HUMBOLDT BAY MUNICIPAL WATER DISTRICT

Request for Qualifications (RFQ)

Reservoirs Seismic Retrofit Project (3 Tanks)
Samoa Peninsula and Korblex, California

Bid Period Assistance and Construction Management

A. Invitation

You are invited to submit a Statement of Qualifications (SOQ) in accordance with the outline below to be considered for selection by the Humboldt Bay Municipal Water District (District) to perform bid period assistance and construction management services for the District's Reservoirs Seismic Retrofit Project.

The deadline to submit an SOQ is provided in Table 1 in Section F of this RFQ.

B. Project Overview

The project consists of a seismic retrofit of the District's three reservoirs**.** On Korblex Hill, there are two potable domestic water (DW) reservoirs, a 1 Million Gallon (MG) capacity, welded steel tank constructed in 1967, and a 2 MG welded steel tank constructed in 1996, which is used for disinfection contact time in the treatment process and storage. The District also has another 1 MG welded steel tank also constructed in 1967 located on the Samoa Peninsula and used for storage at that end of the District's non-potable Industrial Water (IW) system.

The District replaced the roof of the 1 MG domestic reservoir in 2017. As part of this roof replacement project, the seismic stability of the reservoir was assessed, and structural calculations were performed. It was found that the reservoir did not conform to the then-current California Building Code (CBC) seismic requirements, and its ability to resist seismic forces was 33% below what would be required for new tank construction. Based on our improved understanding of earthquake forces, the current CBC requires much stricter seismic design requirements based on the anticipated seismic forces at the project location. Humboldt County has some of the largest earthquake risk in California, and correspondingly some of the highest design parameters in the State and the United States. It was subsequently determined that the 1 MG Samoa IW reservoir, which was constructed with the same design and at the same time as the Korblex DW reservoir, and the 2 MG DW reservoir also require seismic retrofits.

The project is currently in the design phase. The construction work for the two project sites (Korblex and Samoa) is being broken up into two separate construction bid packages, and it is expected that construction will occur simultaneously at each site. The District's intent is to execute one agreement with a single consultant firm or team to provide the services as described in Section E for each construction project. GHD Inc. (GHD) has prepared 60% design documents (plans and specifications) for the project and is in the process of preparing final bid packages. The 60% design plans for the Korblex and Samoa sites have been included as Attachment 1 and Attachment 2, respectively.

A summary of the major design components is as follows:

– 1 MG Korblex tank
  - Install additional anchorage to lower shell ring and new concrete ring foundation with helical anchors that will integrate with existing foundation.
  - Install new flexible piping connections to accommodate potential differential settlement at necessary points of connection.
  - Spot coating as necessary.
– 2 MG Korblex tank
  - Install new roof and intermediate column supports designed to resist seismic sloshing wave.
  - Install new perimeter concrete ring wall connected to existing perimeter ring foundation and with anchorage connecting existing steel wall to new concrete ring.
  - Install new flexible piping connections to accommodate potential differential settlement at necessary points of connection.
  - Coating of the entire tank and roof.
– 1 MG Samoa tank
  - Install new roof and center column designed to resist seismic sloshing wave.
  - Install additional anchorage to lower shell ring. Install new concrete ring foundation with helical anchors that will integrate with existing foundation.
  - Install new flexible piping connections to accommodate potential differential settlement at necessary points of connection.
  - Coating of the entire tank and roof.

Note that the above bullet list is a summary of the major construction components, and it is not a comprehensive list of all the design components of the project. Furthermore, the major construction components are still subject to change and the 60% design documents are in the process of being developed into final design documents. While it is believed at this time that major design components will not be changed and will instead be refined to complete the design and allow for a competitive bid, design changes may occur, and the selected consultant will ultimately be responsible for performing construction management services in accordance with the final bid packages that are to be completed by GHD. Table 2 in Section G gives an estimated date for when final bid packages will be ready to advertise for construction bids.

C. Funding Sources

The project is being funded in part by a Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant being administered by the California Governor's Office of Emergency Services (Cal OES). Project activities must adhere to the requirements of both federal and state agencies related to the Hazard Mitigation Grant Program, National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA).

D. Selection Process

The District will establish a Selection Committee to review the SOQ submittals received. The Selection Committee will request a scope of work and fee proposal from the most qualified firm/team that is subject to negotiation of a fair and reasonable price. If negotiations are not successful, the District will terminate negotiations with the selected consultant and will begin to negotiate with other qualified consultants in the order

of their respective SOQ ranking (from highest to lowest) until an agreement is reached. The final proposal will be brought to the District's Board of Directors for potential approval.

E. Work to be Completed

The District is seeking a consultant firm or team to provide construction bid period assistance and construction management services for the seismic retrofit of the District's three welded steel reservoirs. One reservoir is located on the Samoa Peninsula, and the other two are located at the District's Korblex facility near Arcata, California. A single consultant firm or team will be selected encompassing all the required services. The services that are required include the following:

1. Bid period assistance

1.1 Assist the District with distributing and advertising the Plans and Specifications completed by GHD for a competitive sealed bid process for project construction.

1.2 Respond to contractor questions during the bid phase in the form of formal addenda. Consult the Engineer of Record for technical questions that are related to the intent of the project design.

1.3 Review and evaluate construction bids for compliance with project specifications. Confirm that the low-cost bidder is responsible and responsive per CA state law, meets the project bond requirements, holds a valid contractor license, is registered with the California Department of Industrial Relations, and is not ineligible for participation in federal assistance programs.

1.4 Following review of contractor bids, recommend award to District staff and Board of Directors.

2. Construction management and inspection services

2.1 Provide construction inspection services to monitor contractor compliance with the plans and specifications. This will include but not be limited to special inspections for structural work, welding, and coating. It will also include daily inspections, reports, photo documentation, and other standard construction inspection tasks. Compaction testing and concrete sampling and testing will be the responsibility of the contractor, not the consultant.

2.2 Consult and coordinate with the District throughout construction. Continually provide the District with ongoing construction documentation.

2.3 Consult and coordinate with the District and Engineer of Record when issues arise that are related to the intent of the project design.

2.4 Develop agendas and minutes for and coordinate and conduct project construction meetings.

2.5 Receive, log, and respond to Contractor's submittals. Engage the District as necessary and include District staff on correspondence. Consult the Engineer of Record for technical submittals that are related to the intent of the project design. Selected consultant will respond to all administrative submittals and those related to standard materials of construction, for example, concrete, aggregates, etc.

2.6 Receive, log, and respond to Contractor's Requests for Information (RFIs). Engage the District as necessary and include District staff on correspondence. Coordinate with the Engineer of Record for technical RFIs that are related to the intent of the project design.

2.7 Receive, log, review, and assist the District with processing legitimate change orders. Coordinate with the Engineer of Record for change orders that are related to the intent of the project design.

2.8 Receive, log, review, and assist the District with processing pay requests.

2.9 Confirm that the contractor provides as-built drawing markups and review for adequacy.

2.10 Provide one clean, complete, set of as-built drawing markups for each construction project that incorporate redlines from the contractor, construction manager, and owner and rectify any conflicts

prior to delivering to the Engineer of Record. Final as-built drawings will be prepared by the Engineer of Record using this information.

2.11 Prepare contract closeout documents and prepare the Notice of Completion.

2.12 Provide the District with a compiled package of all construction management documentation to be used for District records and for grant closeout purposes.

GHD is the Engineer of Record for the project. As such, GHD will perform engineering services during bidding and construction to address questions and issues related to the intent of the design. The District is contracted separately with GHD, and GHD is precluded from responding to this RFQ. GHD's services during bidding and construction will be limited to the following:

1. Attending and participating in the pre-bid meeting that will be organized and coordinated by the consultant selected out of this RFQ process.
2. Providing responses to technical written questions received from the contractors during the bid period that are regarding the intent of the design.
3. Attending and participating in the contractor preconstruction meeting that will be organized and coordinated by the consultant selected out of this RFQ process.
4. Reviewing submittals, requests for information (RFIs), and change orders that have bearing on the intent of the design and being consulted on any issues regarding answering design questions or modifying the design.
    a. This includes addressing changes that come up during construction that require design interpretation or changes, including issues such as differing site conditions.
5. Performing periodic site inspections to address potential changes and to confirm that construction is meeting the intent of the design.
6. Reviewing markups provided by consultant and preparing project record drawings.

The selected consultant will be responsible for coordinating with and engaging GHD when necessary, with prior written approval from the District.

F. Consultant Selection Schedule

The following schedule has been established for the consultant selection process. The District reserves the right to modify this schedule as required.

Table 1 Consultant selection schedule

Issue RFQ	January 4, 2024
Deadline to submit questions	January 26, 2024 (5:00 pm PST)
Deadline for addenda to be issued	February 1, 2024
Deadline to submit SOQ	**February 8, 2024 (3:00 pm PST)**
Selection committee review	February 9 to 13, 2024
Notify apparent most qualified consultant	February 13, 2024
Selected consultant submits scope of work and fee	February 27, 2024
District Board approves contract	March 14, 2024
Execute consultant contract	March 15, 2024

G. Project Schedule

The following is an estimated schedule for the project:

Table 2 Estimated project schedule

Advertise for construction bids	March 2024
Receive and evaluate construction bids	April 2024
Award project to contractor	May 2024
Construction	May 2024 through October 2024
Project closeout	October 2024 through December 2024

This estimated project schedule is subject to change and may be modified by the District if required.

H. SOQ Requirements

H.1 SOQ Contents

Firms or teams who are interested in providing the consultant services described above are to submit a Statement of Qualifications. The SOQ shall include the following:

1. Table of Contents
2. Cover Letter

   Provide a cover letter, maximum length of 1 page, indicating the Consultant's interest and summary of qualifications. Include Consultant's name, office location, and years in operation. Include name and contact information for the officer authorized to represent the firm for any correspondence and negotiations.
3. Project Understanding and Approach

   Summarize the Consultant's understanding of the services to be performed and specific challenges that are related to the delivery of the anticipated Scope of Services. The Approach section should include the following:

   - How the Consultant will address the identified project challenges.
   - Project management plan highlighting communication plan, schedule management, and how the consultant will integrate the District and Engineer of Record into the construction management process.
   - Quality assurance and quality control approach and procedures.
4. Experience and Qualifications of Firm

   Provide a project organization chart showing each team member who would be assigned to the project. Identify prime and subconsultants. Identify key team members who Consultant feels would be critical to the success of the project and describe how each will contribute to the project. Provide examples of project assignments in which they have played a similar role.

   Describe qualifications of Consultant's firm and specific experience within the last 5 years providing similar services to those anticipated for this project. Include information related to Consultant's firm with state and federal grant funded projects. Provide descriptions (size, type, year, amount, and location) of three similar projects complete with contact information (name, title, phone number, and e-mail address) for each reference project provided. Cross reference key team members to the listed projects.

5. Provide information regarding present workload and staff availability.
6. List any potential conflicts of interest and a strategy for negating them.

H.2 Page Limit

SOQs shall be limited to a total of 12 pages which shall be numbered in consecutive order. The page limit excludes the SOQ cover page, table of contents, cover letter, section dividers, and resumes. SOQs shall be submitted on 8½ by 11 pages only with each double-sided sheet counted as two pages.

H.3 SOQ Submittal Requirements

Applicants who are interested in providing the services for this project are required to submit a Statement of Qualifications no later than the time and date noted in Table 1 in Section F. All SOQs and materials submitted in response to this RFQ will become the property of the District and will not be returned. The District is not responsible for any costs incurred in the preparation of a response to this RFQ. Please submit the SOQ to:

John Friedenbach, General Manager
Humboldt Bay Municipal Water District
828 7th Street
Eureka, CA 95501-1114

SOQs received after the deadline, regardless of postmark, will be rejected.

Applicants shall submit five bound copies of their SOQ, one unbound copy, and one electronic pdf copy on a CD or flash drive. All submission materials shall be included in a sealed envelope labeled with the following:

– Submitting firm's name and address
– "Statement of Qualifications for Bid Assistance and Construction Management Services for HBMWD Reservoirs Seismic Retrofit Project"

H.4 Questions and Addenda

Questions regarding this RFQ must be submitted in writing, by e-mail only, to John Friedenbach, General Manager, at friedenbach@hbmwd.com by the deadline shown in Table 1 in Section F. Questions will be responded to in writing. Written summaries of all questions and answers will be distributed to each consultant. Addenda will be issued, if necessary, and posted to the District's website.

Site visits are available upon request. Requests shall be in writing via email and directed to John Friedenbach, General Manager, at friedenbach@hbmwd.com and Dale Davidsen, Superintendent, at supt@hbmwd.com.

I. Selection Criteria

The District's Selection Committee will evaluate all submitted SOQs in accordance with the criteria stated below. The District reserves the right to request interviews of the top ranked firms. Should interviews be required, those consultants participating in the interview process will have their SOQs rescored after the interview process, and final rankings will be based on those scores.

The Selection Committee will decide which applicant will be invited to submit a scope and fee proposal. Evaluation and selection criteria will include the following:

1. Consultant's understanding of the project and conceptual approach – 20 points
2. Consultant firm or team's qualifications and experience on similar projects, including transmission-level water infrastructure and construction / modifications to steel reservoirs – 25 points
3. Qualifications and experience of the project manager and key personnel – 20 points

4. Consultant's experience with grant-funded projects – 10 points
5. Consultant Team's present workload and staff availability – 5 points
6. References for prime and key sub consultants – 15 points
7. Consultant Team's ability to negate any identified conflicts of interest – 5 points

J. Attachments

Attachment 1: Korblex Reservoirs Seismic Retrofit Project – 60% Design Drawings

Attachment 2: Samoa Reservoir Seismic Retrofit Project – 60% Design Drawings

Attachments

Attachment 1

Korblex Reservoirs Seismic Retrofit Project – 60% Design Drawings

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

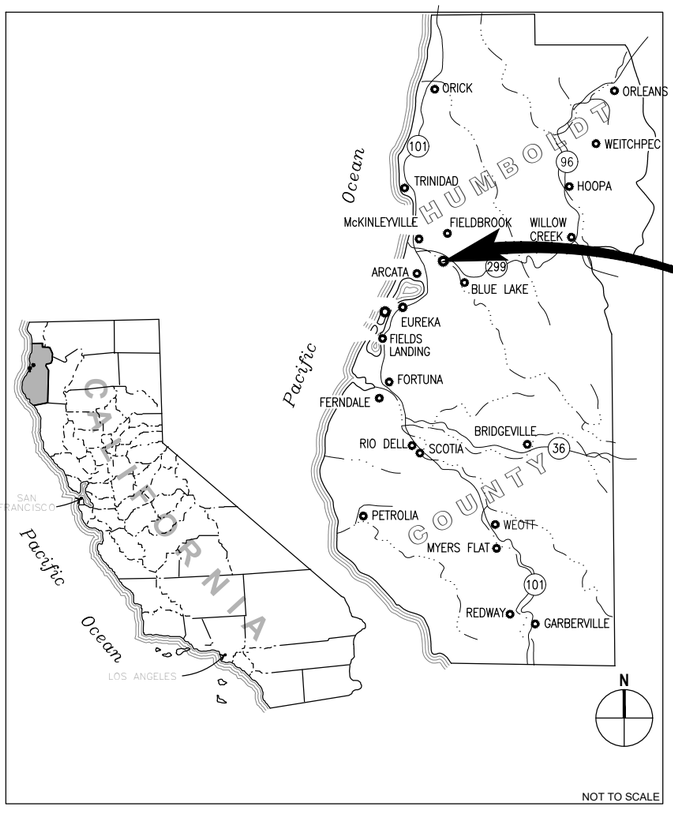
KORBLEX RESERVOIRS SEISMIC RETROFIT PROJECT

JULY 2021

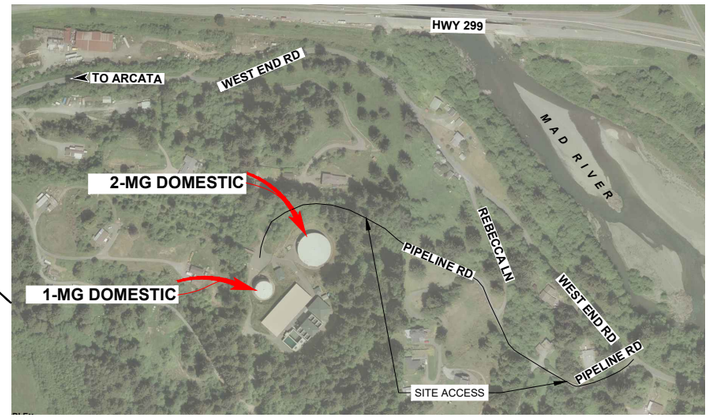
PREPARED BY:

GHD

AREA MAP



LOCATION MAP



KORBLEX TANKS

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1"=200' 0 200' 400'

APPROVALS

PLANS AND SPECIFICATIONS APPROVED BY THE BOARD OF DIRECTORS OF THE HUMBOLDT BAY MUNICIPAL WATER DISTRICT, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA, THIS ____ DAY OF _____, 2021.

GENERAL MANAGER
JOHN FRIEDENBACH _____ SIGNED

BOARD OF DIRECTORS

SHERI WOO	PRESIDENT
NEAL LATT	VICE PRESIDENT
J. BRUCE RUPP	SECRETARY-TREASURER
MICHELLE FULLER	ASSISTANT SECRETARY-TREASURER
DAVID LINDBERG	DIRECTOR

ENGINEER: GHD Inc.
STEVE MCHANEY _____ SIGNED

SHEET INDEX

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	SXM	Drafting Check	SXM	Project Manager NS
Designer	BLC	Design Check	SXM	Project Director SXM

Bar is one inch on original size sheet
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GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
www.ghd.com

Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

Title: COVER SHEET AND SHEET INDEX
Size: ANSI D

Project No.	Date	Scale	Sheet No.	Sheet
11218859	07-23-2021	AS SHOWN	G-001	1 of 16

Plot Date: 30 July 2021 - 11:20 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-GN-0001.dwg

GENERAL SITE NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND BECOMING FAMILIAR WITH THE SITE CONDITIONS PRIOR TO BIDDING.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ALL SURVEY MONUMENTS, FENCES, ROADS, CORNER PIPES, OR OTHER SITE DEVELOPMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION AT THE CONTRACTOR'S OWN EXPENSE. IF A MONUMENT HAS THE POTENTIAL OF BEING DISTURBED, A CORNER RECORD SHALL BE FILED WITH THE COUNTY SURVEYOR (PER SECTION 8773.2 OF THE PUBLIC LAND SURVEYORS ACT) AS REQUIRED BY THE SUBDIVISION MAP ACT TO PRESERVE THE LOCATION OF SAID MONUMENT. CONTRACTOR SHALL, AT HIS/HER EXPENSE, HIRE A CIVIL ENGINEER OR LAND SURVEYOR TO PERFORM THE WORK.
3. CONTRACTOR SHALL PROVIDE ADEQUATE DUST AND EROSION AND SEDIMENT CONTROL AND KEEP MUD AND DEBRIS OFF ROADS AT ALL TIMES.
4. CONTRACTOR SHALL USE DESIGNATED STAGING AREAS AND ANY OTHER AREAS AS DEPICTED ON THESE DOCUMENTS FOR STAGING CONSTRUCTION EQUIPMENT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL CONSTRUCTION. ADEQUATE BRACING, FALL PROTECTION, AND SUPPORTS SHALL BE USED TO PROVIDE PROPER TEMPORARY INTEGRITY AND WORKER PROTECTION DURING ALL PHASES OF CONSTRUCTION.
6. UPON COMPLETION OF THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL LEAVE THE PROJECT AREA FREE OF DEBRIS AND UNUSED MATERIAL. ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE RESTORED TO AN "AS GOOD OR BETTER" CONDITION.
7. IT IS EXPECTED THAT THE ACTUAL LOCATION OF EXISTING UTILITIES MAY VARY FROM THAT SHOWN ON THE PLANS. CONTRACTOR SHALL POTHOLE AND LOCATE ALL EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT PRIOR TO WORK COMMENCING FOR ANY EXCAVATION OR POTHOLING.
8. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT NEW FEATURES TIE INTO EXISTING SITE DEVELOPMENT, PAVEMENT JOINTS MATCH CORRECTLY, AND THAT GENERAL DESIGN ELEVATIONS FOR NEW CONSTRUCTION PROVIDE PROPER PAVEMENT AND DRAINAGE SLOPES FROM EXISTING TIE IN POINTS. REPORT DISCREPANCIES TO OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

HAZARDOUS MATERIAL NOTES

1. SEE LIMITED HAZARDOUS MATERIALS SURVEY REPORT, KORBLEX AND SOMOA RESERVOIR SEISMIC RETROFIT PROJECT, HUMBOLDT BAY MUNICIPAL WATER DISTRICT, 30 JUNE 2021 BY GHD.
2. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH ALL STATE AND FEDERAL REGULATIONS WITH RESPECT TO HAZARDOUS MATERIALS HANDLING AND DISPOSAL AND FOR PROTECTION OF WORKERS AND OWNERS AND OWNER'S REPRESENTATIVE PERSONNEL ON SITE.
3. ANY ASBESTOS CEMENT PIPE ENCOUNTERED DURING CONSTRUCTION TO BE PROPERLY HANDLED AND DISPOSED BY THE CONTRACTOR.

VEGETATION PROTECTION AND RESTORATION NOTES

1. NO CUTTING OF ANY PART OF TREES, INCLUDING ROOTS, SHALL BE DONE WITHOUT SECURING APPROVAL FROM OWNER.
2. ALL EXISTING LANDSCAPED AND UNPAVED AREAS WHICH ARE DISTURBED BY CONSTRUCTION OR EARTHWORK OPERATIONS SHALL BE HAND RAKED SMOOTH AND RETURNED TO ORIGINAL EXISTING CONDITIONS.
3. LANDSCAPING THAT IS REMOVED TO FACILITATE CONSTRUCTION SHALL BE REPLACED IN KIND.
4. ALL DISTURBED AREAS SHALL BE RAKED SMOOTH AND HYDROSEEDED FOLLOWING CONSTRUCTION.
5. WHEN CONSTRUCTION OCCURS WITHIN DRIP LINE ON EXISTING TREES, CONTRACTOR IS TO PILE THE SOIL ON THE SIDE AWAY FROM THE TREE. WHEN THIS IS NOT POSSIBLE, PLACE SOIL ON PLYWOOD. A TARP, OR THICK BED OF MULCH. THIS IS TO HELP PREVENT CUTTING INTO THE SOIL SURFACE WHEN THE BACKHOE OR TRACTOR BLADE REFILLS THE TRENCH.
6. REFILL OPEN TRENCHES QUICKLY WITHIN 4 HOURS OF EXCAVATION WHEN THEY OCCUR WITHIN THE DRIP LINE OF EXISTING TREES. IF THIS IS NOT POSSIBLE AND WEATHER IS HOT, DRY, OR WINDY, CONTRACTOR MUST KEEP ROOT ENDS MOIST BY COVERING THEM WITH WET BURLAP. IF TEMPERATURE IS 80°F OR GREATER, THE BURLAP MUST BE INSPECTED EVERY HOUR AND RE-WET A NECESSARY TO MAINTAIN A CONSTANT COOL MOIST CONDITION. IF TEMPERATURE IS BELOW 80°, THE BURLAP MUST BE INSPECTED EVERY FOUR HOURS AND RE-WET AS NECESSARY TO MAINTAIN A CONSTANT COOL MOIST CONDITION. SMALL ROOTS CAN DRY OUT AND DIE IN 10-15 MINUTES. LARGER ROOTS CAN SUCCUMB IN AN HOUR OR LESS UNDER UNFAVORABLE WEATHER CONDITIONS.
7. MATERIALS, EQUIPMENT, TEMPORARY BUILDINGS, FUELS, PAINTS AND OTHER CONSTRUCTION ITEMS ARE NOT TO BE PLACED WITHIN THE DRIP LINE OF EXISTING TREES.
8. 5.GRADING SHOULD NOT CREATE DRAINAGE PROBLEMS FOR TREES BY CHANNELING WATER INTO THEM, OR CREATING SUNKEN AREAS.

GEOTECHNICAL NOTES

1. CONTRACTOR SHALL DESIGN THE PROJECT TO BE COMPLIANT WITH THE FOLLOWING GEOTECHNICAL REPORTS:
   1.1. GEOTECHNICAL INVESTIGATION REPORT HBMWD RESERVOIRS SEISMIC RETROFIT PROJECT THREE WATER TANKS FROM CRAWFORD & ASSOCIATES, INC. DATED JULY 2021.

SURFACE RESTORATION NOTES

1. IN ADDITION TO UTILITY AND VEGETATION RESTORATION, CONTRACTOR TO RESTORE SIDEWALKS, CURBS, PAVING, SLABS, STRIPING, SIGNAGE, AND OTHER SURFACE FEATURES TO PRE-PROJECT CONDITIONS.
2. NOT ALL SURFACE RESTORATION REQUIREMENTS SHOWN. CONTRACTOR TO ASSESS PRIOR TO BIDDING AND INCLUDE THE COST OF RESTORATION IN THE BID ITEMS AFFECTING SURFACE FEATURES.

ITEMS TO BE PROVIDED BY THE CONTRACTOR

1. NOT UNLESS SPECIFICALLY NOTED OTHERWISE, CONTRACTOR SHALL FURNIISH AND INSTALL ALL NEW ITEMS.
2. UNLESS SPECIFICALLY NOTED OTHERWISE THE TERM "PROVIDE" SHALL MEAN CONTRACTOR TO FURNISH AND INSTALL.

GRADING NOTES

1. SURVEY OF EXISTING CONDITIONS PREPARED BY LACO ASSOCIATES. SEE SURVEY NOTES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL SURVEY DATA. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING RIGHT-OF-WAY LINES, SLOPE EASEMENTS, AND ALL HORIZONTAL AND VERTICAL CONTROL PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING AND SHALL ARRANGE FOR STAKING WITH A LICENSED SURVEYOR. STAKING WILL BE REVIEWED BY OWNER FOR CONFIRMATION TO DESIGN PRIOR TO CONSTRUCTION.
3. ALL GRADES BETWEEN SPOT ELEVATIONS SHALL HAVE UNIFORM SLOPE UNLESS OTHERWISE INDICATED. MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING WALLS AND DOORS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL CONSTRUCTION. ADEQUATE SHORING BRACING, TIES, AND SUPPORTS SHALL BE USED TO PROVIDE PROPER TEMPORARY INTEGRITY DURING ALL PHASES OF CONSTRUCTION.
5. ALL EXISTING LANDSCAPED AND UNPAVED AREAS WHICH ARE DISTURBED BY CONSTRUCTION OR EARTHWORK OPERATIONS SHALL BE HAND RAKED SMOOTH AND RETURNED TO ORIGINAL EXISTING CONDITIONS.
6. ALL DITCHES, SWALES, GUTTERS, ETC. SHOULD BE CONSIDERED ACTIVE STORM CONVEYANCES UNLESS OTHERWISE INDICATED. CONTRACTOR IS RESPONSIBLE FOR ADDRESSING STORM WATER DRAINAGE AND DEWATERING OF WORK AREAS DURING CONSTRUCTION.
7. DURING WET WEATHER PERIODS, CONTRACTOR IS RESPONSIBLE FOR SEQUENCING CONSTRUCTION IN A MANNER TO MINIMIZE IMPACT ON OPEN EARTHWORK AND COMPACTION OPERATIONS.
8. COMPLETELY COVER ANY SOIL STOCKPILES WITH 6 MIL BLACK PLASTIC AND PROVIDE RESTRAINTS TO HOLD PLASTIC IN PLACE. MONITOR PLASTIC COVER AS PART OF CONTINUOUS EROSION CONTROL PLAN. PLACE SILT FENCE COMPLETELY AROUND STOCKPILE.

STAGING

1. CONTRACTOR MAY STAGE ON EXISTING PAVED AREAS. COORDINATE STAGING LOCATIONS WITH OWNER.

UTILITY NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS AND INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR.
2. CONTRACTOR SHALL COORDINATE CONSTRUCTION SEQUENCING AND SHUT DOWNS WITH DISTRICT STAFF.
3. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS AND INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR. SEE GENERAL SITE NOTES 1 AND 7. SEE UTILITY LOCATING AND MAPPING SPECIFICATIONS.
4. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION UNDER THIS SECTION OR ANY OTHER SECTION.
5. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, OR FITTING REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.
6. CONTRACTOR SHALL COORDINATE USA UTILITY LOCATE 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION. CONTRACTOR SHALL COORDINATE THE UTILITY LOCATE WITH THE OWNER FOR ALL UTILITY WORK. CONTRACTOR TO NOTE THAT CAMPUS OWNED UTILITIES WILL NOT BE MARKED VIA A USA LOCATE. CONTRACTOR TO EMPLOY THEIR OWN UTILITY LOCATING TECHNIQUES ALONG ALL PROPOSED ROUTES OF NEW UTILITIES AND TO MARK ALL CAMPUS OWNED UTILITIES AFFECTED BY CONTRACTORS WORK. INFORM OWNER IMMEDIATELY IF LOCATE INDICATES THAT EXISTING UTILITIES ARE DIFFERENT THAN SHOWN ON DRAWINGS.
7. CONTRACTOR IS RESPONSIBLE FOR POTHOLING ALONG THE ALIGNMENTS OF ALL NEW UTILITIES TO IDENTIFY POTENTIAL UTILITY CONFLICTS, SOILS CONDITIONS, AND TIE-IN POINTS. CONTRACTOR RESPONSIBLE FOR MAKING ADJUSTMENTS IN ALIGNMENTS TO ACCOMMODATE ACTUAL FIELD CONDITIONS.
8. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, FEATURES, AND STRUCTURES LOCATED ON THE SITE. LOCATE, PROTECT, AND AVOID DISRUPTION OF ALL ABOVE AND BELOW GRADE UTILITIES DURING CONSTRUCTION.
9. ALL BURIED LINES TO HAVE 36 INCHES MINIMUM COVER, UNLESS NOTED OTHERWISE.
10. CONTRACTOR TO VERIFY CONNECTIVITY OF UTILITY NETWORK PRIOR TO REPLACEMENT, ABANDONMENT, OR DEMOLITION OF EXISTING UTILITY. CONTRACTOR TO CONFIRM CONNECTIVITY OF NEW UTILITY PRIOR TO COMPLETING WORK.
11. THRUST BLOCKING REQUIRED ON ALL PRESSURE LINES BENDS AND FITTINGS. SEE STANDARD THRUST BLOCKING DETAIL. RESTRAINED FITTINGS MAY BE USED AS AN ALTERNATIVE WHEN INSTALLED ON FITTINGS AND LINES PER MANUFACTURER REQUIREMENTS TO ACHIEVE PROPER RESTRAINT OF THE OVERALL PIPING SYSTEM.
12. ALL EXISTING UTILITIES AND TIE-IN POINTS SHOULD BE CONSIDERED ACTIVE UTILITIES UNLESS OTHERWISE INDICATED.
13. CONFIRM FIRE HYDRANT TYPE, NOZZLE SIZES, AND THREAD CONFIGURATIONS WITH FIRE DEPARTMENT PRIOR TO CONSTRUCTION.
14. CONFIRM ALL UTILITY VALVE VAULTS, VALVES, METERS, BACKFLOW PREVENTION ASSEMBLIES, AND OTHER UTILITY APPURTENANCES WITH THE OWNER.

EROSION CONTROL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND IMPLEMENTING THE PROJECT SWPPP PER THE CURRENT NPDES GENERAL PERMIT REQUIREMENTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MONITORING AND REPORTING. THE OWNER SHALL REGISTER THE PROJECT VIA SMARTS AND ESTABLISH ACCESS FOR THE QUALIFIED STORMWATER PRACTITIONER (QSP).
3. THE EROSION CONTROL MEASURES SHOWN HERE ARE THE MINIMUM RECOMMENDED. THE CONTRACTOR SHALL ADHERE TO THE QSD/QSP SPECIFIC PLAN OF BMP'S (BEST MANAGEMENT PRACTICES) FOR THE PROJECT SITE APPROPRIATE TO THE PHASE OF CONSTRUCTION AND THE TIME OF YEAR.
4. BACK UP EROSION CONTROL MATERIALS SHALL BE STOCKPILED ON THE SITE TO ALLOW FOR TIMELY REPAIR AND MAINTENANCE OF ALL BMP'S.

ABBREVIATIONS

A B	ANCHOR BOLT	LS	LIFT STATION
AB	AGGREFATE BASE	LT	LEFT
AC	ASPHALT CONCRETE		
AGG	AGGREGATE		
ARV	AIR VACUUM RELEASE VALVE	M	METER
AVE	AVENUE	MAX	MAXIMUM
AWWA	AMERICAN WATER WORKS ASSOCIATION	MFR	MANUFACTURER
		MG	MILLION GALLON
B-	BORING	MH	MANHOLE
BC	BEGIN CURVE	MIN	MINIMUM
BF	BLIND FLANGE	MPG	MEDIUM PRESSURE GAS
BFV	BUTTERFLY VALVE	MISC	MISCELLANEOUS
BFP	BACK FLOW PREVENTER		
BM	BENCH MARK	N	NORTH
BLDG	BUILDING	(N)	NEW
BLVD	BOULEVARD	NIC	NOT IN CONTRACT
BO	BLOW OFF	NO	NUMBER
BOT	BOTTOM	NPT	NATIONAL PIPE THREAD
BVC	BEGIN VERTICAL CURVE	NTS	NOT TO SCALE
C	CONDUIT	OC	ON CENTERS
CB	CATCH BASIN	OPNG	OPENING
CBC	CALIFORNIA BUILDING CODE		
CCR	CALIFORNIA CODE OF REGULATIONS	PC	POINT OF CURVATURE
CI	CAST IRON	PCC	PORTLAND CONCRETE CEMENT
CL	CENTERLINE	PE	POLYETHYLENE
CLR	CLEAR, CLEARANCE	PI	POINT OF INTERSECTION
CLS	CONCRETE LINED STEEL PIPE	PL	PROPERTY LINE
CO	CLEAN OUT	PL	PLATE
CMLS	CEMENT MORTAR LINED STEEL	PLCS	PLACES
CMP	CORRUGATED METAL PIPE	PLWD	PLYWOOD
CMU	CONCRETE MASONRY UNIT	POC	POINT OF CONNECTION
CONC	CONCRETE	PP	POWER POLE
CONT	CONTINUOUS	PRV	PRESSURE REDUCING VALVE
CONT'D	CONTINUED	PSI	POUNDS PER SQUARE INCH
COR	CORNER	PT	POINT
CU	CUBIC	PT	POINT OF TANGENCY
CV	CHECK VALVE	PT	PRESSURE TREATED
		PTFE	POLYTETRAFLUOROETHYLENE
d	PENNY (NAIL SIZE)	PVC	POLVINYL CHLORIDE PLASTIC PIPE
DIA, Ø	DIAMETER		
DTL	DETAIL	R	RADIUS
DI	DIP DUCTILE IRON PIPE	RC	RELATIVE COMPACTION
DF	DOUGLAS FIR	RCP	REINFORCED CONCRETE PIPE
DR	DRIVE	RD	ROAD
DW	DOMESTIC WATER LINE	RDWD	REDWOOD
DWG	DRAWING	REQ'D	REQUIRED
		REQ'T	REQUIREMENT
(E)	EXISTING	RPP	REDUCED PRESSURE PRINCIPAL
E	EAST, OR EASTING	RT	RIGHT
EA	EACH	R/W	RIGHT OF WAY
EC	END CURVE		
EF	EACH FACE	S	SLOPE
EP	EDGE PAVEMENT	SAT	SATURATED
EQ	EQUAL	SCH, OR SCHED	SCHEDULE
ER	EDGE ROAD	SD	STORM DRAIN
EL/ELEV	ELEVATION	SDMH	STORM DRAIN MANHOLE
ELEC	ELECTRIC, OR ELECTRICAL	SDCB	STORM DRAIN CATCH BASIN
ENGR	ENGINEER	SHT	SHEET
EVC	END VERTICAL CURVE	SIM	SIMILAR
EW	EACH WAY	SO	SOUTH
		SS	SANITARY SEWER
FDC	FIRE DEPARTMENT CONNECTION	SSMH	SANITARY SEWER MANHOLE
FIN	FINISH	SSTL	STAINLESS STEEL
FF	FINISH FLOOR	STA	STATION
FG	FINISH GRADE	STD	STANDARD
FH	FIRE HYDRANT	STL	STEEL
FL	FLOW LINE		
FLR	FLOOR	TC	TOP OF CURB
FO	FIBER OPTIC	T, OR	
FP	FIRE PROTECTION	TEL	TELEPHONE
FS	FINISHED SURFACE	THK	THICK
FT	FOOT, OR FEET	TG	TOP OF GRATE
FTG	FOOTING	TP	TEST PIT
		TRF	TURBIDITY REDUCTION FACILITY
G	GAS LINE	TS	TOP OF SLAB
GAL	GALLON	TW	TOP OF WALL
GALV	GALVANIZED	TYP	TYPICAL
GR	GRADE		
GRD	GROUND	UBC	UNIFORM BUILDING CODE
GV	GATE VALVE	UNO	UNLESS NOTED OTHERWISE
		UP	UTILITY POLE
HB	HOSE BIBB		
HCSB	HUMBOLDT COMMUNITY SERVICES DISTRICT	V	VOLT(S)
HDD	HORIZONTAL DIRECTIONAL DRILLING	VERT	VERTICAL
HDPE	HIGH-DENSITY POLYETHYLENE		
HORZ	HORIZONTAL	W/	WITH
HPG	HIGH PRESSURE GAS	W	WATER
HPNS	HIGH PRESSURE NATURAL GAS	WD	WIDE
HPS	HIGH PRESSURE SODIUM	WSP	WELDED STEEL PIPE
HWY	HIGHWAY		
		XING	CROSSING
IE	INVERT ELEVATION		
INV	INVERT	YD	YARD
IP	IRON PIPE		
IRR	IRRIGATION	&	AND
		@	AT
JCT	JUNCTION	°	DEGREE
JP	JUNCTION POLE (UTILITY)	Ø	DIAMETER
		'	FEET
L	LENGTH	"	INCHES
LAT	LATERAL	#	NUMBER
LF	LINEAR FEET	±	PLUS OR MINUS

PLAN SYMBOLS

NOTE: CONTRACT ENGINEER FOR ABBREVIATIONS NOT LISTED.

EXISTING

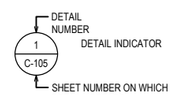
- EDGE OF AC PAVEMENT
- OH — OVERHEAD WIRES
- OHE — OVERHEAD ELECTRIC WIRES
- OHT — OVERHEAD TELEPHONE WIRES
- UGE — UNDERGROUND ELECTRIC LINE
- E — ELECTRIC LINE
- SL — STREET LIGHT CONDUIT
- G — GAS LINE
- SS — SANITARY SEWER LINE
- SSFM — SANITARY SEWER FORCE MAIN
- SD — STORM DRAIN LINE
- T — TELEPHONE LINE
- TC — TELECOMMUNICATIONS
- L — LIGHTING CONDUIT
- TV — TELEVISION LINE
- W — WATER LINE
- WA — WATER LINE TO ABANDONED
- W — WATER LINE TO BE DEMOLISHED
- x — x — CHAIN LINK FENCE
- 89 — CONTOUR ELEVATION LINE
- CENTER LINE
- PROPERTY LINE
- MONUMENT LINE
- EASEMENT LINE
- x 95.94 SPOT ELEVATION

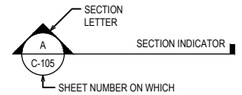
EXISTING

- GM GAS METER
- GV GAS VALVE
- WM WATER METER
- WATER VALVE
- W WATER VAULT
- HOSE BIBB
- FIRE HYDRANT
- WATER TAPPING SADDLE
- S SANITARY SEWER MANHOLE
- SSCO SANITARY SEWER CLEANOUT
- SV SEWER VENT
- D STORM DRAIN MANHOLE
- CB CATCH BASIN
- CURB INLET
- DRAINAGE INLET
- SDCO STORM DRAIN CLEANOUT
- E ELECTRIC VAULT COVER
- ELECTRIC PULLBOX
- T TELEPHONE PULLBOX
- HVE HIGH VOLTAGE ELECTRIC
- TELEPHONE MANHOLE
- POWER POLE
- GUY GUY WIRE & ANCHOR
- (2)R JOINT POLE WITH (2) RISERS
- JP JOINT POLE
- STREET LIGHT
- ELECTROLIER
- SIGN (AS NOTED)

GENERAL SHEET SYMBOLS

- 1 KEYNOTE
- 1 VALVE NUMBER
- RUBBER EXPANSION JOINT ASSEMBLY





60% DESIGN

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Author	SXM	Drafting Check	SXM	Project Manager NS
Designer	BLC	Design Check	SXM	Project Director SXM

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Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project KORBLEX RESERVOIRS SEISMIC RETROFIT

Title GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

Size ANSI D

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. G-002
Sheet 2 of 16

Plot Date: 30 July 2021 - 11:21 AM
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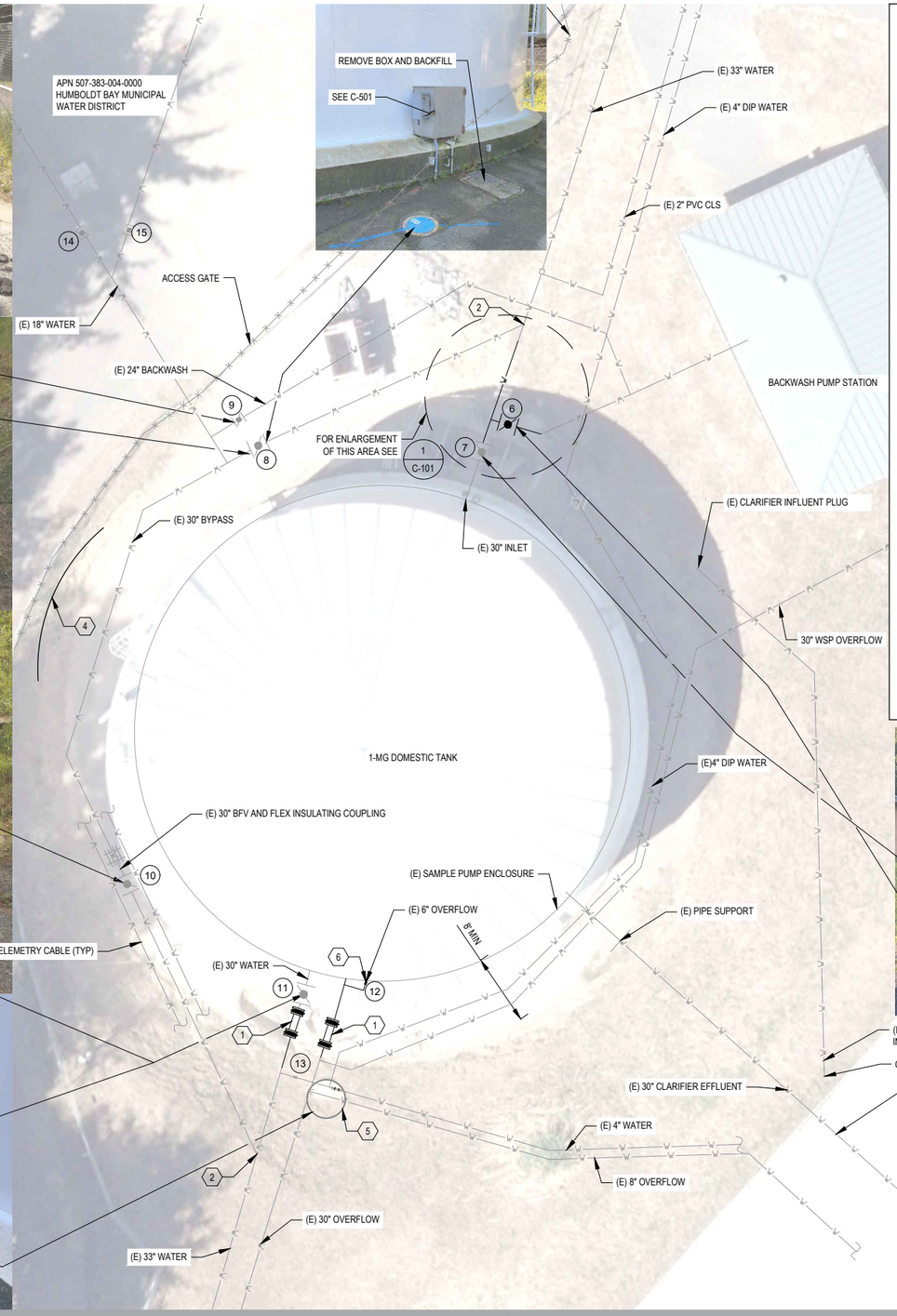
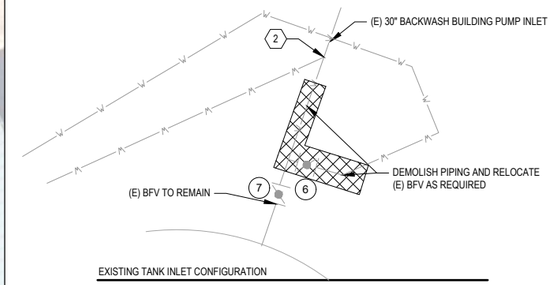
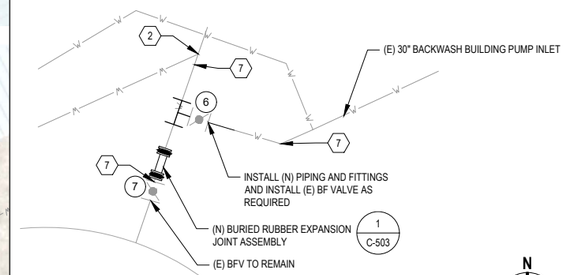




EXISTING TANK INLET CONFIGURATION



PIPING MODIFICATIONS

N

1 C-101 KORBLEX 1 MG DOMESTIC TANK INLET

NTS

0 10' 20'

SHEET GENERAL NOTES

1. CONTRACTOR TO VERIFY PIPE AND VALVE SIZES, TYPE, AND CONFIGURATION AND PROVIDE ALL TRANSITION FITTINGS AS REQUIRED.
2. REPAIR ALL PAVING SIMILAR TO 1 C-504

SHEET KEYNOTES

1. (N) BURIED RUBBER EXPANSION JOINT ASSEMBLY THIS IS ADDITIVE BID WORK. 1 C-503
2. (E) TRANSITION FROM 30" TO 33".
3. NOT USED
4. INSTALL GABION WALL 30' LONG AND 4' HIGH TO MAINTAIN A MINIMUM OF 10' CLEAR FROM NEW LADDER AND PLATFORM. REMOVE AND REINSTALL FENCING AND RECONSTRUCT ROAD AS REQUIRED.
5. (E) VALVE VAULT.
6. REMOVE EXISTING DRAIN VALVE AND INSTALL (N) DRAIN VALVE OUTSIDE OF STRUCTURAL MODIFICATIONS AND INSTALL (N) CONNECTING PIPING AS REQUIRED. THIS IS BASE BID WORK.
7. PROVIDE TRANSITION FITTINGS AS REQUIRED.

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	MD	Drafting Check	SG	Project Manager NS
Designer	SXM	Design Check	MD	Project Director SXM

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

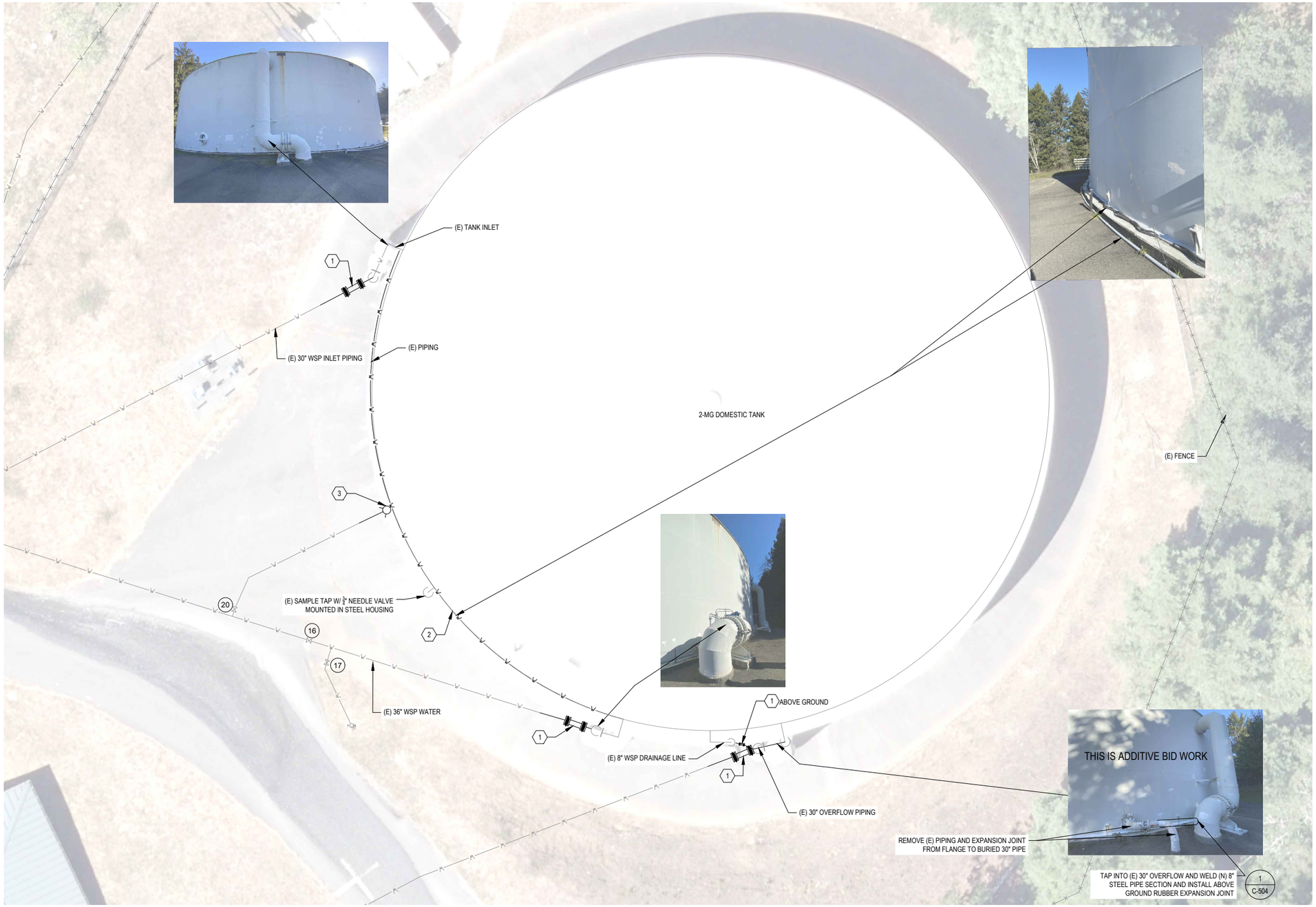
Title: 1 MG DOMESTIC EXISTING SITE CONDITIONS AND IMPROVEMENTS

Size: ANSI D

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. C-101 | Sheet 3 of 16

Plot Date: 30 July 2021 - 11:24 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-CI-0101.dwg



SHEET GENERAL NOTES

1. CONTRACTOR TO VERIFY PIPE AND VALVE SIZES, TYPE, AND CONFIGURATION AND PROVIDE ALL TRANSITION FITTINGS AS REQUIRED.
2. REPAIR ALL PAVING SIMILAR TO 1 / C-504

SHEET KEYNOTES

1. (N) BURIED RUBBER EXPANSION JOINT ASSEMBLY 1 / C-503 THIS IS ADDITIVE BID WORK.
2. DEMO EXISTING PIPING, FITTINGS, AND INSULATION ALONG BASE OF TANK AND REPLACE BURIED ALONG BASE OF (N) STRUCTURAL MODIFICATIONS
3. RELOCATE 1 1/2" WHARF HYDRANT OUTSIDE OF (N) STRUCTURAL MODIFICATIONS. COORDINATE (N) LOCATION WITH OWNER.

N

0 10' 20'

60% DESIGN

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Designer	SXM	Design Check	MD	Project Director	SXM

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Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

Project No.: 11218859
Date: 07-23-2021
Scale: AS SHOWN

Title: 2 MG DOMESTIC EXISTING SITE CONDITIONS AND IMPROVEMENTS

Size: ANSI D

Sheet No.: C-102
Sheet: 4 of 16

Plot Date: 30 July 2021 - 11:25 AM
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SHEET GENERAL NOTES

1. CONTOURS SHOWN ON THIS DRAWING ARE NOT THE PRODUCT OF SURVEY AND ARE APPROXIMATE.
2. THE INTERIOR OF THE (E) 2-MG TANK AND NEW ROOF SHALL BE PREPPED AND PAINTED PER SPECIFICATION SECTION 09 91 00 - TANK PREPARATION AND COATING. REQUIRED TOUCH-UP PAINT LOCATIONS ON THE EXTERIOR OF THE TANK SHALL ALSO BE PREPPED AND PAINTED PER THE ABOVE REFERENCED SPECIFICATION.
3. WHERE ITEMS ARE TO BE REMOVED FROM THE OUTSIDE OF THE TANK, THE CONTRACTOR SHALL GRIND DOWN AND PAINT OVER ALL (E) BOLT PENETRATIONS, BRACKETS, ETC. IT SHALL BE ASSUMED THAT THESE AND ANY OTHER LOCATIONS REQUIRING PAINTING SHALL BE PREPPED AND PAINTED PER SPECIFICATION SECTION 09 91 00.
4. ALL AREAS OF TANK TO BE COVERED IN CONCRETE SHALL BE PREPPED AND COATED IN ACCORDANCE WITH SPECIFICATION 09 91 00.
5. ALL NEW METAL COMPONENTS SHALL BE PREPPED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09 91 00.
6. CONTRACTOR SHALL COORDINATE WITH OWNER FOR TRANSFER OF UTILITY CONNECTIONS INSIDE ENCLOSURES THAT ARE TO BE REPLACED.
7. CONTRACTOR MAY REMOVE FENCING AS NEEDED FOR THE PERFORMANCE OF THE WORK, BUT IS RESPONSIBLE FOR THE REPLACEMENT OF THE FENCE TO RETURN IT TO EXISTING CONDITION, AND FOR THE REPLACEMENT OF TEMPORARY FENCING DURING THE PERFORMANCE OF THE WORK TO PREVENT PUBLIC ACCESS TO THE SITE.
8. THE CONTRACTOR SHALL REMOVE THE CATHODIC PROTECTION ANODES PRIOR TO THE PERFORMANCE OF THE WORK AND SHALL REPLACE THEM UPON COMPLETION.
9. THE OWNER SHALL DRAIN AND PERFORM INITIAL "MUCK OUT" OF THE TANK PRIOR TO THE PERFORMANCE OF THE WORK.
10. CONTRACTOR WILL PERFORM ALL ELECTRICAL WORK REQUIRED FOR REPLACEMENT OF ELECTRICAL COMPONENTS.
11. CONTRACTOR SHALL PROVIDE SUBMITTAL/SHOP DRAWINGS PRIOR TO FABRICATION AND/OR ORDERING OF ENCLOSURES, EQUIPMENT, PARTS, ETC.

N

0 10' 20' 40'

DRAFT 60% DESIGN

No.	Issue	Checked	Approved	Date
Author	**MD**	Drafting Check	**SG**	Project Manager **STEVE MCHANEY**
Designer	**SXM**	Design Check	**MD**	Project Director

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **KORBLEX RESERVOIRS SEISMIC RETROFIT**

Title **2 MG DOMESTIC ROOF REPLACEMENT & PAINTING PLAN**

Size **ANSI D**

Project No.	Date	Scale
11218859	**04-01-2021**	**AS SHOWN**

Sheet No. **C-103**
Sheet **5** of **22**

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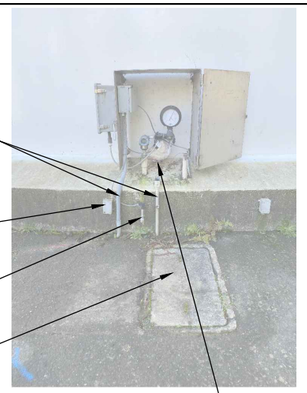


REROUTE CONDUIT OUTSIDE OF STRUCTURAL MODIFICATIONS

REMOVE PLASTIC BOX WHERE PRESENT, TYP

EXTEND PRESSURE TRANSDUCER WITH STAINLESS STEEL PIPING AND RELOCATE OUTSIDE OF STRUCTURAL MODIFICATIONS

REPLACE EXISTING CONCRETE BOX AND CONDUIT OUTSIDE OF STRUCTURAL MODIFICATIONS

6 / S-501 REPLACE LADDER AND CAGE

220'

REROUTE PIPING AND WIRING. RELOCATE AND REPLACE ELECTRICAL BOXES ABOVE STRUCTURAL MODIFICATIONS

EXTEND SAMPLING STATION WITH STAINLESS STEEL PIPING OUTSIDE OF STRUCTURAL MODIFICATIONS

4 / C-501

BLOCKOUT AROUND ACCESS HATCH. SEE STRUCTURAL PLANS

2 / C-503 REPLACE ENCLOSURE MOUNTED ON STRUCTURAL MODIFICATIONS AND EXTEND PIPING, CONDUIT, AND CONDUCTORS AS REQUIRED

REMOVE PLASTIC BOX WHERE PRESENT, TYP

LIMITS OF STRUCTURAL MODIFICATIONS. SEE STRUCTURAL PLANS

BLOCKOUT AROUND ACCESS HATCH. SEE STRUCTURAL PLANS

RELOCATE ENCLOSURE ABOVE STRUCTURAL MODIFICATIONS AND EXTEND PIPING, CONDUIT, AND CONDUCTORS AS REQUIRED

CUTOFF TAP FLUSH AT TANK FACE AND WELD PLATE

40'

1'-6"

3"

TWO UNUSED CONDUITS WITHIN LIMITS OF STRUCTURAL MODIFICATIONS

EXISTING GROUND SURFACE

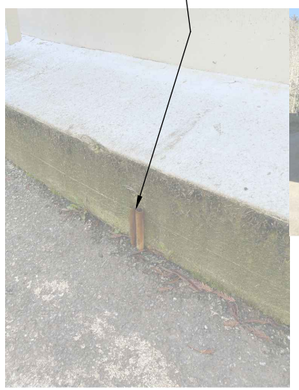
EXISTING TANK CURBING

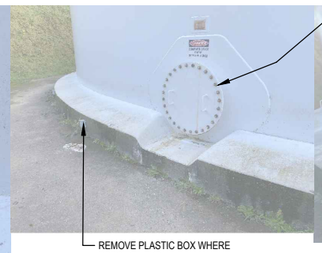
CUTOFF TAP FLUSH AT TANK FACE AND WELD PLATE

CUTOFF FEATURE FLUSH AT TANK FACE AND WELD PLATE

EXTEND SAMPLING STATION WITH STAINLESS STEEL PIPING OUTSIDE OF STRUCTURAL MODIFICATIONS

4 / C-501





REMOVE PLASTIC BOX WHERE PRESENT, TYP

1 / C-501 **1 MG DOMESTIC TANK SHELL ELEVATION**

SCALE: NTS

0 10' 20'

60% DESIGN

SHEET GENERAL NOTES

1. WHERE ITEMS ARE TO BE REMOVED FROM THE OUTSIDE OF THE TANK, THE CONTRACTOR SHALL GRIND DOWN AND PAINT OVER ALL (E) BOLT PENETRATIONS, BRACKETS, ETC. AND WELD 1/4" STEEL PLATES OVER OPENINGS. IT SHALL BE ASSUMED THAT THESE AND ANY OTHER LOCATIONS REQUIRING PAINTING SHALL BE PREPPED AND PAINTED PER SPECIFICATION SECTION 09 91 00.
2. ALL NEW METAL COMPONENTS SHALL BE PREPPED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09 91 00.
3. CONTRACTOR SHALL PROVIDE SUBMITTAL/SHOP DRAWINGS PRIOR TO FABRICATION AND/OR ORDERING OF ENCLOSURES, EQUIPMENT, PARTS, ETC.
4. FOR ALL HATCHES, COVERS AND FITTINGS REMOVED DURING PROJECT, REPLACE GASKETS AND BOLTS, NUTS, AND WASHERS.
5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE.
6. WELD STEEL PLATES TO THE INTERIOR AND EXTERIOR OF THE TANK WHERE STEEL PLATES ARE REQUIRED USING 3/8" FILLET WELD ALL AROUND.
7. ALL PIPING AND EQUIPMENT THAT WILL BE EXTENDED OR EXTRUDED BY THE WORK SHALL BE SLEEVED PER THE SPECIFICATIONS.

No.	Issue	Checked	Approved	Date
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Designer	SXM	Design Check	MD	Project Director	SXM

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Project KORBLEX RESERVOIRS SEISMIC RETROFIT

Project No. 11218859 | Date 07-23-2021 | Scale AS SHOWN

Title 1 MG DOMESTIC TANK SHELL ELEVATION

Size ANSI D

Sheet No C-501

Sheet 6 of 16

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SHEET GENERAL NOTES

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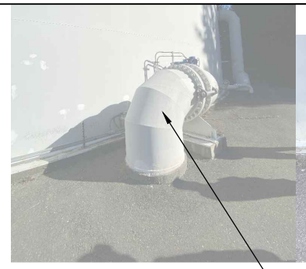
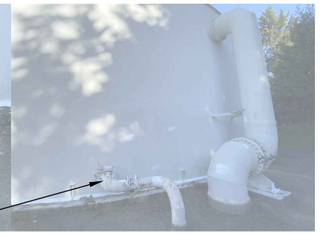




204'

REPLACE LADDER AND CAGE (6 / S-501)

RELOCATE AND MOUNT ENCLOSURES TO FACE OF STRUCTURAL MODIFICATIONS

BLOCKOUT AROUND PIPE PENETRATION. SEE STRUCTURAL PLANS.

RELOCATE SAMPLE STATION OUTSIDE OF STRUCTURAL MODIFICATIONS

BLOCKOUT AROUND ACCESS HATCH. SEE STRUCTURAL PLANS. PLAQUE ABOVE HATCH TO BE REMOVED AND REMOUNTED OUTSIDE OF STRUCTURAL MODIFICATIONS.

LIMITS OF STRUCTURAL MODIFICATIONS. SEE STRUCTURAL PLANS

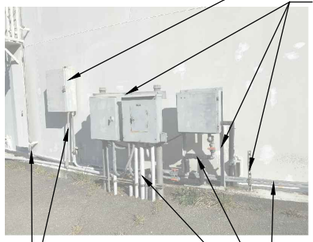
BLOCKOUT AROUND ACCESS HATCH. SEE STRUCTURAL PLANS

MATCHLINE

INSTALL (N) SAMPLE TAP AND BALL VALVE FIELD COORDINATE WITH OWNER (4 / C-501)

EXISTING GROUND SURFACE

REMOVE AND DISPOSE OF PANEL AND OTHER SUPPORTS AS REQUIRED, TYP



REMOVE AND EXTEND PRESSURE TRANSDUCER WITH STAINLESS STEEL PIPE PAST STRUCTURAL MODIFICATIONS (4 / C-501)

BLOCKOUT AROUND PIPE PENETRATION. SEE STRUCTURAL PLANS

RELOCATE WHARF HYDRANT OUTSIDE OF STRUCTURAL MODIFICATIONS. CONFIRM NEW LOCATION WITH OWNER.

REPLACE (E) PIPING WITH (N) SCH 80 PVC AND BURY MIN 36" OUTSIDE OF STRUCTURAL MODIFICATIONS

REPLACE AND REROUTE CONDUITS AND CONDUCTORS UNDERGROUND TO RELOCATED PANELS AS REQUIRED. PROVIDE EXTENSIONS AND PULL BOXES AS REQUIRED

REPLACE ALL PIPING, VALVES, AND FITTINGS AND REROUTE UNDERGROUND, TYP

204'

24' TYP

8' TYP

8'

MATCHLINE

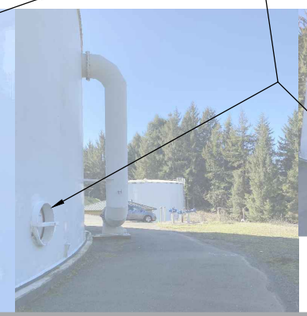
LIMITS OF STRUCTURAL MODIFICATIONS. SEE STRUCTURAL PLANS

EXTEND FEATURE WITH STAINLESS STEEL PIPE OUTSIDE OF STRUCTURAL MODIFICATIONS (4 / C-501)

BLOCKOUT AROUND ACCESS HATCH. SEE STRUCTURAL PLANS

CUTOFF SHIELD AND EXTEND PRESSURE GAUGE WITH STAINLESS STEEL PIPING OUTSIDE STRUCTURAL MODIFICATIONS. REPLACE IN KIND INCLUDING SS SHIELD SIMILAR TO (4 / C-501)

EXISTING GROUND SURFACE



REPLACE ALL (E) PIPING AND REROUTE UNDERGROUND

1 / C-502 **2MG DOMESTIC TANK SHELL ELEVATION**

SCALE: NTS

0 10' 20'

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	**MD**	Drafting Check	**SG**	Project Manager **NS**
Designer	**SXM**	Design Check	**MD**	Project Director **SXM**

Bar is one inch on original size sheet
0 1"

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**

Project **KORBLEX RESERVOIRS SEISMIC RETROFIT**

Title **2 MG DOMESTIC TANK SHELL ELEVATION**

Size **ANSI D**

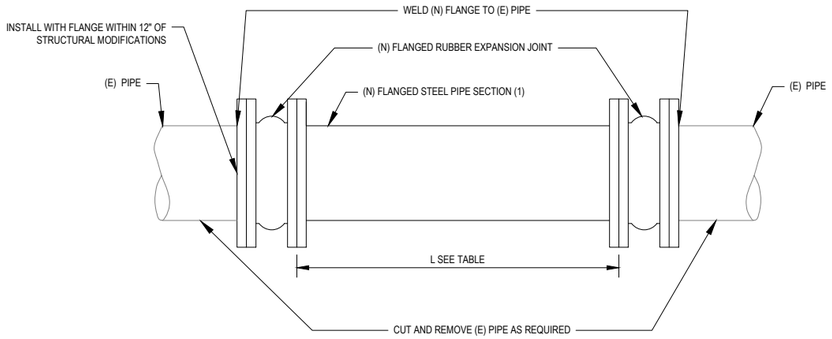
Project No.	Date	Scale
11218859	**07-23-2021**	**AS SHOWN**

Sheet No. **C-502**

Sheet **7** of **16**

Plot Date: 30 July 2021 - 11:28 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-CI-0501.dwg

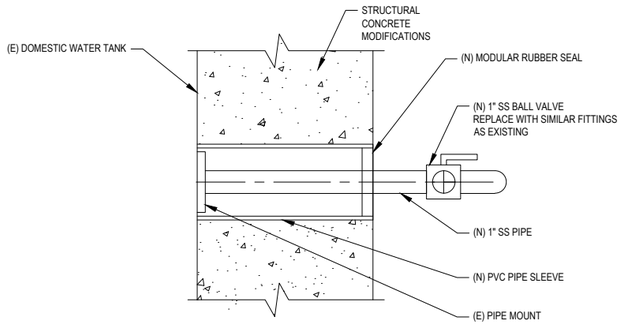
MINIMUM SPOOL LENGTH	
EXISTING PIPE SIZE	L_{MIN}
6" / 8"	18"
30"	36"



(1). MATCH (E) PIPE TYPE, LINING, AND COATING.
(2). (N) RUBBER EXPANSION JOINT ASSEMBLIES WILL BE INSTALLED WITHIN (E) PIPE RUNS OR ADJACENT TO (E) VALVES OR FITTINGS. CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED TRANSITION FITTINGS AND COUPLERS.

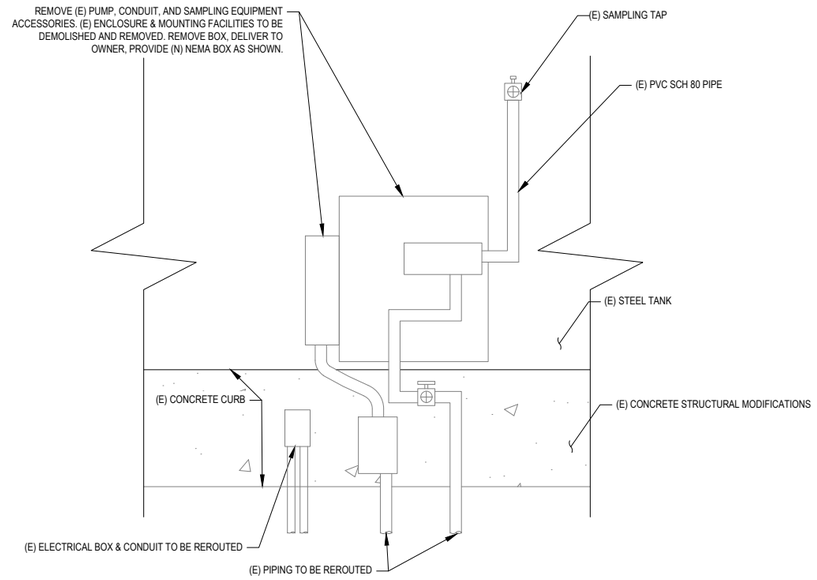
1 / C-503 **RUBBER EXPANSION JOINT ASSEMBLY DETAIL**

SCALE: NTS



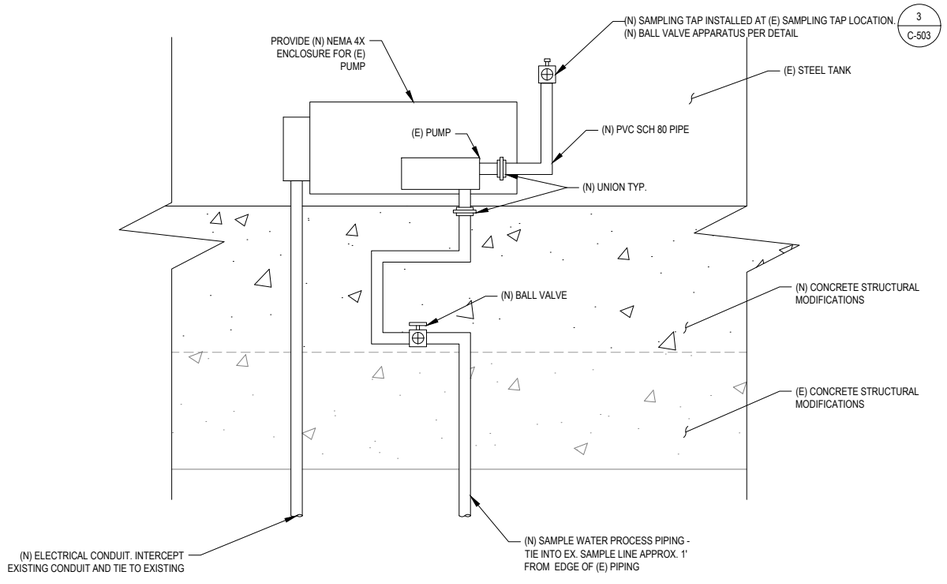
3 / C-503 **TYPICAL SAMPLE TAP SLEEVE**

SCALE: NTS



EXISTING CONDITIONS

SCALE: NTS



MODIFICATIONS

SCALE: NTS

2 / C-503 **RESERVOIR SAMPLE PUMP MODIFICATIONS**

SCALE: NTS

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	SS	Drafting Check	SS	Project Manager NS
Designer	SXM	Design Check	SS	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

Title: SEISMIC CIVIL DETAILS

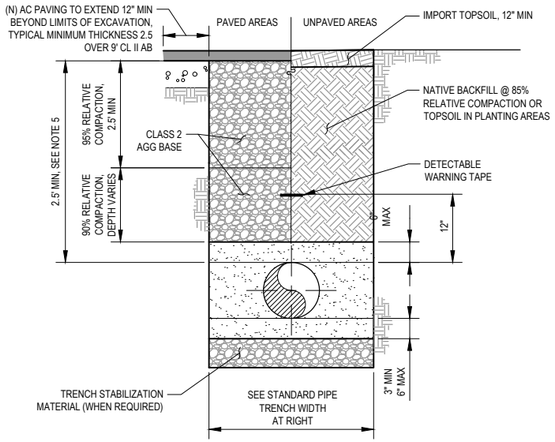
Size: ANSI D

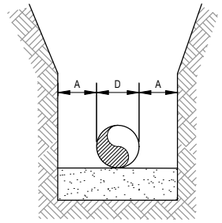
Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. C-503

Sheet 8 of 16

Plot Date: 30 July 2021 - 12:28 PM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\Digital_Design\ACAD 2020\Sheets\Korblex\11218859-GHD-0001-DWG-CI-0503.dwg

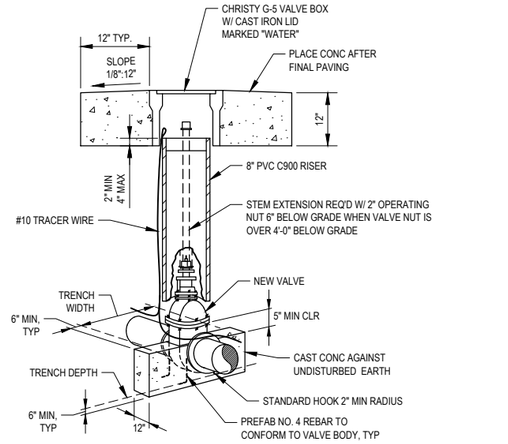




PIPE DIA "D"	MINIMUM "A"	MAXIMUM "A"
< 4"	3"	6"
4" TO 6"	6"	12"
6" TO 15"	8"	14"
16" TO 21"	10"	16"
24" TO 30"	12"	18"
33" TO 42"	15"	21"
48" & LARGER	18"	24"

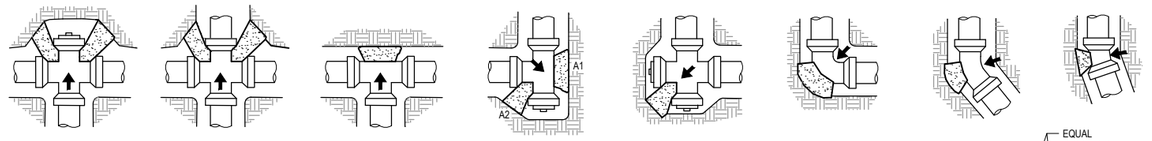
NOTES:
1. WIDER TRENCHES MAY REQUIRE HIGHER STRENGTH PIPE AND/OR SPECIAL BEDDING.
2. DIFFERING TRENCH WIDTHS REQUIRE PRIOR APPROVAL OF ENGINEER.
3. IN MAKING EXCAVATIONS FOR THIS PROJECT, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING & INSTALLING ADEQUATE SHEETING, SHORING & BRACING AS MAY BE NECESSARY AS A PRECAUTION AGAINST SLIDES OR CAVE-INS, AND TO PROTECT ALL (E) IMPROVEMENTS OF ANY KIND, EITHER ON PUBLIC OR PRIVATE PROPERTY, FULLY FROM DAMAGE.
4. SATISFACTORY NATIVE BACKFILL MATERIAL USED AS UTILITY TRENCH BACKFILL BELOW UNPAVED AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
5. 2-SACK SLURRY BACKFILL MAY BE USED IN TRENCH WHEN MINIMUM PIPE COVER NOT POSSIBLE, WHEN APPROVED BY OWNER'S REPRESENTATIVE.
6. CLASS 2 AGGREGATE BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
7. DETECTABLE WARNING TAPE SHALL BE BRIGHT COLORED, CONTINUOUSLY PRINTED, MINIMUM 6" WIDE BY 4 MIL. THICK, MANUFACTURED FOR DIRECT BURIAL.
8. DETECTABLE WARNING TAPE NOT REQUIRED FOR IRRIGATION LINES.
9. GRAVEL ROADS SHALL USE PAVED AREA TRENCH SECTION BUT WITH AGGREGATE BASE TO SURFACE, UNLESS NOTED OTHERWISE.

1 C-504 TYPICAL TRENCH AND PAVING DETAIL
SCALE: NTS



NOTES:
1. CONTRACTOR TO PROVIDE ALL COMPONENTS.
2. VALVE SIZES & ENDS AS SHOWN OR SPECIFIED ON PLANS

2 C-504 STANDARD VALVE INSTALLATION
SCALE: NTS



NOTES:
1. CONCRETE THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.THRUST BLOCKS ARE NOT REQUIRED WHERE JOINTS ARE ADEQUATELY RESTRAINED.
2. KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES.
3. VOLUMES AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER VOLUMES AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.
4. ALL BURIED PIPE EXCEPT FLANGED, SCREWED, SOLVENT WELDED PVC OR WELDED STEEL PIPE SPECIFIED TO BE PRESSURE TESTED SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL DIRECTIONAL CHANGES UNLESS OTHERWISE NOTED.
5. THRUST BLOCKS SHALL NOT BE LOCATED OR SIZED TO ENCASE ADJACENT PIPES OR FITTINGS.
6. THE SIZE AND WEIGH OF ALL UPLIFT THRUST BLOCKS SHALL BE AS DETERMINED BY ENGINEER.
7. THE BEARING AREAS ARE BASED ON TEST PRESSURE OF 150 PSI AND ALLOWABLE SOIL BEARING STRESS OF 1000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
   BEARING AREA = (TEST PRESSURE / 150) x (1000 / SOIL BEARING STRESS) x (TABLE VALUE)
8. THRUST BLOCKS REQUIRED AT ALL CHANGES IN DIRECTION OF PIPING UNLESS NOTED OTHERWISE.
9. CONTRACTOR TO PROVIDE ALL COMPONENTS.
10. ALL PIPE AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CORROSION AND CONC ADHESION.

BEARING AREA OF THRUST BLOCK IN SQ. FT.

PIPE SIZE	TEE, WYE, PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED A1	TEE PLUGGED A2	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.5	2	2	1.5	1.5	1	1
6	3	4.5	4.5	3	2.5	1.5	1
8	5	7	7	5	4	2	1
10	8	12	12	8	7	3	2
12	12	17	17	12	10	5	3
16	15	21.5	21.5	15	12	6	4

PIPE SIZE	TEE, WYE, PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED A1	TEE PLUGGED A2	45° BEND	22 1/2° BEND	11 1/4° BEND
18	19	27	27	19	15	8	6
20	24	34	34	24	18	10	8
22	29	41	41	29	22	12	10
24	34	48	48	34	26.5	14	12
32	39	55	55	39	31.5	16	14

4 C-504 STANDARD THRUST BLOCK DETAILS
SCALE: NTS

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	MD	Drafting Check	MD	Project Manager NS
Designer	SXM	Design Check	MD	Project Director SXM

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Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project KORBLEX RESERVOIRS SEISMIC RETROFIT

Project No. 11218859 | Date 07-23-2021 | Scale AS SHOWN

Title CIVIL DETAILS

Size ANSI D

Sheet No. C-504 | Sheet 9 of 16

Plot Date: 30 July 2021 - 11:28 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-CI-0503.dwg

SHEET GENERAL NOTES

1. CONTRACTOR TO COORDINATE ALL STRUCTURAL DOCUMENTS WITH ALL OTHER DISCIPLINES AND REPORT ANY DISCREPANCIES TO THE OWNER PRIOR TO THE START OF ANY FABRICATION OR CONSTRUCTION.

2. CONTRACTOR TO COORDINATE ALL NEW WORK WITH EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE OWNER PRIOR TO CONSTRUCTION.

3. DO NOT SCALE DRAWINGS.

4. DESIGN CRITERIA: 2019 CALIFORNIA BUILDING CODE (2019 CBC)
   AWWA D100-11
   ACI 318-14
   CAL / OSHA

5. LOADS:
   - ROOF LIVE LOADS: 20 PSF (REDUCTIONS TAKEN AS ALLOWED BY BUILDING CODE)
   - MAINTENANCE PLATFORM: 60 PSF
   - WIND LOADS:
   - MAIN FORCE RESISTING SYSTEM:
     - BASIC WIND SPEED: V = 115 MPH
     - RISK CATEGORY: IV (ESSENTIAL FACILITY)
     - EXPOSURE CATEGORY: C
     - INTERNAL PRESSURE COEFFICIENT: ±0.18
   - SEISMIC LOADS (KORBLEX):
     - SEISMIC IMPORTANCE FACTOR: I_E = 1.50
     - MAPPED SPECTRAL RESPONSE ACCELERATIONS:
       - S_S = 2.61 g
       - S_1 = 1.07 g
     - SPECTRAL RESPONSE COEFFICIENTS:
       - SDS = 2.09 g
       - SD1 = 1.22 g
     - SOIL SITE CLASS: D
     - SEISMIC DESIGN CATEGORY: E

6. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.

7. THESE DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF CONSTRUCTION, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.

8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND FOR CHECKING DIMENSIONS. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES AND RESOLVE BEFORE PROCEEDING WITH THE WORK.

9. PROVIDE MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DURING CONSTRUCTION. RETAIN A REGISTERED CIVIL ENGINEER WHOM IS PROPERLY QUALIFIED TO DESIGN BRACING, SHORING, ETC. VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.

10. INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.

11. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY FALLING DEBRIS AND OTHER HAZARDS IN CONNECTION WITH THIS WORK.

12. UNLESS NOTED OTHERWISE, REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR FINISHES, SLOPES, DEPRESSIONS, OPENINGS, CURBS, STAIRS, RAMPS, TRENCHES, EQUIPMENT AND LOCATIONS AND EXTENT OF SUCH CONDITIONS.

13. CONTRACTOR TO COORDINATE ALL NEW WORK WITH EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

14. DETAILS OR CONDITIONS NOT FULLY DEVELOPED ON STRUCTURAL DOCUMENTS ARE SIMILAR TO DEVELOPED DETAILS.

15. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

16. ALL PLANS TO BE COORDINATED WITH GENERAL NOTES AND TYPICAL DETAILS AS APPLICABLE.

17. ALL LADDERS, RAILINGS, PLATFORMS, AND SAFETY ELEMENTS SHALL BE PROVIDED IN CONFORMANCE WITH CAL / OSHA STANDARDS.

FOUNDATIONS

1. FOUNDATION DESIGN WILL BE BASED ON CRITERIA AND RECOMMENDATIONS PRESENTED IN THE GEOTECHINCAL INVESTIGATION REPORT: HBMWD RESERVOIRS SEISMIC RETROFIT PROJECT, THREE WATER TANKS, KORBLEX AND SAMOA, CALIFORNIA, PREPARED BY PREPARED BY CRAWFORD & ASSOCIATES, INC. DATED JULY 2021.

2. ALLOWABLE BEARING PRESSURE FOR TANK FOUNDATIONS IS 3,000 PSF WITH A 1/3 INCREASE FOR SEISMIC, FOR BOTH TANK SITES.

STEEL

1. DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (LATEST EDITION AND SUPPLEMENTS).

2. ANCHOR BOLTS: ASTM F1554 GRADE 55.

3. ALL STEEL BARS & PLATES SHALL BE ASTM A36 UNLESS OTHERWISE NOTED.

4. ALL STEEL SHAPES SHALL BE ASTM A992 GRADE 50 UNLESS OTHERWISE NOTED.

5. ALL TUBES SHALL BE ASTM A500 GRADE B.

6. ALL PIPES TO BE ASTM A53 GRADE B.

7. ALL THREADED RODS: ASTM F1554 GRADE 55.

8. BOLTED CONNECTIONS, UNLESS NOTED OTHERWISE: 1-INCH DIAMETER A325-N BOLTS.

9. INSTALL HIGH STRENGTH BOLTS IN ACCORDANCE WITH SECTION 8 OF THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", LATEST EDITION.

10. PROVIDE BEVELED WASHERS ON ALL CONNECTION TO SLOPING FLANGES OF W SECTIONS AND CHANNELS WHERE SLOPE EXCEEDS 1:20.

11. ANCHOR RODS SHALL BE THREADED ANCHOR RODS WITH NUT. THE EMBEDDED NUT SHALL BE TACK WELDED TO THE ANCHOR ROD TO PREVENT ROTATION DURING TIGHTENING.

12. BOLT HOLES IN STEEL SHALL BE "STANDARD" (1/16-INCH LARGER IN DIAMETER THAN THE NOMINAL BOLT SIZE), UNLESS OTHERWISE NOTED.

13. WELDING ELECTRODES (FILLER METAL): E70XX (70 KSI), WITH EXACT FILLER METAL SELECTED BY THE FABRICATOR.

14. WELD LENGTHS CALLED FOR ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE LENGTH OF WELD IS NOT SHOWN IT SHALL BE THE FULL LENGTH OF THE JOINT.

15. COMPLETE PENETRATION WELDS SHALL BE MADE WITH PROPER BACKING WHEREVER POSSIBLE. FULL PENETRATION WELDS MADE WITHOUT PROPER BACKING SHALL HAVE THE ROOT GOUGED BEFORE WELDING IS STARTED FROM THE OTHER SIDE EXCEPT AS PROVIDED IN AWS D1.1.

16. ALL BUTT AND GROOVE WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.

17. ALL SPLICING OF MEMBERS SHALL BE AS SHOWN ON THE DRAWINGS. ANY SPLICING OF THE STEEL MEMBERS PROPOSED BY THE STEEL FABRICATOR SHALL BE SHOWN ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER PRIOR TO FABRICATION.

18. ALL STEEL FABRICATION SHALL BE PERFORMED BY A FABRICATOR APPROVED BY THE OWNER.

19. ALL ANCHOR BOLTS SHALL BE EMBEDDED AS SHOWN ON THE DRAWINGS.

20. MINIMUM PLATE THICKNESS: 3/8 INCH UNLESS OTHERWISE NOTED. MINIMUM WELD:1/4" UNLESS OTHERWISE NOTED.

21. ALL STEEL FABRICATION AND DETAILS TO COMPLY WITH MOST STRINGENT OF: AISC CODE, AWS CODE, AND THE 2019 CBC.

22. ALL WELDING TO BE BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO ALL 2019 CBC AND AWS REQUIREMENTS. ALL WELDERS SHALL BE PRE-QUALIFIED BY THE PROJECT WELDING INSPECTOR FOR THE WELD TYPES AND POSITIONS USED IN THE PROCEDURES THEY WILL BE PERFORMING.

23. UNLESS NOTED OTHERWISE, ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED, UNLESS IT IS PART OF THE PAINTED TANK ASSEMBLY.

HELICAL ANCHORS

1. CONTRACTOR SHALL SUBMIT HELICAL ANCHOR SHOP DRAWINGS INCLUDING MANUFACTURER DATA, CURRENT VALID ENGINEERING TEST REPORTS, AND SITE SPECIFIC CAPACITY CALCULATIONS STAMPED AND SIGNED BY A CALIFORNIA LICENSED PROFESSIONAL ENGINEER. SITE SPECIFIC ANCHOR CALCULATIONS SHALL BE BASED UP ON THE PROJECT GEOTECHNICAL REPORT.

2. FOR BIDDING PURPOSES, ANCHOR SCHEMATIC DESIGN IS BASED UPON HUBBELL POWER SYSTEMS INC. CHANCE ANCHORS PER ESR-2794.

3. ANCHOR DESIGN SHALL PROVIDE FOR A MINIMUM 50 YEAR DESIGN LIFE WITH CORROSION ALLOWANCE BASED UPON THE SITE SPECIFIC SOIL CORROSIVITY ANALYSIS REPORT.

4. MINIMUM ANCHOR CAPACITY AND EMBEDMENT PARAMETERS ARE AS FOLLOWS:

   a. 1MG KORBLEX TANK, 33 KIP TENSION CAPACITY WITH ANCHORS AT 4'-0" O/C AROUND PERIMETER. FINAL EMBEDMENT LENGTH BY ANCHOR DESIGNER, APPROXIMATED AT 20 FEET FOR BID PURPOSES.

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IN ACCORDANCE WITH 2019 CALIFORNIA BUILDING CODE CHAPTER 17 IS REQUIRED ON THE FOLLOWING PORTIONS OF THE WORK:
   - STRUCTURAL STEEL
   - CONCRETE
   - HELICAL ANCHORS

2. (REFER TO THE STATEMENT OF SPECIAL INSPECTIONS FOR MORE SPECIFIC REQUIREMENTS)

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.

2. CONCRETE REINFORCING COVER SHALL BE AS FOLLOWS:

   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3 INCHES
   CONCRETE EXPOSED TO EARTH OR WEATHER .....2 INCHES

3. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. CONTRACTOR TO REVIEW FORMING, REINFORCING DETAILS AND ANY EMBEDDED ITEMS AND DETERMINE PRIOR TO FABRICATION OF ANY REINFORCING, PLACEMENT REQUIREMENTS AND CLEARANCES.

4. EPOXY ANCHORS SHALL BE ONE OF THE FOLLOWING, UNO:

   HILTI HIT-HY 200 (ICC-ES REPORT ESR-3187)

   HILT HIT-RE 500 (ICC-ES REPORT ESR-2322)

   SIMPSON SET-3G (ICC-ES REPORT ESR-4057)

REINFORCING

1. ALL CONCRETE REINFORCING SHALL BE ASTM A615, Fy = 60 KSI., UNLESS NOTED OTHERWISE.

2. REINFORCING SHALL EXTEND CONTINUOUS FOR THE DIMENSION SHOWN.

3. NO WELDING OF ANY REINFORCING IS PERMITTED, UNLESS SPECIFICALLY STATED ON THE PLANS. REINFORCEMENT TO BE WELDED TO MEET THE REQUIREMENTS OF ASTM A706.

4. LOCATE ALL REINFORCING AS SHOWN ON DRAWINGS AND FASTEN SECURELY.

5. LAP SPLICES AND DEVELOPMENT LENGTHS PER DETAIL ON DRAWING S-501.

6. REINFORCEMENT SHALL BE PLACED SO AS NOT TO COME IN CONTRACT WITH METALLIC CONCRETE PENETRATIONS.

7. ALL REINFORCING TO TERMINATE WITH STANDARD HOOKS AS SHOWN ON PLANS. ALL STIRRUPS AND TIES TO BE CLOSED WITH 135° BENDS.

8. IN WALL ELEMENTS, VERTICAL BARS SHALL BE LOCATED ON OUTERMOST LAYER UNLESS SPECIFICALLY NOTED OTHERWISE.

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE BY THE CONTRACTOR. DETAILS SHOWN IN THESE SECTIONS ARE FOR BIDDING PURPOSES ONLY AND NOT FOR CONSTRUCTION.

2. DEFERRED SUBMITTALS INCLUDE:
   - 2 MG KORBLEX TANK ROOF REPLACEMENT
   - 1 MG KORBLEX TANK HELICAL ANCHORS

3. CONTRACTOR SHALL SUBMIT STEEL TANK ROOF PLANS AND CALCULATIONS TO THE OWNER FOR APPROVAL AND PERMIT PRIOR TO ANY CONSTRUCTION. PLANS AND CALCULATIONS MUST BE PREPARED, SEALED, AND SIGNED BY A CALIFORNIA LICENSED ENGINEER. CALCULATIONS SHALL INCLUDE ANALYSIS OF NEW ROOF WITH SEISMIC SLOSHING WAVE CONSIDERATION.

4. CONTRACTOR'S STEEL TANK ROOF SUBMITTAL PACKAGE WILL BE SUBJECT TO OWNER REVIEW AND COMMENT. CONTRACTOR WILL BE RESPONSIBLE FOR ADDRESSING OWNER REVIEW COMMENTS AND RESUBMITTING THE TANK ROOF SUBMITTAL AS NECESSARY. OWNER RESERVES RIGHT TO REQUEST DESIGN MODIFICATIONS BASED ON SERVICEABILITY / MAINTENANCE REQUIREMENTS, ETC.

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	S. MCHANEY	Project Manager NS
Designer	S. GOULD	Design Check	B. CROWELL	Project Director SXM

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

Project No. 11218859 | Date 07-23-2021 | Scale AS SHOWN

Title: STRUCTURAL GENERAL NOTES

Size: ANSI D

Sheet No. S-001 | Sheet 10 of 16

Plot Date: 30 July 2021 - 11:28 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-ST-0001.dwg

STATEMENT OF SPECIAL INSPECTIONS

STATEMENT OF SPECIAL INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED IN ACCORDANCE WITH THE SPECIAL INSPECTION AND STRUCTURAL TESTING REQUIREMENTS OF THE BUILDING CODE SECTIONS 1704 AND 1705.

THIS STATEMENT OF SPECIAL INSPECTIONS ENCOMPASS THE FOLLOWING DISCIPLINES:

- ☒ STRUCTURAL SPECIAL INSPECTIONS PER 1704
- ☐ STRUCTURAL SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE
- ☐ STRUCTURAL SPECIAL INSPECTIONS FOR WIND RESISTANCE

THE SCHEDULE OF SPECIAL INSPECTIONS SUMMARIZES THE SPECIAL INSPECTIONS AND TESTS REQUIRED. SPECIAL INSPECTORS WILL REFER TO THE APPROVED PLANS AND SPECIFICATIONS FOR DETAILED SPECIAL INSPECTION REQUIREMENTS. ANY ADDITIONAL TESTS AND INSPECTIONS REQUIRED BY THE APPROVED PLANS AND SPECIFICATIONS WILL ALSO BE PERFORMED.

THE SPECIAL INSPECTIONS IDENTIFIED ARE IN ADDITION TO THOSE REQUIRED BY OTHER SECTIONS OF THE BUILDING CODE.

THE SPECIAL INSPECTION COORDINATOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE OWNER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITIES.

INTERIM REPORTS SHALL BE SUBMITTED TO THE OWNER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 1704.1.2.

A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS, TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO PROJECT COMPLETION. THE FINAL REPORT WILL DOCUMENT THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF DISCREPANCIES NOTED IN INSPECTIONS.

JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR IS REQUIRED TO COORDINATE ALL INSPECTIONS. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY SPECIAL INSPECTIONS THAT ARE REQUIRED. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY CONCRETE TO BE POURED.

ALL SPECIAL INSPECTORS AND QUALIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER-OF-RECORD AND THE OWNER FOR REVIEW.

SPECIALLY INSPECTED WORK THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE OWNER IS SUBJECT TO REMOVAL OR EXPOSURE.

CONTINUOUS INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS OTHERWISE SPECIFIED. WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED, IT IS THE AGENT'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL THE WORK IS INSPECTED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE.

CONTRACTOR STATEMENT OF RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OR FABRICATION OF A SYSTEM OR COMPONENT DESIGNATED ABOVE AS PART OF THE MAIN WIND FORCE OR MAIN SEISMIC FORCE RESISTING SYSTEMS ABOVE MUST SUBMIT A STATEMENT OF RESPONSIBILITY PER SECTION 1706.

SCHEDULE OF INSPECTION AND TESTING AGENCIES

THIS STATEMENT OF SPECIAL INSPECTIONS / QUALITY ASSURANCE PLAN INCLUDES THE FOLLOWING BUILDING SYSTEMS:

- ☒ SOILS AND FOUNDATIONS
- ☒ CAST-IN-PLACE CONCRETE
- ☐ PRECAST CONCRETE
- ☐ MASONRY LEVEL 1
- ☐ MASONRY LEVEL 2
- ☐ WOOD CONSTRUCTION
- ☐ MECHANICAL & ELECTRICAL SYSTEMS
- ☐ ARCHITECTURAL SYSTEMS
- ☒ STRUCTURAL STEEL
- ☐ COLD-FORMED STEEL FRAMING

SPECIAL INSPECTION AGENCIES	FIRM AND CONTACT INFO.
1. SPECIAL INSPECTION COORDINATOR	TBD
2. CONCRETE INSPECTOR	TBD
3. STEEL INSPECTOR	TBD
4. SOILS INSPECTOR	TBD
5. CONCRETE TESTING AGENCY	TBD

QUALIFICATIONS OF INSPECTORS AND TESTING TECHNICIANS

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION AND TESTING ACTIVITIES ARE SUBJECT TO THE APPROVAL OF OWNER. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED.

KEY FOR MINIMUM QUALIFICATIONS OF INSPECTION AGENTS:

WHEN THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DEEMS IT APPROPRIATE THAT THE INDIVIDUAL PERFORMING A STIPULATED TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION OR LICENSE AS INDICATED BELOW, SUCH DESIGNATION SHALL APPEAR BELOW THE *AGENCY NUMBER* ON THE SCHEDULE.

PE/SE STRUCTURAL ENGINEER - A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURES
PE/GE GEOTECHNICAL ENGINEER - A LICENSED GE OR PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS
EIT ENGINEER-IN-TRAINING - A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTALS OF ENGINEERING EXAMINATION

AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION

ACI-CFTT CONCRETE FIELD TESTING TECHNICIAN - GRADE 1
ACI-CCI CONCRETE CONSTRUCTION INSPECTOR
ACI-LTT LABORATORY TESTING TECHNICIAN - GRADE 1&2
ACI-STT STRENGTH TESTING TECHNICIAN

AMERICAN WELDING SOCIETY (AWS) CERTIFICATION

AWS-CWI CERTIFIED WELDING INSPECTOR
AWS/AISC-SSI CERTIFIED STRUCTURAL STEEL INSPECTOR

INTERNATIONAL CODE COUNCIL (ICC) CERTIFICATION

ICC-SMSI STRUCTURAL MASONRY SPECIAL INSPECTOR
ICC-SWSI STRUCTURAL STEEL AND WELDING SPECIAL INSPECTOR
ICC-SFSI SPRAY-APPLIED FIREPROOFING SPECIAL INSPECTOR
ICC-PCSI PRESTRESSED CONCRETE SPECIAL INSPECTOR
ICC-RCSI REINFORCED CONCRETE SPECIAL INSPECTOR

AMERICAN SOCIETY OF NONDESTRUCTIVE TESTING (ASNT)

TABLE 1705.6 - SOILS

ITEM 1:	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 2:	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 3:	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 4:	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL. ☐ PERIODIC ☒ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 5:	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE

TABLE 1705.2 - STEEL CONSTRUCTION

ITEM 1:	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS.	AGENCY # (QUALIF.): AWS/AISC-SSI, ICC-SWSI
SCOPE:		
A.	IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS.: AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
B.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	
ITEM 2:	INSPECTION OF HIGH-STRENGTH BOLTING:	AGENCY # (QUALIF.): AWS/AISC-SSI, ICC-SWSI
SCOPE:		
A.	SNUG-TIGHT JOINTS. ☒ PERIODIC ☐ CONTINUOUS	
B.	PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT MATCHMAKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AISC 360 SECTION M2.5
C.	PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION. ☐ PERIODIC ☒ CONTINUOUS	
ITEM 3:	MATERIAL VERIFICATION OF STRUCTURAL STEEL	AGENCY # (QUALIF.): PE/SE
SCOPE:		
A.	FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360 ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
B.	FOR OTHER STEEL, IDENTIFICATION ON MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN APPROVED CONSTRUCTION DOCUMENTS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. APPLICABLE ASTM MATERIAL STANDARDS
C.	MANUFACTURER'S CERTIFIED TEST REPORTS ☒ PERIODIC ☐ CONTINUOUS	
ITEM 4:	MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	MANUFACTURER'S CERTIFIED TEST REPORTS ☒ PERIODIC ☐ CONTINUOUS	
ITEM 5:	MATERIAL VERIFICATION OF WELD FILLER MATERIALS	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS
B.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	
ITEM 6:	INSPECTION OF WELDING	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	STRUCTURAL STEEL AND COLD-FORMED STEEL DECK	
1.	COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS ☐ PERIODIC ☒ CONTINUOUS	
2.	MULTIPASS FILLET WELDS ☐ PERIODIC ☒ CONTINUOUS	
3.	SINGLE-PASS FILLET WELDS > 5/16". ☐ PERIODIC ☒ CONTINUOUS	REFERENCE STDS. AWS D1.1
4.	PLUG AND SLOT WELDS ☐ PERIODIC ☒ CONTINUOUS	
5.	SINGLE-PASS FILLET WELDS < 5/16". ☒ PERIODIC ☐ CONTINUOUS	
6.	FLOOR AND ROOF DECK WELDS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AWS D1.3
B.	REINFORCING STEEL:	
1.	VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706 ☒ PERIODIC ☐ CONTINUOUS	
2.	REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT. ☐ PERIODIC ☒ CONTINUOUS	REFERENCE STDS. AWS D1.4 ACI 318 SECTION 4.2.2
3.	SHEAR REINFORCEMENT. ☐ PERIODIC ☒ CONTINUOUS	
4.	OTHER REINFORCING STEEL. ☒ PERIODIC ☐ CONTINUOUS	
ITEM 7:	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	DETAILS SUCH AS BRACING AND STIFFENING. ☒ PERIODIC ☐ CONTINUOUS	
B.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	
C.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	

TABLE 1705.3 - CONCRETE CONSTRUCTION

ITEM 1:	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS: ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3
ITEM 2:	REINFORCING BAR WELDING:	AGENCY # (QUALIF.): ACI-CWI
SCOPE:		
A.	VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS.: AWS D1.4 ACI 318: 26.6.4
B.	INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND. ☒ PERIODIC ☐ CONTINUOUS	
C.	INSPECT ALL WELDS. ☐ PERIODIC ☒ CONTINUOUS	
ITEM 3:	INSPECT ANCHORS CAST IN CONCRETE: ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS: ACI 318 17.8.2
ITEM 4:	INSPECT TEST ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI
SCOPE:		
A.	ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. ☐ PERIODIC ☒ CONTINUOUS	REFERENCE STDS.: ACI 318: 17.8.2.4
B.	MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS.: ACI 318: 17.8.2
ITEM 5:	VERIFY USE OF REQUIRED DESIGN MIX: ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI ACI 318 CH. 19, 26.4.3, 26.4.4
ITEM 6:	PRIOR TO CONCRETE PLACEMENT, FABRICATED SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. ☐ PERIODIC ☒ CONTINUOUS	AGENCY # (QUALIF.): ACI-CFTT, ACI-STT REFERENCE STDS.: ASTM C172 ASTM C31 ACI 318: 26.4, 26.12
ITEM 7:	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. ☐ PERIODIC ☒ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.5, ACI 506: 3.4
ITEM 8:	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.5.3-26.5.5
ITEM 9:	INSPECT PRESTRESSED CONCRETE FOR:	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.10.2
SCOPE:		
A.	APPLICATION OF PRESTRESSING FORCES; AND. ☐ PERIODIC ☒ CONTINUOUS	
B.	GROUTING OF BONDED PRESSTRESSING TENDONS. ☐ PERIODIC ☒ CONTINUOUS	
ITEM 10:	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.9.2
ITEM 11:	VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS WHEN BEAMS AND STRUCTURAL SLABS. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CFTT, ACI-STT REFERENCE STDS.: ACI 318: 26.10.2, 26.11.2
ITEM 11:	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.11.2(B)

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	S. MCHANEY	Project Manager NS
Designer	S. GOULD	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project KORBLEX RESERVOIRS SEISMIC RETROFIT
Title SPECIAL INSPECTIONS
Size ANSI D
Project No. 11218859
Date 07-23-2021
Scale AS SHOWN
Sheet No. S-002
Sheet 11 of 16

Plot Date: 30 July 2021 - 11:28 AM
Plotted By: Michelle Davidson
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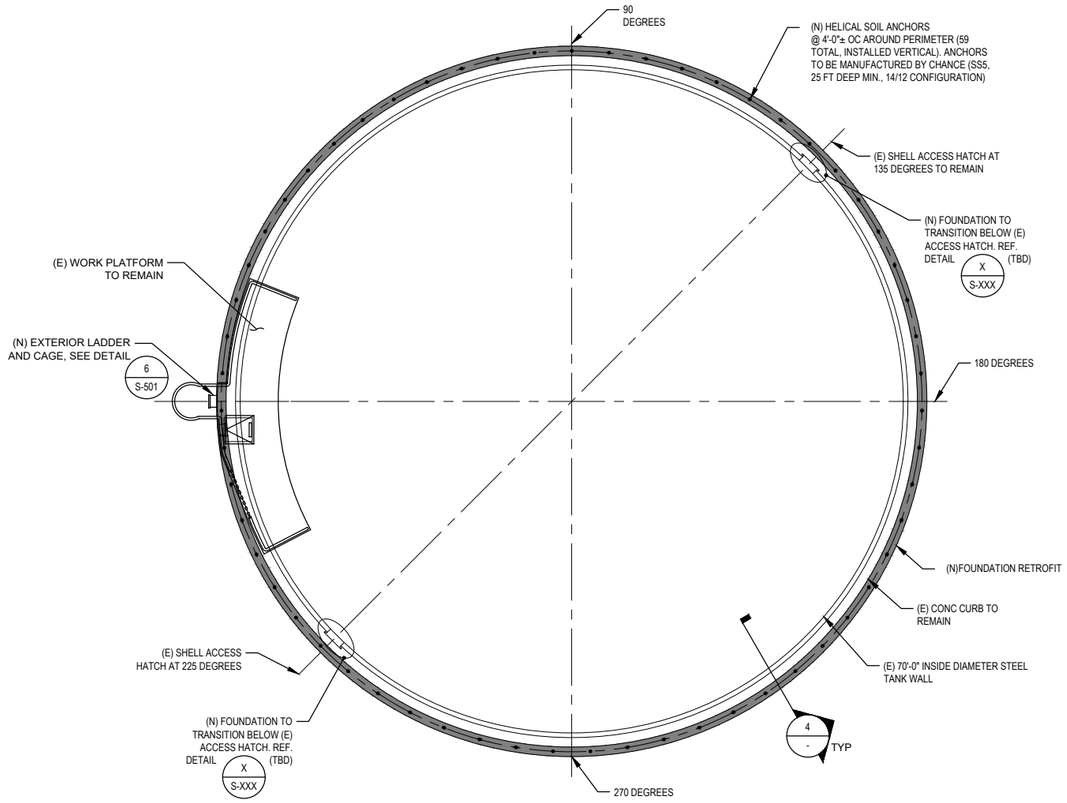
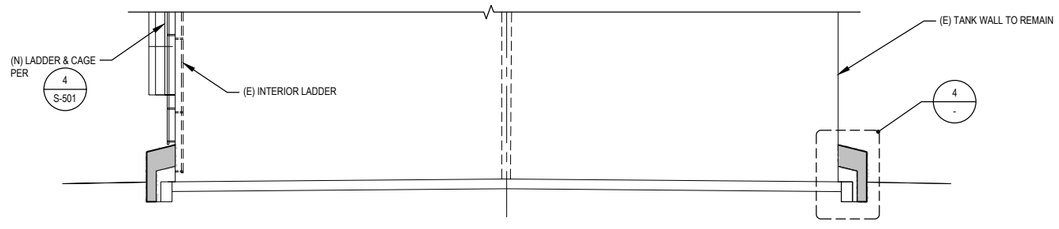


1 FOUNDATION LAYOUT - PLAN
SCALE: 1/8" - 1-0"



2 TANK SECTION
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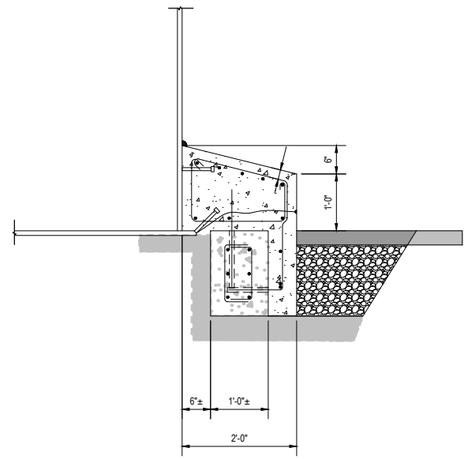
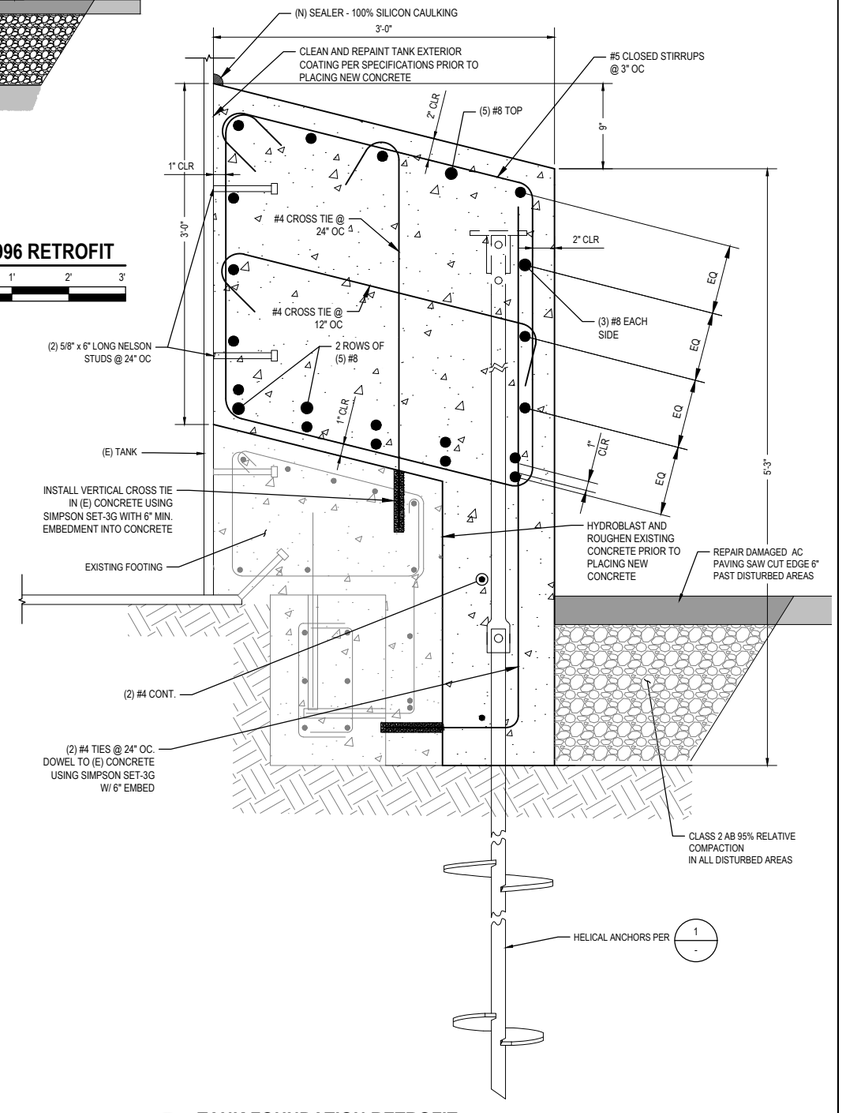


3 EXISTING TANK CURBING PER 1996 RETROFIT
SCALE: 3/4" = 1'-0" (FOR REFERENCE)
0 1' 2' 3'

SHEET GENERAL NOTES

1. CONTRACTOR TO PROVIDE ALL COMPONENTS TO CONSTRUCT / INSTALL NEW WORK.



4 TANK FOUNDATION RETROFIT
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	B. CROWELL	Project Manager NS
Designer	S. BURNS	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

Title: 1 MG DOMESTIC TANK FOUNDATION PLAN

Size: ANSI D

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. S-101
Sheet 12 of 16

Plot Date: 30 July 2021 - 11:29 AM
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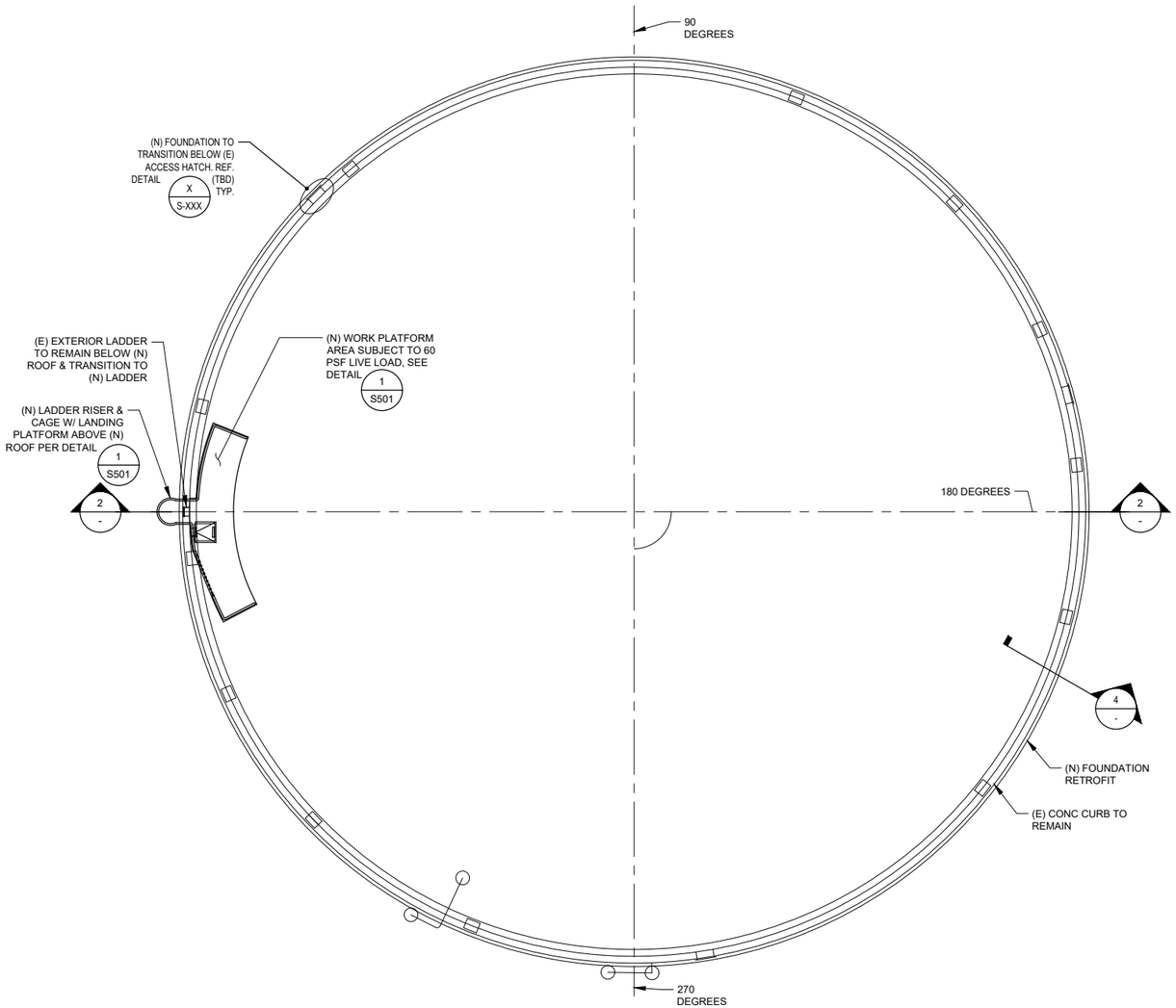
SHEET GENERAL NOTES

1. CONTRACTOR TO PROVIDE ALL COMPONENTS TO CONSTRUCT / INSTALL NEW WORK.



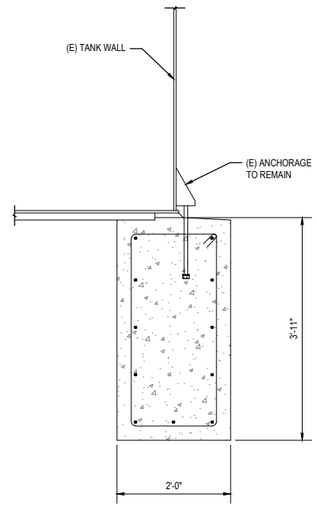
1 FOUNDATION LAYOUT - PLAN

SCALE: 3/32" - 1-0"

0 8' 16' 24'

2 TANK SECTION

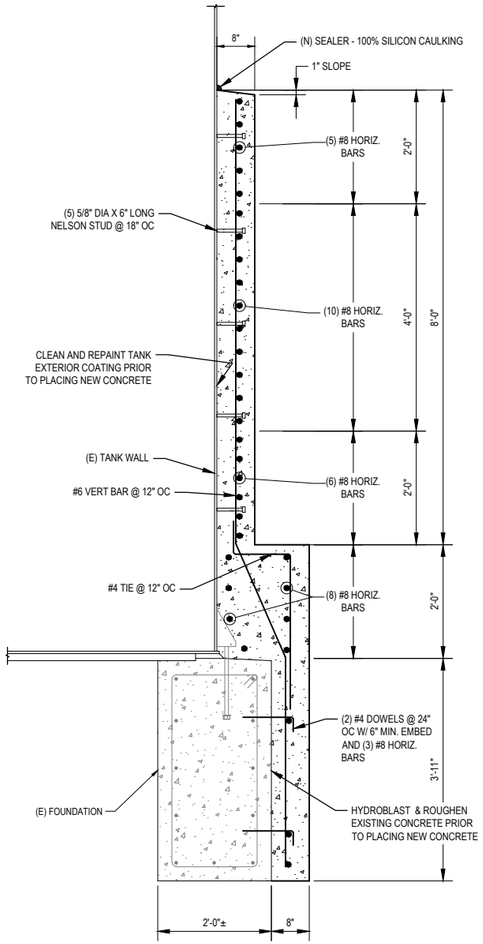
SCALE: 3/32" - 1-0"



3 EXISTING TANK FOUNDATION

SCALE: 3/4" = 1'-0" (FOR REFERENCE)

0 1' 2' 3'



4 TANK FOUNDATION RETROFIT

SCALE: 3/4" = 1'-0"

0 1' 2' 3'

60% DESIGN

No.	Issue	Checked	Approved	Date

Author	A. PRATT	Drafting Check	B. CROWELL
Designer	S. BURNS	Design Check	B. CROWELL
Project Manager	NS		
Project Director	SXM		

Bar is one inch on original size sheet

0 1"

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT

Project: KORBLEX RESERVOIRS SEISMIC RETROFIT

Title: 2 MG DOMESTIC TANK FOUNDATION PLAN

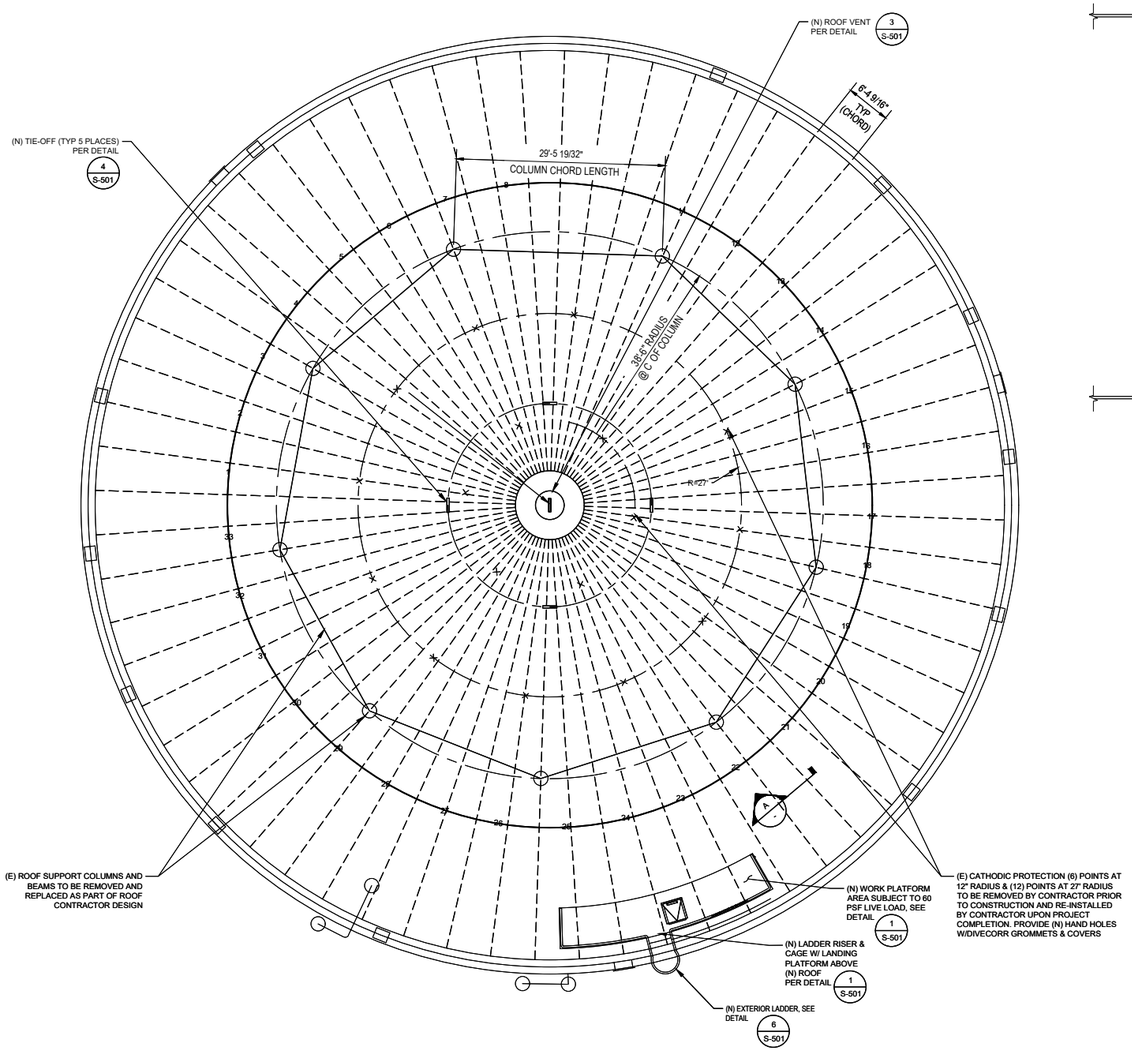
Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Size: ANSI D

Sheet No.: S-102

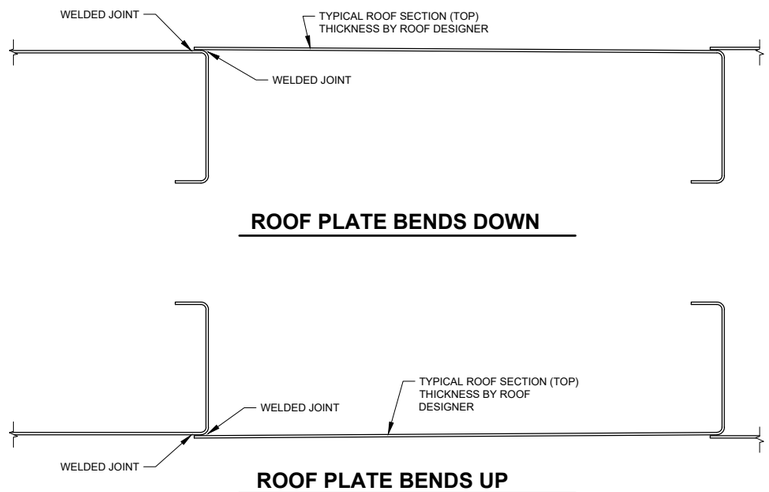
Sheet: 13 of 16

Plot Date: 30 July 2021 - 11:29 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-ST-0102.dwg



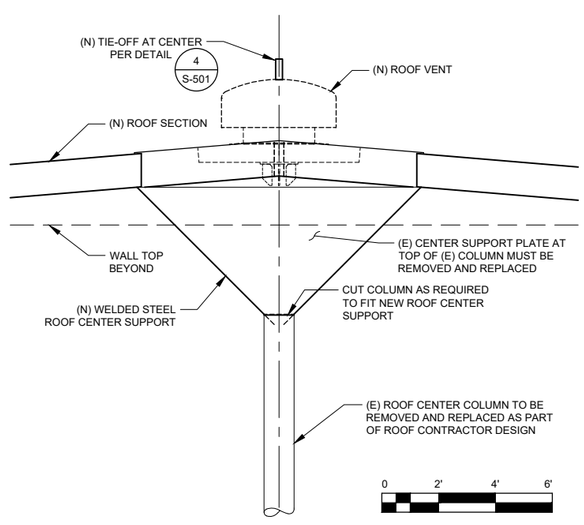
1 ROOF LAYOUT - PLAN

SCALE: 3/32" - 1-0"



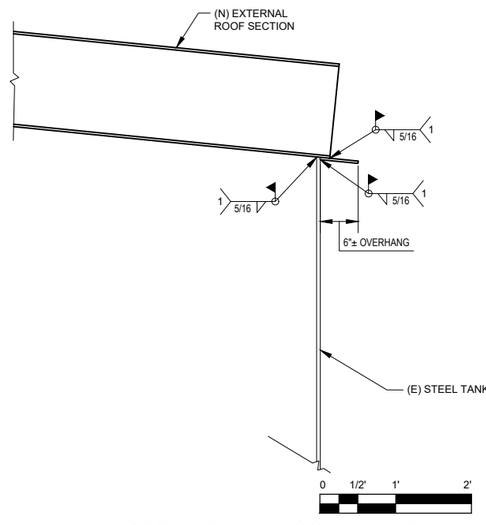
A TYPICAL FORMED ROOF SECTIONS

SCALE: 1 1/2" - 1-0"



2 CENTER SUPPORT COLUMN CONNECTION

SCALE: 3/8" - 1-0"



3 ROOF TO WALL CONNECTION

SCALE: 1" - 1-0"

SHEET GENERAL NOTES

1. CONTRACTOR TO PROVIDE ALL COMPONENTS TO CONSTRUCT / INSTALL NEW WORK.

ROOF BUILD NOTE:

1. ROOF BUILD OPTIONS SHOWN ARE CONCEPTUAL ONLY. ONE-PIECE PRESS-BRAKE JOIST WITH ROOF PLATE SECTIONS WITH CONTINUOUS SEALED WELDED JOINTS ARE THE PREFERRED METHOD OF CONSTRUCTION TO PROVIDE A MORE SERVICEABLE INTERIOR ROOF SURFACE IN LIGHT OF CURRENT CORROSION ISSUES NECESSITATING THIS ROOF REPLACEMENT. CONTRACTOR BIDS SHALL INCLUDE THE METHOD OF FRAMING TO BE USED. CONTRACTOR BIDS SHALL ALSO INCLUDE JUSTIFICATION FOR ROOF FRAMING OPTION TO BE PROVIDED, INCLUDING ANY COST COMPARISON TO SERVICEABILITY/MAINTENANCE BENEFITS.

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	A. PRATT	Drafting Check	B. CROWELL	Project Manager NS
Designer	S. BURNS	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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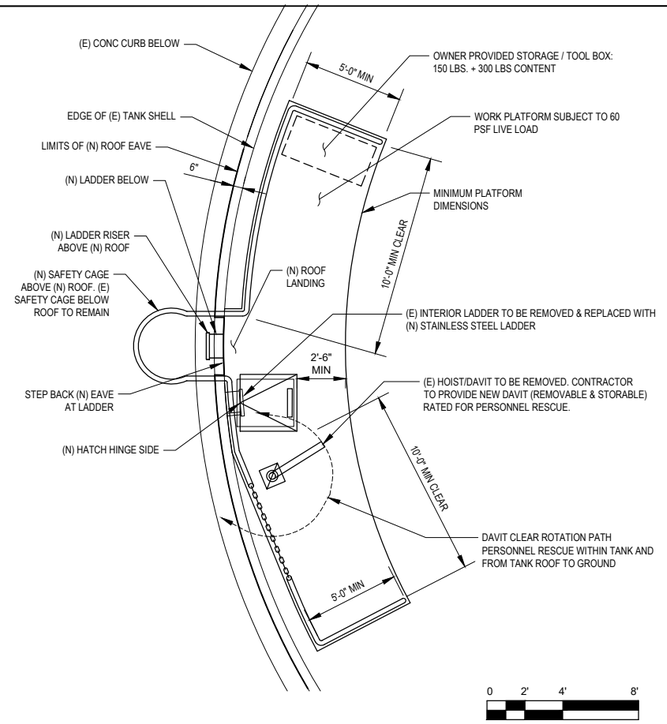
Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project KORBLEX RESERVOIRS SEISMIC RETROFIT

Title 2 MG DOMESTIC TANK ROOF PLAN
Size ANSI D

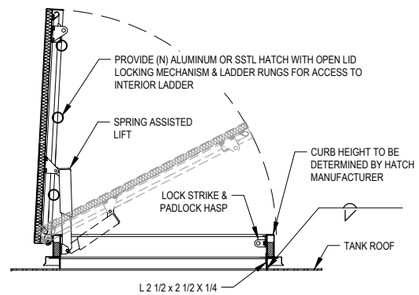
Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. S-103
Sheet 14 of 16

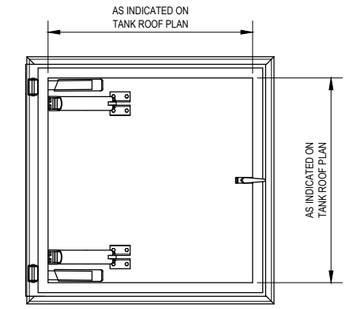
Plot Date: 30 July 2021 - 11:29 AM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-ST-0103.dwg



1 S501 **TANK PLATFORM & RAILING PLAN**
SCALE: 1/4" = 1'-0"

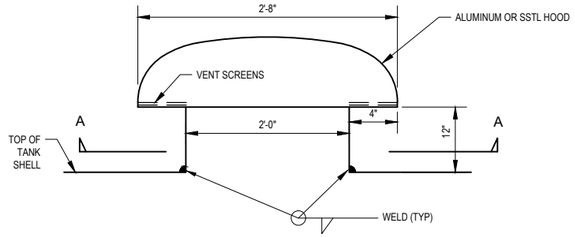


ELEVATION

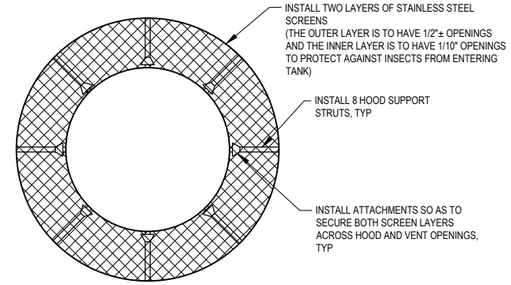


PLAN

2 S501 **ROOF HATCH DETAIL**
SCALE: NOT TO SCALE

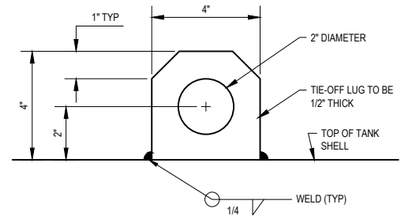


FRONT VIEW

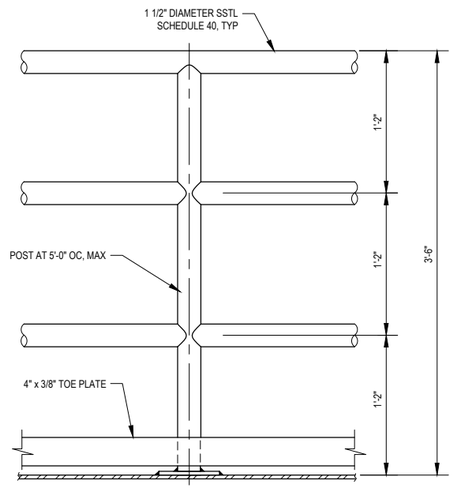


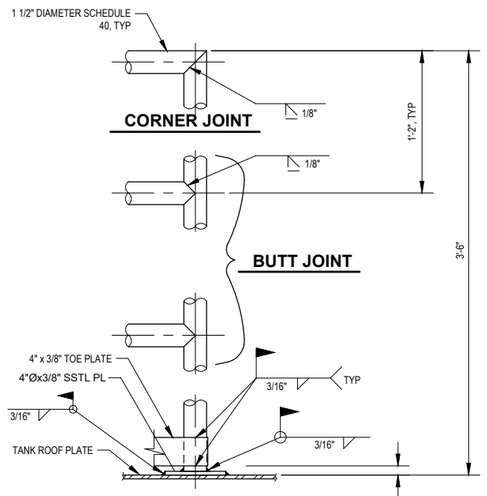
BOTTOM VIEW (SECTION A - A)

3 S501 **ROOF VENT DETAILS**
SCALE: NOT TO SCALE

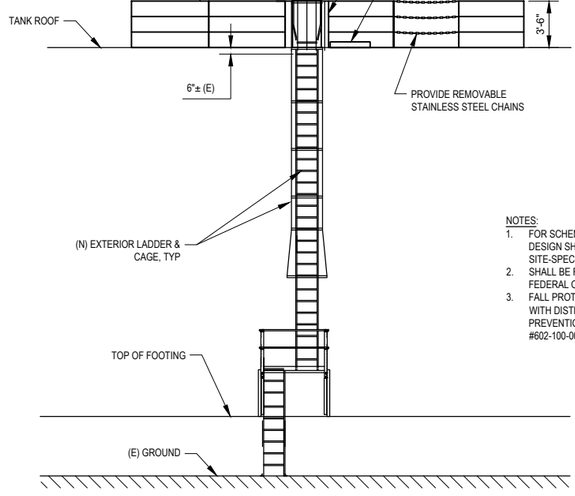


4 S501 **TIE-OFF DETAIL**
SCALE: NOT TO SCALE



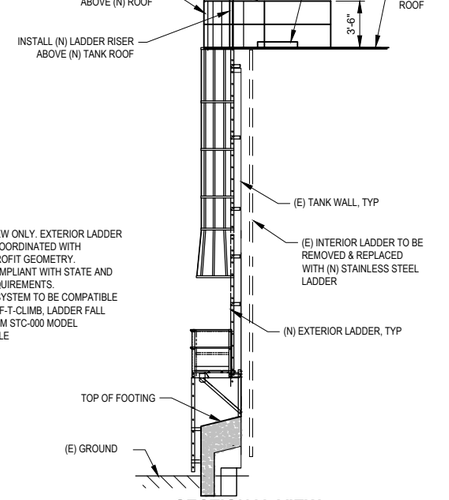


5 S501 **SAFETY RAILING DETAIL**
SCALE: NOT TO SCALE



VIEW FACING TANK WALL

NOTES:
1. FOR SCHEMATIC VIEW ONLY. EXTERIOR LADDER DESIGN SHALL BE COORDINATED WITH SITE-SPECIFIC RETROFIT GEOMETRY.
2. SHALL BE FULLY COMPLIANT WITH STATE AND FEDERAL OSHA REQUIREMENTS.
3. FALL PROTECTION SYSTEM TO BE COMPATIBLE WITH DISTRICT'S SAF-T-CLIMB, LADDER FALL PREVENTION SYSTEM STC-000 MODEL #602-100-003 SHUTTLE



SECTIONAL VIEW

6 S501 **EXTERIOR LADDER DETAILS**
SCALE: NOT TO SCALE

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	**A. PRATT**	Drafting Check	**B. CROWELL**	Project Manager **NS**
Designer	**S. BURNS**	Design Check	**B. CROWELL**	Project Director **SXM**

Bar is one inch on original size sheet
0 1"

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **KORBLEX RESERVOIRS SEISMIC RETROFIT**

Title **TANK ROOF DETAILS**

Size **ANSI D**

Project No.	Date	Scale
11218859	**07-23-2021**	**AS SHOWN**

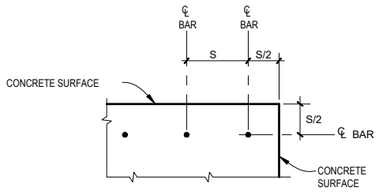
Sheet No **S-501**
Sheet **15 of 16**

Plot Date: 30 July 2021 - 11:30 AM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-ST-0501.dwg

DEVELOPMENT LENGTH (ℓ_d)												
BAR SIZE	3000 PSI CONC (f'c)				4000 PSI CONC (f'c)				5000 PSI CONC (f'c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"
#3	13	22	12	17	12	19	12	15	12	17	12	13
#4	18	29	14	22	15	25	12	19	14	23	12	17
#5	22	36	17	28	19	31	15	24	17	28	13	22
#6	26	43	20	33	23	37	18	29	20	34	16	26
#7	38	63	29	48	33	54	25	42	29	49	23	38
#8	43	72	33	55	37	62	29	48	34	56	26	43
#9	49	81	37	62	42	70	33	54	38	63	29	48
#10	56	89	43	69	49	78	38	60	44	69	34	54
#11	68	98	52	76	59	85	45	66	53	76	41	59
TENSION LAP SPLICE LENGTH (CLASS 'B' SPLICE)												
BAR SIZE	3000 PSI CONC (f'c)				4000 PSI CONC (f'c)				5000 PSI CONC (f'c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"
#3	17	28	16	22	16	25	16	19	16	22	16	17
#4	23	38	18	29	20	33	16	25	18	29	16	23
#5	28	47	22	36	25	41	19	31	22	36	17	28
#6	34	56	26	43	29	49	23	38	26	44	20	34
#7	49	82	38	63	43	71	33	55	38	63	30	49
#8	56	93	43	72	49	81	38	62	44	72	34	56
#9	63	105	49	81	55	91	42	70	49	81	38	63
#10	73	116	56	90	63	101	49	78	57	90	44	70
#11	88	128	68	99	76	111	59	85	68	99	53	76

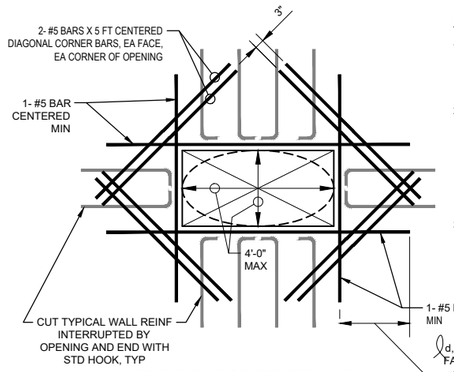
NOTES:

1. LENGTHS SHOWN ARE FOR GRADE 60 UNCOATED BARS.
2. LENGTHS SHOWN ARE IN INCHES.
3. INCREASE LENGTHS 30% FOR LIGHT WEIGHT CONCRETE
4. TOP BARS: HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THEM.
5. THE QUANTITY 's' IS DEFINED AS FOLLOWS:



1 BAR DEVELOPMENT LENGTHS AND LAP SPLICE LENGTHS FOR CONCRETE

NOT TO SCALE

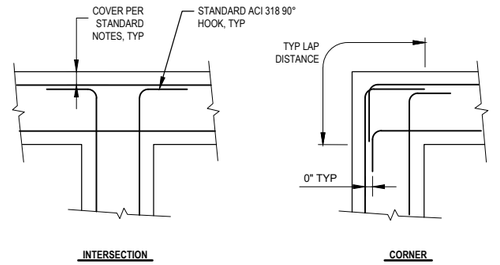


NOTES:

1. FOR ROUND OPENING USE CIRCUMSCRIBING RECTANGLE FOR REINFORCING APPLICATION
2. PROVIDE EXTRA BARS (NOT SHOWN) PARALLEL TO SIDES OF OPENINGS EQUAL TO AREAS OF INTERRUPTED SLAB BARS. EXTEND FULL LENGTH OF SPAN AND/OR LENGTH OF INTERRUPTED BARS AS APPLICABLE
3. TYPICAL AT OPENINGS UP TO 4'-0" MAXIMUM, UNO

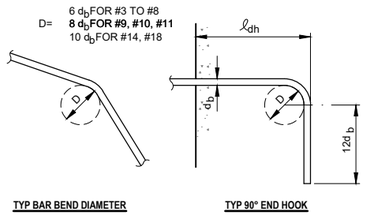
2 TYP REINFORCEMETN AT WALL & SLAB OPENINGS

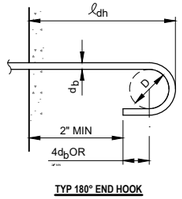
NOT TO SCALE



3 TYP REINFORCEMENT AT INTERSECTIONS AND CORNERS

NOT TO SCALE

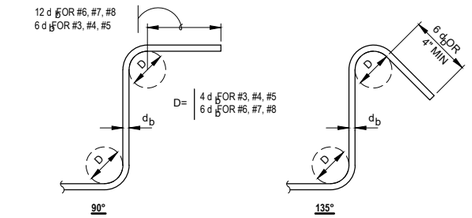




MINIMUM TENSION EMBEDMENT LENGTHS FOR STANDARD END HOOKS ON REINFORCING BARS (IN.) ℓ_{dh}				
BAR SIZE	NORMAL WEIGHT CONCRETE, f'c, PSI			
	3000	4000	5000	6000
#3	6	6	6	6
#4	8	7	6	6
#5	10	9	8	7
#6	12	10	9	9
#7	14	12	11	10
#8	16	14	12	11
#9	18	15	14	13
#10	20	17	16	14
#11	22	19	17	16
#14	38	33	29	27
#18	50	43	39	35

4 REINFORCING BAR ENDS AND BAR HOOKS

NOT TO SCALE



5 STIRRUPS AND TIE HOOKS

NOT TO SCALE

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	B. CROWELL	Project Manager NS
Designer	S. GOULD	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project KORBLEX RESERVOIRS SEISMIC RETROFIT

Title TYPICAL CONCRETE DETAILS

Size ANSI D

Project No. 11218859 | Date 07-23-2021 | Scale AS SHOWN

Sheet No. S-502 | Sheet 16 of 14

Plot Date: 30 July 2021 - 11:30 AM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11218859\digital_design\acad 2020\Sheets\Korblex\11218859-GHD-0001-DWG-ST-0501.dwg

Attachment 2

Samoa Reservoir Seismic Retrofit Project – 60% Design Drawings

HUMBOLDT BAY MUNICIPAL WATER DISTRICT

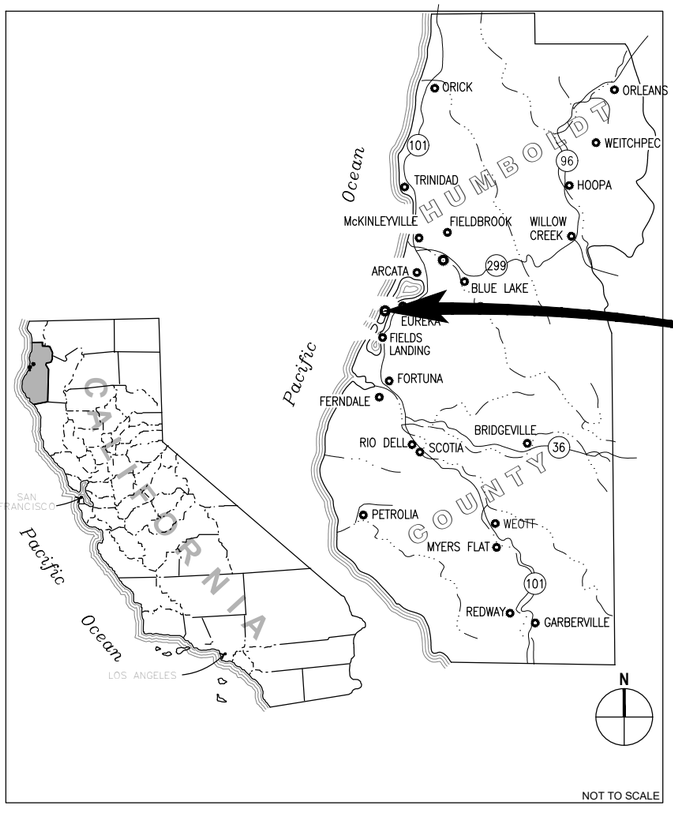
SAMOA RESERVOIR SEISMIC RETROFIT PROJECT

JULY 2021

PREPARED BY:

GHD

AREA MAP



LOCATION MAP

SAMOA TANK

N

0 200' 400'

1"=200'

APPROVALS

PLANS AND SPECIFICATIONS APPROVED BY THE BOARD OF DIRECTORS OF THE HUMBOLDT BAY MUNICIPAL WATER DISTRICT, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA, THIS ____ DAY OF _____, 2021.

GENERAL MANAGER
JOHN FRIEDENBACH _____ SIGNED

BOARD OF DIRECTORS

SHERI WOO	PRESIDENT
NEAL LATT	VICE PRESIDENT
J. BRUCE RUPP	SECRETARY-TREASURER
MICHELLE FULLER	ASSISTANT SECRETARY-TREASURER
DAVID LINDBERG	DIRECTOR

ENGINEER: GHD Inc.
STEVE MCHANEY _____ SIGNED

SHEET INDEX

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	SXM	Drafting Check	SXM	Project Manager NS
Designer	BLC	Design Check	SXM	Project Director SXM

Bar is one inch on original size sheet
0 1"

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www.ghd.com

Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: SAMOA RESERVOIR SEISMIC RETROFIT

Title: COVER SHEET AND SHEET INDEX

Size: ANSI D

Project No.	Date	Scale	Sheet No.	Sheet
11218859	07-23-2021	AS SHOWN	G-001	1 of 14

Plot Date: 29 July 2021 - 7:19 PM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-GN-0001.dwg

GENERAL SITE NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND BECOMING FAMILIAR WITH THE SITE CONDITIONS PRIOR TO BIDDING.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ALL SURVEY MONUMENTS, FENCES, ROADS, CORNER PIPES, OR OTHER SITE DEVELOPMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION AT THE CONTRACTOR'S OWN EXPENSE. IF A MONUMENT HAS THE POTENTIAL OF BEING DISTURBED, A CORNER RECORD SHALL BE FILED WITH THE COUNTY SURVEYOR (PER SECTION 8773.2 OF THE PUBLIC LAND SURVEYORS ACT) AS REQUIRED BY THE SUBDIVISION MAP ACT TO PRESERVE THE LOCATION OF SAID MONUMENT. CONTRACTOR SHALL, AT HIS/HER EXPENSE, HIRE A CIVIL ENGINEER OR LAND SURVEYOR TO PERFORM THE WORK.
3. CONTRACTOR SHALL PROVIDE ADEQUATE DUST AND EROSION AND SEDIMENT CONTROL AND KEEP MUD AND DEBRIS OFF ROADS AT ALL TIMES.
4. CONTRACTOR SHALL USE DESIGNATED STAGING AREAS AND ANY OTHER AREAS AS DEPICTED ON THESE DOCUMENTS FOR STAGING CONSTRUCTION EQUIPMENT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL CONSTRUCTION. ADEQUATE BRACING, FALL PROTECTION, AND SUPPORTS SHALL BE USED TO PROVIDE PROPER TEMPORARY INTEGRITY AND WORKER PROTECTION DURING ALL PHASES OF CONSTRUCTION.
6. UPON COMPLETION OF THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL LEAVE THE PROJECT AREA FREE OF DEBRIS AND UNUSED MATERIAL. ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE RESTORED TO AN "AS GOOD OR BETTER" CONDITION.
7. IT IS EXPECTED THAT THE ACTUAL LOCATION OF EXISTING UTILITIES MAY VARY FROM THAT SHOWN ON THE PLANS. CONTRACTOR SHALL POTHOLE AND LOCATE ALL EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT PRIOR TO WORK COMMENCING FOR ANY EXCAVATION OR POTHOLING.
8. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT NEW FEATURES TIE INTO EXISTING SITE DEVELOPMENT, PAVEMENT JOINTS MATCH CORRECTLY, AND THAT GENERAL DESIGN ELEVATIONS FOR NEW CONSTRUCTION PROVIDE PROPER PAVEMENT AND DRAINAGE SLOPES FROM EXISTING TIE IN POINTS. REPORT DISCREPANCIES TO OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

HAZARDOUS MATERIAL NOTES

1. SEE LIMITED HAZARDOUS MATERIALS SURVEY REPORT, KORBLEX AND SAMOA RESERVOIR SEISMIC RETROFIT PROJECT, HUMBOLDT BAY MUNICIPAL WATER DISTRICT, 30 JUNE 2021 BY GHD.
2. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH ALL STATE AND FEDERAL REGULATIONS WITH RESPECT TO HAZARDOUS MATERIALS HANDLING AND DISPOSAL AND FOR PROTECTION OF WORKERS AND OWNERS AND OWNER'S REPRESENTATIVE PERSONNEL ON SITE.
3. ANY ASBESTOS CEMENT PIPE ENCOUNTERED DURING CONSTRUCTION TO BE PROPERLY HANDLED AND DISPOSED BY THE CONTRACTOR.

VEGETATION PROTECTION AND RESTORATION NOTES

1. NO CUTTING OF ANY PART OF TREES, INCLUDING ROOTS, SHALL BE DONE WITHOUT SECURING APPROVAL FROM OWNER.
2. ALL EXISTING LANDSCAPED AND UNPAVED AREAS WHICH ARE DISTURBED BY CONSTRUCTION OR EARTHWORK OPERATIONS SHALL BE HAND RAKED SMOOTH AND RETURNED TO ORIGINAL EXISTING CONDITIONS.
3. LANDSCAPING THAT IS REMOVED TO FACILITATE CONSTRUCTION SHALL BE REPLACED IN KIND.
4. ALL DISTURBED AREAS SHALL BE RAKED SMOOTH AND HYDROSEEDED FOLLOWING CONSTRUCTION.
5. WHEN CONSTRUCTION OCCURS WITHIN DRIP LINE ON EXISTING TREES, CONTRACTOR IS TO PILE THE SOIL ON THE SIDE AWAY FROM THE TREE. WHEN THIS IS NOT POSSIBLE, PLACE SOIL ON PLYWOOD. A TARP, OR THICK BED OF MULCH. THIS IS TO HELP PREVENT CUTTING INTO THE SOIL SURFACE WHEN THE BACKHOE OR TRACTOR BLADE REFILLS THE TRENCH.
6. REFILL OPEN TRENCHES QUICKLY WITHIN 4 HOURS OF EXCAVATION WHEN THEY OCCUR WITHIN THE DRIP LINE OF EXISTING TREES. IF THIS IS NOT POSSIBLE AND WEATHER IS HOT, DRY, OR WINDY, CONTRACTOR MUST KEEP ROOT ENDS MOIST BY COVERING THEM WITH WET BURLAP. IF TEMPERATURE IS 80°F OR GREATER, THE BURLAP MUST BE INSPECTED EVERY HOUR AND RE-WET A NECESSARY TO MAINTAIN A CONSTANT COOL MOIST CONDITION. IF TEMPERATURE IS BELOW 80°, THE BURLAP MUST BE INSPECTED EVERY FOUR HOURS AND RE-WET AS NECESSARY TO MAINTAIN A CONSTANT COOL MOIST CONDITION. SMALL ROOTS CAN DRY OUT AND DIE IN 10-15 MINUTES. LARGER ROOTS CAN SUCCUMB IN AN HOUR OR LESS UNDER UNFAVORABLE WEATHER CONDITIONS.
7. MATERIALS, EQUIPMENT, TEMPORARY BUILDINGS, FUELS, PAINTS AND OTHER CONSTRUCTION ITEMS ARE NOT TO BE PLACED WITHIN THE DRIP LINE OF EXISTING TREES.
8. 5.GRADING SHOULD NOT CREATE DRAINAGE PROBLEMS FOR TREES BY CHANNELING WATER INTO THEM, OR CREATING SUNKEN AREAS.

GEOTECHNICAL NOTES

1. CONTRACTOR SHALL DESIGN THE PROJECT TO BE COMPLIANT WITH THE FOLLOWING GEOTECHNICAL REPORTS:
   1.1. GEOTECHNICAL INVESTIGATION REPORT HBMWD RESERVOIRS SEISMIC RETROFIT PROJECT THREE WATER TANKS FROM CRAWFORD & ASSOCIATES, INC. DATED JULY 2021.

SURFACE RESTORATION NOTES

1. IN ADDITION TO UTILITY AND VEGETATION RESTORATION, CONTRACTOR TO RESTORE SIDEWALKS, CURBS, PAVING, SLABS, STRIPING, SIGNAGE, AND OTHER SURFACE FEATURES TO PRE-PROJECT CONDITIONS.
2. NOT ALL SURFACE RESTORATION REQUIREMENTS SHOWN. CONTRACTOR TO ASSESS PRIOR TO BIDDING AND INCLUDE THE COST OF RESTORATION IN THE BID ITEMS AFFECTING SURFACE FEATURES.

ITEMS TO BE PROVIDED BY THE CONTRACTOR

1. NOT UNLESS SPECIFICALLY NOTED OTHERWISE, CONTRACTOR SHALL FURNIISH AND INSTALL ALL NEW ITEMS.
2. UNLESS SPECIFICALLY NOTED OTHERWISE THE TERM "PROVIDE" SHALL MEAN CONTRACTOR TO FURNISH AND INSTALL.

GRADING NOTES

1. SURVEY OF EXISTING CONDITIONS PREPARED BY LACO ASSOCIATES. SEE SURVEY NOTES. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL SURVEY DATA. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING RIGHT-OF-WAY LINES, SLOPE EASEMENTS, AND ALL HORIZONTAL AND VERTICAL CONTROL PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING AND SHALL ARRANGE FOR STAKING WITH A LICENSED SURVEYOR. STAKING WILL BE REVIEWED BY OWNER FOR CONFIRMATION TO DESIGN PRIOR TO CONSTRUCTION.
3. ALL GRADES BETWEEN SPOT ELEVATIONS SHALL HAVE UNIFORM SLOPE UNLESS OTHERWISE INDICATED. MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING WALLS AND DOORS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL CONSTRUCTION. ADEQUATE SHORING BRACING, TIES, AND SUPPORTS SHALL BE USED TO PROVIDE PROPER TEMPORARY INTEGRITY DURING ALL PHASES OF CONSTRUCTION.
5. ALL EXISTING LANDSCAPED AND UNPAVED AREAS WHICH ARE DISTURBED BY CONSTRUCTION OR EARTHWORK OPERATIONS SHALL BE HAND RAKED SMOOTH AND RETURNED TO ORIGINAL EXISTING CONDITIONS.
6. ALL DITCHES, SWALES, GUTTERS, ETC. SHOULD BE CONSIDERED ACTIVE STORM CONVEYANCES UNLESS OTHERWISE INDICATED. CONTRACTOR IS RESPONSIBLE FOR ADDRESSING STORM WATER DRAINAGE AND DEWATERING OF WORK AREAS DURING CONSTRUCTION.
7. DURING WET WEATHER PERIODS, CONTRACTOR IS RESPONSIBLE FOR SEQUENCING CONSTRUCTION IN A MANNER TO MINIMIZE IMPACT ON OPEN EARTHWORK AND COMPACTION OPERATIONS.
8. COMPLETELY COVER ANY SOIL STOCKPILES WITH 6 MIL BLACK PLASTIC AND PROVIDE RESTRAINTS TO HOLD PLASTIC IN PLACE. MONITOR PLASTIC COVER AS PART OF CONTINUOUS EROSION CONTROL PLAN. PLACE SILT FENCE COMPLETELY AROUND STOCKPILE.

STAGING

1. CONTRACTOR MAY STAGE ON EXISTING PAVED AREAS. COORDINATE STAGING LOCATION WITH OWNER.

UTILITY NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS AND INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR.
2. CONTRACTOR SHALL COORDINATE CONSTRUCTION SEQUENCING AND SHUT DOWNS WITH DISTRICT STAFF.
3. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS AND INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR. SEE GENERAL SITE NOTES 1 AND 7. SEE UTILITY LOCATING AND MAPPING SPECIFICATIONS.
4. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION UNDER THIS SECTION OR ANY OTHER SECTION.
5. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, OR FITTING REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.
6. CONTRACTOR SHALL COORDINATE USA UTILITY LOCATE 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION. CONTRACTOR SHALL COORDINATE THE UTILITY LOCATE WITH THE OWNER FOR ALL UTILITY WORK. CONTRACTOR TO NOTE THAT CAMPUS OWNED UTILITIES WILL NOT BE MARKED VIA A USA LOCATE. CONTRACTOR TO EMPLOY THEIR OWN UTILITY LOCATING TECHNIQUES ALONG ALL PROPOSED ROUTES OF NEW UTILITIES AND TO MARK ALL CAMPUS OWNED UTILITIES AFFECTED BY CONTRACTORS WORK. INFORM OWNER IMMEDIATELY IF LOCATE INDICATES THAT EXISTING UTILITIES ARE DIFFERENT THAN SHOWN ON DRAWINGS.
7. CONTRACTOR IS RESPONSIBLE FOR POTHOLING ALONG THE ALIGNMENTS OF ALL NEW UTILITIES TO IDENTIFY POTENTIAL UTILITY CONFLICTS, SOILS CONDITIONS, AND TIE-IN POINTS. CONTRACTOR RESPONSIBLE FOR MAKING ADJUSTMENTS IN ALIGNMENTS TO ACCOMMODATE ACTUAL FIELD CONDITIONS.
8. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, FEATURES, AND STRUCTURES LOCATED ON THE SITE. LOCATE, PROTECT, AND AVOID DISRUPTION OF ALL ABOVE AND BELOW GRADE UTILITIES DURING CONSTRUCTION.
9. ALL BURIED LINES TO HAVE 36 INCHES MINIMUM COVER, UNLESS NOTED OTHERWISE.
10. CONTRACTOR TO VERIFY CONNECTIVITY OF UTILITY NETWORK PRIOR TO REPLACEMENT, ABANDONMENT, OR DEMOLITION OF EXISTING UTILITY. CONTRACTOR TO CONFIRM CONNECTIVITY OF NEW UTILITY PRIOR TO COMPLETING WORK.
11. THRUST BLOCKING REQUIRED ON ALL PRESSURE LINES BENDS AND FITTINGS. SEE STANDARD THRUST BLOCKING DETAIL. RESTRAINED FITTINGS MAY BE USED AS AN ALTERNATIVE WHEN INSTALLED ON FITTINGS AND LINES PER MANUFACTURER REQUIREMENTS TO ACHIEVE PROPER RESTRAINT OF THE OVERALL PIPING SYSTEM.
12. ALL EXISTING UTILITIES AND TIE-IN POINTS SHOULD BE CONSIDERED ACTIVE UTILITIES UNLESS OTHERWISE INDICATED.
13. CONFIRM FIRE HYDRANT TYPE, NOZZLE SIZES, AND THREAD CONFIGURATIONS WITH FIRE DEPARTMENT PRIOR TO CONSTRUCTION.
14. CONFIRM ALL UTILITY VALVE VAULTS, VALVES, METERS, BACKFLOW PREVENTION ASSEMBLIES, AND OTHER UTILITY APPURTENANCES WITH THE OWNER.

EROSION CONTROL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND IMPLEMENTING THE PROJECT SWPPP PER THE CURRENT NPDES GENERAL PERMIT REQUIREMENTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MONITORING AND REPORTING. THE OWNER SHALL REGISTER THE PROJECT VIA SMARTS AND ESTABLISH ACCESS FOR THE QUALIFIED STORMWATER PRACTITIONER (QSP).
3. THE EROSION CONTROL MEASURES SHOWN HERE ARE THE MINIMUM RECOMMENDED. THE CONTRACTOR SHALL ADHERE TO THE QSD/QSP SPECIFIC PLAN OF BMP'S (BEST MANAGEMENT PRACTICES) FOR THE PROJECT SITE APPROPRIATE TO THE PHASE OF CONSTRUCTION AND THE TIME OF YEAR.
4. BACK UP EROSION CONTROL MATERIALS SHALL BE STOCKPILED ON THE SITE TO ALLOW FOR TIMELY REPAIR AND MAINTENANCE OF ALL BMP'S.

ABBREVIATIONS

A B	ANCHOR BOLT
AB	AGGREFATE BASE
AC	ASPHALT CONCRETE
AGG	AGGREGATE
ARV	AIR VACUUM RELEASE VALVE
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B-	BORING
BC	BEGIN CURVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BFP	BACK FLOW PREVENTER
BM	BENCH MARK
BLDG	BUILDING
BLVD	BOULEVARD
BO	BLOW OFF
BOT	BOTTOM
BVC	BEGIN VERTICAL CURVE
C	CONDUIT
CB	CATCH BASIN
CBC	CALIFORNIA BUILDING CODE
CCR	CALIFORNIA CODE OF REGULATIONS
CI	CAST IRON
CL	CENTERLINE
CLR	CLEAR, CLEARANCE
CLS	CONCRETE LINED STEEL PIPE
CO	CLEAN OUT
CMLS	CEMENT MORTAR LINED STEEL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
CONT'D	CONTINUED
COR	CORNER
CU	CUBIC
CV	CHECK VALVE
d	PENNY (NAIL SIZE)
DIA, Ø	DIAMETER
DTL	DETAIL
DI	DIP DUCTILE IRON PIPE
DF	DOUGLAS FIR
DR	DRIVE
DW	DOMESTIC WATER LINE
DWG	DRAWING
(E)	EXISTING
E	EAST, OR EASTING
EA	EACH
EC	END CURVE
EF	EACH FACE
EP	EDGE PAVEMENT
EQ	EQUAL
ER	EDGE ROAD
EL/ELEV	ELEVATION
ELEC	ELECTRIC, OR ELECTRICAL
ENGR	ENGINEER
EVC	END VERTICAL CURVE
EW	EACH WAY
FDC	FIRE DEPARTMENT CONNECTION
FIN	FINISH
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FLR	FLOOR
FO	FIBER OPTIC
FP	FIRE PROTECTION
FS	FINISHED SURFACE
FT	FOOT, OR FEET
FTG	FOOTING
G	GAS LINE
GAL	GALLON
GALV	GALVANIZED
GR	GRADE
GRD	GROUND
GV	GATE VALVE
HB	HOSE BIBB
HCSB	HUMBOLDT COMMUNITY SERVICES DISTRICT
HDD	HORIZONTAL DIRECTIONAL DRILLING
HDPE	HIGH-DENSITY POLYETHYLENE
HORZ	HORIZONTAL
HPG	HIGH PRESSURE GAS
HPNS	HIGH PRESSURE NATURAL GAS
HPS	HIGH PRESSURE SODIUM
HWY	HIGHWAY
IE	INVERT ELEVATION
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION
JCT	JUNCTION
JP	JUNCTION POLE (UTILITY)
L	LENGTH
LAT	LATERAL
LF	LINEAR FEET
LS	LIFT STATION
LT	LEFT
M	METER
MAX	MAXIMUM
MFR	MANUFACTURER
MG	MILLION GALLON
MH	MANHOLE
MIN	MINIMUM
MPG	MEDIUM PRESSURE GAS
MISC	MISCELLANEOUS
N	NORTH
(N)	NEW
NIC	NOT IN CONTRACT
NO	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTERS
OPNG	OPENING
PC	POINT OF CURVATURE
PCC	PORTLAND CONCRETE CEMENT
PE	POLYETHYLENE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PL	PLATE
PLCS	PLACES
PLWD	PLYWOOD
POC	POINT OF CONNECTION
PP	POWER POLE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PT	POINT
PT	POINT OF TANGENCY
PT	PRESSURE TREATED
PTFE	POLYTETRAFLUOROETHYLENE
PVC	POLVINYL CHLORIDE PLASTIC PIPE
R	RADIUS
RC	RELATIVE COMPACTION
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWD	REDWOOD
REQ'D	REQUIRED
REQ'T	REQUIREMENT
RPP	REDUCED PRESSURE PRINCIPAL
RT	RIGHT
R/W	RIGHT OF WAY
S	SLOPE
SAT	SATURATED
SCH, OR SCHED	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SDCB	STORM DRAIN CATCH BASIN
SHT	SHEET
SIM	SIMILAR
SO	SOUTH
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SSTL	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
TC T, OR	TOP OF CURB
TEL	TELEPHONE
THK	THICK
TG	TOP OF GRATE
TP	TEST PIT
TRF	TURBIDITY REDUCTION FACILITY
TS	TOP OF SLAB
TW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
V	VOLT(S)
VERT	VERTICAL
W/	WITH
W	WATER
WD	WIDE
WSP	WELDED STEEL PIPE
XING	CROSSING
YD	YARD
&	AND
@	AT
°	DEGREE
Ø	DIAMETER
'	FEET
"	INCHES
#	NUMBER
±	PLUS OR MINUS

PLAN SYMBOLS

NOTE: CONTACT ENGINEER FOR ABBREVIATIONS NOT LISTED.

EXISTING

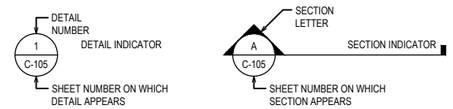
- EDGE OF AC PAVEMENT
- OH — OVERHEAD WIRES
- OHE — OVERHEAD ELECTRIC WIRES
- OHT — OVERHEAD TELEPHONE WIRES
- UGE — UNDERGROUND ELECTRIC LINE
- E — ELECTRIC LINE
- SL — STREET LIGHT CONDUIT
- G — GAS LINE
- SS — SANITARY SEWER LINE
- SSFM — SANITARY SEWER FORCE MAIN
- SD — STORM DRAIN LINE
- T — TELEPHONE LINE
- TC — TELECOMMUNICATIONS
- L — LIGHTING CONDUIT
- TV — TELEVISION LINE
- W — WATER LINE
- WA — WATER LINE TO ABANDONED
- W — WATER LINE TO BE DEMOLISHED
- x — x — CHAIN LINK FENCE
- 89 — CONTOUR ELEVATION LINE
- CENTER LINE
- PROPERTY LINE
- MONUMENT LINE
- EASEMENT LINE
- x 95.94 SPOT ELEVATION

EXISTING

- GM GAS METER
- GV GAS VALVE
- WM WATER METER
- WATER VALVE
- W WATER VAULT
- HOSE BIBB
- FIRE HYDRANT
- WATER TAPPING SADDLE
- S SANITARY SEWER MANHOLE
- SSCO SANITARY SEWER CLEANOUT
- SV SEWER VENT
- D STORM DRAIN MANHOLE
- CB CATCH BASIN
- CURB INLET
- DRAINAGE INLET
- SDCO STORM DRAIN CLEANOUT
- E ELECTRIC VAULT COVER
- ELECTRIC PULLBOX
- T TELEPHONE PULLBOX
- HVE HIGH VOLTAGE ELECTRIC
- TELEPHONE MANHOLE
- POWER POLE
- GUY GUY WIRE & ANCHOR
- (2)R JOINT POLE WITH (2) RISERS
- JP JOINT POLE
- STREET LIGHT
- ELECTROLIER
- SIGN (AS NOTED)

GENERAL SHEET SYMBOLS

- 1 KEYNOTE
- 1 VALVE NUMBER
- RUBBER EXPANSION JOINT ASSEMBLY



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No.	Issue	Checked	Approved	Date

Author **SXM** Drafting Check **SXM** Project Manager **NS**

Designer **BLC** Design Check **SXM** Project Director **SXM**

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**

Project **SAMOA RESERVOIR SEISMIC RETROFIT**

Title **GENERAL NOTES, SYMBOLS AND ABBREVIATIONS**

Size **ANSI D**

Project No.	Date	Scale
11218859	**07-23-2021**	**AS SHOWN**

Sheet No. **G-002** Sheet **2 of 14**

Plot Date: 29 July 2021 - 7:19 PM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-GN-0002.dwg

SHEET GENERAL NOTES

1. CONTRACTOR TO VERIFY PIPE AND VALVE SIZES, TYPE, AND CONFIGURATION AND PROVIDE ALL TRANSITION FITTINGS AS REQUIRED
2. REPAIR ALL PAVING SIMILAR TO 1/C-504
3. CONTRACTOR MAY STAGE ON (E) PAVED AREAS.

SHEET KEYNOTES

1. REPLACE PORTION OF DRAIN LINE 1/C-503
2. (N) BURIED RUBBER EXPANSION JOINT ASSEMBLY 1/C-502
3. REPLACE FILL LINE FROM DOMESTIC WATER SYSTEM 3/C-503
4. (E) CATHODIC PROTECTION TO REMAIN
5. REPLACE PORTION OF 42" CMLS 2/C-502

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Designer	SXM	Design Check	MD	Project Director	SXM

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: SAMOA RESERVOIR SEISMIC RETROFIT

Title: 1 MG INDUSTRIAL EXISTING SITE CONDITIONS AND IMPROVEMENTS

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Size: ANSI D

Sheet No: C-101

Sheet: 3 of 14

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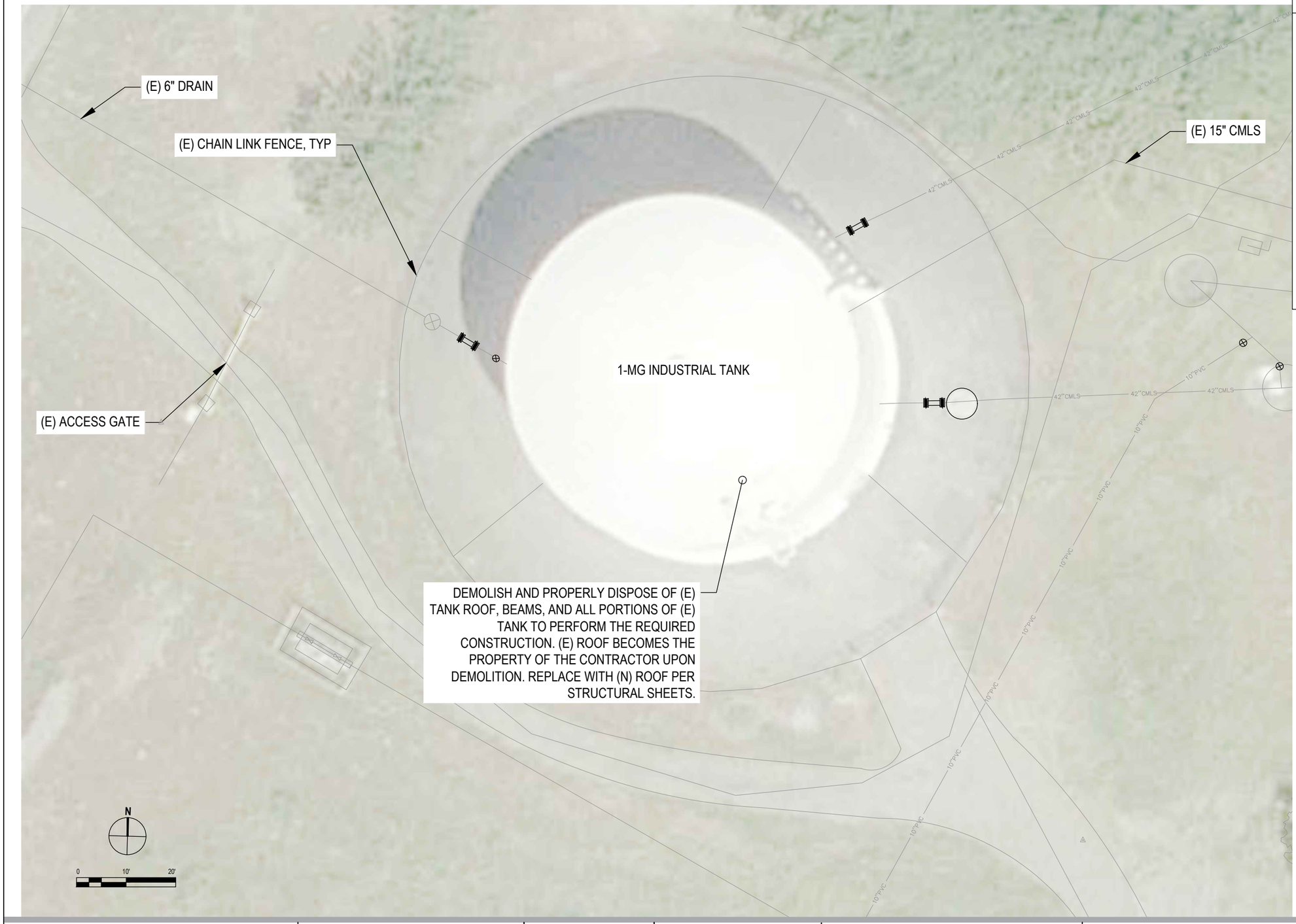

SHEET GENERAL NOTES

1. THE INTERIOR OF THE (E) 1-MG TANK AND NEW ROOF SHALL BE PREPPED AND PAINTED PER SPECIFICATION SECTION 09 91 00 - TANK PREPARATION AND COATING. REQUIRED TOUCH-UP PAINT LOCATIONS ON THE EXTERIOR OF THE TANK SHALL ALSO BE PREPPED AND PAINTED PER THE ABOVE REFERENCED SPECIFICATION.
2. WHERE ITEMS ARE TO BE REMOVED FROM THE OUTSIDE OF THE TANK, THE CONTRACTOR SHALL GRIND DOWN AND PAINT OVER ALL (E) BOLT PENETRATIONS, BRACKETS, ETC. IT SHALL BE ASSUMED THAT THESE AND ANY OTHER LOCATIONS REQUIRING PAINTING SHALL BE PREPPED AND PAINTED PER SPECIFICATION SECTION 09 91 00.
3. ALL NEW METAL COMPONENTS SHALL BE PREPPED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09 91 00.
4. CONTRACTOR SHALL COORDINATE WITH OWNER FOR TRANSFER OF UTILITY CONNECTIONS INSIDE ENCLOSURES THAT ARE TO BE REPLACED.
5. CONTRACTOR MAY REMOVE FENCING AS NEEDED FOR THE PERFORMANCE OF THE WORK, BUT IS RESPONSIBLE FOR THE REPLACEMENT OF THE FENCE TO RETURN IT TO EXISTING CONDITION, AND FOR THE REPLACEMENT OF TEMPORARY FENCING DURING THE PERFORMANCE OF THE WORK TO PREVENT PUBLIC ACCESS TO THE SITE.
6. THE OWNER SHALL DRAIN AND PERFORM INITIAL "MUCK OUT" OF THE TANK PRIOR TO THE PERFORMANCE OF THE WORK.
7. CONTRACTOR WILL PERFORM ALL ELECTRICAL WORK REQUIRED FOR REPLACEMENT OF ELECTRICAL COMPONENTS.
8. CONTRACTOR SHALL PROVIDE SUBMITTAL/SHOP DRAWINGS PRIOR TO FABRICATION AND/OR ORDERING OF ENCLOSURES, EQUIPMENT, PARTS, ETC.

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Designer	**SXM**	Design Check	**MD**	Project Director **SXM**

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **SAMOA RESERVOIR SEISMIC RETROFIT**

Title **1 MG INDUSTRIAL ROOF REPLACEMENT AND SITE PLAN**

Size **ANSI D**

Project No.	Date	Scale	Sheet No.	Sheet
11218859	**07-23-2021**	**AS SHOWN**	**C-102**	4 of 14

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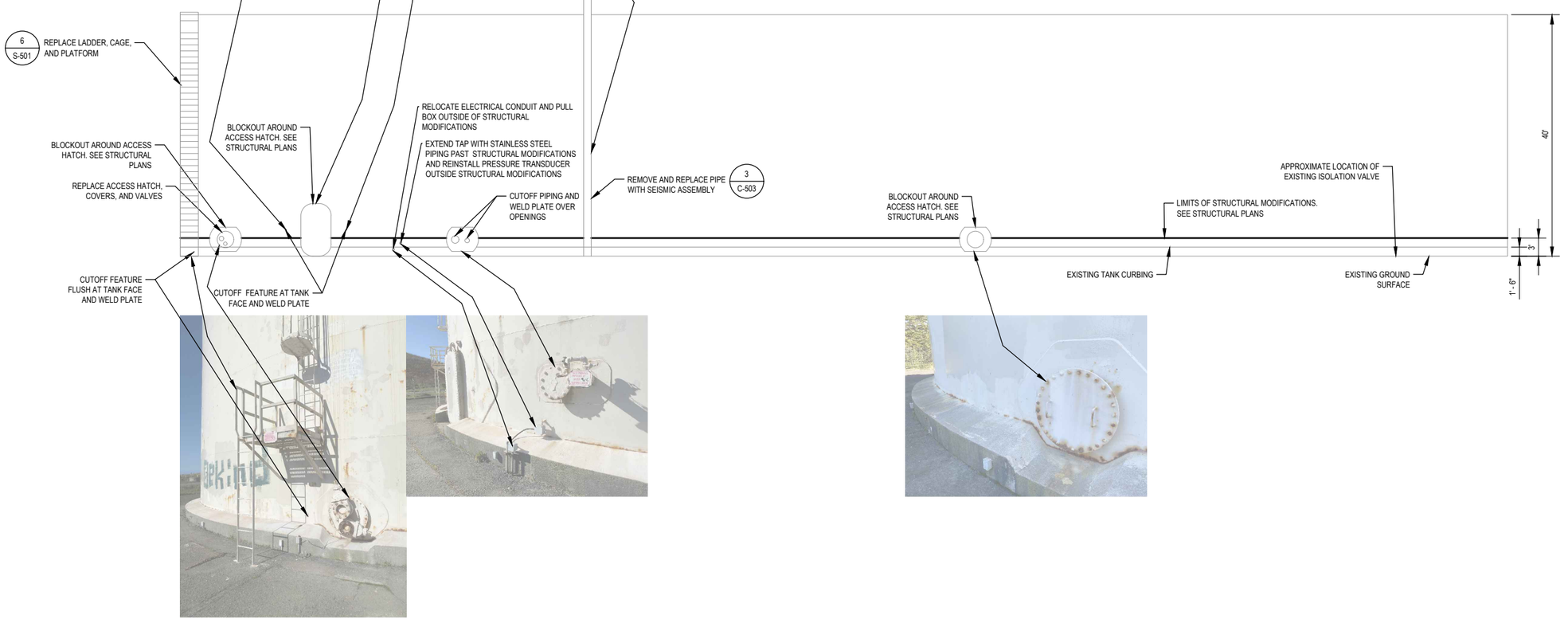
SHEET GENERAL NOTES

1. WHERE ITEMS ARE TO BE REMOVED FROM THE OUTSIDE OF THE TANK, THE CONTRACTOR SHALL GRIND DOWN AND PAINT OVER ALL (E) BOLT PENETRATIONS, BRACKETS, ETC. AND WELD 1/4" STEEL PLATES OVER OPENINGS. IT SHALL BE ASSUMED THAT THESE AND ANY OTHER LOCATIONS REQUIRING PAINTING SHALL BE PREPPED AND PAINTED PER SPECIFICATION SECTION 09 91 00.
2. ALL NEW METAL COMPONENTS SHALL BE PREPPED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09 91 00.
3. CONTRACTOR SHALL PROVIDE SUBMITTAL/SHOP DRAWINGS PRIOR TO FABRICATION AND/OR ORDERING OF ENCLOSURES, EQUIPMENT, PARTS, ETC.
4. FOR ALL HATCHES, COVERS AND FITTINGS REMOVED DURING PROJECT, REPLACE GASKETS AND BOLTS, NUTS, AND WASHERS.
5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE.
6. WELD STEEL PLATES TO THE INTERIOR AND EXTERIOR OF THE TANK WHERE STEEL PLATES ARE REQUIRED USING 3/8" FILLET WELD ALL AROUND.



1 MG INDUSTRIAL TANK SHELL ELEVATION

1 / C-501 **SCALE: NTS**

0 10' 20'

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Project **SAMOA RESERVOIR SEISMIC RETROFIT**

Title **1 MG INDUSTRIAL TANK SHELL ELEVATION**

Size **ANSI D**

Project No.	Date	Scale
11218859	**07-23-2021**	**AS SHOWN**

Sheet No. **C-501**
Sheet **5** of **14**

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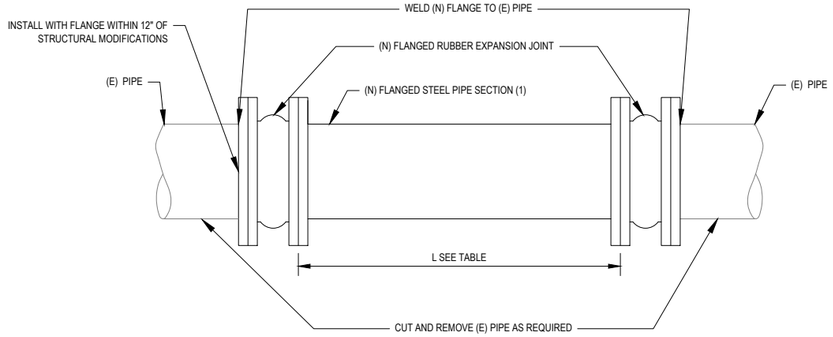
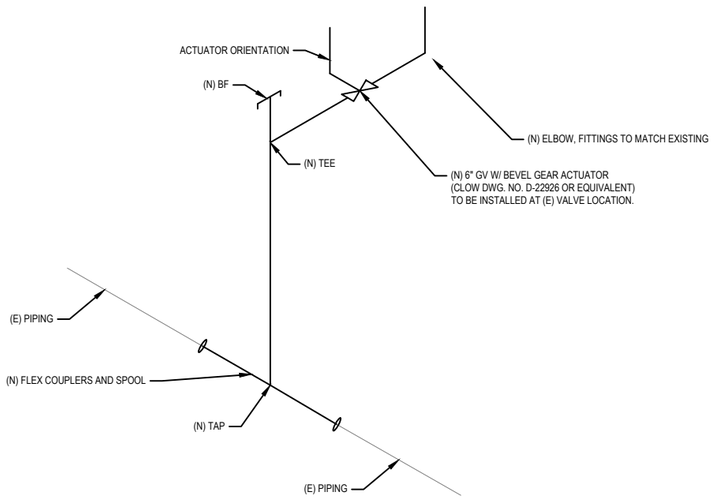
MINIMUM SPOOL LENGTH	
EXISTING PIPE SIZE	L_{MIN}
6" / 8"	36"
15" / 16"	60"
30"	80"
42"	100"



(1). MATCH (E) PIPE TYPE, LINING, AND COATING WHEN DIFFERENT

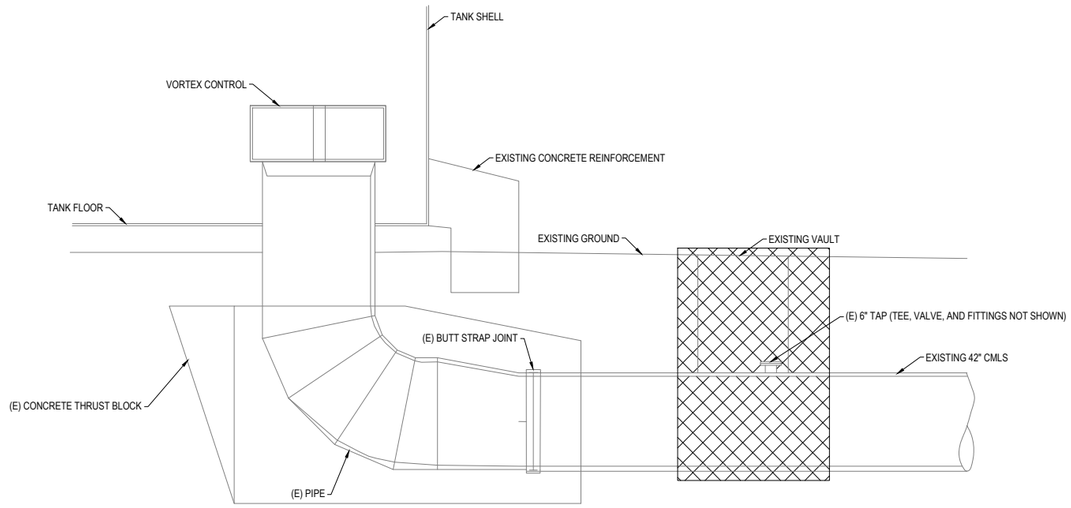
1 C-502 RUBBER EXPANSION JOINT ASSEMBLY DETAIL

SCALE: NTS



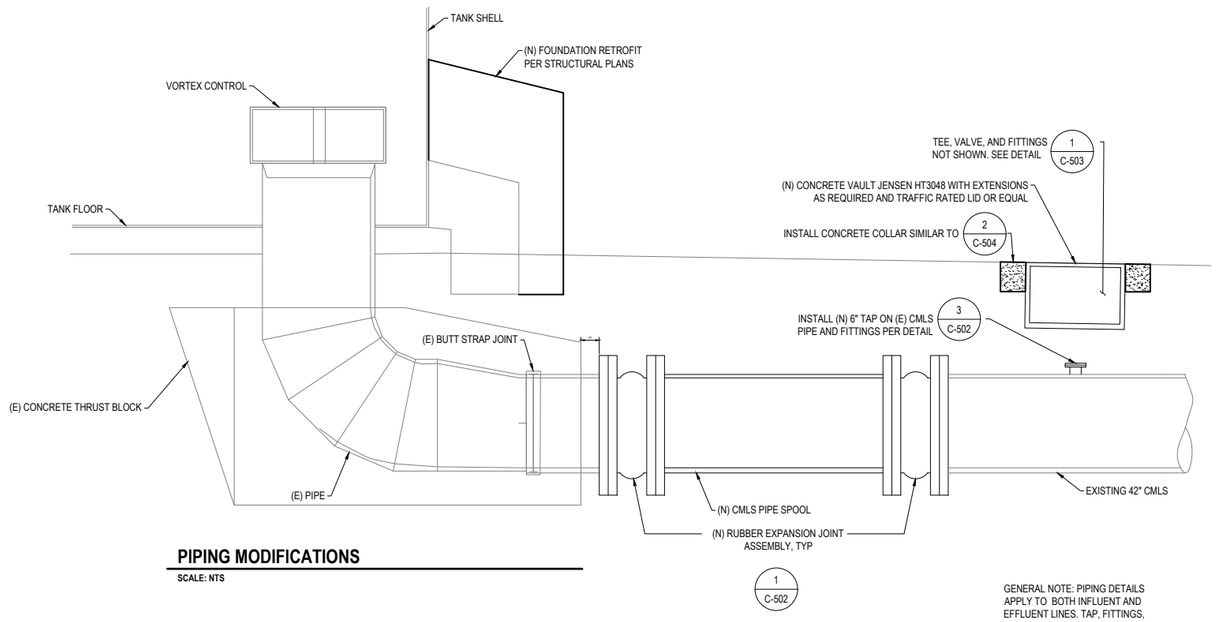
3 C-502 1 MG INDUSTRIAL PIPING LINE SCHEMATIC

SCALE: NTS



EXISTING CONDITIONS AND DEMOLITION

SCALE: NTS



PIPING MODIFICATIONS

SCALE: NTS

GENERAL NOTE: PIPING DETAILS APPLY TO BOTH INFLUENT AND EFFLUENT LINES. TAP, FITTINGS, AND VAULT APPLIES WHERE EXISTING.

2 C-502 1 MG 42" CMLS INDUSTRIAL

SCALE: NTS

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Project SAMOA RESERVOIR SEISMIC RETROFIT

Title SEISMIC CIVIL DETAILS 1

Size ANSI D

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. C-502
Sheet 6 of 14

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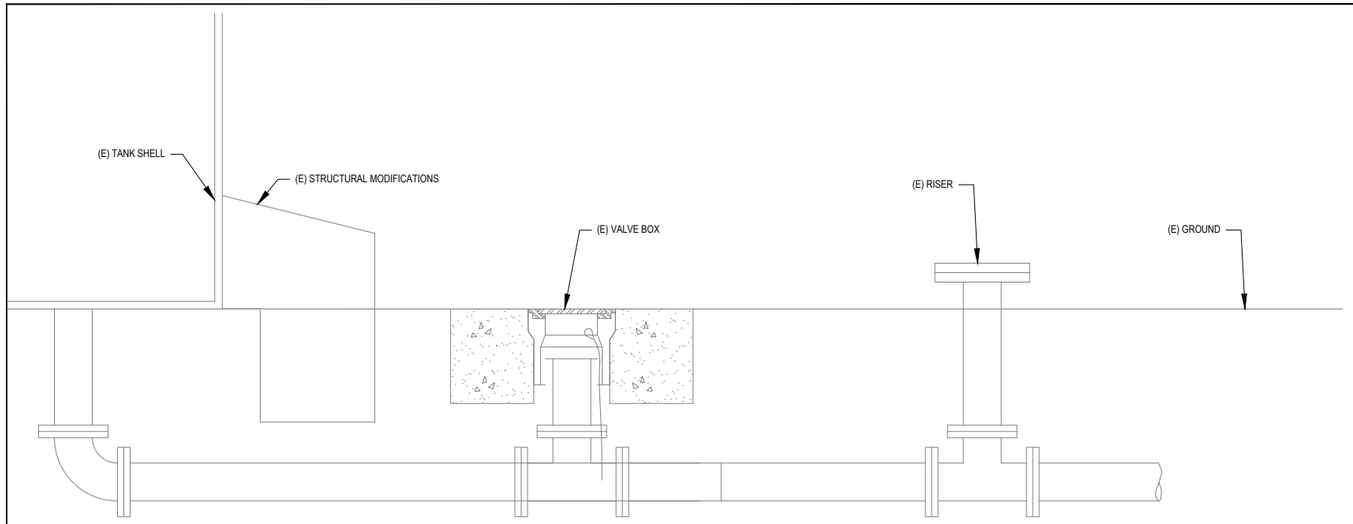
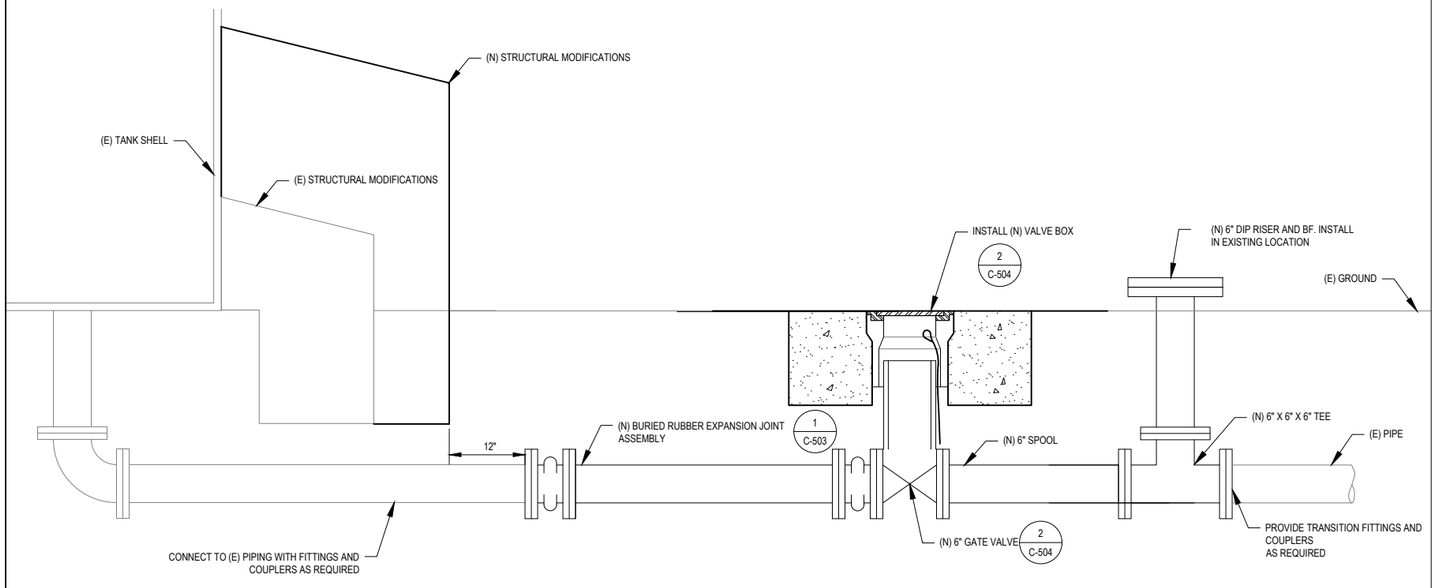


EXISTING CONDITIONS

SCALE: NTS

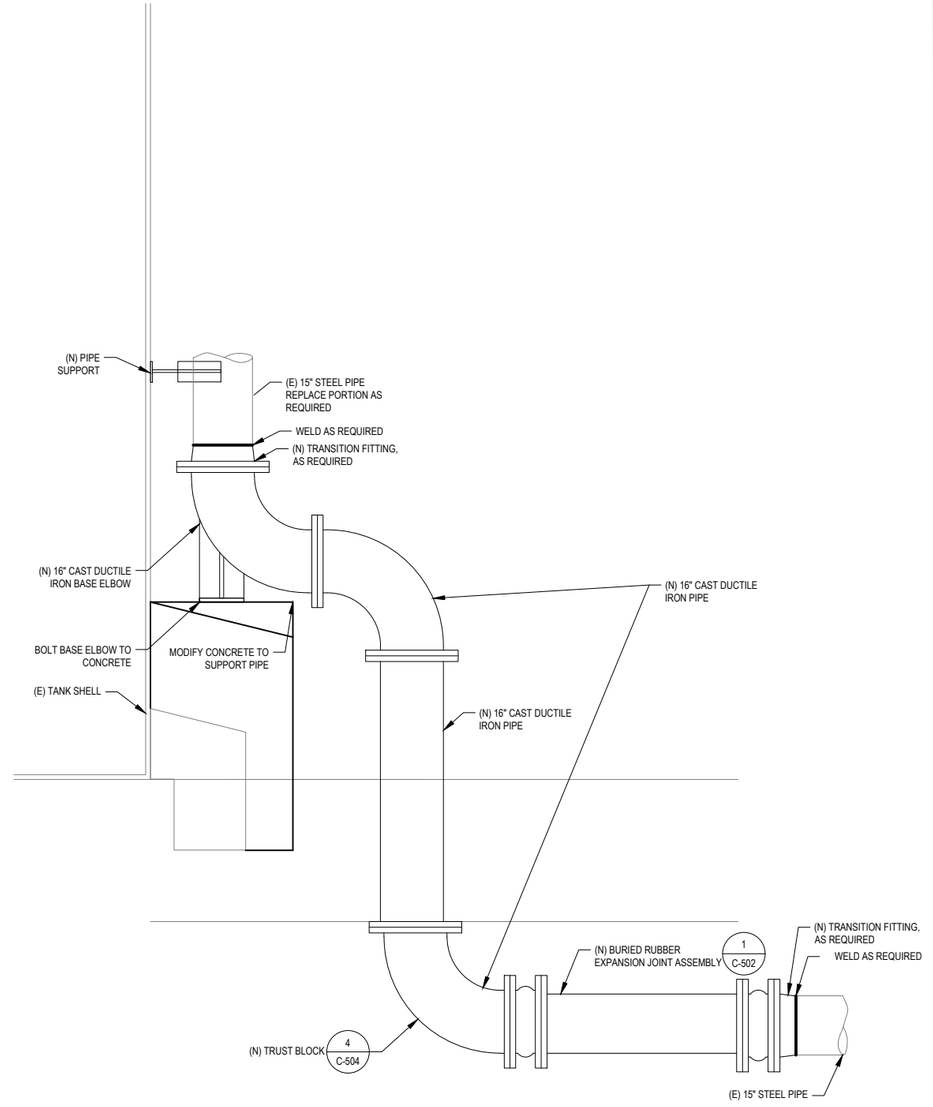


MODIFICATIONS

SCALE: NTS

1 C-503 **1 MG INDUSTRIAL DRAIN OUTLET**

SCALE: NTS



3 C-503 **1 MG INDUSTRIAL INLET EXISTING CONDITIONS AND MODIFICATIONS**

SCALE: NTS

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Project **SAMOA RESERVOIR SEISMIC RETROFIT**

Title **SEISMIC CIVIL DETAILS 2**

Size **ANSI D**

Project No.	Date	Scale	Sheet No.	Sheet
11218859	**07-23-2021**	**AS SHOWN**	**C-503**	7 of 14

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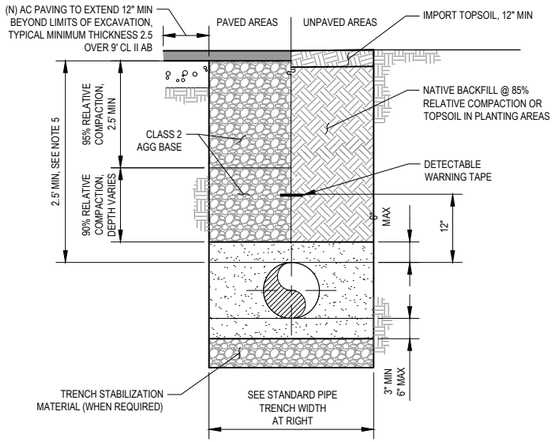
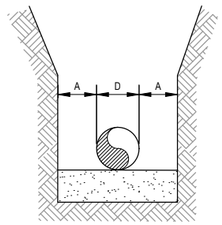


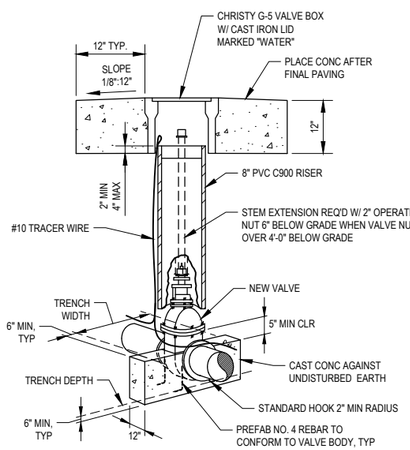


PIPE DIA "D"	MINIMUM "A"	MAXIMUM "A"
< 4"	3"	6"
4" TO 6"	6"	12"
6" TO 15"	8"	14"
16" TO 21"	10"	16"
24" TO 30"	12"	18"
33" TO 42"	15"	21"
48" & LARGER	18"	24"

NOTES:
1. WIDER TRENCHES MAY REQUIRE HIGHER STRENGTH PIPE AND/OR SPECIAL BEDDING.
2. DIFFERING TRENCH WIDTHS REQUIRE PRIOR APPROVAL OF ENGINEER.
3. IN MAKING EXCAVATIONS FOR THIS PROJECT, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING & INSTALLING ADEQUATE SHEETING, SHORING & BRACING AS MAY BE NECESSARY AS A PRECAUTION AGAINST SLIDES OR CAVE-INS, AND TO PROTECT ALL (E) IMPROVEMENTS OF ANY KIND, EITHER ON PUBLIC OR PRIVATE PROPERTY, FULLY FROM DAMAGE.
4. SATISFACTORY NATIVE BACKFILL MATERIAL USED AS UTILITY TRENCH BACKFILL BELOW UNPAVED AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
5. 2-SACK SLURRY BACKFILL MAY BE USED IN TRENCH WHEN MINIMUM PIPE COVER NOT POSSIBLE, WHEN APPROVED BY OWNER'S REPRESENTATIVE.
6. CLASS 2 AGGREGATE BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
7. DETECTABLE WARNING TAPE SHALL BE BRIGHT COLORED, CONTINUOUSLY PRINTED, MINIMUM 6" WIDE BY 4 MIL. THICK, MANUFACTURED FOR DIRECT BURIAL.
8. DETECTABLE WARNING TAPE NOT REQUIRED FOR IRRIGATION LINES.
9. GRAVEL ROADS SHALL USE PAVED AREA TRENCH SECTION BUT WITH AGGREGATE BASE TO SURFACE, UNLESS NOTED OTHERWISE.

1 C-504 TYPICAL TRENCH AND PAVING DETAIL

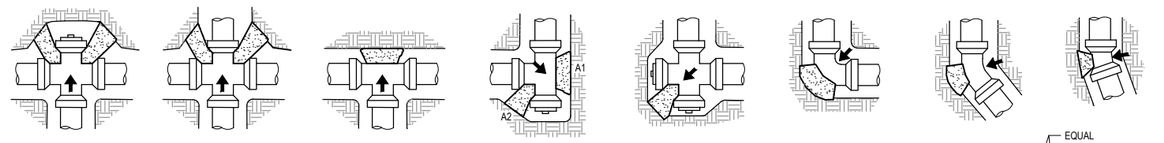
SCALE: NTS



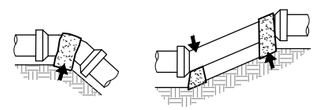
NOTES:
1. CONTRACTOR TO PROVIDE ALL COMPONENTS.
2. VALVE SIZES & ENDS AS SHOWN OR SPECIFIED ON PLANS

2 C-504 STANDARD VALVE INSTALLATION

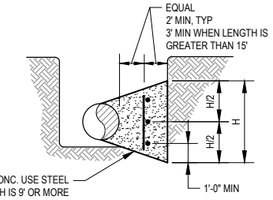
SCALE: NTS



PLAN



ELEVATION



TYPICAL SECTION

NOTES:
1. CONCRETE THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL.THRUST BLOCKS ARE NOT REQUIRED WHERE JOINTS ARE ADEQUATELY RESTRAINED.
2. KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES.
3. VOLUMES AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER VOLUMES AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.
4. ALL BURIED PIPE EXCEPT FLANGED, SCREWED, SOLVENT WELDED PVC OR WELDED STEEL PIPE SPECIFIED TO BE PRESSURE TESTED SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL DIRECTIONAL CHANGES UNLESS OTHERWISE NOTED.
5. THRUST BLOCKS SHALL NOT BE LOCATED OR SIZED TO ENCASE ADJACENT PIPES OR FITTINGS.
6. THE SIZE AND WEIGH OF ALL UPLIFT THRUST BLOCKS SHALL BE AS DETERMINED BY ENGINEER.
7. THE BEARING AREAS ARE BASED ON TEST PRESSURE OF 150 PSI AND ALLOWABLE SOIL BEARING STRESS OF 1000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
   BEARING AREA = (TEST PRESSURE / 150) x (1000 / SOIL BEARING STRESS) x (TABLE VALUE)
8. THRUST BLOCKS REQUIRED AT ALL CHANGES IN DIRECTION OF PIPING UNLESS NOTED OTHERWISE.
9. CONTRACTOR TO PROVIDE ALL COMPONENTS.
10. ALL PIPE AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CORROSION AND CONC ADHESION.

BEARING AREA OF THRUST BLOCK IN SQ. FT.

PIPE SIZE	TEE, WYE, PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED A1	TEE PLUGGED A2	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.5	2	2	1.5	1.5	1	1
6	3	4.5	4.5	3	2.5	1.5	1
8	5	7	7	5	4	2	1
10	8	12	12	8	7	3	2
12	12	17	17	12	10	5	3
16	15	21.5	21.5	15	12	6	4

PIPE SIZE	TEE, WYE, PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED A1	TEE PLUGGED A2	45° BEND	22 1/2° BEND	11 1/4° BEND
18	19	27	27	19	15	8	6
20	24	34	34	24	18	10	8
22	29	41	41	29	22	12	10
24	34	48	48	34	26.5	14	12
32	39	55	55	39	31.5	16	14

3 C-504 STANDARD THRUST BLOCK DETAILS

SCALE: NTS

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	**SXM**	Drafting Check	**SXM**	Project Manager **NS**
Designer	**MD**	Design Check	**SXM**	Project Director **SXM**

Bar is one inch on original size sheet
0 1"

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**
Project **SAMOA RESERVOIR SEISMIC RETROFIT**

Title **CIVIL DETAILS**

Size **ANSI D**

Project No.	Date	Scale
11218859	**07-23-2021**	**AS SHOWN**

Sheet No. **C-504** Sheet **8 of 14**

Plot Date: 29 July 2021 - 7:22 PM Plotted By: Michelle Davidson Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-CI-0502.dwg

SHEET GENERAL NOTES

1. CONTRACTOR TO COORDINATE ALL STRUCTURAL DOCUMENTS WITH ALL OTHER DISCIPLINES AND REPORT ANY DISCREPANCIES TO THE OWNER PRIOR TO THE START OF ANY FABRICATION OR CONSTRUCTION.
2. CONTRACTOR TO COORDINATE ALL NEW WORK WITH EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE OWNER PRIOR TO CONSTRUCTION.
3. DO NOT SCALE DRAWINGS.
4. DESIGN CRITERIA: 2019 CALIFORNIA BUILDING CODE (2019 CBC)
   AWWA D100-11
   ACI 318-14
   CAL / OSHA
5. LOADS:
   - ROOF LIVE LOADS: 20 PSF (REDUCTIONS TAKEN AS ALLOWED BY BUILDING CODE)
   - MAINTENANCE PLATFORM: 60 PSF
   - WIND LOADS:
   - MAIN FORCE RESISTING SYSTEM:
     - BASIC WIND SPEED: V = 115 MPH
     - RISK CATEGORY: IV (ESSENTIAL FACILITY)
     - EXPOSURE CATEGORY: C
     - INTERNAL PRESSURE COEFFICIENT: ±0.18
     - SEISMIC LOADS (SAMOA):
     - SEISMIC IMPORTANCE FACTOR: I_E = 1.50
     - MAPPED SPECTRAL RESPONSE ACCELERATIONS:
       - S_S = N/A
       - S_1 = N/A
     - SPECTRAL RESPONSE COEFFICIENTS:
       - SDS = 1.21 g
       - SD1 = 1.87 g
     - SOIL SITE CLASS: F
     - SEISMIC DESIGN CATEGORY: E
6. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.
7. THESE DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF CONSTRUCTION, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND FOR CHECKING DIMENSIONS. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES AND RESOLVE BEFORE PROCEEDING WITH THE WORK.
9. PROVIDE MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DURING CONSTRUCTION. RETAIN A REGISTERED CIVIL ENGINEER WHOM IS PROPERLY QUALIFIED TO DESIGN BRACING, SHORING, ETC. VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.
10. INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY FALLING DEBRIS AND OTHER HAZARDS IN CONNECTION WITH THIS WORK.
12. UNLESS NOTED OTHERWISE, REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR FINISHES, SLOPES, DEPRESSIONS, OPENINGS, CURBS, STAIRS, RAMPS, TRENCHES, EQUIPMENT AND LOCATIONS AND EXTENT OF SUCH CONDITIONS.
13. CONTRACTOR TO COORDINATE ALL NEW WORK WITH EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
14. DETAILS OR CONDITIONS NOT FULLY DEVELOPED ON STRUCTURAL DOCUMENTS ARE SIMILAR TO DEVELOPED DETAILS.
15. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
16. ALL PLANS TO BE COORDINATED WITH GENERAL NOTES AND TYPICAL DETAILS AS APPLICABLE.
17. ALL LADDERS, RAILINGS, PLATFORMS, AND SAFETY ELEMENTS SHALL BE PROVIDED IN CONFORMANCE WITH CAL / OSHA STANDARDS.

FOUNDATIONS

1. FOUNDATION DESIGN WILL BE BASED ON CRITERIA AND RECOMMENDATIONS PRESENTED IN THE GEOTECHINCAL INVESTIGATION REPORT: HBMWD RESERVOIRS SEISMIC RETROFIT PROJECT, THREE WATER TANKS, KORBLEX AND SAMOA, CALIFORNIA, PREPARED BY PREPARED BY CRAWFORD & ASSOCIATES, INC. DATED JULY 2021.
2. ALLOWABLE BEARING PRESSURE FOR TANK FOUNDATIONS IS 3,000 PSF WITH A 1/3 INCREASE FOR SEISMIC, FOR BOTH TANK SITES.

STEEL

1. DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (LATEST EDITION AND SUPPLEMENTS).
2. ANCHOR BOLTS: ASTM F1554 GRADE 55.
3. ALL STEEL BARS & PLATES SHALL BE ASTM A36 UNLESS OTHERWISE NOTED.
4. ALL STEEL SHAPES SHALL BE ASTM A992 GRADE 50 UNLESS OTHERWISE NOTED.
5. ALL TUBES SHALL BE ASTM A500 GRADE B.
6. ALL PIPES TO BE ASTM A53 GRADE B.
7. ALL THREADED RODS: ASTM F1554 GRADE 55.
8. BOLTED CONNECTIONS, UNLESS NOTED OTHERWISE: 1-INCH DIAMETER A325-N BOLTS.
9. INSTALL HIGH STRENGTH BOLTS IN ACCORDANCE WITH SECTION 8 OF THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", LATEST EDITION.
10. PROVIDE BEVELED WASHERS ON ALL CONNECTION TO SLOPING FLANGES OF W SECTIONS AND CHANNELS WHERE SLOPE EXCEEDS 1:20.
11. ANCHOR RODS SHALL BE THREADED ANCHOR RODS WITH NUT. THE EMBEDDED NUT SHALL BE TACK WELDED TO THE ANCHOR ROD TO PREVENT ROTATION DURING TIGHTENING.
12. BOLT HOLES IN STEEL SHALL BE "STANDARD" (1/16-INCH LARGER IN DIAMETER THAN THE NOMINAL BOLT SIZE), UNLESS OTHERWISE NOTED.
13. WELDING ELECTRODES (FILLER METAL): E70XX (70 KSI), WITH EXACT FILLER METAL SELECTED BY THE FABRICATOR.
14. WELD LENGTHS CALLED FOR ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE LENGTH OF WELD IS NOT SHOWN IT SHALL BE THE FULL LENGTH OF THE JOINT.
15. COMPLETE PENETRATION WELDS SHALL BE MADE WITH PROPER BACKING WHEREVER POSSIBLE. FULL PENETRATION WELDS MADE WITHOUT PROPER BACKING SHALL HAVE THE ROOT GOUGED BEFORE WELDING IS STARTED FROM THE OTHER SIDE EXCEPT AS PROVIDED IN AWS D1.1.
16. ALL BUTT AND GROOVE WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.
17. ALL SPLICING OF MEMBERS SHALL BE AS SHOWN ON THE DRAWINGS. ANY SPLICING OF THE STEEL MEMBERS PROPOSED BY THE STEEL FABRICATOR SHALL BE SHOWN ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER PRIOR TO FABRICATION.
18. ALL STEEL FABRICATION SHALL BE PERFORMED BY A FABRICATOR APPROVED BY THE OWNER.
19. ALL ANCHOR BOLTS SHALL BE EMBEDDED AS SHOWN ON THE DRAWINGS.
20. MINIMUM PLATE THICKNESS: 3/8 INCH UNLESS OTHERWISE NOTED. MINIMUM WELD:1/4" UNLESS OTHERWISE NOTED.
21. ALL STEEL FABRICATION AND DETAILS TO COMPLY WITH MOST STRINGENT OF: AISC CODE, AWS CODE, AND THE 2019 CBC.
22. ALL WELDING TO BE BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO ALL 2019 CBC AND AWS REQUIREMENTS. ALL WELDERS SHALL BE PRE-QUALIFIED BY THE PROJECT WELDING INSPECTOR FOR THE WELD TYPES AND POSITIONS USED IN THE PROCEDURES THEY WILL BE PERFORMING.
23. UNLESS NOTED OTHERWISE, ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED, UNLESS IT IS PART OF THE PAINTED TANK ASSEMBLY.

HELICAL ANCHORS

1. CONTRACTOR SHALL SUBMIT HELICAL ANCHOR SHOP DRAWINGS INCLUDING MANUFACTURER DATA, CURRENT VALID ENGINEERING TEST REPORTS, AND SITE SPECIFIC CAPACITY CALCULATIONS STAMPED AND SIGNED BY A CALIFORNIA LICENSED PROFESSIONAL ENGINEER. SITE SPECIFIC ANCHOR CALCULATIONS SHALL BE BASED UP ON THE PROJECT GEOTECHNICAL REPORT.
2. FOR BIDDING PURPOSES, ANCHOR SCHEMATIC DESIGN IS BASED UPON HUBBELL POWER SYSTEMS INC. CHANCE ANCHORS PER ESR-2794.
3. ANCHOR DESIGN SHALL PROVIDE FOR A MINIMUM 50 YEAR DESIGN LIFE WITH CORROSION ALLOWANCE BASED UPON THE SITE SPECIFIC SOIL CORROSIVITY ANALYSIS REPORT.
4. MINIMUM ANCHOR CAPACITY AND EMBEDMENT PARAMETERS ARE AS FOLLOWS:
   a. 1MG SAMOA TANK, 13 KIP TENSION CAPACITY WITH ANCHORS AT 4'-0" O/C AROUND PERIMETER. FINAL EMBEDMENT LENGTH BY ANCHOR DESIGNER, APPROXIMATED AT 17 FEET MAXIMUM AS TO REMAIN ABOVE EXISTING GROUND WATER TABLE AS IDENTIFIED IN THE PROJECT GEOTECHNICAL REPORT.

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IN ACCORDANCE WITH 2019 CALIFORNIA BUILDING CODE CHAPTER 17 IS REQUIRED ON THE FOLLOWING PORTIONS OF THE WORK:
   - STRUCTURAL STEEL
   - CONCRETE
   - HELICAL ANCHORS
2. (REFER TO THE STATEMENT OF SPECIAL INSPECTIONS FOR MORE SPECIFIC REQUIREMENTS)

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
2. CONCRETE REINFORCING COVER SHALL BE AS FOLLOWS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3 INCHES
   CONCRETE EXPOSED TO EARTH OR WEATHER .....2 INCHES
3. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. CONTRACTOR TO REVIEW FORMING, REINFORCING DETAILS AND ANY EMBEDDED ITEMS AND DETERMINE PRIOR TO FABRICATION OF ANY REINFORCING, PLACEMENT REQUIREMENTS AND CLEARANCES.
4. EPOXY ANCHORS SHALL BE ONE OF THE FOLLOWING, UNO:
   HILTI HIT-HY 200 (ICC-ES REPORT ESR-3187)
   HILT HIT-RE 500 (ICC-ES REPORT ESR-2322)
   SIMPSON SET-3G (ICC-ES REPORT ESR-4057)

REINFORCING

1. ALL CONCRETE REINFORCING SHALL BE ASTM A615, Fy = 60 KSI., UNLESS NOTED OTHERWISE.
2. REINFORCING SHALL EXTEND CONTINUOUS FOR THE DIMENSION SHOWN.
3. NO WELDING OF ANY REINFORCING IS PERMITTED, UNLESS SPECIFICALLY STATED ON THE PLANS. REINFORCEMENT TO BE WELDED TO MEET THE REQUIREMENTS OF ASTM A706.
4. LOCATE ALL REINFORCING AS SHOWN ON DRAWINGS AND FASTEN SECURELY.
5. LAP SPLICES AND DEVELOPMENT LENGTHS PER DETAIL ON DRAWING S-501.
6. REINFORCEMENT SHALL BE PLACED SO AS NOT TO COME IN CONTRACT WITH METALLIC CONCRETE PENETRATIONS.
7. ALL REINFORCING TO TERMINATE WITH STANDARD HOOKS AS SHOWN ON PLANS. ALL STIRRUPS AND TIES TO BE CLOSED WITH 135° BENDS.
8. IN WALL ELEMENTS, VERTICAL BARS SHALL BE LOCATED ON OUTERMOST LAYER UNLESS SPECIFICALLY NOTED OTHERWISE.

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE BY THE CONTRACTOR. DETAILS SHOWN IN THESE SECTIONS ARE FOR BIDDING PURPOSES ONLY AND NOT FOR CONSTRUCTION.
2. DEFERRED SUBMITTALS INCLUDE:
   - 1 MG SAMOA TANK ROOF REPLACEMENT
   - 1 MG SAMOA HELICAL ANCHORS
3. CONTRACTOR SHALL SUBMIT STEEL TANK ROOF PLANS AND CALCULATIONS TO THE OWNER FOR APPROVAL AND PERMIT PRIOR TO ANY CONSTRUCTION. PLANS AND CALCULATIONS MUST BE PREPARED, SEALED, AND SIGNED BY A CALIFORNIA LICENSED ENGINEER. CALCULATIONS SHALL INCLUDE ANALYSIS OF NEW ROOF WITH SEISMIC SLOSHING WAVE CONSIDERATION.
4. CONTRACTOR'S STEEL TANK ROOF SUBMITTAL PACKAGE WILL BE SUBJECT TO OWNER REVIEW AND COMMENT. CONTRACTOR WILL BE RESPONSIBLE FOR ADDRESSING OWNER REVIEW COMMENTS AND RESUBMITTING THE TANK ROOF SUBMITTAL AS NECESSARY. OWNER RESERVES RIGHT TO REQUEST DESIGN MODIFICATIONS BASED ON SERVICEABILITY / MAINTENANCE REQUIREMENTS, ETC.

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	S. MCHANEY	Project Manager NS
Designer	S. GOULD	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: SAMOA RESERVOIR SEISMIC RETROFIT
Title: STRUCTURAL GENERAL NOTES
Size: ANSI D
Project No.: 11218859
Date: 07-23-2021
Scale: AS SHOWN
Sheet No.: S-001
Sheet: 9 of 14

Plot Date: 29 July 2021 - 7:22 PM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-ST-0001.dwg

STATEMENT OF SPECIAL INSPECTIONS

STATEMENT OF SPECIAL INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED IN ACCORDANCE WITH THE SPECIAL INSPECTION AND STRUCTURAL TESTING REQUIREMENTS OF THE BUILDING CODE SECTIONS 1704 AND 1705.

THIS STATEMENT OF SPECIAL INSPECTIONS ENCOMPASS THE FOLLOWING DISCIPLINES:

- ☒ STRUCTURAL SPECIAL INSPECTIONS PER 1704
- ☐ STRUCTURAL SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE
- ☐ STRUCTURAL SPECIAL INSPECTIONS FOR WIND RESISTANCE

THE SCHEDULE OF SPECIAL INSPECTIONS SUMMARIZES THE SPECIAL INSPECTIONS AND TESTS REQUIRED. SPECIAL INSPECTORS WILL REFER TO THE APPROVED PLANS AND SPECIFICATIONS FOR DETAILED SPECIAL INSPECTION REQUIREMENTS. ANY ADDITIONAL TESTS AND INSPECTIONS REQUIRED BY THE APPROVED PLANS AND SPECIFICATIONS WILL ALSO BE PERFORMED.

THE SPECIAL INSPECTIONS IDENTIFIED ARE IN ADDITION TO THOSE REQUIRED BY OTHER SECTIONS OF THE BUILDING CODE.

THE SPECIAL INSPECTION COORDINATOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE OWNER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITIES.

INTERIM REPORTS SHALL BE SUBMITTED TO THE OWNER AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 1704.1.2.

A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS, TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO PROJECT COMPLETION. THE FINAL REPORT WILL DOCUMENT THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF DISCREPANCIES NOTED IN INSPECTIONS.

JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR IS REQUIRED TO COORDINATE ALL INSPECTIONS. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY SPECIAL INSPECTIONS THAT ARE REQUIRED. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE SPECIAL INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO ANY CONCRETE TO BE POURED.

ALL SPECIAL INSPECTORS AND QUALIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER-OF-RECORD AND THE OWNER FOR REVIEW.

SPECIALLY INSPECTED WORK THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE OWNER IS SUBJECT TO REMOVAL OR EXPOSURE.

CONTINUOUS INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS OTHERWISE SPECIFIED. WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED, IT IS THE AGENT'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL THE WORK IS INSPECTED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE.

CONTRACTOR STATEMENT OF RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OR FABRICATION OF A SYSTEM OR COMPONENT DESIGNATED ABOVE AS PART OF THE MAIN WIND FORCE OR MAIN SEISMIC FORCE RESISTING SYSTEMS ABOVE MUST SUBMIT A STATEMENT OF RESPONSIBILITY PER SECTION 1706.

SCHEDULE OF INSPECTION AND TESTING AGENCIES

THIS STATEMENT OF SPECIAL INSPECTIONS / QUALITY ASSURANCE PLAN INCLUDES THE FOLLOWING BUILDING SYSTEMS:

- ☒ SOILS AND FOUNDATIONS
- ☒ CAST-IN-PLACE CONCRETE
- ☐ PRECAST CONCRETE
- ☐ MASONRY LEVEL 1
- ☐ MASONRY LEVEL 2
- ☐ WOOD CONSTRUCTION
- ☐ MECHANICAL & ELECTRICAL SYSTEMS
- ☐ ARCHITECTURAL SYSTEMS
- ☒ STRUCTURAL STEEL
- ☐ COLD-FORMED STEEL FRAMING

SPECIAL INSPECTION AGENCIES	FIRM AND CONTACT INFO.
1. SPECIAL INSPECTION COORDINATOR	TBD
2. CONCRETE INSPECTOR	TBD
3. STEEL INSPECTOR	TBD
4. SOILS INSPECTOR	TBD
5. CONCRETE TESTING AGENCY	TBD

QUALIFICATIONS OF INSPECTORS AND TESTING TECHNICIANS

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION AND TESTING ACTIVITIES ARE SUBJECT TO THE APPROVAL OF OWNER. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED.

KEY FOR MINIMUM QUALIFICATIONS OF INSPECTION AGENTS:

WHEN THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DEEMS IT APPROPRIATE THAT THE INDIVIDUAL PERFORMING A STIPULATED TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION OR LICENSE AS INDICATED BELOW, SUCH DESIGNATION SHALL APPEAR BELOW THE *AGENCY NUMBER* ON THE SCHEDULE.

PE/SE STRUCTURAL ENGINEER - A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURES
PE/GE GEOTECHNICAL ENGINEER - A LICENSED GE OR PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS
EIT ENGINEER-IN-TRAINING - A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTALS OF ENGINEERING EXAMINATION

AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION

ACI-CFTT CONCRETE FIELD TESTING TECHNICIAN - GRADE 1
ACI-CCI CONCRETE CONSTRUCTION INSPECTOR
ACI-LTT LABORATORY TESTING TECHNICIAN - GRADE 1&2
ACI-STT STRENGTH TESTING TECHNICIAN

AMERICAN WELDING SOCIETY (AWS) CERTIFICATION

AWS-CWI CERTIFIED WELDING INSPECTOR
AWS/AISC-SSI CERTIFIED STRUCTURAL STEEL INSPECTOR

INTERNATIONAL CODE COUNCIL (ICC) CERTIFICATION

ICC-SMSI STRUCTURAL MASONRY SPECIAL INSPECTOR
ICC-SWSI STRUCTURAL STEEL AND WELDING SPECIAL INSPECTOR
ICC-SFSI SPRAY-APPLIED FIREPROOFING SPECIAL INSPECTOR
ICC-PCSI PRESTRESSED CONCRETE SPECIAL INSPECTOR
ICC-RCSI REINFORCED CONCRETE SPECIAL INSPECTOR

AMERICAN SOCIETY OF NONDESTRUCTIVE TESTING (ASNT)

TABLE 1705.6 - SOILS

ITEM 1:	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 2:	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 3:	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 4:	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL. ☐ PERIODIC ☒ CONTINUOUS	AGENCY # (QUALIF.): PE/GE
ITEM 5:	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): PE/GE

TABLE 1705.2 - STEEL CONSTRUCTION

ITEM 1:	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS.	AGENCY # (QUALIF.): AWS/AISC-SSI, ICC-SWSI
SCOPE:		
A.	IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS.: AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
B.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	
ITEM 2:	INSPECTION OF HIGH-STRENGTH BOLTING:	AGENCY # (QUALIF.): AWS/AISC-SSI, ICC-SWSI
SCOPE:		
A.	SNUG-TIGHT JOINTS. ☒ PERIODIC ☐ CONTINUOUS	
B.	PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT MATCHMAKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AISC 360 SECTION M2.5
C.	PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION. ☐ PERIODIC ☒ CONTINUOUS	
ITEM 3:	MATERIAL VERIFICATION OF STRUCTURAL STEEL	AGENCY # (QUALIF.): PE/SE
SCOPE:		
A.	FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360 ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
B.	FOR OTHER STEEL, IDENTIFICATION ON MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN APPROVED CONSTRUCTION DOCUMENTS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. APPLICABLE ASTM MATERIAL STANDARDS
C.	MANUFACTURER'S CERTIFIED TEST REPORTS ☒ PERIODIC ☐ CONTINUOUS	
ITEM 4:	MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	MANUFACTURER'S CERTIFIED TEST REPORTS ☒ PERIODIC ☐ CONTINUOUS	
ITEM 5:	MATERIAL VERIFICATION OF WELD FILLER MATERIALS	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS
B.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	
ITEM 6:	INSPECTION OF WELDING	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	STRUCTURAL STEEL AND COLD-FORMED STEEL DECK	
1.	COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS ☐ PERIODIC ☒ CONTINUOUS	
2.	MULTIPASS FILLET WELDS ☐ PERIODIC ☒ CONTINUOUS	
3.	SINGLE-PASS FILLET WELDS > 5/16". ☐ PERIODIC ☒ CONTINUOUS	REFERENCE STDS. AWS D1.1
4.	PLUG AND SLOT WELDS ☐ PERIODIC ☒ CONTINUOUS	
5.	SINGLE-PASS FILLET WELDS < 5/16". ☒ PERIODIC ☐ CONTINUOUS	
6.	FLOOR AND ROOF DECK WELDS. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS. AWS D1.3
B.	REINFORCING STEEL:	
1.	VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706 ☒ PERIODIC ☐ CONTINUOUS	
2.	REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT. ☐ PERIODIC ☒ CONTINUOUS	REFERENCE STDS. AWS D1.4 ACI 318 SECTION 4.2.2
3.	SHEAR REINFORCEMENT. ☐ PERIODIC ☒ CONTINUOUS	
4.	OTHER REINFORCING STEEL. ☒ PERIODIC ☐ CONTINUOUS	
ITEM 7:	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE	AGENCY # (QUALIF.): AWS-CWI, ASNT
SCOPE:		
A.	DETAILS SUCH AS BRACING AND STIFFENING. ☒ PERIODIC ☐ CONTINUOUS	
B.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	
C.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ☒ PERIODIC ☐ CONTINUOUS	

TABLE 1705.3 - CONCRETE CONSTRUCTION

ITEM 1:	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS: ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3
ITEM 2:	REINFORCING BAR WELDING:	AGENCY # (QUALIF.): ACI-CWI
SCOPE:		
A.	VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS.: AWS D1.4 ACI 318: 26.6.4
B.	INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND. ☒ PERIODIC ☐ CONTINUOUS	
C.	INSPECT ALL WELDS. ☐ PERIODIC ☒ CONTINUOUS	
ITEM 3:	INSPECT ANCHORS CAST IN CONCRETE: ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS: ACI 318 17.8.2
ITEM 4:	INSPECT TEST ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI
SCOPE:		
A.	ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. ☐ PERIODIC ☒ CONTINUOUS	REFERENCE STDS.: ACI 318: 17.8.2.4
B.	MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A. ☒ PERIODIC ☐ CONTINUOUS	REFERENCE STDS.: ACI 318: 17.8.2
ITEM 5:	VERIFY USE OF REQUIRED DESIGN MIX: ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI ACI 318 CH. 19, 26.4.3, 26.4.4
ITEM 6:	PRIOR TO CONCRETE PLACEMENT, FABRICATED SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. ☐ PERIODIC ☒ CONTINUOUS	AGENCY # (QUALIF.): ACI-CFTT, ACI-STT REFERENCE STDS.: ASTM C172 ASTM C31 ACI 318: 26.4, 26.12
ITEM 7:	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. ☐ PERIODIC ☒ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.5, ACI 506: 3.4
ITEM 8:	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.5.3-26.5.5
ITEM 9:	INSPECT PRESTRESSED CONCRETE FOR:	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.10.2
SCOPE:		
A.	APPLICATION OF PRESTRESSING FORCES; AND. ☐ PERIODIC ☒ CONTINUOUS	
B.	GROUTING OF BONDED PRESSTRESSING TENDONS. ☐ PERIODIC ☒ CONTINUOUS	
ITEM 10:	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.9.2
ITEM 11:	VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS WHEN BEAMS AND STRUCTURAL SLABS. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CFTT, ACI-STT REFERENCE STDS.: ACI 318: 26.10.2, 26.11.2
ITEM 11:	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. ☒ PERIODIC ☐ CONTINUOUS	AGENCY # (QUALIF.): ACI-CCI, ICC-RCSI REFERENCE STDS.: ACI 318: 26.11.2(B)

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	S. MCHANEY	Project Manager NS
Designer	S. GOULD	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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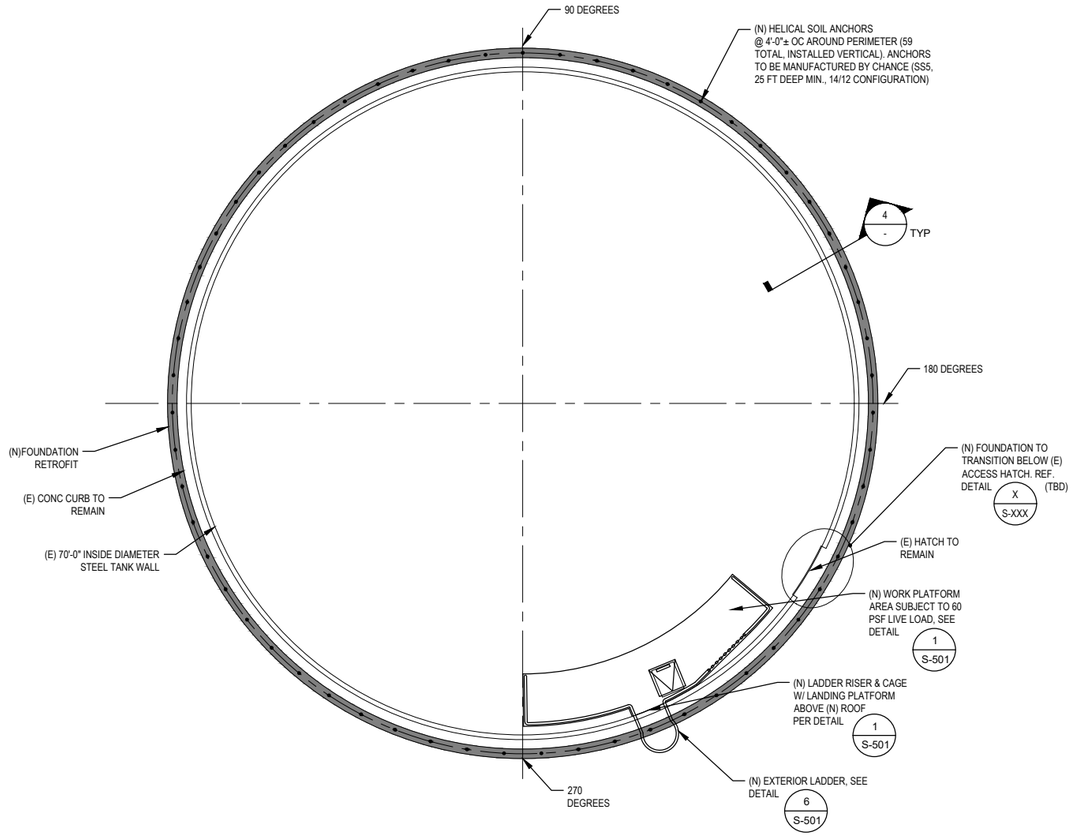
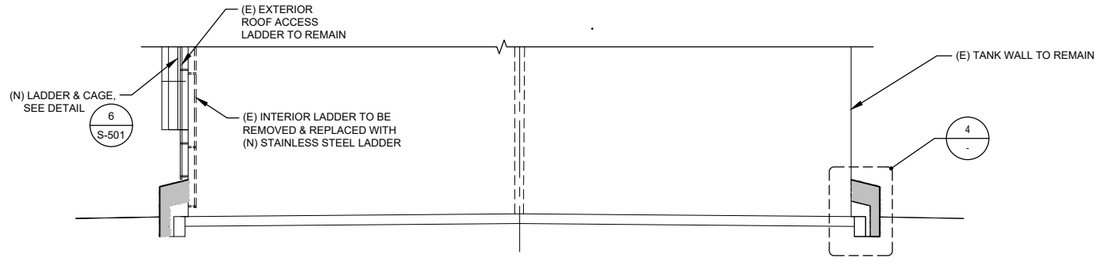
Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project SAMOA RESERVOIR SEISMIC RETROFIT
Title SPECIAL INSPECTIONS
Size ANSI D
Project No. 11218859
Date 07-23-2021
Scale AS SHOWN
Sheet No. S-002
Sheet 10 of 14

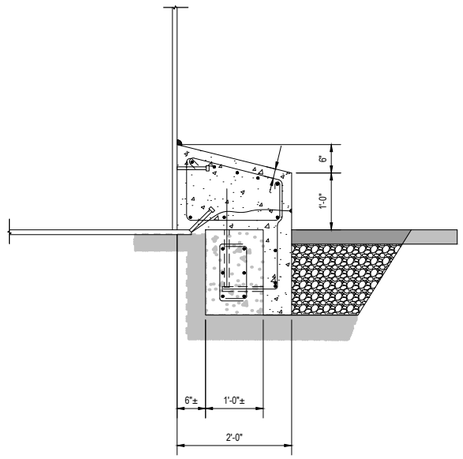
Plot Date: 29 July 2021 - 7:23 PM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-ST-0001.dwg



1 FOUNDATION LAYOUT - PLAN
SCALE: 1/8" - 1-0"



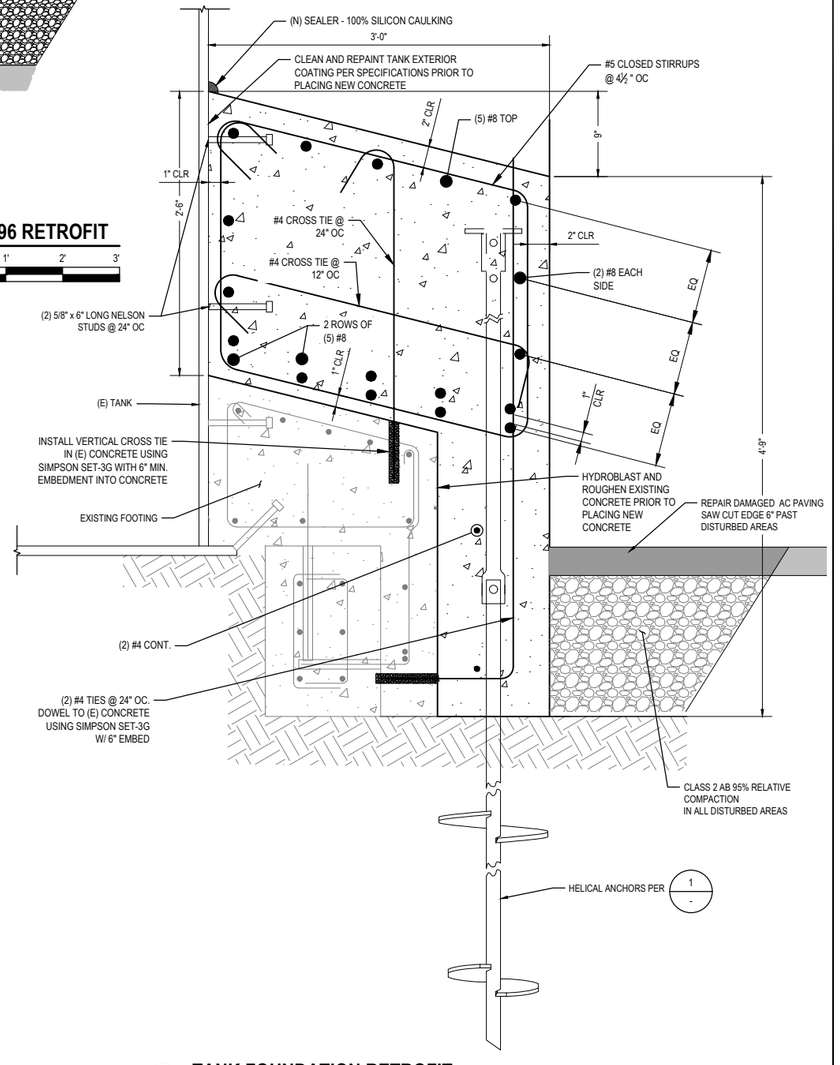
2 TANK SECTION
SCALE: 1/8" - 1-0"



3 EXISTING TANK CURBING PER 1996 RETROFIT
SCALE: 3/4" = 1'-0"

0 1' 2' 3'

(FOR REFERENCE)



4 TANK FOUNDATION RETROFIT
SCALE: 1 1/2" = 1'-0"

0 1/2' 1' 1 1/2'

SHEET GENERAL NOTES

1. CONTRACTOR TO PROVIDE ALL COMPONENTS TO CONSTRUCT / INSTALL NEW WORK.

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	B. CROWELL	Project Manager NS
Designer	S. BURNS	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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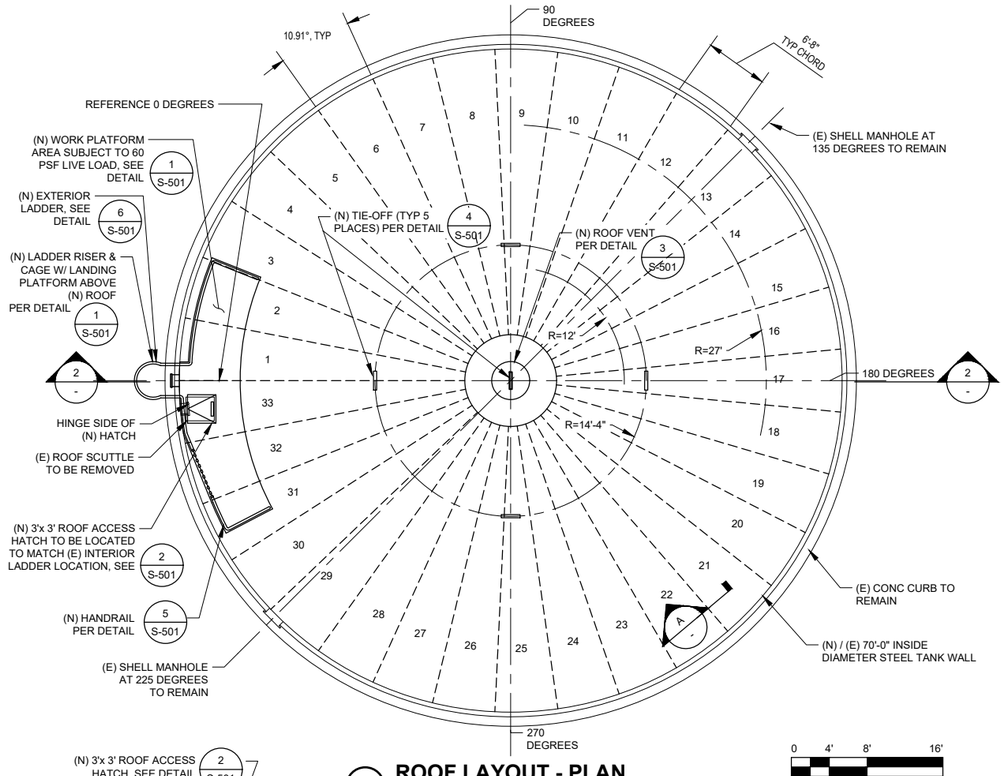
Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: SAMOA RESERVOIR SEISMIC RETROFIT

Title: 1 MG INDUSTRIAL TANK FOUNDATION PLAN

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Size: ANSI D
Sheet No: S-101
Sheet: 11 of 14

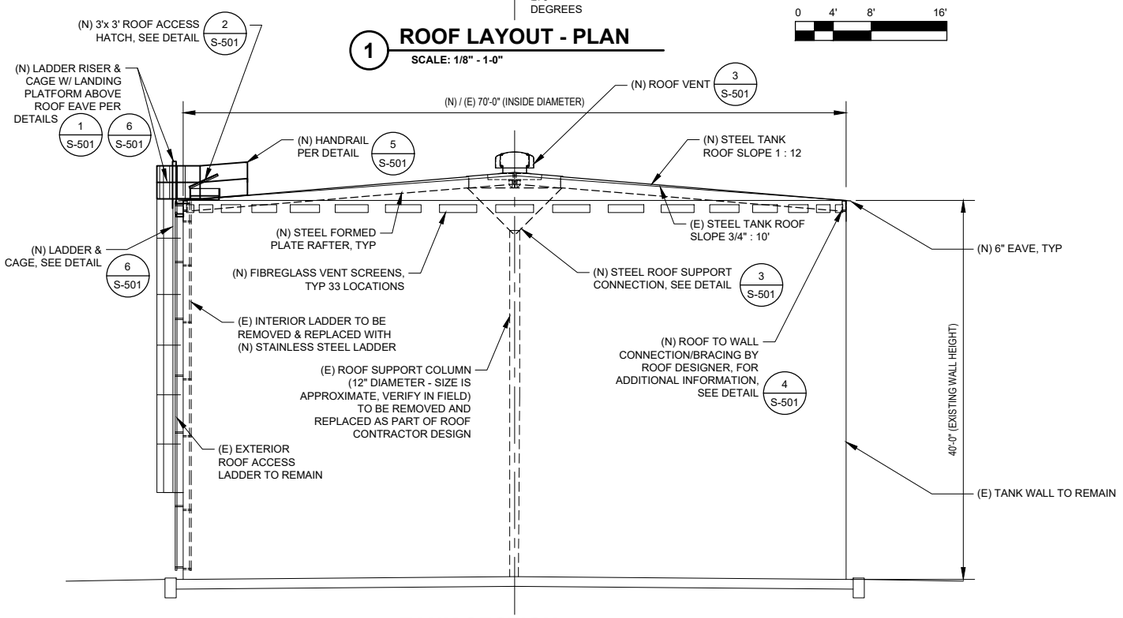
Plot Date: 29 July 2021 - 7:23 PM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-ST-0103.dwg



1 ROOF LAYOUT - PLAN

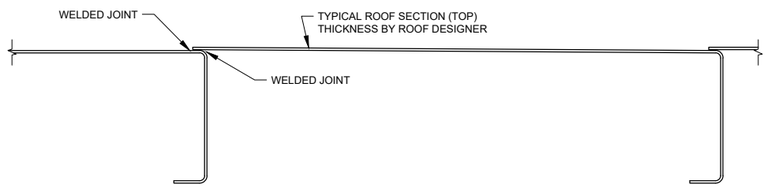
SCALE: 1/8" - 1-0"

0 4' 8' 16'

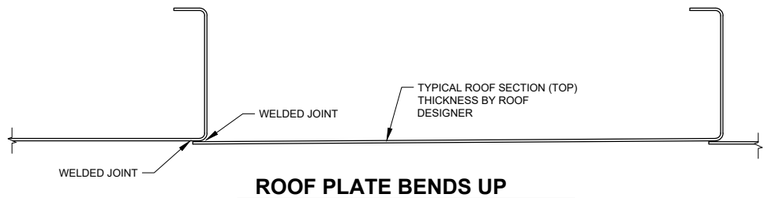


2 TANK SECTION

SCALE: 1/8" - 1-0"



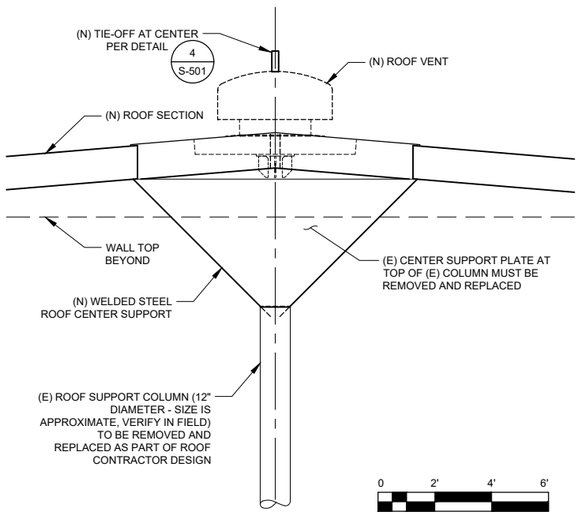
ROOF PLATE BENDS DOWN



ROOF PLATE BENDS UP

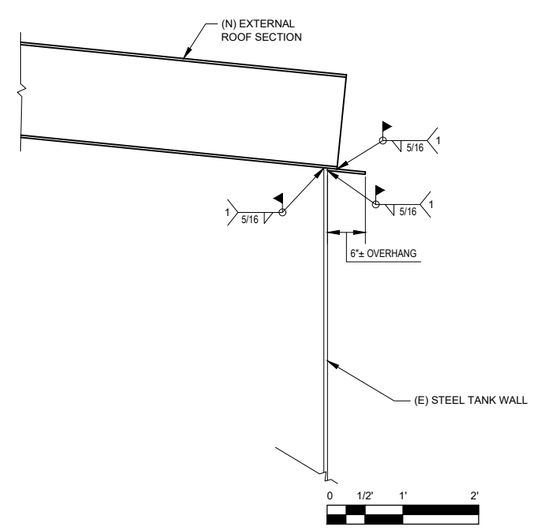
A TYPICAL FORMED ROOF SECTIONS

SCALE: 1 1/2" - 1-0"



3 CENTER SUPPORT COLUMN CONNECTION

SCALE: 3/8" - 1-0"



4 ROOF TO WALL CONNECTION

SCALE: 1" - 1-0"

SHEET GENERAL NOTES

1. CONTRACTOR TO PROVIDE ALL COMPONENTS TO CONSTRUCT / INSTALL NEW WORK.

ROOF BUILD NOTE:

1. ROOF BUILD OPTIONS SHOWN ARE CONCEPTUAL ONLY. ONE-PIECE PRESS-BRAKE JOIST WITH ROOF PLATE SECTIONS WITH CONTINUOUS SEALED WELDED JOINTS ARE THE PREFERRED METHOD OF CONSTRUCTION TO PROVIDE A MORE SERVICEABLE INTERIOR ROOF SURFACE IN LIGHT OF CURRENT CORROSION ISSUES NECESSITATING THIS ROOF REPLACEMENT. CONTRACTOR BIDS SHALL INCLUDE THE METHOD OF FRAMING TO BE USED. CONTRACTOR BIDS SHALL ALSO INCLUDE JUSTIFICATION FOR ROOF FRAMING OPTION TO BE PROVIDED, INCLUDING ANY COST COMPARISON TO SERVICEABILITY/MAINTENANCE BENEFITS.

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	A. PRATT	Drafting Check	B. CROWELL	Project Manager NS
Designer	S. BURNS	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client: HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project: SAMOA RESERVOIR SEISMIC RETROFIT

Title: 1 MG INDUSTRIAL ROOF PLAN

Size: ANSI D

Project No.	Date	Scale
11218859	07-23-2021	AS SHOWN

Sheet No. S-102

Sheet 12 of 14

Plot Date: 29 July 2021 - 7:23 PM
Plotted By: Michelle Davidson
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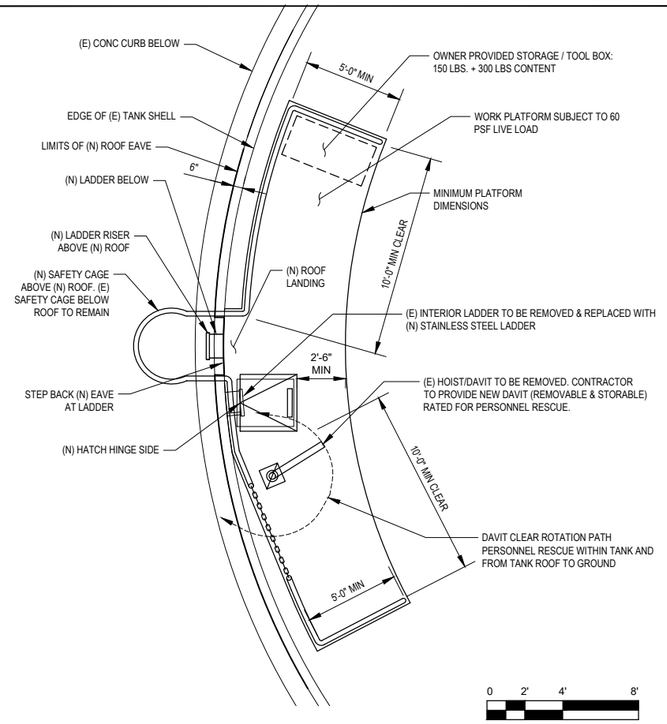
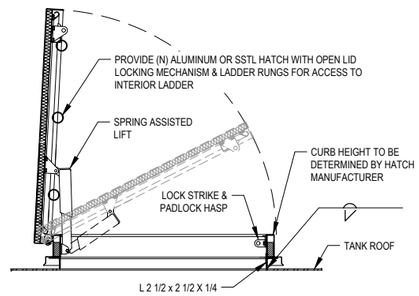
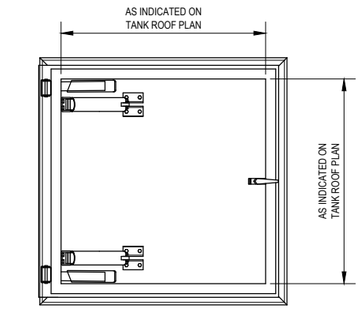


1 S501 **TANK PLATFORM & RAILING PLAN**

SCALE: 1/4" = 1'-0"



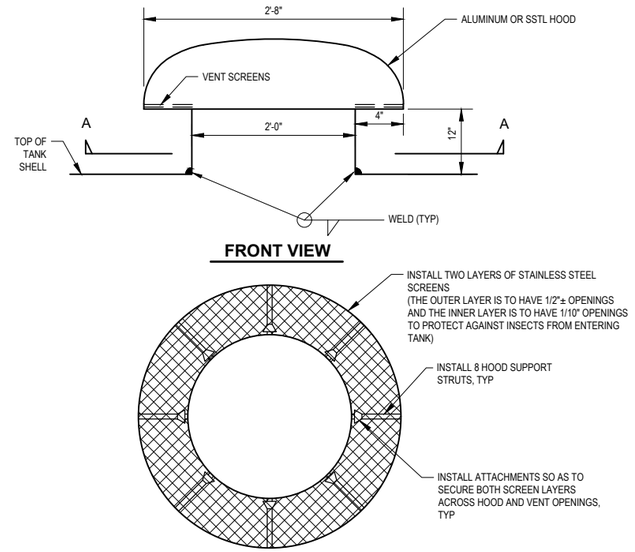
ELEVATION



PLAN

2 S501 **ROOF HATCH DETAIL**

SCALE: NOT TO SCALE

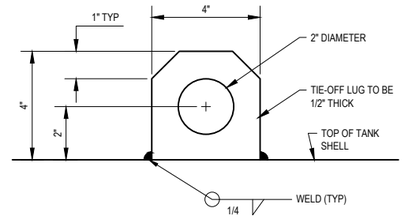


FRONT VIEW

BOTTOM VIEW (SECTION A - A)

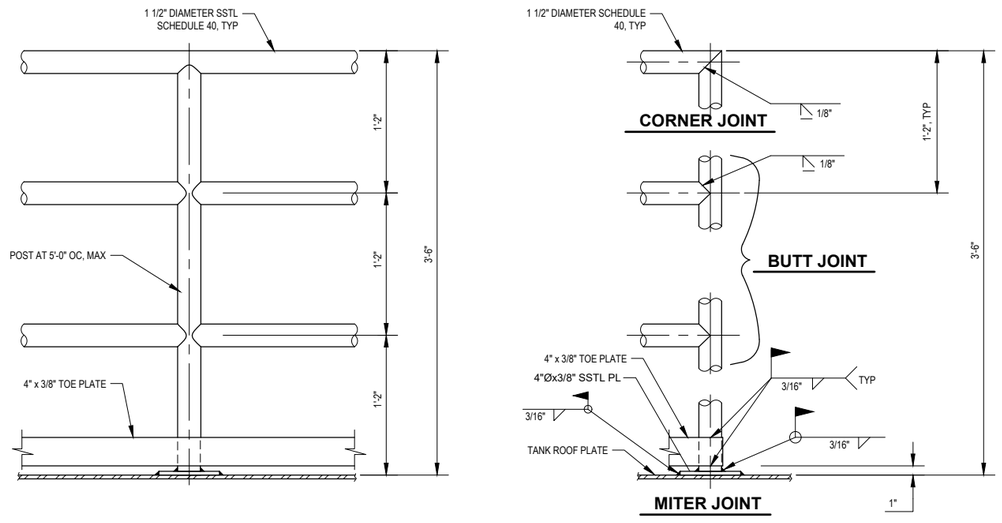
3 S501 **ROOF VENT DETAILS**

SCALE: NOT TO SCALE



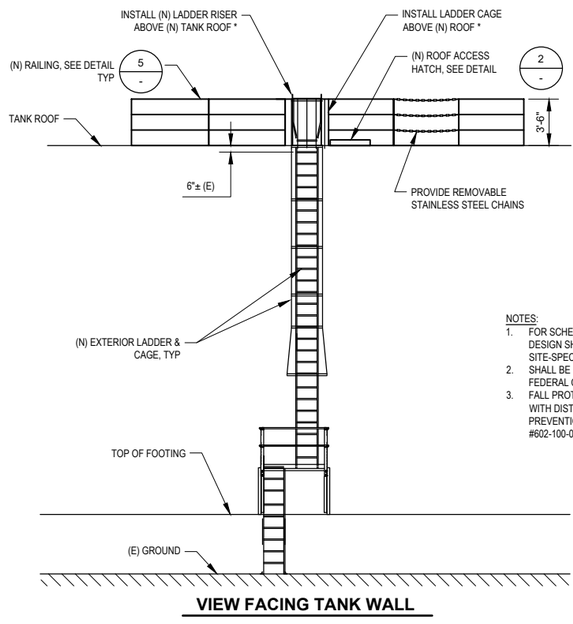
4 S501 **TIE-OFF DETAIL**

SCALE: NOT TO SCALE



5 S501 **SAFETY RAILING DETAIL**

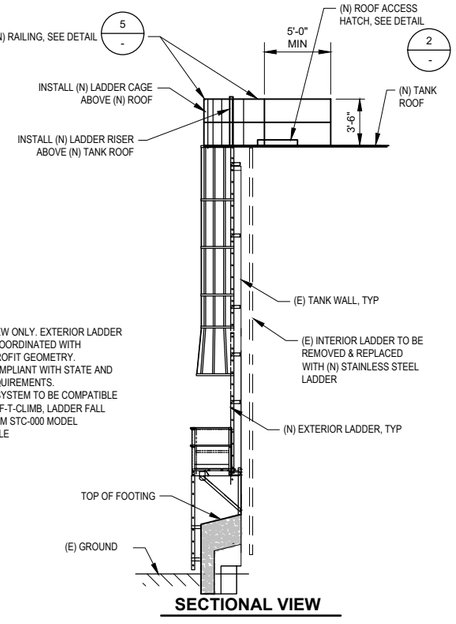
SCALE: NOT TO SCALE



VIEW FACING TANK WALL

NOTES:

1. FOR SCHEMATIC VIEW ONLY. EXTERIOR LADDER DESIGN SHALL BE COORDINATED WITH SITE-SPECIFIC RETROFIT GEOMETRY.
2. SHALL BE FULLY COMPLIANT WITH STATE AND FEDERAL OSHA REQUIREMENTS.
3. FALL PROTECTION SYSTEM TO BE COMPATIBLE WITH DISTRICT'S SAF-T-CLIMB, LADDER FALL PREVENTION SYSTEM STC-000 MODEL #602-100-003 SHUTTLE



SECTIONAL VIEW

6 S501 **EXTERIOR LADDER DETAILS**

SCALE: NOT TO SCALE

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	**A. PRATT**	Drafting Check	**B. CROWELL**	Project Manager **NS**
Designer	**S. BURNS**	Design Check	**B. CROWELL**	Project Director **SXM**

Bar is one inch on original size sheet

0 1"

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Client **HUMBOLDT BAY MUNICIPAL WATER DISTRICT**

Project **SAMOA RESERVOIR SEISMIC RETROFIT**

Title **TANK ROOF DETAILS**

Size **ANSI D**

Project No.	Date	Scale
11218859	**07-23-2021**	**AS SHOWN**

Sheet No **S-501**

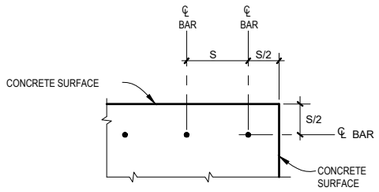
Sheet 13 of 14

Plot Date: 29 July 2021 - 7:24 PM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\561\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-ST-0501.dwg

DEVELOPMENT LENGTH (ℓ_d)												
BAR SIZE	3000 PSI CONC (f'c)				4000 PSI CONC (f'c)				5000 PSI CONC (f'c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"
#3	13	22	12	17	12	19	12	15	12	17	12	13
#4	18	29	14	22	15	25	12	19	14	23	12	17
#5	22	36	17	28	19	31	15	24	17	28	13	22
#6	26	43	20	33	23	37	18	29	20	34	16	26
#7	38	63	29	48	33	54	25	42	29	49	23	38
#8	43	72	33	55	37	62	29	48	34	56	26	43
#9	49	81	37	62	42	70	33	54	38	63	29	48
#10	56	89	43	69	49	78	38	60	44	69	34	54
#11	68	98	52	76	59	85	45	66	53	76	41	59
TENSION LAP SPLICE LENGTH (CLASS 'B' SPLICE)												
BAR SIZE	3000 PSI CONC (f'c)				4000 PSI CONC (f'c)				5000 PSI CONC (f'c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"	s ≥ 6"	s < 6"
#3	17	28	16	22	16	25	16	19	16	22	16	17
#4	23	38	18	29	20	33	16	25	18	29	16	23
#5	28	47	22	36	25	41	19	31	22	36	17	28
#6	34	56	26	43	29	49	23	38	26	44	20	34
#7	49	82	38	63	43	71	33	55	38	63	30	49
#8	56	93	43	72	49	81	38	62	44	72	34	56
#9	63	105	49	81	55	91	42	70	49	81	38	63
#10	73	116	56	90	63	101	49	78	57	90	44	70
#11	88	128	68	99	76	111	59	85	68	99	53	76

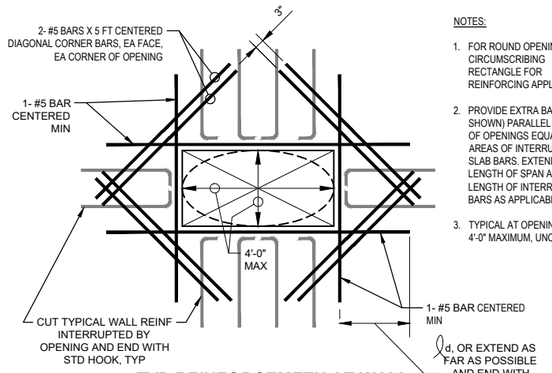
NOTES:

1. LENGTHS SHOWN ARE FOR GRADE 60 UNCOATED BARS.
2. LENGTHS SHOWN ARE IN INCHES.
3. INCREASE LENGTHS 30% FOR LIGHT WEIGHT CONCRETE
4. TOP BARS: HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THEM.
5. THE QUANTITY 's' IS DEFINED AS FOLLOWS:



1 BAR DEVELOPMENT LENGTHS AND LAP SPLICE LENGTHS FOR CONCRETE

NOT TO SCALE

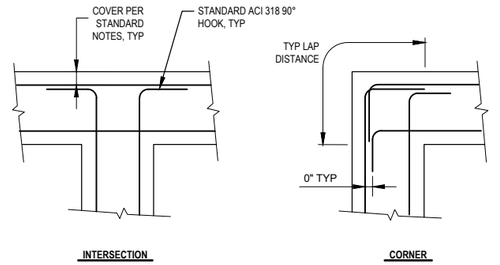


NOTES:

1. FOR ROUND OPENING USE CIRCUMSCRIBING RECTANGLE FOR REINFORCING APPLICATION
2. PROVIDE EXTRA BARS (NOT SHOWN) PARALLEL TO SIDES OF OPENINGS EQUAL TO AREAS OF INTERRUPTED SLAB BARS. EXTEND FULL LENGTH OF SPAN AND/OR LENGTH OF INTERRUPTED BARS AS APPLICABLE
3. TYPICAL AT OPENINGS UP TO 4'-0" MAXIMUM, UNO

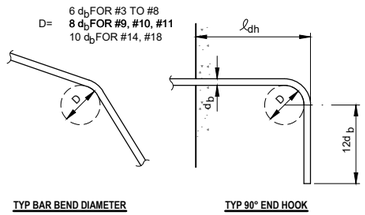
2 TYP REINFORCEMETN AT WALL & SLAB OPENINGS

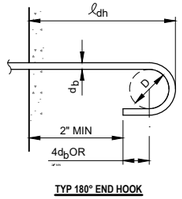
NOT TO SCALE



3 TYP REINFORCEMENT AT INTERSECTIONS AND CORNERS

NOT TO SCALE

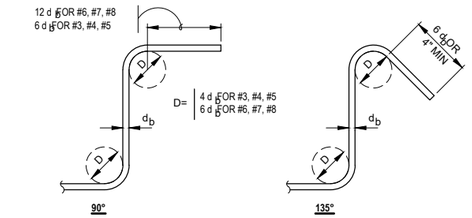




MINIMUM TENSION EMBEDMENT LENGTHS FOR STANDARD END HOOKS ON REINFORCING BARS (IN.) ℓ_{dh}				
BAR SIZE	NORMAL WEIGHT CONCRETE, f'c, PSI			
	3000	4000	5000	6000
#3	6	6	6	6
#4	8	7	6	6
#5	10	9	8	7
#6	12	10	9	9
#7	14	12	11	10
#8	16	14	12	11
#9	18	15	14	13
#10	20	17	16	14
#11	22	19	17	16
#14	38	33	29	27
#18	50	43	39	35

4 REINFORCING BAR ENDS AND BAR HOOKS

NOT TO SCALE



5 STIRRUPS AND TIE HOOKS

NOT TO SCALE

60% DESIGN

No.	Issue	Checked	Approved	Date
Author	S. GOULD	Drafting Check	B. CROWELL	Project Manager NS
Designer	S. GOULD	Design Check	B. CROWELL	Project Director SXM

Bar is one inch on original size sheet
0 1"

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Client HUMBOLDT BAY MUNICIPAL WATER DISTRICT
Project SAMOA RESERVOIR SEISMIC RETROFIT

Title TYPICAL CONCRETE DETAILS

Size ANSI D

Project No. 11218859
Date 07-23-2021
Scale AS SHOWN

Sheet No. S-502
Sheet 14 of 14

Plot Date: 29 July 2021 - 7:24 PM
Plotted By: Michelle Davidson
Path and Filename: \\ghdnet\ghd\US\Eureka\Projects\56\11218859\digital_design\acad 2020\Sheets\Samoa\11218859-GHD-0002-DWG-ST-0501.dwg