 4, title 3, chapter 3, article 3 (commencing with section 2016.010)) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration. The arbitrator shall be experienced in public works construction law. The arbitrator's fees and expenses shall be split and paid equally by the parties, except where the arbitrator, for good cause, determines a different division. The court may, upon request by any party, order any witnesses to participate in the arbitration process. Any party who, after receiving an arbitration award, requests a trial de novo but does not obtain a more favorable judgment shall (in addition to payment of any costs and fees under Code of Civil Procedure part 3, title 3, chapter 2.5 (commencing with section 1141.10)) pay the attorney's fees of the other party arising out of the trial de novo.

(vii) Interest. In any lawsuit filed under this subsection, District shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the lawsuit is filed in court.

(g) Claims Subject to Public Contract Code section 9204

(i) The Contract Claim will be processed and resolved pursuant to Public Contract Code section 9204, which is summarized here:

A. District Review of Claim. Within 45 days after receiving a complete Contract Claim, District shall review the claim and provide the Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. District will pay any undisputed portion of the claim within 60 days from the date of the written statement. If District fails to timely issue a written statement, the claim shall be deemed rejected in its entirety.

B. Meet and Confer Conference. If the Contractor disputes the District's written statement or if the Contract Claim is deemed rejected, the Contractor may demand and the parties will conduct an informal conference to meet and confer regarding settlement in accordance with section 9204, subsection (d)(2). Within 10 business days following the conclusion of the meet and confer conference, District shall provide Contractor a written statement identifying the portion (if any) of the claim remaining in dispute and any undisputed portion will be paid by District within 60 days after this written statement.

C. Non-Binding Mediation. Any remaining disputed portion of the claim shall be submitted to nonbinding mediation in accordance with section 9204, subsection (d)(2).

D. Interest. Any amount not paid in a timely manner as required by this subsection shall bear interest at a rate of 7 percent per annum until paid.

The foregoing is summary of section 9204. In the event of any conflict between the summary and section 9204, the statute will govern.

(ii) Lawsuit and Judicial Reference. If mediation is unsuccessful and all or parts of the Contract Claim remain in dispute, then the Contractor may pursue a lawsuit. If the Contractor timely files a lawsuit, the case shall be submitted to judicial reference pursuant to California Code of Civil Procedure sections 638 and 640 through 645.1 (or any successor statute) and California Rules of Court title 3, division 9 (commencing with section 3.900). As authorized by Code of Civil Procedure section 638, a referee will consider and decide all factual and legal issues in the action. Each party acknowledges that it will not have any right to a jury trial or to have any judicial officer besides the referee hear or decide the action. When Contractor initiates the superior court lawsuit, it will, at the same time it files the complaint in the action, also file a motion for appointment of a single referee.

A. Appointment of a referee shall be by mutual agreement within 30 days between the parties, and if unsuccessful, then by the court and will be governed by Code of Civil Procedure section 640, and subject to objection by either party as provided by Code of Civil Procedure section 641. The referee must be a retired judge or a licensed attorney with at least ten years substantive experience in public works construction matters.

B. The parties shall be entitled to discovery and the referee shall oversee discovery and may enforce all discovery orders in the same manner as a superior court judge. The referee shall have the authority to consider and rule on appropriate pre-hearing and post-hearing motions in the same manner as a superior court judge. The referee will have the authority to set a briefing and hearing schedule for any such motion or for a hearing on the merits.

C. The referee's statement of decision shall include findings of fact and conclusions of law. The statement of decision will stand as the decision of the superior court and, upon filing of the statement with the clerk of

the court, judgment may be entered pursuant to Code of Civil Procedure section 644, subsection (a). The parties will have rights to appeal the final judgment so entered.

D. Each party will pay half of the costs of the referee and the administrative fees of the reference proceeding, and each party will bear its own costs, expenses and attorney fees for the reference proceeding.

(h) Contract Work Pending Claim Resolution. Unless otherwise directed in writing by the District, pending resolution of a claim under this section, the Contractor shall continue to diligently prosecute the Work in accordance with the Contract and the instructions of the District.

(i) Tort Claims. The provisions of this section apply only to contract-based claims and they shall not apply to tort claims, and nothing in this section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Government Code title 1, division 3.6, part 3, chapters 1 (commencing with section 900) and 2 (commencing with section 910).

2.40 Assignment of Anti-Trust Claims

In entering into this Contract, Contractor offers and agrees to assign to District all rights, title, and interest in and to all causes of action it may have under section 4 of the Clayton Act (15 U.S. Code, section 15) or under the Cartwright Act (chapter 2 (commencing with section 16700) of part 2 of division 7 of the California Business and Professions Code), arising from purchases of goods, services or materials pursuant to this Contract. The assignment shall be made and become effective at the time District tenders final payment to Contractor, without further acknowledgement by the parties.

2.41 Integration

This Contract constitutes the sole, final, complete, exclusive and integrated expression and statement of the terms of this contract among the parties concerning the subject matter addressed herein, and supersedes all prior negotiations, representations or agreements, either oral or written, that may be related to the subject matter of this Contract, except those other documents that are expressly referenced in this Contract.

2.42 Counterparts and Electronic Signatures

This Contract may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute the same instrument. Counterparts may be delivered by facsimile, electronic mail (including PDF or any electronic signature complying with California's Uniform Electronic Transactions Act (Civ. Code, §1633.1, et seq.) or any other applicable law) or other transmission method. The parties agree that any electronic signatures appearing on the Contract are the same as handwritten signatures for the purposes of validity, enforceability, and admissibility.

2.43 Independent Contractor

The relationship between District and Contractor is that of an owner and independent contractor, and all persons hired or employed by Contractor shall be Contractor's employees, agents or subcontractors.

2.44 Governing Law

This Contract shall be construed and enforced in accordance with, and the validity and performance of this Contract shall be governed by, the laws of the State of California.

2.45 Waiver; Remedies

Any waiver at any time by either party of its rights with respect to a breach or default or any other matter arising in connection with this Contract shall not be deemed to be a waiver with respect to any other breach, default or matter. The rights and remedies provided in this Contract are in addition to any of the rights and remedies provided by law.

2.46 Severability

The illegality or unenforceability of any provision of this Contract shall not render the other provisions unenforceable, invalid or illegal.

2.47 Binding on Successors

This Contract shall bind and inure to the benefit of the heirs, successors, assigns, and successor companies of the parties; however, Contractor shall not assign or transfer any rights, obligations or interest in the Contract without the prior written consent of District.

2.48 Notices

Any invoice, payment, notice, demand, request, consent, approval or notification of change of address that either party to this Contract may or is required to give to the other party will be in writing and signed for the party by an authorized officer and addressed to the addresses set forth above. All such notices will be deemed to have been received on the day of delivery if either personally delivered or sent by recognized national overnight courier service or three days after mailing if enclosed in a properly addressed and stamped envelope and deposited in a United States post office for first-class delivery. Either party may change its address at any time by notifying the other party in writing of the change of address in accordance with this section.

The parties enter into and execute this Contract effective on the date written above.

For District:

Authorized Signature: _____

Printed Name: _____

Title: _____

For Contractor:

Authorized Signature: _____

Printed Name: _____

Title: _____

3 CONTRACTOR'S WORKERS' COMPENSATION CERTIFICATE

(Labor Code Section 1861)

To: Mammoth Community Water District

I am aware of the provisions of section 3700 of the Labor Code, which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work under this Contract.

For Contractor

Authorized Signature: _____

Printed Name: _____

Title: _____

Company Name: _____

Date: _____

4 PAYMENT BOND

KOWN ALL MEN BY THESE PRESENTS,

THAT, WHEREAS, the Mammoth Community Water District, hereinafter designated as the "District", has awarded to _____ hereinafter designated as the "Contractor" a Contract for the work described as follows:

Tank Rehabilitation Project

The rehabilitation of a 1 MG welded steel potable water tank and a 50,000 Gallon welded steel backwash tank, including surface prep, new interior and exterior coating system, patch welding and new miscellaneous hardware. The project also includes an alternate bid for a 0.5 MG potable water tank.

WHEREAS, the Contractor is required by the Contract and by the provisions of Division 4, Part 6 of the Civil Code to furnish a bond in connection with the Contract, as hereinafter set forth.

WHEREAS, the Contract by this reference is made a part hereof;

NOW, THEREFORE, we, the undersigned Contractor, as Principal, and _____

_____, as Surety, a corporation organized and existing under the laws of the State of _____, duly authorized and in good standing to transact business under the laws of the State of California, as an admitted Surety, are held and firmly bound unto the District in the sum of $ _____, the sum being not less than one hundred percent (100%) of the total Contract amount payable by the District, under the terms of the Contract, for which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT, if the Contractor, its heirs, executors, administrators, successors, assigns or subcontractors shall fail to pay for any materials, provisions, provender or other supplies or teams, implements or machinery used in, upon, for or about the performance of the work contracted to be done, or shall fail to pay for any work or labor thereon of any kind, or shall fail to pay any of the persons named in Civil Code Section 9100, or shall fail to pay for amounts due under the Unemployment Insurance Code with respect to such work or labor as required by the provisions of Division 4, Part 6 of the Civil Code, or shall fail to pay for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work or labor, and provided that the claimant shall have complied with the provisions of that Code, the Surety or Sureties hereon will pay for the same in amount not exceeding the sum specified in the Contract, otherwise the above obligation shall be void. In case suit is brought upon this bond, the Surety will pay a reasonable attorney's fee to the prevailing party to be fixed by the court. This bond shall

inure to the benefit of any and all persons, companies and corporations entitled to file claims under Section 9100 of the Civil Code, so as to give a right of action to them or to their assigns in any suit brought upon this bond. And the Surety, for value received, hereby stipulates and agrees that not change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specification.

The address or addresses at which the principal and surety(ies) may be served with notices, papers and other documents under the California Bond and Undertaking Law (Code of Civil Procedure section 995.010 et seq.) is the following:

_____

_____

IN WITNESS THEREOF, the above bounded parties have executed this instrument under their several seals this _____ day of _____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

For Contractor as Principal:

_____

Name: _____

Title: _____

For Surety:

_____

Name: _____

Title: _____

(Seal)

(NOTE: The date of this bond must not be prior to date of Contract. If Contractor is a partnership, all partners should execute bond.)

5 FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS,

THAT, WHEREAS, Mammoth Community Water District, hereinafter designated as the "District," entered into a Contract with _____, hereinafter designated as the "Contractor" for the work described as follows:

Tank Rehabilitation Project

The rehabilitation of a 1 MG welded steel potable water tank and a 50,000 Gallon welded steel backwash tank, including surface prep, new interior and exterior coating system, patch welding and new miscellaneous hardware. The project also includes an alternate bid for a 0.5 MG potable water tank.

WHEREAS, the Contractor is required under terms of the Contract to furnish a bond for the faithful performance of the Contract;

WHEREAS, the Contract is by reference made a part hereof;

NOW, THEREFORE, we, the undersigned Contractor, as Principal, and _____, a corporation organized and existing under the laws of the state of _____, and duly authorized and in good standing to transact business under the laws of the State of California, as an admitted Surety, are held and firmly bound unto the District in the penal sum of $ _____, the sum being not less than one hundred percent (100%) of the total Contract amount, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT, if the above bounden Contractor, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alterations thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the District, its directors, officers, employees and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the said Contract, the above obligation in above-stated amount shall hold good for a period of one (1) year after the recording of the notice of completion, during which time if the Contractor, its heirs, executors, administrators, successors or assigns shall fail to make full, complete, and satisfactory repair and replacements or totally protect the District from loss or damage made evident during the period of one (1) year from the date of recording of the notice of completion, and resulting from or caused by defective materials or faulty workmanship in prosecution of the work done, the above obligation in the above-stated amount shall remain in full force and effect.

However, anything in this paragraph to the contrary notwithstanding, the obligation of the Surety hereunder shall continue so long as any obligation of the Contractor remains.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall, in any way, affect its obligations on this bond and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications. The Surety hereby waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

In the event suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all costs incurred by the District in such suit, including, but not limited to, administrative and consultant costs, and reasonable attorney's fees to be fixed by the Court.

The address or addresses at which the principal and surety(ies) may be served with notices, papers and other documents under the California Bond and Undertaking Law (Code of Civil Procedure section 995.010 et seq.) is the following:

_____

_____

IN WITNESS THEREOF, the above bounded parties have executed this instrument under their several seals this _____ day of _____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

For Contractor as Principal:

_____

Name: _____

Title: _____

For Surety:

_____

Name: _____

Title: _____

(Seal)

(NOTE: The date of this bond must not be prior to date of Contract. If Contractor is a partnership, all partners should execute bond.)

Attachment 1 – Technical Specifications to the MCWD Tank Rehabilitation Project

Table of Contents

1 Governing Standards

The following standards (including the most recent update or version) shall govern the work unless specified otherwise in these specifications:

SSPC-Vol.1,	Steel Structures Painting Manual, Good Painting Practice.
SSPC-Vol.2,	Steel Structures Painting Manual, Systems and Specifications.
SSPC-SP 1	Solvent Cleaning
SSPC-SP 2	Hand Tool Cleaning
SSPC-SP 3	Power Tool Cleaning
SSPC-SP 5	White Metal Blast Cleaning
SSPC-SP Guide 11	Stripe Coating
SSPC-SP 7	Brush-Off Blast Cleaning
SSPC-SP 10	Near White Blast Cleaning
SSPC-SP 11	Power Tool Cleaning to Bare Metal
SSPC-AB 1	Mineral and Slag Abrasives
SSPC-PA 1	Shop, Field and Maintenance Painting
SSPS-PA Guide 3	Guide to Safety in Paint Application
SSPS-PA Guide 12	Lighting
SSPC-Guide to Vis 1-89	Visual Standard for Abrasive Blast Cleaned Steel
SSPC-V15 (3-93)	Visual Standard for Power & Hand-Tool Cleaned Steel
AWWA D102-97	Standard for Painting Steel Water-Storage Tanks
AWWA C652 ISO-8502-3	Disinfection of Water Storage Facilities. Preparation of Steel Substrates (Class 2)
All applicable State and Federal OSHA safety standards.	

2 Quality Assurance

The District has retained a coating inspection firm to oversee all quality control related to coating operations. The inspector will report directly to the District Engineer and shall act with the Engineer's authority in all matters related to construction. The Inspector will be a NACE/AMMP Certified Coating Inspector, who will inspect any or all phases of work to be performed as outlined herein. The inspector shall be an addition to the District Inspector; authority shall be limited to coating related work only. The District Inspector shall remain the primary observer for all work on the project. The inspector shall work for and report to the District. The Contractor shall not rely upon the tank inspector for documentation of environmental conditions and assuring compliance with plans and specifications.

The Contractor shall notify the District Engineer in advance (48 hours minimum) of all surface preparation or paint application in order to perform a preliminary examination and provide acceptance of the surface preparation and each coat prior to application of the next coat.

The Coating Inspector shall examine all materials, tools, and equipment to be used in the blasting and coating operations and shall have the authority to direct the Contractor to remove, replace, or repair any materials, tools, or equipment found not to be in conformance with the Contract Documents including the approved shop drawings and manufacturer's recommendations. The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety efforts of the Contractor by the Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the District or the Inspector. The Contractor shall indemnify, defend, and save harmless the District and the coating Inspector from all liability associated therewith.

The Contractor shall provide evidence of regular engagement in application of 100% solids coatings for at least five years prior to commencement of this work on potable water storage reservoirs.

The Contractor shall certify in writing that supervisors and workers on-site shall be experienced and knowledgeable in preparation for and application of high-performance industrial coatings.

The Contractor's workmanship shall conform to standards and recommendations of SSPS Vol. 1, especially Chapters 5.1 and 6.

The District may use any testing method deemed necessary by the District Coating Inspector to verify quality of work. The District may, but is not required to, monitor the quality of work pursuant to this section.

The Contractor shall ensure proper materials handling and use, including: all coating materials are labeled and used in accordance with SSPC-PA 1, Paragraphs 5.1.1 thru 5.1.5, except all coating system materials without a stated shelf life shall be delivered and used within six months of the date of manufacture; and certification, from any source, that the coating system materials are still suitable for use beyond the stated shelf life or beyond the six month period specified above will not be accepted. All equipment and materials shall be stored in a secured ventilated container.

The Contractor shall perform the necessary quality assurance in accordance with an approved plan. The Contractor will supply all inspection equipment. The District reserves the right to use their equipment at any time.

The Contractor shall comply with the following conditions in collection and analysis of wastes:

All testing of spent abrasive blast media and removed coating materials to classify these wastes as hazardous or non-hazardous shall be performed by a laboratory that complies with and is certified under the Environmental Laboratory Accreditation Program (ELAP) of the California Department of Health Services.

Any Laboratory performing analysis shall provide for comparison to TTLC, STLC, TCLP limits, and RCA limits, and to all other applicable regulatory limits. Laboratory shall retain samples at least ninety (90) calendar days after all analyses are complete.

The Contractor shall ensure collection of as many representative samples as required by the representative of the disposal facility, but not less than 4 total.

3 Quality Control

The Contractor shall provide adequate lighting, without shadows, during all phases of work to ensure that work is performed as specified and that the entire work area is illuminated.

The Contractor shall provide ground supported scaffolding and lighting (SSPC Guide 12), as determined by the Inspector, to facilitate visual and instrument inspection by the Inspector of each phase of the work and of the completed work, as so placed as directed to minimize glare and shadows. Work will be rejected if proper lighting is not achieved for a proper inspection. All scaffolding shall be equipped with stairways, no exterior ladders.

Provide the following minimum illumination during all phases of work:

General work area: 25-Foot Candles.

Surface preparation and coating application: 30-Foot Candles.

Inspection: 50-Foot Candles. The Contractor shall provide personnel to move scaffolding and furnish other assistance to District Inspectors as required.

The District Coating Inspector will examine surfaces after abrasive blast cleaning to verify that all deposits of contaminants have been removed as per surface clean as per ISO 8502 (Class 2). The Contractor shall blow down and vacuum all surfaces prior to District inspection. Tank floors shall be vacuumed.

The Contractor shall verify at a minimum of two times daily that air supply is free of oil and moisture contamination (ASTM D-4285). The Contractor shall use effective oil and water separators in all main compressor airlines and shall be placed as close as practicable to the equipment. Prior to using compressed air, the Contractor shall test the quality of air downstream of the separators at suitable outlets by blowing the air on clean white blotter for 2 minutes to check for any contamination, oil, or moisture.

The Contractor shall perform the following daily: measure air temperature, humidity, relative humidity, and metal surface temperature, and determine dew point and relative humidity prior to abrasive blasting or painting. The Contractor shall provide portable temperature and humidity recorders to provide continuous permanent hard copy of the reservoir conditions and repeat measurements and determination of dew point as often as the District Inspector deems necessary but not less often than every four hours at the start of preparation operations and run constantly until final cure.

The Contractor shall maintain a written record of measurements and dew points, and time that measurements were taken, keep such record on-site, and make records available to District Inspector on request.

The Contractor shall furnish 1 roll of Testex tape 1.5 to 4.5 mils X-course prior to the start of abrasive blasting. The District Coating Inspector may evaluate surface preparation using field abrasive blasting standards, and Testex tape. Evaluation may include inspection of blasted surfaces for dust and abrasive residue, using clear adhesive coated tape. Evaluation will be made immediately prior to coating application.

The Contractor shall verify cleanliness of all spray application equipment prior to, or no later than, time of mixing coating material.

The Contractor shall measure wet film thickness during coating application of coating to ensure adequate coating thickness, taking at least one measurement for each 100 square feet of application area. The Contractor shall measure dry film thickness after each coat using a non-destructive magnetic dry film thickness gauge.

The District Coating Inspector may, but is not required to, also measure coating thickness, at random locations, after each coat. SSPC –PA 2 (Level 1) is only to be used for the calibration of dry film thickness gauges. This is a minimum maximum dry film thickness specification. Dry film thickness readings will not be averaged. All inspection equipment shall be supplied by the Contractor. All equipment shall have current calibration certificates. The District reserves the right to use their own equipment at any time.

The District Coating Inspector will evaluate cleanliness of coated surface immediately prior to application of a subsequent coat.

The Contractor shall test all coated surfaces for pinholes (NACE SPO-188) and holidays after application of the final coat in accordance with the following:

Perform test in the presence of the District Coating Inspector.

Perform test after coating has cured as recommended by the manufacturer.

Use an appropriate detector, such as Elcometer #236 or as approved by the District representative.

Re-test after coating repairs until non detectable.

The District may hire a third-party inspector to inspect the Contractor’s work, but the ultimate responsibility for the quality of the Contractor’s work and the performance of contractual obligations remains with the Contractor.

4 Warranty

Anniversary inspection requirements and failure criteria shall be in accordance with AWWA D-102, Section 9, except as modified herein. The total warranty period shall be two years from the final acceptance date.

Warranty inspection of coating work shall be conducted between the period of eleventh (11th) month through twelfth (12th) month following final acceptance of the Contract work. The inspection window may be extended to an additional four months at the District's option.

The District will establish the date for the inspection and shall notify the Contractor at least 30 days in advance. Owner may, by written notice to the Contractor, reschedule the warranty inspection to another date within the eleven through twelfth month inspection period, or may cancel the warranty period altogether.

The contractor shall attend this inspection. The contractor shall be responsible for notifying all directly involved parties of the date and time of the inspection. Contractor's Coating Subcontractor(s) shall be present at this inspection.

The District will drain tanks and the interiors will be hosed sufficiently clean. Contractors provide suitable lighting, ventilation, and scaffolding (Interior stairway) for the tank inspection. Using SSPC – Guide 12 for Illumination, provide a minimum of 200 candle foot illumination for inspection.

The entire interior and exterior coating systems shall be visually inspected to determine whether any repair work is necessary or if a more detailed inspection will be needed.

The District shall prepare and deliver to the Contractor an Inspection Report covering the warranty inspection, setting forth the number and types of failures observed, the percentage of the surface area where failure has occurred, and the names of the persons making the inspections. Color photographs illustrating each type of failure shall be included in the report. Where coatings have peeled off, bubbled, or cracked, and any location where rusting is evident shall be considered to be a failure of the coating system. Upon completion The District will prepare a schedule for remedial work completion, to be no more than thirty (30) calendar days after the submittal of the inspection report to the Contractor. Upon failure of the Contractor to commence remedial work within ten calendar days after the starting date established by the District, the District may at its option, retain another Contractor to perform the remedial work. The Contractor shall be liable for actual inspection cost of all such remedial work plus a 20 percent District administrative cost.

Extensive Failure: If the area of failure exceeds 25 percent of the area of a portion of the reservoir surface, then that portion (shell, Floor, Roof plates and rafters are individual portions) shall be removed, replaced, and recoated in accordance with this Section. For determining the need for complete recoating, the exterior roof to the bottom of the knuckle and the exterior shell shall each be considered a separate portion.

Repairs shall be commenced on a date established by Owner and shall be completed within one month (thirty days). At locations where the warranty inspection of the coatings has shown evidence of peeling, bubbling, rusting or cracking coats, this shall be considered to District be a failure of the coating system.

The Contractor shall bear the expense of all warranty inspections of the remedial work required by the District. The Contractor shall disinfect the reservoir after the inspection and repairs.

After warranty repairs the Contractor will be responsible for disinfection of the complete interior tank.

Any location where coating is defined as defective shall be considered to be a failure of the system at that location. The Contractor shall make repairs at all points where failures are observed by removing the deteriorated coating, cleaning the surface, and recoating with the same system specified herein. Any spot repairs to defective areas will require feathering at least 3 inches into sound adjacent coating. Repaired spots shall be demarcated by masking. If an area of failure exceeds 25 percent of a specific coated surface, the entire coating system from that specific area may be required to be removed and recoated in accordance with the original specification. 1. Specific coated surfaces are defined as follows: a. Roof - interior b. Shell - interior c. Floor - interior d. Attachments, accessories and appurtenances

Products for Interior Coating System Materials:

1) The Contractor shall provide the following new interior coating systems consisting of a thin film epoxy on the rafters, roof plates, and down 6” onto the shell Sherwin Williams’s Sherplate 600 or equal. The floor, shell, ladder, roof supports, and overflow shall be coated with Sherwin Williams Sherplate PW 100% solids epoxy or equal and recommended for corrosion protection of steel water storage tanks.

2) The Contractor shall not use or allow to come in contact with any portion of the tank interior, any coating system and/or any thinners or additives which have not been approved and listed by the National Sanitation Foundation, Standard 61 (NSF 61) for use in potable water reservoirs. Minimum adhesion value (ASTM D-4541) for the lining system using a type two instrument shall be 800 P.S.I. The interior roof, rafters, and shell shall be completely coated, caulked, and tested prior to abrasive blasting on the floor plates.

3) The Contractor shall provide coating "certified non-lead" (less than 0.06 percent lead by weight in the dried film) as defined in Part 1303 of the Consumer Products Safety Act.

4) The Contractor shall ensure the following: each sample shall have an identifying sample number assigned when the sample is taken; each sample number shall be included on the sampling chain of custody and in all reports, correspondence, and other documentation related to the sample; each sample shall have a sampling chain of custody; and, each chain of custody show the name and organization of each person having custody of the sample, and also show the sample number, job name and location, time of day and date sample was taken, material sampled, and tests to be performed.

5) The Contractor shall notify the District at least 24 hours prior to sampling collection for the purpose of District verification of samples collected.

6) Manufacturer's Representative: The Contractor shall, at no cost to the District, provide a qualified technical representative of the coating system manufacturer at the jobsite as required by the District to resolve problems related to the coating system or the application of the system.

Interior Tank Coating

5 Interior Scope of Work

The Contractor shall provide all labor, materials, equipment, and incidentals required to remove all the existing interior coatings and repaint the reservoir interior shell, rafters, floor, ladder, overflow, interior roof plates, roof, inlet and drain piping, and all other miscellaneous steel on the interior of the T-7, T-2 and Lake Mary Backwash potable water reservoirs, with an NSF /UL lining system. The full coating system shall be an NSF/UL 61/600 system for contact in potable water service. The reservoir is in proximity to homes and at no time shall dust or overspray be allowed to leave the boundaries of the site. The Compressors and generators shall be equipped with silencers. At no time will dust or fumes go beyond the boundaries of the tank site. The maximum sound level at the homeowner's boundaries shall not exceed 50 decibels. The existing rafters shall be wedged to abrasive blast inaccessible surfaces of the topside of the rafters and the underside of the roof plates. The wedges shall be a minimum of 2" high and placed a maximum spacing of 6' apart along each rafter during surface preparation and the coating application process.

T-2 Reservoir (alt. Item)	Lake Mary Backwash Tank	T-7 Reservoir
Year Built: 1979	Year Built: 1979	Year Built: 2008
Diameter: 60'	Diameter: 35'	Diameter: 87'
Shell Height: 24'	Shell Height: 8'	Shell Height: 27'
Capacity: 0.5 M. Gallons	Capacity: 0.05 MG	Capacity: 1.0 MG

The shell to roof seam and roof support pedestals shall be caulked with Sika 1-A. The reservoirs have the original epoxy lining system.

The exterior coatings on all three Reservoirs will have the roof, shell, and handrails prepared and overcoated. All associated piping shall be prepared as per this specification and coated with an epoxy / Polysiloxane system.

The District will drain the reservoir. The reservoir may have up to six inches of water and silt remains. The Contractor shall be responsible for disposing the remaining water and silt.

All welding shall be complete prior to any abrasive blasting or coating application.

The Contractor shall have a current California C-33 license or Class A General Engineering License. The Contractor shall submit five projects within the last two years using plural component equipment and NSF-600 100% solids epoxy on the interior of potable water storage tanks. The information shall include Name of project, size of project, name and phone number of owner or Engineer.

When the new interior coating has completely cured, the Contractor shall clean and disinfect the reservoir.

After filling the reservoir, the District shall test the reservoir water for bacteriologic and volatile organic contamination, and for aesthetic quality. The District shall not accept the project until the reservoir water meets California Department of Health Services (DHS) and federal drinking water standards. In addition, the tank will not be accepted until the coating system is free of taste and odor associated with the coating product and does not impart any adverse aesthetic quality to District water.

The interior roof, rafters and shell shall be completely coated, tested, repaired prior to any operations on the floor of the tank.

The Contractor shall dispose of all wastes from abrasive blasting and any other wastes or debris generated during work. The Contractor shall sample, and test wastes as required by applicable regulatory agencies, and as necessary for classification of wastes prior to disposal. The Contractor shall bear all costs for waste sampling, testing, accumulation, transport, and disposal, including the cost for wastes classified as hazardous and non-hazardous.

The Contractor should expect that the entire surface under the existing coatings to be corroded or having mill scale and shall provide for such conditions, accordingly, including complete removal of such materials down to bare steel and providing “White Metal Blast Cleaning” (SSPC/SP # 5) to allow for proper adhesion of the interior coating system.

The District shall conduct a one-year anniversary inspection and the Contractor shall provide floor protection, lighting, and scaffolding during the inspection. The Contractor shall be present at the inspection and disinfect the reservoir after repairs are complete.

When considering the proposed work schedule, the Contractor shall allow three (3) consecutive working days for the District to fill the Reservoir after the coating has cured.

At least two days prior to start of work, the Contractor shall arrange with the District for a pre-preparation conference at the job site to ensure that all parties are familiar with the entire project, including specifications and the manufacturer's printed application instructions.

6 Interior Submittals

The Contractor shall provide a separate submittal for each material to be used in the work. At a minimum provide submittals for abrasive materials, paint systems, thinners, any additives, equipment, and a disposal plan. All required submittal are described in detail in the remainder of this section.

The Contractor shall include the following data in the interior coating system submittal:

Weight in pounds/gallon – ASTM D-2196

% solids by volume – ASTM D-2369

Percent solids by weight – ASTM D-2369

Air cure dry time to re-coat – ASTM D-1640

Minimum adhesion to steel substrate – ASTM D-4541 using a type II instrument (Minimum acceptable adhesion shall be 800 p.s.i.).

Manufacturer's batch numbers and dates of manufacture for materials to be furnished as part of this project.

Letter from the dehumidification manufacturer that the equipment has been properly sized as per the specification requirements.

The Contractor shell submit the NSF listing for all interior coatings.

The Contractor shall include technical data documenting that the material to be provided complies with these specifications. Submittals will not be accepted until all requirements of this specification have been confirmed.

The Contractor shall include the following data in the manufacturer's recommended handling and installation instructions for the proposed paint system submittal:

1) Storage – including maximum and minimum storage temperatures.
2) Surface preparation
3) Coating repair
4) Application equipment
5) Mixing and application of coating system – including a table of minimum and maximum time to re-coat as a function of temperature

6) Curing – including curing time required before holiday testing, and curing time required before immersion as function of temperature and coating thickness. Minimum and maximum re-coat times.

7) Ventilation and Containment System

8) Acceptable temperatures at the time of application.

9) Health and Safety Plan

10) Fire Prevention Plan.

The Contractor shall include the following data in the equipment submittal:

1) Details of vacuum system for removing dust and abrasive from abrasive blast cleaned surfaces.

2) The manufacturer's latest written operation instructions including recommendations for air filter maintenance and change interval for air compressors used for work.

The Contractor shall include the following data in the report submittal:

1) Actual weight of blast cleaning abrasive used for field abrasive blast cleaning, submitted within 24 hours after blasting is completed.

2) Quantity of coating material used for each coat, submitted within 24 hours after completion of each coat.

3) Name of laboratories proposed to be used to test wastes and reservoirs water prior to testing any materials.

4) Laboratory test results for representative waste samples prior to removing any waste materials from the job site. At a minimum, the samples shall be tested for total concentrations of the 17 metals identified in Title 22, for comparison to Total Threshold Limit Concentrations (TTLC) values. The California Waste Extraction Test (WET) shall be performed for each analyte of each sample for which the total concentration exceeds 10 times the STLC value, if any, as specified in Title 22. Toxic Characteristic Leaching Procedure (TCLP) testing shall be performed for each analyte of each sample for which the total concentration exceeds 20 times the TCLP values, if any, specified in the Federal Resource Conservation and Recovery Act. Reactivity, corrosively, and Ignitability testing shall be performed as required by Title 22 and/or the District or representative of the disposal facility.

5) Receipts from disposal site for all waste. Receipts shall identify disposed material and source, show quantity of disposed material in tons or cubic yards, and show method used for final disposition as buried, incinerated, and chemically treated and/or other means.

6) Quantity of thinner used for each coat and total amount used.

The Contractor shall include the following data in the disposal plan submittal:

1) Certification that the materials disposal plan complies with all applicable requirements of the Federal Resource Conservation and Recovery Act; Title 22 and Title 26 of the California Administrative Code; and other applicable regulations of local, state, and federal agencies having jurisdiction over the disposal of spent abrasive blast media, removed coating materials, and other waste, whether hazardous or non-hazardous.
2) The name and Environmental Laboratory Accreditation Program Certificate number of laboratory that will sample and test spent abrasive blast media and removed coating materials. Include statement of the laboratory's certified testing areas and analyses that the laboratory is qualified to perform.
3) Written permission to dispose of material from disposal site representative. Include name, address, and telephone number of disposal sites and of representative.
4) The District shall provide written acceptance of the disposal plan prior to disposal of any wastes.

7 Interior Delivery, Storage, and Handling

The Contractor shall deliver materials as follows:

Delivery of abrasive grit shall be in original labeled moisture-proof bags or airtight bulk containers. Abrasives shall not be reused.

Delivery of coating system materials shall be in original, unopened containers with seals unbroken and labels intact. Labels shall identify type of material, color, and batch number. No material shall exceed six months from the original batch manufacturing date (No exceptions).

The Contractor shall store materials as follows:

Store materials in a single, approved location.

Store coating system materials in enclosed, secure, and ventilated structures, and maintain temperature inside the structure within the temperature range recommended by the manufacturer.

Keep storage location clean, neat, and free of fire hazards.

All operating equipment shall be placed into secondary containment to prevent accidental spills.

The Contractor shall manage materials as follows:

Avoid spilling thinners, solvents, paint products or other materials that contain toxic substances. All compressors and operating equipment shall be placed in secondary containment. All sewer or site drains shall be covered.

Remove discarded thinners, solvents, and paint products from the jobsite daily.

8 Interior Safety

The Contractor shall comply with all Federal, State, and Local applicable safety regulations and requirements. All scaffolding shall be equipped with interior stairways. No exterior ladders will be allowed on scaffolding. No gas, diesel, or propane lifts are allowed on the interior of the tank. Only electric type lifts are allowed.

9 Existing Interior Coatings

The District assumes the present coating system (Epoxy) is the original coating system provided at the time of tank erection and fabrication.

The Contractor shall bear all cost associated with stripping, handling, storing, testing, transport, and disposal of all waste. It shall be the Contractors responsibility to estimate the quantity and classification of waste associated with work.

10 Interior Abrasives

The Contractor shall use abrasive grit for field blast cleaning conforming to the following:

1) Produce a surface profile of 3.5 to 4.5 mils for the floor, shell, roof supports, ladder, and overflow.
2) Produce a surface profile of 1.5 to 2.5 mils for the roof plates, rafters, and down onto the shell 1'.
3) New, clean, and free of contaminants, and containing no hazardous materials.
4) Provide a sharp angular profile.
5) Certified by California Air Resources Board, Executive Order G-565.
6) Conform to all applicable requirements of the Local Air Quality District.
7) No sand or glass abrasives are allowed. Only grit type abrasives to be used.
8) All welding shall be complete prior to surface preparation and coating application.

11 Interior Limiting Environmental Conditions

The Contractor shall apply coatings only when conditions are within the limits prescribed by the manufacturer and shall not apply coatings when the following conditions exist:

Metal temperature is less than 60 degrees F.
Relative humidity is greater than 45 percent.

Contractor shall not abrasive blast or apply coatings when air temperature is less than 5 degrees F above dew point.

12 Interior Dehumidification

The Contractor shall provide dehumidification as required to establish and maintain the specified temperature and relative humidity inside the reservoir twenty fours a day, seven days a week until final cure. The Contractor shall complete any blasting, coating, and testing operations within the duration of time as specified. The District shall not provide a time extension for weather delays. The Contractor shall bear all cost and liability for work resulting from dehumidification equipment failure, breakdown, power failure, or down time.

The Contractor shall provide dehumidification continuously from start of white metal (SP #5) abrasive blasting, until a minimum of three (3) days after application of final coat and all repairs are completed, or for a longer period as recommended by the coating system's manufacturer. The Contractor shall submit a letter from the dehumidification manufacture that the equipment has been properly sized for this project prior to any abrasive blasting operations. A minimum of one air change per hour is required. Working hour meters are required on the dehumidification units.

The Contractor shall provide dehumidification equipment consisting of a solid desiccant (not liquid, granular, or loose lithium chloride) design having a single rotary desiccant bed capable of continuous operation, fully automatic with drip-proof electrical controller. Air heaters alone are not acceptable as dehumidification units.

The Contractor shall ensure that relative humidity of processed air from dehumidification unit not exceed forty five percent.

The Contractor shall ensure dehumidification equipment provides a minimum of two complete air changes inside the reservoir every sixty minutes.

The Contractor shall ensure areas adjacent to the surface that is to be blasted and coated are not exposed to a relative humidity greater than forty-five percent at any time during blasting, cleaning, coating, or curing.

The Contractor shall ensure that during blast cleaning and coating, and for 96 hours after final coat and all repairs are completed, dehumidification units maintain an air and steel temperature of 70 degrees F minimum inside the reservoir.

The Contractor shall ensure dehumidification equipment is placed as close to reservoir manhole as possible.

The Contractor shall ensure cleaning of dehumidification filters prior to start of dehumidification and weekly cleaning thereafter.

The Contractor shall ensure dehumidification tubing is maintained as follows:

1) Mechanically connected and sealed with duct tape at joints.
2) Extended to the center of the Reservoir and attached to a diffuser that will distribute air equally throughout Reservoir.
3) There is no dust or other foreign material inside tubing.

The Contractor shall provide and maintain 24-hour strip chart recorder for humidity and temperature and place humidity and temperature measuring devices inside reservoir at the start of abrasive blasting operations even if dehumidification is not being used.

13 Interior Preparation

The Contractor shall prepare surfaces to be coated in accordance with the coating manufacturer's instructions but not less than specified herein.

The Existing rafters shall be wedged to abrasive blast inaccessible surfaces of the top side of the flanges and the underside of the roof plate. The wedges shall be a minimum of two inches high and placed at a maximum spacing of 6 feet apart along each rafter during the surface preparation and coating process.

During blast cleaning operations, inlet, outlet, overflow, and drain openings in bottom shall be covered with plywood bulkheads, or other approved barriers, to prevent entry of spent abrasive, removed coating or other foreign materials.

The Contractor shall clean surfaces including removal of all visible oil, grease, dirt, welding residue, and other contaminants from areas to be coated (SSPC/Sp#1); inspection using a black light to locate oil and grease; and removal of slag and weld metal accumulation and splatters by chipping or grinding as required in NACE SPO-178.

The Contractor shall provide blast cleaning including removal of existing coating, under film corrosion, corrosion, and other corrosion products from all areas to be coated; and preparation of all surfaces to be coated by abrasive blast cleaning to SSPC-SP 5 white metal with a surface profile of 3.5 to 4.5 mils for the 100% solids epoxy and 1.5 to 2.5 mils for the thin film epoxy. The Contractor should expect that the entire surface under the existing coatings to be corroded or have mill scale and shall provide for such conditions, accordingly, including complete removal of such materials down to bare steel.

The Contractor shall ensure complete abrasive blast cleaning of metal prior to application of coating system. The Contractor will provide a hold back of 5" into the existing coating.

The Contractor shall not reuse abrasive blast media unless the media is specifically designed for reuse, if steel abrasive is used the working mixture shall be a minimum of 75% grit and 25% shot. No automatic blast units shall be allowed on the exterior roof. The Contractor shall be fully aware of the different required anchor profiles that are required for different products.

The Contractor shall ensure maintenance of abrasive blasting equipment including:

1) Installation of an oil moisture separator in the airline between compressor and blast machine.
2) Installation of an air cooler/dryer in the airline between the compressor and the oil and moisture separator.
3) Use of venturi nozzle.

The Contractor shall ensure all surfaces to be blast cleaned are electrically grounded during blast cleaning. All air and blast lines will have cable whip checks installed

The Contractor shall ensure all surfaces to be blast cleaned are electrically grounded during blast cleaning. All air and blast lines will have cable whip checks installed.

The Contractor shall mask-off and protect all exposed machined metal surfaces, plastic, and other surfaces not to be painted or that may be damaged by abrasive blasting or tying into coating systems

The Contractor shall remove all dust and abrasive from freshly blasted surfaces by use of a vacuum system. When the Contractor is painting the roof plates, rafters, knuckle, shell and roof support there shall be no more than 1” of remaining grit on the floor during coating application

The Contractor shall dispose of abrasive blast media and other waste materials off-site and in accordance with approved material disposal plan and discard material directly from Reservoir to a portable container and remove container from site. The Contractor shall ensure media is not placed on ground or other intermediate location. No abrasives shall be reused at any time.

14 Interior Application

The Contractor shall adhere to general application requirements as follows:

1) Mix and apply all coatings in accordance with the manufacturer's recommendations and instructions, the applicable requirements of SSPC-PA 1, and as specified herein.
2) Obtain Inspector's evaluation and approval of steel surface preparation immediately prior to application of first coat.
3) Obtain Inspector's evaluation and approval of cleanliness of previous coat immediately prior to application of subsequent coats.
4) The contractor shall provide ratio testing at the beginning of each application.
5) Completely coat all surfaces above shell prior to coating shell. The floor will be abrasive blasted and coated after the shell, roof, roof supports, and rafters are completely caulked, tested, and repaired.
6) For each portion of the Reservoir-shell, roof, and floor, complete application.

Apply coatings with plural component spray except:

1) Areas of less than 2 square inches may be brushed, or the roof and rafters.
2) Required brush striping of edges, welds, nuts, bolts, rafter edges, and roof plate edges. The thin film stripe coat will be applied as a totally independent coat by brush and allowed to dry prior to application of the finish coat. The stripe coat will be the same as the system being applied. No other products shall be allowed for stripe coats.

Apply coatings at a temperature recommended by manufacturer. Prior to mixing, coating materials shall be not less than 90oF. Use explosion-proof inline heaters, as necessary.

Scaffolding or other support system shall be free of abrasive blast media, dirt, and other foreign matter prior to coating application.

The Contractor should be fully aware that most 100% epoxies can produce amine blush which must be removed prior to over coating and disinfection.

Finish coats shall be uniform in color and gloss over the entire surface. Finish coat shall be smooth to touch with no sags, runs, dry spray, over-spray, cracks, pinholes, or other surface defects and must be even in color and appearance. When coating is applied, the previously coated area will be masked off to prevent overspray onto newly painted surfaces.

Coating should not be applied closer than 6 inches from an unprepared surface.

The Contractor shall apply a totally independent brush coat and allowed to dry to all welds, plate edges, rafter edges, nuts, bolts, and hard to reach areas prior to application of the finish coat.

The Contractor shall provide color as follows: (Thin Film Epoxy Sherwin Williams Sherplate 600) or equal. All areas to be coated above the waterline.

First Coat: Buff

Second Coat: White

The Contractor shall provide color as follows: (Thick Film Epoxy/ Sherwin Williams Sherplate PW) or equal. All areas below the overflow.

White

The Contractor shall provide a Dry Film Thickness (DFT) as follows: (Thin Film Epoxy)

First Coat: 8.0 mils minimum to 10.0 mils maximum

Finish Coat: 8.0 mils minimum to 10.0 mils maximum

-Minimum total DFT: 16.0 mils

-Maximum total DFT: 20.0 mils

The Contractor shall remove areas of paint in excess of allowable mils specified.

The Contractor shall provide a Dry Film Thickness (DFT) as follows: (Thick Film Epoxy)

First Coat: 25.0 mils minimum to 35.0 mils maximum

-Minimum total DFT: 25.0 mils

-Maximum total DFT: 35.0 mils

The Contractor shall provide additional coats to achieve specified minimum dry film thickness.

The Contractor shall provide application equipment as follows:

Airless spray pumps in compliance with manufacturer's requirements, having an anti-freeze device, and fluid filter.

Use fluid tip size recommended by manufacturer.

Use clean fluid lines not previously used to apply zinc-rich or water-based coating materials.

Clean equipment using only products recommended by the coating manufacturer.

Blow lines to remove all thinners prior to painting.

Barcol hardness testing is required eight hours after each application of the 10% solids epoxy.

Each application sample shall be sprayed onto plastic and marked with the date and time of application including the batch number. This sample shall retained be given to the project Engineer.

Plural Component Coatings: After each component of the plural component coating system has been thoroughly heated, the Contractor shall perform a paint pump ratio test which shall be done prior to each application in the presence of the Inspector.

The Contractor shall place two clean see-through containers with preprinted volumetric marks on a flat surface. The hose valve for each component shall be opened simultaneously and each component flow rate shall be allowed to stabilize by pouring the discharging materials into separate disposable containers. After the flow is stabilized, the hoses shall be transferred to the pre-printed volumetric containers and the valves shall be shut off after one of the containers has been filled to 32 or 48 fluid ounces, depending on the mixing ratio recommended by the Manufacturer. If the volumetric quantity of coating in the containers does not match the Manufacturer's recommendation, the Contractor shall correct the ratio issues. No spraying shall be performed until the ratio test result has met the manufacturers written technical data sheet and been accepted by the Inspector. All plural component pump gauges shall be in working order prior to any application, if gauges are not working, they shall be immediately replaced. All gauges shall be in the zero position when pump is off. The Contractor will spray first onto plastic and put batch number and date and retain until end of project.

The Contractor shall provide coating repairs as follows:

Touch-up or refinish all chipped, abraded, or otherwise unsatisfactory portions of the work in accordance with the manufacturer's recommendations. The Contractor shall be fully aware that high solids epoxies can amine blush.

Re-coating or touch-up of areas that have cured beyond the maximum time recommended by the manufacturer require the following special preparation.

Sweep blast area and 3-inches into the surrounding area. Sweep blast under low pressure to uniformly abrade surface and feather edges. Feather edges by sanding, abrading, de-glossing or other means acceptable to the Inspector.

Remove abrasive blast residue from blasted area with special attention to marginal areas of intact coating.

All repairs shall be masked off.

15 Interior Curing and Cleaning

The Contractor shall ensure curing of all coatings by forced heated air ventilation for a minimum of 72 (ventilating) hours at seventy degrees, or longer if recommended by the manufacturer after coating application and repairs are completed. Curing shall include providing ventilation at a rate of at least one complete air change every four hours.

Equipment shall have a time recorder that provides a cumulative record of operating time.

Deliver air from ventilating fan to center of reservoir through continuous flexible duct that is not reduced in area from the fan outlet exhausting to the exterior of the tank.

Prior to re-installation of roof vent covers removed during forced air ventilation, the Contractor shall ensure cleaning as follows:

Clean dust and abrasive-blasting residue from the roof ventilation screens and top of rafter lips.

The Contractor shall have the District flush the inlet line prior to cleaning operations. Thoroughly wash down with water all interior surfaces, including but not limited to, roof, rafters, walls, floor, piping and supports. All amine blush shall be removed prior to putting the reservoir into service. The Contractor shall steam clean surfaces where necessary.

16 Shell to Roof Junction Gap and Voids Caulking

After the finish coat is cured (fingernail depression test), the Contractor shall completely fill and seal all voids, bolt holes. voids and around the entryways and the floor roof pedestal with Sikaflex–1A caulking or approved substitute to provide a tightly adherent, smooth, and continuous seam of caulk. This application will be performed after the application of finial coat of epoxy and holiday testing or as directed by the manufacture.

17 Manway Gasket Replacement and Vent Screens

The Contractor shall supply new manway gaskets for tank manways. The vent screens shall be replaced with new vent screens at per AWWA D-100 and AWWA M42.

Separate the stainless-steel screen and band from the carbon steel tank with NSF61-certified neoprene rubber or polyethylene spacers ¼" thick minimum to prevent galvanic corrosion between dissimilar metals and to protect tank coatings from being crushed by screen. Strips should be placed along the entire length of bands and vertically along edges of vent openings and all contact points.

18 Reservoir Disinfection

Upon complete curing, the Contractor shall submit in writing to the District certification that the coating is fully cured and ready to be placed into service for disinfection and testing. Reservoir cleaning and disinfection shall not commence without written certification. All amine blush must be removed prior to disinfection.

After all other work has been completed, the Contractor shall ensure that the interior of the Reservoir is thoroughly cleaned and disinfected in accordance with the most current edition of AWWA C652, Disinfection of Water Storage Facilities. The Contractor shall ensure the reservoir is disinfected in accordance with Chlorination Method 2, which requires spray wash of the Reservoir interior with a 200-mg/ml chlorine solution. The District will assist the Contractor in filling the Reservoir and the Contractor shall allow three (3) consecutive working days for the owner to fill the Reservoir.

The Contractor shall furnish all cleaning and disinfection materials and all equipment and labor necessary for the cleaning and disinfecting operations.

After the first 24 hours have elapsed once the tank is full, the District will take a sample of the water to be used for bacteriological contaminants. If the results of this test are negative, the tank will be considered satisfactorily disinfected. If the results are positive, the tank shall be drawn down to that depth that will permit the addition of sodium hypochlorite to a final concentration of 10-mg/L. This depth will be determined upon an evaluation of the chlorine residual provided for in this Section of these Project Special Provisions.

The Contractor shall ensure that any water used in cleaning and in disinfection of the Reservoir, is discharged in a manner acceptable to the District and the appropriate water pollution control agency. The Contractor shall ensure all water discharged is de-chlorinated.

19 Soak Period & Testing for Volatile Organic Compounds

The Contractor shall ensure that water in the Reservoir is allowed to soak for five (5) days after the Reservoir has been filled to the over-flow level and disinfected.

After the five-day soak period the District will sample and submit a single sample to a certified laboratory to test the water for the presence of organic chemical contaminants (e.g. TCE, PCE, etc.) possibly having leached from the new paint system. The sample is to be tested in accordance with EPA Method 524.2. The water sample will be collected by the District in the presence of the Contractor and should be a true representation of the water in the Reservoir at the time.

The Contractor shall be liable for all cost associated with re-testing water if reservoir water draining and refilling is necessary.

The District Engineer shall evaluate and determine acceptability of the aesthetic quality of the water as a condition of final acceptance of the work. Constituent levels found from sample results which are at or below regulated maximum contaminant levels specified by state and federal standards shall not be the sole basis for tank acceptance.

The District Engineer may reject all work, or a portion thereof based on any adverse taste or odor detected or other conditions affecting the aesthetic quality of the water.

20 Disposal of Existing Coatings and Spent Abrasive Blast Media

The Contractor shall dispose of spent abrasive blast media and removed coating materials in accordance with a District approved disposal plan.

The Contractor shall coordinate and pay all costs for sampling and testing of spent abrasive blast media and removed coating materials in order to document waste class. Minimum sampling and testing requirements are listed previously in this Section.

Prior to removal of hazardous wastes off-site, the Contractor shall allow adequate time for District to review laboratory test results, as well as the time required to obtain a Hazardous Waste Generator's U.S. EPA ID Number, if required the District will provide the Contractor with written notice to dispose of all or a portion of the spent abrasive blast media and/or removal coating materials as hazardous waste, if so, determined by the District that such disposal is required.

The Contractor shall be responsible for all costs associated with accumulating, transporting, and disposing of spent abrasive blast media and removed coating materials.

21 Interior Clean-Up

Upon completion of the work, the Contractor shall make a detailed inspection of all work.

The Contractor shall be solely responsible for all paint over-spray or fugitive dust fallout claims.

The Contractor shall remove all spattering, spits, and blemishes.

Upon completion, of work, the Contractor shall remove all staging, tarps, scaffolding, and containers from the site, including but not limited to paint and thinner containers and excess paint and thinner (to be disposed of in conformance to all current regulations); paint spots removed, and the entire job site cleaned; all damage to surfaces resulting from the work from this section to be cleaned, repaired or refinished to the complete satisfaction of the District. All clean up shall be completed within 7 calendar days starting at the last day of holiday testing of the reservoir. The Contractor shall allow adequate time for District for review of laboratory test results, as well as the time required to obtain a Hazardous Waste Generator's U.S. EPA ID Number if required.

The District will provide the Contractor with written notice to dispose of all or a portion of the spent abrasive blast media and/or removed coating materials, as required.

The Contractor shall bear all costs associated with site clean up.

22 Interior Measurement and Payment

Under this item, the Contractor shall remove all existing coatings from the inside of the tank and abrasive blast interior surfaces. The Contractor shall then recoat the tank interior using the system specified. The Contractor shall also provide the necessary environmental controls (dehumidification, heaters, enclosures, etc) and arrange for the VOC testing, disinfecting of the tank, and arrange for bacteriological testing. Payment shall be made on a lump sum basis upon completion of each line item listed in the bid schedule.

External Tank Coating

23 External Scope

The Contractor shall properly prepare the Reservoir's exterior surface of the water storage tank roof plates, shell, ladder, ladder cage and all piping, and appurtenances. The Contractor shall apply the coating system as indicated herein and, in a manner, prescribed by these specifications and the manufacturers printed application instructions. The interior coating system must be completed prior to coating work on the exterior.

At least two days prior to start of work, the Contractor shall arrange with the District for a pre-preparation conference at the job site to ensure that all parties involved are familiar with the entire project, including all specifications, safety codes, and job site conditions.

24 External Materials

The District provides the following protective coatings manufacturer, as specified herein, as a standard of quality, or equal. All finish colors shall be colored at the factory as a dry grind only, no quick colors shall be accepted.

Sherwin Williams or Equal

Reference Standards: The Contractor shall comply with the requirements of the Steel Structures Painting Council Painting Manual, Volume 1 and 2, Good Painting Practices, including the National Association of Corrosion Engineers, American Society of Testing and Materials, and American Water Works Association D-102-06, for application and surface preparation, and all applicable OSHA and safety standards.
The Contractor shall consult the District Engineer regarding any situations not covered by the reference standards or this specification; however, it is the Contractor not the District that is ultimately responsible for proper exterior coating application.

25 External Submittals

The Contractor shall submit the manufacturers latest written product data sheets on each product to be used, and current manufacturer's safety data sheets (M.S.D.S.) on all materials to be used in the surface and coating operations including abrasives, thinners, cleaning fluids, and solvents.

The Contractor shall submit, for the District Engineer's acceptance, a written program detailing measures for full containment, and equipment and dust and over-spray control.

The Contractor shall always maintain on the job site M.S.D.S. and product data sheets. The Contractor shall post required signage for lead work.

The Contractor shall include the following data in the manufacturer's recommended handling and installation instructions for the proposed paint system submittal:

1) Storage – including maximum and minimum storage temperatures
2) Surface preparation
3) Coating repair
4) Application equipment
5) Mixing and application of coating system – including a table of minimum and maximum time to re-coat as a function of temperature
6) Curing – Minimum and maximum re-coat times.
7) Acceptable temperatures at the time of application

The Contractor shall include the following data in the report submittal:

1) Quantity of coating material used for each coat, submitted within 24 hours after completion of each coat.
2) Containment plan and equipment and dust collection system.
3) Fire prevention plan.

26 External Delivery

The Contractor shall assure that all materials delivered to the job site are in their original unopened containers.

The Contractor shall not use any product older than twelve months from the original manufacturer's factory batch date as listed on the container.

27 External Storage

The Contractor shall submit, for the District Engineer's acceptance, a specified material storage area and store all materials in the approved location.

The Contractor shall maintain material storage areas in a clean condition, free of solvent rags, and wastepaper. The Contractor shall remove debris and other fire hazards and dispose of such items in accordance with all the applicable regulations at the end of each workday.

28 External Safety

1) This project is subject to all applicable Safety and Health regulations and Industry Safety Standards.
2) The Contractor shall submit a notarized letter signed by a principal officer certifying the Contractor fully complies with the California Code of Safety Regulations and the Federal Code of Regulations pertaining to the scope of this project, but not limited to the following, as well as any other applicable orders, codes, ordinances, or laws, State, Federal, and Local. (GISO-General Industry Safety Orders, CSO-Construction Safety Orders, CFR-Code of Federal.

Title	Code Regulation	Section
Illness Injury Prevention Program	CSO/GISO	1508-3203
Hazard Communication	GISO	5194
Lead	CFR	1926.62
Safety Instructions for Employees	CSO	1510
Dust, Fumes, Mist, Vapors, and Gases	CSO	1528
Metal Scaffolding	CSO	1644
General Industry Standards	29 CFR	1910.1025
Respiratory Protection	CSO/GISO	1531-5144

29 External Hazardous Substances

The Contractor shall exercise extreme care when handling or disposing of materials or substances listed in Section 8-339 of Division 4 (California Code of Occupational Safety and Health Regulations) of Title 26 (Toxics) of the California Code of Regulations, or as evidenced by the M.S.D.S.

The Contractor shall immediately notify the District Engineer of any spill of material that is a hazardous substance in accordance with the appropriate jurisdiction.

30 Dust/Over-Spray Control

The Contractor shall be solely responsible for all claims resulting from dust and over-spray control from the coating and surface preparation operations or any damage or nuisance to property or persons.

31 Workmanship

The Contractor shall provide written evidence to the District Engineer that workers furnished have performed quality work and possess experience and knowledge in surface preparation and the application of high-performance industrial coatings.

The Contractor shall provide written evidence to the District Engineer that the Contractor has a minimum of five years experience in the painting of water storage tanks and a current list of water tank painting projects for the past five years (five minimum).

The Contractor shall conform to all the standards of craftsmanship as discussed in the Steel Structures Painting Council's Painting Manual, Volume 1, Good Painting Practice. These techniques include but are not limited to multiple passes of the spray gun, with each pass overlapped 50%, and "cross hatching" successive coats of paint. A stripe (Brush coat) is required on all welds prior to the finish coat.

Finish coats shall be uniform in color and gloss over the entire surface. Finish coat shall be smooth to touch with no sags, runs, dry spray, over-spray, cracks, pinholes, or other surface defects and must be even in color and appearance. When coating is applied, the previously coated area will be masked off to prevent overspray onto newly painted surfaces.

32 External Equipment

The Contractor shall use properly functioning equipment capable of performing the task required herein.

33 External Surface Preparation

The Contractor shall prepare all exterior surfaces by water blasting, hand, and power tool cleaning.

The Contractor shall schedule cleaning and painting so that detrimental amounts of dust or other contaminants do not fall on wet, or newly painted surfaces. Surfaces not to be painted shall be suitably protected from the effects of cleaning and painting operations. Prior to spot and full priming, surfaces shall be cleaned by a combination of blowing with clean dry air with a 1/2" hose with a shut off device, vacuuming, brooming, or as directed by the District Engineer.

34 Degree of Cleanliness

1. The Contractor shall water blast the exterior of roof and knuckle plates of the reservoirs at 3,000 P.S.I. minimum (SSPC/WJ-4) with Devoe Dev-prep #88 or Great Lakes Extra Muscle Detergent. At no time shall cleaning detergents be allowed to dry on the exterior surfaces. The Contractor shall remove all chalking with a result equal to ASTM D-4214 result #8

2. The entire existing exterior coatings on the roof plates, shell, and knuckle shall be pole sanded to remove any existing debris in the coating. The Contractor shall power tool clean all areas of visual corrosion as per SSPC/Sp# 3 and as per SSPC/Sp#11. All broken edges shall be feathered to a smooth transition. All bare metal shall be spot primed. The entire exterior coating shall be sanded to remove any existing debris.

35 Air Compressors

The Contractor shall remove from the work site air compressors that are undersized or will not supply enough air for the coating operations. All operating equipment shall be placed into secondary containment to prevent accidental spills.

The Contractor shall check air stream a minimum of twice daily for moisture and oil contamination as per ASTM D-4285. All equipment shall have moisture and oil separators.

36 External Coating Application/ Environmental Conditions

No coating or paint shall be applied: when the surrounding air temperature or the temperature of the surface to be coated or painted is outside of the published material manufacturers recommendations to wet or damp surfaces or in rain, snow, fog or mist; when the temperature is less than 5 degrees F above the dew point; when it is expected the air temperature will drop below manufacturers recommendations, or less than 5 degrees F above the dew point within eight hours after application of coating or paint. Dew point shall be measured by use of an instrument such as a electronic Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables or equivalents.

37 External Application Procedures

The Contractor shall apply all coatings in accordance with the manufacturer's latest written recommendations and the best state of the art techniques that will result in a finish that is free of runs, sags, pinholes, dry spray, orange peel, be in even in color and appearance. The exterior welds shall be stripe coated with the epoxy primer prior to the application of the urethane finish coat.

The Contractor shall bring all materials to the job site in the original factory sealed containers. The Contractor shall not use any material until the Engineer has inspected the contents and obtained the information from the containers or labels. All materials shall be mixed as full kits only. Materials shall only be thinned with the manufacturer's recommended thinners and will be thinned as required to adjust for viscosity for temperature variations, proper atomization, and flow. Thinning shall not exceed the Local, State, or Federal V.O.C. limits. Any catalyzed material remaining at the end of each day shall be properly discarded. The entire primer application shall be complete before the finish coat is applied.

To prevent the degradation or contamination of cleaned surfaces, the first coat of paint shall be applied immediately after the surfaces have been cleaned and approved by the Engineer. Succeeding coats shall be applied before contamination of the under surface occurs.

38 External Curing

Each coat of paint shall be allowed to either dry or cure for the amount of time recommended by the coating manufacture before successive coats of paint are applied.

All successive coats of paint shall be applied within the re-coat threshold time as recommended by the manufacturer.

39 External Color Scheme

The exterior topcoat color shall be as per the District's Engineer's instructions. The shell and piping, and ladders finish coat shall be a color selected by the District.

The Contractor shall submit color chips at least 3-inches by 5-inches in dimension within five (5) days prior to the start of application of the exterior topcoat. The Contractor shall order final coating materials only after receiving written approval from the Engineer. Failure to obtain the District's approval prior to ordering shall not be the cause for additional compensation.

40 Exterior Surface Coating System

The Contractor shall spot prime, full prime and finish coat all exterior surfaces including, shell, roof, ladders, railings, and all associated piping.

The following coating system is approved by the District or equal.

Sherwin Williams, INC.
Spot Prime: Macropoxy #646 at 4.0 minimum 6.0 maximum mils DFT
Full Prime Coat: Macropoxt #5000 at 1.0 minimum 1.5 mils maximum mils DFT
*Full Finish Coat: Sher-loxane 800 at 4.0 minimum 6.0 maximum mils DFT

Total System DFT: 5.0 minimum- 7.0 mils maximum
*The Contractor shall submit finish color and sheen prior to ordering finish coat materials.
The Contractor shall obtain get written approval from the District for the selected sheen
and finish color after District approves the submittal.

CAULKING: Upon completion of the exterior coating system, the void between the bottom plate and the concrete ring wall shall have the existing sealant material removed and replaced with Sika-2C. The sealant shall be applied at a1:1 from the top edge of the bottom plate extension onto the concrete ½". Prior to installing the sealant all existing felt must be trimmed even with the bottom plate extension. Sealant must be firmly forced into void. If the void, it too large the contractor shall install butyl closed cell backing rod.

The color and sheen (Gloss) shall be submitted to the District and approved in writing by the District prior to Contractor ordering material.

41 External Film Thickness

The tank Coating Inspector shall inspect film thickness with a non-destructive dry film thickness gauge (e.g., Elcometer 456). The Contractor shall provide to the District upon request U.S. Department of Commerce, Bureau of Standards calibration plates to verify accuracy.

42 External Coating Repairs

1) If it is necessary to touch-up or re-coat damaged areas after the coatings have cured beyond the maximum re-coat time, the Contractor shall prepare surfaces prior to applying touch-up paint. The Contractor shall mask off and spray designated areas only. All repairs will be masked off.

43 Contractor's Responsibility

The Contractor shall dispose of any residual waste from surface preparation operations in compliance with all Federal, State, and Local regulations. The Contractor shall ensure that all openings are covered and protected to prevent over-spray from entering the Reservoir. The Contractor will be responsible for all costs in the event of contamination of the water inside the Reservoir. Site Restoration

Upon completion of the work, the Contractor shall restore the site to the original condition, including removing all trash and other debris from the site.

44 Exterior Clean-Up

Upon completion of the work, the Contractor shall make a detailed inspection of all work.

The Contractor shall be solely responsible for all paint over-spray or dust fallout claims., and too restore the site to its original condition.

The Contractor shall remove all spattering, spits, and blemishes.

4) Upon completion, of work, the Contractor shall remove all staging, tarps, scaffolding, and containers from the site, including but not limited to: paint and thinner containers and excess paint and thinner (to be disposed of in conformance to all current regulations); paint spots removed and the entire job site cleaned; all damage to surfaces resulting from the work from this section to be cleaned, repaired or refinished to the complete satisfaction of the District. All clean up shall be completed within 7 calendar days starting at the last day of holiday testing of the reservoir. No abrasive residual may be left on the ground and must be removed.

5) The Contractor shall bear all costs associated with site clean up.

45 Exterior Measurement and Payment

Under this item, the Contractor prepares the exterior surface of the tank. The Contractor shall then recoat the tank exterior using the system specified. The Contractor shall also provide the necessary controls to avoid overspray. Payment shall be made on a lump sum basis upon completion of each line item listed in the bid schedule.

46 Steel Tank 1-Year Inspection

At the time of tank acceptance for service, the District Engineer shall schedule the first anniversary inspection provided for in AWWA D102-06. The inspection of the tank shall be scheduled for a date between the first day of the eleventh month and the thirtieth day of the thirteenth month following acceptance. This schedule for the inspection shall be considered tentative and the Contractor will be notified of the inspection schedule no later than the first day of the tenth month following acceptance of the tank.

Upon completion of this inspection, the inspecting firm will prepare a report that includes but is not limited to, the methods used in the inspection, the equipment, and personnel on hand at the time of the inspection, a summary of findings, photographs of all deficiencies found, and any other information relevant to the condition and maintenance of the tank.

The Contractor shall have a representative on site at the time of inspection to authorize any minor repairs the inspection subcontractor is willing to perform during or directly after the inspection.

47 Omissions

Care has been taken to delineate herein those surfaces to be coated. However, if the coating requirements have been inadvertently omitted from this section or any other section of the specifications, it is intended that all metal surfaces unless specifically exempted herein, shall receive a first-class protective system equal to that given the same type of surface pursuant to these specifications.

Contractor/Inspector Interaction & Compliance

48 Inspection

The District has retained a coating inspection firm to oversee all quality control related to coating operations. The tank inspector will report directly to the District Engineer and shall act with the Engineer's authority in all matters related to tank construction. The Inspector will be an N.A.C.E. Certified Coating Inspector, who will inspect any or all phases of work to be performed as outlined herein. The tank inspector shall be an addition to the District Inspector; authority shall be limited to tank related work only. The District Inspector shall remain the primary observer for all work on the project. The tank inspector shall work for and report to the District. The Contractor shall not rely upon the tank inspector for documentation of environmental conditions and assuring compliance with plans and specifications.

The Contractor shall notify the District Engineer in advance (48 hours minimum) of all surface preparation or paint application in order to perform a preliminary examination and provide acceptance of the surface preparation and each coat prior to application of the next coat.

The Coating Inspector shall examine all materials, tools, and equipment to be used in the blasting and coating operations and shall have the authority to direct the Contractor to remove, replace, or repair any materials, tools, or equipment found not to be in conformance with the Contract Documents including the approved shop drawings and manufacturer's recommendations. The tank inspector will also observe the Contractor's safety activities throughout blasting and coating operations and the Contractor shall immediately rectify any deficiencies noted in that observation. The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety efforts of the Contractor by the Tank Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the District or the Tank Inspector. The Contractor shall indemnify, defend, and save harmless the District and the Tank Inspector from all liability associated therewith.

The SSPC-Vis1 pictorial surface standards along with dry film and wet film thickness gauges will be used by the Coating Inspector to determine acceptability of the paint application. The Contractor shall provide necessary testing equipment to perform the above-mentioned tests.

The Contractor shall afford the tank inspector all reasonable facilities and assistance in monitoring the coating and priming operations. The Contractor shall provide weekly copies of their daily work reports to the tank Coating Inspector. Such reports shall include, but not be limited to, the day and date of work performed, the relevant weather conditions, the type and amount of work performed, all work related to the safety of the operation, and personnel assigned to work actually performed.

To facilitate adequate inspection of all surfaces, the Contractor shall provide scaffolding or rigging and people to move the scaffolding as necessary for the Coating Inspector to perform dry film thickness readings, and visual holiday inspection as required by these specifications and reference standards. The Contractor shall provide personnel to move scaffolding or rigging at the instructions of the Engineer.

The tank Coating Inspector shall have authority to direct the Contractor to suspend operations when environmental conditions fall outside the manufacturer's recommended parameters. The Contractor shall comply with these directions and shall not proceed until the tank Coating Inspector determines environmental conditions are sufficient to proceed. Failure to suspend coating operations as directed or restarting work without the direction of the tank Coating Inspector shall be cause for rejection of work so performed.

The Contractor shall immediately remove and replace all such work in accordance with these Project Special Provisions and directions of the tank inspector. No additional compensation will be allowed for work resulting from failure to comply with the tank inspector or for surfaces not otherwise conforming to the provisions of these Project Special Provisions.

49 Coating Inspector Authority

The tank Coating Inspector shall have authority to direct the Contractor to suspend operations when environmental conditions fall outside the manufacturer's recommended parameters.

The Contractor shall comply with directions and shall not proceed until the tank Coating Inspector determines environmental conditions are sufficient to proceed. Failure to suspend coating operations as directed or restarting work without the direction of the tank Coating Inspector shall be cause for rejection of work so performed.

The Contractor shall immediately remove and replace all such work in accordance with these Project Special Provisions and directions of the Coating Inspector.

No additional compensation will be allowed for work resulting from failure to comply with the tank inspector or for surfaces not otherwise conforming to the provisions of these Project Special Provisions.

50 Safety

The Contractor shall always provide a safe work environment. In the event the Coating Inspector notes any safety deficiencies, the Contractor shall immediately rectify noted deficiencies.

The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety deficiencies of the Contractor by the Coating Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the District or the Coating Inspector.

The Contractor shall save harmless the District and the Coating Inspector from all liability associated therewith.

51 Inspection Assistance

To facilitate adequate inspection of all surfaces, the Contractor shall provide scaffolding or rigging necessary for the Coating Inspector to perform dry film thickness readings, and visual holiday inspection as required by these specifications and reference standards.

The Contractor shall provide personnel to move scaffolding or rigging at the instructions of the Coating Inspector.

52 Notification

The Contractor shall notify the Coating Inspector in advance (48 hours minimum) of all surface preparation or paint application in order to perform a preliminary examination and provide acceptance of the surface preparation and each coat prior to application of the next coat.

53 Acceptability for Paint Application

The SSPC-Vis1 pictorial surface standards along with dry film and wet film thickness gauges will be used by the Coating Inspector to determine acceptability of the paint application.

The Contractor shall provide necessary testing equipment to perform the above-mentioned tests.

54 Reporting

The Contractor shall afford the Coating Inspector all reasonable facilities and assistance in monitoring the coating and priming operations.

The Contractor shall provide weekly copies of daily work reports to the tank Coating Inspector. Such reports shall include, but not be limited to, the day and date of work performed, the type and amount of work performed, all work related to the safety of the operation, and personnel assigned to work actually performed.

Attachment 2
Tank T7 As-Built Plans

Pacific Tank

ZONE 3 (BLUFFS) WATER STORAGE TANK
MAMMOTH COMMUNITY WATER DISTRICT
87' -0" DIA. X 27'-0" HIGH WITH 3'-0 KNUCKLE
1,000,000 GALLONS

GENERAL NOTES

1. DESIGN CODE: CBC 2007, IBC 2006, AWWA-D100-05, ASCE/SEI 7-05, AISC - 9TH Ed., & OWNERS SPECIFICATION SECTIONS.
   a) DESIGN PRESSURE: ATMOSPHERIC
   b) DESIGN TEMPERATURE: MAXIMUM 150°F
   c) DESIGN ROOF TOTAL LOAD: 230 PSF, SNOW LOAD.
   d) DESIGN WIND LOAD: 95 MPH EXP. "C"
   e) DESIGN SEISMIC LOADING: SEISEMIC USE GROUP IV, SITE CLASS 'C', DESIGN CATEGORY 'D', S_{DS}1.032 & S_{D1} 0.458.
   f) CONTENTS SPECIFIC GRAVITY: 1.00 (WATER)
   g) ROOF TYPE: SUPPORTED CONE WITH 1 1/2" IN 12" SLOPE
   h) FLOOR TYPE: FLAT, 4.35" CROWN AT CENTER WITH 1% SLOPE
2. ALL STEEL PLATES AND STRUCTURAL SHAPES TO ASTM STANDARDS A36 STRUCTURAL STEEL
3. ALL NOZZLE FLANGES AND BLINDS TO ANSI B31.3 OR B16.5
4. ALL NOZZLE NECKS TO A53 GR. B ERW
5. ALL NOZZLE AND MANWAY GASKETS TO BE FULL FACE NEOPRENE
6. ALL FORGING TO ASTM STANDARDS A105 & ASME SA-105
7. ALL SHOP FABRICATION AND FIELD ERECTION TO AWWA-D100-05

TANK INDEX

REGISTERED PROFESSIONAL ENGINEER
SAYASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
COVER SHEET

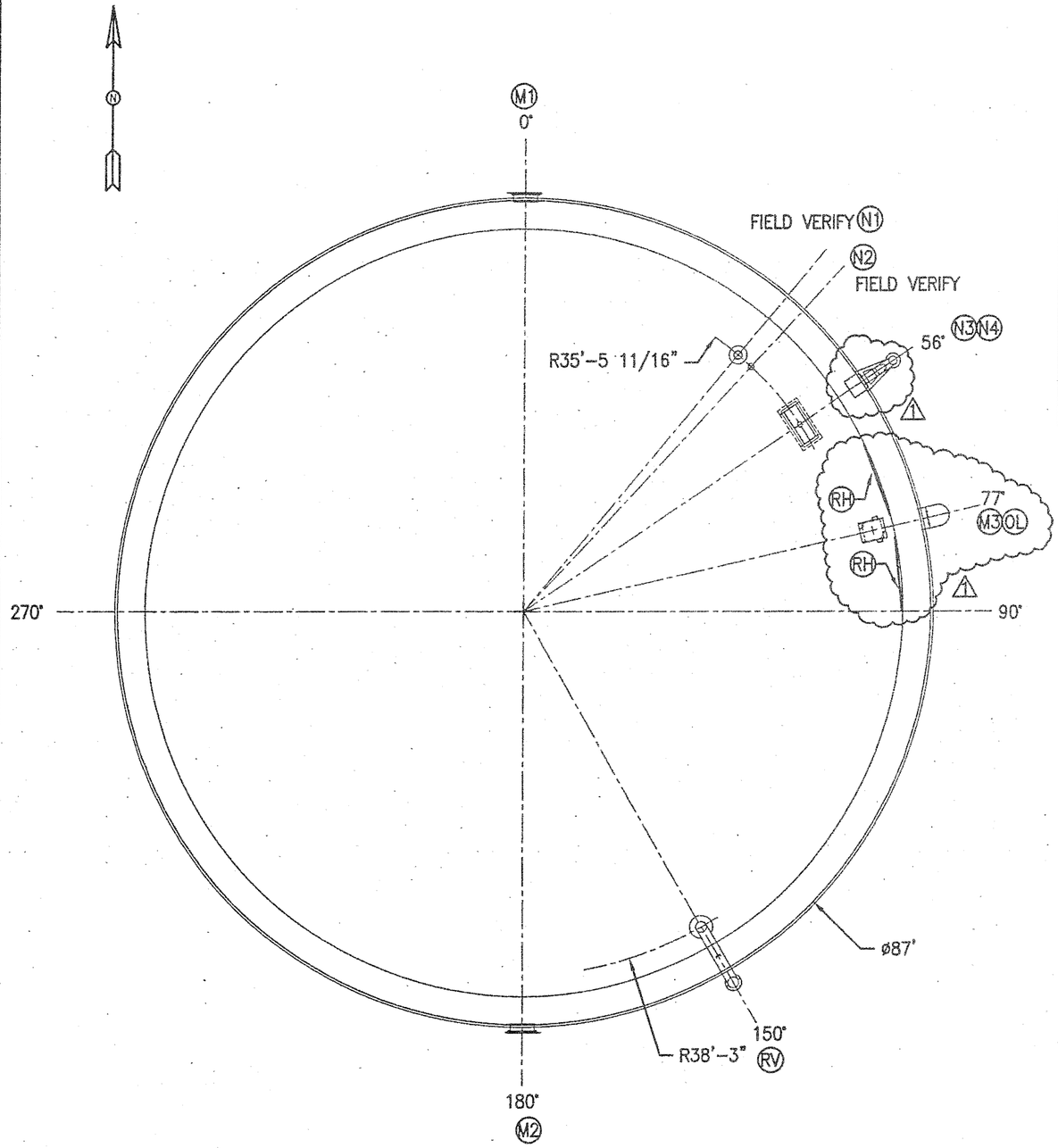
REV:

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3942
Fax (949) 240-3943
St. Contractors Lic. #659385-A

DWG. NO. 1

REV SET: 0



APPURTENANCE SCHEDULE

REV	MK	SIZE	QTY	RAT'G	PROJ	ELEV	ORIENTATION DEG	ORIENTATION FT & IN	DESCRIPTION	SHT
	M1	ø30"	1	API-650	8"	3'-0"	0	0'-0"	SHELL MANWAY	12
	M2	ø30"	1	API-650	8"	3'-0"	180	136'-7 15/16"	SHELL MANWAY	12
1	M3	24"X24"	1	AWWA	7"	ROOF	77	58'-5 1/2"	SQUARE ROOF HATCH	11
	N1	ø10"	1	AWWA	4"	FLOOR	X	FIELD VERIFY	INLET/OUTLET PIPE	13
1	N2	ø2"	1	AWWA	6"	FLOOR	X	FIELD VERIFY	PRESSURE SENSING	16
1	N3	ø10	1	AWWA	48"	22'-10"	56	42'-6 3/16"	OVERFLOW	15
	N4	ø10"	1	AWWA	0"	FLOOR	56	42'-6 3/16"	DRAIN	14
1	RH	ø1 1/4"	1	OSHA	3'-6"	ROOF	SEE PLAN		ROOF HANDRAILS	20
1	OL	16"	1	OSHA	9"	ROOF	77	58'-5 1/2"	OUTSIDE LADDER	17
1	RP	30"X42"	1	OSHA	–	ROOF	77	58'-5 1/2"	ROOF PLATFORM	18
	RV	ø14"	1	AWWA	24"	ROOF	150	113'-10 9/16"	ROOF VENT	21

NOTES:

1. ORIENTATION IN FEET AND INCHES ARE MEASURED CLOCKWISE FROM ZERO DEGREES ALONG THE OUTSIDE FACE OF THE TANKS FIRST SHELL RING TO THE CENTERLINE OF THE APPURTENANCE.
2. NAME PLATE LOCATED ABOVE SHELL MANWAY.

REGISTERED PROFESSIONAL ENGINEER SIAVASH NOORAFSHANI 37614 Exp. 09/30/08 CIVIL STATE OF CALIFORNIA

Fabricated and Erected by:

Pacific Tank Company Inc.

Paso Robles, California
San Juan Capistrano, California
www.pacifictank.net

-05	2008	08-386
AWWA D100	Year	Contract No.
87 Ft.	27 Ft.	1,000,000
Nom. Dia., Ft.	Nom. Ht., Ft.	Nom. Cap., Gal.
A36	N/A	
Material	Heat Treatment	

NAME PLATE

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
ORIENTATION

REV: 1 07/10/08 TEH, CHANGED N4 TO ø10", N2 TO 6" PROJECTION, ADDED N3 TO PLAN VIEW. ROTATED OL, RP AND M3 TO 77°.

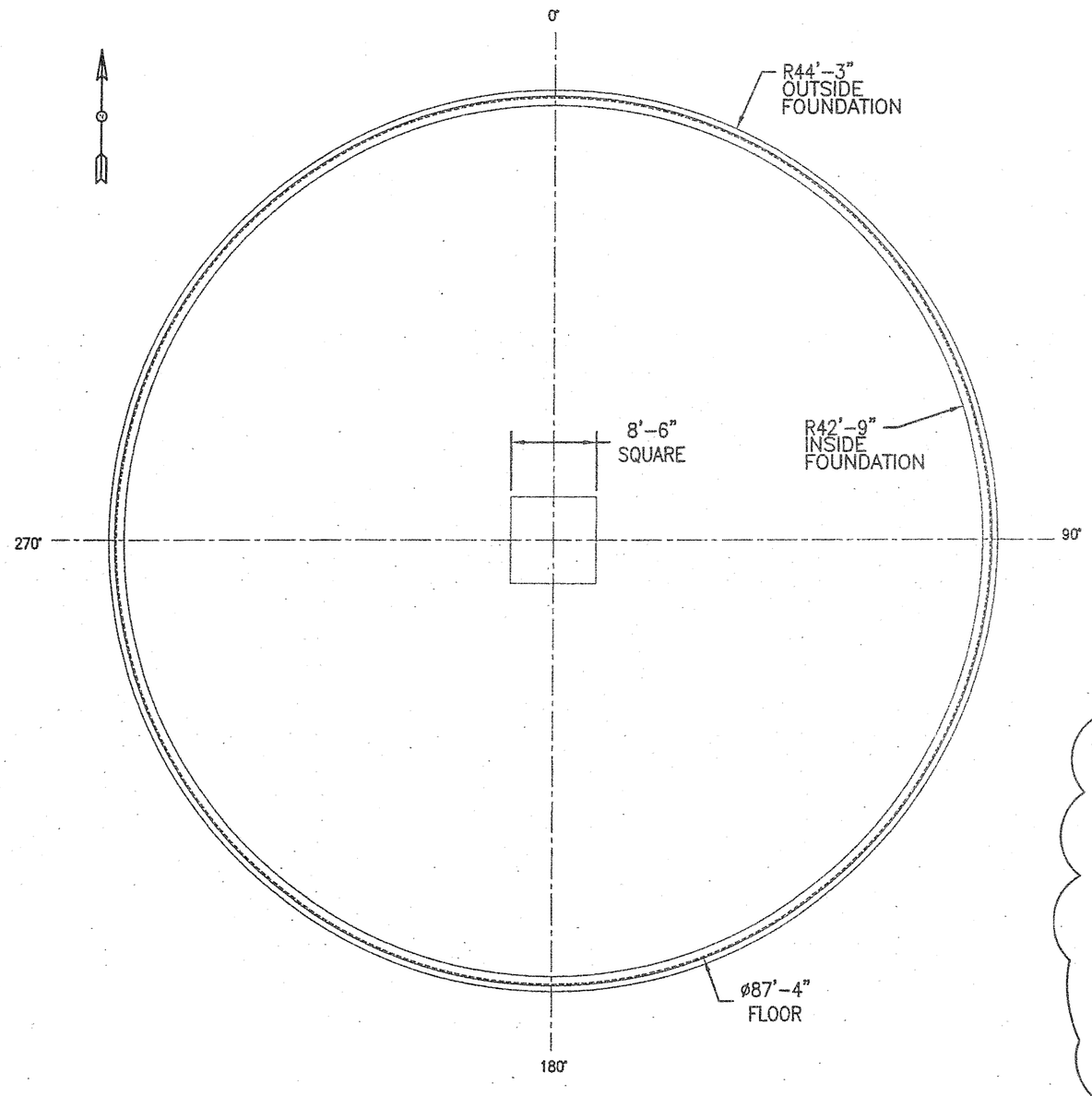
TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3402
Fax (949) 240-3943
St. Contractors Lic. #659385-A

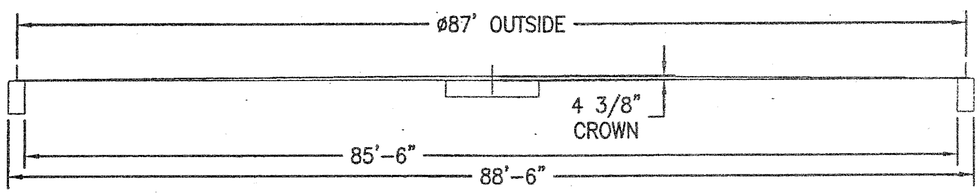
Pacific Tank & CONSTRUCTION INC.

DWG. NO. 2

REV SET: 1

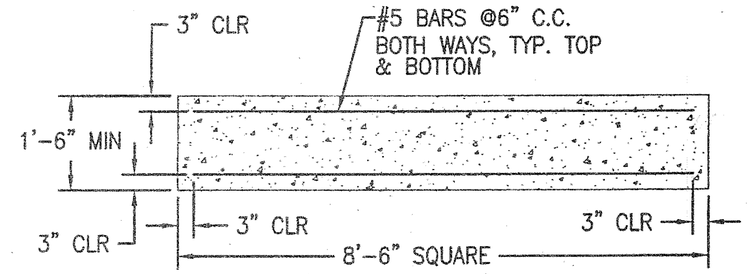


PLANVIEW

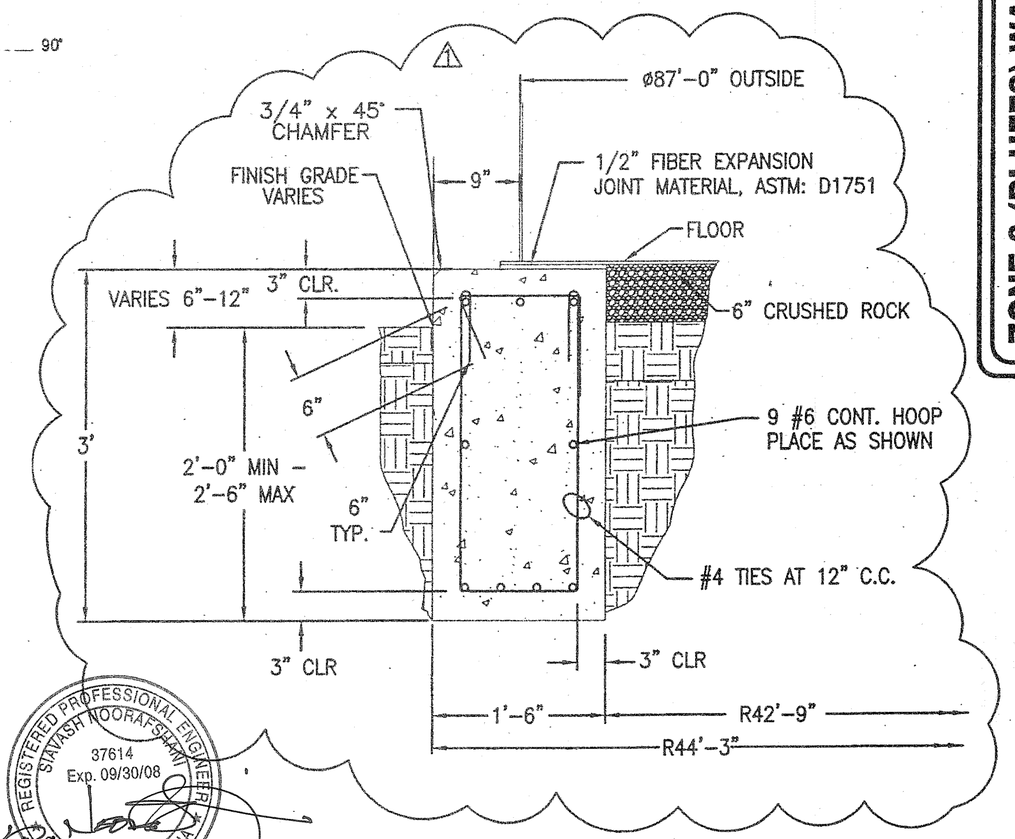


BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION	QTY	WT EA
FELT	1	FELT, 60" X 12" FELT	55	5
	2			
TL LBS= 275	3			
	4			



CENTER FOOTING



REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

FOUNDATION DETAILS

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK FOUNDATION

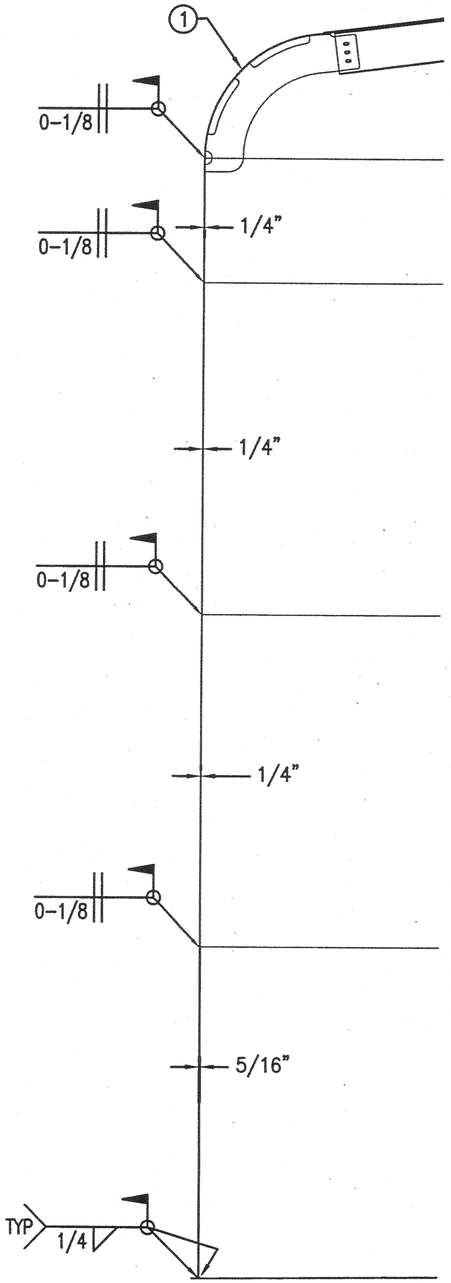
TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV:
△ 07/10/08 TEH, CHANGED REBAR PER CUSTOMER REQUIREMENTS.

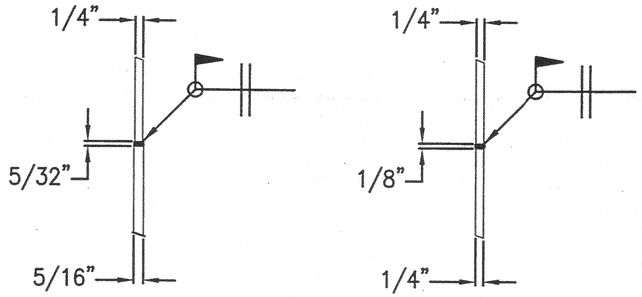
PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3843
St. Lic. #659385-A
PT Pacific Tank & CONSTRUCTION INC.

DWG. NO. 3

REV SET: 1



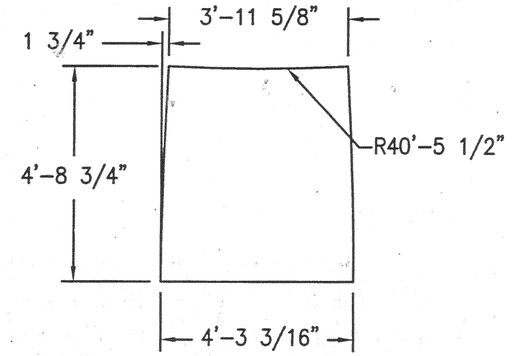
WELD DETAILS



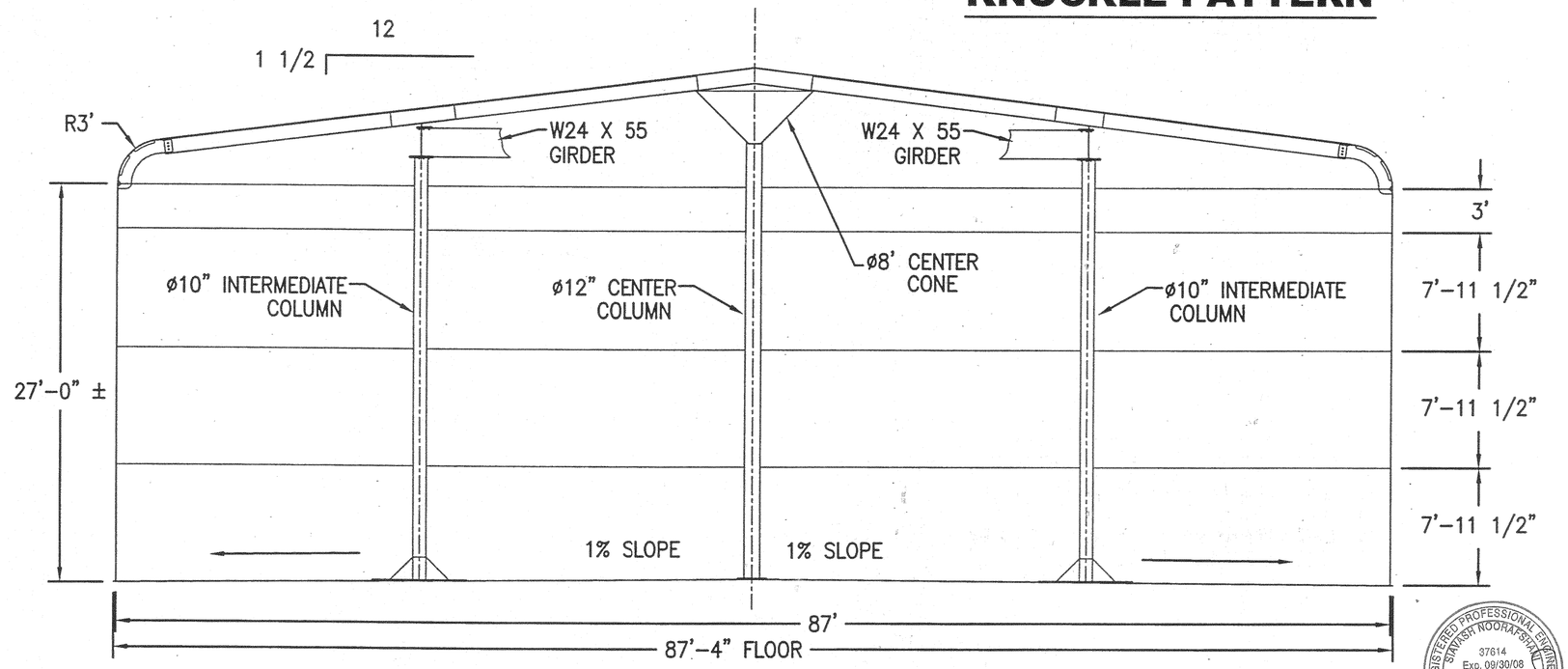
WELD DETAILS

BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
SHELL DETAILS	RING 1	PLATE, 5/16" THK X 95 1/2" X 479"	A36	6	4080
	RING 1	PLATE, 5/16" THK X 95 1/2" X 412"	A36	1	3487
	RING 2	PLATE, 1/4" THK X 95 1/2" X 479	A36	6	3264
	RING 2	PLATE, 1/4" THK X 95 1/2" X 412"	A36	1	2789
	RING 3	PLATE, 1/4" THK X 95 1/2" X 479"	A36	6	3264
	RING 3	PLATE, 1/4" THK X 95 1/2" X 412"	A36	1	2789
	RING 4	PLATE, 1/4" THK X 36" X 479"	A36	6	1222
TL LBS= 93,896	RING 4	PLATE, 1/4" THK X 36" X 412"	A36	1	1051
	1	KNUCKLE, 1/4" THK X PATTERN	A36	64	200



KNUCKLE PATTERN



ELEVATION VIEW

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
TANK DETAILS

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

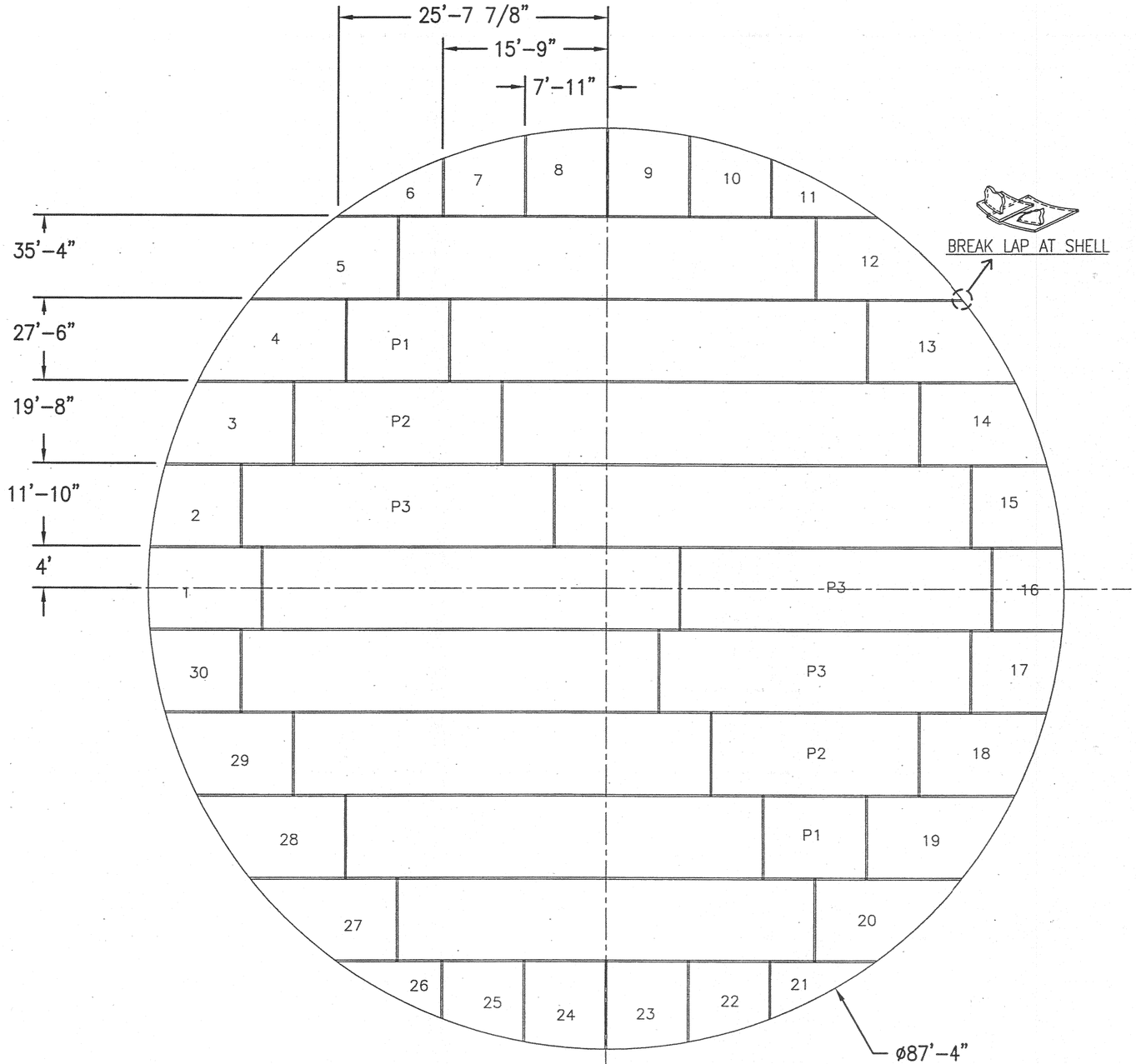
REV:

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-7943
St. Contractors Lic. #659385-A

PLT Pacific Tank & CONSTRUCTION INC.

DWG. NO. 4

REV SET: 0



PLANVIEW

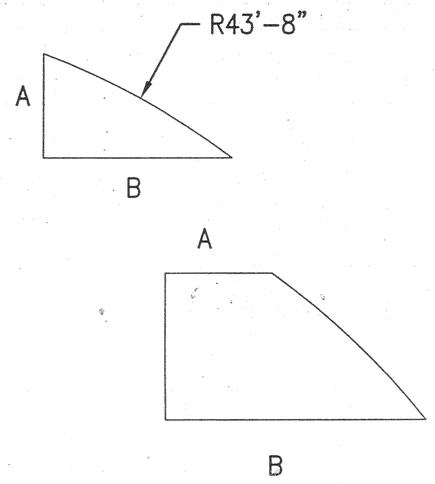
BILL OF MATERIALS

ASSEMBLY	DESCRIPTION	QTY	WT EA
FLOOR PLATES	PLATE, 1/4" THK X 8'-0" X 40'-0" A36	9	3264
	TOTAL WT. FULL PLATE		29,376
SKETCH PLATES	PLATE, 1/4" THK X 8'-0" X 40'-0" A36	11	3264

CUTTING GUIDE

PLATE #	A	B	QTY	WT EA
1	10'-8 13/16"	10'-8 13/16"	1	887
2,15,17,30	7'-3 3/8"	8'-9"	4	665
3,14,18,29	9'-2 7/8"	12'-3 15/16"	4	893
4,13,19,28,	9'-2 1/16"	14'-3 7/8"	4	976
5,12,20,27	5'-9 7/8"	14'-2 5/8"	4	849
6,11,21,26,	5'-7 1/2"	10'-3 5/8"	4	328
7,10,22,25	5'-6 3/4"	7'-9 11/16"	4	557
8,9,23,24	7'-9 5/16"	8'-6"	4	675
16	6'-8 13/16"	6'-8 13/16"	1	560
P1	8'-0"	10'-0"	2	816
P2	8'-0"	20'-0"	2	1632
P3	8'-0"	30'-0"	3	2448
		TOTAL WT. SKETCH		33,459
		TOTAL WT.		62,835

NOTES:
1. FLOOR WELDED TOP SIDE ONLY WITH FULL FILLET WELDS. FLOOR PLATE LAP TO BE 2"± LAP OF MAIN PLATE OVER SKETCH PLATE.



CUTTING GUIDE

REGISTERED PROFESSIONAL ENGINEER SIAVASH NOORAFSHAN 37614 Exp. 09/30/08 CIVIL STATE OF CALIFORNIA

DRWN:TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
FLOOR LAYOUT

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.:08-386

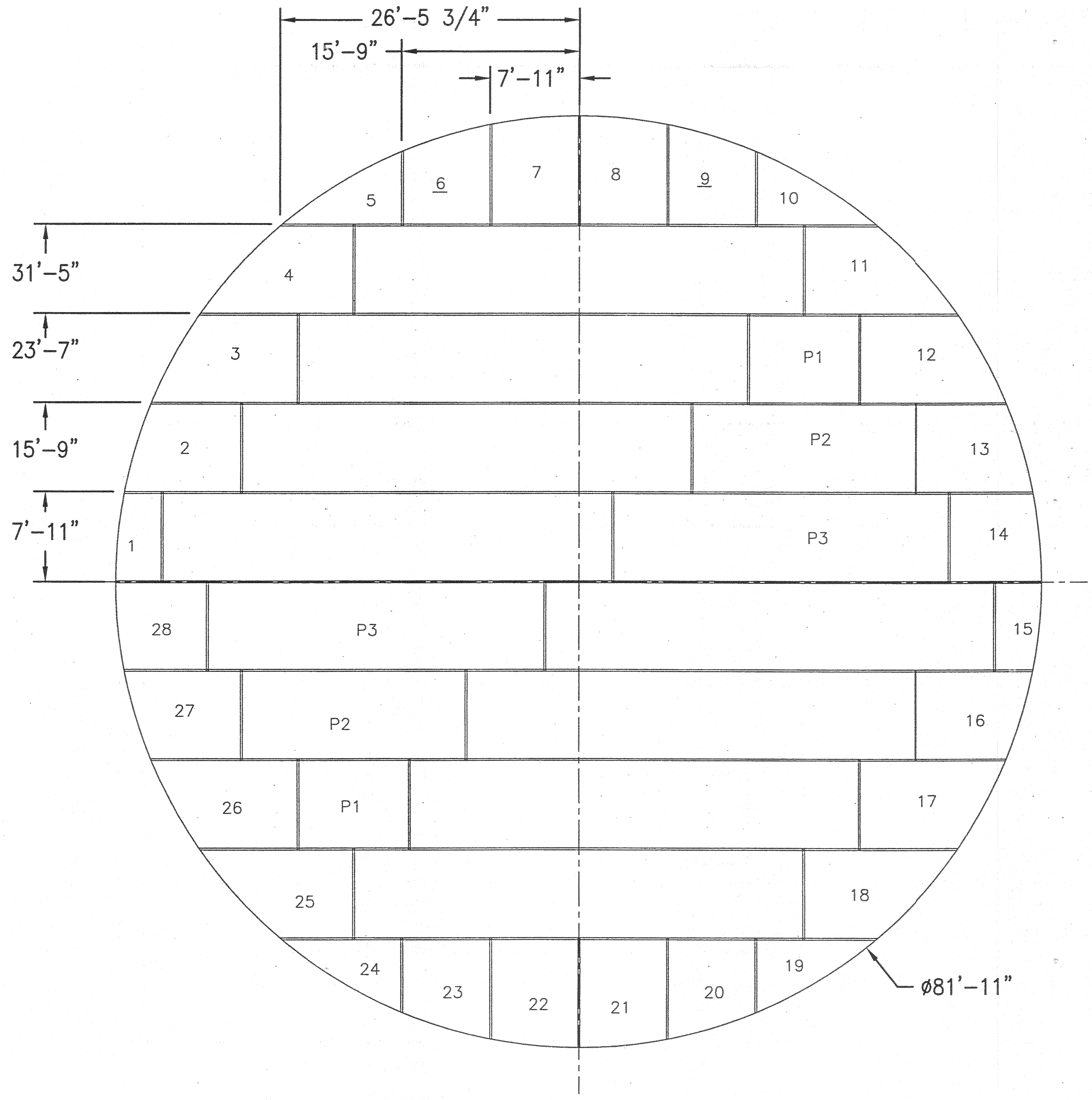
REV:

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 31
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3943
Contractors Lic. St. #653685-A

PT Pacific Tank & CONSTRUCTION INC.

DWG. NO. 5

REV SET: 0



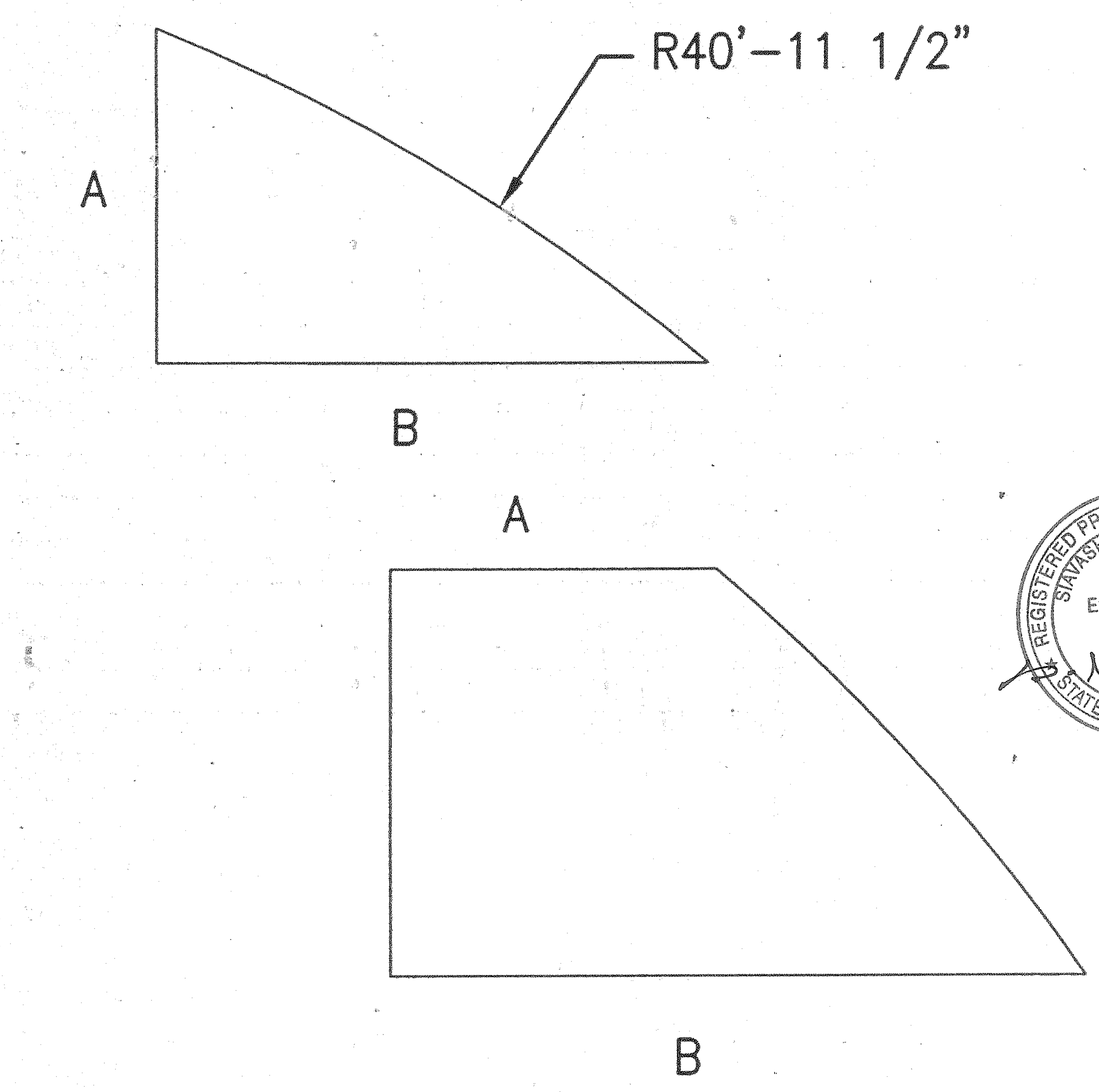
PLANVIEW

BILL OF MATERIALS

ASSEMBLY	DESCRIPTION		QTY	WT EA
ROOF PLATES	PLATE, 5/16" THK X 8'-0" X 40'-0"	A36	8	4080
	TOTAL WT. FULL PLATE		32,640	
SKETCH PLATES	PLATE, 5/16" THK X 8'-0" X 40'-0"	A36	10	4080

CUTTING GUIDE				
PLATE #	A	B	QTY	WT EA
1,15	11'-4 11/16"	11'-4 11/16"	2	944
2,13,16,27	4'-5"	6'-5 15/16"	4	961
3,12,17,26	4'-8 7/8"	9'-4 13/16"	4	599
4,11,18,25	5'-5 11/16"	14'-10 1/2"	4	882
5,10,19,24	4'-1 11/16"	15'-8 1/4"	4	449
6,9,20,23	5'-5 11/16"	14'-10 1/2"	4	882
7,8,21,22	4'-1 11/16"	15'-8 1/4"	4	449
14,28	11'-4 11/16"	11'-4 11/16"	2	944
P1	8'-0"	10'-0"	2	1020
P2	8'-0"	20'-0"	2	2040
P3	8'-0"	30'-0"	2	3060
		TOTAL WT. SKETCH	36,472	
		TOTAL WT.	69,112	

NOTES:



CUTTING GUIDE

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
ROOF LAYOUT

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386
REV:

REGISTERED PROFESSIONAL ENGINEER SIAVASH NOORAFSHAN 37614 Exp. 09/30/08 CIVIL STATE OF CALIFORNIA

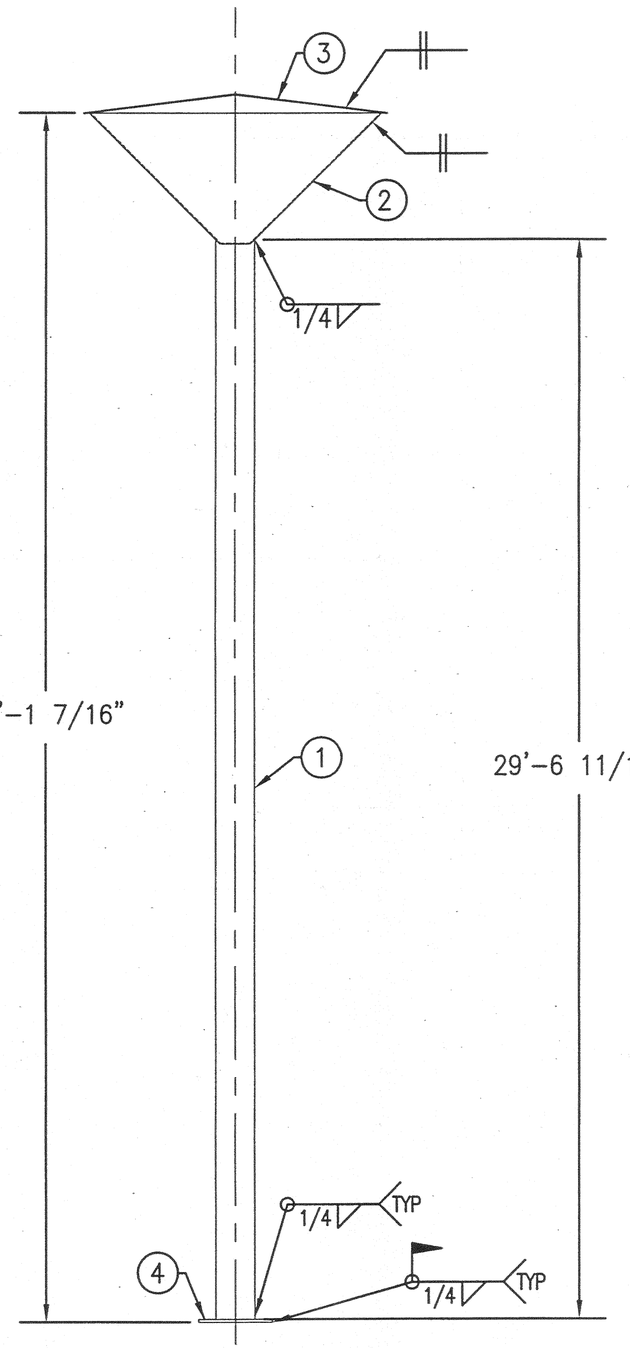
PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3943
St. Contractors Lic. #659385-A
Pacific Tank & CONSTRUCTION INC.

DWG. NO.
6

REV SET: 0

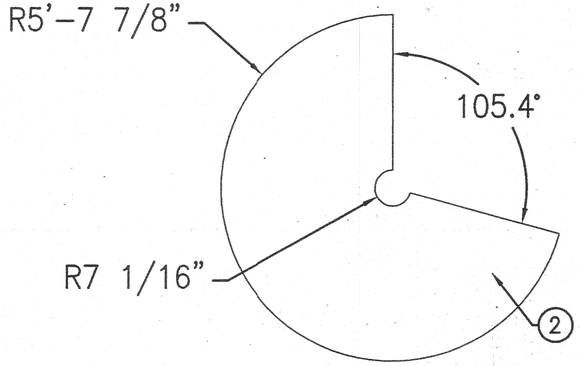
BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
CENTER COLUMN AND CONE	1	PIPE, ø12" SCH STD X 354 11/16"	A36	1	1466
	2	LOWER CONE PLATE, 1/4" THK X PATTERN	A36	1	719
	3	UPPER CONE PLATE, 1/4" THK X PATTERN	A36	1	559
	4	PLATE, 1" THK X 24" X 24"	A36	1	163
	5				
TL LBS= 2,907	6				

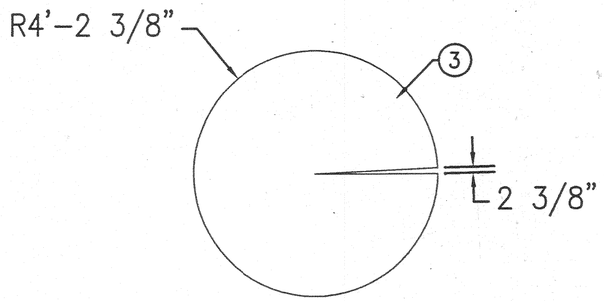


NOTE: 4.35 INCH CROWN IN CENTER OF FLOOR.

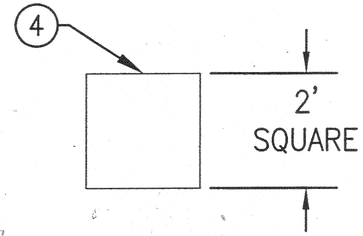
CENTER COLUMN



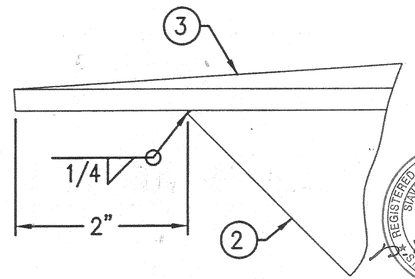
LOWER CONE PATTERN



UPPER CONE PATTERN



TYP BASE PLATE



CONE ALIGNMENT

REGISTERED PROFESSIONAL ENGINEER
SIAMAK NOORAY SHANY
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
CENTER SUPPORT COLUMN

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV: 1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3942
Fax (949) 240-3943
St. Contractors Lic. #659385-A

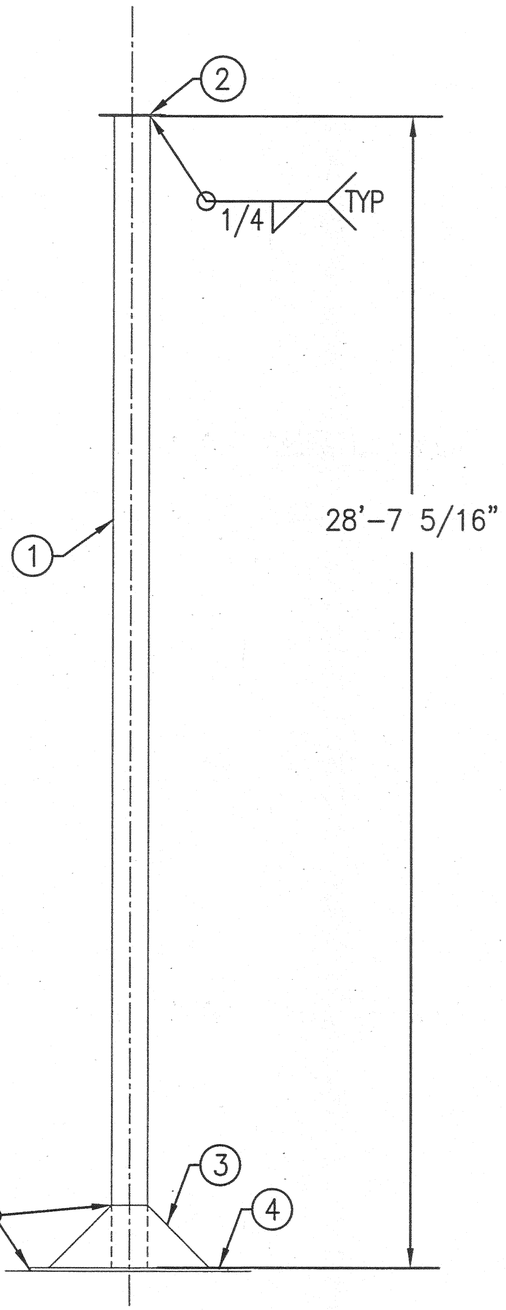
Pacific Tank & CONSTRUCTION INC.

DWG. NO. 7

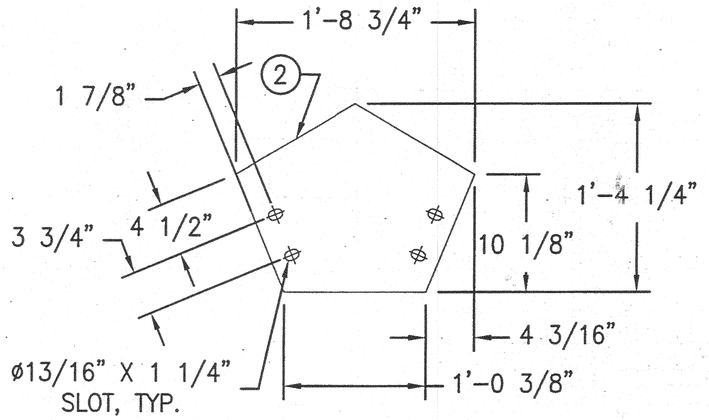
REV SET: 0

BILL OF MATERIALS

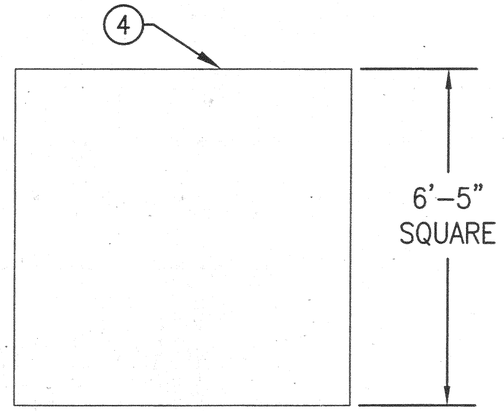
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
INTERMEDIATE COLUMNS	1	PIPE, ø10" SCH STD X 343 5/16"	A36	8	1159
	2	PLATE, 1/2" THK X PATTERN	A36	8	32
	3	BOTTOM CONE PLATE, 1/4" THK X PATTERN	A36	8	172
	4	PLATE, 1" THK X 77" X 77"	A36	8	1681
	5				
TL LBS= 24,352	6				



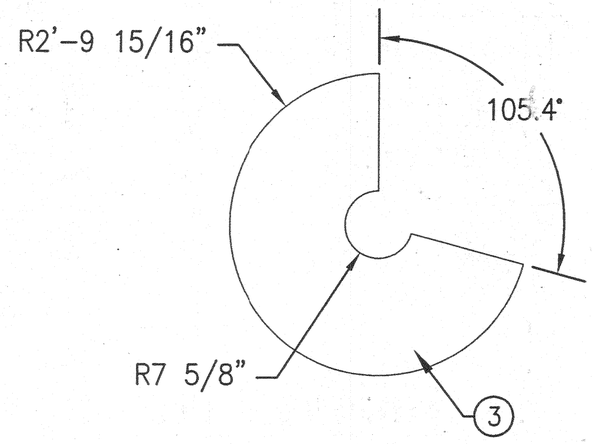
COLUMN



GIRDER SUPPORT



TYP BASE PLATE



BOTTOM CONE

REGISTERED PROFESSIONAL ENGINEER
SAMUEL NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
INTERMEDIATE SUPPORT COLUMN

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV: 1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3902
Fax (949) 240-3942
St. Contractors Lic. #659385-A

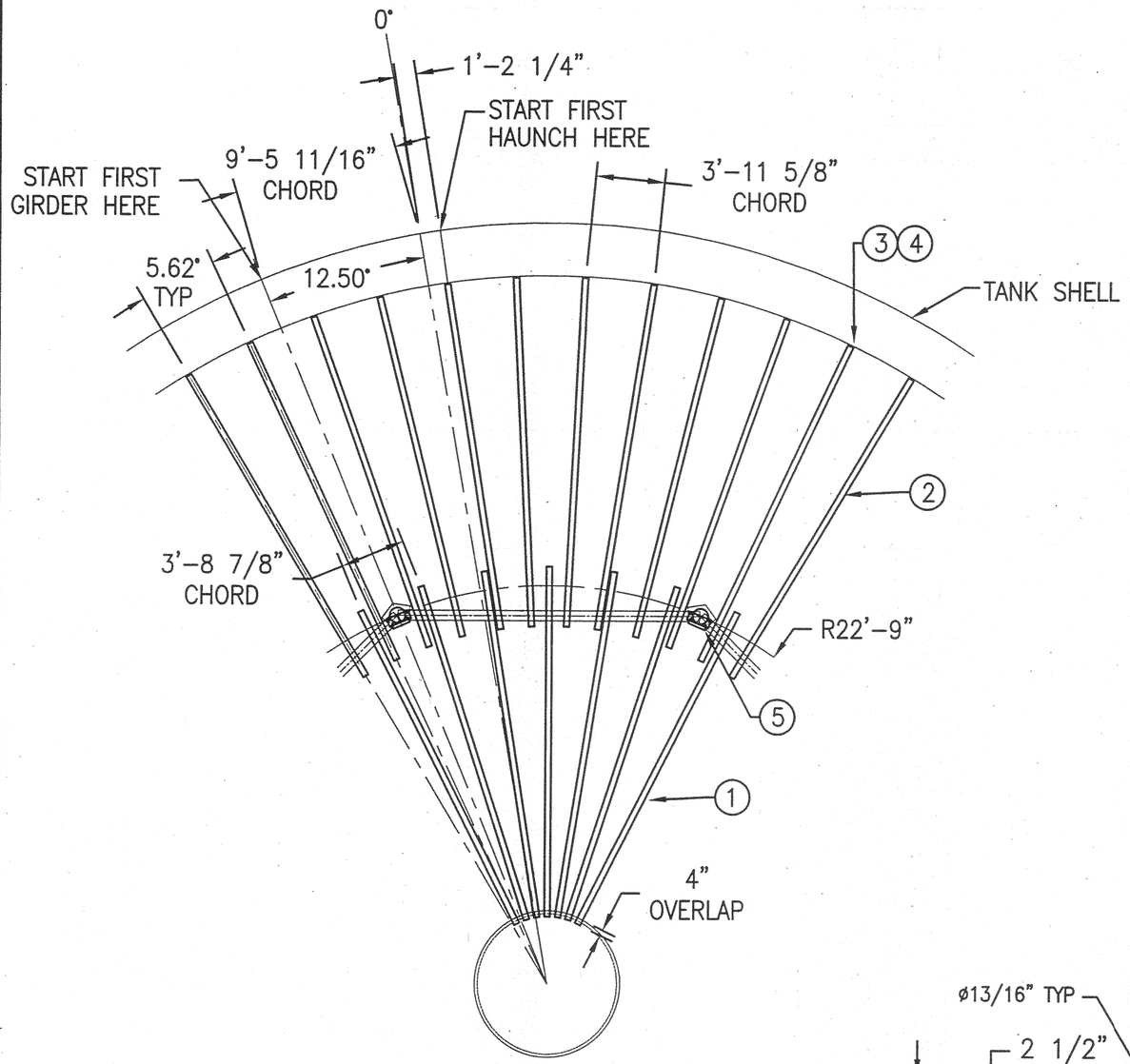
Pacific Tank & CONSTRUCTION INC.

DWG. NO. 8

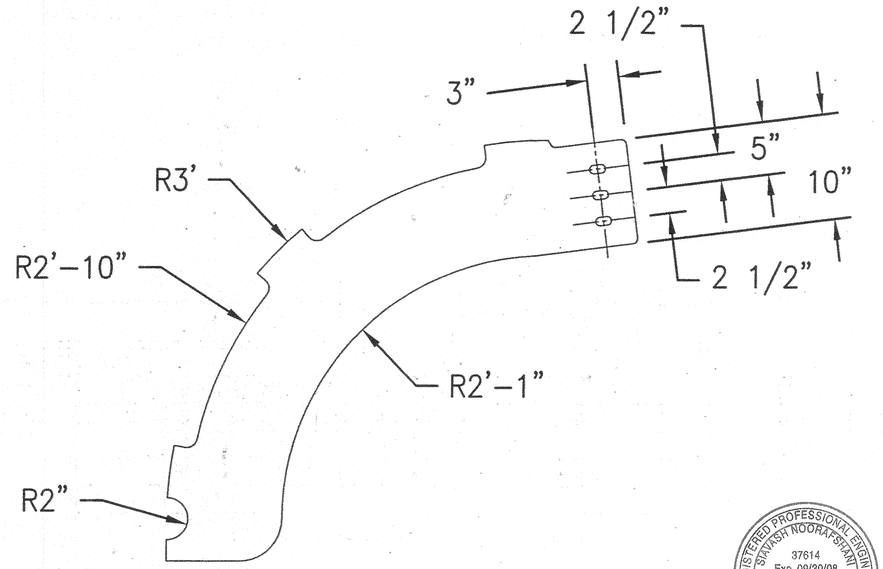
REV SET: 0

BILL OF MATERIALS

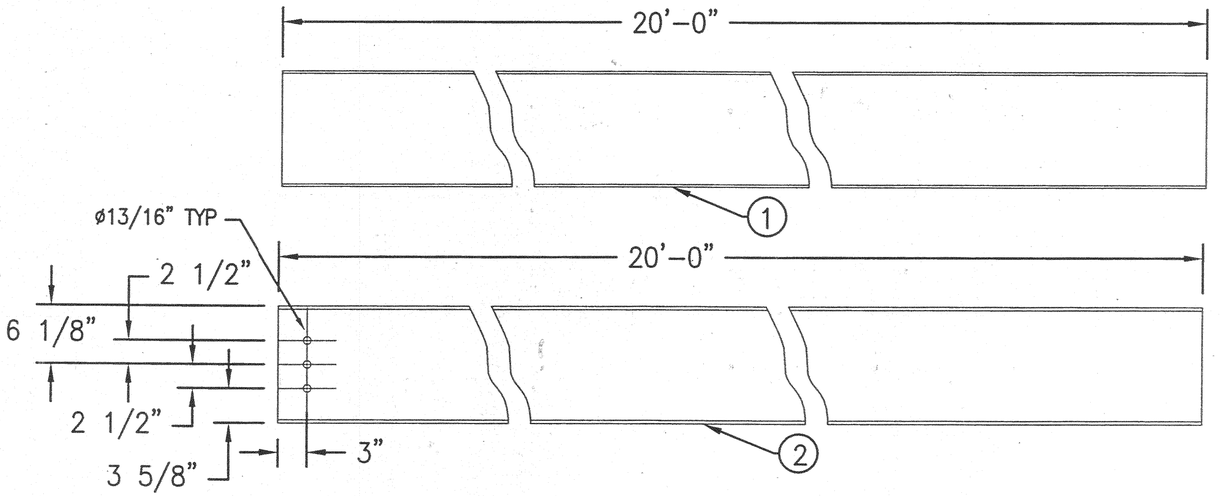
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
RAFTER DETAILS	1	RAFTER, W12X14 X 20'-0"	A36	40	280
	2	RAFTER, W12X19 X 20'-0"	A36	64	380
	3	PLATE, 3/8" THK X PATTERN	A36	64	35
	4	BOLT, ø3/4" X 2" HEX WITH NUT & WASHER	A307	192	1
TL LBS= 37,918	5				
	6				



RAFTER LAYOUT



HAUNCH DETAIL



RAFTER DETAIL

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
RAFTER DETAILS

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

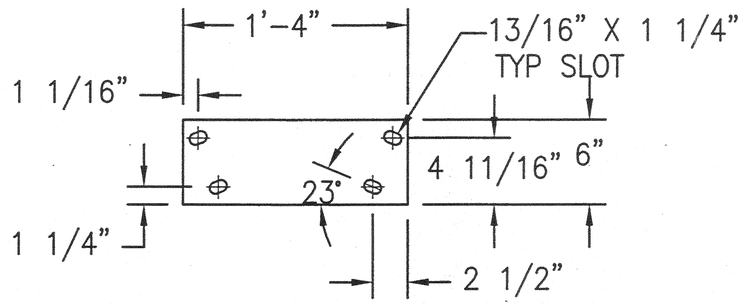
REV: 1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-1902
Fax (949) 240-1943
St. Contractors Lic. #659385-A

PLT Pacific Tank & CONSTRUCTION INC.

DWG. NO. 9

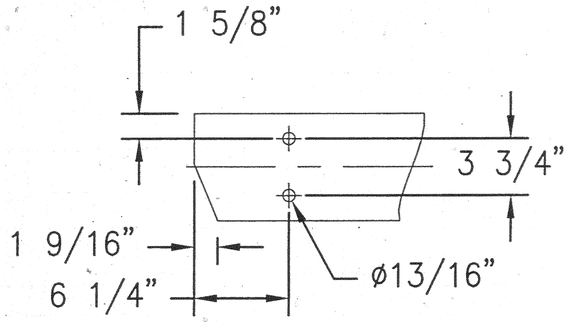
REV SET: 0



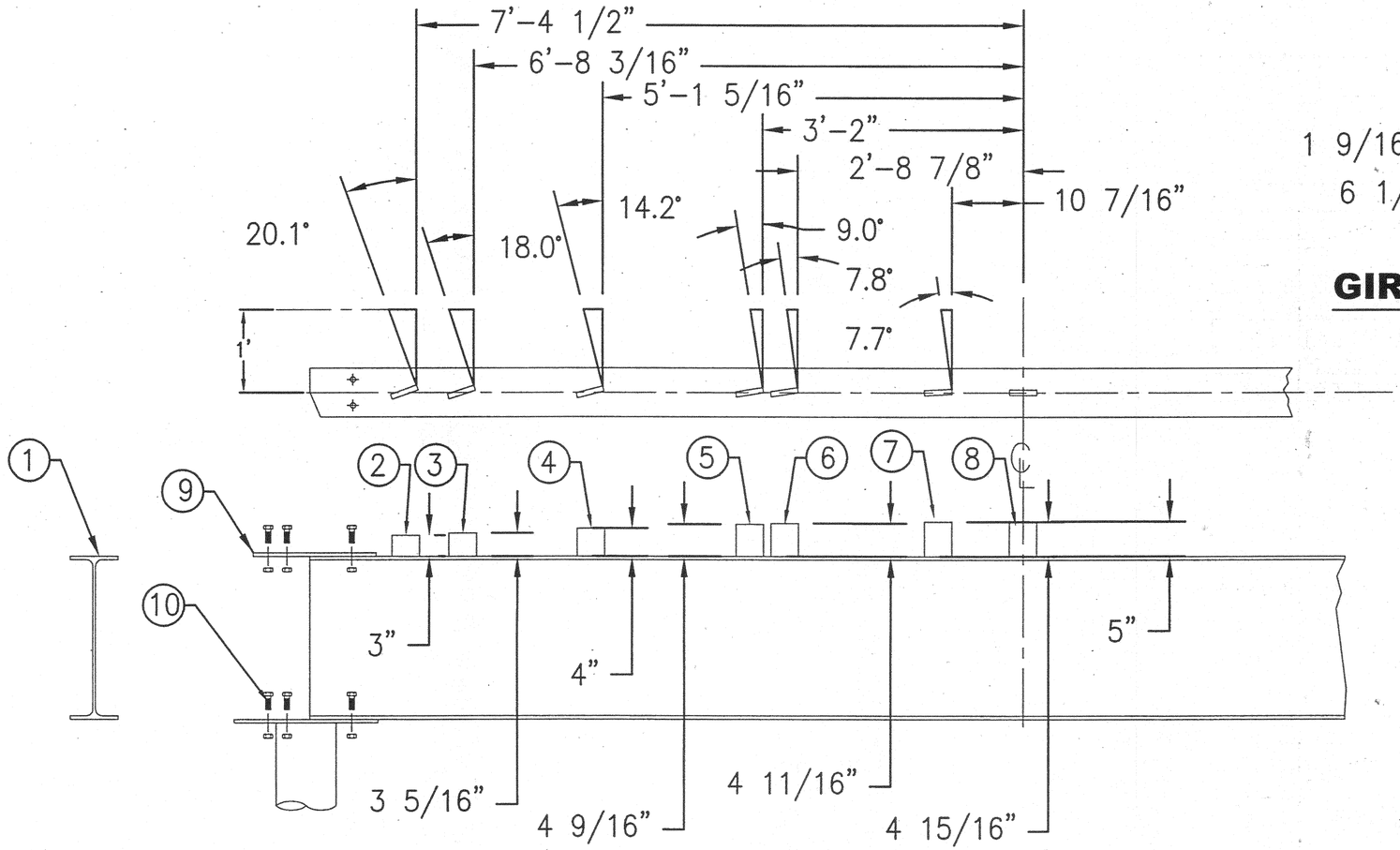
GIRDER TOP PLATE

BILL OF MATERIALS

ASSEMBLY:	ITEMNO:	DESCRIPTION:		QTY:	WT.EA:
GIRDER DETAIL	1	W25 X 55 X 17'-4" LG.	A36	8	953
	2	F.B.: 3/4" THK. X 4" X 3" LG.	A36	16	2
	3	F.B.: 3/4" THK. X 4" X 3 5/16" LG.	A36	16	2
	4	F.B.: 3/4" THK. X 4" X 4" LG.	A36	16	3
	5	F.B.: 3/4" THK. X 4" X 4 9/16" LG.	A36	16	3
	6	F.B.: 3/4" THK. X 4" X 4 11/16" LG.	A36	16	3
	7	F.B.: 3/4" THK. X 4" X 4 15/16" LG.	A36	16	3
	8	F.B.: 3/4" THK. X 4" X 5" LG.	A36	8	3
	9	PL 1/2" X 6" X 1'-7" X SK.	A36	8	14
TL. WT.= 8,976	10	BOLT 3/4" X 2 1/2" LG. W/HVY HEX NUT & WASHER	A307	64	1
	11				



GIRDER END DETAIL



GIRDER DEATIL

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

ZONE 3 (BLUFFS) WATER STORAGE TANK
GIRDER DETAILS

DRWN:TEH 07/01/08
CHK:
APPR:

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV:

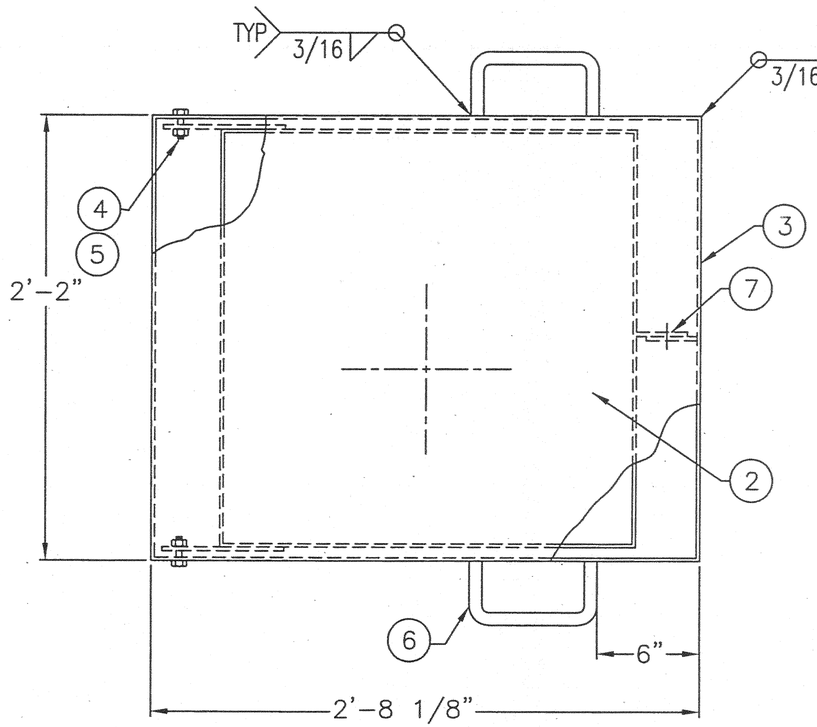
PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7302
Fax (949) 240-7343
St. Contractors Lic. #659385-A
PLT Pacific Tank & CONSTRUCTION INC.

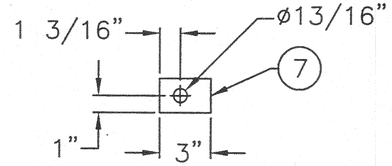
DWG. NO. 10

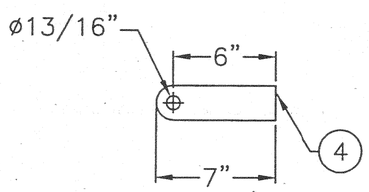
REV SET: 0

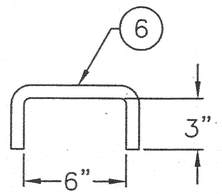
BILL OF MATERIALS

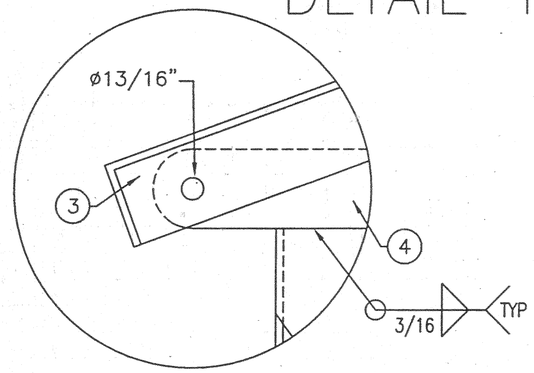
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
24" X 24" HATCH (M2)	1	PLATE, 3/16" THK X 10" X 2'-0"	A36	4	10
	2	PLATE, 3/16" THK X 2'-2" X 2'-8 1/8"	A36	1	70
	3	FB, 3/16" THK X 2 3/16" X LENGTH	A36	2	8
	4	FB, 1/4" THK X 2" X 7"	CS	2	1
	5	BOLT, ø3/4" X 1" WITH NUT	307	2	1
	6	ROUND BAR, ø3/4" X 13 1/4"	A36	2	2
	7	FB, 1/4" THK X 2" X 3"	A36	2	1
TL LBS= 178					

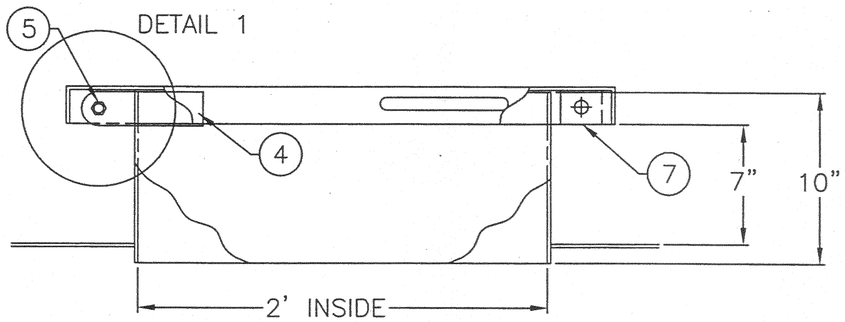


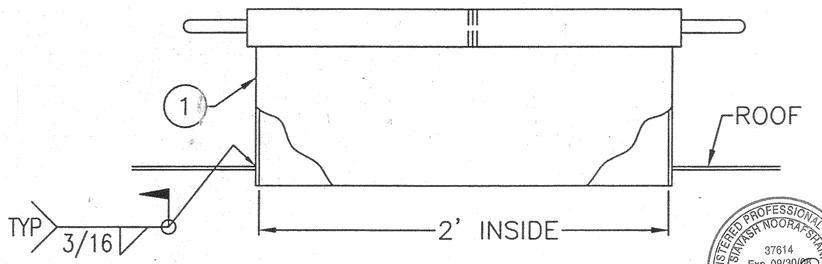












REGISTERED PROFESSIONAL ENGINEER
SHAHAB NOORAYSHANT
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

ZONE 3 (BLUFFS) WATER STORAGE TANK 24" SQUARE ROOF HATCH

DRWN:TEH 07/01/08
CHK:
APPR:

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV:
1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3902
Fax (949) 240-3943
Cal. Contractors Lic. St. #659385-A

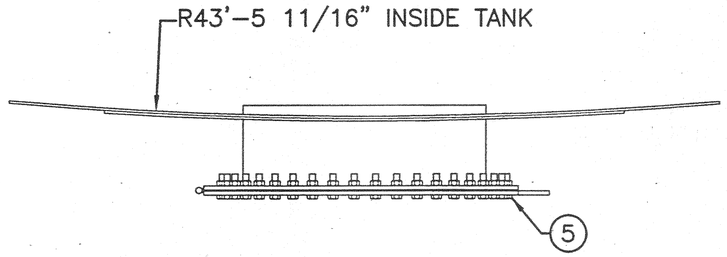
PACIFIC TANK & CONSTRUCTION INC.

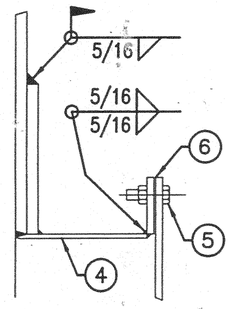
DWG. NO. 11

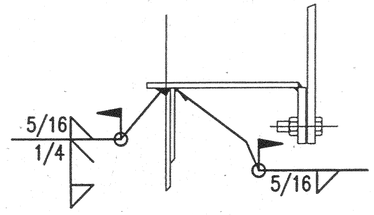
REV SET: 0

BILL OF MATERIALS

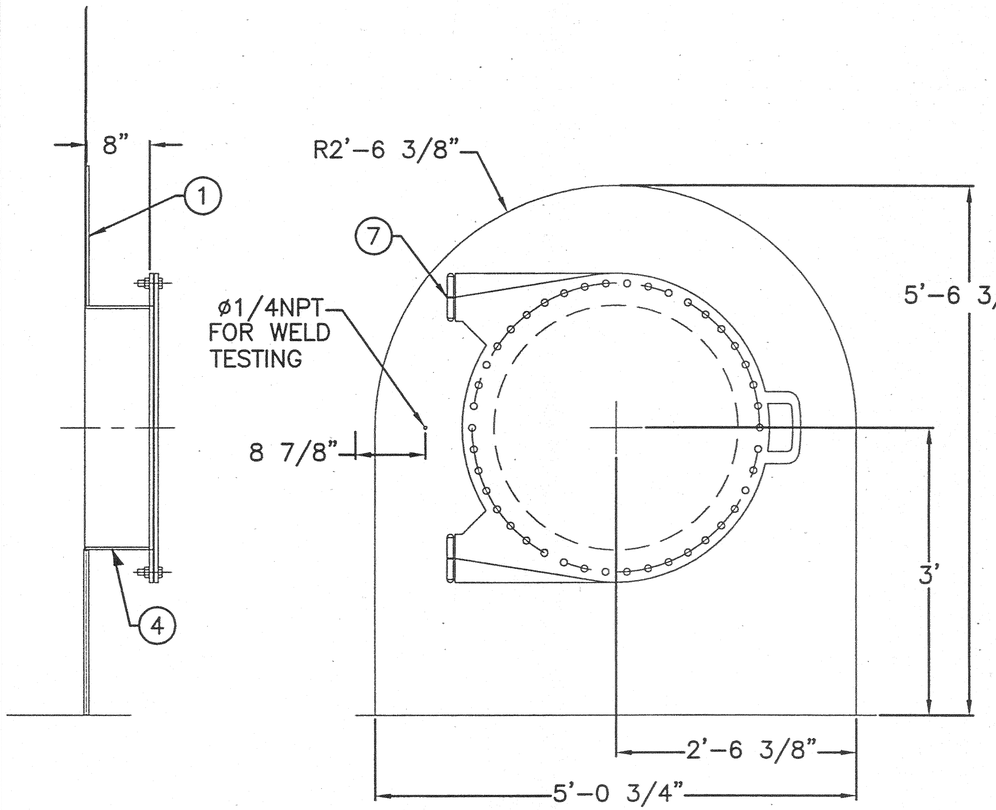
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
SHELL MANWAY (M1) (M2) TL LBS= 1178	1	PLATE, 5/16" THK X 5'-6 3/8" X 5'-0 3/4"	A36	2	256
	2	COVER PLATE, 9/16" THK X 3'-7 5/8" X 3'-2 3/4"	A36	2	155
	3	FLANGE PLATE, 9/16" THK X 3'-7 5/8" X 3'-2 3/4"	A36	2	50
	4	NECK PLATE, 5/16" THK X 9 1/2" X 7'-11 1/4"	A36	2	80
	5	BOLT, ø3/4" X 2" HEX WITH NUT	A36	84	1
	6	GASKET, 1/8" THK	NEOPRENE	2	2
	7	WELD HINGE	A36	4	2



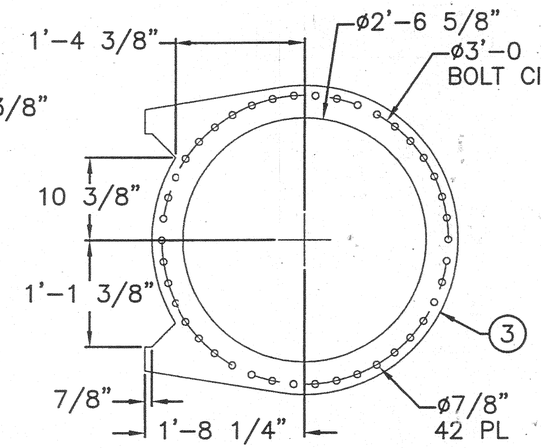




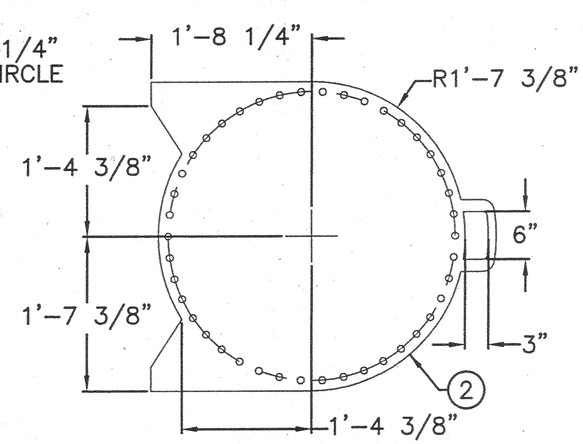
WELD DETAILS



ELEVATION



FLANGE



COVER

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
Ø30" HINGED MANWAY

REV: 1

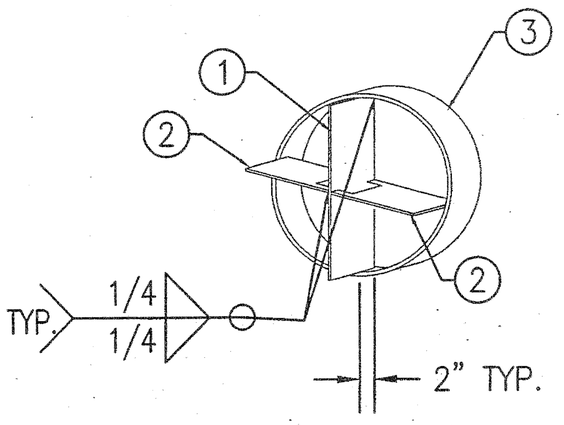
TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-7945
St. Contractors Lic. #659385-A

PT Pacific Tank & CONSTRUCTION INC.

DWG. NO. 12

REV SET: 0

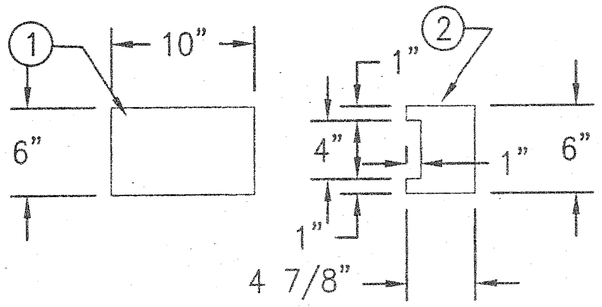


⚠1 REMOVABLE SILT STOP DETAIL

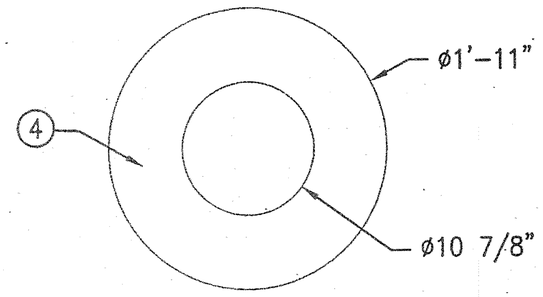
BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
ø10" INLET/OUTLET (N1)	1	PLATE, 1/4" THK X 6" x 10"	A36	1	1
	2	PLATE, 1/4" THK X 6" x 4 7/8"	A36	2	1
	3	PIPE, ø10" STD WT X 4"	A53	1	12
	4	PLATE, 3/8" THK X ø23" OD X ø10 7/8" ID	A36	1	34
TL LBS= 49					

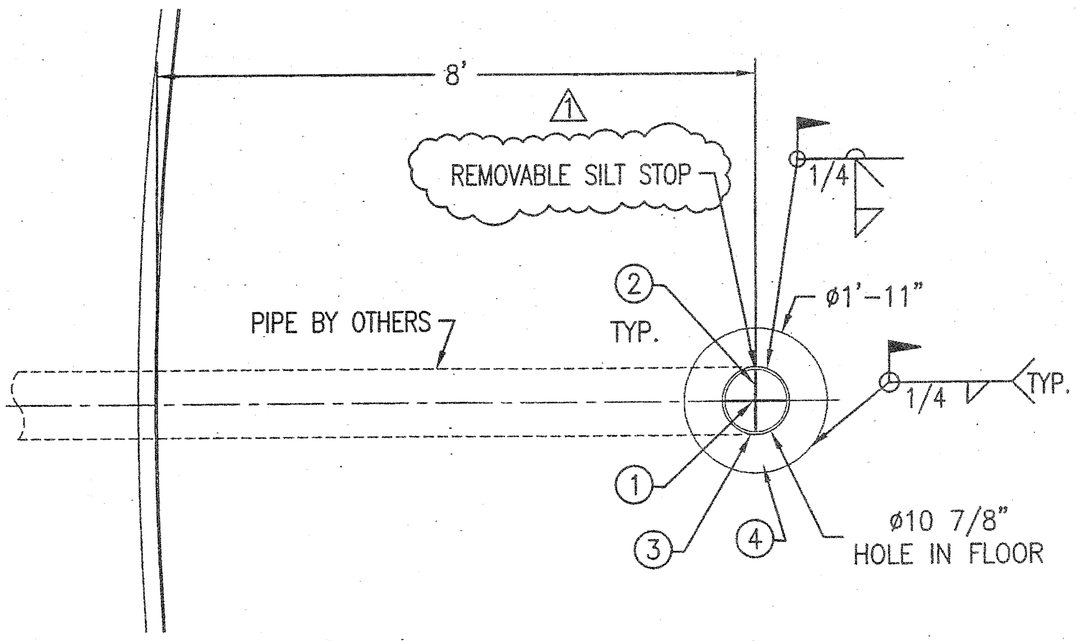
NOTE: 1. FIELD VERIFY LOCATION AND DISTANCE FROM SHELL.



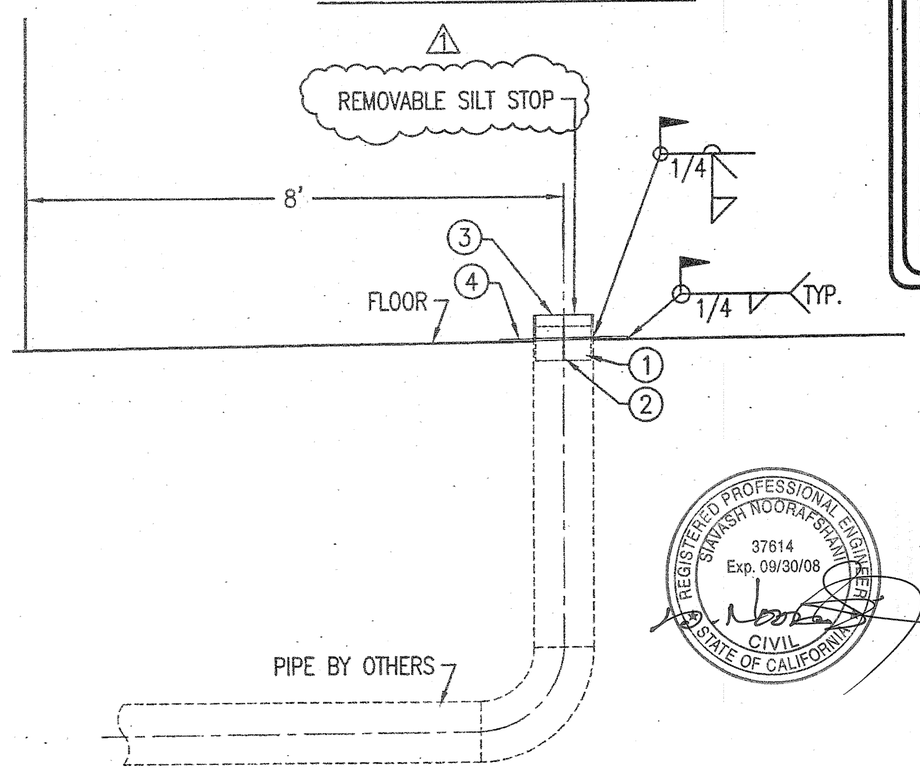
ITEMS #1 AND #2



REINFORCING PLATE



PARTIAL PLANVIEW



ELEVATION

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHANI
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK Ø10" INLET/OUTLET PIPE

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

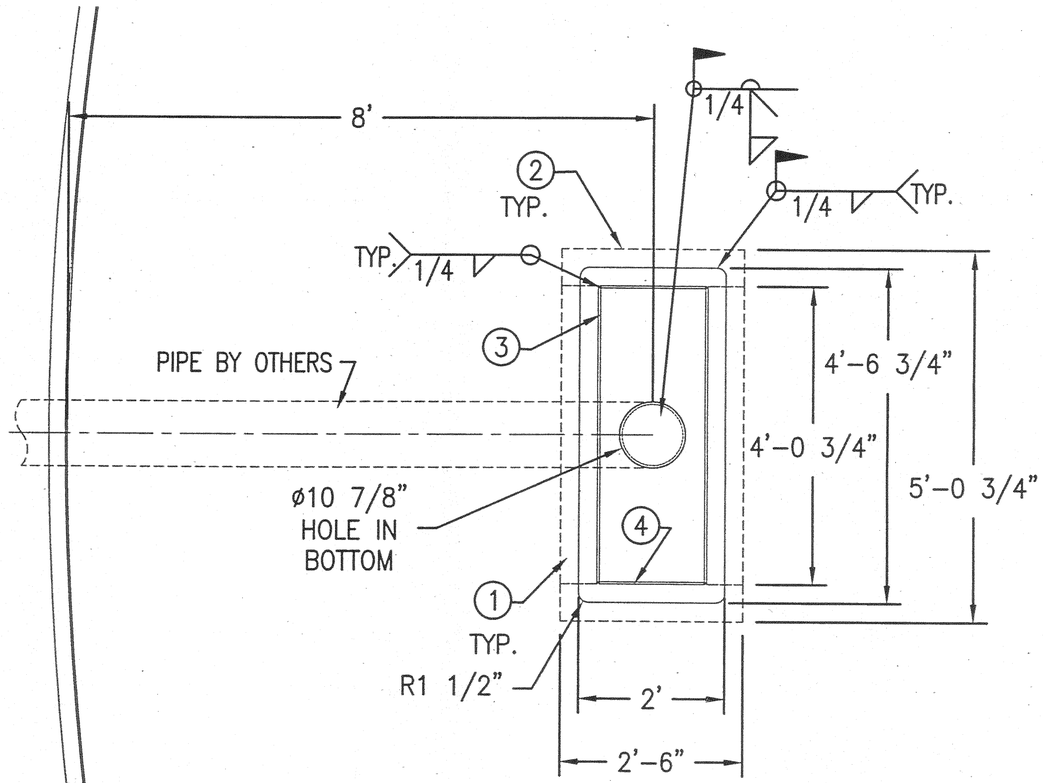
REV.
⚠1 07/10/08 TEH, ADDED NOTE TO INDICATE REMOVABLE SILT STOP,

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310, San Juan Capistrano, CA. 92693
Phone: (949) 240-3902
Fax: (949) 240-3943
Contractors Lic. St. #659385-A
PLT Pacific Tank & CONSTRUCTION INC.

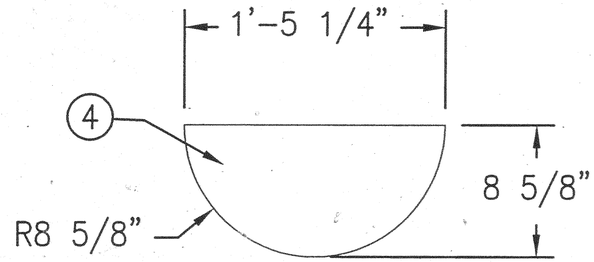
DWG. NO. 13
REV SET: 1

BILL OF MATERIALS

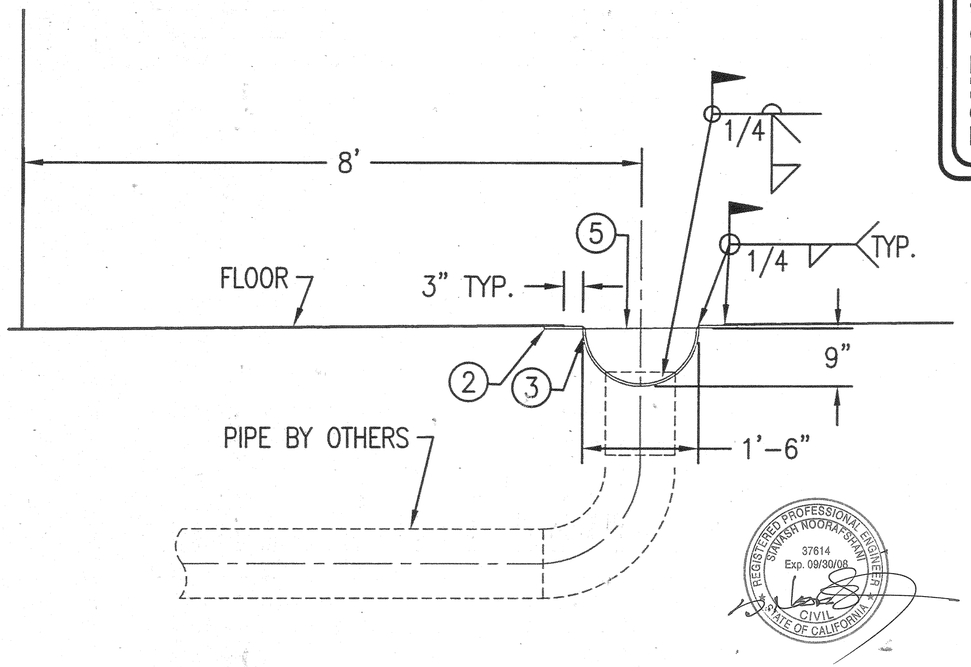
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
ø10" DRAIN (N4)	1	FB, 3/8" THK X 6" X 2-6"	A36	2	19
	2	FB, 3/8" THK X 6" X 4'- 0 3/4"	A36	2	31
	3	PIPE, ø18" STD WT X 4'-0" (HALF PIPE)	A53	1	141
	4	PLATE, 3/8" THK X PATTERN	A36	2	12
TL LBS= 265					



PARTIAL PLANVIEW



END PLATE



ELEVATION

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAYESTANI
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN:TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
ø10" DRAIN

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV: 1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-7945
CSL Contractors Lic. #659385-A

PACIFIC TANK & CONSTRUCTION INC.

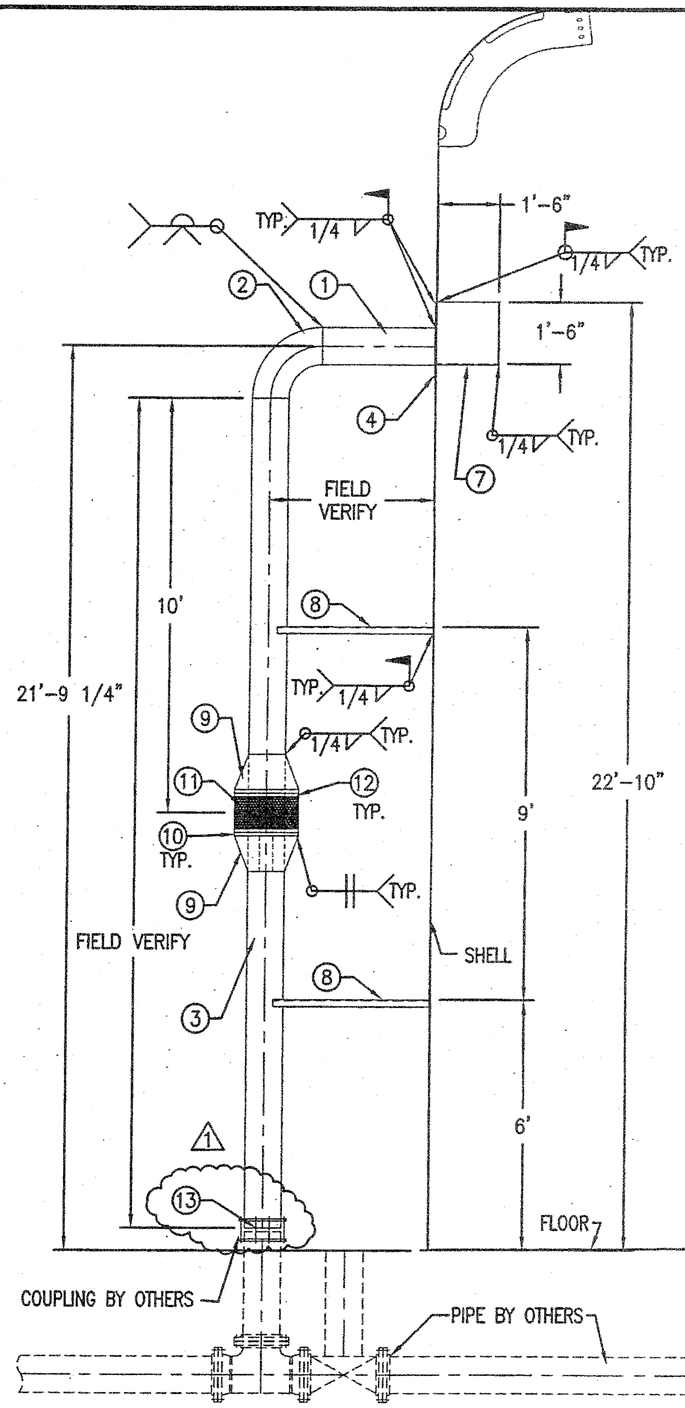
DWG. NO. 14

REV SET: 0

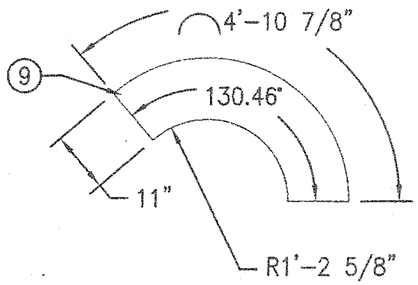
BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
ø10" OVERFLOW (N3)	1	PIPE, 10"ø SCH 40 X 33 1/4"	A53	1	112
	2	ELBOW, 10"ø X 90° SCH STD, LONG RADIUS	A53	1	82
	3	PIPE, 10"ø SCH 40 X LENGTH (FIELD VERIFY)	A53	1	810±
	4	PLATE, 1/4" THK X PATTERN	A36	1	27
	5	PLATE, 1/4" THK X 1'-6" X 1'-6"	A36	2	23
	6	PLATE, 1/4" THK X 2'-0" X 1'-6"	A36	1	31
	7	PLATE, 1/4" THK X 2'-0" X 1'-6"	A36	1	31
	8	PLATE, 1/4" THK X PATTERN	A36	2	51
	9	PLATE, 1/4" THK X PATTERN	A36	2	36
TL LBS= 1346	10	F.B., 1/4" THK X 2" X 4-10 1/8" ROLLED	A36	2	9
	11	INSECT SCREEN, 12" X 59" X #8 X .028 MESH	SS	1	5
	12	WORM DRIVE HOSE BAND, 1/2" X 59"	SS	2	5
	1 13	INSECT SCREEN, ø10 3/4" X #4 X .035 MESH	SS	1	5

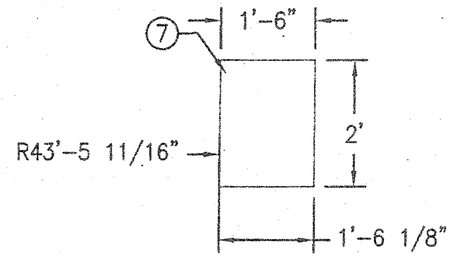
NOTES: 1. FIELD VERIFY DIMENSIONS PRIOR TO CUTTING ITEMS #1 AND #8.
2. EXTERIOR PIPE TO BE PAINTED SAME AS TANK.



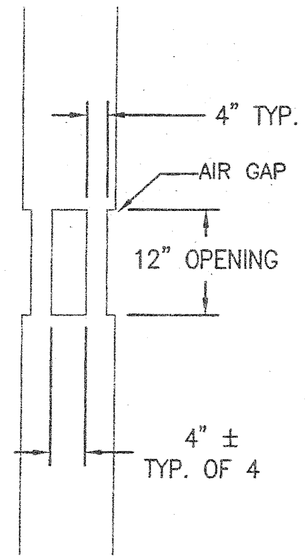
ELEVATION



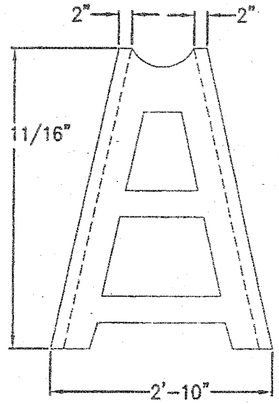
ITEM #9

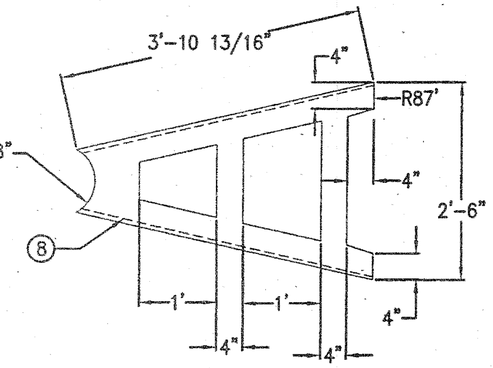


ITEM #7

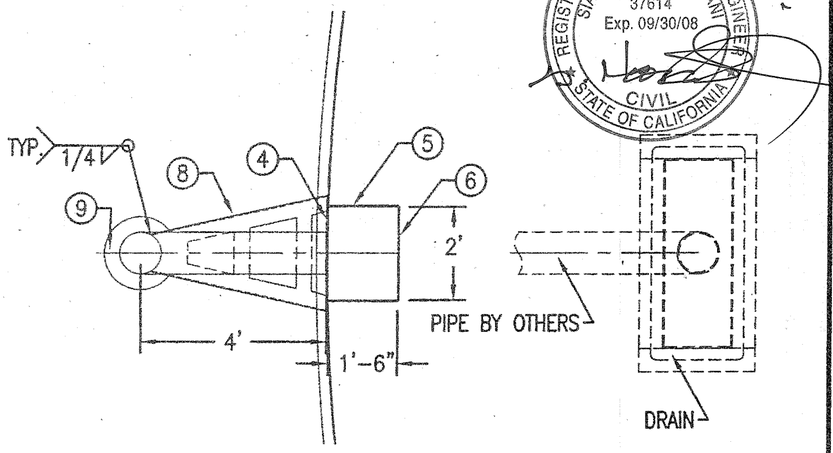


AIR GAP DETAIL





PIPE SUPPORT



PARTIAL PLANVIEW

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK Ø10" OVERFLOW

REV:
1 07/10/08 TEH, ADDED ITEM #13 TO END OF OVERFLOW.

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3902
Fax (949) 240-3903
St. Contractors Lic. #669385-A

PACIFIC TANK & CONSTRUCTION INC.

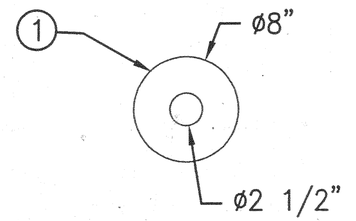
DWG. NO. 15

REV SET: 1

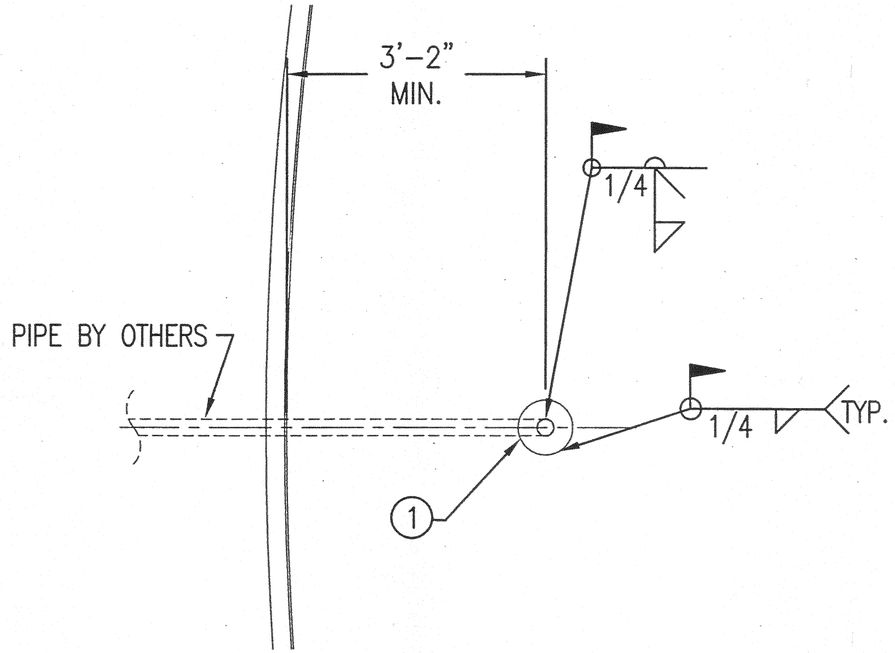
BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION	QTY	WT EA
ø2" PRESSURE (N2)	1	PLATE, 1/4" THK X 6" x 10" A36	1	7
	2			
	3			
	4			
TL LBS= 7				

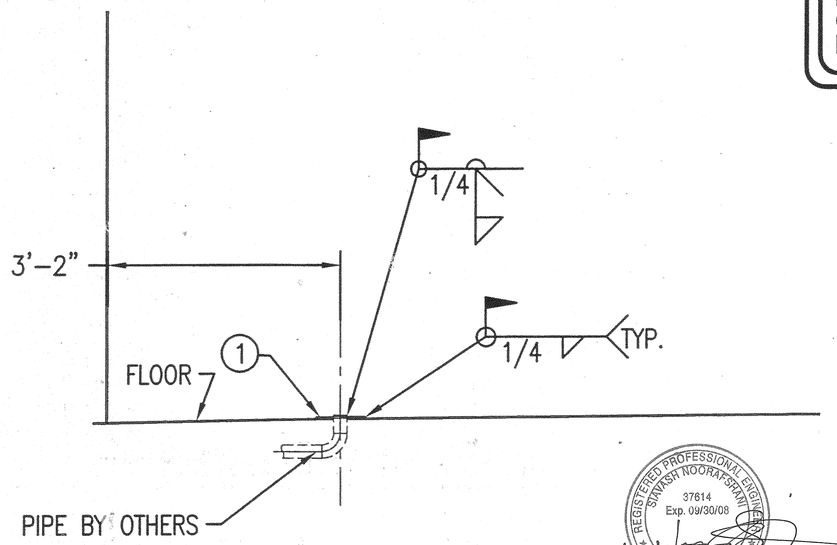
NOTE: 1. FIELD VERIFY LOCATION AND DISTANCE FROM SHELL.



REINFORCING PLATE



PARTIAL PLANVIEW



ELEVATION

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHANT
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

ZONE 3 (BLUFFS) WATER STORAGE TANK
Ø2" PRESSURE SENSING

DRWN: TEH 07/01/08
CHK:
APPR:

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV: 1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3943
St. Contractors Lic. #659385-A

PT Pacific Tank & CONSTRUCTION INC.

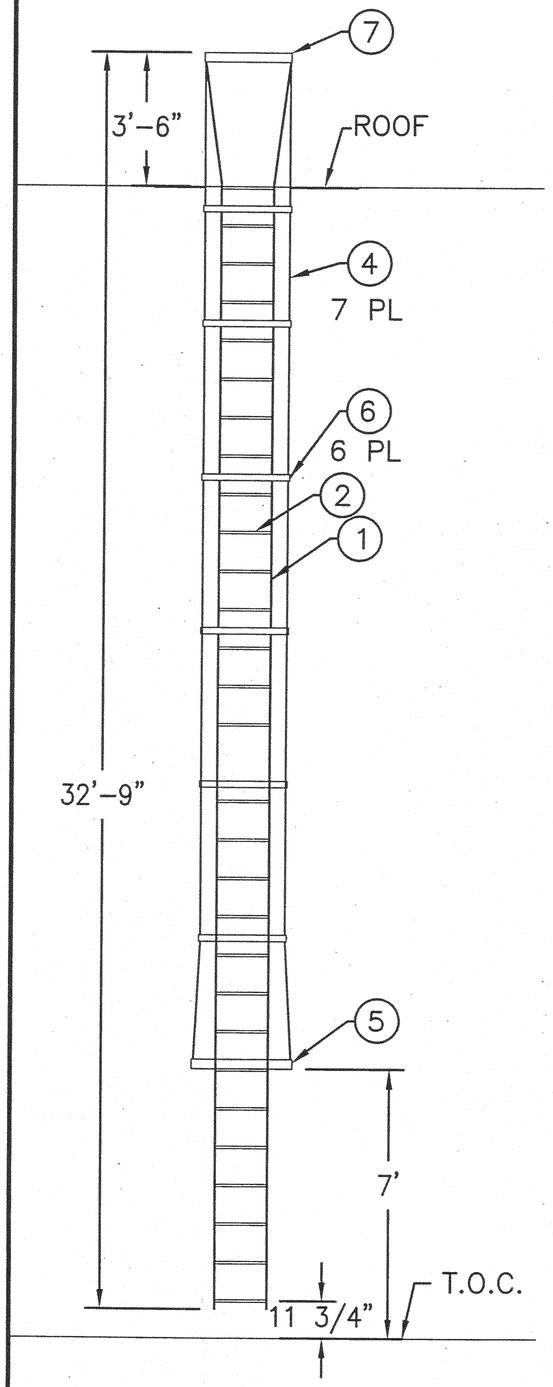
DWG. NO. 16

REV SET: 0

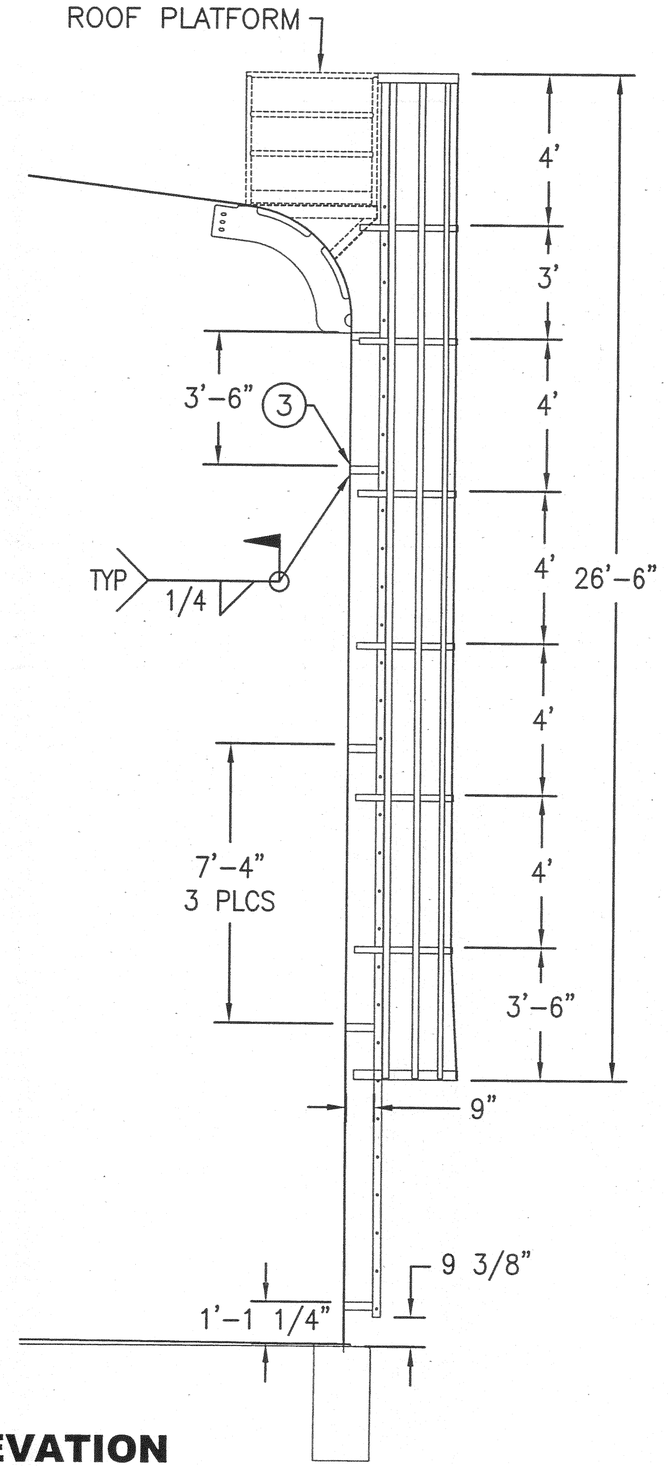
BILL OF MATERIALS

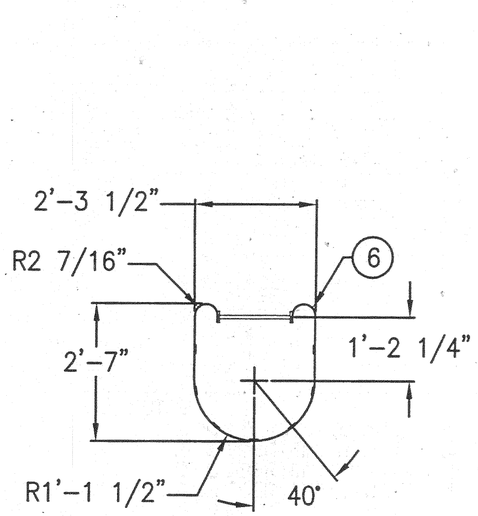
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
OUTSIDE LADDER & CAGE	1	FB, 3/8" THK X 2 1/2" X 393"	A36	2	104
	2	ROUND BAR, 3/4"ø X 16"	A36	32	2
	3	BAR, 3/8" X 2 1/2" X 9"	A36	10	2
	4	FB, 1/4" THK X 2" X 318"	A36	7	45
	5	FB, 1/4" THK X 3" X 118 3/4"	A36	1	32
	6	FB, 1/4" THK X 2" X 92 1/2"	A36	6	21
	7	FB, 1/4" THK X 3" X 106 1/2"	A36	1	22
TL LBS= 767					

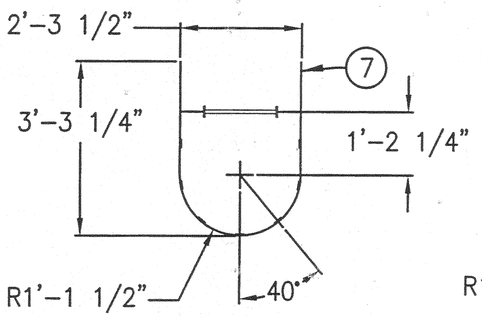
NOTES:
1. HOOPS IN CAGE AREA HAVE STANDOFF OF 2 1/2" FROM TANK SHELL.
2. LADDER FINISH IS THE SAME AS THE OUTSIDE OF THE TANK.
3. LADDER IS NOT GALVANIZED.
4. LADDER AND CAGE TO BE WELDED WITH 1/4" FILLET WELDS, TWO SIDES MIN. AT ALL JOINTS EXCEPT RUNGS.

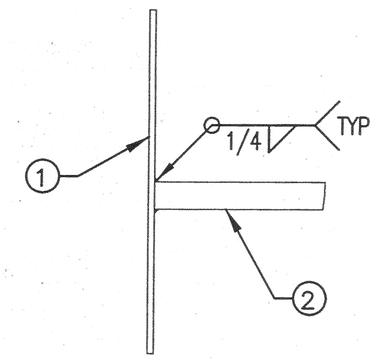


ELEVATION

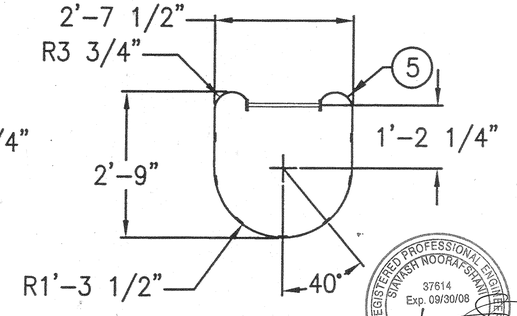








WELD DETAIL



HOOPS

REGISTERED PROFESSIONAL ENGINEER SIAVASH NOORAFSHANI 37614 Exp. 09/30/08 CIVIL STATE OF CALIFORNIA

ZONE 3 (BLUFFS) WATER STORAGE TANK
OUTSIDE LADDER AND CAGE

DRWN: TEH 07/01/08
CHK:
APPR:

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV: 1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3702
Fax (949) 240-3942
St. Contractors Lic. #659365-A

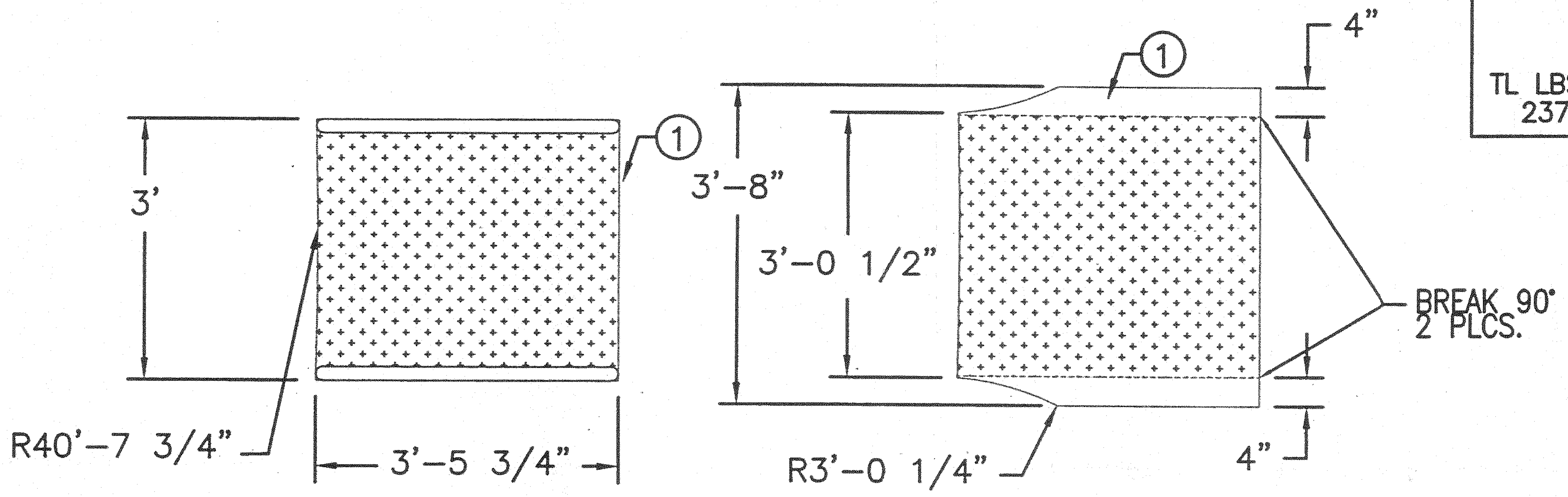
Pacific Tank & CONSTRUCTION INC.

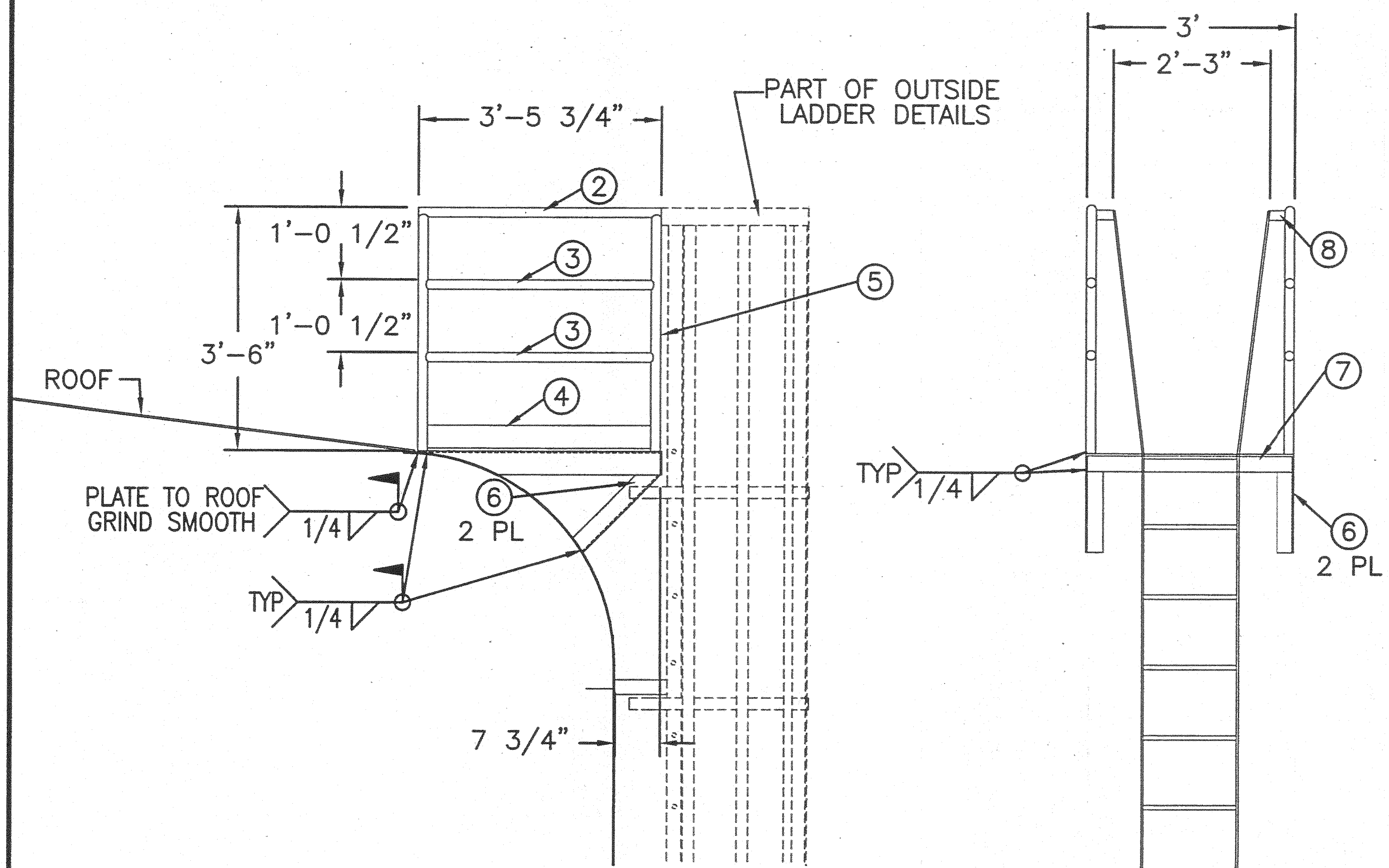
DWG. NO. 17

REV SET: 0

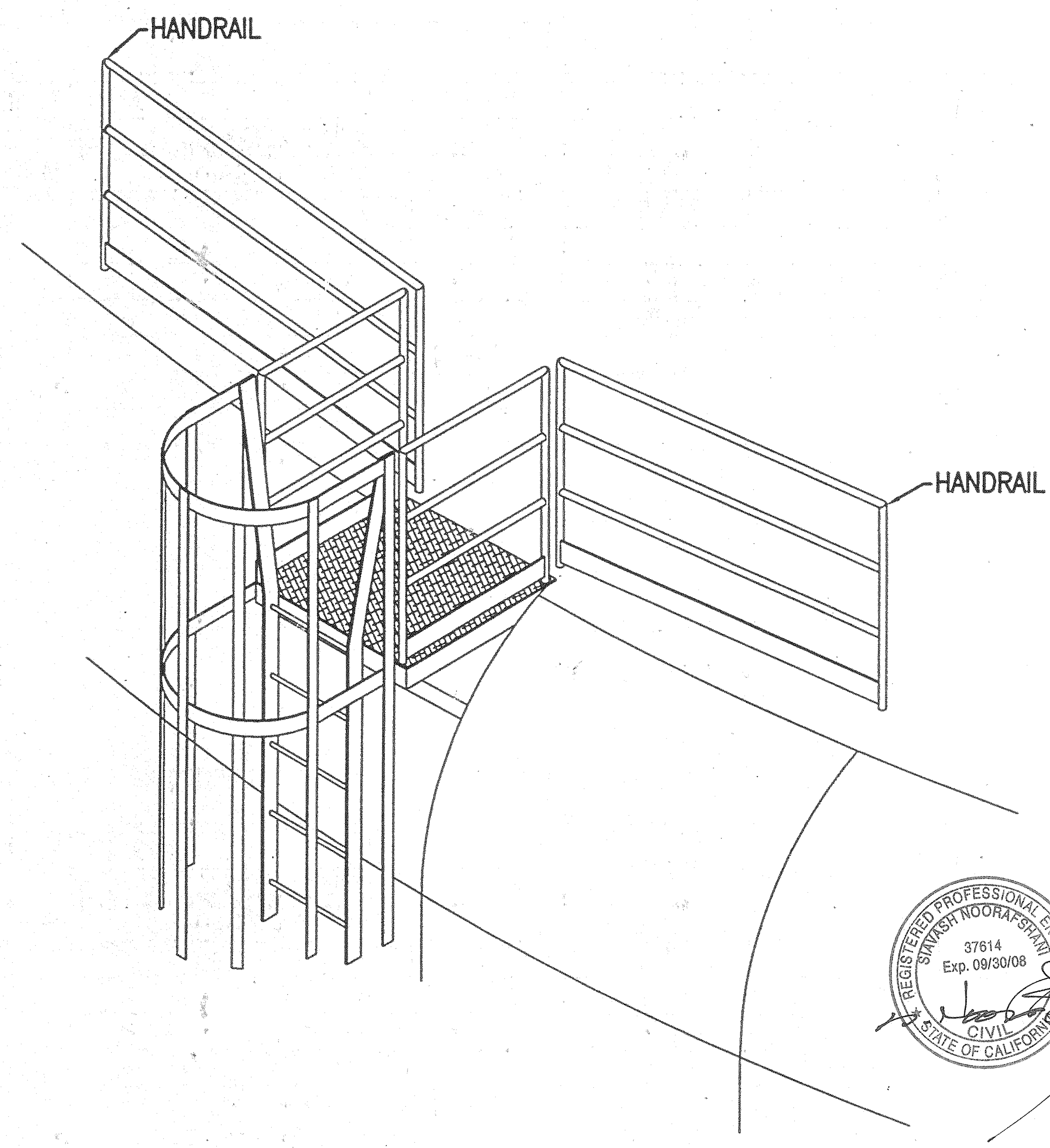
BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
ROOF PLATFORM (RP)	1	CHECKERED PLATE, 1/4" THK. X 3'-0" X 3'-5 3/4"	A36	1	106
	2	PIPE, ø1 1/4" SCH 40, X 3'-5 3/4"	A36	2	8
	3	PIPE, ø1 1/4" SCH 40, X 3'-3 3/16"	A36	4	7
	4	FB 1/4" X 4" X 3'-2 7/16"	A36	2	11
	5	PIPE, ø1 1/4" SCH 40 X 3'-6"	A36	4	8
	6	L, 3/8" THK X 3" X 3" X 1'-6 3/4"	A36	2	11
	7	FB 1/4" X 4" X 2'-6"	A36	1	9
TL LBS= 237	8	PIPE, ø1 1/4" SCH 40, X 3"	A36	2	1





ELEVATION VIEW



ASSEMBLY VIEW

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHANI
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

REV:

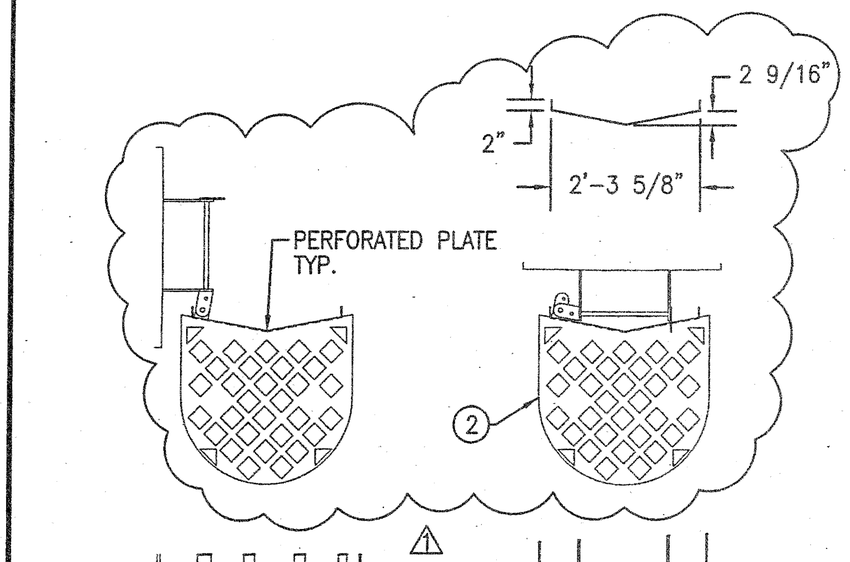
ZONE 3 (BLUFFS) WATER STORAGE TANK
ROOF PLATFORM

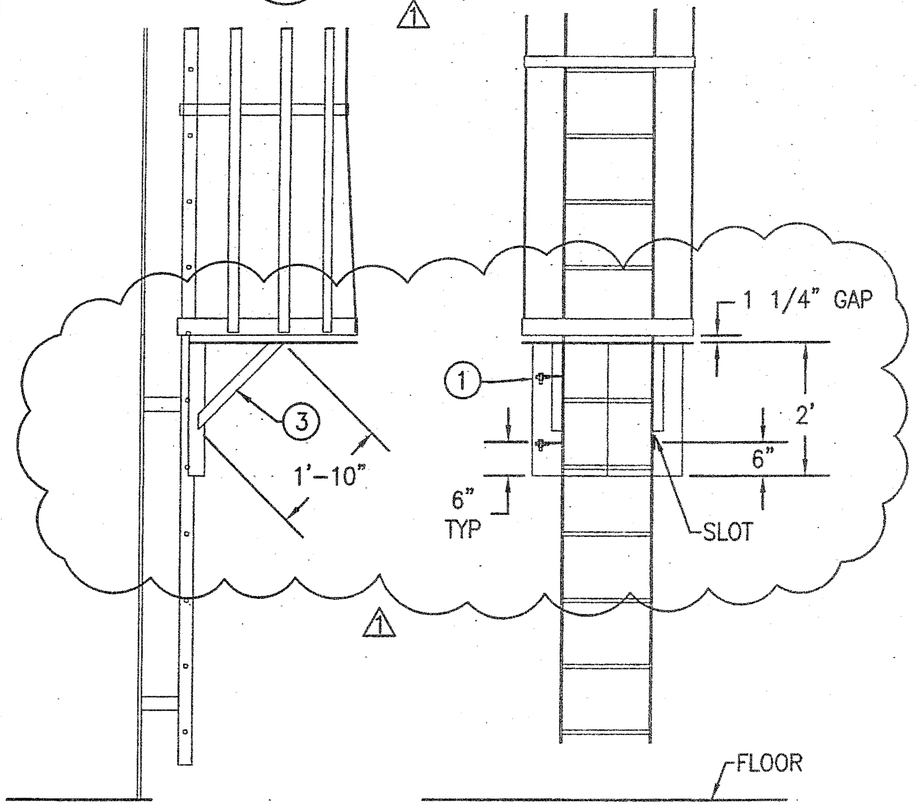
PACIFIC TANK
& CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3943
St. Contractors Lic. #659385-A

PTC Pacific Tank & CONSTRUCTION INC.

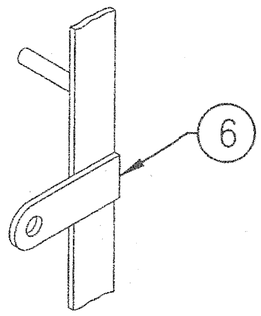
DWG. NO.
18

REV SET: 0

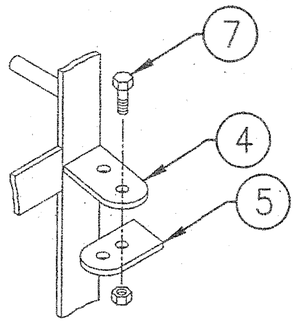




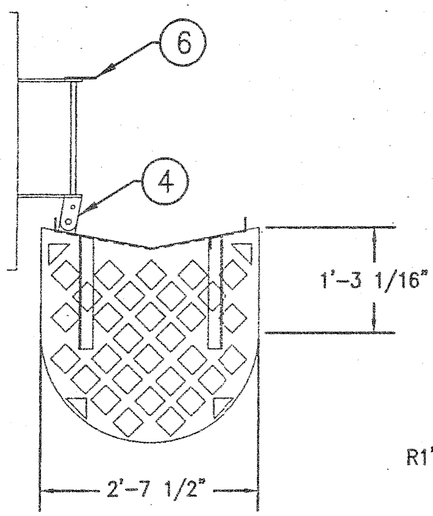
ELEVATION



LOCK BAR



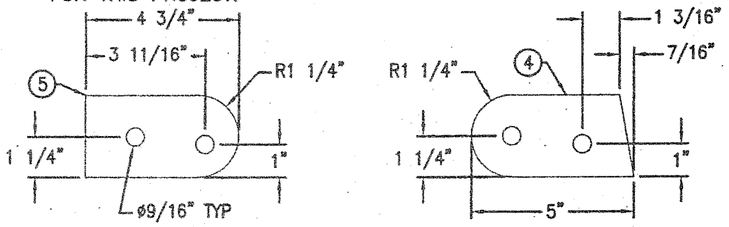
HINGE ASSY



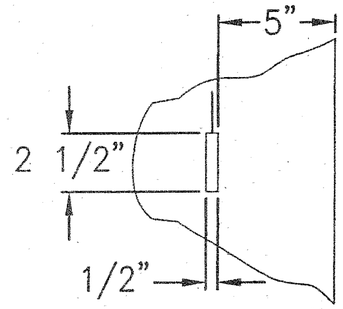
BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
SECURITY GATE	1	PLATE, 3/16" THK X 2'-8" X 2'-0"	A36	1	41
	2	PLATE, 1/4" THK X 2'-6 13/16" X 2'-7 1/2"	A36	1	43
	3	L, 1/4" THK X 2" X 2" X 1'-10"	A36	2	4
	4	FB, 1/4" THK X 2" X 5"	A36	2	1
	5	FB, 1/4" THK X 2" X 4 3/4"	A36	2	1
	6	FB, 1/4" THK X 2" X 4 1/2"	A36	1	1
	7	BOLT, ø1/2" X 1 1/2" HEX WITH NUT	A36	2	1
TL LBS= 99					

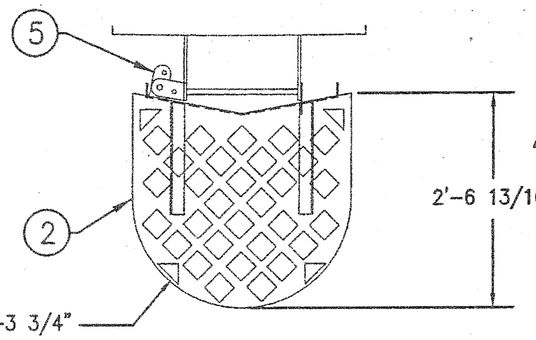
NOTE: 1. BILL OF MATERIALS IS FOR ONE (1) TANK THERE ARE TWO (2) TANKS FOR THIS PROJECT.



HINGE BRACKETS



SLOT DETAIL



PLANVIEW

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAN
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK LADDER SECURITY GATE

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

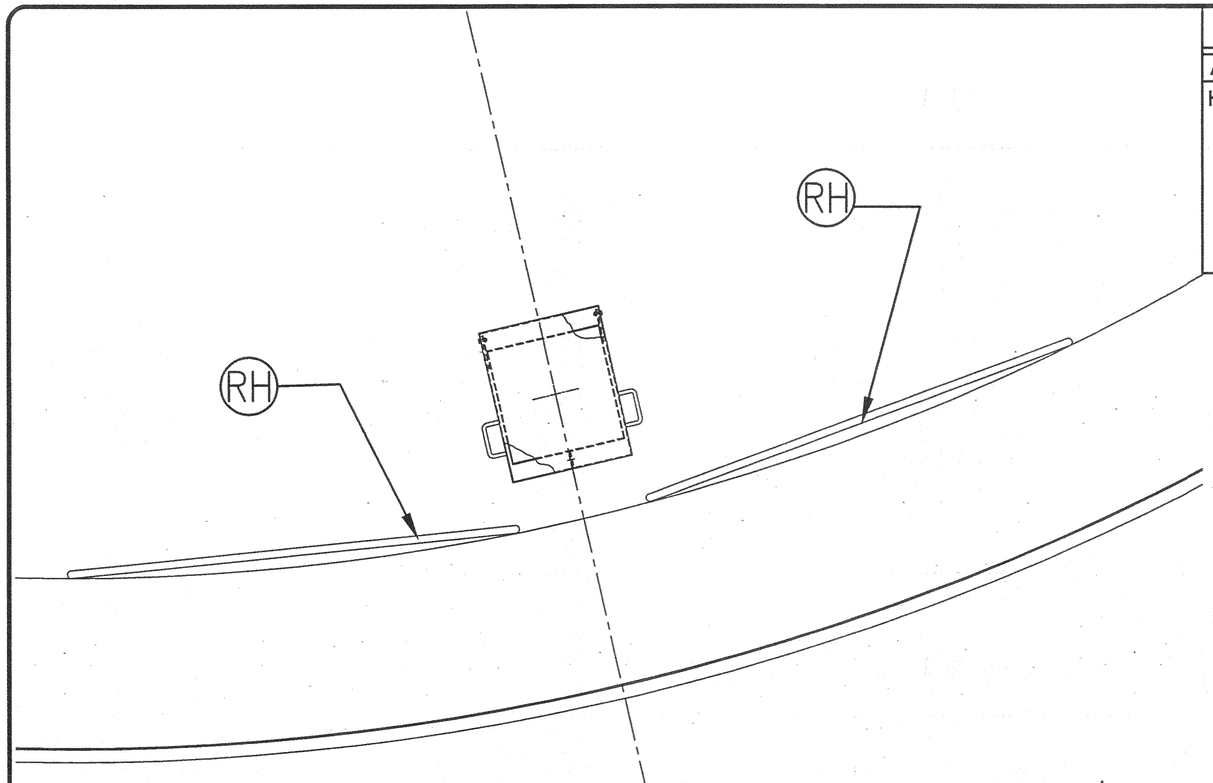
REV:
△ 07/10/08 TEH, ADDED PERFORATIONS TO ITEM #2, SHORTENED ITEM #1.

PACIFIC TANK & CONSTRUCTION INC.
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3943
Lic. #659385-A

Pacific Tank & CONSTRUCTION INC.

DWG. NO. 19

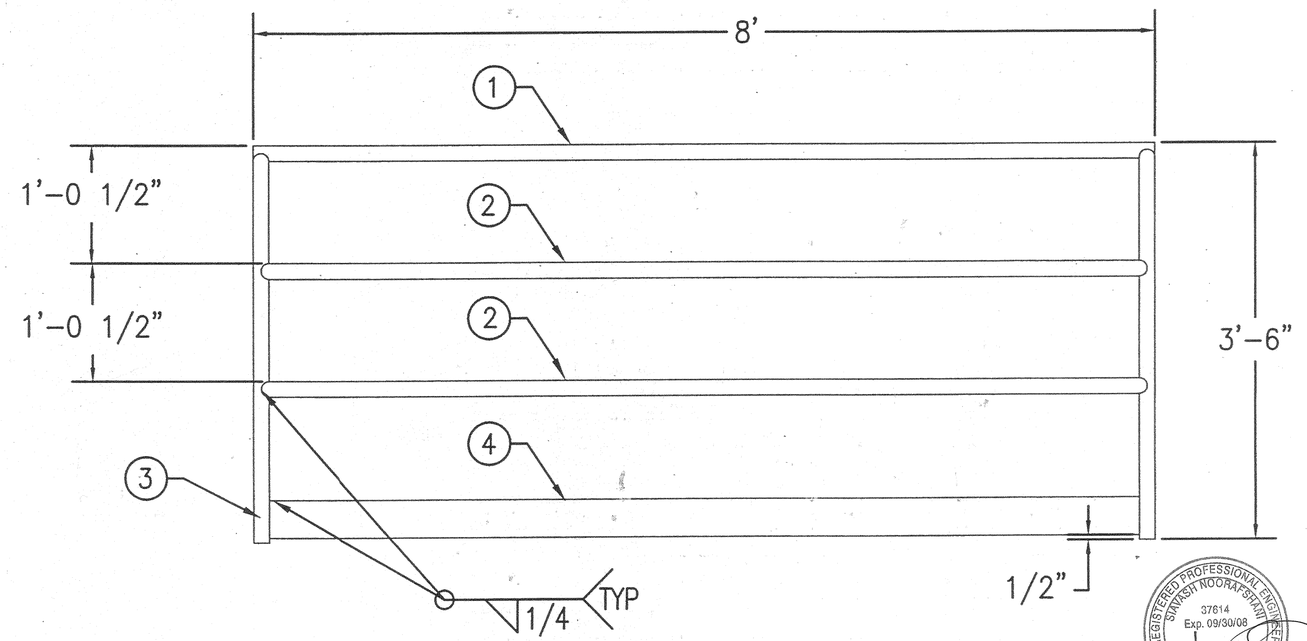
REV SET: 1



PARTIAL PLANVIEW

BILL OF MATERIALS

ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
HANDRAILS (RH)	1	PIPE, ø1 1/4" SCH 40 X 8'-0"	A36	2	18
	2	PIPE, ø1 1/4" SCH 40 X 7'-10 5/16"	A36	4	17
	3	PIPE, ø1 1/4" SCH 40 X 3'-6"	A36	4	8
	4	FB, 1/4" THK X 4" X 7'-8 11/16"	A36	2	26
TL LBS= 188					



ELEVATIONS

REGISTERED PROFESSIONAL ENGINEER
SIAVASH NOORAFSHAR
37614
Exp. 09/30/08
CIVIL
STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
ROOF HANDRAIL

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

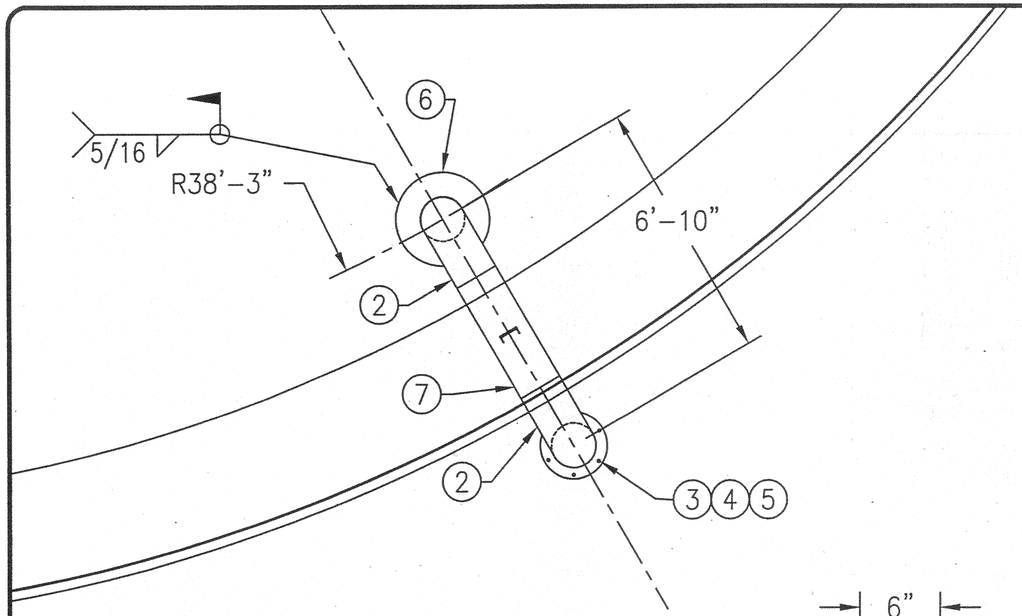
REV:
1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-3702
Fax (949) 240-3943
Lic. Contractors Lic. St. #659385-A

Pacific Tank & CONSTRUCTION INC.

DWG. NO.
20

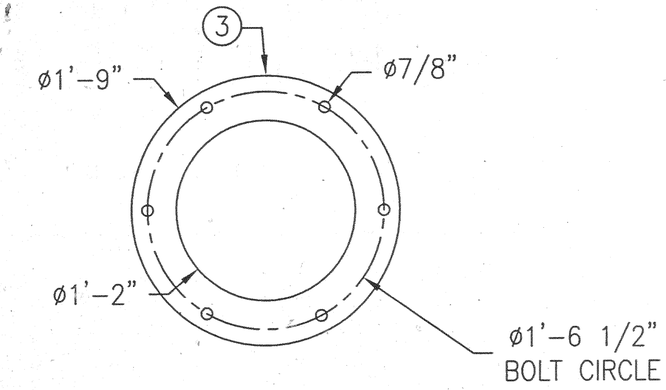
REV SET: 0



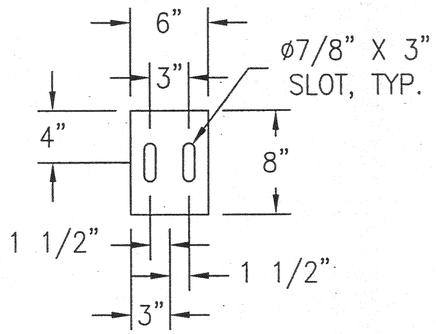
PARTIAL PLAN VIEW

BILL OF MATERIALS

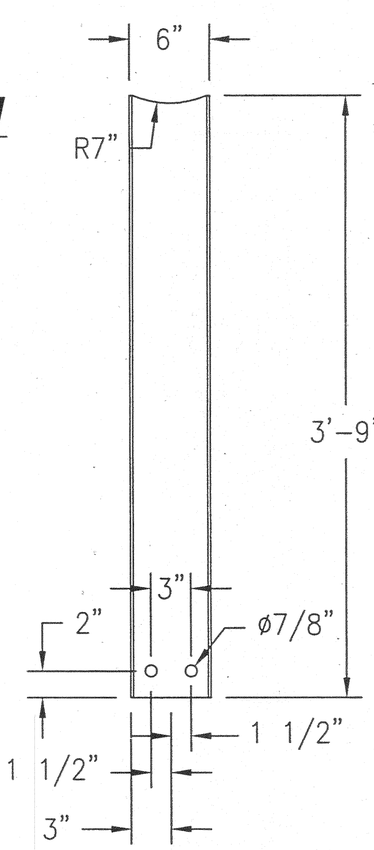
ASSEMBLY	ITEM #	DESCRIPTION		QTY	WT EA
ø14" VENT (RV)	1	PIPE, ø14", SCH 40 X 2'-2 1/8"	A53	1	138
	2	ELBOW, ø14" X 90° LONG RADIUS STD WT	A53	2	154
	3	PLATE, 1/4" THK X ø21" OD X ø14" ID	A36	2	13
	4	INSECT SCREEN, ø21" OD X #8 X .28 MESH	SS	1	2
	5	BOLT, ø3/4" X 2" LONG WITH HEX NUT.	ZINC	8	1
	6	PLATE, 5/16" THK X ø29 1/2" OD X ø14 1/8" ID	A36	1	47
	7	PIPE, ø14", SCH 40 X 3'-4"	A53	1	212
TL LBS= 774	8	CHANNEL, C6 X 8.2 X 3'-9"	A36	1	31
	9	PLATE, 3/8" THK X 6" X 8"	A36	1	2



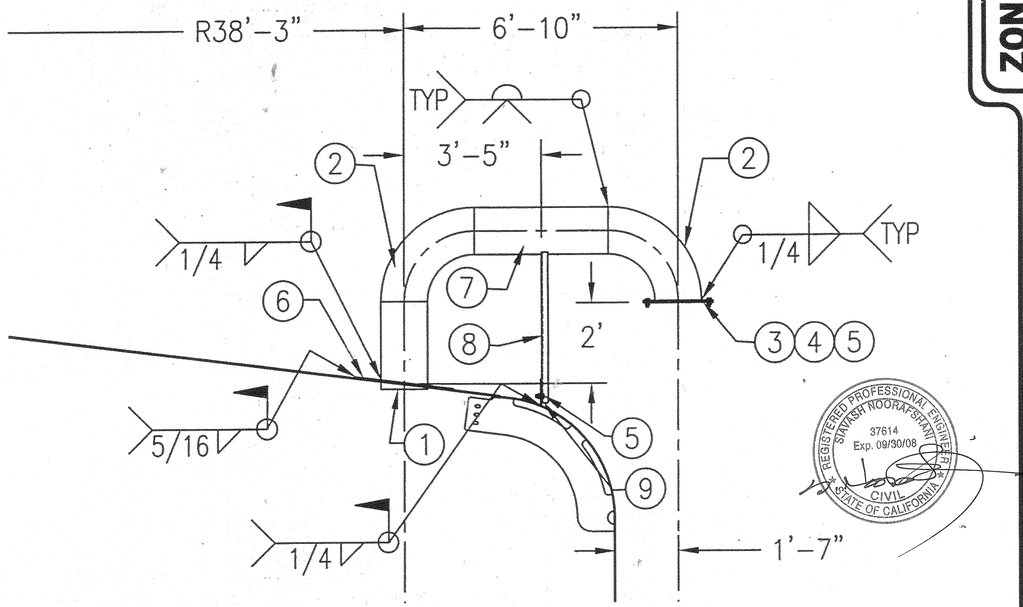
FLANGES



ITEM #9



ITEM #8



ELEVATION

REGISTERED PROFESSIONAL ENGINEER SIAVASH NOORAFSHANT 37614 Exp. 09/30/08 CIVIL STATE OF CALIFORNIA

DRWN: TEH 07/01/08
CHK:
APPR:

ZONE 3 (BLUFFS) WATER STORAGE TANK
Ø14" GOOSENECK VENT

TYPE: AWWA-D100
SCALE: N.T.S.
JOB NO.: 08-386

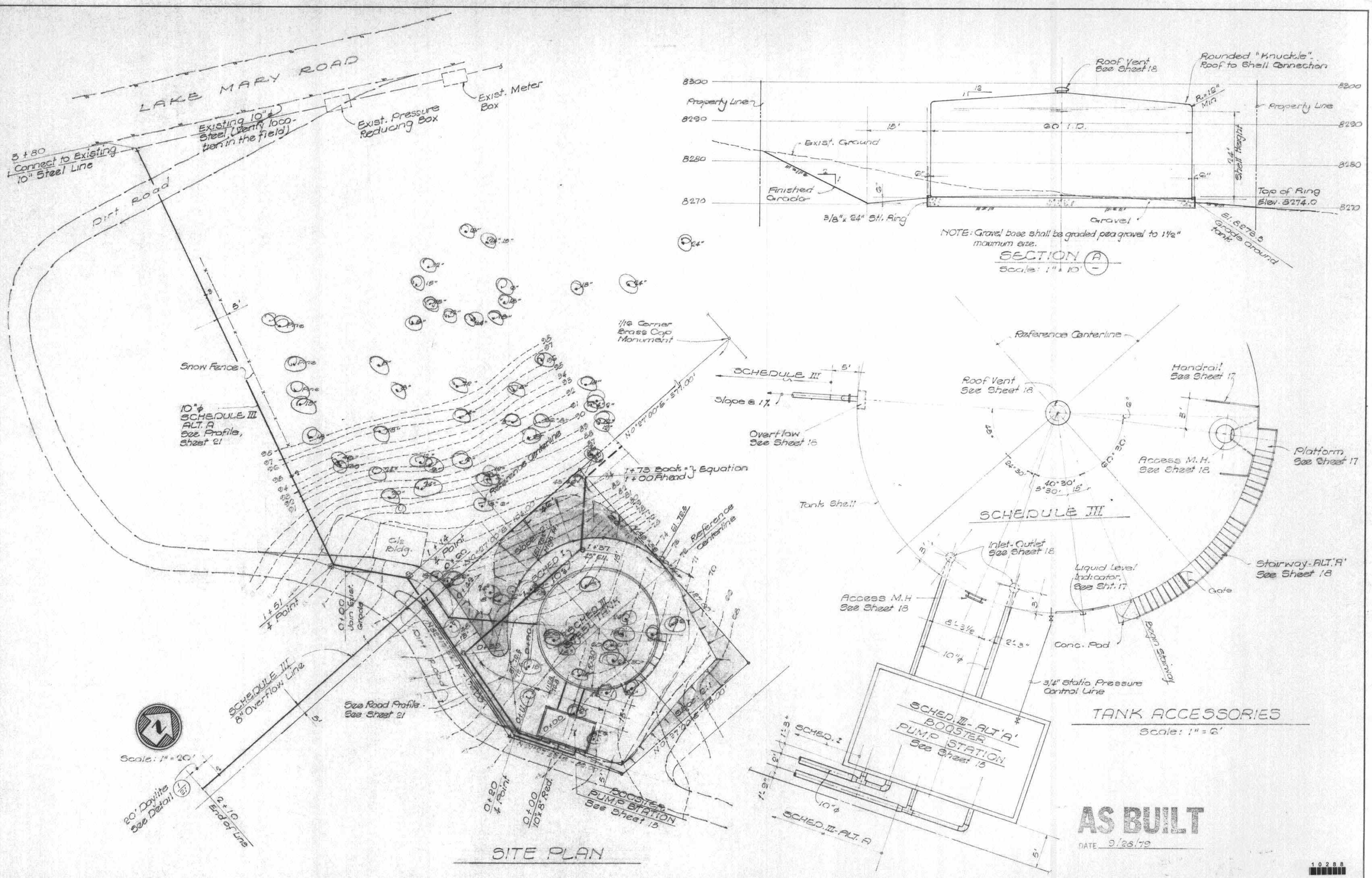
REV:
1

PACIFIC TANK & CONSTRUCTION INC.
P.O. Box 310
San Juan Capistrano, CA 92693
Phone (949) 240-7902
Fax (949) 240-3943
Contractors Lic. St. #659385-A

PT Pacific Tank & CONSTRUCTION INC.

DWG. NO. 21
OF:
REV SET: 0

Attachment 2
Tank T2 As-Built Plans



AS BUILT
DATE 9/28/79

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JOB NO. 247
DRAWN BC DATE 11/7/77
CHECKED GPP DATE

RCE 13,512 4/18/78 DATE

GRAM/PHILLIPS ASSOCIATES, INC.
1000 EAST WALNUT STREET/SUITE 223/PASADENA, CALIFORNIA 91106/PHONE (213) 681-0291 | ENGINEERING/RESEARCH ENVIRONMENTAL SYSTEMS

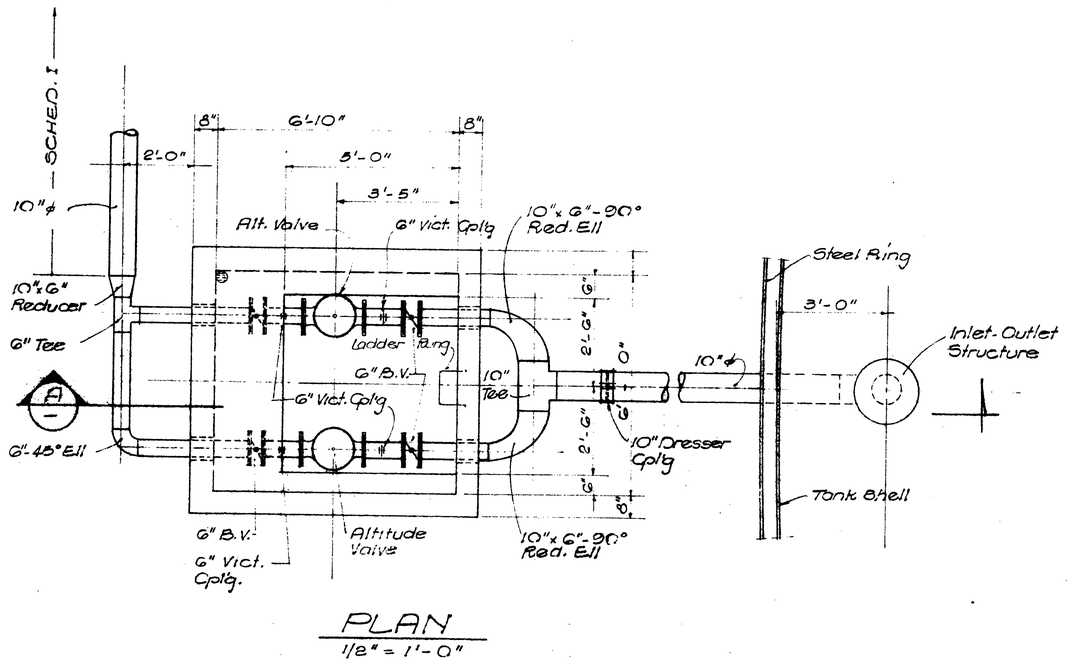
8/77 DIETERICH-POST CLEARPRINT 1000H

MAMMOTH COUNTY WATER DISTRICT
Mono County, California

SITE PLAN AND MISCELLANEOUS DETAILS

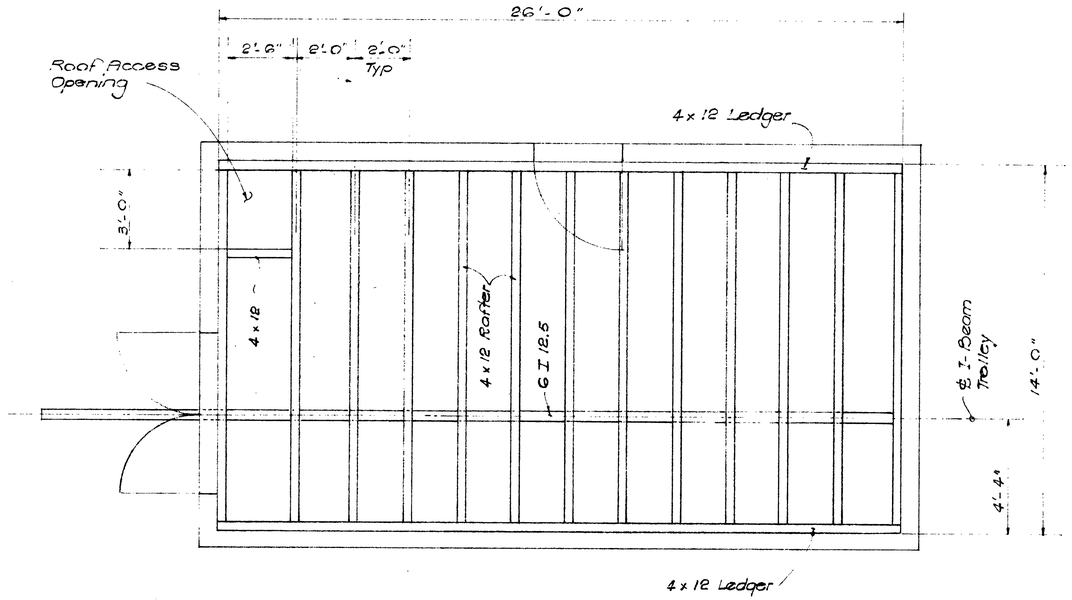
10288

SHEET 14 OF 23



PLAN

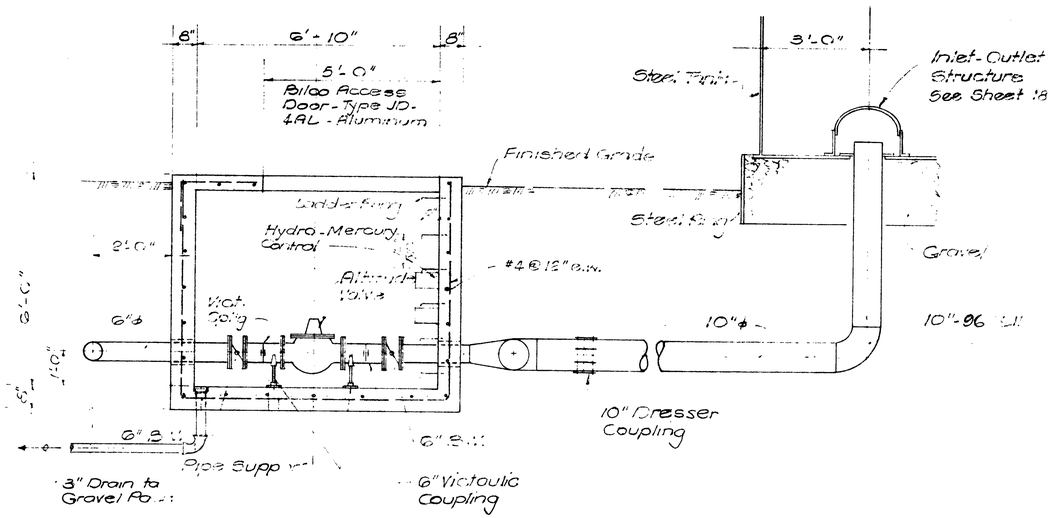
1/2" = 1'-0"



ROOF FRAMING PLAN

(BOOSTER PUMP STATION)

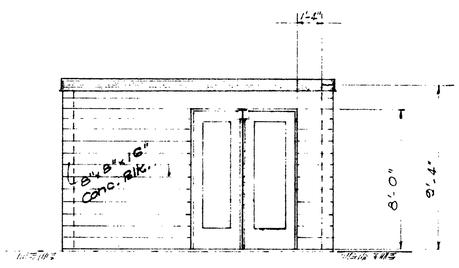
3/8" = 1'-0"



SECTION A

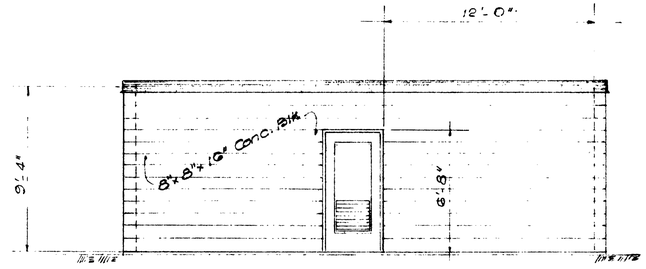
1/2" = 1'-0"

VAULT PIPING DETAIL (ALTERNATE B, SCHED. III)



WEST ELEVATION

1/4" = 1'-0"



NORTH ELEVATION

1/4" = 1'-0"

NOTE: All concrete block cells solid grouted.

BOOSTER PUMP STATION

SCHEDULE III - ALT. A.

AS BUILT

DATE 9/29/79

10290

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JOB NO. 647

DRAWN — DATE —

CHECKED — DATE —

RCE 13851 — DATE 4/12/78

8/77 DIETERICH-POST CLEARPRINT 1000H

GRAM/PHILLIPS ASSOCIATES, INC.

1000 EAST WALNUT STREET/SUITE 223/PASADENA, CALIFORNIA 91106/PHONE (213) 681-0291

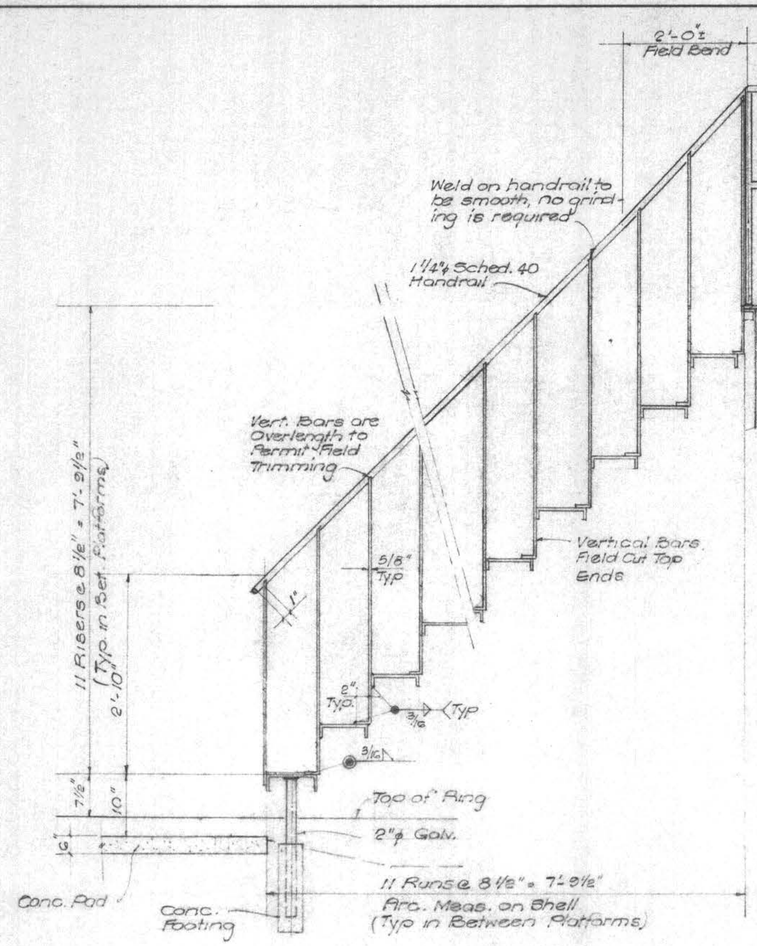
ENGINEERING/RESEARCH ENVIRONMENTAL SYSTEMS

MAMMOTH COUNTY WATER DISTRICT

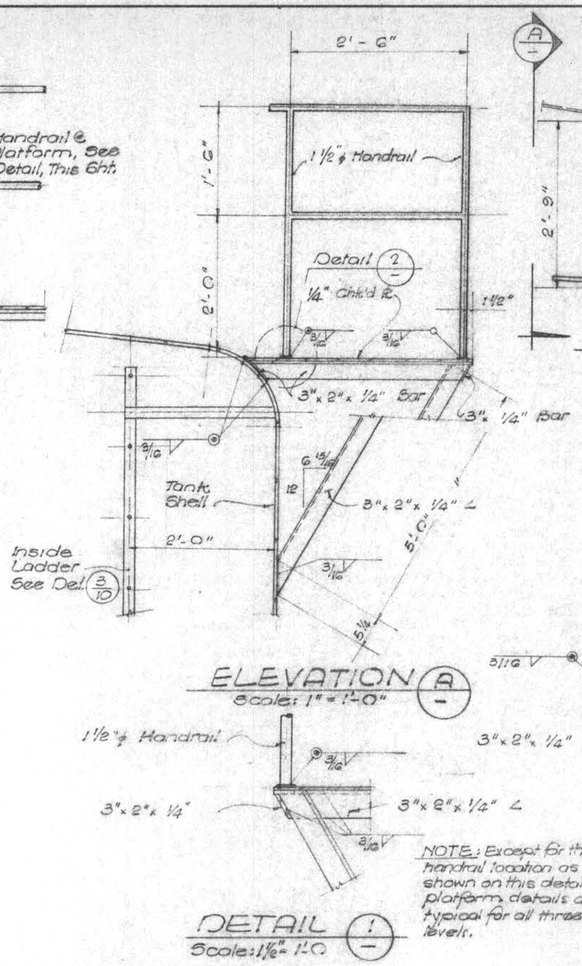
Mono County, California

RESERVOIR VAULT PIPING DETAILS AND BUILDING DETAILS

SHEET 16 OF 23

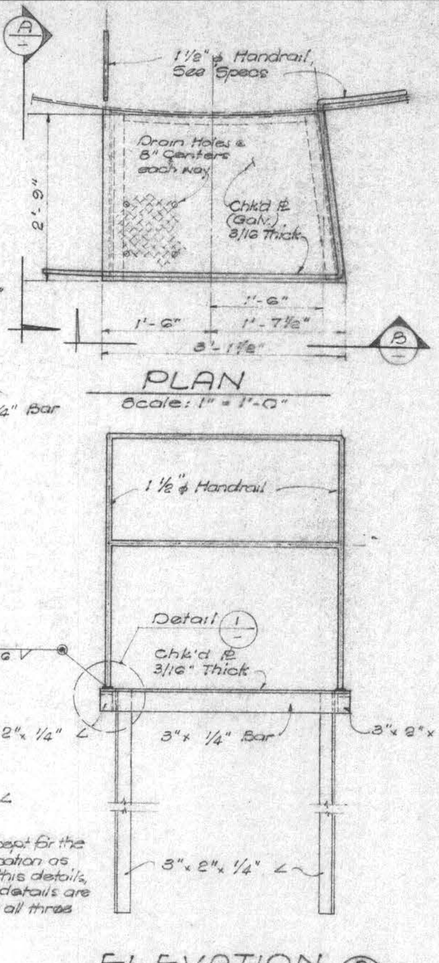


ELEVATION
DEVELOPED VIEW
Not to Scale

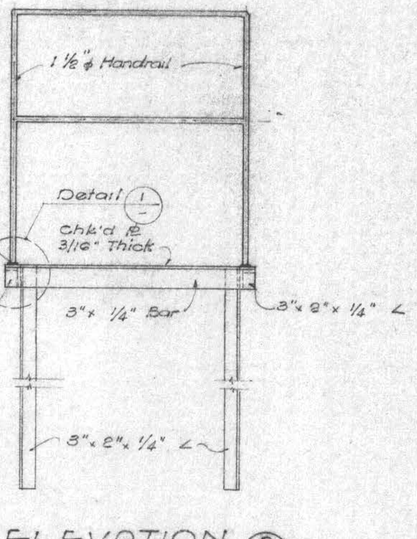


ELEVATION (A)
Scale: 1" = 1'-0"

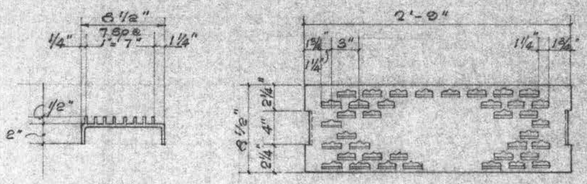
DETAIL (1)
Scale: 1 1/2" = 1'-0"



PLAN
Scale: 1" = 1'-0"

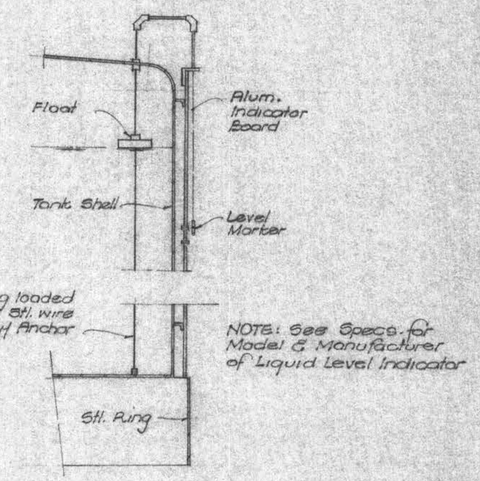


ELEVATION (B)
Scale: 1" = 1'-0"



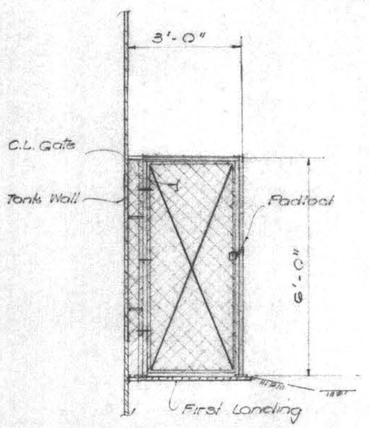
SECTION PLAN

STAIR TREAD
Not to Scale

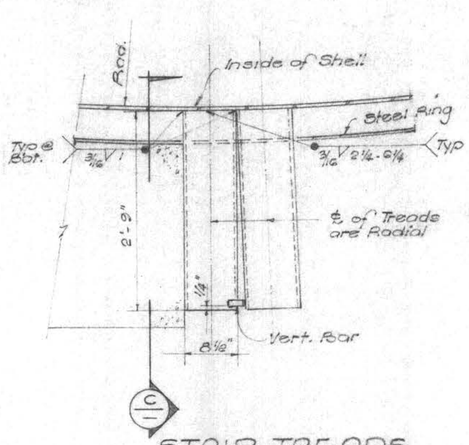


NOTE: See Specs. for Model C Manufacturer of Liquid Level Indicator

LIQUID LEVEL INDICATOR
Not to Scale



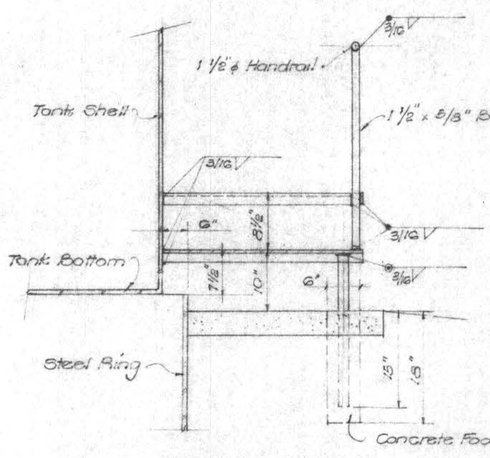
GATE ELEVATION
Not to Scale



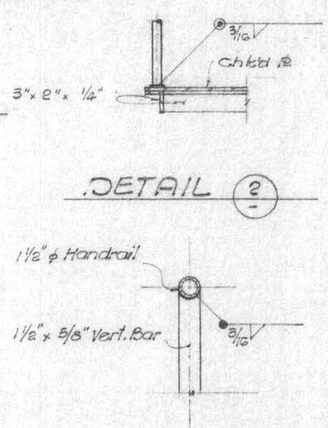
STAIR TREADS
Scale: 1" = 1'-0"

STAIRWAY DETAILS
ALTERNATE 'A'

PLATFORM



SECTION (C)
Scale: 1" = 1'-0"



DETAIL (3)
Not to Scale

AS BUILT
DATE 2/29/79

NO.	DATE	REVISIONS	BY

JOB NO. 247
DRAWN T.C. DATE 3/30/78
CHECKED a.f.p. DATE

RCE 13512 4/18/78 DATE

GRAM/PHILLIPS ASSOCIATES, INC.
1000 EAST WALNUT STREET/SUITE 223/PASADENA, CALIFORNIA 91106/PHONE (213) 681-0291
ENGINEERING/RESEARCH ENVIRONMENTAL SYSTEMS

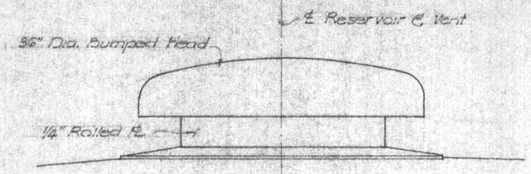
MAMMOTH COUNTY WATER DISTRICT
Mono County, California

MISCELLANEOUS DETAILS

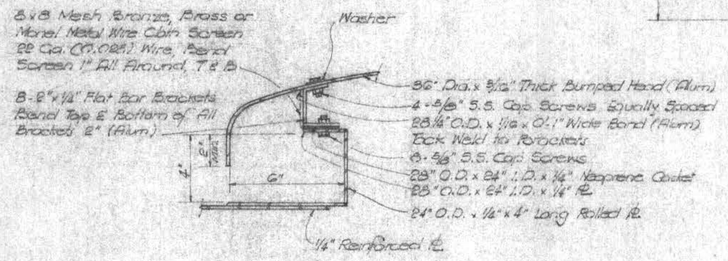
SHEET 17 OF

10291

8/77 DIETERICH-POST CLEARPRINT 1000H



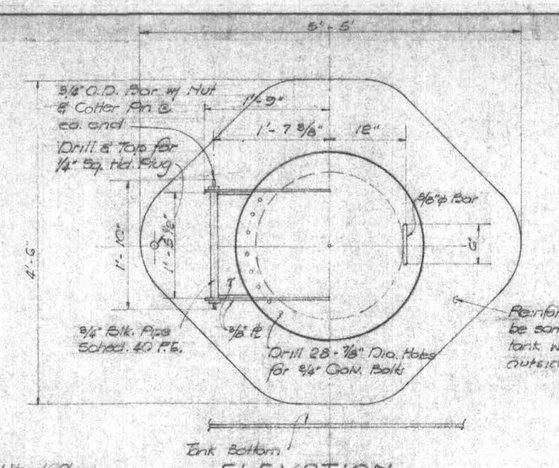
ELEVATION



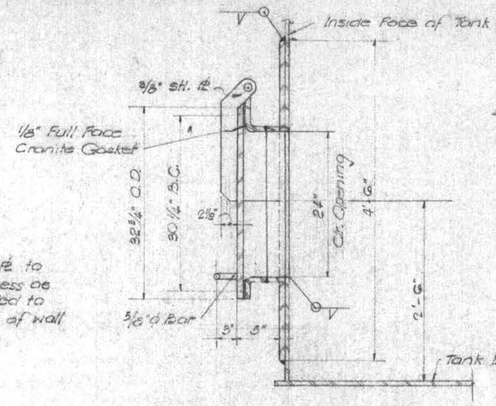
SECTION

ROOF VENT DETAILS (1)

Not to Scale

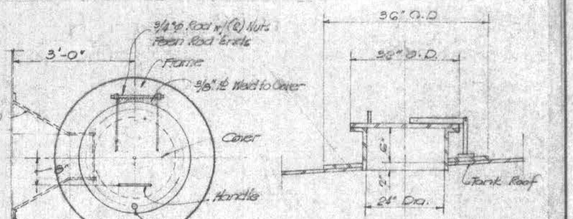


ELEVATION



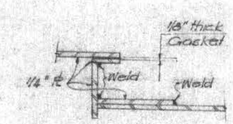
SECTION

ACCESS MANHOLE DETAIL (5)

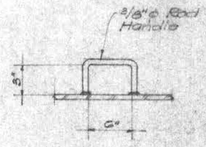


PLAN

SECTION



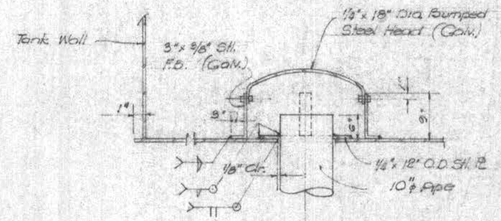
FRAME DETAIL



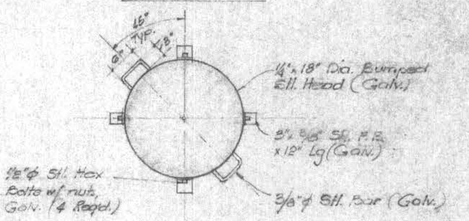
HANDLE DETAIL

ROOF ACCESS HATCH DETAILS (4)

Not to Scale



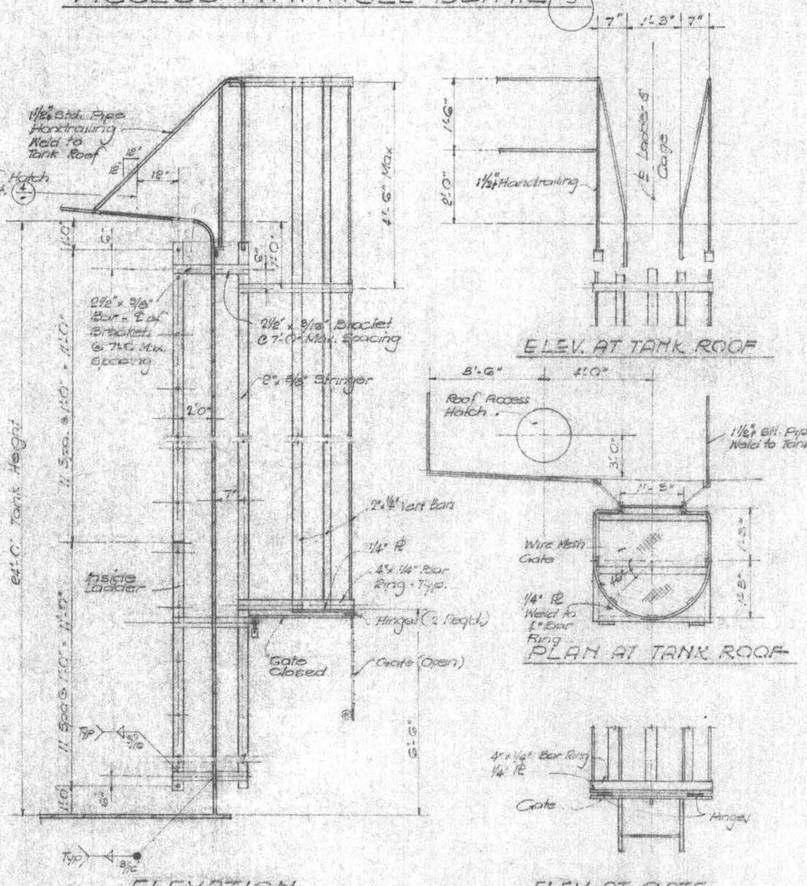
SECTION



PLAN

INLET-OUTLET DETAIL (6)

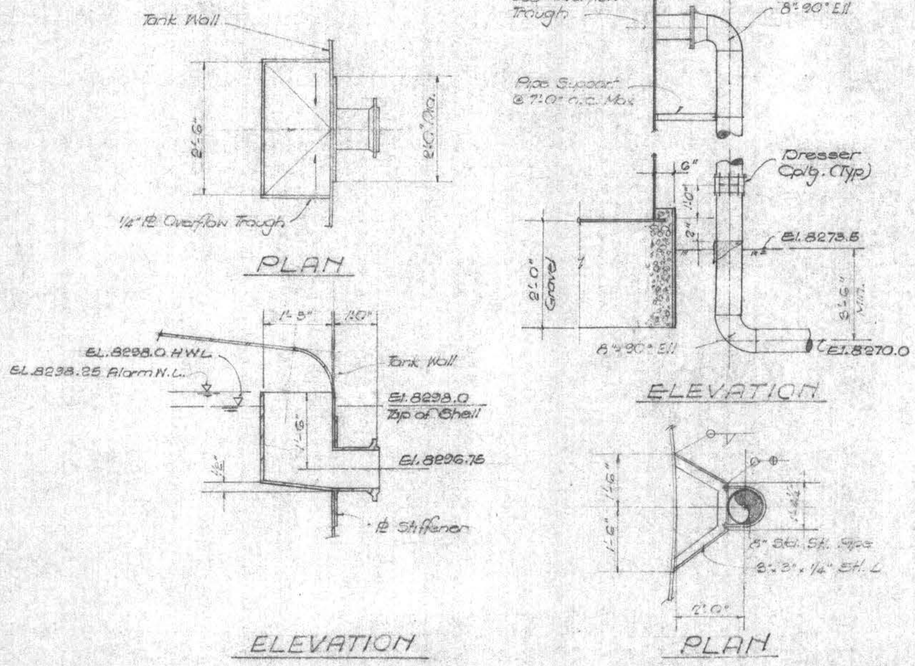
Not to Scale



ELEVATION

INTERIOR & EXTERIOR LADDER DETAILS (3)

(ALTERNATE "B")



ELEVATION

PLAN

OVERFLOW TROUGH DETAILS (2)

Not to Scale

AS BUILT

DATE 9/29/79

NO.	DATE	DESCRIPTION REVISIONS	BY	CHECKED	DATE
				D.F.P.	

JOB NO. 427
DRAWN B.C. DATE
CHECKED D.F.P. DATE

D. F. Phillips 4/18/78
RCE 12,312 DATE

GRAM/PHILLIPS ASSOCIATES, INC.
1000 EAST WALNUT STREET/SUITE 223/PASADENA, CALIFORNIA 91106/PHONE (213) 681-0291
ENGINEERING/RESEARCH ENVIRONMENTAL SYSTEMS

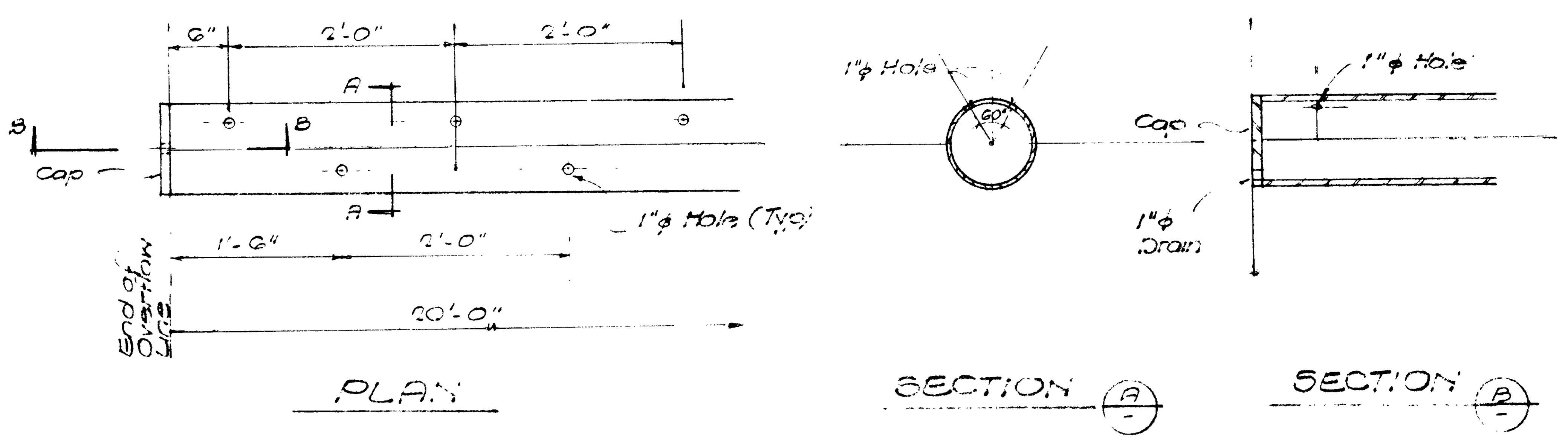
MAMMOTH COUNTY WATER DISTRICT
Mono County, California

SCHED. III - WATER TANK DETAILS

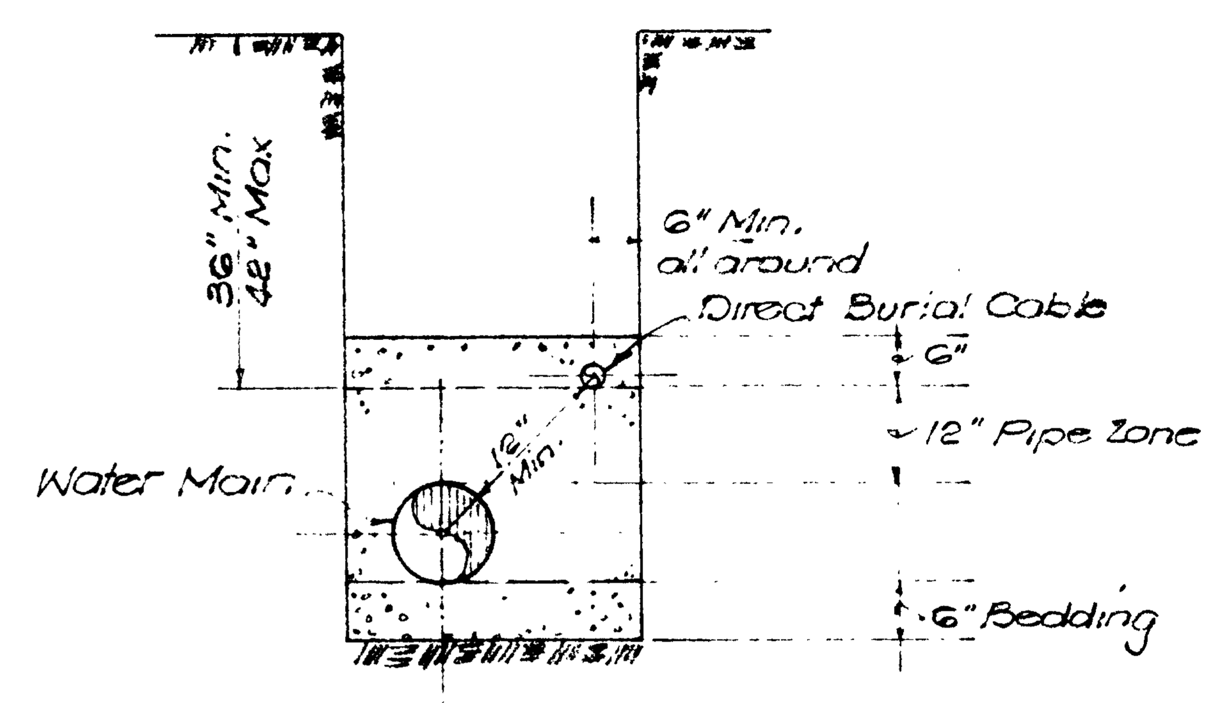
10292

SHEET 18 OF 23

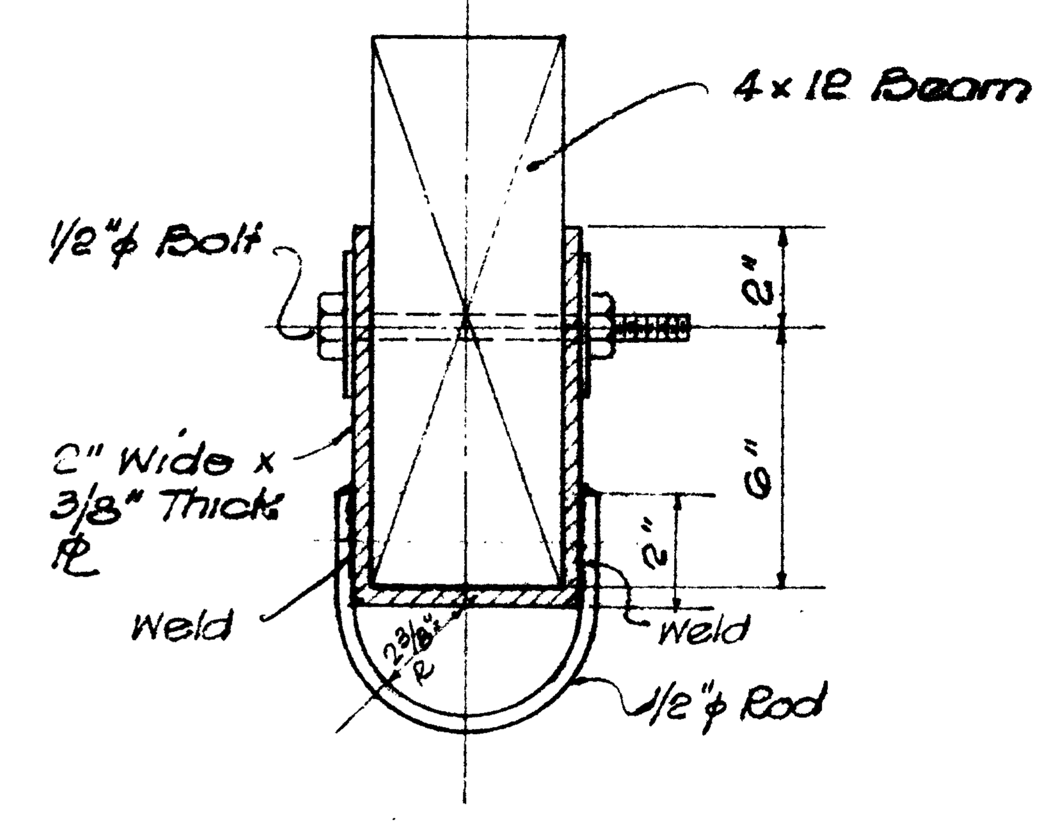
8/77 DIETERICH-POST CLEARPRINT 1000H



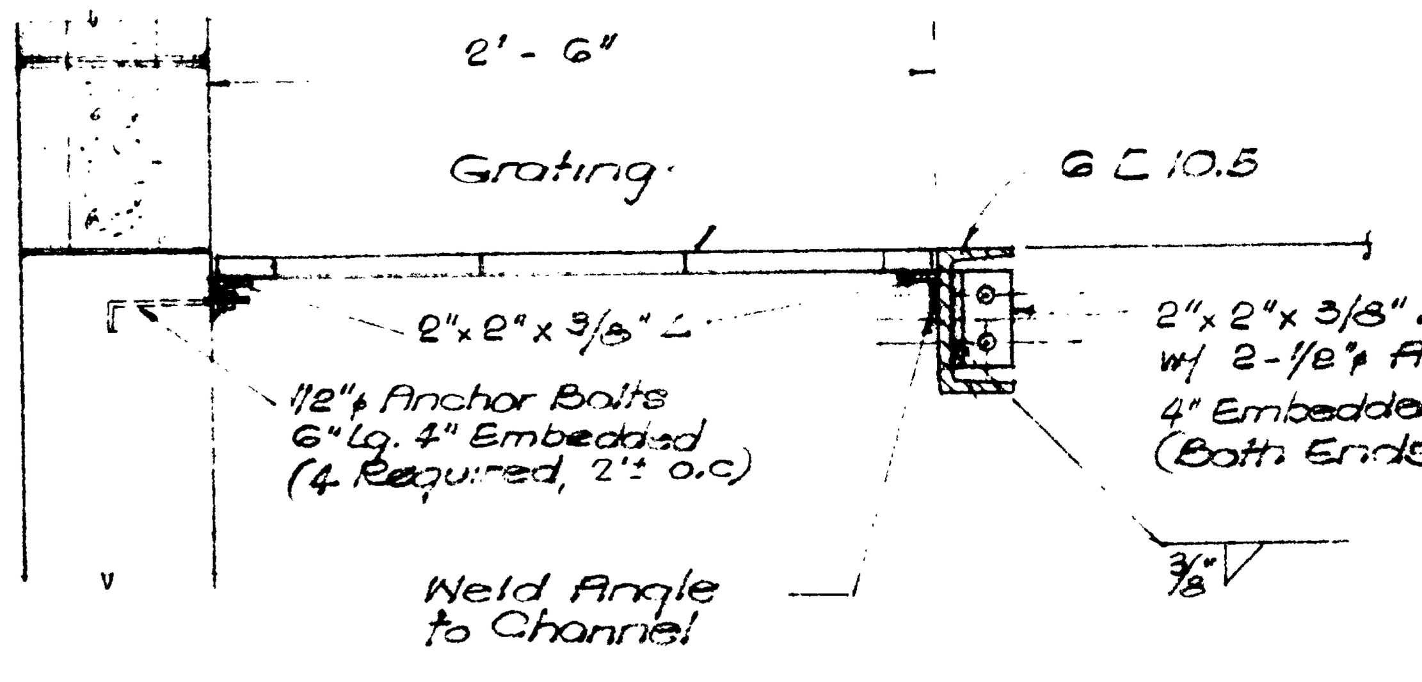
DETAIL 1/14
1" = 1'-0"



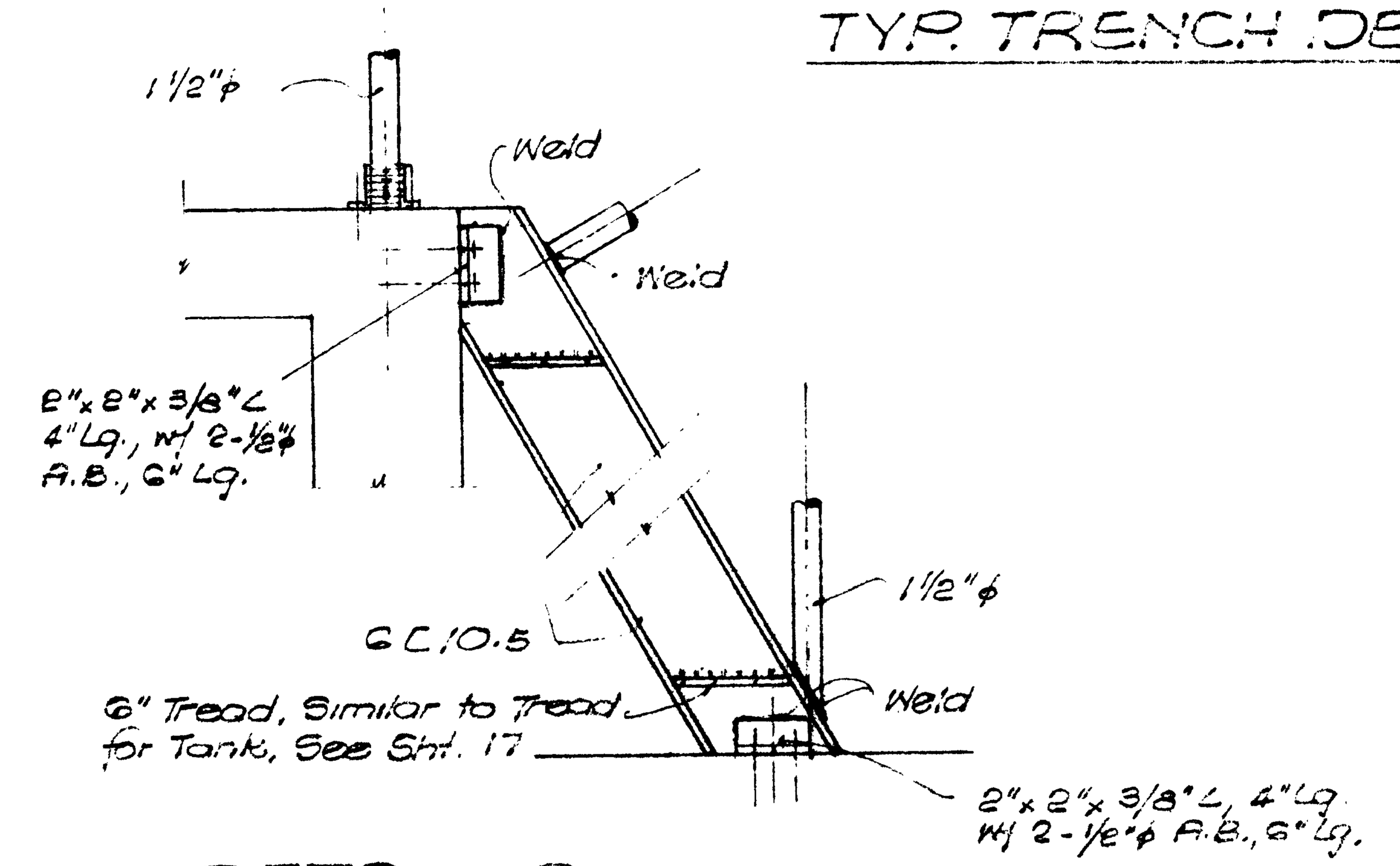
TYP. TRENCH DETAIL



DETAIL 4/15
3" = 1'-0"



DETAIL 2/15
1 1/2" = 1'-0"



DETAIL 3/15
1 1/2" = 1'-0"

AS BUILT
DATE 9/29/79

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JOB NO. 247
DRAWN b.c. DATE 4/14/78
CHECKED d.f.p. DATE 4/14/78
RCE 13,512 DATE 4/18/78

GRAM/PHILLIPS ASSOCIATES, INC.
1000 EAST WALNUT STREET/SUITE 223/PASADENA, CALIFORNIA 91106/PHONE (213) 681-0291
ENGINEERING/RESEARCH
ENVIRONMENTAL SYSTEMS

PROFILES & MISCELLANEOUS DETAILS

10294

SHEET 21 OF 23

3/74 DIETERICH-POST CLEARPRINT 1000H

Attachment 3
Tank Dive Inspection Reports

Mammoth Community Water District

T-7 Tank (Bluffs) Project Report

October 23, 2019

MUNICIPAL DIVING

YOUR POTABLE WATER SPECIALIST

PO Box 2007 Valley Center, CA 92082
(619) 980-7900
woody@municipaldiving.com

Municipal Diving Services, Inc.
T-7 Reservoir Project Report

Scope

Municipal Diving conducted an inspection (interior and exterior) and interior cleaning of T-7 Tank for the Mammoth Community Water District. This inspection qualifies as a "Comprehensive Tank Inspection" as defined by the AWWA and recognized by the EPA. This inspection is defined as a "survey" inspection by NACE International.

Inspection Procedure

The face of a clock is used to reference locations on the interior or exterior of water storage facilities. The starting point, 12:00, is always the access hatch located on the roof of the facility. Our inspections are always conducted clockwise. For example, if an overflow line is located one-twelfth of the way around the facility, its location would be referred to as 1:00. When we refer to the rings that comprise the shell of steel water storage tanks, the rings are numbered from the ground up. *Underlined statements = see recommendations*

Your Inspector

Your inspection was conducted by and this report finalized by Eric "Woody" Morrison. Woody is a NACE Coating Inspector with 15 years of experience inspecting potable water tanks and the associated exterior and interior/immersion service coatings and liners.

Facility Details

T-7 Tank is a welded steel potable water storage tank located in Mammoth Lakes, California. The facility was erected by Pacific Tank Company, Inc. in 2008. T-7 Tank is 27' high (3 rings) with a diameter of 87'. Approximately 17' of water was in the facility at the beginning of the project. The tank has a storage capacity of 1MG.

The accompanying video file should be used to reference the details of this report.

EXTERIOR OF T-7 TANK

SECURITY – A security gate is located on the access road. The gate was securely padlocked.

FOUNDATION – Overall Condition: Good
The tank was constructed on a concrete foundation/ ringwall. Slight hairline cracks are present in a few areas in the concrete foundation/ringwall (considered normal). Erosion is not present at the base of the facility.

EXTERIOR LADDER– Overall Condition: Good
The ladder, ladder guard and safety cage are located at 12:00. Chipped paint is present in a few very small areas resulting in exposed primer or light surface corrosion. The ladder guard was securely padlocked at the beginning of the inspection and is in good condition.

ANCHOR BOLTS: N/A

TARGET: N/A

MANWAYS – Overall Condition: Good
T-7 Tank has two round shell manways located at 5:00 and 10:00. Corrosion, cracked or damaged coating is not located on the manways. The coating on the 5:00 manway has been patched in a couple of areas and the patches are in good condition. All attachment hardware is present and in good condition. The manufacturer's nameplate is attached to the shell above the 10:00 manway. Water leakage is not located on the two manways.

OVERFLOW LINE – Overall Condition: Good
The overflow line exits the tank in the middle of ring #3 at 11:30. Corrosion, cracked or damaged coating is not located on the overflow line. A vent is located in the middle of the overflow line. Both the fine mesh screen and the stainless-steel bands securing the screen are in good condition without corrosion. Voids are not located in the screen and it appears to be #24 mesh or smaller. The overflow line is secured to the shell by two steel stand-offs. Chipped paint has resulted in exposed primer on one of the stand-offs.

LEVEL SENSOR, DRAIN & COMMON LINES: The lines exit/enter the tank through the floor. Reference interior inspection section of the report.

SHELL – Overall Condition: Good - Fair
The coating and patched areas on the shell are glassy and reflective. The coating is not chalking. Corrosion is not located on the shell. The shell has been scratched and scuffed in many areas on ring #1 (6:00) and in a small area on ring #3 (7:00). The scratched coating on ring #1 has resulted in a couple of small areas of exposed primer and some light surface corrosion. Graffiti is present at the base of the shell at 8:00. The shell is significantly bowed/bent to the left of the overflow line on ring #1. *It should be noted that the inspection was conducted from grade level. Scaffolding or ladders were not erected for the inspection.*

VENT – Overall Condition: *Appears to be Good*
One vent is located at 3:00 near the edge of the roof. The vent structure terminates over the side of the roof structure. The paint on the vent appears to be in good condition. Safety concerns prevented a thorough inspection of the vent structure. *The vent screen is only visible from the base of the facility which prevented a thorough inspection of the condition of the screen.*

SAFETY RAILING – Overall Condition: **Poor**
A section of the safety railing is missing. There is no safety railing between the access hatch and edge of the roof. A section of railing located between the top of the ladder and the roof has been significantly bent. The coating on the remainder of the railing is in fair - good condition. In a few locations, chipped or delaminating paint has resulted in exposed primer and light surface corrosion on the railing. The remaining section of the railing appears to be securely welded to the roof/knuckle.

ACCESS HATCH – Overall Condition: Good
The access hatch located at 12:00 was securely padlocked at the start of the inspection. The hatch appears to close securely. Chipped coating has resulted in a few areas of light surface corrosion on the interior of the access hatch and on the lip of the hatch. A gasket is not present.

ROOF – Overall Condition: *Appears to be Good - Fair*
The design/pitch of the roof and lack of safety hardware prevented a thorough inspection of the roof structure. The coating is not glassy; it is flat/not reflective. The coating is not chalking. Corrosion is present in a few areas where large scratches and scuffs are located on the roof near the access hatch. Chipped/scratched paint and exposed primer were observed in many additional areas near the access hatch. Additional light surface corrosion was observed in a couple of small areas. Graffiti is not visible on the roof.

SAFETY CLIPS/HARDWARE: N/A

CATHODIC PROTECTION SYSTEM: N/A

EXTERIOR INSPECTION SYNOPSIS

Condition of Exterior Coating – Corrosion/Damage

Location	Corrosion or damage %	Details
Foundation	<1%	Hairline cracks are present (normal).
Vertical Wall	<1%	The coating has been scratched in a few areas. Minimal corrosion is present on the shell.
Ladder	<1%	Minimal corrosion is present on the ladder
Appurtenances	0	
Roof	<1%	The coating has been scratched in a few areas on the roof.

Damage/Corrosion/Coating Failure Analysis: The age of the coating and normal wear and tear is the likely cause of the delaminating coating and corrosion on the roof.

FINDINGS AND RECOMMENDATIONS - EXTERIOR

The exterior inspection has identified a couple of areas that should be closely monitored or addressed.

- We do not feel that the exterior will need to be recoated in the next 3 years.
- We recommend repairing the safety railing and replacing the missing components.
- We recommend continuing to patch damaged areas on the exterior of the tank. This will lengthen the lifespan on the coating.
- We suggest installing CONFINED SPACE placards on the manways.
- We suggest installing safety hardware on the roof.
- We suggest installing a gasket on the access hatch.

INTERIOR OF T-7 TANK

Unless otherwise noted, the interior of the facility is coated with epoxy.

NOTE ABOUT THE INTERIOR OF THE TANK: Water clarity was rated as excellent. Indications of vandalism or animal intrusion are not located on the interior of the facility.

INTERIOR LADDER: N/A

TARGET: N/A

ROOF STRUCTURE & KNUCKLE – Overall Condition: Good
Low water levels significantly hindered the inspection of the roof structure. Blistered coating was not visible on the roof structure. Cracked coating is located on the knuckle behind roughly 25% of the rafters which has resulted in light surface corrosion. Light surface corrosion and rust bleed were observed on the knuckle, roof plate weld seams, ring girders, attachment hardware used to secure ring girders and on rafter tails. Many of the areas of corrosion on roof plate weld seams are located at the transition from roof - knuckle. All rafters appear to be securely attached to the hatplate and welded to ring girders. All rafters are securely bolted to rafter tails and all rafter tails appear to be securely welded to the shell. All ring girders also appear to be securely bolted to columns. Voids are not located in the roof structure.

HATPLATE – Overall Condition: Good – Fair
Low water levels significantly hindered the inspection of the hatplate. Blistered coating was not visible to the diver/inspector. Coating defects have resulted in light – possibly moderate corrosion in many small locations on the edge of the hatplate. The rafters appear to be securely attached to the hatplate.

OVERFLOW WEIR BOX – Overall Condition: Good
Extremely light surface corrosion is present in a few areas on the weld that connects the bottom of the weir box to the shell. The weir box appears to be securely welded to the shell.

SHELL – Overall Condition: Fair – **Poor**
The coating on the shell of T-7 Tank has continued to deteriorate since our last inspection in 2016. The coating is flat/ not reflective. The coating is chalking moderately. **Both ruptured coating blisters and cracked coating have resulted in over 1000 areas of pinhole corrosion on each ring below the waterline. Concentrated clusters of corrosion are located near the weld that connects the two rings and at the base of the shell.** Additional corrosion is located in a few areas on the weld between rings #2 and #3. Patches are present in many areas on the shell. Some light surface corrosion is located on the edges of patches and a couple of patches have failed. The shell is lightly – moderately stained in many areas near the waterline. Light surface corrosion was also observed above the waterline at the transition from knuckle - roof structure and where rafter tails are welded to the knuckle.

FLOOR – Overall Condition: Fair
Between 1/16” – 1/8” of sediment was present over 90% of the floor. The sediment consisted of extremely fine silt and a few small pieces of corroded metal. All loose sediment and debris were removed from the floor of the tank. The coating is dull, not reflective. The coating is chalking moderately. Coating defects have resulted in pinhole type or light surface corrosion in many small locations on the floor. Significant corrosion is not present. The bulk of the corrosion is the result of tiny ruptured coating blisters.

MANWAYS – Overall Condition: Good
Coating defects have resulted in a few areas of pinhole type corrosion on each manway. Light – possibly moderate corrosion is present in a couple of areas between the manways and gaskets. Indications of water leakage are not present.

COMMON LINE – Overall Condition: Good
The approximately 16" common line enters the facility through the floor at 11:00. A 6" silt stop is located at the end of the common line. Coating defects/corrosion are not present on the exterior of the silt stop. The interior of the silt-stop and line are heavily stained. Obstructions were not visible on the interior of the line. The tank was not isolated during the project. Water was entering the facility. A slight accumulation of corroded metal flakes was present on the floor around the common line which has stained the epoxy coating.

LEVEL SENSOR LINE – Overall Condition: Fair
The level sensor line exits the facility through the floor next to the common line. The level sensor line is approximately 2" in diameter. Moderate - dense corrosion is present in a few areas on the interior lip of the line. Obstructions do not appear to be present.

DRAIN LINE – Overall Condition: Good
The 12" drain line exits the facility through a drain trough in the floor at 11:30. The recessed area is located approximately 10' from the shell. Coating blisters are not present. Pinhole corrosion is present in a couple of areas on the lip of the trough and line. Patches are present on the lip of the line. Corrosion was observed on the edge of one patch. Obstructions are not located on the interior of the line.

SUPPORT COLUMNS – Overall Condition: Fair - **Poor**
The condition of the coating on columns has continued to deteriorate since our last inspection in 2016. Eight steel support columns and a centerpole are located on the interior of the tank. **Both ruptured coating blisters and cracked coating have resulted in pinhole corrosion on each column. The number of individual areas of corrosion on each column ranges from roughly 40 to over 500 on the centerpole**. Additional areas of pinhole corrosion are present on baseplates. Low water levels hindered the inspection of the columns above the waterline. The majority of the coating above the waterline appears to be in good condition. Light surface corrosion is present in a few areas on attachment hardware at the tops of columns. A few epoxy patches are present on the support columns and are in good condition.

INTERIOR INSPECTION SYNOPSIS

Condition of Interior Coating – Corrosion and Blisters

Location	Corrosion %	Blisters %	Details
Shell	15%	20%	Corrosion is present in over 2000 areas on the shell below the waterline. Additional unruptured blisters are also present.
Floor	1%	1%	Corrosion is present in many small areas where blisters have ruptured.
Roof	<1%	0	A small area of moderate corrosion is present on a rafter. The remainder of the corrosion is minor.
Hatplate	1%	0	Corrosion is present on the edge of the hatplate.
Column(s)	5%	4%	Corrosion is present in 40 – 500 areas on each column.
Common/Drain and Overflow Lines	<1%	0	Minimal corrosion is present
Nozzle, stubbed-out line, level sensor lines	20%	0	Moderate – dense corrosion is present on the level sensor.
Manway(s)	<1%	0	Minimal corrosion is present

Coating Failure Analysis: Ruptured blisters are the primary cause of the corrosion in the facility. Cracked coating is also a contributing factor. The most common causes of coating blisters are solvent entrapment (manifests immediately) and soluble salts (manifests over time). Temperature fluctuations above/at the waterline are contributing to the cracked coating observed near rafter tails.

Degree of Pitting Observed by Divers: Metal loss may be taking place on the edge of a rafter.

Depth/Type of Sediment: Up to 1/8” of fine silt and corroded metal flake.

FINDINGS & RECOMMENDATIONS - INTERIOR

The inspection of T-7 Tank has identified a few areas that should be closely monitored or addressed:

- The condition of the coating on the shell and columns has continued to deteriorate since our last inspection in 2016.
- We feel the tank will likely need to be recoated in the next 3 years. We strongly recommend recoating the facility before any significant metal loss begins to take place.
- Any additional efforts to repair the failing coating are not recommended.
- Until the facility can be recoated, we recommend closely monitoring the corrosion on the interior of the tank.
- When the facility is recoated, we recommend stripe coating all sharp edges including manways doors, baseplate edges, rafter tails, welds etc.
- We recommend that all tanks be maintained on a 3-year schedule. AWWA in M42 - Chapter 8 (rev. 2013) states: *"Tanks should be washed out and inspected at least once every three years, and where water supplies have sediment problems, annual washouts are recommended"*.
- Due to the accelerated and widespread corrosion, we suggest inspecting the facility every two years until it can be recoated.

We would like to thank you for retaining our services. Should further information or assistance be required, please contact Municipal Diving at (619) 980-7900 or woody@municipaldiving.com

Sincerely,

E. Woody Morrison 10/29/2019
CEO - Municipal Diving
NACE Coating Inspector Level 2 – Certified #74632

Municipal Diving Services, Inc.
PO Box 2007
Valley Center CA 92082
619-980-7900
woody@municipaldiving.com

Mammoth Community Water District

Lake Mary Recovery Tank Project Report

September 22, 2022

MUNICIPAL DIVING
YOUR POTABLE WATER SPECIALIST
PO Box 2007 Valley Center, CA 92082
(619) 980-7900
woody@municipaldiving.com

Municipal Diving Services, Inc.
Lake Mary Recovery Tank Project Report

Facility Details

Lake Mary Recovery Tank is a welded steel raw water storage facility located in Mammoth Lakes, California. The facility was erected by Pittsburg-Des Moines Steel Company in 1979. Lake Mary Recovery Tank is 8' high (1 ring) with a diameter of 35'. 6' of water was in the facility at the beginning of the project. The facility has a storage capacity of 0.05MG.

Scope

Municipal Diving conducted an exterior inspection and interior inspection/wet cleaning of the facility for the Mammoth Community Water District. The inspection qualifies as a “Comprehensive Facility Inspection” as defined by the AWWA and recognized by the EPA. This inspection is defined as a “survey” inspection by NACE International (now AMPP).

Inspection Procedure

The face of a clock is used to reference locations on the interior or exterior of water storage facilities or reservoirs. The starting point, 12:00, is always the access hatch located on the roof of the facility. Our inspections are always conducted clockwise. For example, if an overflow line is located one-twelfth of the way around the facility, its location would be referred to as 1:00. When we refer to the rings that comprise the shell of steel water storage facilities, the rings are numbered from the foundation up. Underlined Text = *See Recommendations*.

Standards

We adhere to the American Water Works Association standards for inspecting and repairing water tanks, AWWA D101-53. All dive personnel and equipment are fully disinfected according to AWWA Standard C652-19 before entering potable water facilities. All Confined Space operations conducted in your facilities are in compliance with all applicable OSHA, AWWA, and ADCI standards, procedures, and regulations (including 1910.401 thru 1910.441). All repair products are NSF-61 approved for use in potable water facilities.

Your Inspector

Your inspection was conducted by and this report finalized by Eric “Woody” Morrison. Woody is a NACE trained coating inspector with 18 years of experience inspecting potable water facilities and the associated exterior and interior/immersion service coatings and liners.

DFT Measurements

Any DFT measurements that were conducted on the exterior shell and/or roof were done in accordance with SSPC – PA2, Type 1 (magnetic pull-off gauges). Readings were rounded/averaged to the nearest .5 mils.

Repairs

Any areas that were repaired/patched were done so in accordance with SSPC SP2 – Hand Tool Cleaning for steel surfaces. All areas were patched using AquataPoxy A-6 Thick, which has NSF-61 approval for use in potable water storage facilities.

Additional References

The accompanying video file should be used to reference the details of this report.

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EXTERIOR OF LAKE MARY RECOVERY TANK

SECURITY – A security gate/fence is not located around the tank or facility.

FOUNDATION – Overall Condition: Good
The facility was erected on a rock foundation. A grade ring is located around the facility and the visible portions are in good condition without corrosion. In a few areas, the grade ring is completely buried. Erosion is not present at the base of the facility.

ANCHOR BOLTS: N/A

LADDER – Overall Condition: Fair
The ladder and ladder guard are located at 12:00. Delaminating coating has resulted in large areas of exposed primer on the interior of the ladder guard and in a few areas on the ladder rungs and rails. Minimal corrosion is present. The ladder guard was securely padlocked at the beginning of the project. The ladder appears to be securely welded to the shell. A safety cage is not present. A confined space placard is present on the ladder guard.

TARGET – Overall Condition: **Poor**
A target is located on the shell at 2:00. **The bulk of the markings on the target have delaminated. The level slide is not operational and is resting at the base of the target.**

MANWAY – Overall Condition: Good - Fair
The tank has one round manway located at 3:00. Corrosion is located in one area on the arm for the manway. Delaminating coating has resulted in a few small areas of exposed primer. Water leakage is not located on the manway.

SHELL – Overall Condition: Good - Fair
The coating on the shell is glassy and reflective. The coating is not chalking. Corrosion is not located on the shell. The coating has been chipped in a few areas resulting in exposed primer. Exposed primer is also located in a few large areas at the transition to roof (roof lip) and tub ring between 8:00 and 10:00. Indications of vandalism are not present on the shell. It should be noted that the inspection was conducted from grade level. DFT measurements were conducted on the shell in three sample sites: the east, south and west sides of the facility. Average Mil thickness readings (in order) were 8.5/8.5/9.0 mils. It should be noted that ladders or scaffolding were not erected to inspect the shell.

INLET – OUTLET - DRAIN LINES – The lines enter/exit the facility through the floor. Reference interior section of this report.

OVERFLOW LINE – Overall Condition: Fair
The overflow line exits the facility near the top of ring #1 at 4:00. Light corrosion is present in a few areas on a bolted flange. The coating on the exterior of the line has been scratched/scuffed in a few areas and exposed primer is located in these areas. The screen located over the gap between sections is in good condition and free of corrosion or voids. The overflow line is secured to the shell by one steel standoff. The stand-off appears to be securely welded to the shell. The line continues below grade outside the grade ring.

ACCESS HATCH – Overall Condition: **Extremely Poor**
The access hatch was securely closed and padlocked at the start of the project. The hatch appears to close securely. **Extensive corrosion due to failed coating is located on the interior of the hatch lid . Coating failure is located over roughly 70% of the hatch with the remainder of the coating in the early – mid stages of failure**. Corrosion was also observed in a few areas on the exterior of the hatch. Gaskets are not present on the sides/lip of the hatch.

SAFETY RAILING – Overall Condition: Good
A safety railing is located at the edge of the roof at the top of the ladder and on either side of the access hatch. Damaged coating has resulted in roughly 15 areas of exposed primer on the railing. The railing appears to be securely welded to the roof.

ROOF STRUCTURE – Overall Condition: **Extremely Poor**
The coating on the roof is flat/dull. **The coating is chalking heavily. Light – moderate corrosion due to failed/cracked coating is located over roughly 5% of the surface area of the roof. Exposed primer also due to failed coating is located over roughly 7% of the roof. In many additional areas, primarily near the edge of the roof, the coating is cracking and beginning to fail/delaminate. Failed or failing coating is located over 20% of the roof**. Voids are not located in the roof. DFT measurements were conducted on the roof in three separate locations: 2:00, 6:00 and 10:00 midway between the center vent and edge of the roof. Average Mil thickness readings were 5.5/4.0/4.5 mils

VENT – Overall Condition: **Extremely Poor**
A center vent is located on the roof. **Corrosion has consumed the metal on the vent in many small areas (1/2" – 1/32" in diameter in over 30 locations) on the top and sides of the vent cap**. The design of the vent prevented a thorough inspection of the interior. We did observe two layers of screen, one small and one medium mesh. There appeared to be voids in the fine mesh screen.

SAFETY CLIPS/HARDWARE – Safety hardware is not located on the roof.

EXTERIOR INSPECTION SYNOPSIS

Condition of Exterior Coating – Corrosion/Damage

Location	Corrosion or damage %	Details
Foundation	0	
Vertical Wall	<1%	Small chips and some delamination is taking place.
Ladder	10%	Large areas of exposed primer are present on the ladder guard.
Appurtenances	1%	Exposed primer and minor corrosion are present on the manway and overflow line.
Roof	20%	Widespread coating failure, exposed primer and corrosion are present.

Damage/Corrosion/Coating Failure Analysis: The coating on the roof is failing, likely due to the age of the coating and exposure to the sun.

FINDINGS AND RECOMMENDATIONS - EXTERIOR

The exterior inspection has identified a few areas that should be closely monitored or addressed.

- We recommend recoating the roof before corrosion begins to consume a hole in the metal.
- We recommend patching the holes in the vent cap and repairing the fine mesh screen to prevent nuisance insects from breeding in the tank.
- When the facility is next inspected or rehabilitated, we recommend repairing the target.
- We suggest installing a CONFINED SPACE placard on/next to the manway.
- We suggest installing safety hardware on the roof.

INTERIOR OF LAKE MARY RECOVERY TANK

The interior vertical surface and roof appear to have been coated with SuperTank Solution or a similar product. The floor is coated with coal tar.

NOTE ABOUT THE INTERIOR: Water clarity was rated as poor with roughly 4' of visibility. Indications of vandalism or animal intrusion were not present on the interior of the facility.

INTERIOR LADDER - Overall Condition: Fair
Corrosion is present in a few areas where the coating on the ladder has cracked. The coating on the ladder is stained below the waterline. The ladder is securely welded to the shell by two stand-offs.

OUTLET LINE – Overall Condition: Unknown – Fair
The outlet line exits the tank through the floor at 12:30 roughly 2' from the shell. A baffle and silt stop are located on the line. The baffle prevented an inspection of the interior of the line. Light corrosion was observed on the silt stop and hardware for the baffle.

TARGET - Overall Condition: **Extremely Poor**
The guide wires for the target are slack in the water column and not attached to the roof. Light corrosion was observed on both connection points on the floor for the guide wires. **A float is not present**.

LEVEL SENSOR PROBE AND CONDUIT – Overall Condition: Good
A conduit which houses the wire for the level sensor is suspended from the roof and is in good condition. The probe is located on the floor under the conduit and also appears to be in good condition.

FLOOR - Overall Condition: Fair
Sediment on the floor ranged in depth from 1/2" to 3" of sediment and debris. A large volume of both failed coating and small corroded metal flakes/chips was located on the floor. Up to 3" of debris was located at the base of the shell. A cable and flooded float were also removed from the floor. The coal tar coating on the floor is cracked in many areas. Corrosion was observed in roughly 250 small areas. Extensive corrosion or indications of metal loss are not located on the floor at this time.

MANWAY: Overall Condition: **Poor**
The majority of the coating near the edge of the manway door is cracking and has resulted in light corrosion. Moderate corrosion and more extensive coating failure is located on the hinge and arm for the door.

SHELL - Overall Condition: **Extremely Poor**
The bulk of the coating on the shell has failed resulting in exposed metal. Light surface corrosion is located over the majority of the shell. We estimate that the coating has failed and resulted in corrosion on roughly 45% of the shell both above and below the waterline with the remaining coating failing in large areas. Slight metal loss is taking place in large areas above the waterline.

OVERFLOW WEIR BOX – Overall Condition: **Extremely Poor**
The bulk of the coating on the weir box has failed resulting in exposed metal. Light surface corrosion is located over the majority of the weir box. We estimate that the coating has failed and resulted in corrosion on roughly 75% of the surface area of the overflow weir box. Slight metal loss is taking place in large areas. The weir box appears to be securely welded to the shell.

ROOF STRUCTURE – Overall Condition: **Extremely Poor**
The bulk of the coating on the roof has failed resulting in exposed metal. Light surface corrosion is located over the majority of the roof plates. We estimate that the coating has failed and resulted in corrosion on roughly 70% of the roof plates, the remainder of the coating is also failing/delaminating at this time. The bulk of the coating on rafters is in fair condition with some small areas of failure. **Slight metal loss is taking place in large areas on roof plates.** Twisted or bowed rafters are not present. Voids are not located in the roof.

HATPLATE – Overall Condition: Good
Minor corrosion was observed in a few areas on the edge of the hatplate and hardware. All rafters are securely bolted to the hatplate.

SUPPORT COLUMN - Overall Condition: **Extremely Poor**
The centerpole is the only column located on the interior of the tank. **The coating on the column has failed in many areas near and above the waterline resulting in light corrosion. The coating is cracking failing over roughly 40% of the column.** The centerpole is securely welded to the hatplate.

INLET LINE – Overall Condition: **Extremely Poor**
What appears to be an inlet line enters the facility through the floor next to the centerpole and terminates at the roof. The roughly 8” line is in identical condition to the centerpole. **The coating on the line has failed in many areas near and above the waterline resulting in light corrosion. The coating is cracking failing over roughly 40% of the inlet.**

DRAIN LINE – The outlet line appears to act as the drain line for the tank.

INTERIOR INSPECTION SYNOPSIS

Condition of Interior Coating – Corrosion and Blisters

Location	Corrosion %	Blisters %	Details
Shell	45%	0	Extensive coating failure and corrosion are present.
Floor	3%	0	Cracked coating and corrosion are present in small areas on the floor.
Roof	80%	0	The coating on roof plates has or is failing.
Hatplate	1%	0	Corrosion is present on hardware and the edge of the hatplate.
Column(s)	40%	0	Failed coating and corrosion is located over the top half of the centerpole.
Common/Drain and Overflow Lines	40%	0	Failed coating and corrosion is located over the top half of the inlet. Minor corrosion is present on the outlet.
Level sensor lines	0	0	
Manway(s)	15%	0	Cracked coating and corrosion are present on all components.

Coating Failure Analysis: The age of the coating is the cause of the failures and corrosion. It is unlikely that the tank has been recoated since construction.

Degree of Pitting Observed by Divers: Metal loss is taking place on the shell and roof.

Depth/Type of Sediment: Up to 3” of debris and silt

FINDINGS AND RECOMMENDATIONS - INTERIOR

- We feel that the interior of the tank will need to be recoated as soon as possible to prevent further metal loss.
- We strongly recommend conducting eleven-month warranty inspections after construction or re-coating of water storage facilities. Coating defects can usually be identified during warranty inspections.
- After recoating the tank, we recommend maintaining the Lake Mary Recovery Tank on a 3-year schedule. AWWA in M42 - Chapter 8 (rev. 2013) states: *"Tanks should be washed out and inspected at least once every three years, and where water supplies have sediment problems, annual washouts are recommended"*.

We would like to thank you for retaining our services. Should further information or assistance be required, please contact Municipal Diving at (619) 980-7900 or woody@municipaldiving.com

Sincerely,

E. Woody Morrison 10/06/2022
CEO - Municipal Diving

Municipal Diving Services, Inc.
PO Box 2007
Valley Center CA 92082
619-980-7900
woody@municipaldiving.com

Mammoth Community Water District

Tank #T2 Inspection, Cleaning and Coating Repair Report

September 12, 2018

MUNICIPAL DIVING
YOUR POTABLE WATER SPECIALIST
PO Box 2007 Valley Center, CA 92082
(619) 980-7900
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Municipal Diving Services, Inc.
Tank #T2 Inspection and Cleaning Report

Scope

Municipal Diving's inspection, cleaning and coating repairs of Tank #T2 for the Mammoth Community Water District This inspection qualifies as a "Comprehensive Tank Inspection" as defined by the AWWA and recognized by the EPA.

Inspection Procedure

The face of a clock is used to reference locations on the interior or exterior of water storage tanks or reservoirs. The starting point, 12:00, is always the access hatch located on the roof of the facility. Our inspections are always conducted clockwise. For example, if an overflow line is located one-twelfth of the way around the facility, its location would be referred to as 1:00. When we refer to the rings that comprise the shell of steel water storage tanks, the rings are numbered from the ground up.

Your Inspector

Your inspection was conducted by and this report finalized by Eric "Woody" Morrison. Woody is a NACE Coating Inspector Level 2 – Certified Inspector with 14 years of experience inspecting potable water tanks and the associated exterior and interior/immersion service coatings.

Facility Details

The facility is a welded steel potable water storage facility located in Mammoth Lakes, California. The date of construction is unknown. The tank is 24' high (3 rings) with a diameter of 60'. 19' of water was in the facility at the beginning of the inspection. The facility has a storage capacity of 0.5MG.

The accompanying DVD should be used to reference the details of this report.

EXTERIOR OF TANK #T2

SECURITY: A security fence and gate are not located around the facility.

STAIRWAY - Overall Condition: Good
The bulk of the coating located on the steel stairway is in good condition. Delaminating coating has resulted in exposed primer and light surface corrosion in a couple of small areas. The stairway is securely welded to the shell. The security gate leading to the roof was securely padlocked at the start of the project. A few stanchions for the handrail are bent.

FOUNDATION - Overall Condition: Good
The tank was constructed on a rock bed. A grade ring is located around the facility which is slightly bent in many small areas. Erosion is not present at the base of the tank. Dirt/debris are covering the tub ring in many areas.

OVERFLOW LINE - Overall Condition: Good
The overflow line is located at 1:00. The overflow line exits the tank near the top of ring #1. The line is secured to the shell by three steel stand-offs. The majority of the coating on the exterior of the line is in good condition. Chipped coating/exposed primer and light – possibly moderate corrosion was observed in a few areas. A vent and fine mesh screen are located on the lower third of the overflow line. The fine mesh screen is in good condition and free of voids that could allow contaminants to enter the facility.

MANWAY – Overall Condition: Good
The tank has one round manway. The manway is located at approximately 11:00. The majority of the coating on the manway is in good condition. Chipped/scratched coating has resulted in light surface corrosion in a couple of small areas. Water leakage is not located on the manway.

SHELL - Overall Condition: Good
The majority of the coating on the exterior of the shell is in good condition. The coating is chalking slightly. Chipped/scratched coating, exposed primer and light surface corrosion are located in many small areas. The coating has been patched in a few areas and the patches are in good condition. Corrosion is not present on patches. Graffiti or indications of water leakage are not located on the exterior shell.

INLET AND OUTLET LINES: The inlet and outlet lines enter the facility through the floor of the facility. Please reference interior section of this report.

TARGET – N/A

DRAIN LINE: The facility is without a dedicated drain line.

ACCESS HATCH - Overall Condition: Good
The access hatch located at 12:00 was securely padlocked at the start of the project. The hatch appears to close securely. A gasket is not located on the interior of the access hatch. Chipped/delaminating coating has resulted in exposed primer in one large area on the exterior of the hatch. Cracked/delaminating epoxy coating has resulted in light surface corrosion in a couple of areas on the interior of the access hatch.

SAFETY RAILING - Overall Condition: Good - Fair
The majority of the coating on the safety railing is in good condition. Scratched or cracked coating has resulted in light surface corrosion in a few areas on the safety railing.

ROOF - Overall Condition: Good
The majority of the coating on the exterior of the roof is in good condition. The coating is slightly chalking. Chipped coating, exposed primer and light surface corrosion are located in a couple of small areas. Graffiti or indications of vandalism are not present on the roof.

CP SYSTEM – N/A

SAFETY CLIPS/HARDWARE – N/A

VENT - Overall Condition: Good - Fair
One vent is located in the center of the roof. The coating on the vent is in good condition. The design of the vent prevented a thorough inspection of the interior of the vent structure. The screen is not visible to the inspector.

TELEMETRY PROBE – Overall Condition: Good
A probe enters the facility through the roof next to the access hatch. Voids are not present where the probe penetrates the roof.

EXTERIOR INSPECTION SYNOPSIS

Condition of Exterior Coating – Corrosion/Damage

Location	Corrosion or damage %	Details
Foundation	<1%	The coating on the tub ring is delaminating in a few areas.
Shell	1%	Scratches, chips and corrosion are present in roughly 30 areas on the shell.
Stairway	<1	Minimal corrosion is present.
Appurtenances	<1%	Delaminating coating and corrosion are present on the overflow and manway in a few areas.
Roof	1%	Delaminating coating/exposed undercoat or primer are present in a few areas. Light surface corrosion is present where the coating was scratched.

Damage/Corrosion/Coating Failure Analysis: The bulk of the corrosion on the exterior of the facility is the result of normal wear and tear. The chipped/scratched coating above 6' on the shell is most likely the result of vandalism.

FINDINGS AND RECOMMENDATIONS - EXTERIOR

The exterior inspection has identified a few areas that should be closely monitored or addressed:

- We suggest spot repairing the minimal corrosion/exposed primer on the exterior shell, overflow line, manway and roof.
- We recommend periodically removing the debris from the tub ring to prevent accelerated corrosion.
- We suggest that safety clips/hardware be installed on the roof.
- We recommend periodically removing the vent cap to fully inspect the vent screens.

INTERIOR OF TANK #T2

Unless otherwise noted, the interior of the facility was coated with an epoxy.

NOTES: Water clarity was rated as good. Indications of vandalism, animal intrusion or water leakage were not observed on the interior of the tank at the time of the inspection.

LADDER – Overall Condition : Fair
The coating on the ladder is beginning to fail in large areas near the waterline. The failed coating has resulted in large areas of light surface corrosion. Coating defects have also resulted in light - moderate corrosion in many areas on ladder rungs above the waterline. A few patches are present on the ladder and are in fair condition. The ladder is heavily stained. The ladder appears to be securely welded to the shell/vertical walls.

TELEMETRY PROBE - Overall Condition: Good
A telemetry line and probe enter the tank through the roof structure near the access hatch. Both are in good condition.

OUTLET LINE - Overall Condition: Good - Fair
The outlet line exits the tank through the floor at approximately 10:30. The line is approximately 10" in diameter. A steel baffle is located over the line. The steel supports for the baffle are securely welded to the floor. A steel silt stop is attached to the end of the line. The coating is heavily stained. Coating defects have resulted in a few areas of light – moderate corrosion on the baffle. The baffle prevented the inspector from documenting the condition of the interior of the line. The facility was not isolated during the project: water was not observed exiting the facility.

INLET LINE – Overall Condition: Good – Fair
The inlet line enters the tank through the floor at approximately 11:00. The line is approximately 10" in diameter. A steel baffle is located over the line. The supports for the baffle are securely welded to the floor. A steel silt stop is attached to the line. The coating is heavily stained. Patches are located on the baffle and are in good condition. The baffle prevented the inspector from documenting the condition of the interior of the line.

MANWAY- Overall Condition: Good - Fair
The coating on the interior and door for the manway is in good condition. Blistered or delaminating coating is not present. Coating defects are present in many small areas on the lip of the manway. The coating on the manway is stained. The epoxy patches previously applied to the manway are in good condition and free of corrosion. At the conclusion of the inspection/cleaning, all accessible defects were addressed by the diver. Defects located at gaps or voids were not able to be addressed.

SHELL - Overall Condition: Good - **Poor**
The condition of the coating ranges from poor – good. The majority of the coating on ring #1 and #2 is in good condition. Both rings are lightly – moderately stained, with heavy staining present on both rings near the inlet line. A brown residue is present in many areas on ring #1. A few small coating defects were observed on ring #1 @ 3:00. Patches previously applied to rings #1 and #2 are present and in good condition. **A small section of ring #2 is in poor**

condition. The coating at the top of ring #2 between 4:00 and 7:00 is beginning to fail. The failing coating has resulted in hundreds of areas of concentrated pinhole type corrosion. Ring #3 near the transition to ring #2 is also in poor condition. The coating here and on the weld that connects rings #2 and #3 is failing resulting in extensive corrosion. At the time of the inspection, the corrosion was light without metal loss. Extensive patching has been previously conducted on the weld between rings #2 and #3. The vast majority of the patches have failed. The patches have cracked and are delaminating. Corrosion is present on cracked patches and on the edge of patches. The high-water mark is stained on ring #3. Above the the stains, the bulk of the coating is in good condition. Light – moderate corrosion is present in many areas at the transition from shell to knuckle. The diver addressed three coating defects on ring #1. The remaining corrosion is beyond what can be addressed by divers. The corrosion was addressed with AquataPoxy A-6 Thick, which has NSF-61 approval for application in potable water storage facilities.

SUPPORT COLUMN – Overall Condition: Fair
The centerpole is the only support column located on the interior of the tank. The bulk of the coating on the base is in good condition. Patches previously applied on the baseplate are in good condition. Coating defects are present in a few areas near the top of the base which are not accessible to the diver. The coating is cracking in a couple of large areas near the hatplate, resulting in light surface corrosion. Blistered coating is not located on the baseplate or centerpole.

HATPLATE - Overall Condition: Fair - **Poor**
Light - moderate corrosion is present in many areas on the hatplate. **The epoxy coating on the hatplate is cracked/delaminating in many areas at the connection to column resulting in concentrated moderate corrosion. Cracked coating is also located on the edge of the hatplate near rafters, resulting in additional moderate – possibly dense corrosion.** All rafters appear to be securely attached to the hatplate.

OVERFLOW WEIR BOX - Overall Condition: Fair
Blistered coating does not appear to be present. Coating defects and failing coating have resulted in light surface corrosion in many large areas on the weir box and the weld that connects the box to the shell. Two areas of moderate corrosion are present on the weir box. The weir box appears to be securely welded to the shell.

ROOF & KNUCKLE - Overall Condition: Fair - **Poor**
Blistered coating was not observed on the roof structure. Rust bleed was observed in many areas on roof plate weld seams and rafters. The cracking in many areas on rafters has resulted in light surface corrosion. **Large concentrated areas of light – moderate corrosion are present near the hatplate.** Light – moderate corrosion is present in many areas on roof plate weld seams, rafter clips, rafter tails and the transition from knuckle to roof. All rafters appear to be securely attached to rafter tails and all rafter tails appear to be securely welded to the shell. Twisted or bowed rafters are not present.

FLOOR- Overall Condition: Good
The majority of the floor was covered with sediment to a depth of approximately 1/8". Up to 1/4" of sediment was present in a few areas on weld seams. The bulk of the sediment consisted of extremely fine silt. At the conclusion of the inspection, all loose sediment and debris was

wet cleaned from the floor. Blistered or delaminating coating is not present. A single coating defect was addressed by the diver. Epoxy patches are present on the floor in a few areas and are in good condition. The coating on the floor is discolored near the inlet and outlet lines. In many areas, small corroding metal flakes were observed on the floor. Indications of water leakage were not detected during the inspection of the floor.

INTERIOR INSPECTION SYNOPSIS

Condition of Interior Coating – Corrosion and Blisters

Location	Corrosion %	Blisters %	Details
Shell	8%	0	Extensive coating failure is present on rings #3 and #2.
Floor	<1%	0	The single area of corrosion was addressed by the diver.
Roof	5%	0	Light – moderate corrosion is present where the coating on rafters is beginning to fail near the hatplate. Additional light surface corrosion is present in many areas.
Hatplate	30%	0	The coating is cracking and delaminating on the edge of the hatplate and where the column is attached to the hatplate.
Column(s)	3%	0	The coating is beginning to fail in large areas above water resulting in concentrated light surface corrosion.
Inlet/Outlet/Drain and Overflow Lines	20%	0	Corrosion is present in large areas on the overflow weir box. The inlet and outlet lines are not visible due to the baffles.
Manway(s)	<1%	0	Light surface corrosion is present between the door and manway. The remaining corrosion was addressed.
Valves and Nozzles	n/a	n/a	

Coating Failure Analysis: The age of the coating is the primary cause of the corrosion on the interior of the tank. Temperature fluctuations above and near the waterline are also having a significant impact of the aging of the coating.

Degree of Pitting Observed by Divers: Metal loss is taking place in a few areas on the hatplate and the edges of rafters.

Depth/Type of Sediment: Up to 1/4" on weld seams of sediment and metal flakes.

FINDINGS AND RECOMMENDATIONS - INTERIOR

The interior inspection has identified a few areas that should be closely monitored or addressed:

- We do not feel that the facility will need to be recoated before the next 3-year inspection. However, the coating on the shell and roof should be closely monitored. Metal loss can significantly impact the cost of recoating a facility. The higher portions of the shell on tanks is most often thinner than the base. The tolerance for metal loss is less on ring #3 than ring #1.
- We do feel that the facility will need to be recoated in the next 4-5 years.
- We do not recommend further coating repairs by divers. We are no longer able to extend the life of the coating.
- We recommend that your facility be maintained on its current schedule. AWWA in M42 - Chapter 8 (rev. 2013) states: *"Tanks should be washed out and inspected at least once every three years, and where water supplies have sediment problems, annual washouts are recommended"*.
- We suggest that this facility be inspected and cleaned in September **of 2021** or sooner, or eleven months after the completion of any remedial work.

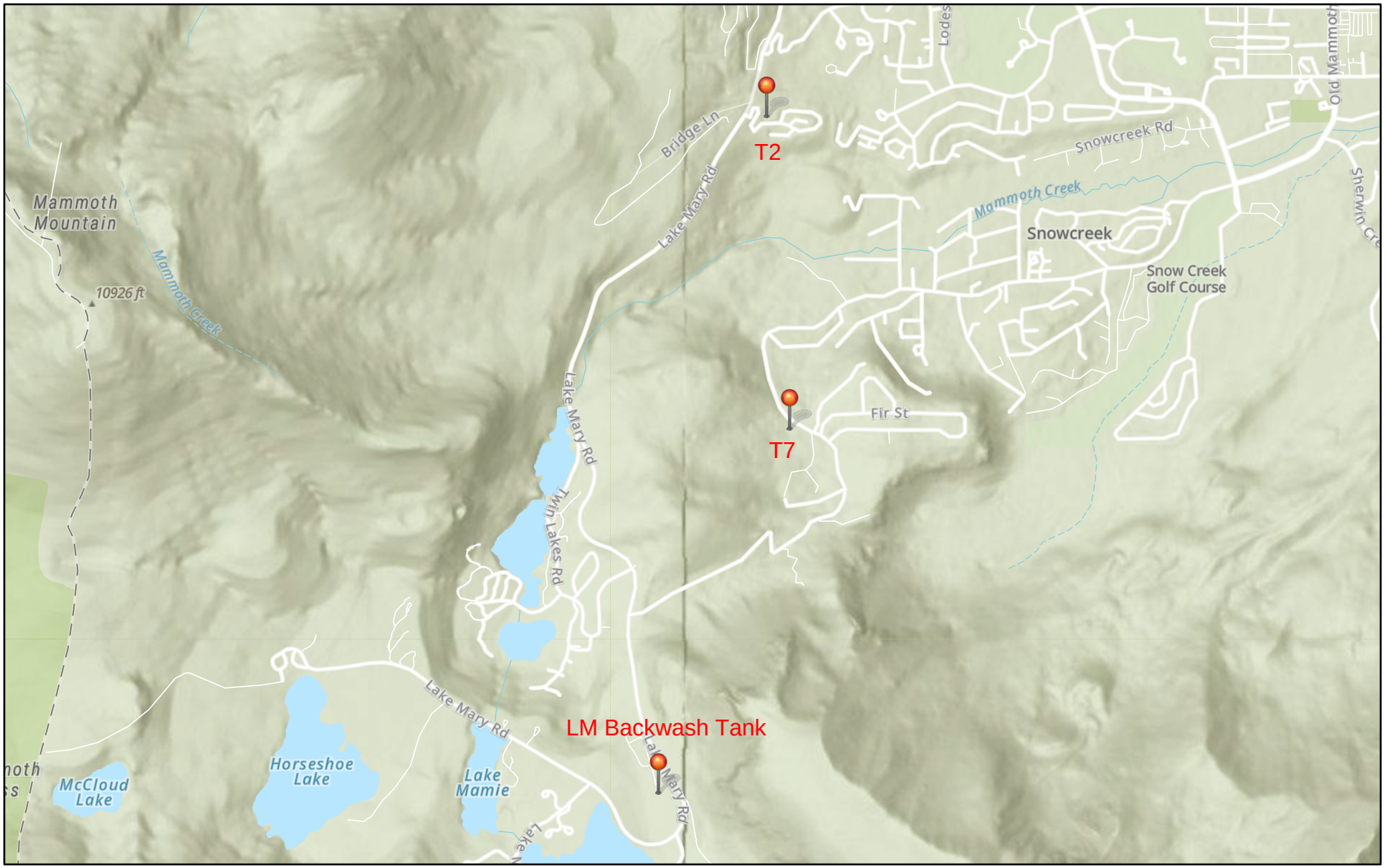
We would like to thank the Mammoth Community Water District for retaining our services. Should further information or assistance be required, don't hesitate to contact us at (619) 980-7900 or woody@municipaldiving.com.

Sincerely,

E. Woody Morrison 9/16/2018
CEO - Municipal Diving
NACE Coating Inspector Level 2 – Certified

Attachment 4
Tank Location Maps

Vicinity Map: MCWD Tank Rehab Project



2/6/2025

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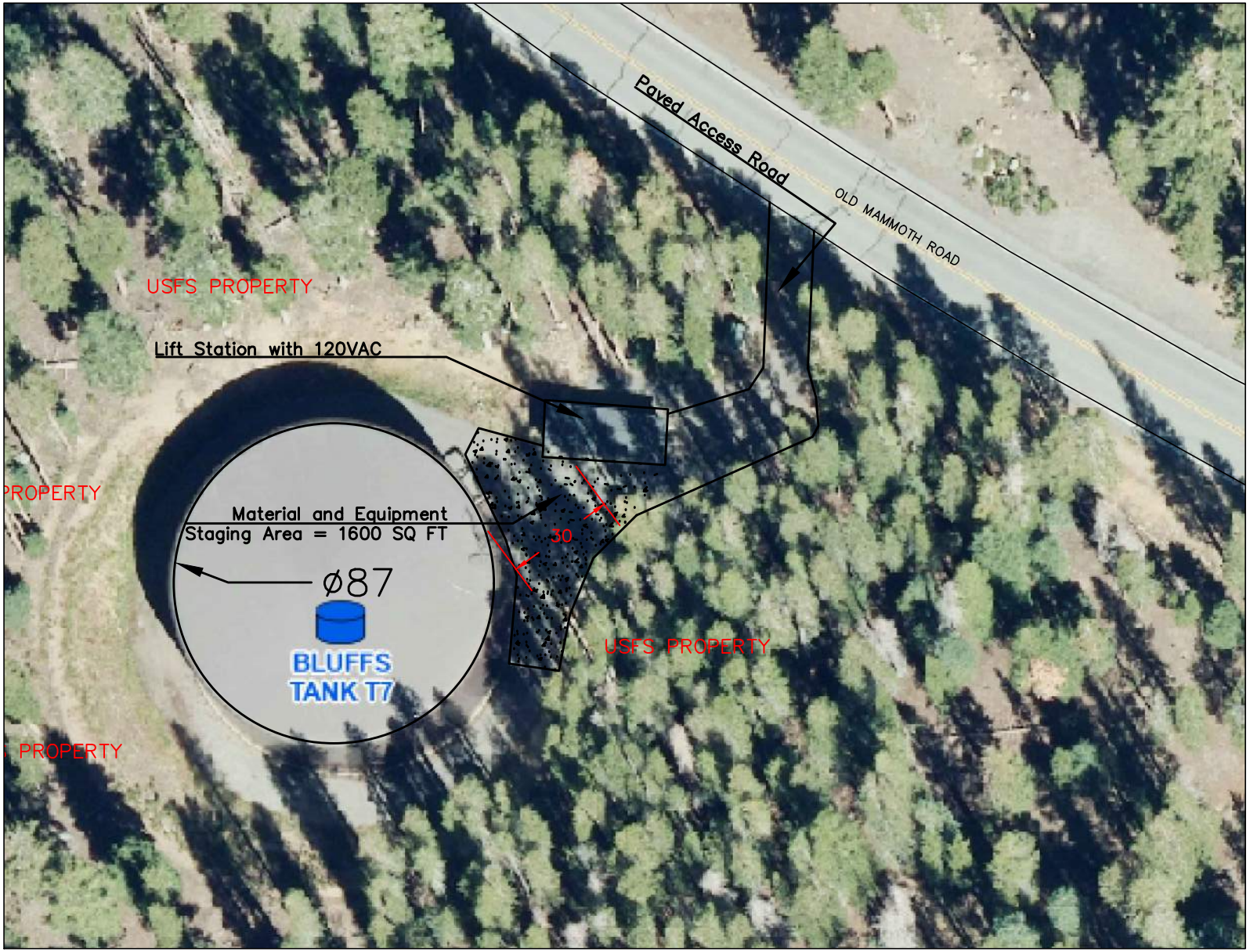
0 0.33 0.65 1.3 km



MAMMOTH COMMUNITY
WATER DISTRICT
P.O.Box 597 Mammoth Lakes, CA 93546
(760) 934-2596 FAX: (760) 934-2143

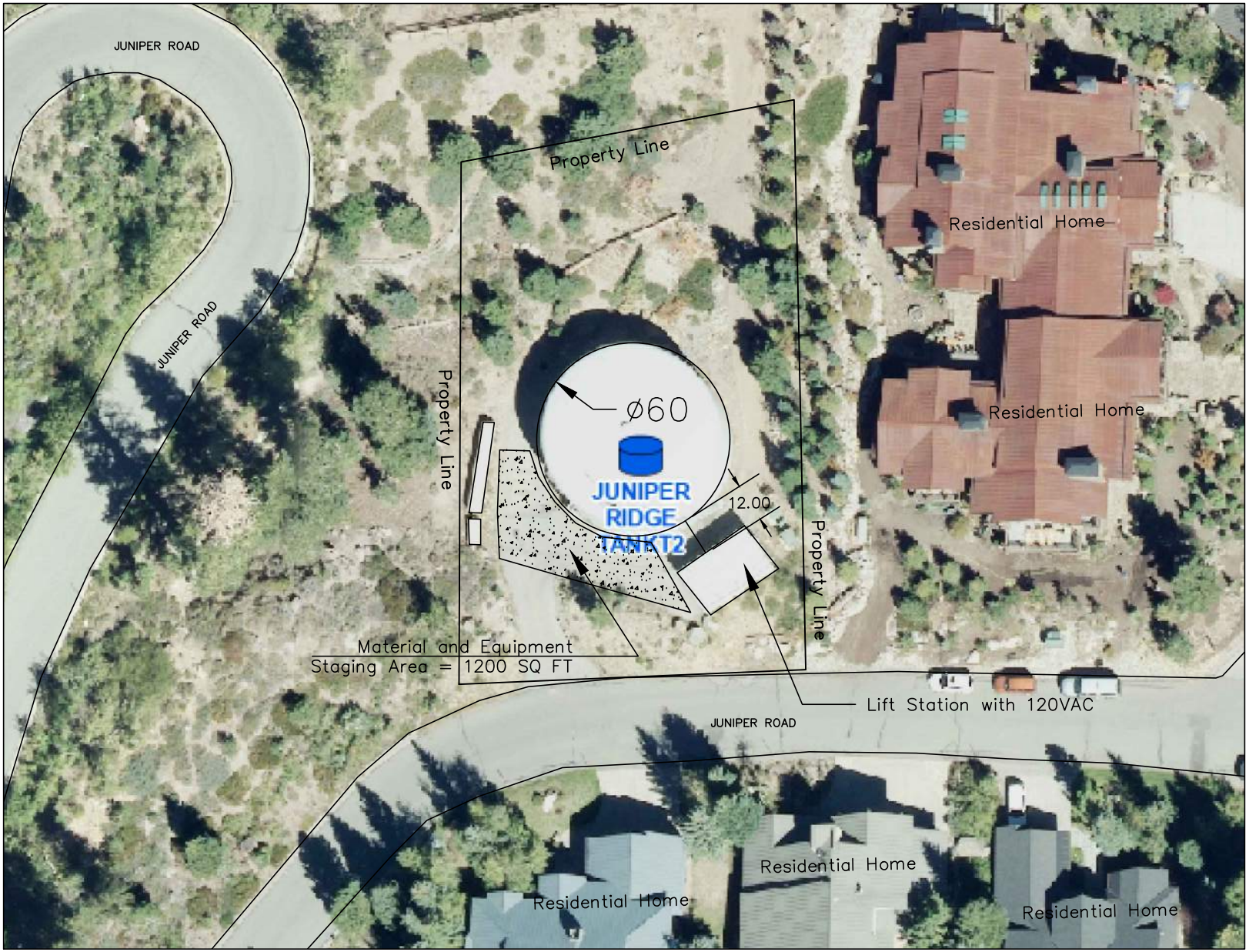
Tank T7 Site Map

DATE: 02/06/2025
DRAWN: NEF
SCALE: NTS

MAMMOTH COMMUNITY
WATER DISTRICT
P.O.Box 597 Mammoth Lakes, CA 93546
(760) 934-2596 FAX: (760) 934-2143

Lake Mary Backwash Tank Site Map

DATE: 02/06/2025
DRAWN: NEF
SCALE: NTS



MAMMOTH COMMUNITY
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Tank T2 Site Map

DATE: 02/06/2025
DRAWN: NEF
SCALE: NTS