MONTECITO WATER DISTRICT

160 East Via Verde, Suite 240
San Dimas, California, 91773
PHONE: (909) 305-2930 FAX: (909) 305-2959
www.tetratech.com

TETRA TECH

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

PROJECT LOCATION:

E. MOUNTAIN DR.,
MONTECITO, CALIFORNIA
34.45528, -119.66058

CLIENT INFORMATION:

MONTECITO WATER DISTRICT
583 San Ysidro Rd
Montecito, CA 93108

Tt PROJECT No.:

200-106490-21001

CLIENT PROJECT No.: P133

PROJECT DESCRIPTION / NOTES:

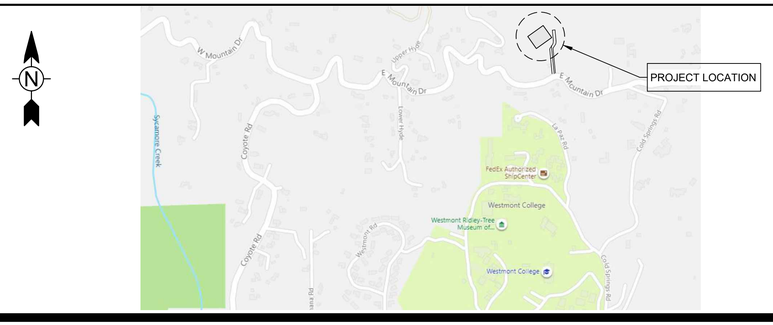
REPLACEMENT OF THE DETERIORATED STEEL ROOF FRAMING, STEEL ROOFING PANELS AND STEEL COLUMNS WITH NEW CONCRETE ROOF DECK, CONCRETE SLAB OVERLAY AND CONCRETE COLUMNS. STRENGTHENING OF THE EXTERIOR WALLS AND WALL FOOTINGS. IMPROVEMENTS TO INLET/OUTLET AND OVERFLOW PIPING.

ISSUED:

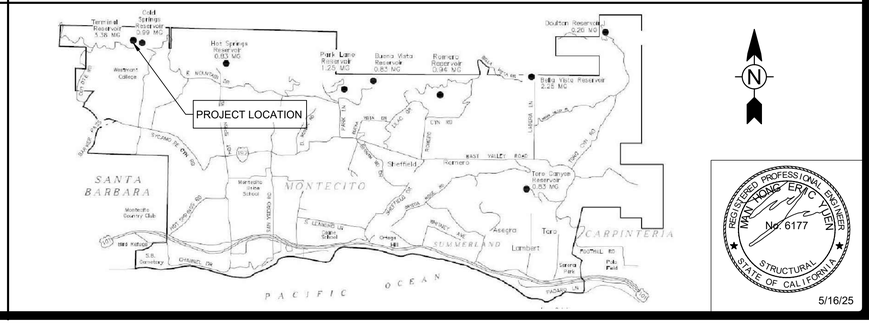
06/15/2021: 60 PERCENT DESIGN REVIEW
09/16/2021: 90 PERCENT DESIGN REVIEW
12/16/2021: DRAFT FINAL SUBMITTAL
05/16/2025: FINAL SUBMITTAL

SHEET INDEX

LOCATION MAP:

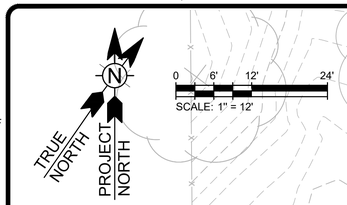


VICINITY MAP:



REGISTERED PROFESSIONAL ENGINEER
MAN HONG ERIC YIEN
No. 6177
STRUCTURAL
STATE OF CALIFORNIA

5/16/25



NOTES:

1. PROTECT IN PLACE ALL EXISTING FEATURES SHOWN UNLESS OTHERWISE NOTED.
2. ALL MATERIALS THAT WILL BE IN CONTACT WITH POTABLE WATER SHALL BE NSF 61 APPROVED.
3. COAST LIVE OAK TREES SHALL BE PROTECTED. STAGING, GRADING, AND VEHICLE PARKING IS EXCLUDED FROM THE CANOPY DRIPLINE PLUS 6 FEET FROM FLAGGED TREES.
4. NATIVE SPECIMEN TREES SHALL NOT BE REMOVED. TREES SHALL BE KEPT HEALTHY BUT MAY BE AFFECTED AT THE ROOTS AND/OR CANOPY TO THE EXTENT WHERE THEY REMAIN HEALTHY.
5. OPEN SPACE WITHIN DISTRICT PROPERTY SOUTH OF SITE FENCING CAN BE UTILIZED FOR STAGING AND STOCK PILING. COORDINATE WITH DISTRICT STAFF ON APPROPRIATE LOCATION.

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REGISTERED PROFESSIONAL ENGINEER
THOMAS L. EPPERSON
No. 36399
Exp. 06-30-26
CIVIL
STATE OF CALIFORNIA
05/09/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

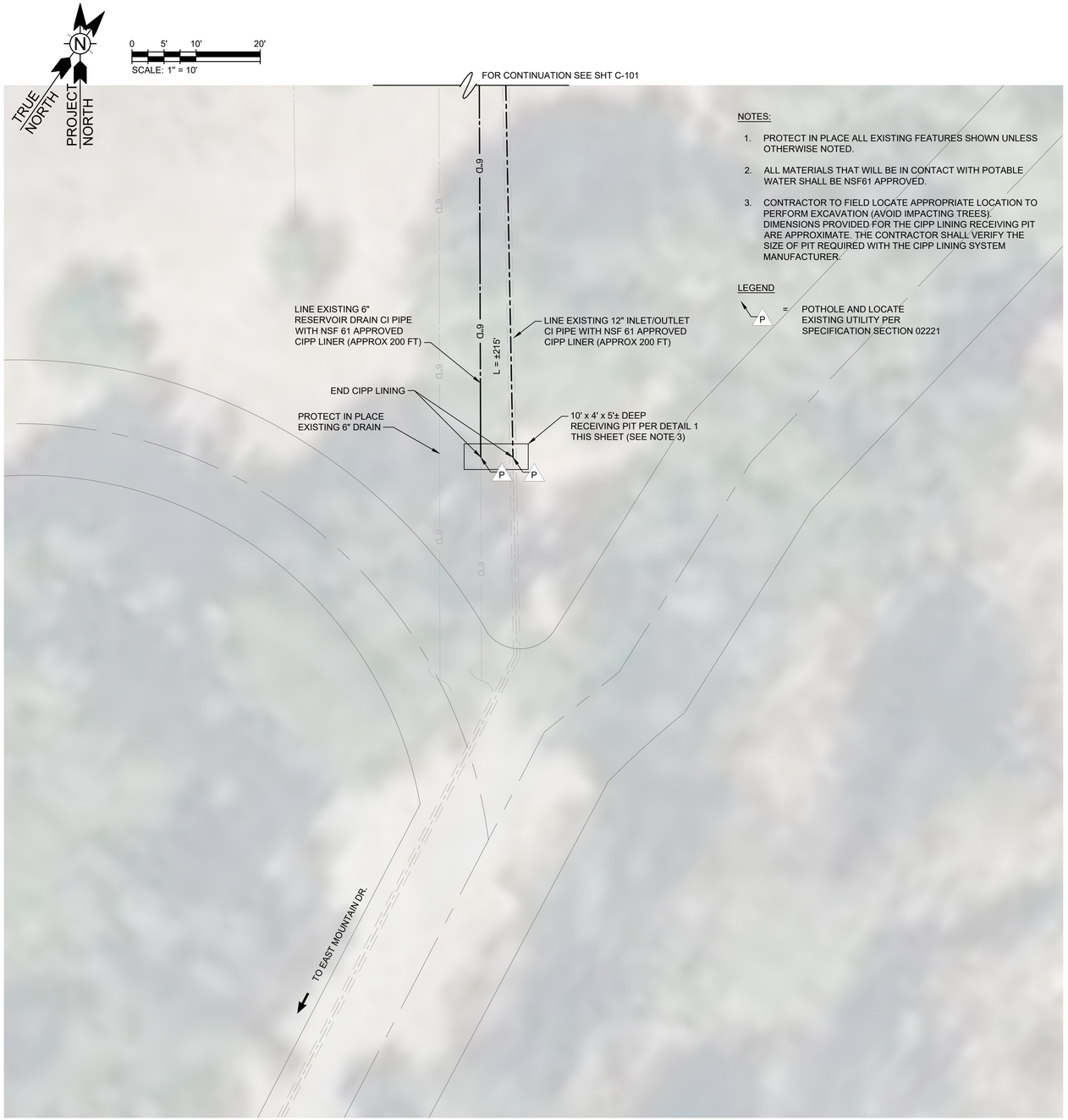
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

INTERIOR INLET/OUTLET PIPING

Project No.:	200-106490-21001
Designed By:	AML
Drawn By:	AS
Checked By:	KRB

C-101

Bar Measures 1 inch

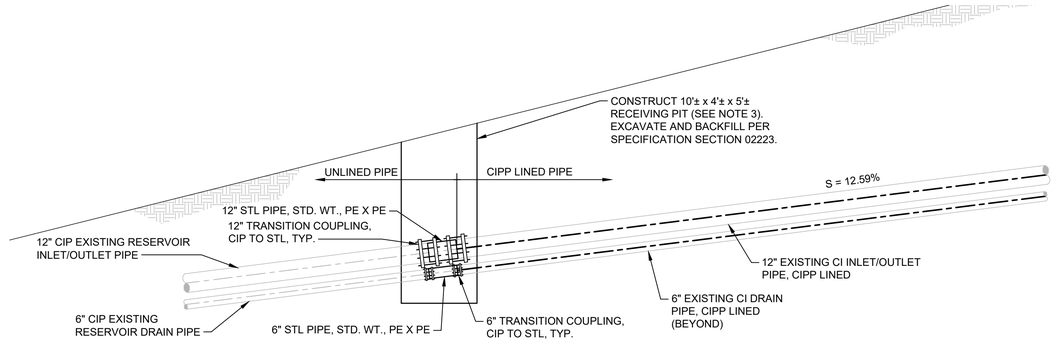


NOTES:

1. PROTECT IN PLACE ALL EXISTING FEATURES SHOWN UNLESS OTHERWISE NOTED.
2. ALL MATERIALS THAT WILL BE IN CONTACT WITH POTABLE WATER SHALL BE NSF61 APPROVED.
3. CONTRACTOR TO FIELD LOCATE APPROPRIATE LOCATION TO PERFORM EXCAVATION (AVOID IMPACTING TREES). DIMENSIONS PROVIDED FOR THE CIPP LINING RECEIVING PIT ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE SIZE OF PIT REQUIRED WITH THE CIPP LINING SYSTEM MANUFACTURER.

LEGEND

P = POTHOLE AND LOCATE EXISTING UTILITY PER SPECIFICATION SECTION 02221



1 – CIPP EXCAVATION DETAIL
SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER
THOMAS L. EPPERSON
No. 36399
Exp. 06-30-26
CIVIL
STATE OF CALIFORNIA
05/09/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

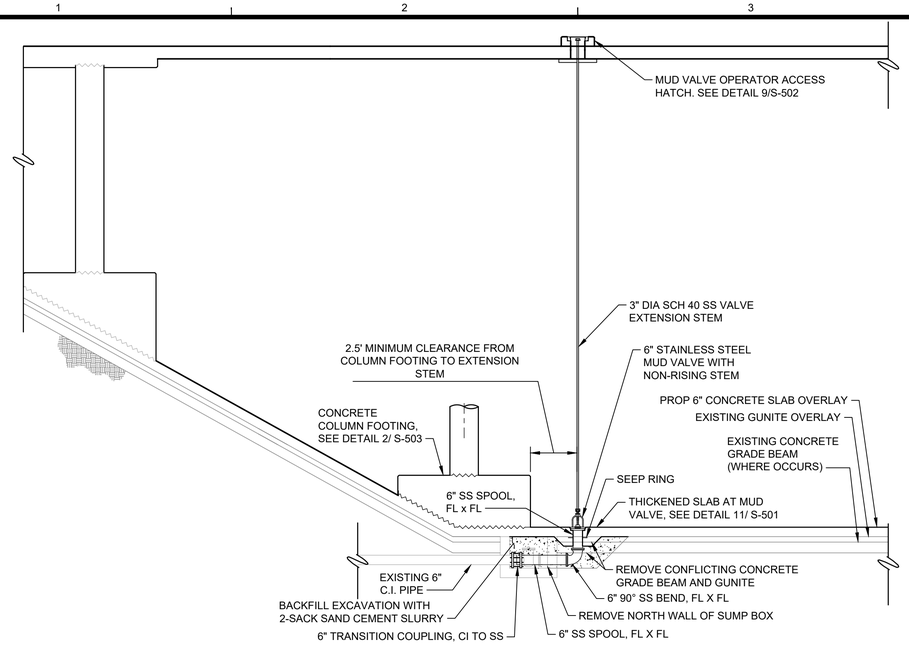
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

INLET/OUTLET PIPING (CONT.)

Project No.:	200-106490-21001
Designed By:	AML
Drawn By:	AS
Checked By:	KRB

C-102

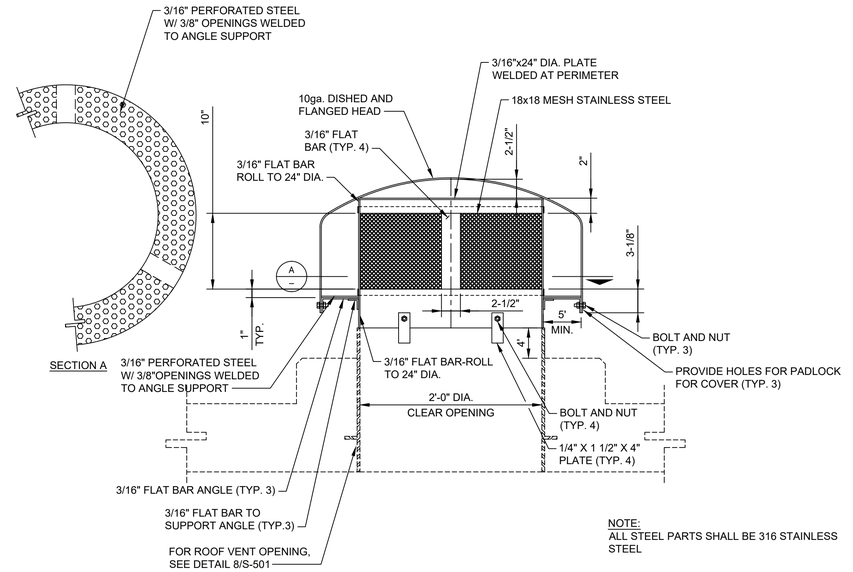
Bar Measures 1 inch



1 — MUD VALVE DETAIL
SCALE: 1/4"=1'-0"

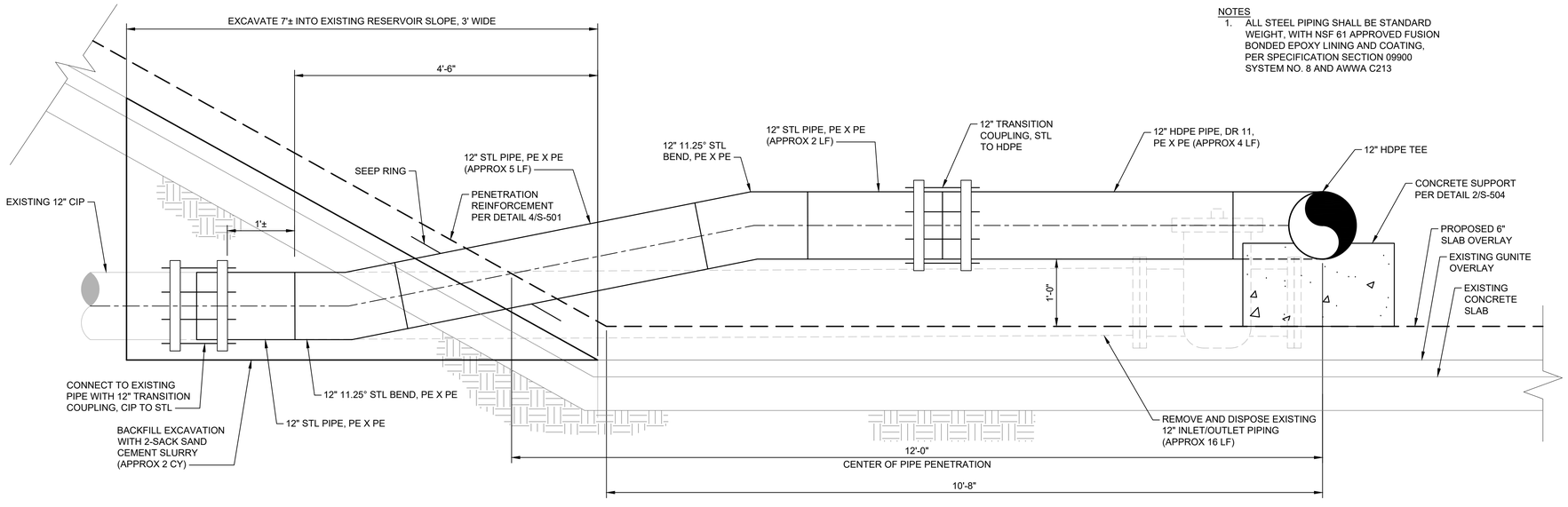
NOTES:

1. SS VALVE EXTENSION SIZE SHALL BE DETERMINED BY VALVE MANUFACTURER
2. PROVIDE MINIMUM OF TWO (2) UNIVERSAL JOINTS ON VALVE STEM TO AID IN ALIGNING STEM AND VALVE NUT. ALL MATERIAL SHALL BE STAINLESS STEEL. LOCATION OF UNWELDED JOINTS PER MANUFACTURER'S RECOMMENDATION.
3. CONTRACTOR SHALL EXERCISE EXTREME CARE WHILE INSTALLING VALVE OPERATOR ACCESS HATCH. CONTRACTOR SHALL USE LASER LEVEL TO MAINTAIN VALVE STEM PLUMBNESS.



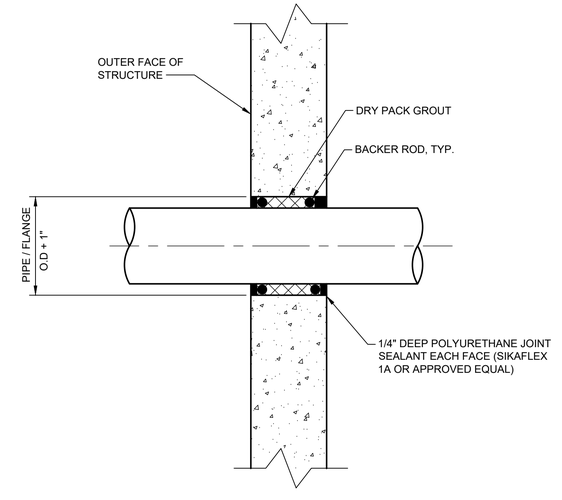
NOTE:
ALL STEEL PARTS SHALL BE 316 STAINLESS STEEL

2 — ROOF VENT DETAIL
SCALE: N.T.S.



NOTES
1. ALL STEEL PIPING SHALL BE STANDARD WEIGHT, WITH NSF 61 APPROVED FUSION BONDED EPOXY LINING AND COATING, PER SPECIFICATION SECTION 09900 SYSTEM NO. 8 AND AWWA C213

3 — INLET/OUTLET CONNECTION DETAIL
SCALE: 1"=1'-0"



4 — RESERVOIR WALL PENETRATION DETAIL (ABOVE WATER LINE)
SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER — THOMAS L. EPPERSON — No. 36399 Exp. 06-30-26 — CIVIL — STATE OF CALIFORNIA
05/09/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR
CIVIL DETAILS

Project No.:	200-106490-21001
Designed By:	AML
Drawn By:	AS
Checked By:	KRB

C-501

Bar Measures 1 inch

GENERAL STRUCTURAL NOTES

THESE NOTES SHALL APPLY UNLESS SHOWN/INDICATED OTHERWISE ELSEWHERE IN THE STRUCTURAL DRAWINGS.

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE 2019 CALIFORNIA BUILDING CODE (C.B.C) BASED UPON THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (I.B.C.).
2. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. DIMENSIONS OF (E) CONSTRUCTION WHERE SHOWN ON THESE DRAWINGS ARE NOMINAL AND SHOULD BE FIELD VERIFIED. SHOULD CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN ON PLANS, THE ENGINEER SHALL BE NOTIFIED IN WRITING BEFORE PROCEEDING WITH WORK.
3. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. SHOULD CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN ON PLANS, THE ENGINEER SHALL BE NOTIFIED IN WRITING BEFORE PROCEEDING WITH WORK.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL COLUMNS, FRAMING, BEAMS, ETC. ARE ADEQUATELY BRACED AND SHORED DURING CONSTRUCTION. ALL BRACING/SHORING SHALL BE DESIGNED BY A REGISTERED ENGINEER HIRED BY THE CONTRACTOR BRACING OF CONCRETE WALLS AND COLUMNS SHALL REMAIN IN PLACE UNTIL RETROFIT WORK IS COMPLETE.
5. UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND THESE GENERAL NOTES. TYPICAL DETAILS ARE MEANT TO APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS WHERE THE OCCUR.
6. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND PEDESTRIANS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED WORK, ETC. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT BE CONSIDERED AS INSPECTION OF SUCH ITEMS.
7. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON DRAWINGS.
8. ALL ITEMS REMOVED DURING CONSTRUCTION WORK SHALL BE REPLACED TO MATCH EXISTING.
9. ALL WORK SHALL CONFORM TO THE PLANS AND SPECIFICATIONS IN ALL RESPECTS AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
10. ASSUMED SOIL BEARING CAPACITY OF 2000 PSF IS BASED ON THE PRESCRIPTIVE VALUES FROM TABLE 1806.2 OF THE 2019 CBC FOR MATERIAL CLASS 4.0.
11. CONTRACTOR SHALL VERIFY LOCATION OF ALL SITE UTILITIES PRIOR TO STARTING WORK, BOTH ABOVE GROUND AND BELOW GROUND, WHICH MAY BE IMPACTED BY THE WORK SHOWN ON THESE DRAWINGS. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
12. CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CLIENT AND TETRA TECH, INC. THEIR PARENT AND SUBSIDIARY COMPANIES, ITS EMPLOYEES, OFFICERS, OR AGENTS, HARMLESS AGAINST ANY AND ALL CLAIMS BY ANY PARTIES ARISING FROM, OR RELATED TO, ANY AND ALL DAMAGES, INCLUDING LEGAL COSTS AND ATTORNEY'S FEES, RESULTING FROM INTERFERENCE WITH, INTERRUPTION OF, DAMAGE TO, OR ANY AND ALL INJURIES WHICH RESULT FROM DAMAGE CAUSED TO SUBSURFACE INSTALLATION, WHICH IS UNFORESEEN AND DESPITE ENGINEER'S EFFORT DURING THE DESIGN PROCESS WAS NOT LOCATED, EXCEPTING ONLY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ENGINEER IN PROVIDING ITS SERVICES.
13. ALL ITEMS SHOWN ON THESE PLANS ARE NEW UNLESS NOTED (E), EXIST. OR EXISTING.

REINFORCING NOTES

1. REINFORCEMENT FOR CONCRETE SHALL BE DEFORMED BARS CONFORMING TO A.S.T.M. SPECIFICATION A615 (A706/A706M FOR WELDED REINFORCING). GRADE 60 STEEL SHALL BE USED
3. ALL REINFORCEMENT, ANCHOR BOLTS, AND OTHER ANCHORAGES PLACED IN CONCRETE SHALL BE ACCURATELY PLACED AND POSITIVELY SECURED AND SUPPORTED BY CONCRETE BLOCKS, METAL CHAIRS, SPACERS, OR METAL HANGERS, AND SHALL BE IN POSITION BEFORE CONCRETE PLACING OR GROUTING IS BEGUN. DETAILING AND PLACING OF BARS SHALL CONFORM TO THE A.C.I. MANUAL OF STANDARD PRACTICES.
4. BARS SPECIFIED AS "CONTINUOUS" SHALL EXTEND THE FULL LENGTH OF THE MEMBER CONTAINING THEM AND MAY BE SPLICED (UNLESS NOTED OR SHOWN WITHOUT SPLICES ON THE PLANS), IN CONCRETE, PROVIDE LAPS PER DETAIL 2 ON SHEET S-501. STAGGER ALL SPLICES.
5. DOWELS SHALL BE PROVIDED AT ALL POUR JOINTS AND SHALL BE THE SAME SIZE AND SPACING AS REINFORCING DIRECTLY BEYOND POUR JOINTS.
6. WELDING OF REINFORCING STEEL, METAL INSERTS AND CONNECTIONS IN REINFORCED CONCRETE CONSTRUCTION SHALL CONFORM TO ANSI/AWS D1.4-11. USE LOW HYDROGEN E-70 SERIES ELECTRODES FOR WELDING OF REINFORCING BARS. CONTINUOUS INSPECTION IS REQUIRED OF ALL FIELD WELDING IN ACCORDANCE WITH C.B.C. CHAPTER 17.

CONCRETE NOTES

1. ALL CONCRETE FOR STRUCTURES SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS. AGGREGATES SHALL CONFORM TO A.S.T.M. C33. REFER TO THE SPECIFICATIONS FOR THE STRENGTH OF CONCRETE FOR OTHER APPLICATIONS
2. CEMENT FOR CONCRETE SHALL BE TYPE V PORTLAND CEMENT CONFORMING TO A.S.T.M. C150.
3. CONCRETE COVER FOR REINFORCING BARS SHALL BE:
   CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 3"
   EXPOSED TO EARTH OR WEATHER: NO. 6 THROUGH NO. 18 BARS = 2"
   NO. 5 BARS, W31 OR D31 WIRE, AND SMALLER = 1 1/2"
   NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
   SLABS, WALLS, JOISTS: NO. 14 AND NO. 18 BARS = 1 1/2"
   NO. 11 BARS AND SMALLER = 3/4"
   BEAMS, COLUMNS: PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS = 1 1/2"
4. DRYPACK SHALL BE 1 PART CEMENT AND 3 PARTS SAND (BY VOLUME).
5. NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. SEE MECHANICAL AND/OR ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES THROUGH WALLS AND FLOORS.
7. THE LOCATION OF ALL CONSTRUCTION JOINTS NOT SPECIFICALLY NOTED OR SHOWN SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
8. "ROUGHENED SURFACES", WHERE SPECIFIED ON THE DRAWINGS, SHALL BE MECHANICALLY ROUGHENED SUCH THAT A 1/4" AMPLITUDE (±) IS ACHIEVED BETWEEN HIGH AND LOW SPOTS OF THE ROUGHENED SURFACE. THE SURFACE SHALL BE CLEAN AND FREE OF LAITANCE

STEEL NOTES

1. ALL WIDE FLANGE MEMBERS SHALL BE IN ACCORDANCE WITH A.S.T.M. A-992. ALL OTHER STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE ASTM A36 UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH CBC SECTION 1705.2.1, UNLESS FABRICATION IS PERFORMED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION, IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SECTION 1704.2.5.2 OF THE 2019 CBC. AT THE COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE CITY BUILDING OFFICIAL (OR OWNER IF THE PROJECT IS NOT UNDER THE JURISDICTION OF A BUILDING DEPARTMENT) AND TO THE ENGINEER STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. STEEL TUBES SHALL CONFORM TO A.S.T.M. A500, GRADE B OR BETTER, UNLESS NOTED OTHERWISE.
3. STEEL PIPES SHALL CONFORM TO A.S.T.M. A53, GRADE B.
4. BOLTS SHALL CONFORM TO A.S.T.M. A307 OR BETTER, UNLESS NOTED OTHERWISE.
5. HOLES FOR BOLTS IN STEEL SHALL BE OF SAME DIAMETER AS BOLT +1/16" MAXIMUM.
6. ALL WELDING SHALL BE SHIELDED ARC TYPE AND SHALL BE PERFORMED BY A CERTIFIED WELDER IN A FABRICATION SHOP REGISTERED AND APPROVED IN ACCORDANCE WITH NOTE 1 ABOVE.CONTINUOUS INSPECTION IS REQUIRED OF ALL FIELD WELDING IN ACCORDANCE WITH AWS D1.1.
7. NO STRUCTURAL STEEL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED AND APPROVED BY STRUCTURAL ENGINEER.
8. STAINLESS STEEL SHALL CONFORM TO A.S.T.M. A276/A.I.S.I. 316.
   STAINLESS STEEL BOLTS SHALL CONFORM TO A.S.T.M. F593.
   STAINLESS STEEL NUTS SHALL CONFORM TO A.S.T.M. F594.
9. WELDING OF STAINLESS STEEL SHALL CONFORM TO STRUCTURAL WELDING CODE - STAINLESS STEEL, ANSI/AWS D1.6-07.
10. WHERE SPECIFIED, USE OF HIGH-STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE "SPECIFICATION FOR STRUCTURAL JOINTS USING A.S.T.M. A325 OR A490 BOLTS" APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION (RCSC). SPECIAL INSPECTION OF HIGH-STRENGTH BOLT CONNECTIONS IS REQUIRED.
11. ALL NON-STAINLESS STEEL EXPOSED TO WEATHER SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 OR A153, AS APPLICABLE. REPAIR OF DAMAGED GALVANIZED COATING SHALL BE IN ACCORDANCE WITH ASTM A780. ALL OTHER NON-STAINLESS STEEL SHALL BE COATED WITH TWO COATS OF SHOP APPLIED PRIMER.
12. WELDING EQUIPMENT SHALL BE CHECKED PRIOR TO WELDING AS REQUIRED BY AISC 360-16 TABLE N5.4-1.
13. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED SHALL BE PERFORMED AS REQUIRED BY AISC 360-16 TABLE N5.6-1

ADHESIVE ANCHORS

1. ADHESIVE ANCHORS SHALL BE "SET-3G" ADHESIVE ANCHORS, MANUFACTURED BY SIMPSON STRONG-TIE.
2. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH I.C.C. EVALUATION REPORT ESR-4057.
3. SPECIAL INSPECTION PER CHAPTER 1704.13 OF THE C.B.C SHALL BE PROVIDED DURING ANCHOR INSTALLATION.
4. AN ALTERNATIVE ADHESIVE ANCHOR PRODUCT MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL, PROVIDED THAT IT HAS A CURRENT I.C.C. EVALUATION REPORT APPROVAL.
5. ALL ABANDONED HOLES SHALL BE FILLED WITH A DRYPACK GROUT A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. THE FILLED HOLE(S) SHALL BE PREPARED AND CLEANED AS REQUIRED BY THE GROUT MANUFACTURER.
6. LOCATE EXISTING REINFORCING USING A NON-DESTRUCTIVE METHOD (PACHOMETER OR OTHER), PRIOR TO DRILLING HOLES FOR ANCHORS. MAINTAIN A MINIMUM CLEARANCE OF 1" BETWEEN THE REINFORCEMENT AND THE ANCHOR.

DESIGN CRITERIA

DESIGN CODES AND REFERENCES:
- -CALIFORNIA BUILDING CODE, 2019 EDITION
- -ASCE/SEI 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES
- -ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- -ACI 350 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES
- -ACI 350.3-06 SEISMIC DESIGN OF LIQUID CONTAINING CONCRETE STRUCTURES

ROOF LOADING:
- DEAD LOAD = 5 PSF (SOLAR PANEL ALLOWANCE)
- SELF WEIGHT OF CONCRETE DEAD LOAD = 110 PSF (8 INCH CONCRETE SLAB)
- LIVE LOAD = 100 PSF (ROOF SLAB DESIGN ONLY)
- LIVE LOAD = 40 PSF (COLUMN AND WALL DESIGN ONLY)

SEISMIC DESIGN PARAMETERS:
- ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE
- LOCATION: LAT. 34.45528 N, LONG. 119.66058 W
- OCCUPANCY CATEGORY: IV
- SITE CLASS: D
- SEISMIC DESIGN CATEGORY: F
- S1 = 0.759 Fa = 1.200 Ss = 2.056
- SD1 = 0.759 Fv = 1.500 SDS = 1.645

REINFORCED CONCRETE RESERVOIR
- Ri = 2.0
- Rc = 1.0
- Ie = 1.5
- Sai = 1.234
- Sac = 0.0195

SOIL DESIGN PARAMETERS:
- ASSUMED SOIL DESIGN PARAMETERS (CLASS 4 SOIL PER CBC 2019 TABLE 1806.2):
- ALLOWABLE SOIL BEARING = 2000 PSF (MAY BE INCREASED BY 1/3 FOR TRANSIENT LOADING CONDITIONS)
- SOIL FRICTION COEFFICIENT = 0.35 BETWEEN CRUSHED ROCK AGGREGATE BASE (CLASS 3 PER CBC 2019 1806.2) - SOIL SURFACE
- ACTIVE SOIL LATERAL PRESSURE = 45 PSF/FT (ASCE7-16 TABLE 3.2-1 SOIL TYPE GC)
- AT-REST SOIL LATERAL PRESSURE = 60 PSF/FT (ASCE7-16 TABLE 3.2-1 FOOTNOTE B)
- SEISMIC SOIL LATERAL PRESSURE = 30.5 PSF/FT (ASSUMED UNIFORMLY DISTRIBUTED LOAD)
- PASSIVE SOIL LATERAL PRESSURE = 150 PSF/FT

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

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

GENERAL STRUCTURAL NOTES

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

S-001

Bar Measures 1 inch

SPECIAL INSPECTIONS REQUIRED

SPECIAL INSPECTIONS REQUIRED FOR THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH C.B.C. CHAPTER 17. SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN APPROVED INSPECTION AGENCY U.N.O, EMPLOYED BY THE OWNER.

THE SPECIAL INSPECTOR SHALL BE CERTIFIED BY THE INTERNATIONAL CODE COUNCIL (I.C.C.) TO PERFORM INSPECTION FOR THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND/OR THE ENGINEER. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE STRUCTURAL ENGINEER AND TO THE BUILDING OFFICIAL.

THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THIS CODE.

IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE AT LEAST 48 HOURS ADVANCE NOTICE TO THE OWNER/OWNER'S REPRESENTATIVE WHEN HIS WORK IS READY FOR ANY REQUIRED SPECIAL INSPECTIONS.

SHOP INSPECTION OF STEEL CONSTRUCTION IS NOT REQUIRED WHEN THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED SPECIAL INSPECTION AGENCY. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

CONTRACTOR RESPONSIBILITY

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

OWNER OR OWNER'S REPRESENTATIVE SHALL BE SYNONYMOUS WITH 'BUILDING OFFICIAL' IN THE FOREGOING IF THE PROJECT IS NOT UNDER THE JURISDICTION OF A BUILDING DEPARTMENT

SPECIAL INSPECTION SHALL BE PROVIDED FOR THE FOLLOWING TYPES OF WORK PERFORMED IN THE FIELD, OR NOT PERFORMED IN AN APPROVED FABRICATION SHOP AS DEFINED ABOVE, UNLESS NOTED AS "N/A".

SPECIAL INSPECTIONS REQUIRED (■ YES ☐ N0)

	CONT	PERIODIC	N/A
REQUIRED VERIFICATION AND INSPECTION OF SOILS (TO BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER):			
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	☐	■	☐
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	☐	■	☐
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	☐	■	☐
4. PERFORM CLASSIFICATION AND TESTING OF NATIVE SOILS TO VERIFY ANY SOIL PROPERTIES ASSUMED AS PART OF DESIGN FOR THIS PROJECT IN THE ABSENCE OF A SOILS REPORT (SEE SOIL PROPERTIES ON THIS DRAWING). THIS TESTING SHALL BE PERFORMED IN ADVANCE OF ANY CONSTRUCTION. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ASSUMED VALUES ARE NOT VALID.	☐	■	☐
5. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	■	☐	☐
6. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	☐	■	☐
CONCRETE CONSTRUCTION:			
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT	☐	■	☐
2. REINFORCING BAR WELDING:			
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	☐	■	☐
B. INSPECT SINGLE-PASS FILLET WELD, MAXIMUM 5/16"; AND	☐	■	☐
C. INSPECT ALL OTHER WELDS.	■	☐	☐
3. INSPECTION OF ANCHORS CAST IN CONCRETE	☐	■	☐
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS			
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	■	☐	☐
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	☐	■	☐
5. VERIFYING USE OF REQUIRED DESIGN MIX	☐	■	☐
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	■	☐	☐
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	■	☐	☐
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	☐	■	☐
9. INSPECT PRESTRESSED CONCRETE FOR:			
A. APPLICATION OF PRESTRESSING FORCES; AND	☐	☐	■
B. GROUTING OF BONDED PRESTRESSING TENDONS.	☐	☐	■
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	☐	■	☐
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	☐	☐	■
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED	☐	■	☐

STEEL CONSTRUCTION (STRUCTURAL STEEL):
R - INSPECT THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS
C - INSPECT THESE ITEMS ON A CONTINUOUS BASIS

	C	R	N/A
1. INSPECTION TASKS PRIOR TO WELDING			
A. WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	■	☐	☐
B. WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	■	☐	☐
C. MANUFACTURERS CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	■	☐	☐
D. MATERIAL IDENTIFICATION (TYPE/GRADE)	☐	■	☐
E. WELDER IDENTIFICATION SYSTEM	☐	■	☐
F. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	☐	■	☐
- JOINT PREPARATION			
- DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)			
- CLEANLINESS (CONDITION OF STEEL SURFACES)			
- TACKING (TACK WELD QUALITY AND LOCATION)			
- BACKING TYPE AND FIT (IF APPLICABLE)			
G. FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- AND K- JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY)	☐	■	☐
- JOINT PREPARATIONS			
- DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)			
- CLEANLINESS (CONDITION OF STEEL SURFACES)			
- TACKING (TACK WELD QUALITY AND LOCATION)			
H. CONFIGURATION AND FINISH OF ACCESS HOLES	☐	■	☐
I. FIT-UP OF FILLET WELDS	☐	■	☐
- DIMENSIONS (ALIGNMENT, GAPS AT ROOT)			
- CLEANLINESS (CONDITION OF STEEL SURFACES)			
- TACKING (TACK WELD QUALITY AND LOCATION)			
2. INSPECTION TASKS DURING WELDING			
A. CONTROL AND HANDLING OF WELDING CONSUMABLES	☐	■	☐
- PACKAGING			
- EXPOSURE CONTROL			
B. NO WELDING OVER CRACKED TACK WELDS	☐	■	☐
C. ENVIRONMENTAL CONDITIONS	☐	■	☐
- WIND SPEED WITHIN LIMITS			
- PRECIPITATION AND TEMPERATURE			
D. WPS FOLLOWED	☐	■	☐
- SETTINGS ON WELDING EQUIPMENT			
- TRAVEL SPEED			
- SELECTED WELDING MATERIALS			
- SHIELDING GAS TYPE/FLOW RATE			
- PREHEAT APPLIED			
- INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)			
- PROPER POSITION (F, V, H, OH)			
E. WELDING TECHNIQUES	☐	■	☐
- INTERPASS AND FINAL CLEANING			
- EACH PASS WITHIN PROFILE LIMITATIONS			
- EACH PASS MEETS QUALITY REQUIREMENTS			
F. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	■	☐	☐
3. INSPECTION TASKS AFTER WELDING			
A. WELDS CLEANED	☐	■	☐
B. SIZE, LENGTH AND LOCATION OF WELDS	■	☐	☐
C. WELDS MEET VISUAL ACCEPTANCE CRITERIA	■	☐	☐
- CRACK PROHIBITION			
- WELD/BASE-METAL FUSION			
- CRATER CROSS SECTION			
- WELD PROFILES			
- WELD SIZE			
- UNDERCUT			
- POROSITY			
D. ARC STRIKES	■	☐	☐
E. K-AREA	■	☐	☐
- WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN. (75 MM) OF THE WELD			
F. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES	■	☐	☐
- AFTER ROLLED HEAVY SHAPES (SEE AISC SECTION A3.1C) AND BUILT-UP SHAPES (SEE AISC SECTION A3.1D) ARE WELDED, VISUALLY INSPECT THE WELD ACCESS HOLE FOR CRACKS			
G. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	■	☐	☐
H. REPAIR ACTIVITIES	■	☐	☐
I. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	■	☐	☐
J. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	☐	■	☐

STEEL CONSTRUCTION (STRUCTURAL STEEL CONT.):

	C	R	N/A
4. INSPECTION TASKS PRIOR TO BOLTING			
A. MANUFACTURER'S CERTIFICATION AVAILABLE FOR FASTENER MATERIALS	■	☐	☐
B. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	☐	■	☐
C. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FORM SHEAR PLANE)	☐	■	☐
D. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	☐	■	☐
E. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	☐	■	☐
F. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	☐	■	☐
G. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	☐	■	☐
5. INSPECTION TASKS DURING BOLTING			
A. FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS ARE POSITIONED AS REQUIRED	☐	■	☐
B. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	☐	■	☐
C. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FOR ROTATING	☐	■	☐
D. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	☐	■	☐
6. INSPECTION TASKS AFTER BOLTING			
A. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	■	☐	☐
7. INSPECTION OF STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT			
A. PLACEMENT AND INSTALLATION OF STEEL DECK	■	☐	☐
B. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	■	☐	☐
C. DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	■	☐	☐

ADHESIVE ANCHORS:	CONT	PERIODIC	N/A
1. VERIFY ANCHOR TYPE:	☐	■	☐
2. VERIFY ADHESIVE IDENTIFICATION AND EXPIRATION DATE	☐	■	☐
3. VERIFY ANCHOR DIMENSIONS:	☐	■	☐
4. VERIFY CONCRETE TYPE:	☐	■	☐
5. VERIFY CONCRETE COMPRESSIVE STRENGTH	☐	■	☐
6. VERIFY HOLE DRILLING METHOD	☐	■	☐
7. VERIFY HOLE DIMENSIONS	☐	■	☐
8. VERIFY HOLE CLEANING PROCEDURES	☐	■	☐
9. VERIFY ANCHOR SPACING	☐	■	☐
10. VERIFY EDGE DISTANCES	☐	■	☐
11. VERIFY CONCRETE THICKNESS	☐	■	☐
12. VERIFY ANCHOR EMBEDMENT	☐	■	☐
13. VERIFY TIGHTENING TORQUE	☐	■	☐
14. VERIFY ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS	☐	■	☐

THE SPECIAL INSPECTOR MUST VERIFY THE INITIAL INSTALLATIONS OF EACH TYPE AND SIZE OF ADHESIVE ANCHOR INSTALLED BY THE CONSTRUCTION PERSONNEL ON SITE. SUBSEQUENT INSTALLATIONS OF THE SAME ANCHOR TYPE AND SIZE BY THE SAME CONSTRUCTION PERSONNEL MAY BE PERMITTED, WITH THE APPROVAL OF THE ENGINEER AND THE SPECIAL INSPECTOR, TO BE PERFORMED IN THE ABSENCE OF THE SPECIAL INSPECTOR. ANY CHANGE IN THE ANCHOR PRODUCT BEING INSTALLED OR THE PERSONNEL PERFORMING THE INSTALLATION REQUIRES AN INITIAL INSPECTION. FOR ONGOING INSTALLATIONS OVER AN EXTENDED PERIOD, THE SPECIAL INSPECTOR MUST MAKE REGULAR INSPECTIONS TO CONFIRM CORRECT HANDLING AND INSTALLATION OF THE PRODUCT. THE SPECIAL INSPECTOR SHALL INFORM THE ENGINEER OF THE FREQUENCY OF THE PERIODIC ANCHOR INSPECTIONS. THE ENGINEER MAY REQUEST ADDITIONAL INSPECTIONS AT ANY TIME.

STRUCTURAL OBSERVATION

THE STRUCTURAL ENGINEER, OR ANOTHER ENGINEER DESIGNATED BY THE STRUCTURAL ENGINEER SHALL BE RETAINED BY THE OWNER TO PERFORM STRUCTURAL OBSERVATION AS REQUIRED BY C.B.C. CHAPTER 17. STRUCTURAL OBSERVATION SHALL BE PROVIDED DURING THE STAGES OF CONSTRUCTION LISTED BELOW. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AT LEAST 48 HOURS ADVANCE NOTICE TO THE STRUCTURAL ENGINEER WHEN HIS WORK IS READY FOR STRUCTURAL OBSERVATION FOR EACH OF THESE STAGES.

	STRUCTURAL OBSERVATIONS REQUIRED (■ YES ☐ N0)
1. CONCRETE: REINFORCING STEEL AND EMBEDDED STRUCTURAL ANCHORAGES PRIOR TO PLACEMENT OF CONCRETE FOR THE FOLLOWING:	
A. FOUNDATIONS	■
B. SLABS-ON-GRADE (EXCEPT SITE PAVING AND FLATWORK)	☐
C. WALLS	■
D. STRUCTURAL FLOOR SLABS AND BEAMS NOT SUPPORTED ON-GRADE	☐
E. ROOF SLABS AND BEAMS	■
2. STRUCTURAL STEEL:	
A. ERECTED COLUMN, BEAMS AND GIRDERS, PRIOR TO INSTALLATION OF ROOF AND FLOOR JOISTS, TRUSSES AND DECKING	■ N/A

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REGISTERED PROFESSIONAL ENGINEER MARK HONG ER YEN No. 6177 STRUCTURAL STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

MONTECITO WATER DISTRICT

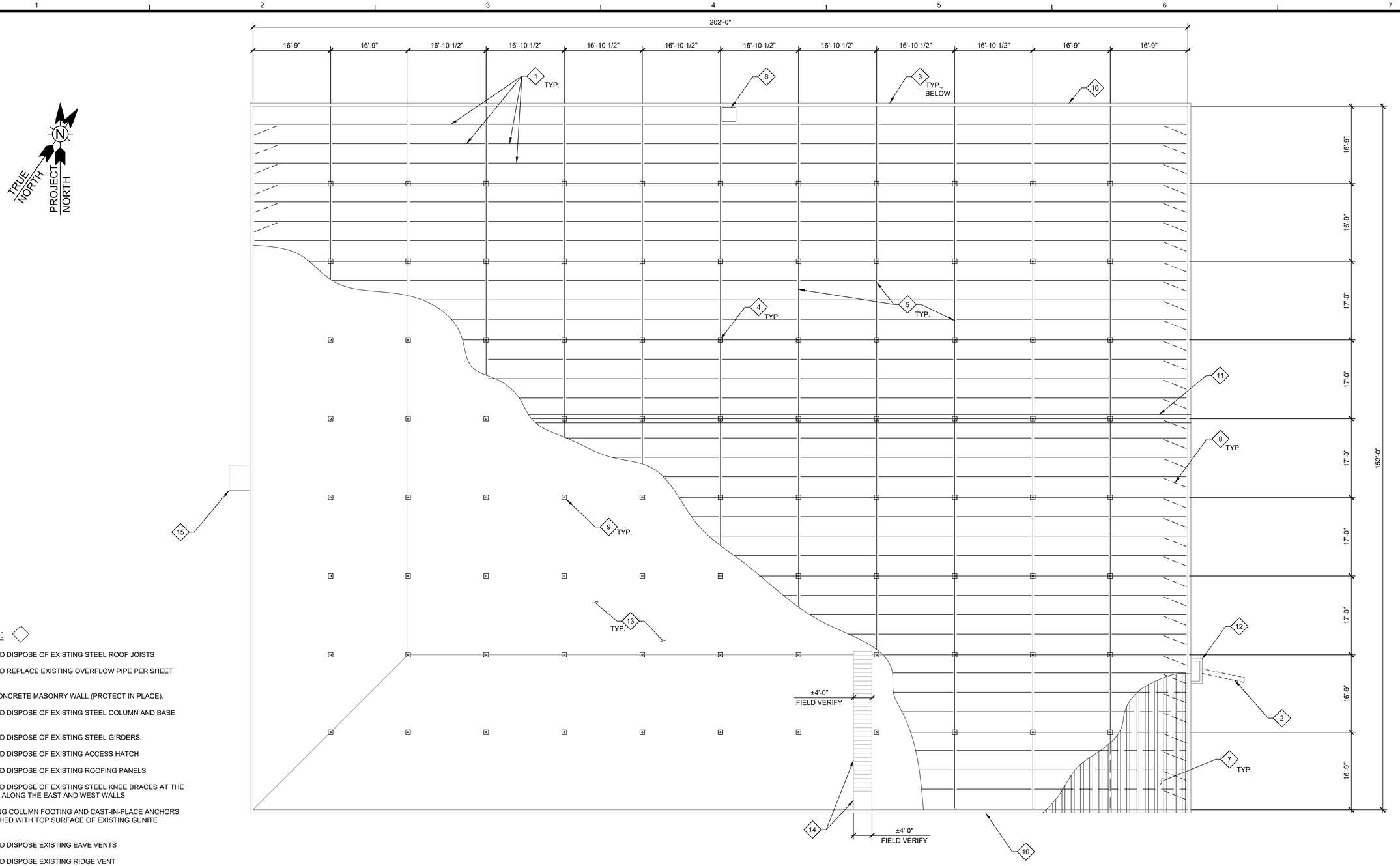
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS

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

S-002

Bar Measures 1 inch



KEYNOTES:

1. REMOVE AND DISPOSE OF EXISTING STEEL ROOF JOISTS
2. REMOVE AND REPLACE EXISTING OVERFLOW PIPE PER SHEET C-101.
3. EXISTING CONCRETE MASONRY WALL (PROTECT IN PLACE).
4. REMOVE AND DISPOSE OF EXISTING STEEL COLUMN AND BASE PLATE.
5. REMOVE AND DISPOSE OF EXISTING STEEL GIRDERS.
6. REMOVE AND DISPOSE OF EXISTING ACCESS HATCH
7. REMOVE AND DISPOSE OF EXISTING ROOFING PANELS
8. REMOVE AND DISPOSE OF EXISTING STEEL KNEE BRACES AT THE ROOF JOIST ALONG THE EAST AND WEST WALLS
9. CUT EXISTING COLUMN FOOTING AND CAST-IN-PLACE ANCHORS TO BE FLUSHED WITH TOP SURFACE OF EXISTING GUNITE OVERLAY.
10. REMOVE AND DISPOSE EXISTING EAVE VENTS
11. REMOVE AND DISPOSE EXISTING RIDGE VENT
12. REMOVE EXISTING CONCRETE CONCRETE SPILLWAY STRUCTURE WITH STEEL PLATE COVER
13. EXISTING 3" THICK GUNITE OVERLAY (PROTECT-IN-PLACE, UNLESS NOTED OTHERWISE).
14. REMOVE AND DISPOSE EXISTING CONCRETE STAIRWAY AND LANDING. TO BE FLUSHED WITH TOP SURFACE OF EXISTING GUNITE OVERLAY.
15. REMOVE AND DISPOSE OF EXISTING CONCRETE SLAB FOR THE SODIUM HYPOCHLORITE TANKS.

DEMOLITION PLAN

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

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

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

DEMOLITION PLAN

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

S-101

Bar Measures 1 inch

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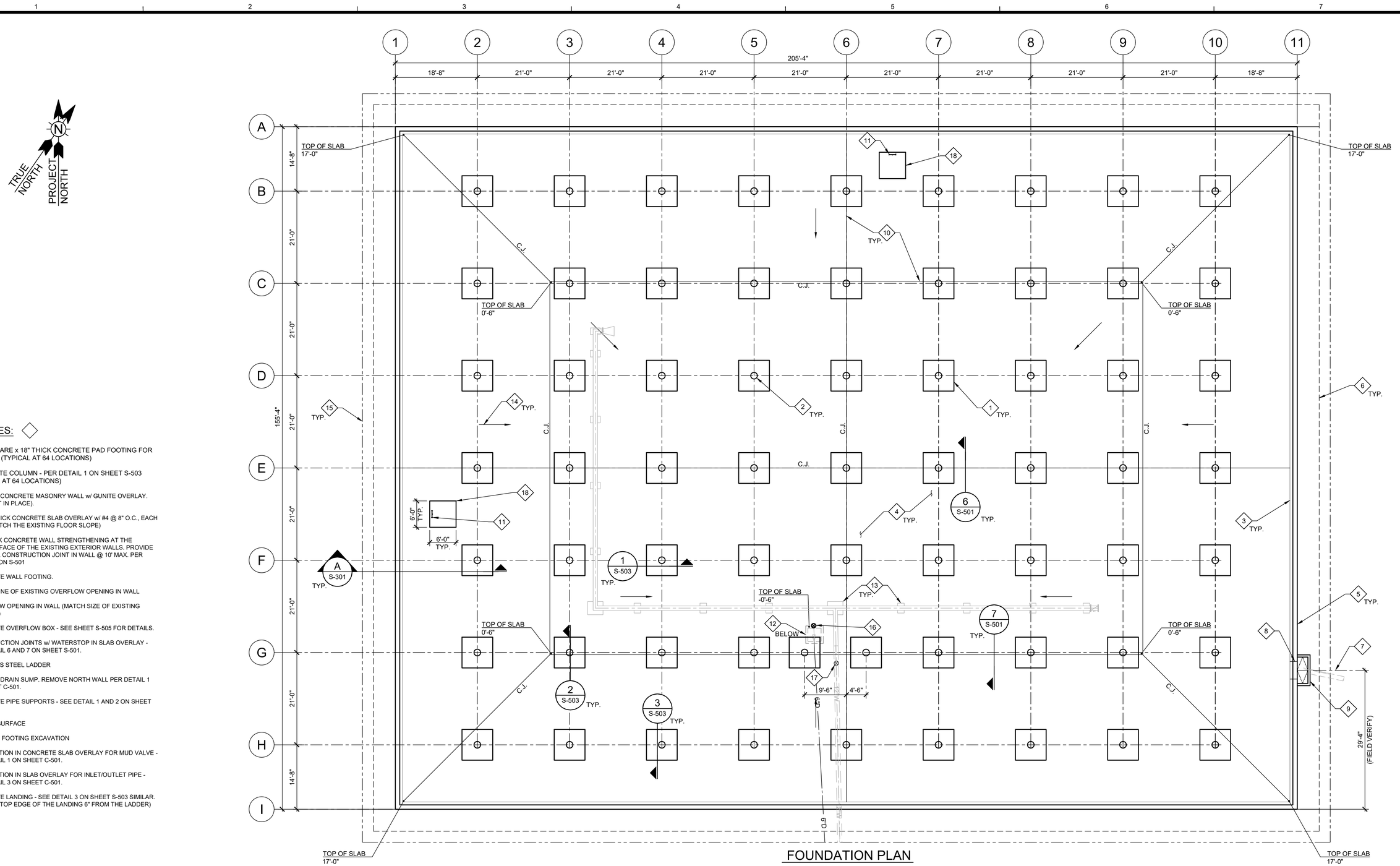

FOUNDATION PLAN

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

KEYNOTES:

1. 7'-0" SQUARE x 18" THICK CONCRETE PAD FOOTING FOR COLUMN (TYPICAL AT 64 LOCATIONS)
2. CONCRETE COLUMN - PER DETAIL 1 ON SHEET S-503 (TYPICAL AT 64 LOCATIONS)
3. EXISTING CONCRETE MASONRY WALL w/ GUNITE OVERLAY. (PROTECT IN PLACE).
4. 6" MIN. THICK CONCRETE SLAB OVERLAY w/ #4 @ 8" O.C., EACH WAY. (MATCH THE EXISTING FLOOR SLOPE)
5. 1'-0" THICK CONCRETE WALL STRENGTHENING AT THE OUTSIDE FACE OF THE EXISTING EXTERIOR WALLS. PROVIDE VERTICAL CONSTRUCTION JOINT IN WALL @ 10' MAX. PER DETAIL 4 ON S-501
6. CONCRETE WALL FOOTING.
7. CENTERLINE OF EXISTING OVERFLOW OPENING IN WALL
8. OVERFLOW OPENING IN WALL (MATCH SIZE OF EXISTING OPENING)
9. CONCRETE OVERFLOW BOX - SEE SHEET S-505 FOR DETAILS.
10. CONSTRUCTION JOINTS w/ WATERSTOP IN SLAB OVERLAY - SEE DETAIL 6 AND 7 ON SHEET S-501.
11. STAINLESS STEEL LADDER
12. EXISTING DRAIN SUMP. REMOVE NORTH WALL PER DETAIL 1 ON SHEET C-501.
13. CONCRETE PIPE SUPPORTS - SEE DETAIL 1 AND 2 ON SHEET S-504.
14. SLOPED SURFACE
15. LIMITS OF FOOTING EXCAVATION
16. PENETRATION IN CONCRETE SLAB OVERLAY FOR MUD VALVE - SEE DETAIL 1 ON SHEET C-501.
17. PENETRATION IN SLAB OVERLAY FOR INLET/OUTLET PIPE - SEE DETAIL 3 ON SHEET C-501.
18. CONCRETE LANDING - SEE DETAIL 3 ON SHEET S-503 SIMILAR. (SET THE TOP EDGE OF THE LANDING 6" FROM THE LADDER)

NOTE:
1. CONCRETE OVERLAY SHALL BE MOIST CURED FOR AT LEAST SEVEN DAYS. THE CONCRETE SHALL BE COVERED WITH POLYETHYLENE SHEETS AND KEPT MOIST USING FOG NOZZLES FOR THE ENTIRE CURING PERIOD.
2. CONTRACTOR SHALL PERFORM A SURVEY AND FIELD VERIFY ALL NEW CONCRETE SURFACE ELEVATIONS PER THIS SHEET.

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

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REGISTERED PROFESSIONAL ENGINEER MATTHEW E. HEINEN No. 6177 STRUCTURAL STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

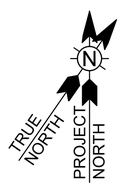
MONTECITO WATER DISTRICT
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

FOUNDATION PLAN

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

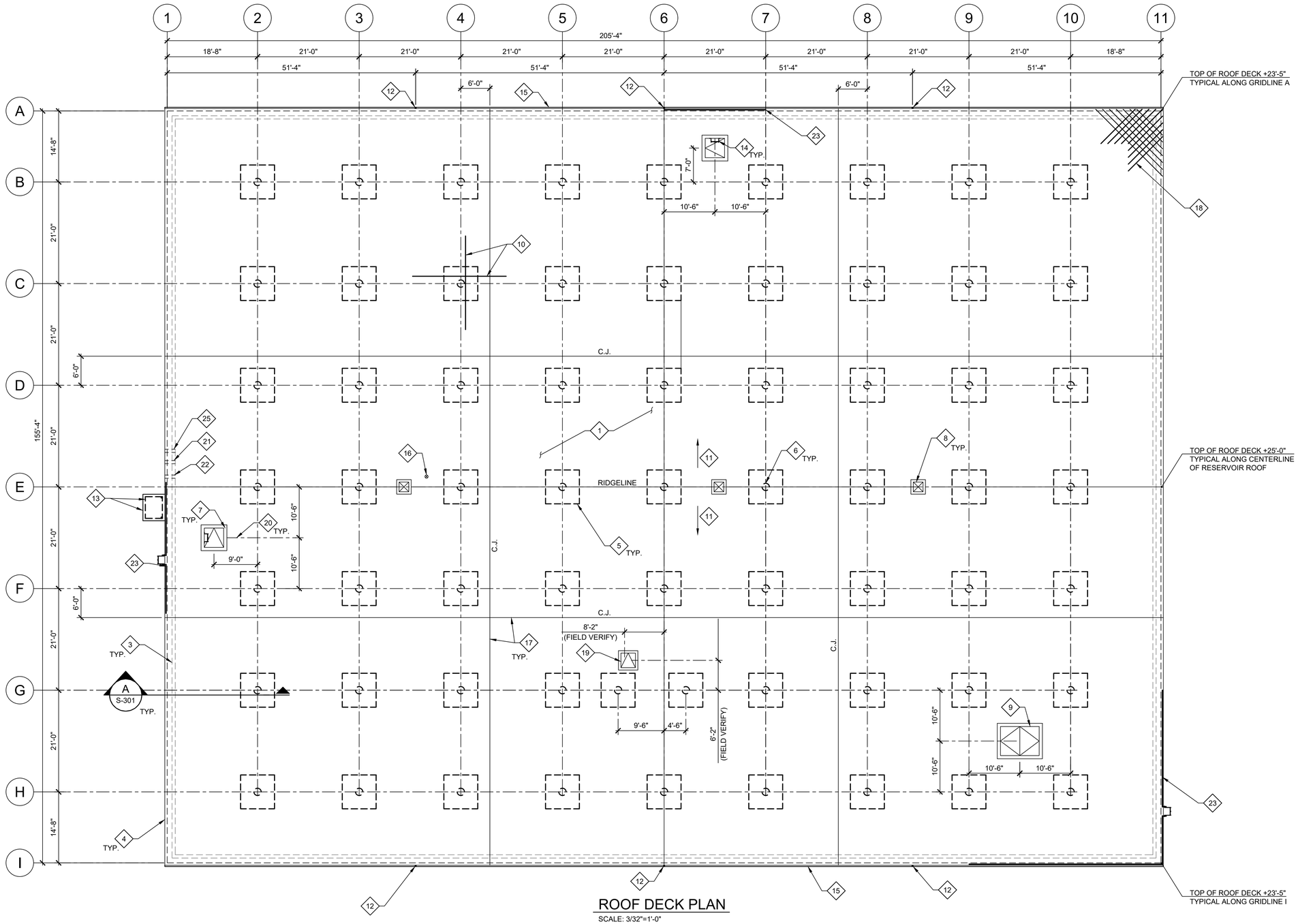
S-102

Bar Measures 1 inch



KEYNOTES:

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



ROOF DECK PLAN

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

ROOF SLAB PLACEMENT NOTES:

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

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

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MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

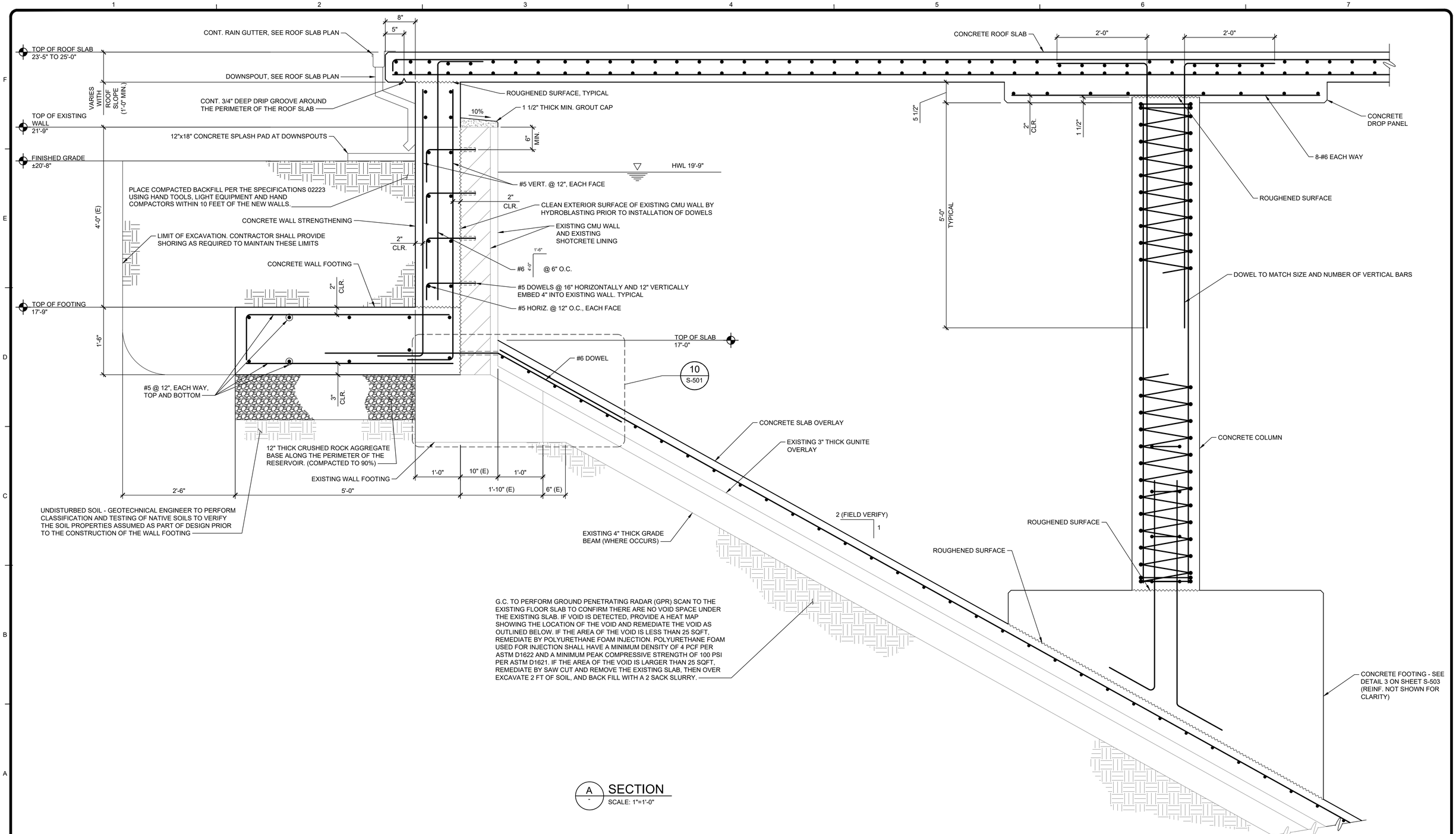
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

ROOF DECK PLAN

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

S-103

Bar Measures 1 inch



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

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

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

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

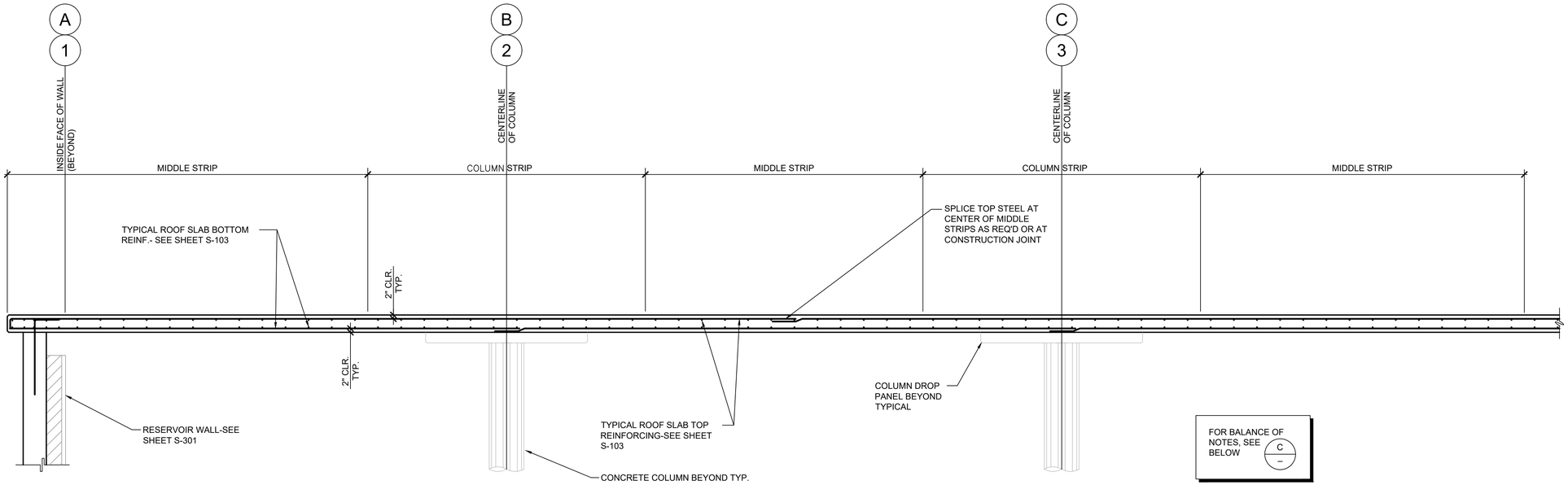
WALL RETROFIT SECTION

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

S-301

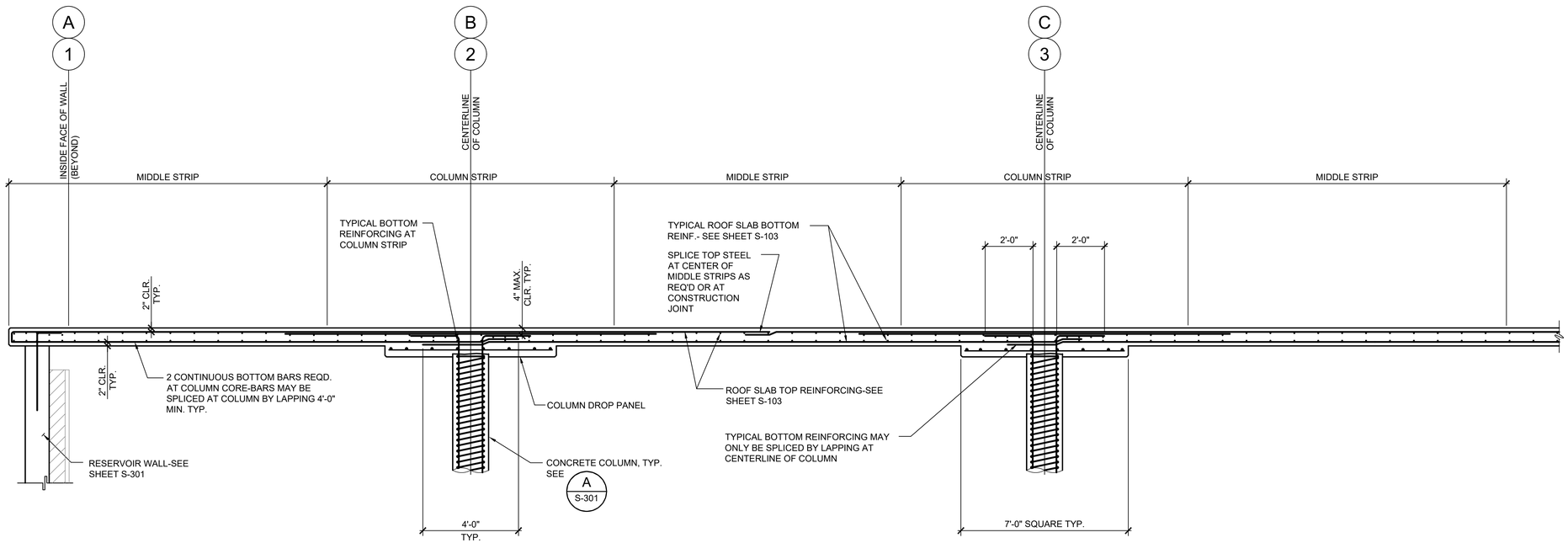
Bar Measures 1 inch

5/15/2025 6:10:27 PM - O:\PROJECTS\IRVINE\106490\200-106490-21001\CAD\SHEETFILES\TERMINALS-301-WALLSECTION.DWG - HEINEN, GEOFF



B – TYPICAL MIDDLE STRIP SECTION

SCALE: 3/8"=1'-0"



C – TYPICAL COLUMN STRIP SECTION

SCALE: 3/8"=1'-0"

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REGISTERED PROFESSIONAL ENGINEER MAN HONG ERIC YIEN No. 6177 STRUCTURAL STATE OF CALIFORNIA

4/18/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR PARK LANE RESERVOIR

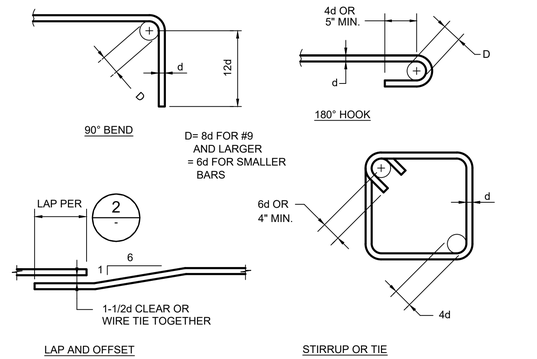
ROOF SLAB CROSS SECTION

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

S-302

Bar Measures 1 inch

5/15/2025 6:11:33 PM - O:\PROJECTS\IRVINE\106490\200-106490-21001\CAD\SHEETFILES\TERMINALS-302-SECTION.DWG - HEINEN, GEOFF



1 - TYPICAL BAR BENDS

SCALE: N.T.S.

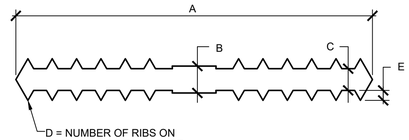
REINFORCING LAP SPLICE SCHEDULE					
BAR	f'c=2500	f'c=3250	f'c=4000	f'c=4500	f'c=5000
	L (inches)	L (inches)	L (inches)	L (inches)	L (inches)
3	24	21	19	18	17
4	32	28	25	24	23
5	39	35	31	30	28
6	47	42	37	35	34
7	69	60	54	51	49
8	78	69	62	59	56

NOTES:

1. LAPS SHOWN IN THIS TABLE ARE CLASS B, CATEGORY 3 TYPE SPLICES. LAP LENGTH IS BASED UPON SMALLER OF TWO BARS BEING SPLICED WHEN NOT THE SAME SIZE.
2. INCREASE LAP LENGTHS BY A FACTOR OF 1.3 FOR HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THIS REINFORCEMENT.

2 - REINFORCING LAP SPLICE SCHEDULE

SCALE: N.T.S.



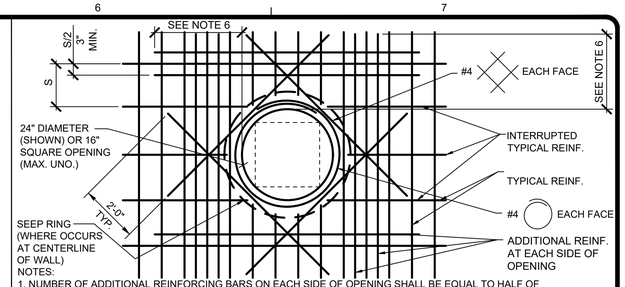
LOCATION	A	B	C	D	E	SIKA/GREENSTREAK
ALL, U.N.O.	4"	3/16"	1/8"	7	3/32"	781

NOTE:

1. ALL SPLICES SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION OR SPLICING WATERSTOPS.
2. JOINTS AT CORNERS AND INTERSECTIONS OF WATERSTOPS SHALL BE SHOP FABRICATED (MITERED AND WELDED). BUTT SPLICES MAY BE MADE IN THE FIELD USING PERSONNEL, EQUIPMENT AND METHODS APPROVED BY THE WATERSTOP MANUFACTURER

3 - WATERSTOP DETAIL

SCALE: NTS

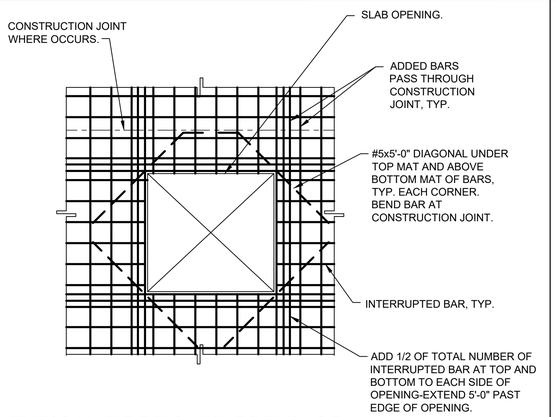


NOTES:

1. NUMBER OF ADDITIONAL REINFORCING BARS ON EACH SIDE OF OPENING SHALL BE EQUAL TO HALF OF THE NUMBER OF INTERRUPTED BARS IN EACH LAYER OF REINFORCING.
2. SIZE OF ADDITIONAL BARS SHALL MATCH THE SIZE OF INTERRUPTED REINFORCING BARS.
3. PROVIDE STANDARD HOOKS ON BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED.
4. PLACE ADDITIONAL BARS IN SAME PLANE AS INTERRUPTED REINFORCING. PLACE #4 & INSIDE OF PLANE OF INTERRUPTED AND ADDITIONAL REINFORCING.
5. ALL REINFORCING SHALL CLEAR EDGE OF OPENING, PIPE OR FLANGE COLLARS BY 2"
6. EXTEND ADDED BARS PAST EDGE OF OPENING A DISTANCE EQUAL TO THE OPENING DIAMETER OR 48 BAR DIAMETERS, WHICHEVER IS GREATER.
7. WHERE SPECIFIED LENGTHS CANNOT BE ACHIEVED, BEND REINFORCING AND PROVIDE A STANDARD 90° BEND OR 180° HOOK.
8. FOR WALL PENETRATIONS WHERE BOTTOM OF OPENING IS LESS THAN 6 FEET ABOVE TOP OF FOOTING, PROVIDE ADDITIONAL DOWELS FROM FOOTING TO WALL PER NOTE 1 ABOVE.

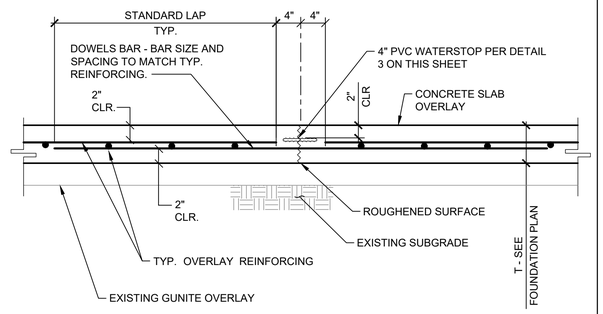
4 - ADDITIONAL REINFORCING AT PENETRATIONS

SCALE: N.T.S.



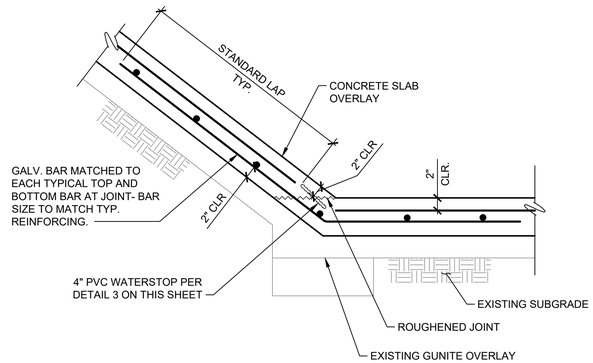
5 - TYPICAL ROOF SLAB OPENINGS

SCALE: N.T.S.



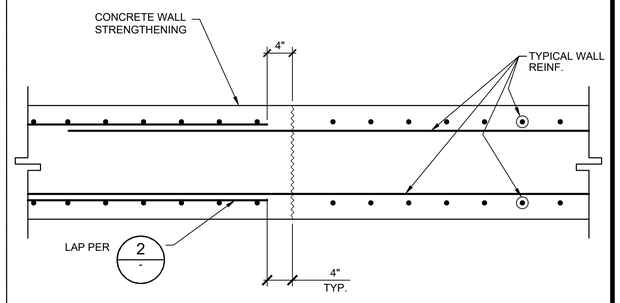
6 - CONCRETE OVERLAY SLAB JOINT

SCALE: 1"=1'-0"



7 - CONCRETE OVERLAY SLAB JOINT AT SLOPE CHANGE

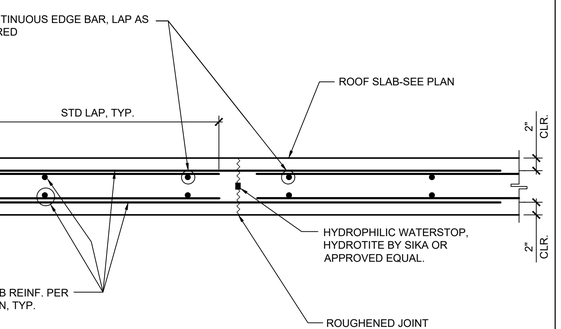
SCALE: 1"=1'-0"



NOTE:
THIS CONSTRUCTION JOINT SHALL ONLY BE USED WHERE SHOWN ON THESE DRAWINGS AND WHERE APPROVED BY THE ENGINEER.

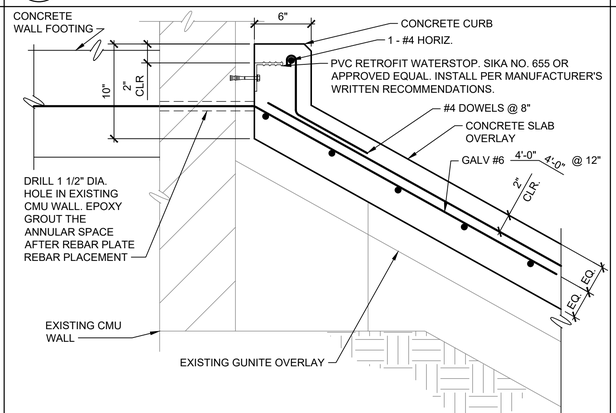
8 - TYPICAL VERTICAL WALL JOINT

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



9 - TYPICAL ROOF SLAB CONSTRUCTION JOINT

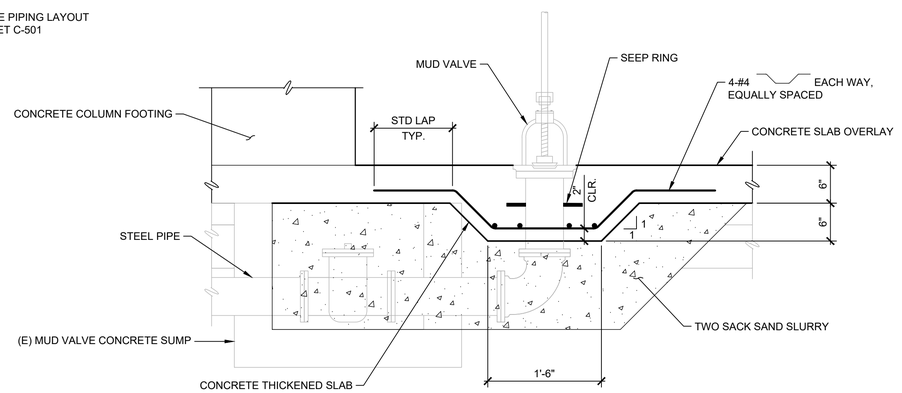
SCALE: 1"=1'-0"



10 - TOP SLAB OVERLAY TO WALL JOINT

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

NOTE:
FOR MUD VALVE PIPING LAYOUT
REFER TO SHEET C-501



11 - CONCRETE THICKENED SLAB DETAIL

SCALE: 1"=1'-0"

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REGISTERED PROFESSIONAL ENGINEER
MANHONG ERIC WEN
No. 6177
STRUCTURAL
STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

STRUCTURAL DETAILS 1

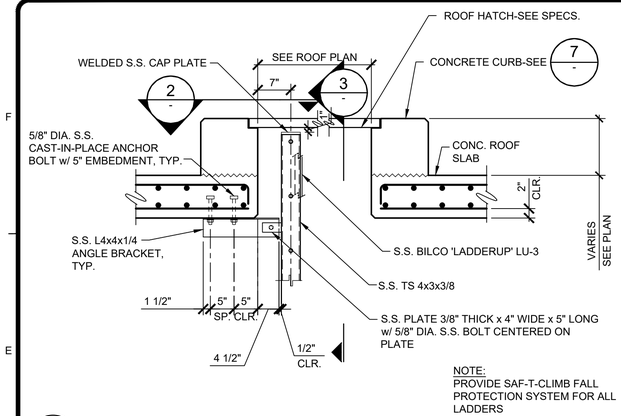
Project No.:	200-106490-21001
Designed By:	GH
Drawn By:	EJH
Checked By:	VMR

S-501

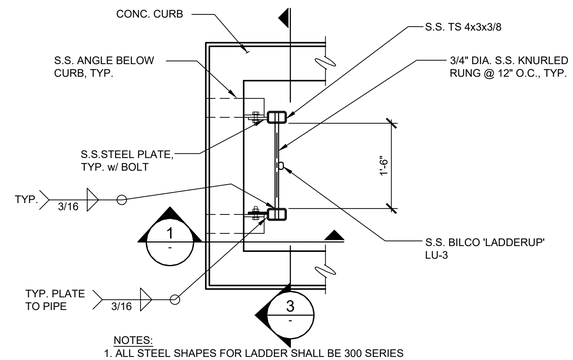
Bar Measures 1 inch

Document Tetra Tech

5/15/2025 6:12:41 PM - O:\PROJECTS\IRVINE\106490\200-106490-21001\CAD\SHEETFILES\TERMINAL\S-501-DETAILS.DWG - HEINEN, GEOFF

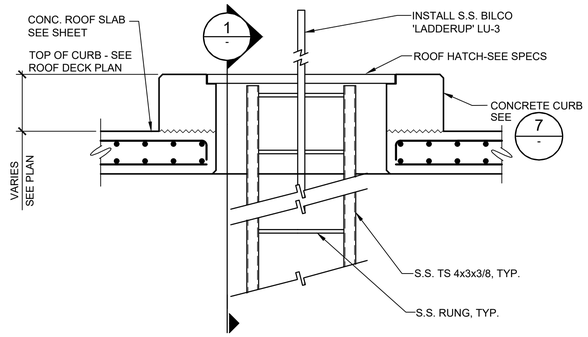


1 - TYPICAL LADDER DETAIL (SECTION)
SCALE: 3/4"=1'-0"

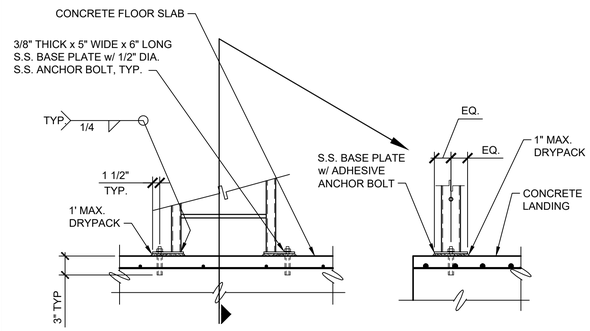


NOTES:
1. ALL STEEL SHAPES FOR LADDER SHALL BE 300 SERIES STAINLESS STEEL.

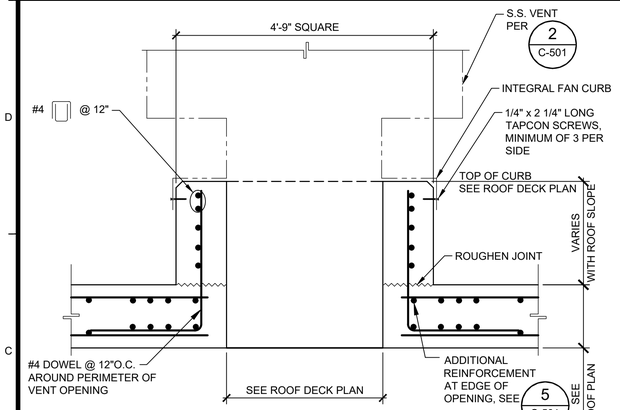
2 - TYPICAL LADDER DETAIL (PLAN)
SCALE: 3/4"=1'-0"



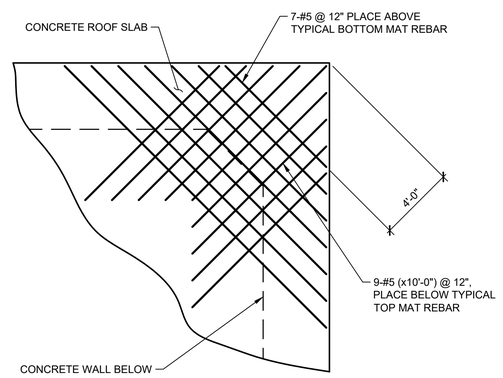
3 - LADDER DETAIL (ELEVATION)
SCALE: 3/4" = 1'-0"



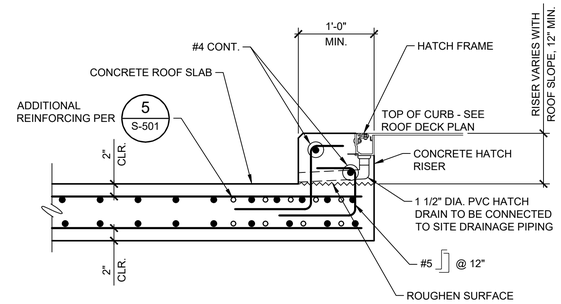
4 - LADDER BASE CONNECTION
SCALE: 3/4"=1'-0"



5 - ROOF VENT OPENING
SCALE: 1"=1'-0"

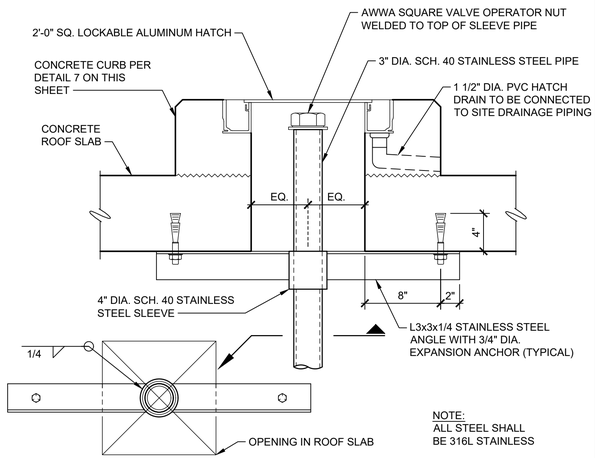


6 - ROOF SLAB CORNER REINF.
SCALE: 1"=1'-0"



7 - HATCH CURB DETAIL
SCALE: 1"=1'-0"

8 - NOT USED
SCALE:



NOTE:
ALL STEEL SHALL BE 316L STAINLESS

9 - MUD VALVE OPERATOR ACCESS HATCH
SCALE: 1 1/2"=1'-0"

10 - NOT USED
SCALE:

11 - NOT USED
SCALE:

12 - NOT USED
SCALE:

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

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

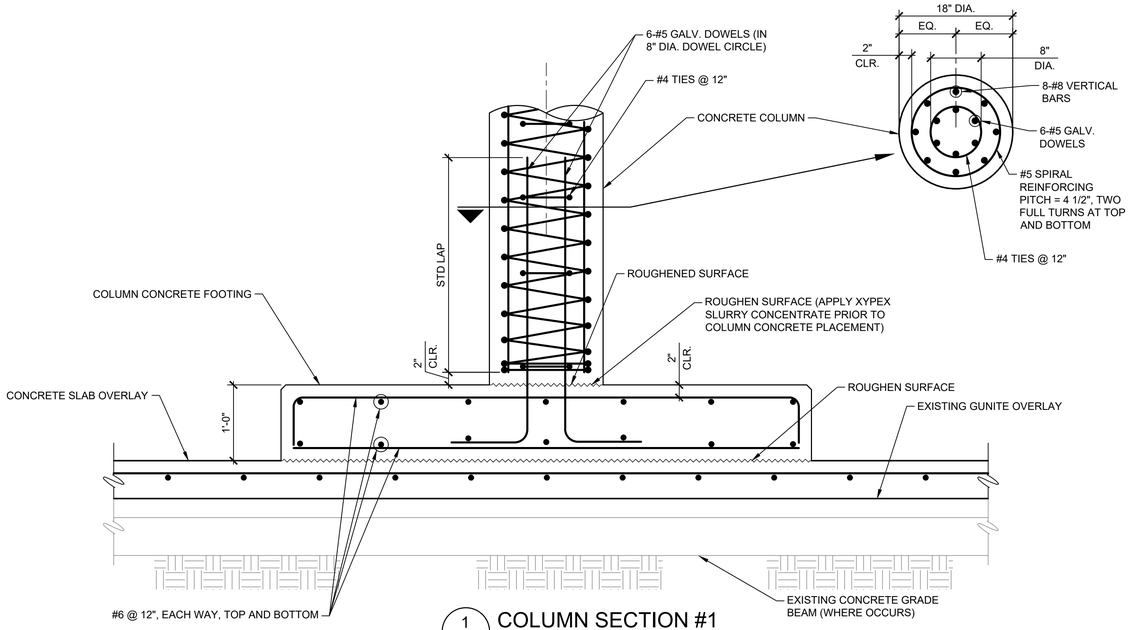
STRUCTURAL DETAILS 2

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

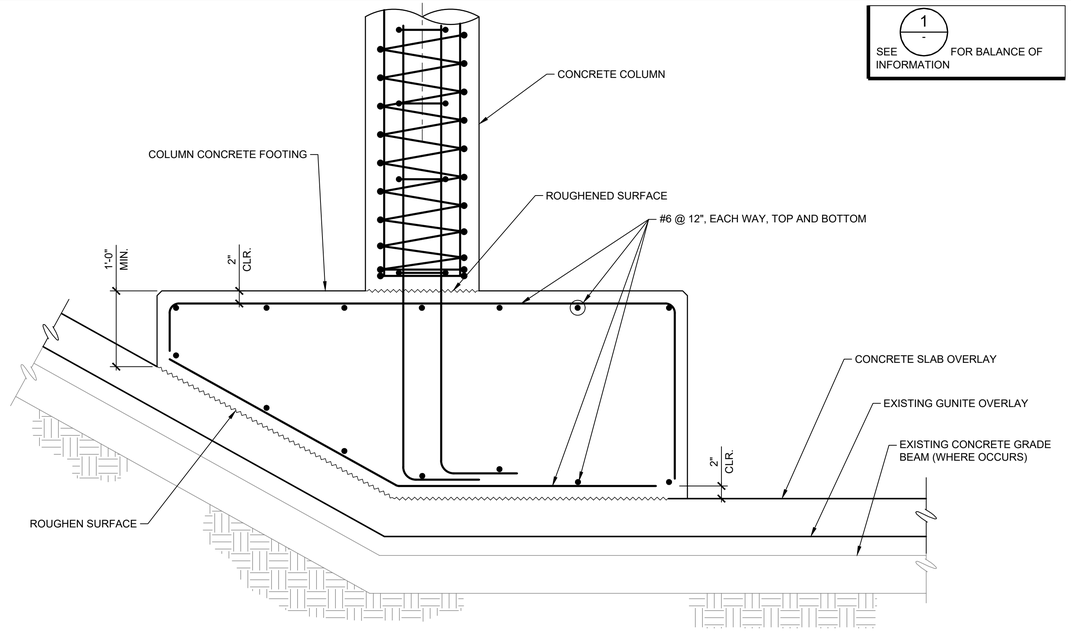
S-502

Bar Measures 1 inch

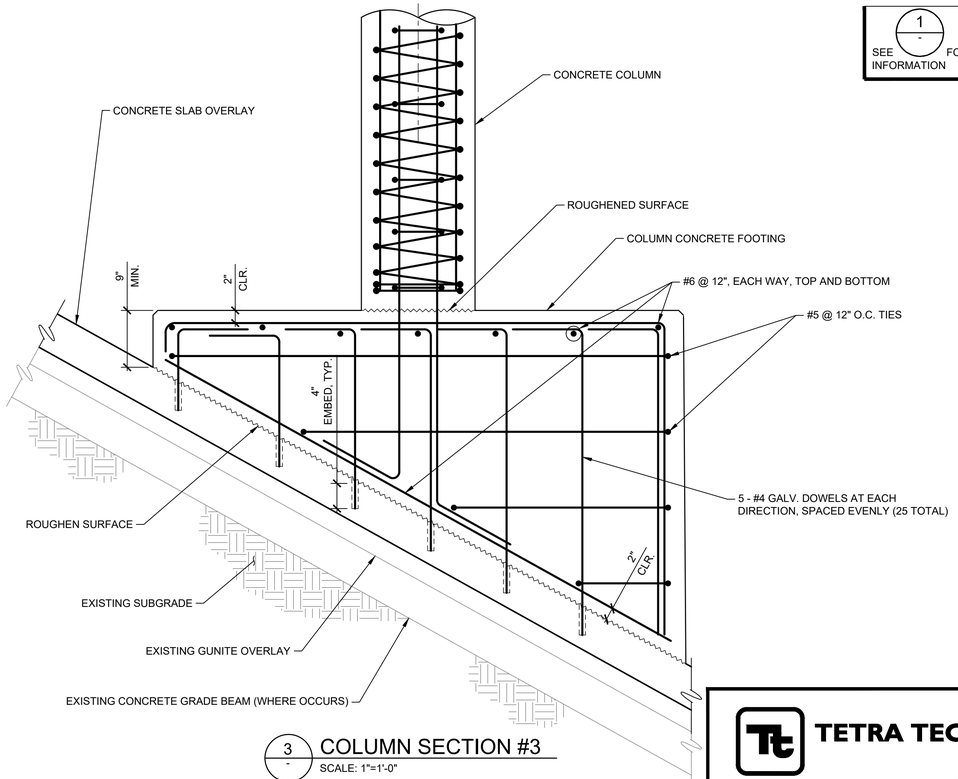
5/15/2025 6:13:50 PM - O:\PROJECTS\RIVINE\106490200-106490-21001\CAD\SHEETFILES\TERMINALS-502-DETAILS.DWG - HEINEN, GEOFF



1 / - COLUMN SECTION #1
SCALE: 1"=1'-0"



2 / - COLUMN SECTION #2
SCALE: 1"=1'-0"



3 / - COLUMN SECTION #3
SCALE: 1"=1'-0"

4 / - NOT USED
SCALE:

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REGISTERED PROFESSIONAL ENGINEER MANWORK-ER JC HEINEN No. 6177 STRUCTURAL STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

STRUCTURAL DETAILS 3

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

S-503

Bar Measures 1 inch

5/15/2025 6:14:58 PM - O:\PROJECTS\IRVINE\106490\200-106490-21001\CAD\SHEETFILES\TERMINAL\S-503-DETAILS.DWG - HEINEN, GEOFF

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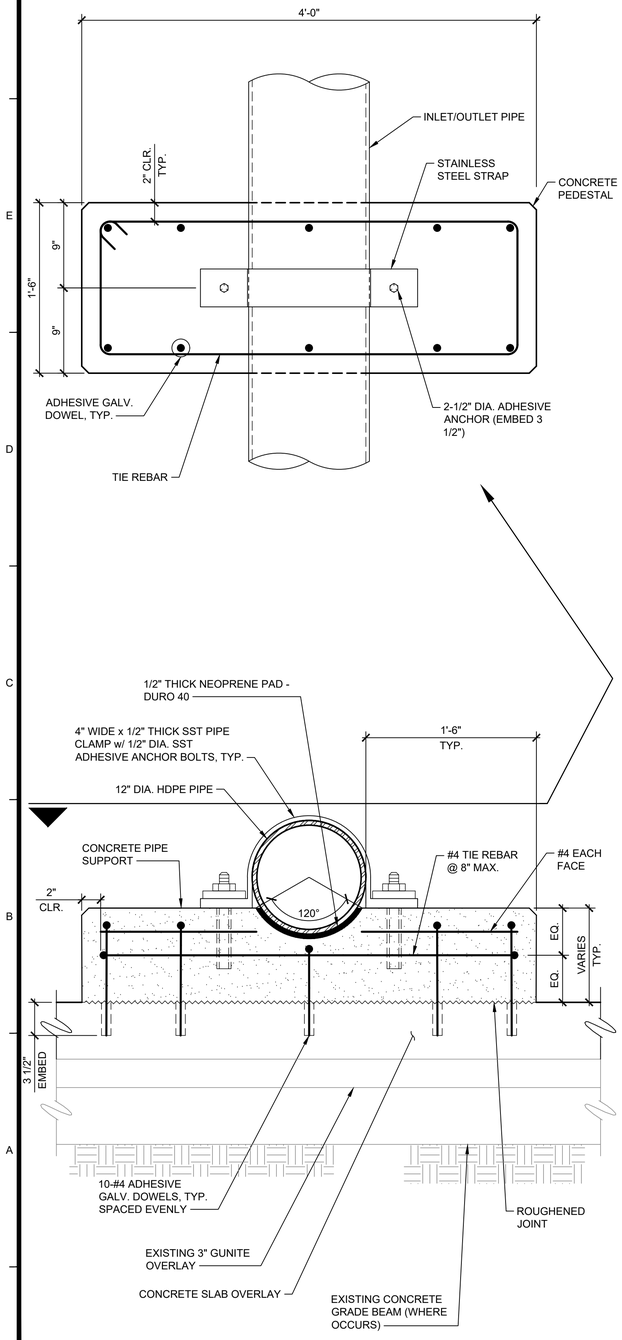
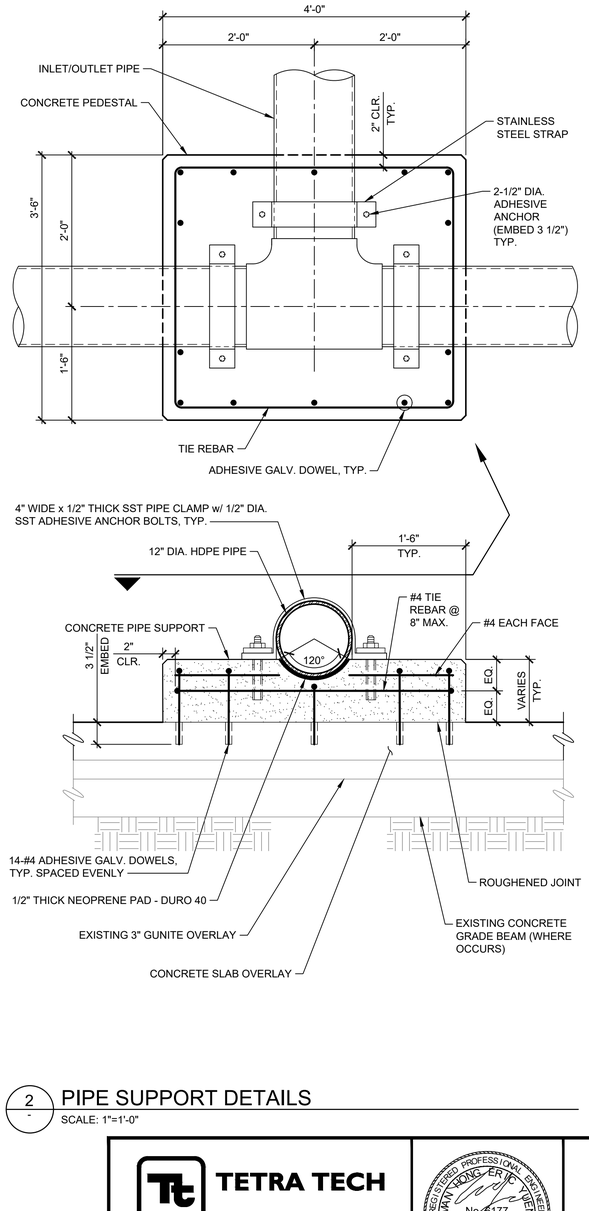


1 PIPE SUPPORT DETAILS

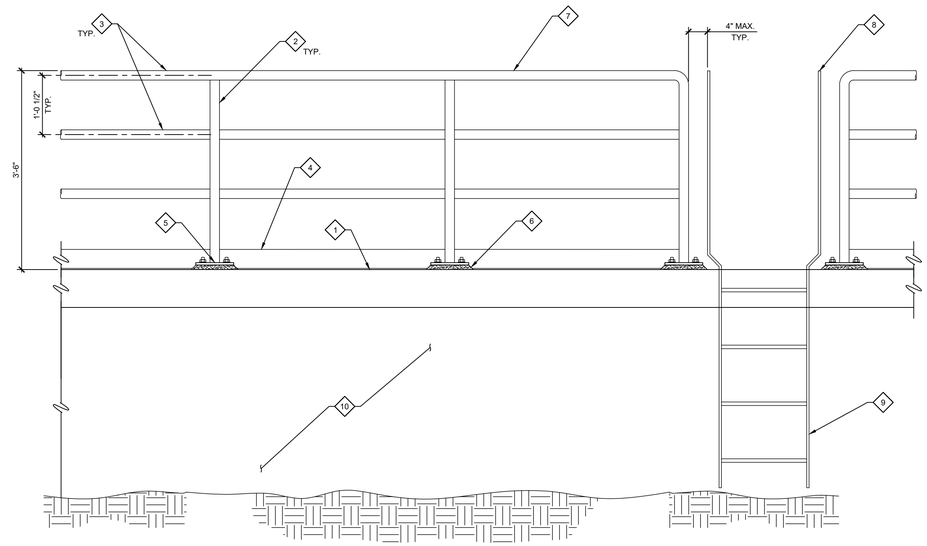
SCALE: 1 1/2"=1'-0"



2 PIPE SUPPORT DETAILS

SCALE: 1"=1'-0"

1. NEW ROOF SLAB
2. 1 1/2" DIAMETER SCHEDULE 80 GUARDRAIL POST @ 5'-0" ON CENTER MAXIMUM
3. 1 1/2" DIAMETER SCHEDULE 40 HORIZONTAL RAILS - TYPICAL
4. 4" HIGH x 1/4" THICK CONTINUOUS TOE PLATE
5. 3/8" THICK x 8" SQUARE BASE PLATE WITH FOUR 1/2" DIAMETER EXPANSION ANCHORS EMBED 4" - ANCHOR SPACING = 5 1/2"
6. 1" MAXIMUM NON-SHRINK GROUT - TYPICAL
7. ALUMINUM GUARDRAIL
8. NEW PREFABRICATED LADDER WITH WALK-THROUGH RAILS FS INDUSTRIES SERIES F OR APPROVED EQUAL
9. ATTACH LADDER TO EDGE OF CONCRETE ROOF AND STEM WALL AT A MINIMUM OF 2 LOCATIONS WITH A MINIMUM OF 2-1/2" DIAMETER EXPANSION ANCHORS (EMBEDDED 4") AT EACH LOCATION, SET LADDER 7" FROM EDGE OF ROOF SLAB
10. NEW CONCRETE WALL



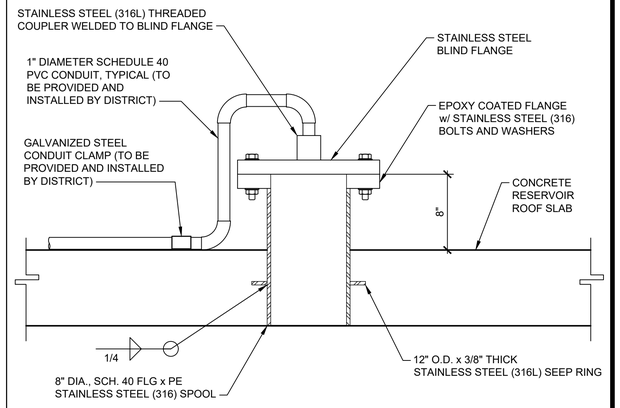
3 LADDER AND GUARDRAIL DETAIL

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

NOTE:
PROVIDE EXPANSION JOINTS IN HORIZONTAL RAILS AND TOE PLATE @ 30'-0" MAXIMUM

4 TYPICAL ROOF MOUNTED GUARDRAIL

SCALE: 1"=1'-0"



5 ROOF PENETRATION FOR TRANSDUCER

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

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San Dimas, California, 91773
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REGISTERED PROFESSIONAL ENGINEER MAN HONG ERIC CHEN No. 6177 STRUCTURAL STATE OF CALIFORNIA
5/16/25

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

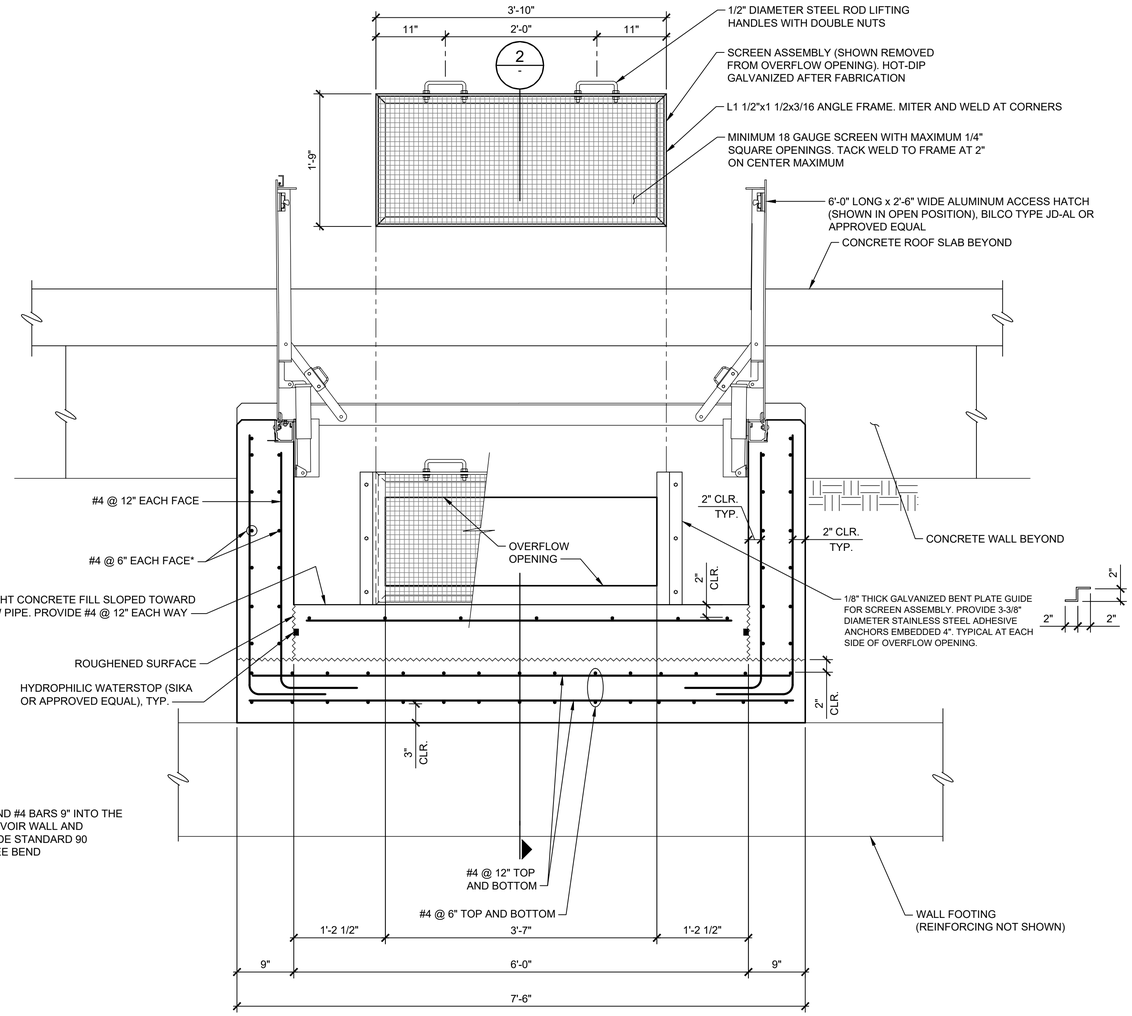
RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

STRUCTURAL DETAILS 4

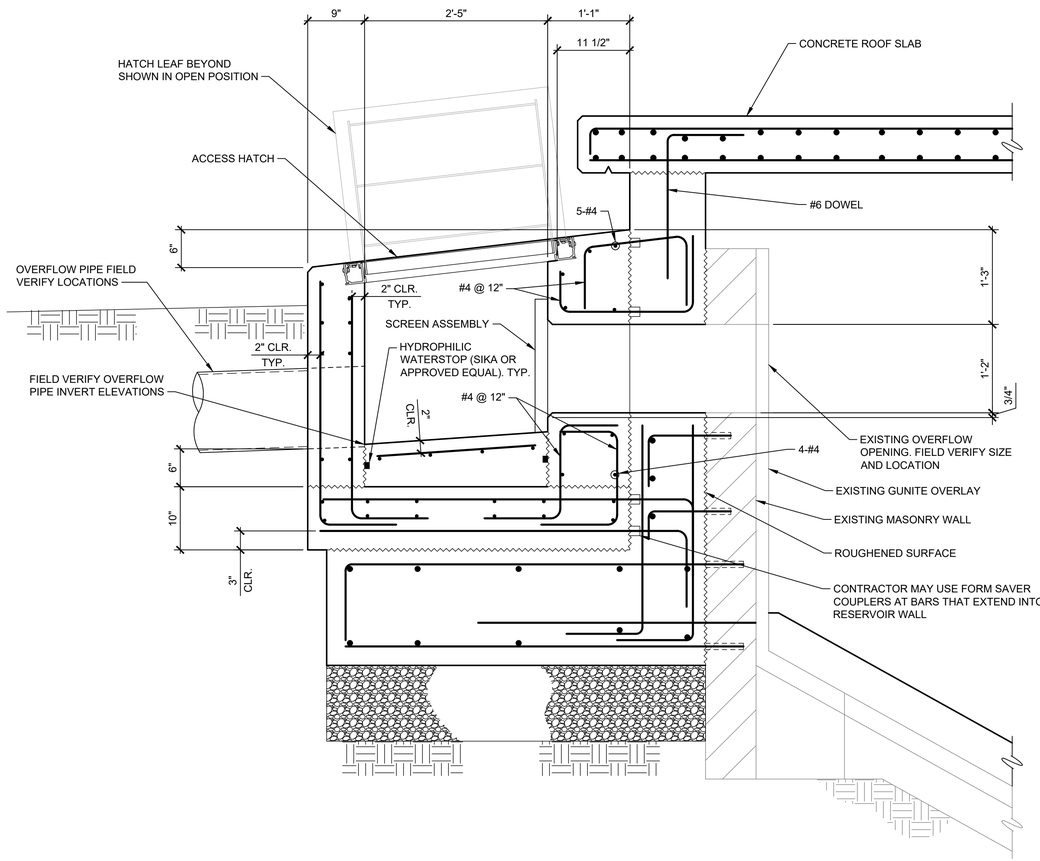
Project No.:	200-106490-21001
Designed By:	GH
Drawn By:	EJH
Checked By:	VMR

S-504

Bar Measures 1 inch



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



2 - VAULT SECTION
SCALE: 1"=1'-0"

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

MONTECITO WATER DISTRICT

MARK	DATE	DESCRIPTION	BY

MONTECITO WATER DISTRICT

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR TERMINAL RESERVOIR

STRUCTURAL DETAILS 5

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

S-505

Bar Measures 1 inch

5/15/2025 6:17:18 PM - O:\PROJECTS\IRVINE\106490\200-106490-21001\CAD\SHEETFILES\TERMINALS-505-DETAILS.DWG - HEINEN, GEOFF

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