

SAN ANTONIO WATER COMPANY

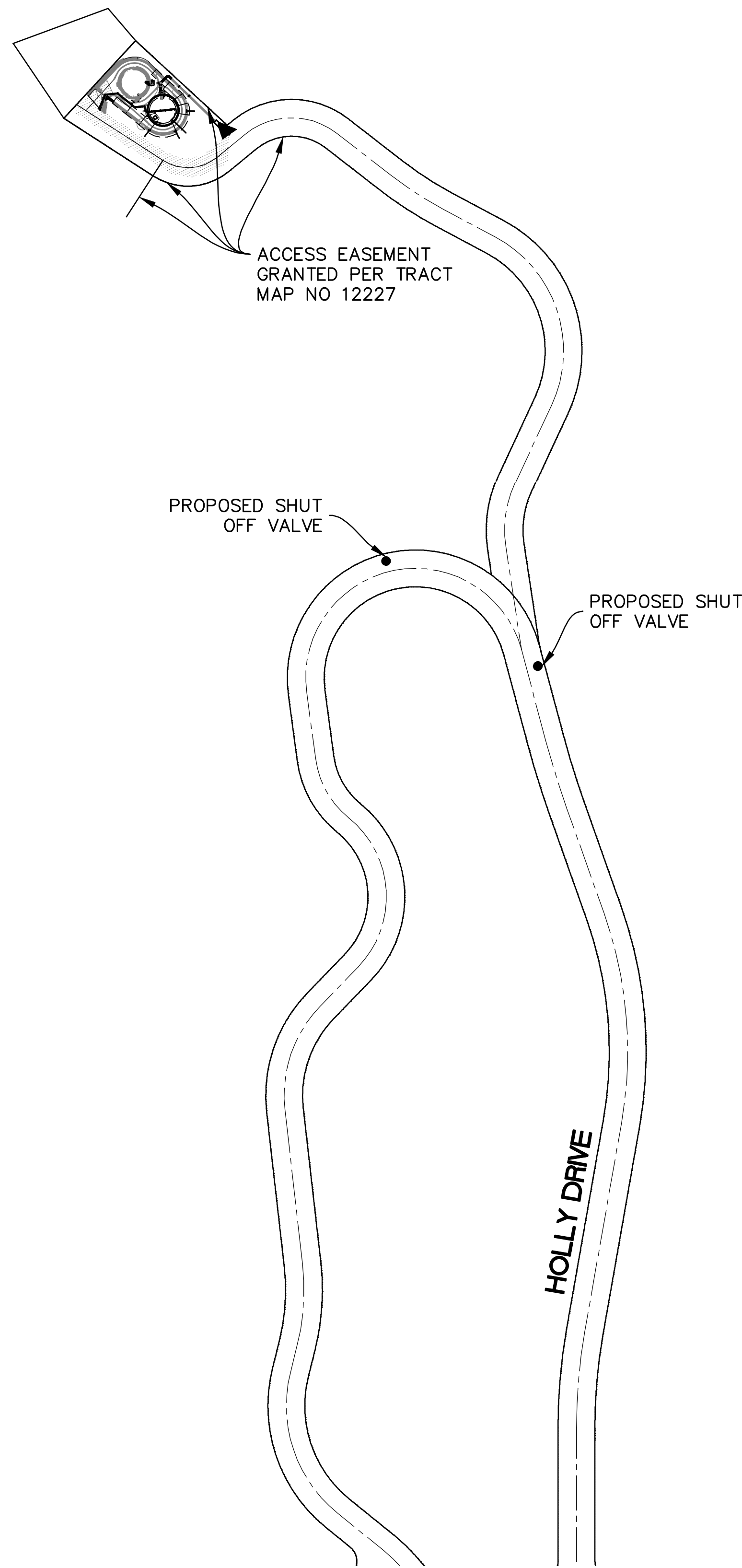
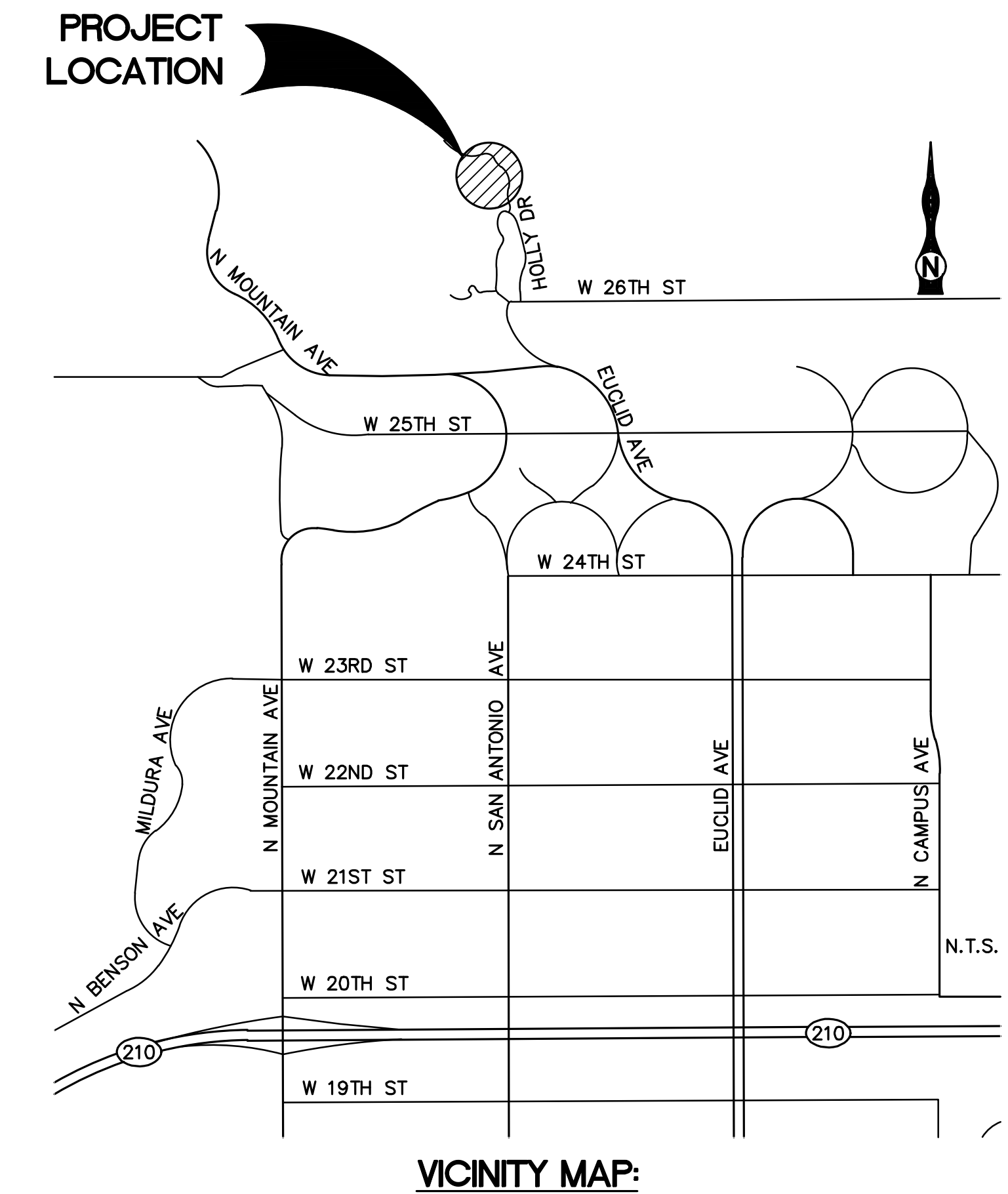
HOLLY DRIVE TANK SITE IMPROVEMENTS

PHASE II

COUNTY OF SAN BERNARDINO



SHEET INDEX		
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BENCH MARK
 BENCH 23F-86 2" CITY OF UPLAND BRASS DISC
 SET IN PCC BASE FOR STREET LIGHT # 2269463E,
 41' WEST OF MOUNTAIN AVE CENTERLINE AND 272'
 SOUTH OF 24TH STREET CENTERLINE.
 ELEV. = 1988.288'

Underground Service Alert

KNOW WHAT'S BELOW
CALL BEFORE YOU DIG
 TWO WORKING DAYS BEFORE YOU DIG

REVISIONS					
MARK	DATE	INITIAL	DESCRIPTION	DATE	APP'VD



TKE ENGINEERING, INC.
 2305 CHICAGO AVENUE
 RIVERSIDE, CA 92507
 (951) 680-0440
 FAX: (951) 680-0490
 08-13-2020
 STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

DRAWN BY: KM
 DESIGNED BY: SWL
 CHECKED BY: SWL
 RECOMMENDED BY:

APPROVED BY:

 SAN ANTONIO WATER COMPANY GENERAL MANAGER
 08/14/20 DATE

SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 TITLE SHEET

WATER DRAWING NO. -
 SHEET 1
 OF 15 SHEET
 DRAWING NO. T-1

GENERAL NOTES:

- 1. ALL WORK AND MATERIAL SHALL CONFORM TO THE HIGHER STANDARD IN EITHER "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF WATER FACILITIES, WATER MAINS AND APPURTENANCES, AS ESTABLISHED BY THE SAN ANTONIO WATER COMPANY, OR "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," LATEST ISSUE AND AMENDMENTS, KNOWN AS THE "GREEN BOOK."
2. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL EXISTING FACILITIES AND IMPROVEMENTS WHETHER OR NOT SHOWN ON THESE PLANS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE APPROPRIATE UTILITY COMPANIES FOR THE PURPOSE OF LOCATING ALL UNDERGROUND IMPROVEMENTS WITHIN THE PROJECT AREA PRIOR TO EXCAVATION.

GRADING NOTES:

- 1. ALL GRADING SHALL CONFORM TO THE 2010 UNIFORM BUILDING CODE, APPENDIX J, AND SAN ANTONIO WATER CO. ORDINANCES.
2. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION/GRADING.
3. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES.

GENERAL NOTES (CONT.):

OVER-EXCAVATION & RECOMPACTION:

IT IS THE GRADING CONTRACTOR'S RESPONSIBILITY TO REVIEW THE GRADING PLANS AND SOILS REPORT THOROUGHLY PRIOR TO SITE MOBILIZATION. IT IS ALSO THE GRADING CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CIVIL AND SOILS ENGINEERS IF ONSITE DISCREPANCIES ARE OBSERVED THAT WOULD AFFECT THE EARTHWORK QUANTITIES.

THE EXISTING TOPOGRAPHY AS DELINEATED ON THESE DRAWINGS SHALL BE UTILIZED AS THE BASIS FOR ALL EARTHWORK COMPUTATIONS. SAID TOPOGRAPHY SHALL BE PRESUMED TO BE ACCEPTABLE TO ALL INTERESTED PARTIES UNLESS A DEVIATION IS FOUND PRIOR TO THE START OF GRADING IN ANY SPECIFIC AREAS.

THE CONTRACTOR IS REQUIRED TO ESTIMATE THE QUANTITIES OF GRADING WORK TO BE DONE AND INCLUDE ALL COSTS THEREFROM IN HIS BID AS NO ADDITIONAL ALLOWANCE WILL BE MADE WITHOUT PRIOR CONSENT FROM THE OWNER.

OVER EXCAVATION AND/OR EXCESS BACKFILLING OR DUPLICATION OF GRADING ACTIVITIES IS NOT A BASIS FOR ADDITIONAL COMPENSATION. THIS ALSO APPLIES WHERE MATERIAL IS TO BE REMOVED AND REPLACED TO REDUCE MOISTURE CONTENT.

OFFSITE DISPOSAL OF EXCAVATION MATERIAL IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCLUDED IN HIS BID. THE CONTRACTOR SHALL HOLD THE OWNER AND ENGINEER HARMLESS AS A RESULT OF ANY CLAIMS ARISING FROM ACTIONS IN ROUTE OR AWAY FROM THE SITE.

EARTH VOLUMES SHOWN ARE ESTIMATES BASED UPON THE GEOTECHNICAL ANALYSIS PERFORMED BY THE NAMED SOILS ENGINEER AND TOPOGRAPHIC SURVEY OF THE EXISTING GROUND SURFACE AT THE TIME OF PLAN PREPARATION.

THE QUANTITIES FOR THESE PLANS ARE BASED UPON FACTORS PRESENTED IN.

PRIVATE ENGINEER'S NOTE:

THE EXISTENCE AND APPROXIMATE LOCATION OF ANY UNDERGROUND UTILITIES OR SUBSTRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES OR STRUCTURES EXCEPT AS SHOWN ON THESE PLANS.

NOTICE TO CONTRACTORS:

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.

SURVEY MONUMENT NOTE:

SURVEY MONUMENTS THAT EXIST AS SHOWN ON RECORDED MAPS, HIGHWAY MAPS OR POINTS THAT PROVIDE SURVEY CONTROL WITHIN THE CONSTRUCTION AREA, SHALL BE LOCATED AND REFERENCED OUT BY A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER.

CONTRACTOR'S RESPONSIBILITY FOR SAFETY:

IN SUBMITTING A BID FOR THIS WORK THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF THIS PROJECT; INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

SAN ANTONIO WATER COMPANY

TERI LAYTON, PROJECT MANAGER 139 N. EUCLID AVENUE UPLAND, CA. 91786 PHONE: (909) 982-4107 FAX: (909) 920-3047

PROJECT SPECIFIC NOTES:

ALL TRENCH EXCAVATION SHALL COMPLY WITH THE MOST CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. TRENCH BACKFILL SHALL BE PLACED IN NO GREATER THAN 4-INCH LIFTS IN HAND COMPACTED OR NO GREATER THAN 8-INCH LIFTS IF POWER COMPACTED.

CONSTRUCTION NOTES:

- 1. INSTALL 120,000 GALLON TANK PER TANK SECTIONS AND DETAILS ON SHEET 6.
2. CONSTRUCT 8" CML/OP INLET/OUTLET PIPE ASSEMBLY PER DETAIL "1" ON SHEET 7.
3. INSTALL 8" DRAIN OUTLET PER DETAIL "1" ON SHEET 8.
4. INSTALL 12" OVERFLOW PER DETAIL "1" ON SHEET 8 WITH SERIES 35-1 CHECK VALVE.
5. INSTALL BOLLARDS PER STANDARD DRAWING NO. SAWCO-17.

QUANTITIES

Table with 2 columns: Item Description, Quantity. Includes items like ABAN (1 EA), APN (1 EA), AVE (1 EA), BSMWC (1 EA), etc.

LEGEND OF SYMBOLS AND ABBREVIATIONS

Legend table mapping symbols to abbreviations and descriptions. Includes symbols for ABAN (Abandoned), APN (Assessors Parcel Number), AVE (Avenue), BSMWC (Box Springs Mutual Water Company), etc.

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-Ph2-SH02.dwg Aug 12, 2020 - 4:56pm

Underground Service Alert logo with '811' and text: KNOW WHAT'S BELOW CALL BEFORE YOU DIG TWO WORKING DAYS BEFORE YOU DIG

REVISIONS table with columns: MARK, DATE, INITIAL, DESCRIPTION, DATE, APP'VD

Professional Engineer Seal for Steven W. Ledbetter, Registered Professional Engineer, State of California, No. 84044.

TKE Engineering, Inc. logo and contact information: 2305 CHICAGO AVENUE RIVERSIDE, CA 92507 (951) 680-0440 FAX: (951) 680-0490

Table with columns: Role, Name. Includes: DRAWN BY: KM, DESIGNED BY: SWL, CHECKED BY: SWL, RECOMMENDED BY:

APPROVED BY: Signature of Steven W. Ledbetter, SAN ANTONIO WATER COMPANY GENERAL MANAGER, DATE: 08/14/20

SAN ANTONIO WATER CO. HOLLY DRIVE RESERVOIR PHASE II GENERAL NOTES

Table with columns: WATER DRAWING NO., SHEET, OF 15 SHEET, DRAWING NO. Includes: SHEET 2 OF 15 SHEET DRAWING NO. G-1

LOCATION OF 2-HAND HOLES NOT TO SCALE

Notes

- 1'-0" (12" THRU 30") AND 6" (LESS THAN 12").
- CUT-TO-FIT (C.T.F.) OPTIONAL TO THE CONTRACTOR, UNLESS OTHERWISE SPECIFIED ON THE PLANS. WELD IN COMPLIANCE WITH THE SPECIFICATIONS.
- CUT-TO-FIT PIPE (LENGTH AS SHOWN ON PLANS). HOLD COATING 6" FROM C.T.F. FIELD APPLY COATING, ONCE JOINT IS FULLY WELDED.
- SPLIT BUTT-STRAP WITH 1 OR 2 HAND HOLES.
- 1-6" HAND HOLE FOR 6" - 18" WATER MAINS AND 2 - 6" DIAMETER HAND HOLES FOR 20" - 36" WATER MAINS. REINFORCE OUTLET IN COMPLIANCE WITH AWWA M-11.
- FABRICATION DRAWINGS MUST BE APPROVED BY SAWCO PRIOR TO FABRICATION.

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-2
DATE: JUNE 2013

TRENCH ZONE BACKFILL MATERIAL:

COMPACTED TO 90% OF ASTM D-1557-91 SELECT MATERIAL OR APPROVED IMPORT.

IF MECHANICAL COMPACTION IS USED, MATERIAL MAY NOT BE GREATER THAN 3 INCHES IN ANY DIMENSION.

IF FLOODING OR JETTING IS USED, MATERIAL MUST MEET THE FOLLOWING:

1/2"	100% PASSING
#200	0% - 10% PASSING
(SE ≥ 20)	

PIPE BEDDING AND PIPE ZONE BACKFILL MATERIAL:

COMPACTED TO 95% OF ASTM D-1557-91 RECOMMENDED GRADATION - SEE SPEC.

1/2"	100% PASSING
#200	0% - 10% PASSING
(SE ≥ 20 IF FLOODING OR JETTING IS USED)	

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-4
DATE: JUNE 2013

Plan Detail Bracing Plate

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-5
DATE: JUNE 2013

HORIZONTAL BEND THRUST BLOCK

PIPE DIA.	H ₁	H ₂	L	H.P.I. ANGLE
4"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 45°
6"	1/2 O.D.	1/2 O.D.	4'-0"	45° TO 85°
8"	1/2 O.D.	1/2 O.D.	4'-0"	85° TO 95°
10"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 17°
12"	1/2 O.D.	1/2 O.D.	4'-0"	28° TO 85°
14"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
16"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
18"	1/2 O.D.	1/2 O.D.	4'-0"	55° TO 85°
20"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
24"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
30"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
36"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
42"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
48"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
54"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
60"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
66"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
72"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
78"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°
84"	1/2 O.D.	1/2 O.D.	4'-0"	37° TO 55°
90"	1/2 O.D.	1/2 O.D.	4'-0"	5° TO 35°

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-13 (1 OF 3)
DATE: JUNE 2013

TEE THRUST BLOCK

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-13 (2 OF 3)
DATE: JUNE 2013

END THRUST BLOCK

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-13 (3 OF 3)
DATE: JUNE 2013

REDUCER THRUST BLOCK

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-13 (3 OF 3)
DATE: JUNE 2013

HOT TAP THRUST BLOCK

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-13 (3 OF 3)
DATE: JUNE 2013

SLOPE PROTECTION CUT-OFF WALL

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-14
DATE: JUNE 2013

TYPICAL 6" WATER HYDRANT INSTALLATION

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-15 (2 OF 2)
DATE: JUNE 2013

GUARD POST INSTALLATION DETAIL

APPROVED BY GENERAL MANAGER
CHARLES MOOREHEAD
STANDARD DRAWING No. SAWCO-17
DATE: JUNE 2013

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MARK	DATE	INITIAL	DESCRIPTION	DATE APP'VD

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2305 CHICAGO AVENUE
RIVERSIDE, CA 92507
(951) 680-0440
FAX: (951) 680-0490
08-13-2020
STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

DRAWN BY: KM
DESIGNED BY: SWL
CHECKED BY: SWL
RECOMMENDED BY: [Signature]
APPROVED BY: [Signature]
SAN ANTONIO WATER COMPANY GENERAL MANAGER
DATE: 08/14/20

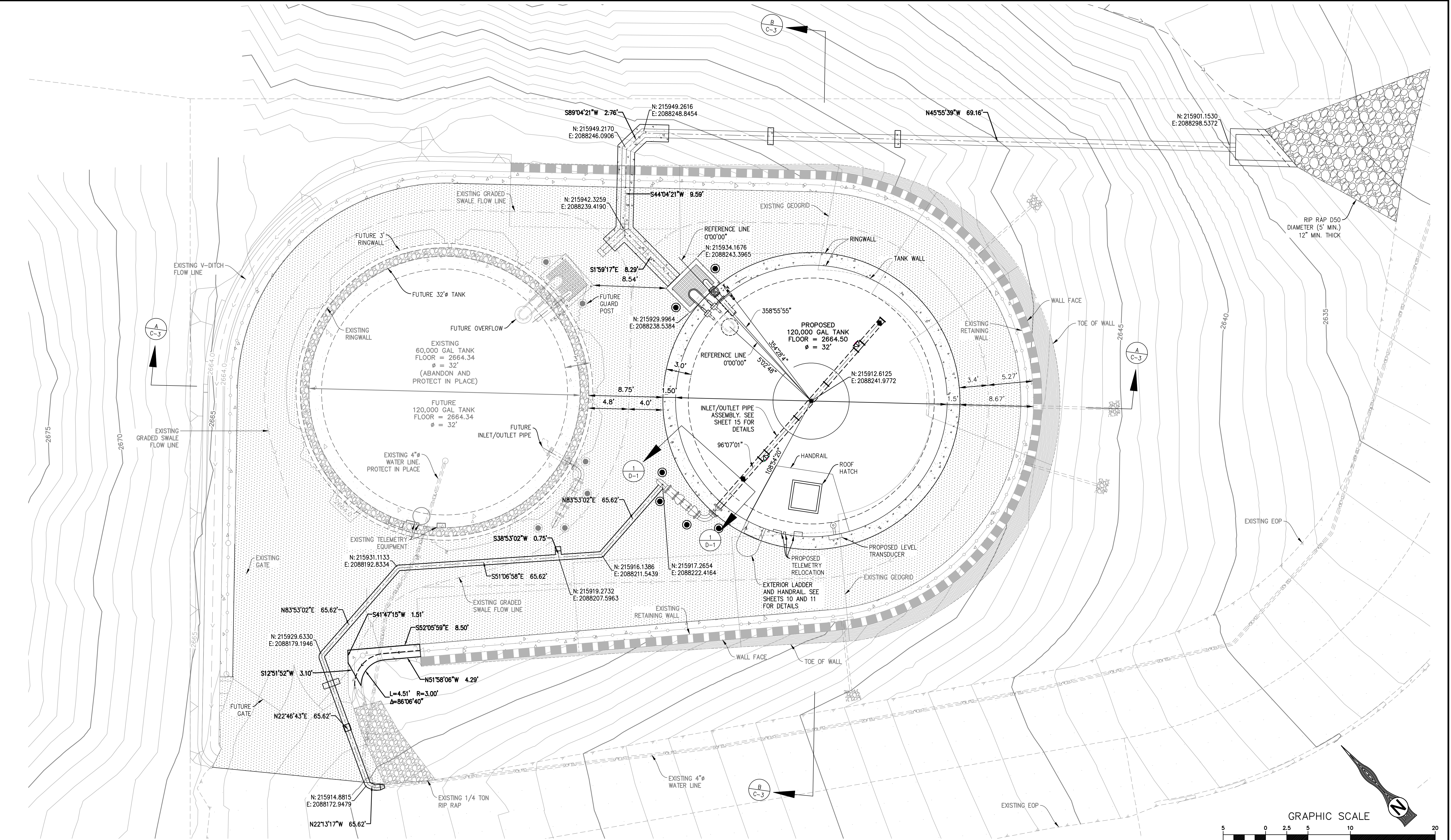
SAN ANTONIO WATER CO.
HOLLY DRIVE RESERVOIR
PHASE II
SAWCO STANDARD DETAILS

WATER DRAWING NO. -
SHEET 3
OF 15 SHEET
DRAWING NO. G-2

DATE: JUNE 2013

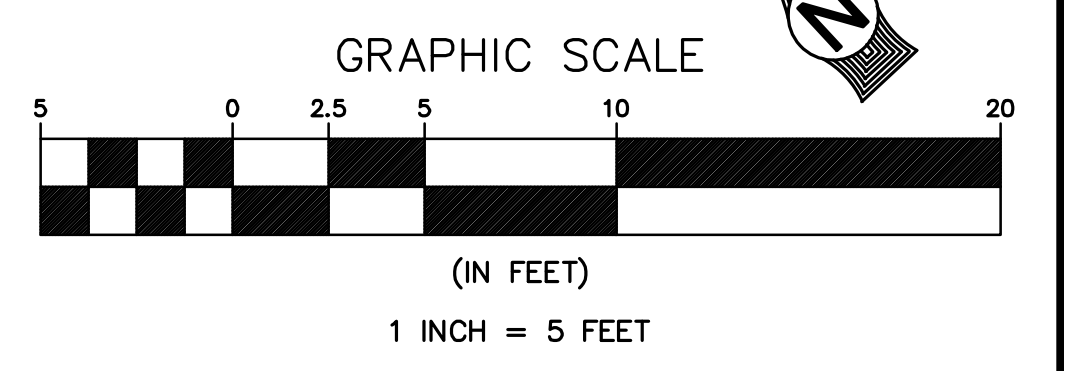
S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH03.dwg Aug 12, 2020 - 3:21pm

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HATCH LEGEND:

 PROPOSED AC PAVEMENT

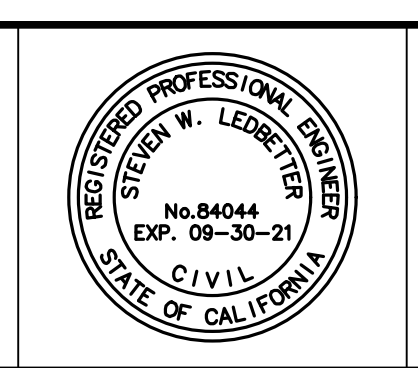


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STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

DRAWN BY: KM
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CHECKED BY: SWL
RECOMMENDED BY:

APPROVED BY:



SAN ANTONIO WATER COMPANY GENERAL MANAGER

08/14/20
DATE

SAN ANTONIO WATER CO.

HOLLY DRIVE RESERVOIR
PHASE II

SITE PLAN/HORIZONTAL CONTROL

WATER DRAWING NO. -
SHEET 4
OF 15 SHEET
DRAWING NO. C-1

CONSTRUCTION NOTES:

- 1 INSTALL 120,000 GALLON TANK PER TANK SECTIONS AND DETAILS ON SHEET 6.
- 2 CONSTRUCT 8" CML/OP INLET/OUTLET PIPE ASSEMBLY PER DETAIL "1" ON SHEET 7.
- 3 INSTALL 8" DRAIN OUTLET PER DETAIL "1" ON SHEET 8.
- 4 INSTALL 12" OVERFLOW PER DETAIL "1" ON SHEET 8 WITH SERIES 35-1 CHECK VALVE.
- 5 INSTALL BOLLARDS PER STANDARD DRAWING NO. SAWCO-17.
- 6 INSTALL 3' X 4' PRECAST CONCRETE BATH BASIN WITH GRATED INLET, DEPTH AS NEEDED, PER DETAIL "1" ON SHEET 8.

CONSTRUCTION NOTES: (CONT.)

- 7 CONSTRUCT 8" STD WT STEEL INLET/OUTLET PIPE (CML/CMC BELOW GRADE AND CML/OP ABOVE GRADE).
- 9 EXCAVATION AND BACKFILL PER SAN ANTONIO WATER COMPANY STANDARD DRAWING NO. SAWCO-4.
- 10 INSTALL 8" STD. WT. 45° LR BEND (CML/CMC)
- 11 INSTALL 12" STD. WT. 45° LR BEND (CML/CMC)
- 12 CONSTRUCT 12" DRAIN CML/CMC INLET/OUTLET PIPE.

CONSTRUCTION NOTES: (CONT.)

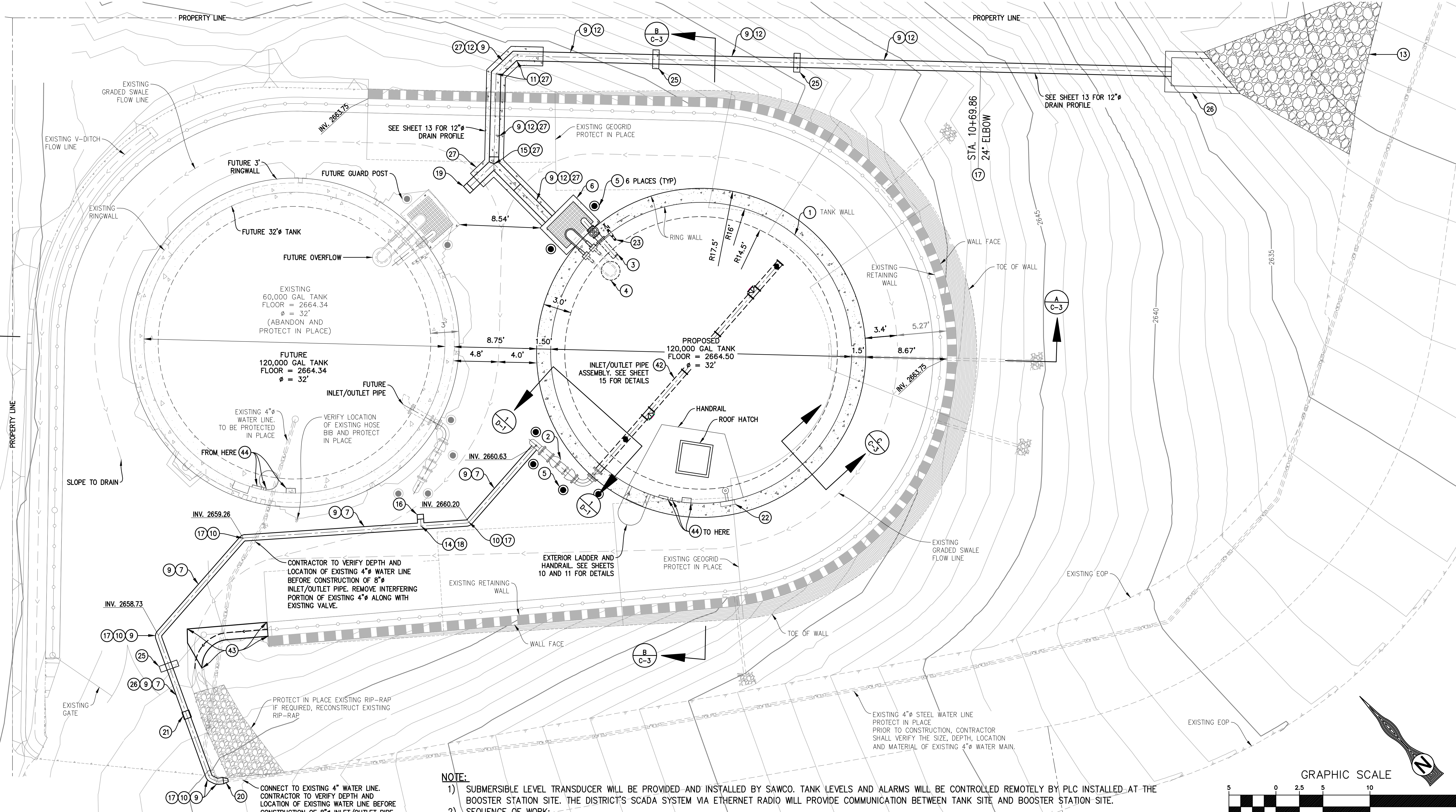
- 13 CONSTRUCT RIP-RAP D50 DIAMETER (5" MIN.), 24" MIN. THICK.
- 14 INSTALL 8"x8"x8" STEEL TEE CML/CMC.
- 15 INSTALL 12"x12"x12" STEEL CML/CMC 90° WYE.
- 16 INSTALL 8" BLIND FLANGE.
- 17 CONSTRUCT HORIZONTAL BEND THRUST BLOCK PER STD SAWCO 13 (1 OF 3) ON SHEET 3.
- 18 CONSTRUCT TEE THRUST BLOCK PER STD SAWCO 13 (2 OF 3) ON SHEET 3.

CONSTRUCTION NOTES: (CONT.)

- 19 INSTALL 12" BLIND FLANGE.
- 20 INSTALL 8" X 4" STEEL REDUCER CML/CMC.
- 21 INSTALL STEEL COUPLING 8" ROMAC STYLE 511
- 22 PROVIDE 1" OPENING WITH BRONZE PLUG FOR FUTURE SUBMERSIBLE LEVEL TRANSDUCER. FINAL LOCATION PER DISTRICT RECOMMENDATION.
- 23 SAMPLING NOZZLE PER DETAIL "4" ON SHEET 7.
- 25 CONSTRUCT SLOPE PROTECTION CUT-OFF WALL PER STD SAWCO-14 ON SHEET 3.

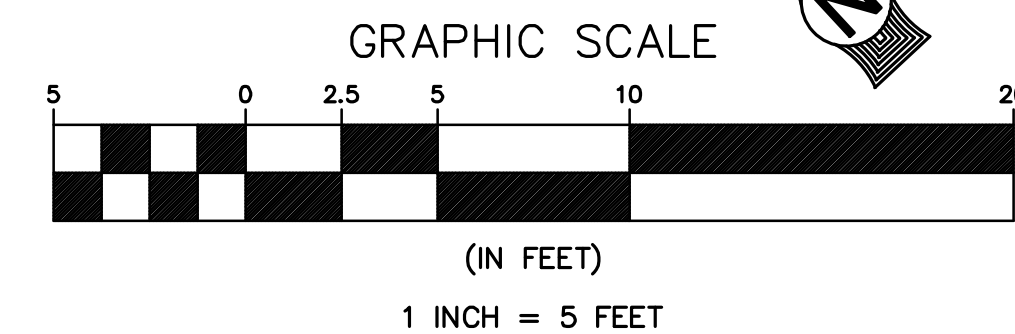
CONSTRUCTION NOTES: (CONT.)

- 26 CONSTRUCT HEADWALL PER SAN BERNARDINO COUNTY ROAD DEPARTMENT STANDARD DRAWING NO. 209A.
- 27 CONSTRUCT 8" THICK, 12" MIN. ALL AROUND CONCRETE COLLAR (3,000 PSI) PER DETAIL "A" ON SHEET 12.



NOTE:

- 1) SUBMERSIBLE LEVEL TRANSDUCER WILL BE PROVIDED AND INSTALLED BY SAWCO. TANK LEVELS AND ALARMS WILL BE CONTROLLED REMOTELY BY PLC INSTALLED AT THE BOOSTER STATION SITE. THE DISTRICT'S SCADA SYSTEM VIA ETHERNET RADIO WILL PROVIDE COMMUNICATION BETWEEN TANK SITE AND BOOSTER STATION SITE.
- 2) SEQUENCE OF WORK:
 STEP 1: BUILD AND TEST PROPOSED TANK, PIPE, AND APPURTENANCES.
 STEP 2: REMOVE INTERFERING PORTION OF EXISTING 4" WATER MAIN ALONG WITH EXISTING VALVE.
 STEP 3: CONSTRUCT 3" AC PAVEMENT OVER 4" CLASS II BASE PER DETAIL "D" ON SHEET 6.



S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH05.dwg Aug 12, 2020 - 3:23pm

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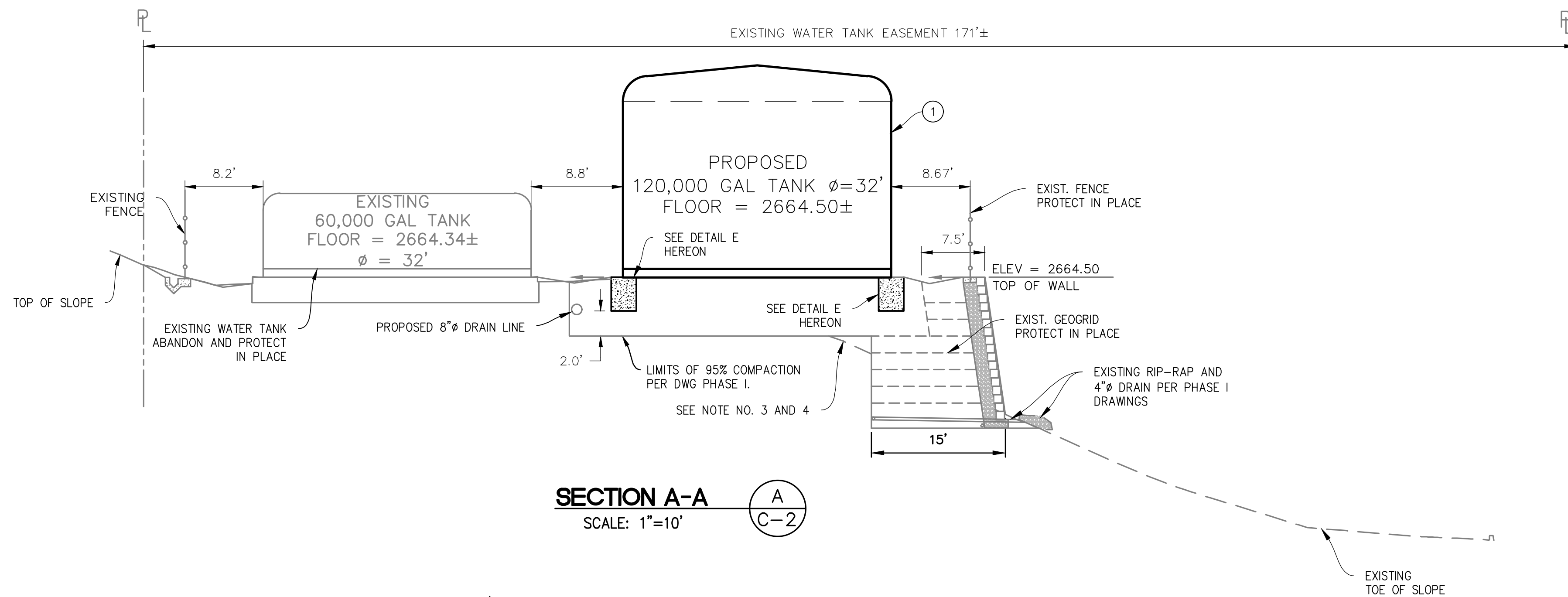
DRAWN BY: KM
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 RECOMMENDED BY:

APPROVED BY:

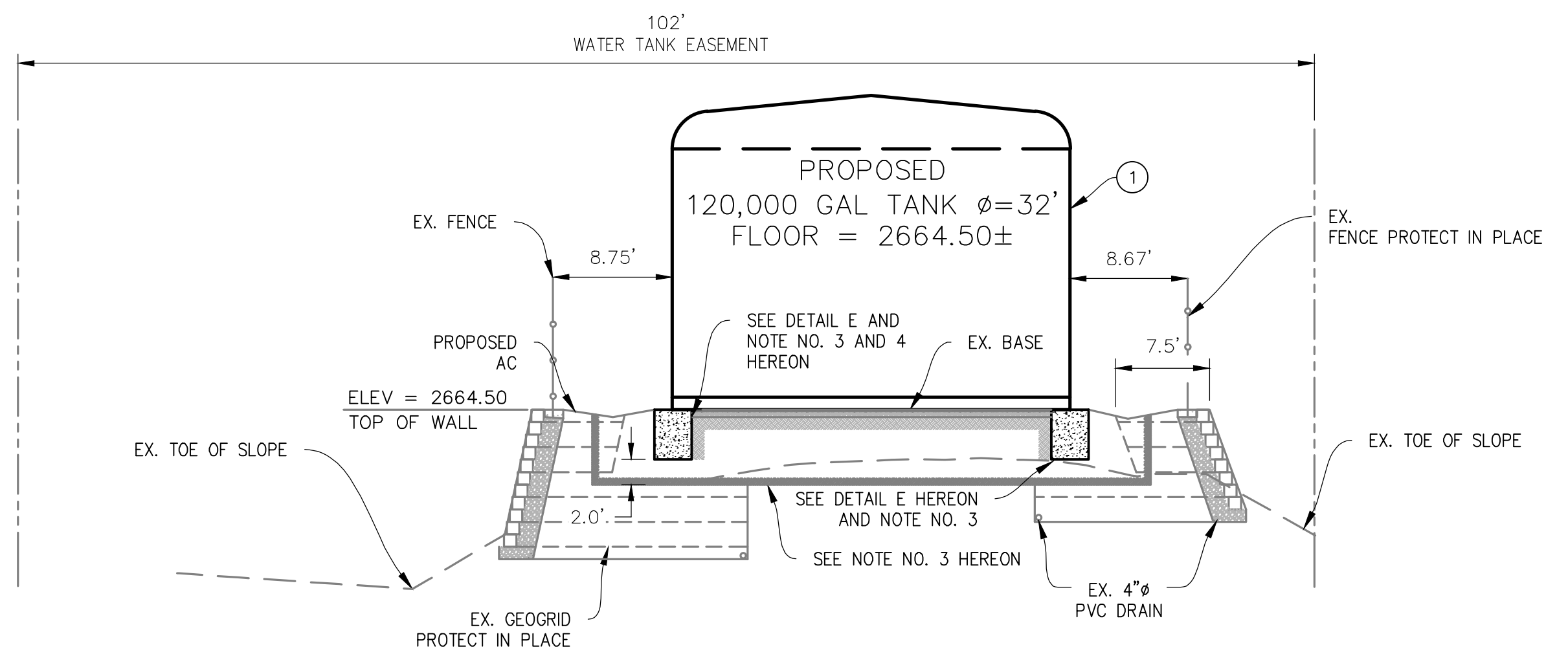
 SAN ANTONIO WATER COMPANY GENERAL MANAGER
 08/14/20 DATE

SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 TANK AND PIPING PLAN

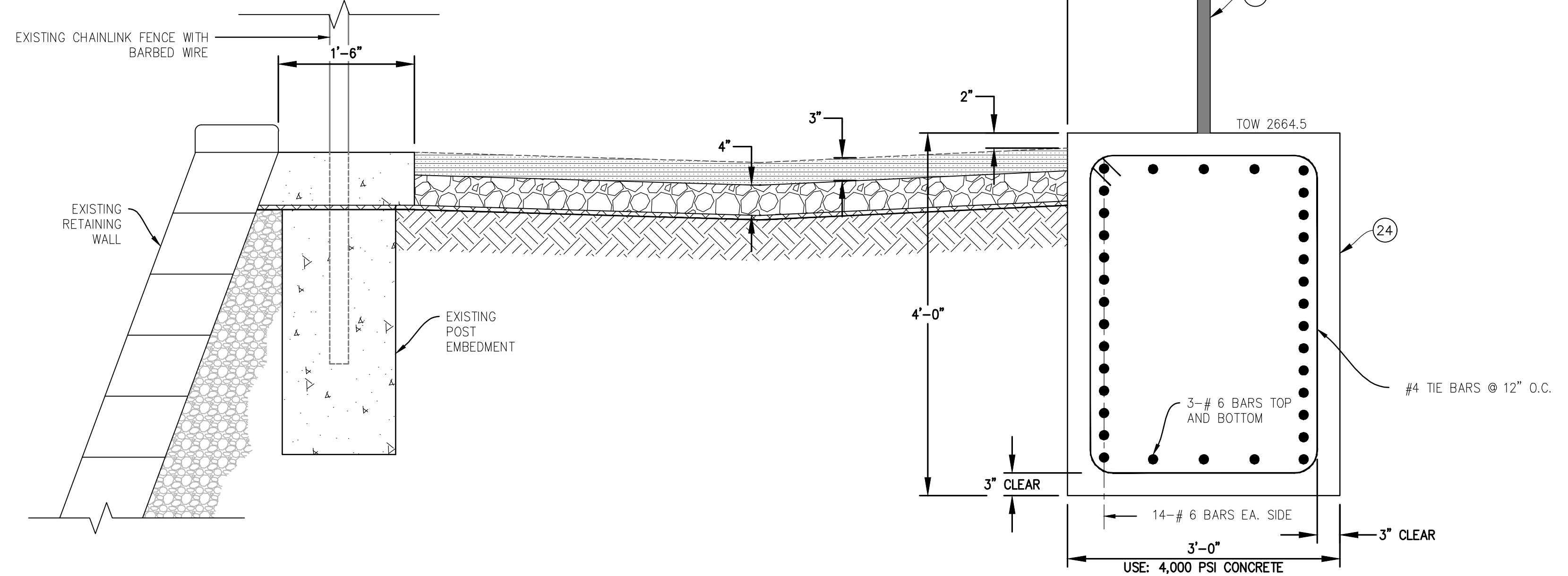
WATER DRAWING NO. -
 SHEET 5
 OF 15 SHEET
 DRAWING NO. C-2



SECTION A-A (A)
SCALE: 1"=10'
C-2



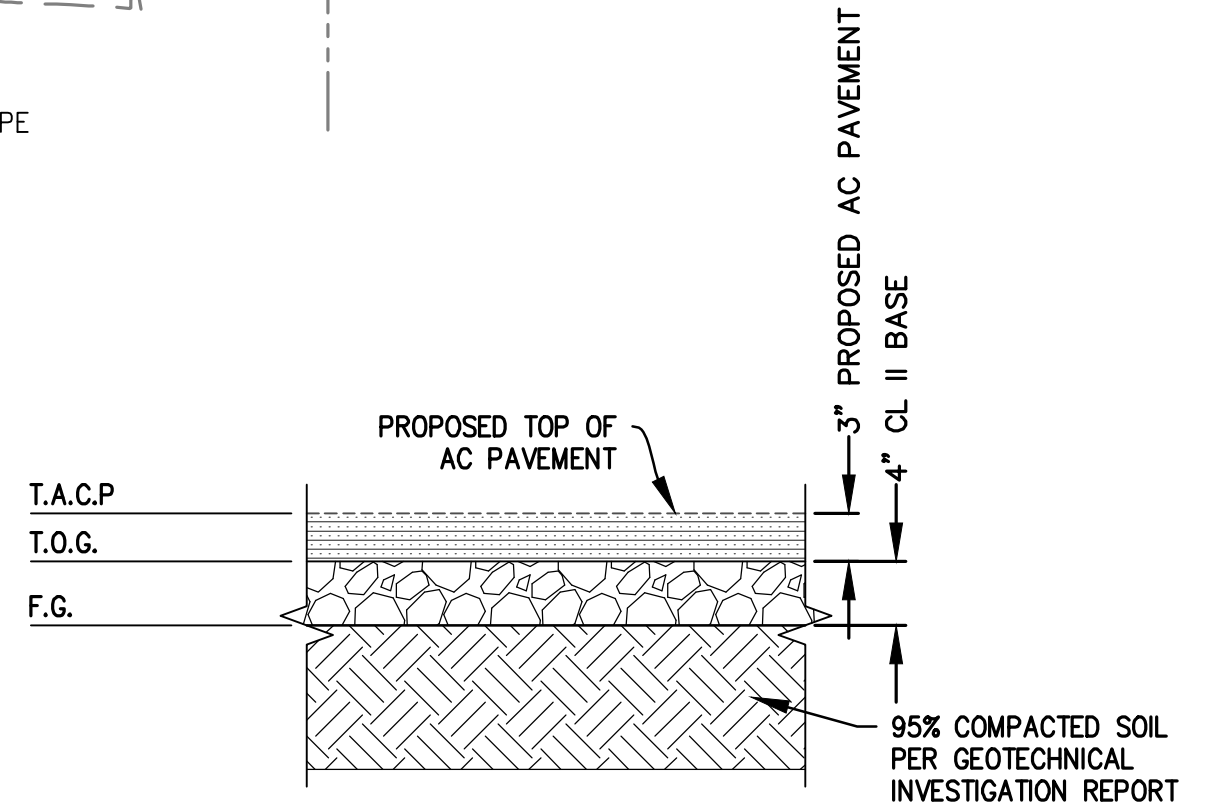
SECTION B-B (B)
SCALE: 1"=10'
C-2



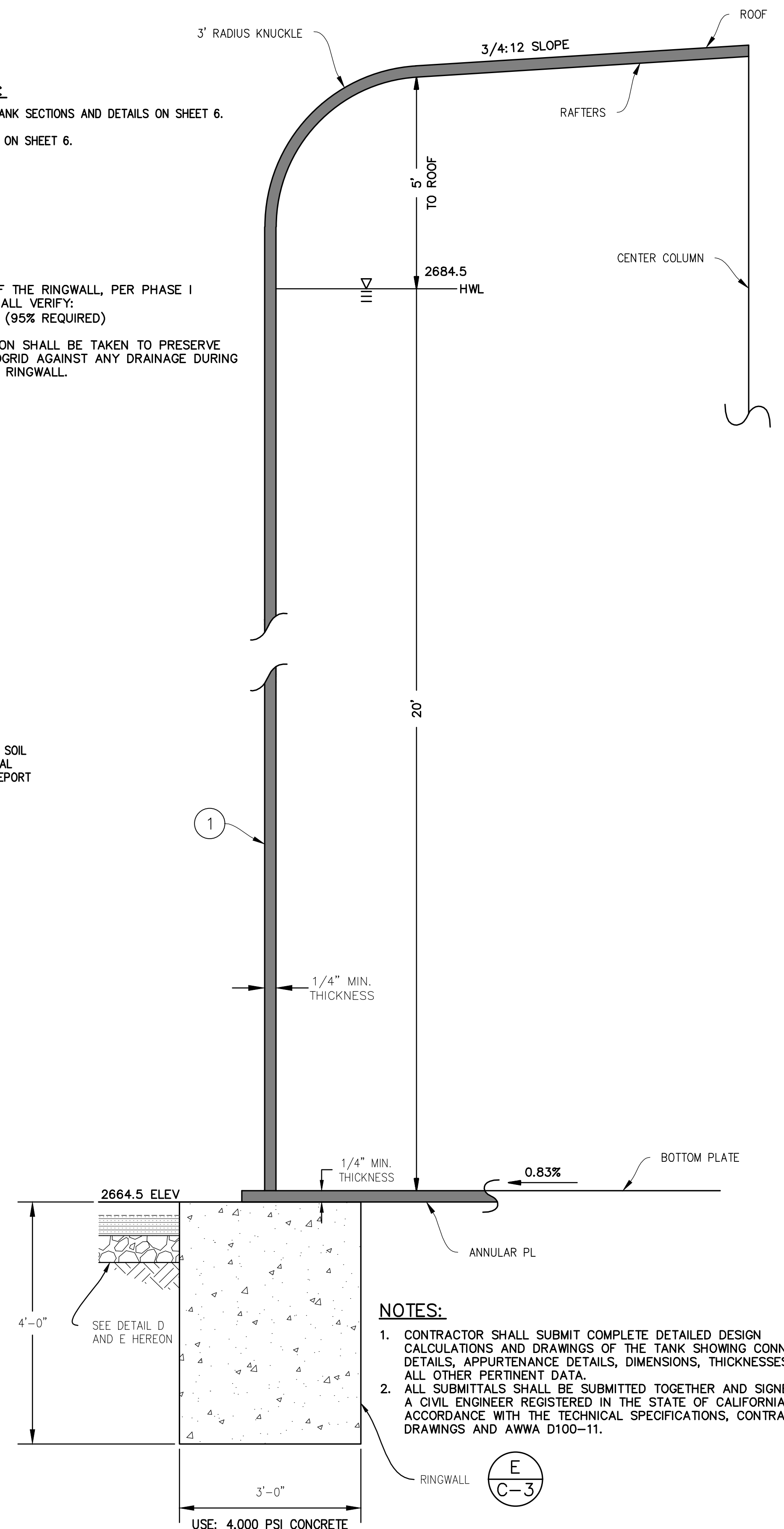
TANK RINGWALL DETAILS (E)
SCALE: 1" = 1'
C-3

- CONSTRUCTION NOTES:**
- 1 INSTALL 120,000 GALLON TANK PER TANK SECTIONS AND DETAILS ON SHEET 6.
 - 24 CONSTRUCT RINGWALL PER DETAIL "E" ON SHEET 6.

- NOTES:**
- 3. PRIOR TO CONSTRUCTION OF THE RINGWALL, PER PHASE I DRAWINGS, CONTRACTOR SHALL VERIFY:
 - COMPACTION OF THE SOIL (95% REQUIRED)
 - LIMITS OF COMPACTION
 - 4. ALL REASONABLE PRECAUTION SHALL BE TAKEN TO PRESERVE AND PROTECT EXISTING GEOGRID AGAINST ANY DRAINAGE DURING THE CONSTRUCTION OF THE RINGWALL.



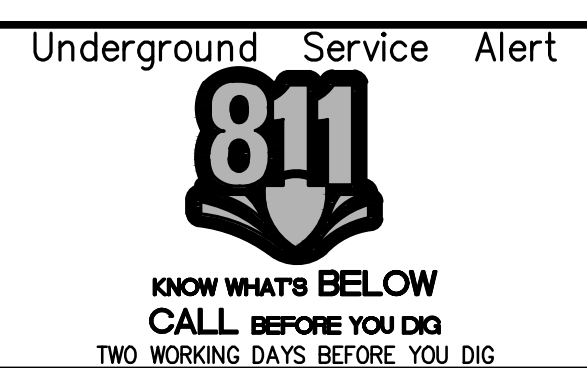
SUBGRADE DETAIL (D)
SCALE: NONE



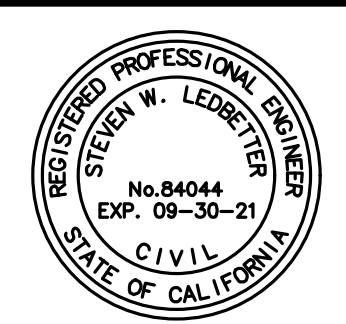
TANK STRUCTURAL DETAILS (C)
SCALE: NONE
C-2

- NOTES:**
- 1. CONTRACTOR SHALL SUBMIT COMPLETE DETAILED DESIGN CALCULATIONS AND DRAWINGS OF THE TANK SHOWING CONNECTION DETAILS, APPURTENANCE DETAILS, DIMENSIONS, THICKNESSES, AND ALL OTHER PERTINENT DATA.
 - 2. ALL SUBMITTALS SHALL BE SUBMITTED TOGETHER AND SIGNED BY A CIVIL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, CONTRACT DRAWINGS AND AWWA D100-11.

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH06.dwg Aug 12, 2020 - 3:24pm



REVISIONS				
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FAX: (951) 680-0490
08-13-2020
STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

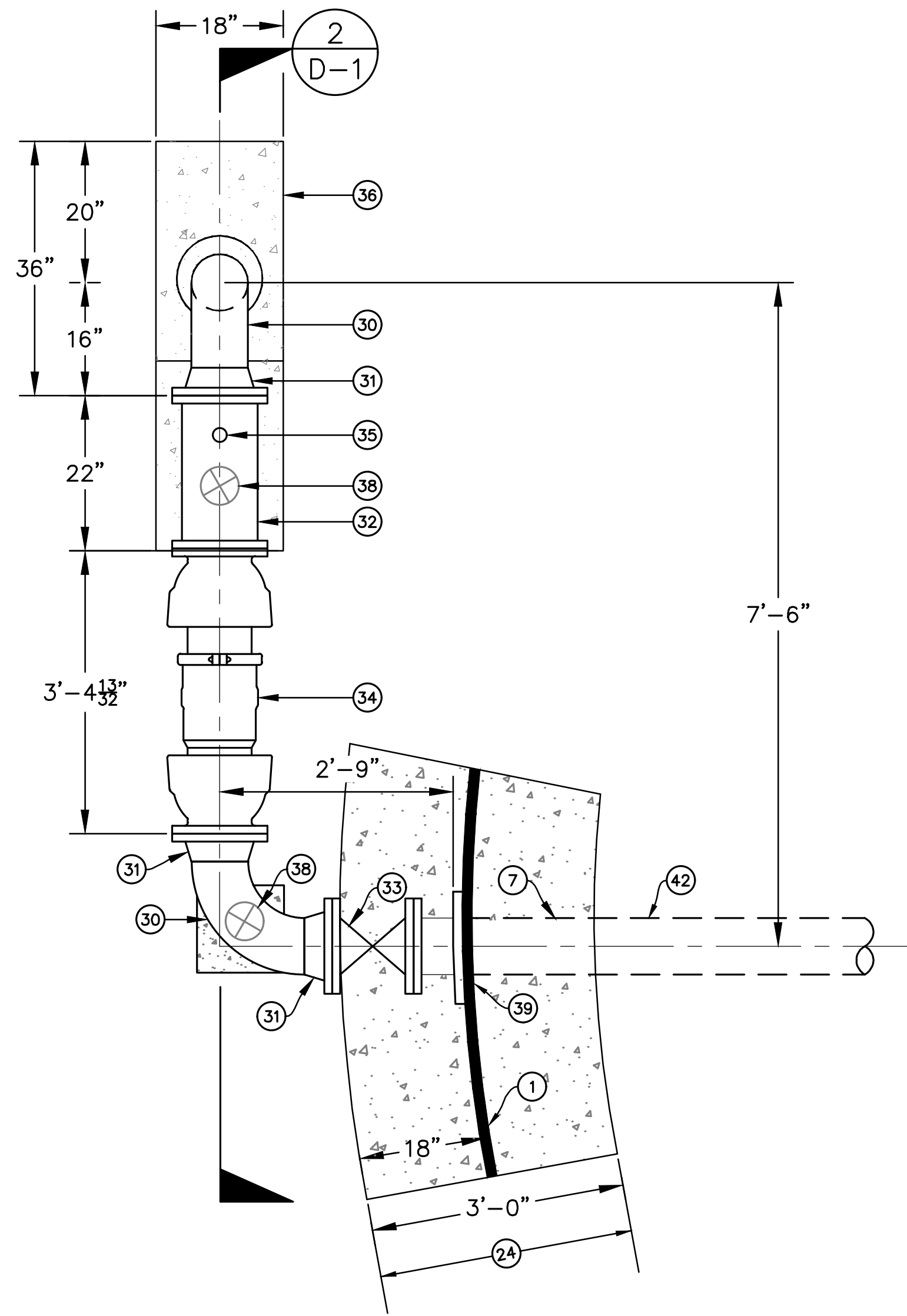
DRAWN BY: KM
DESIGNED BY: SWL
CHECKED BY: SWL
RECOMMENDED BY:

APPROVED BY: *[Signature]*
SAN ANTONIO WATER COMPANY GENERAL MANAGER
08/14/20 DATE

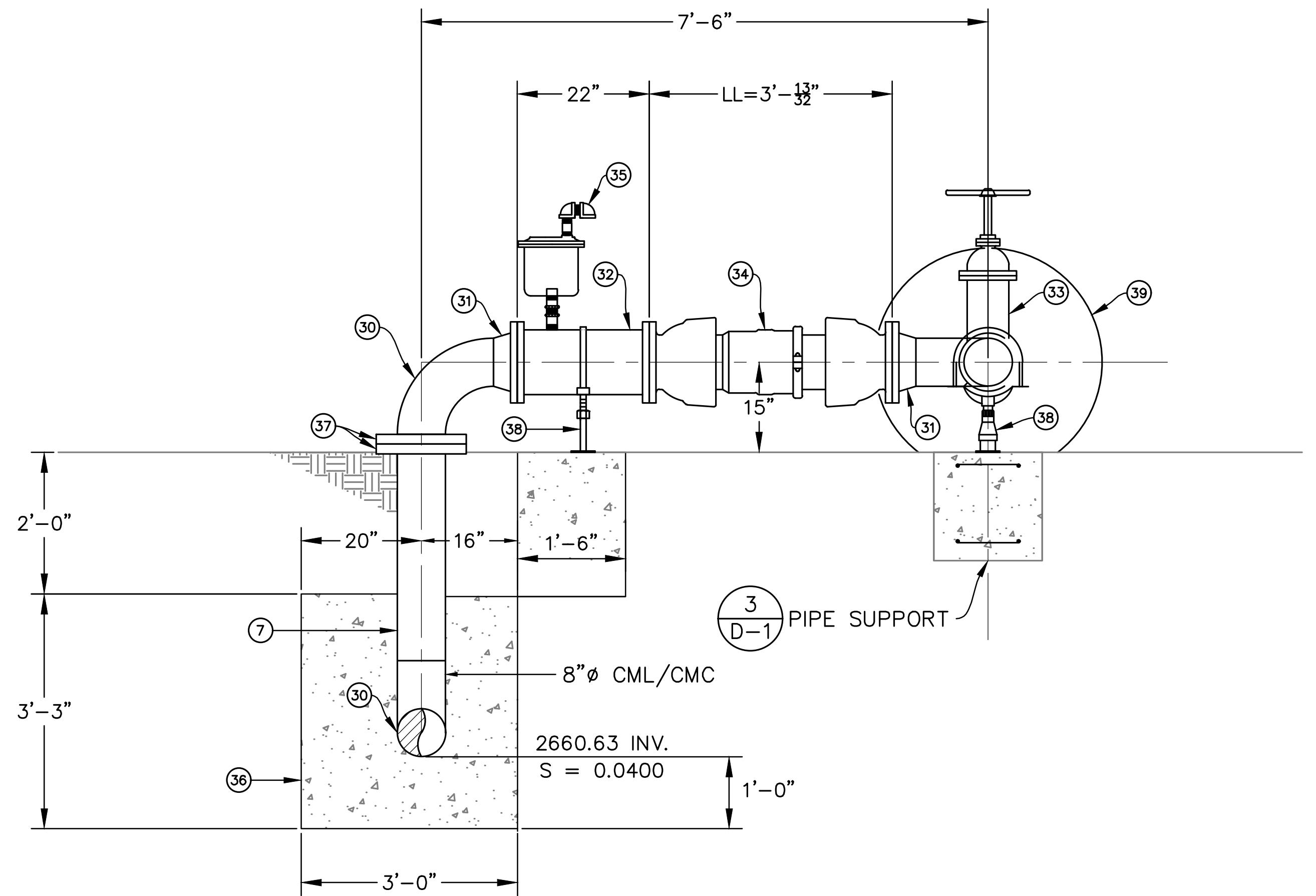
SAN ANTONIO WATER CO.
HOLLY DRIVE RESERVOIR
PHASE II
PROFILE AND SECTIONS

WATER DRAWING NO. -
SHEET 6
OF 15 SHEET
DRAWING NO. C-3

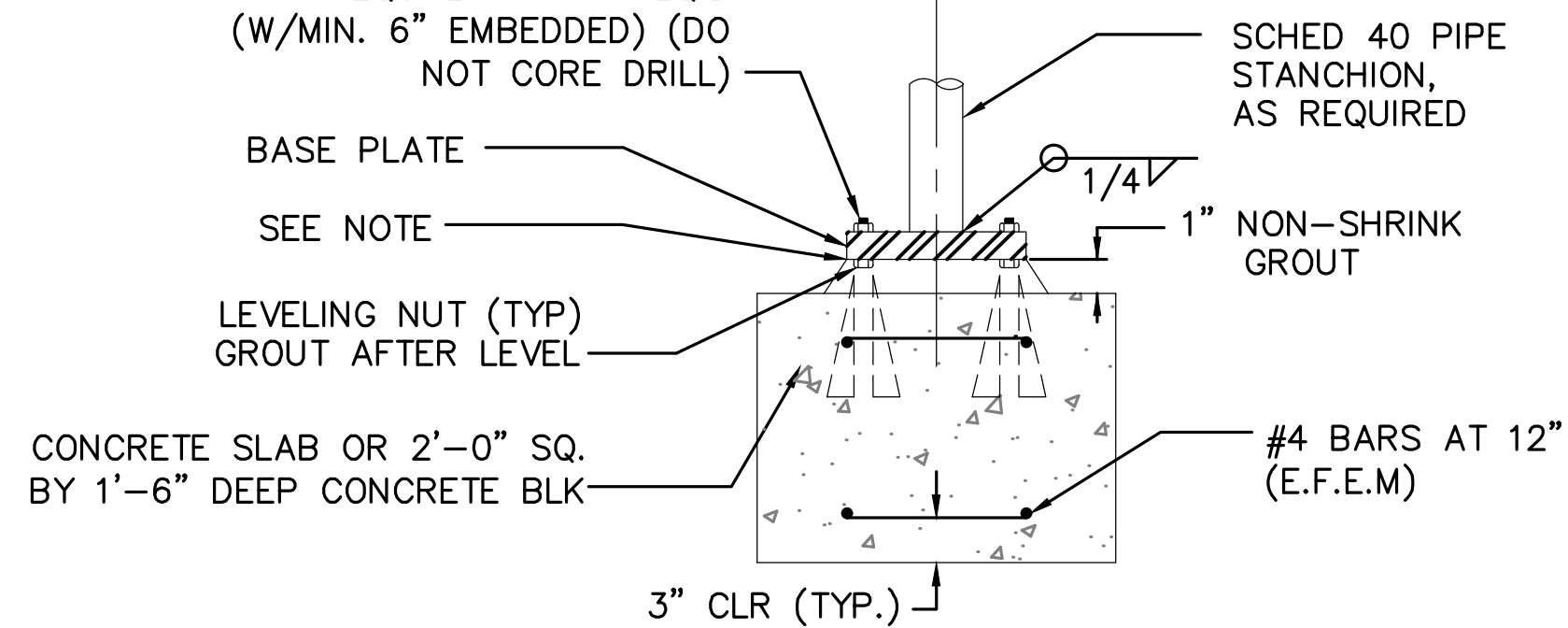
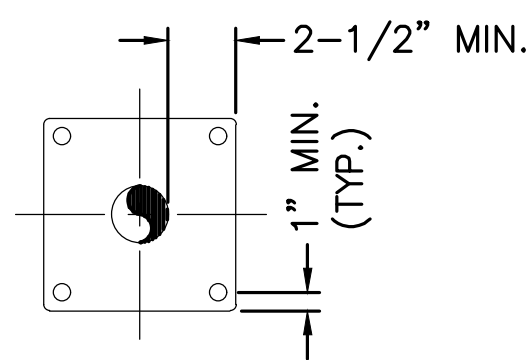
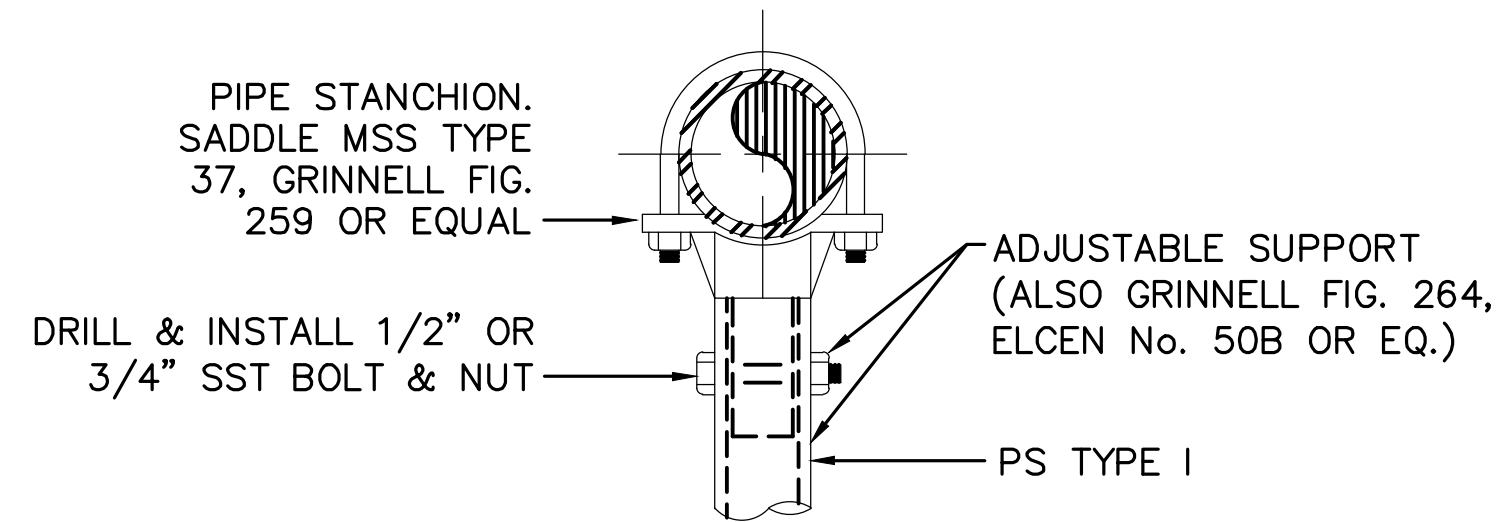
S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH07.dwg Aug 12, 2020 - 3:18pm



1 8" INLET/OUTLET PLAN
C-2 3/4" = 1'



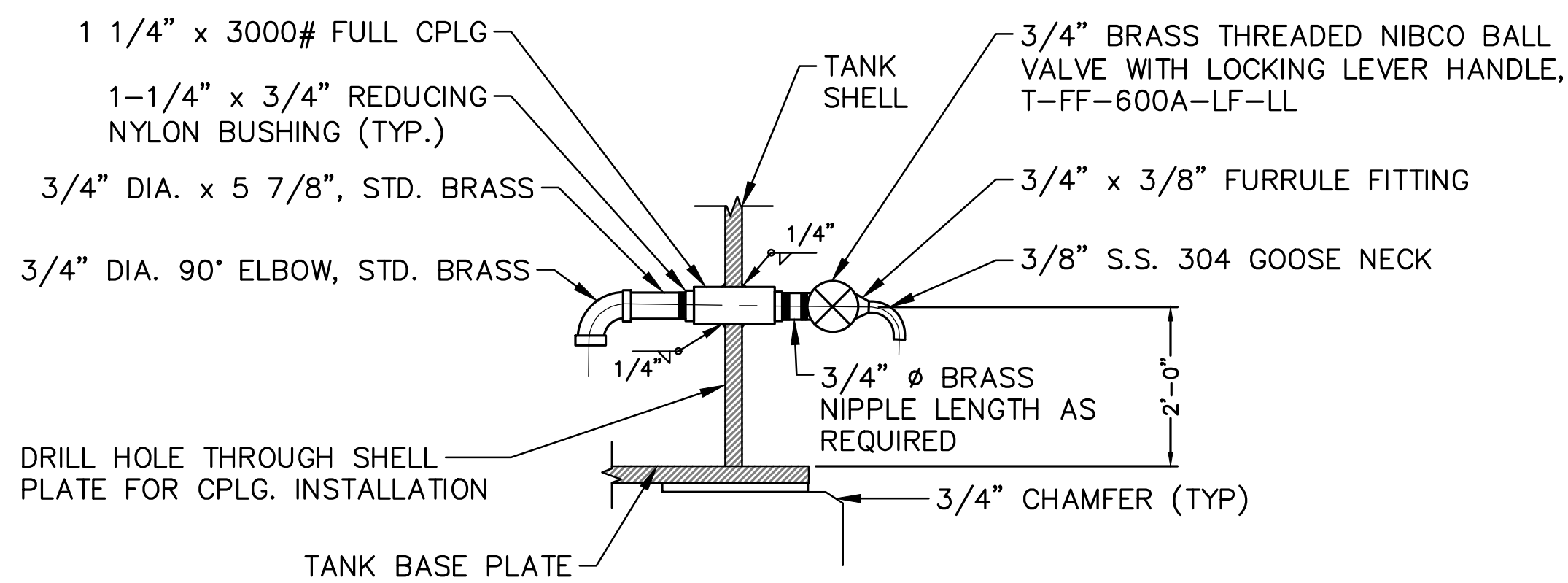
2 8" INLET/OUTLET PROFILE
D-1 3/4" = 1'



PIPE DIA (IN)	2-6	8-12	14-18	20-30
STANCHION DIA (IN)	2	3	4	6
BASE PLATE THICKNESS (IN)	3/8	1/2	3/4	3/4
ANCHOR BOLT DIA (IN)	1/2	5/8	3/4	3/4

NOTE: 1/4" FILLET WELD AROUND THE BASE PLATE WHEN IT SITS ON THE STEEL PLATE.

3 PIPE SUPPORT
D-1 1" = 1'



4 SAMPLING NOZZLE DETAIL
C-2 (PER MANUFACTURER) N.T.S.

CONSTRUCTION NOTES:

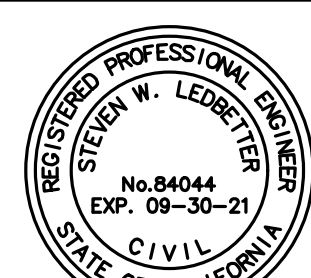
- 1 INSTALL 120,000 GALLON TANK PER TANK SECTIONS AND DETAILS ON SHEET 6.
- 7 CONSTRUCT 8" STD. WT. STEEL INLET/OUTLET PIPE (CML/CMC BELOW GRADE AND CML/OP ABOVE GRADE).
- 24 CONSTRUCT RINGWALL PER DETAIL "E" ON SHEET 6.
- 30 8" STD. WT. 90° LR BEND.
- 31 8" 150# WELD-NECK FLANGE.
- 32 8" STEEL SPOOL (CML/OP) LENGTH AS NEEDED WITH 8" 150# SLIP ON FLG'D ENDS.
- 33 8" AWWA R.S. GATE VALVE WITH HANDWHEEL.
- 34 8" EXPANSION (OR EQUAL) JOINT EBBA IRON, FLANGED A-150, DOUBLE BALL EXPAN (+3/-1) LAYING LENGTH #408F20.
- 35 1" COMBINATION AIR VALVE. INCLUDE 1" 3000# HALF COUPLING AND CORP STOP.
- 36 CLASS "B" CONCRETE THRUST RESTRAINT (PLACE AGAINST UNDISTURBED SOIL).
- 37 8" 150# SLIP-ON FLANGE WELDED TO 8" WSP OR FITTING.
- 38 PIPE SUPPORT PER DETAIL "3" ON SHEET 7.
- 39 CONSTRUCT 1/2" THICK SHELL REINFORCING FOR 8" SHELL OUTLET PER API 650 STANDARDS AND PER MANUFACTURER RECOMMENDATION.
- 42 FURNISH AND INSTALL INTERIOR HYDRO DYNAMIC MIXING SYSTEM PER TIDEFLEX DETAILS 1 AND 2 ON SHEET 15.

Underground Service Alert



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TWO WORKING DAYS BEFORE YOU DIG

REVISIONS					
MARK	DATE	INITIAL	DESCRIPTION	DATE	APP'VD



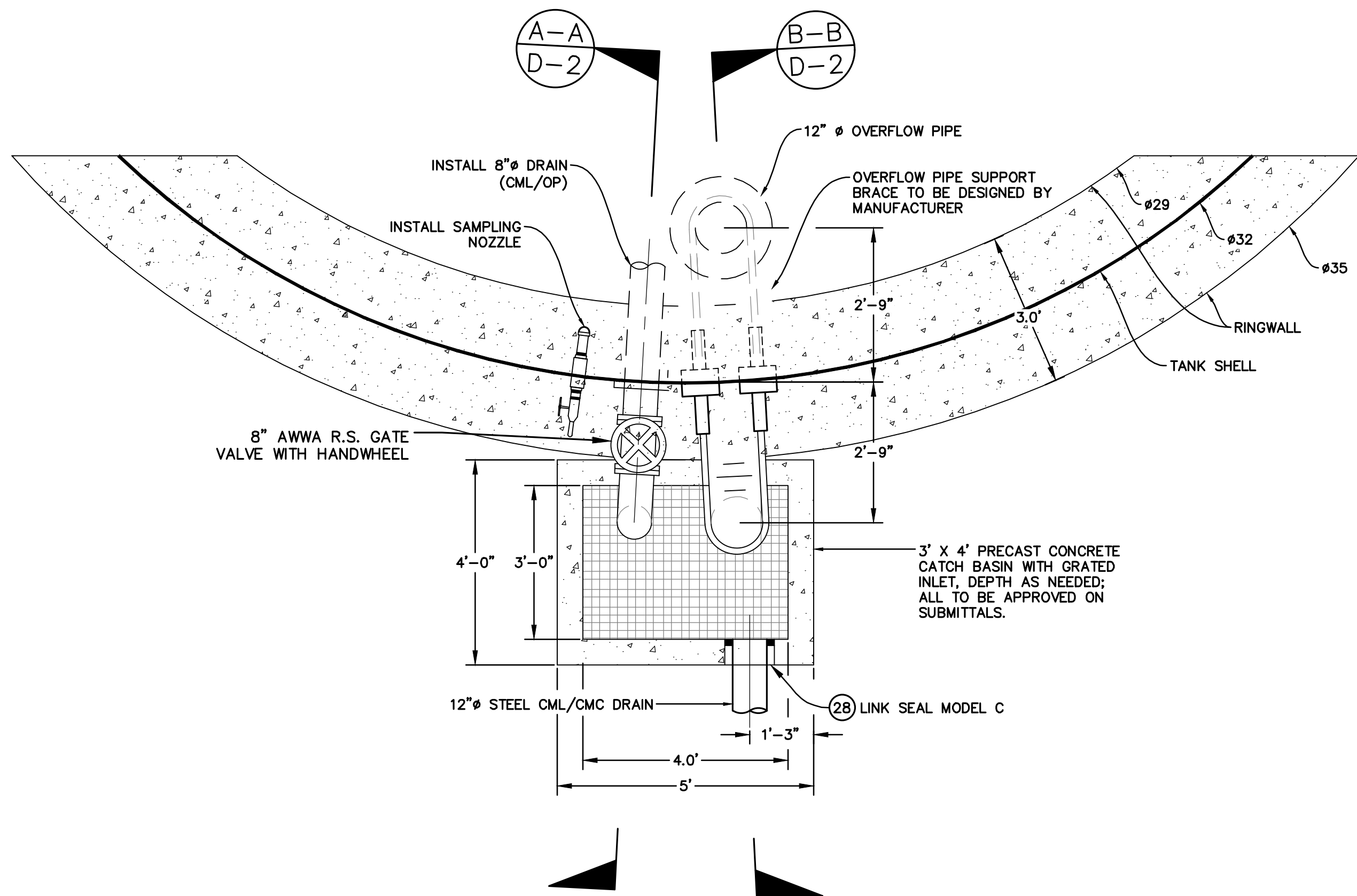
TKE ENGINEERING
STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044
TKE ENGINEERING, INC.
2305 CHICAGO AVENUE
RIVERSIDE, CA 92507
(951) 680-0440
FAX: (951) 680-0490
08-13-2020

DRAWN BY: KM
DESIGNED BY: SWL
CHECKED BY: SWL
RECOMMENDED BY:

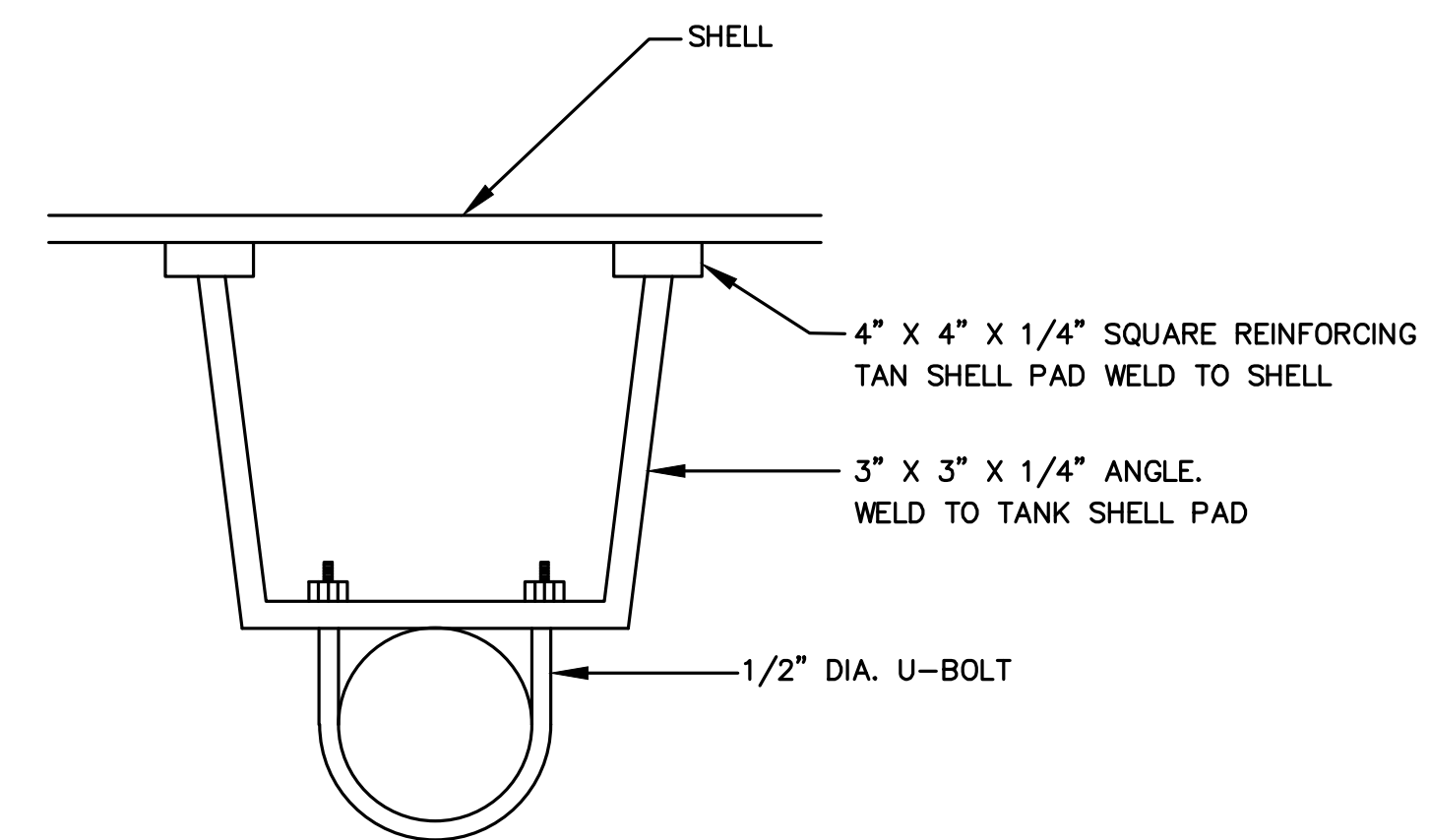
APPROVED BY:
John C. ...
SAN ANTONIO WATER COMPANY GENERAL MANAGER
08/14/20 DATE

SAN ANTONIO WATER CO.
HOLLY DRIVE RESERVOIR
PHASE II
INLET & OUTLET PIPE DETAILS

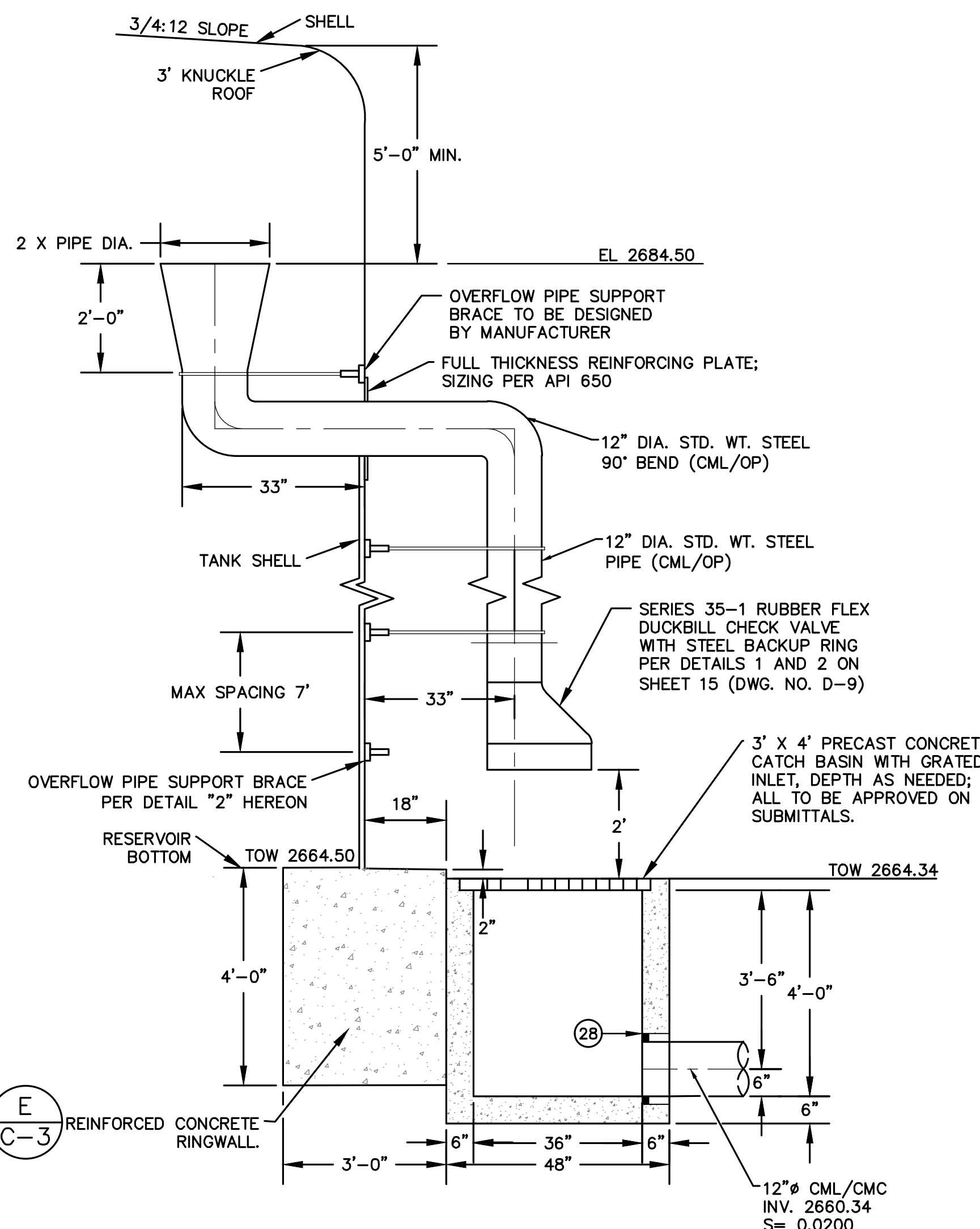
WATER DRAWING NO. -
SHEET 7
OF 15 SHEET
DRAWING NO. D-1



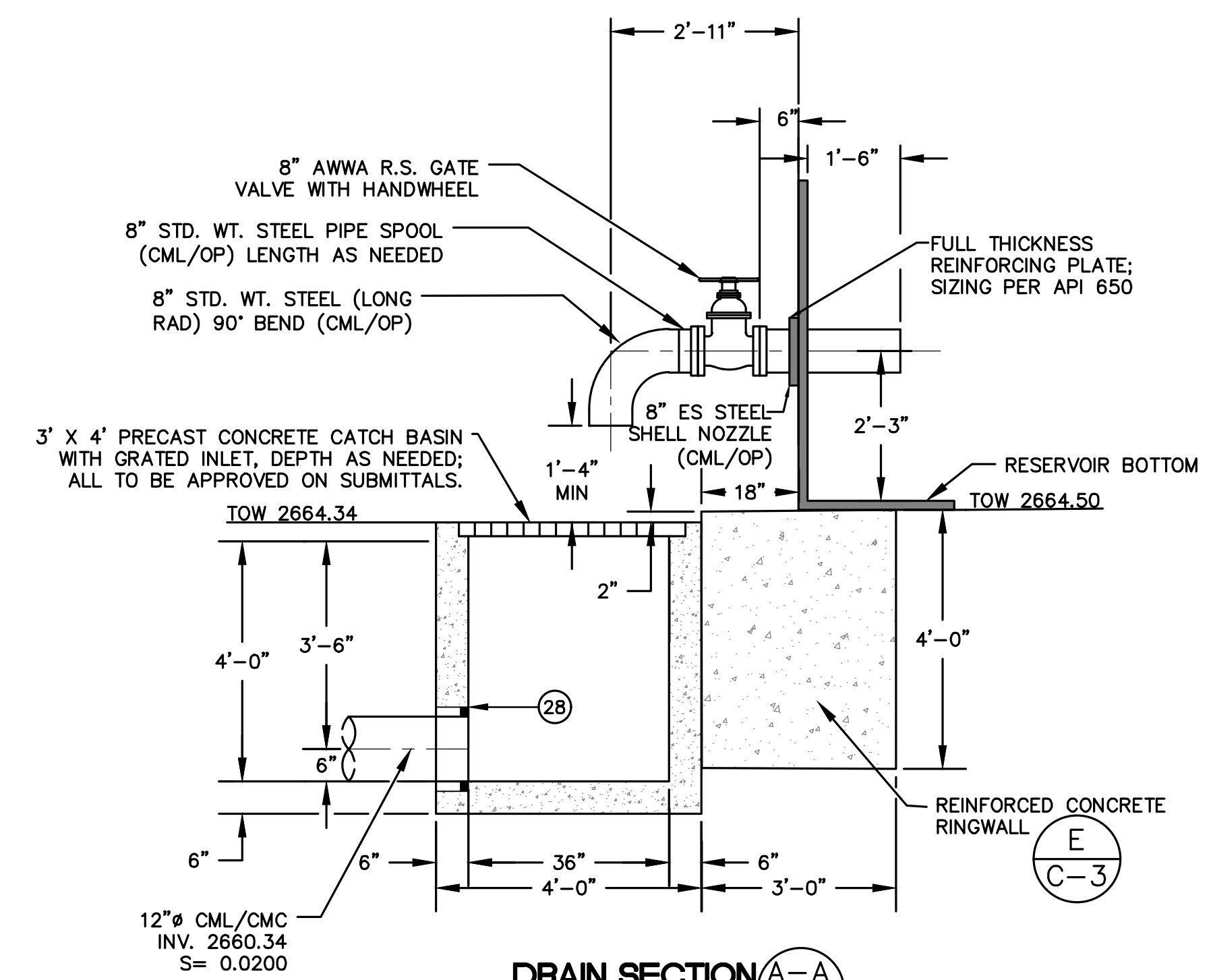
DRAIN AND OVERFLOW PIPING
PLAN VIEW
 1/2" = 1'
 1
 C-2



OVERFLOW PIPE SUPPORT DETAIL
 N.T.S.
 (TO BE VERIFIED BY PIPE MANUFACTURER)
 2
 D-2



OVERFLOW SECTION
 1/2" = 1'
 E
 C-3



DRAIN SECTION
 1/2" = 1'
 A-A
 D-2

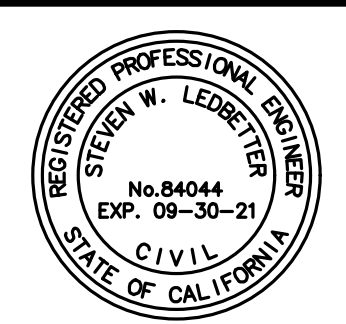
CONSTRUCTION NOTES:
 (28) CONSTRUCT LINK SEAL MODEL C, TYPE: STANDARD WITH EPDM SEAL, NUTS, AND BOLTS. STEEL WITH 2 PARTS ZINC DICHROMATE.

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH08.dwg Aug 12, 2020 - 4:15pm

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TKE ENGINEERING

TKE ENGINEERING, INC.
 2305 CHICAGO AVENUE
 RIVERSIDE, CA 92507
 (951) 680-0440
 FAX: (951) 680-0490

STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044
 08-13-2020

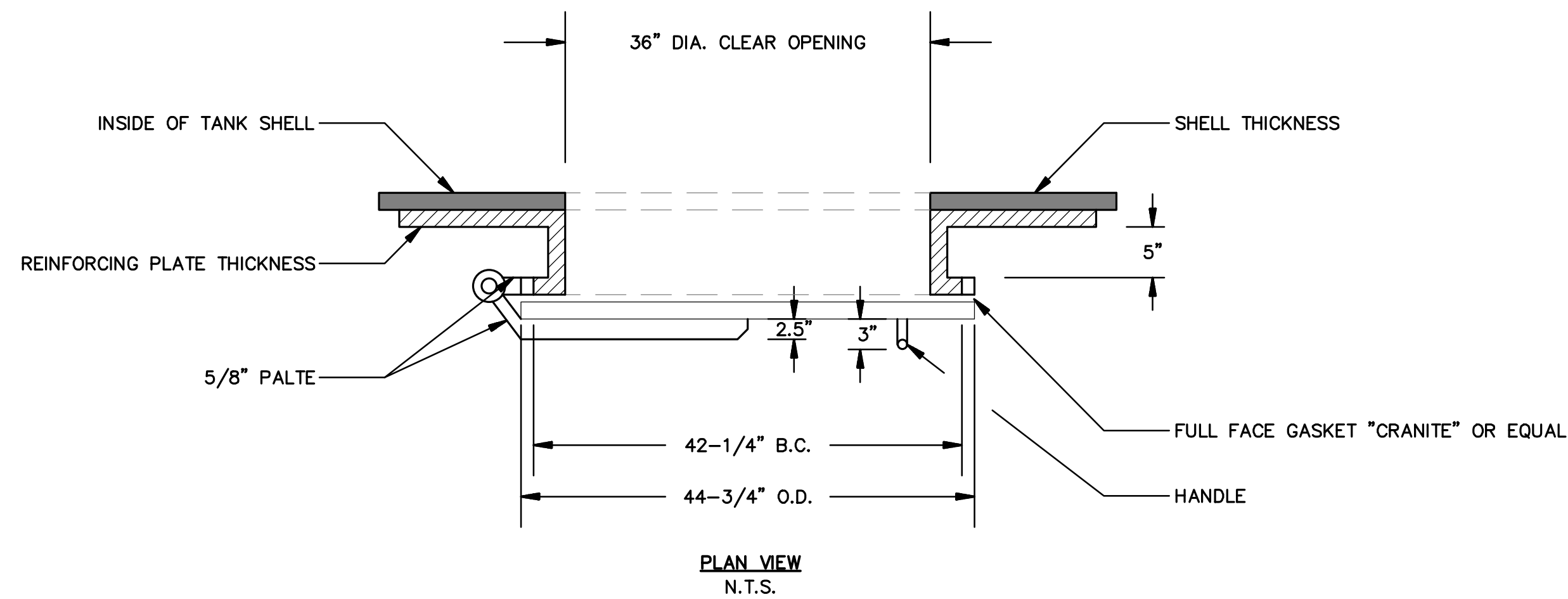
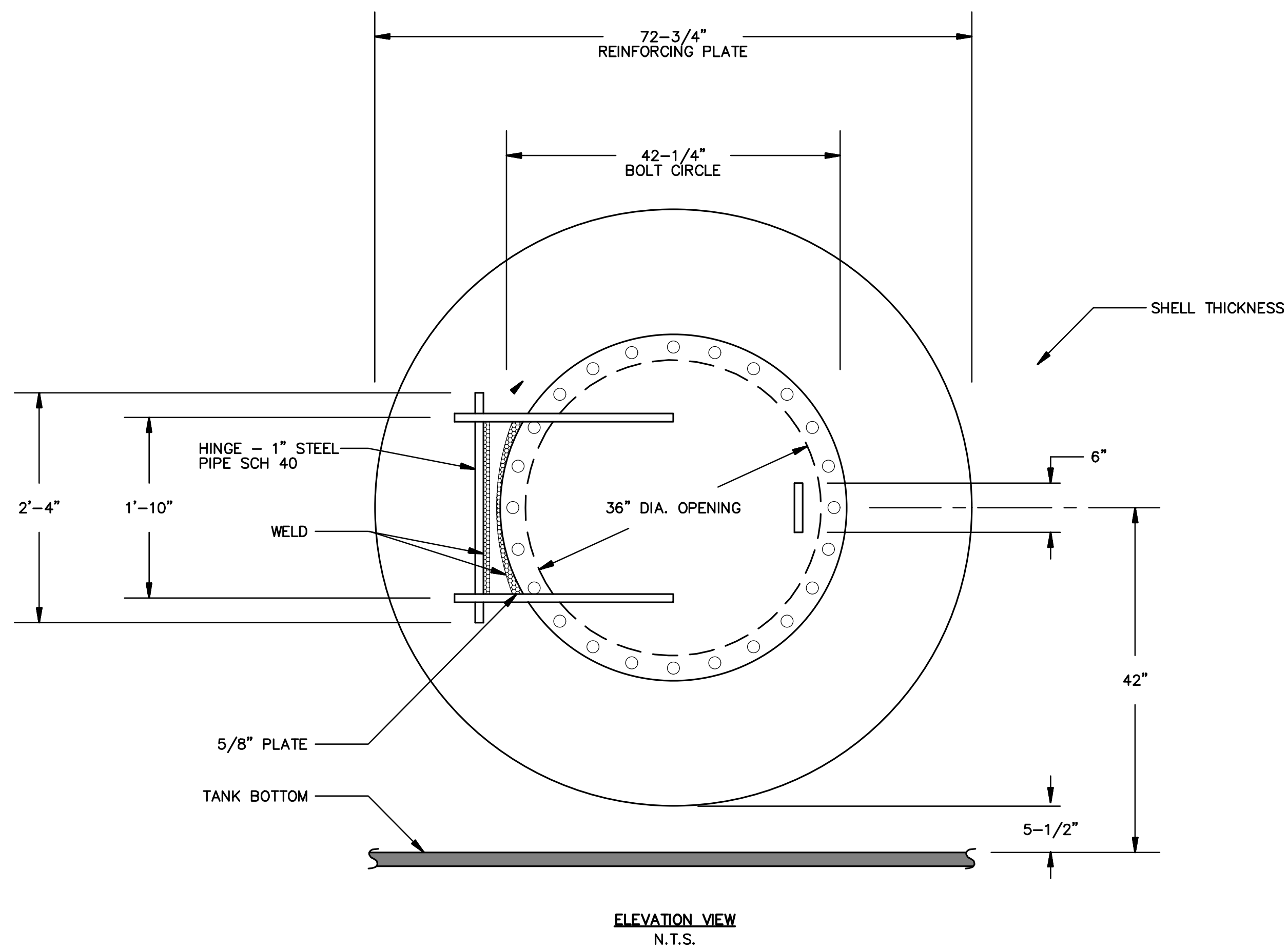
DRAWN BY:	KM
DESIGNED BY:	SWL
CHECKED BY:	SWL
RECOMMENDED BY:	

APPROVED BY:

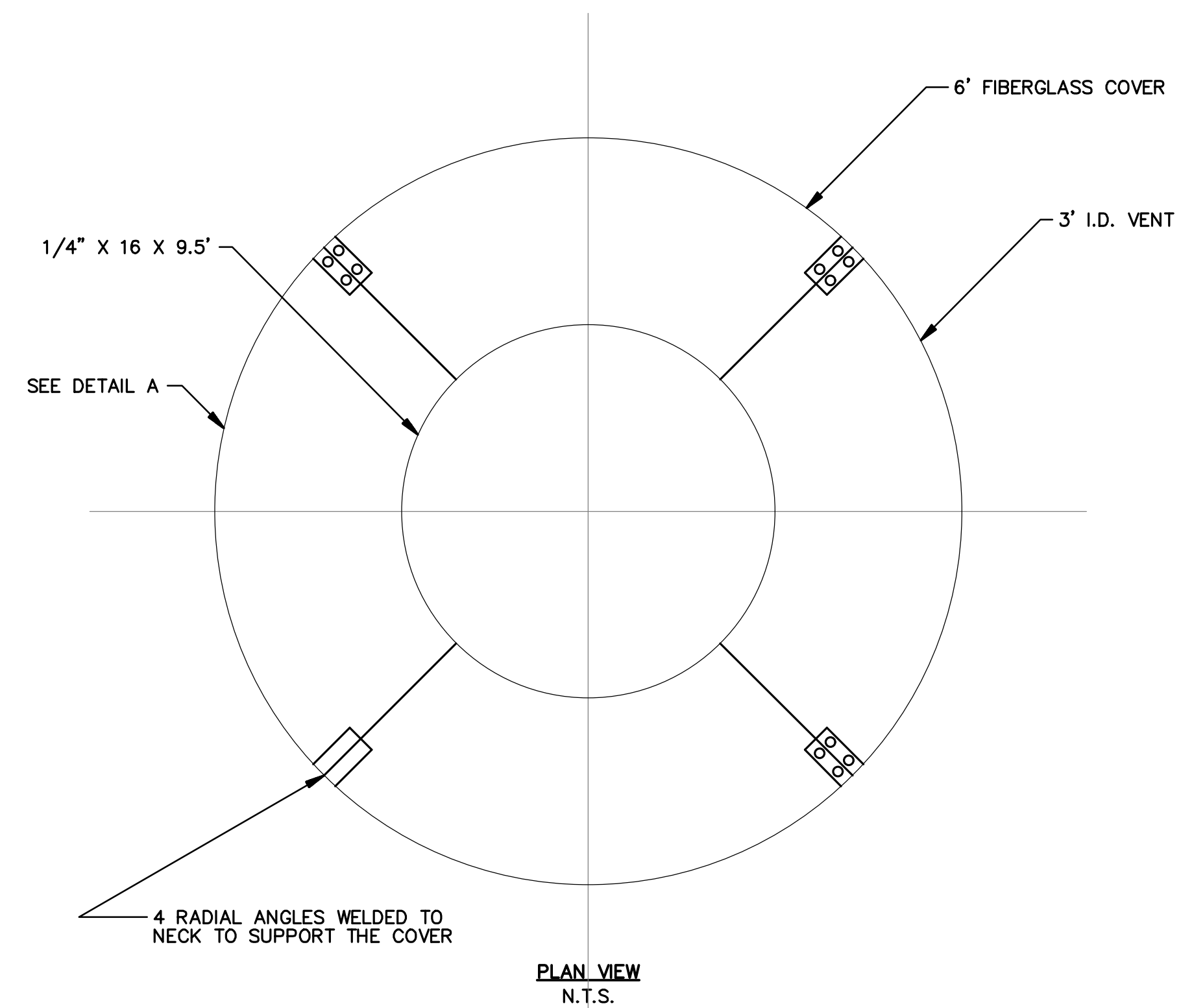
SAN ANTONIO WATER COMPANY GENERAL MANAGER
 08/14/20
 DATE

SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 RESERVOIR DETAIL 1

WATER DRAWING NO.	-
SHEET	8
OF 15 SHEET	
DRAWING NO.	D-2

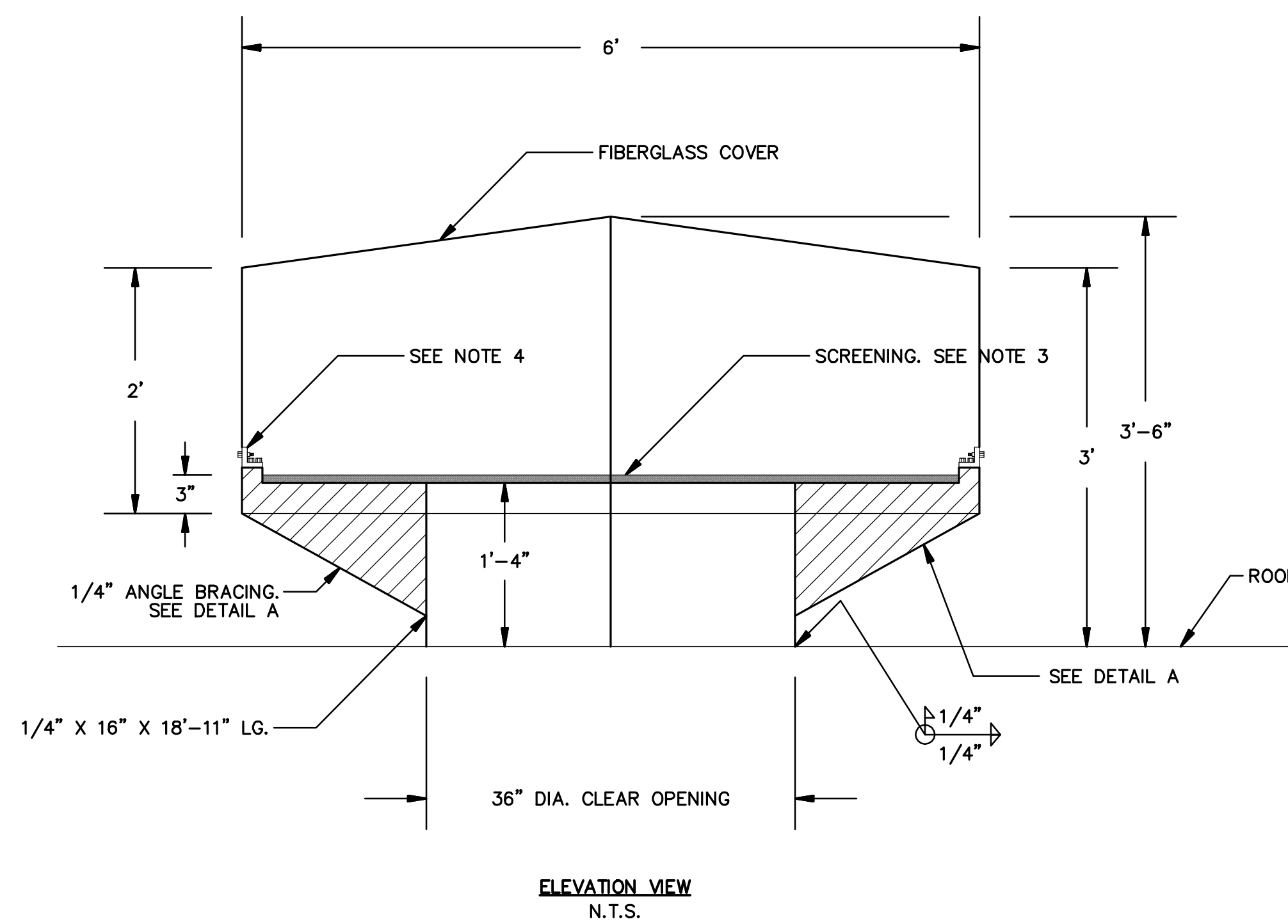


ACCESS MANHOLE
N.T.S.

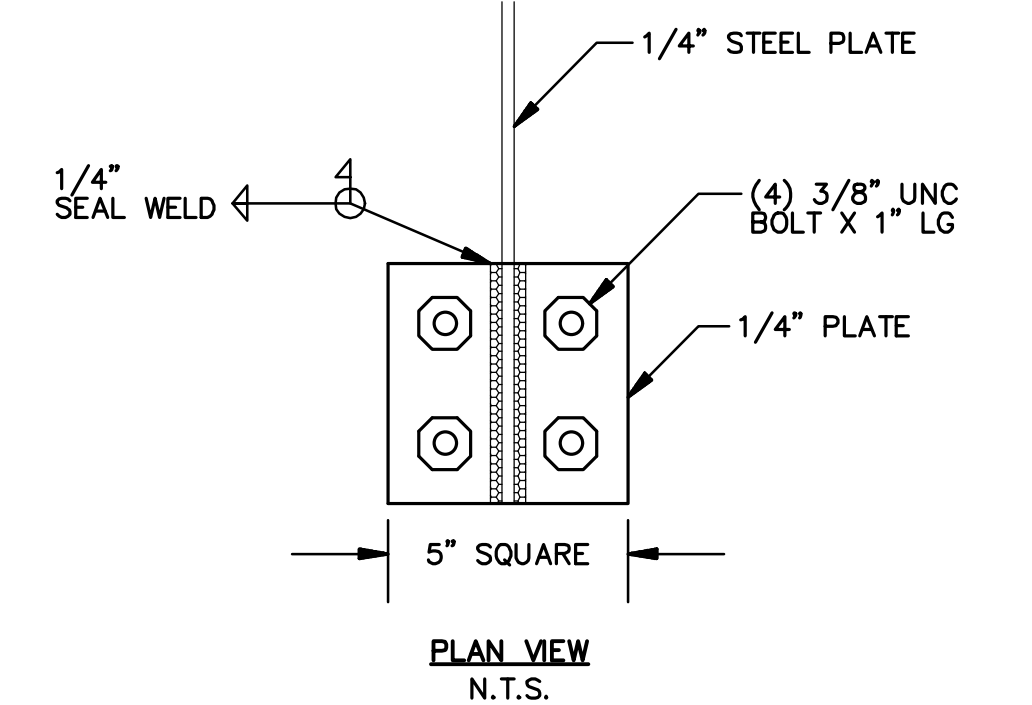
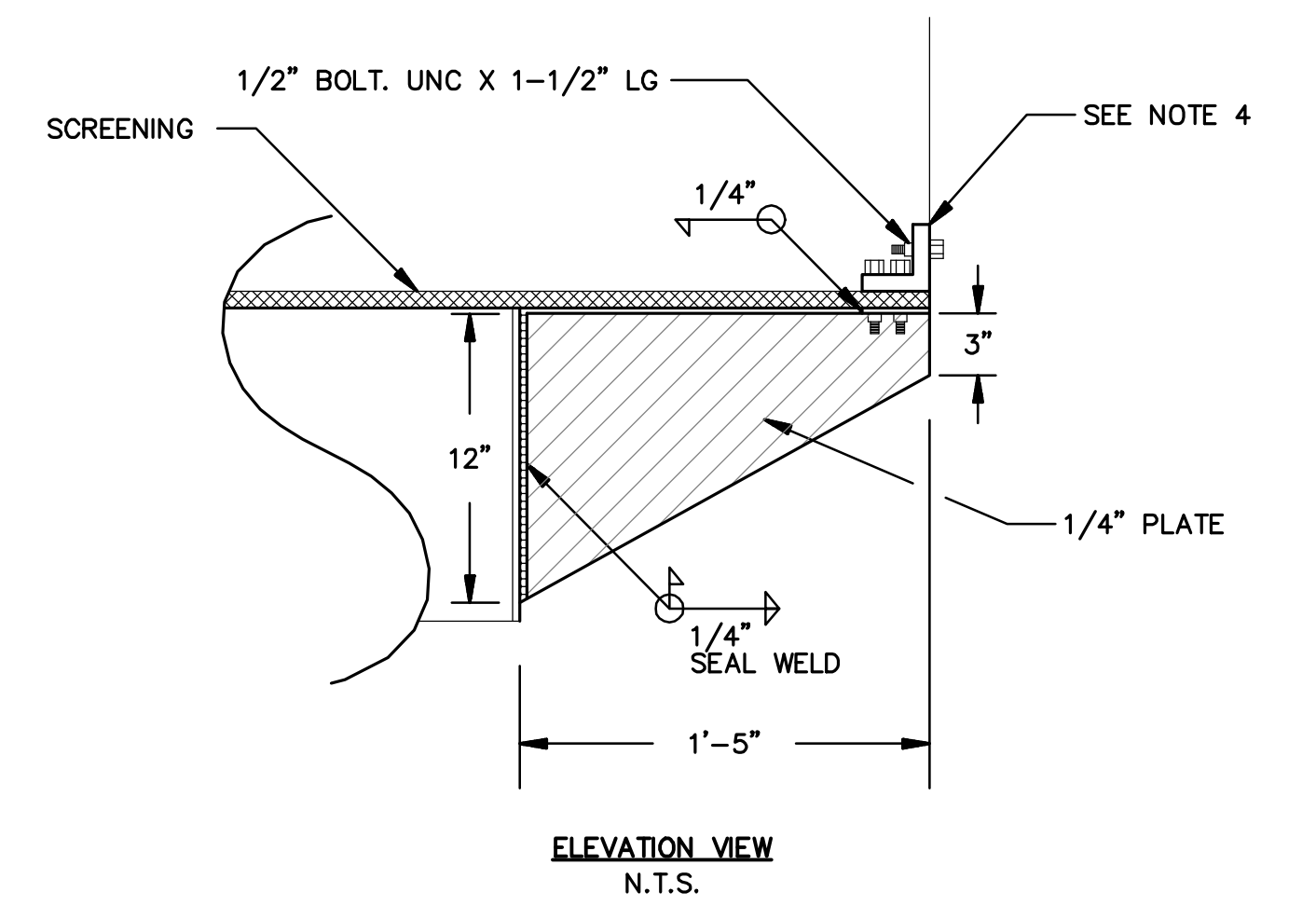


NOTES:

1. SCREEN SHALL NOT BE INSTALLED BEFORE TANK PAINTING IS COMPLETE, BUT SHALL BE INSTALLED PRIOR TO DISINFECTION.
2. INSTALL INSULATIVE SLEEVES AND GASKETS WHERE DISSIMILAR METEALS TOUCH.
3. WIRE MESH INSECT SCREEN, BRONZE, MAXIMUM OPENING SIZE 1/8" X 1/8".
4. 3" X 3" X 16 GAGE MINIMUM STEEL PLATES NEED TO BE EMBEDDED INTO FIBERGLASS COVER AT THE BOLT CONNECTIONS.



CENTER VENT
N.T.S.



DETAIL A
N.T.S.

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH09.dwg Aug 12, 2020 - 4:16pm

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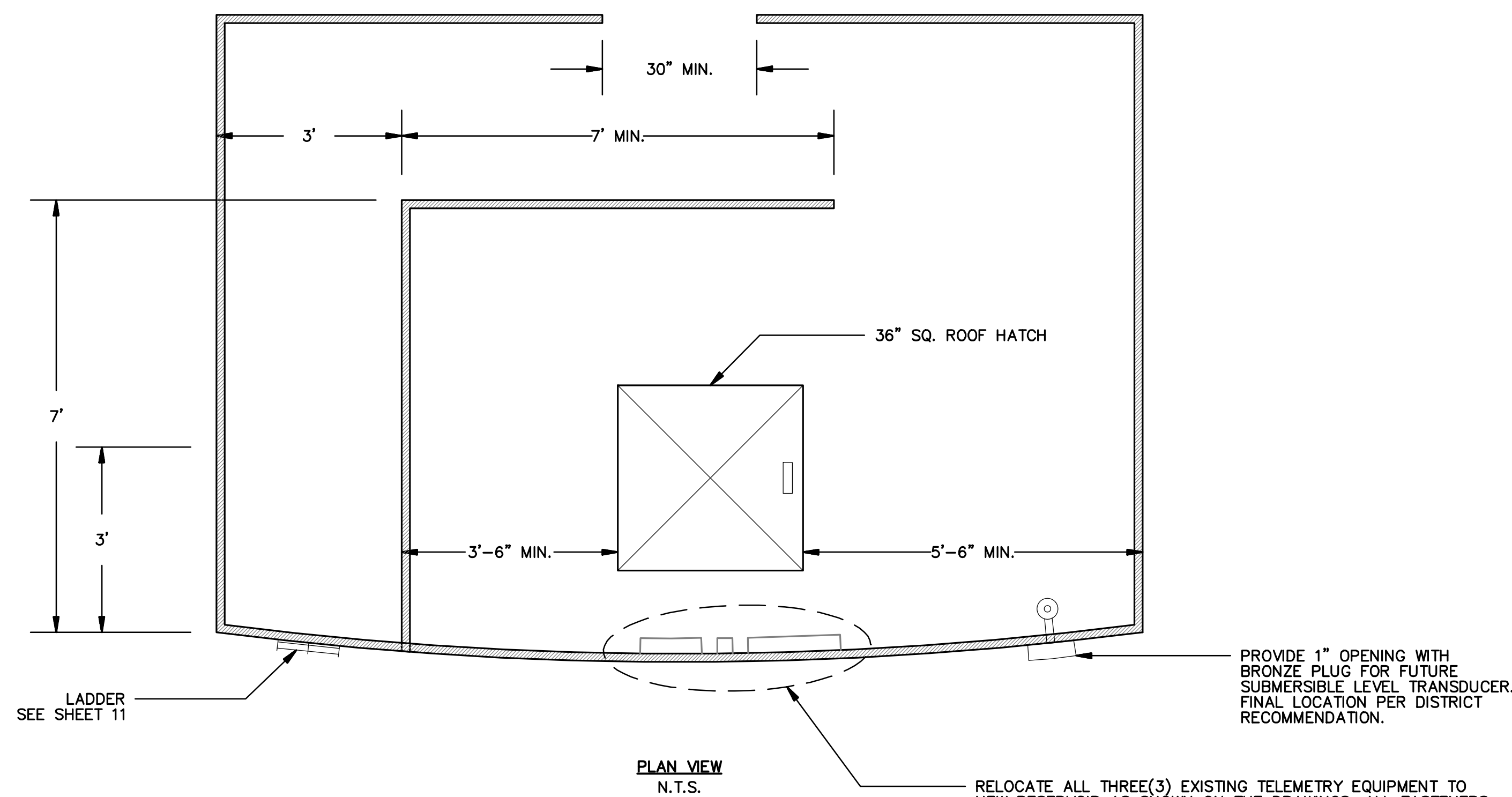
TKE
ENGINEERING
STEVEN W. LEDBETTER
REGISTERED ENGINEER No. 84044

DRAWN BY: KM
DESIGNED BY: SWL
CHECKED BY: SWL
RECOMMENDED BY:

APPROVED BY:
John C. ...
SAN ANTONIO WATER COMPANY GENERAL MANAGER
08/14/20
DATE

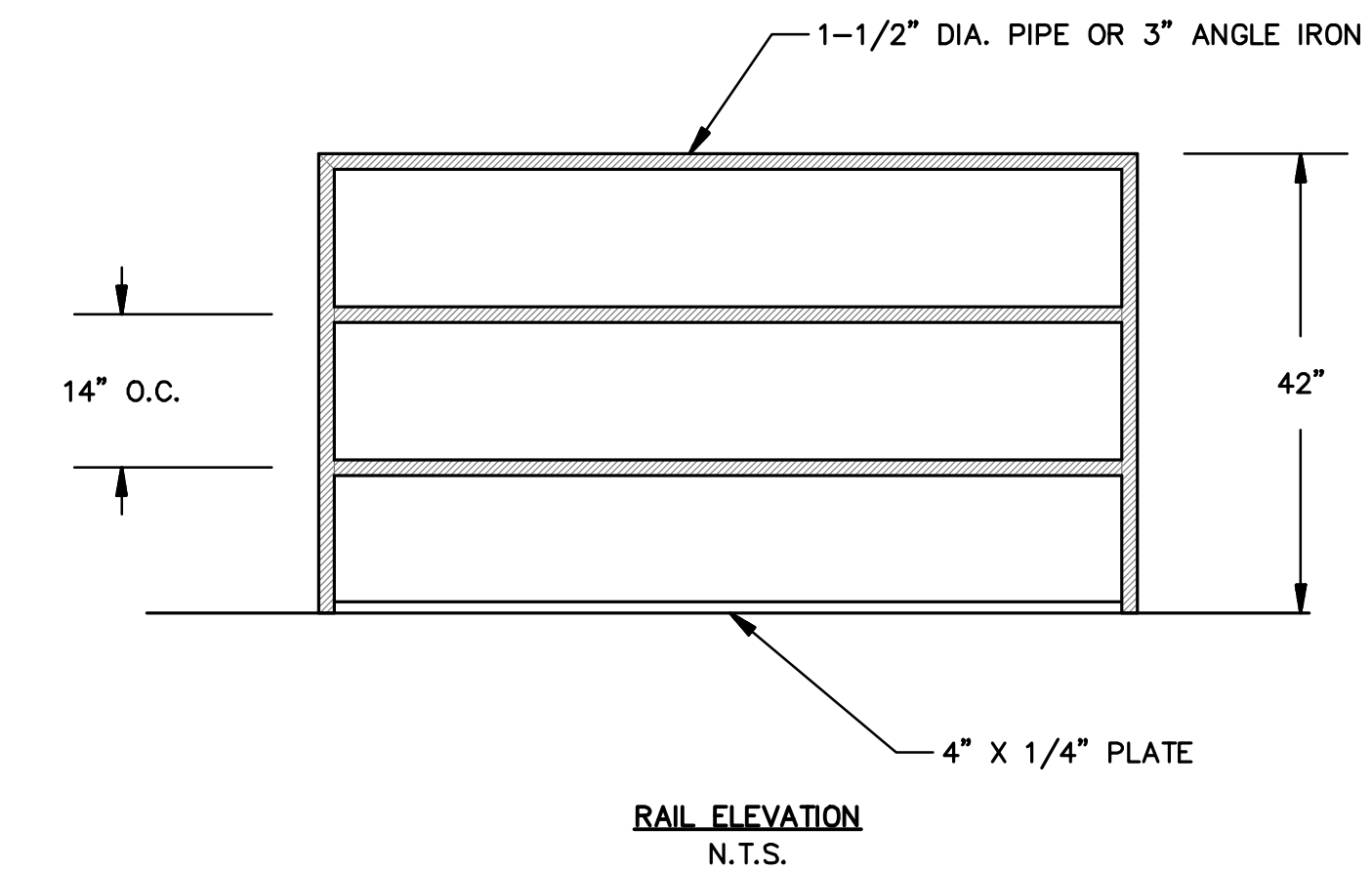
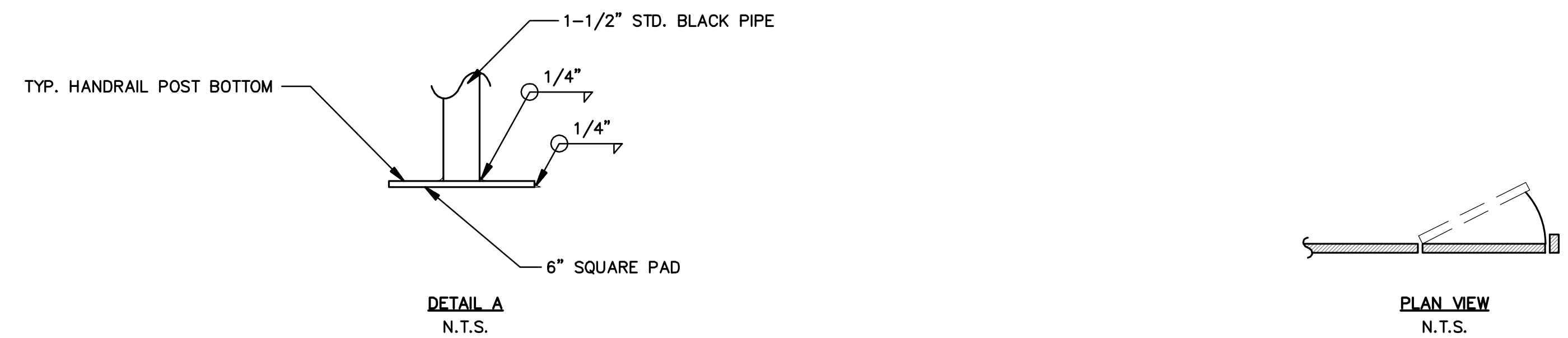
SAN ANTONIO WATER CO.
HOLLY DRIVE RESERVOIR
PHASE II
RESERVOIR DETAIL 2

WATER DRAWING NO. -
SHEET 9
OF 15 SHEET
DRAWING NO. D-3



- NOTES:**
1. CONFIGURATION MAY VARY, FIELD VERIFY MEASUREMENTS PRIOR TO FABRICATION.
 2. MINIMUM AISLE WALKING WIDTH OF 36"

HANDRAILING LAYOUT
N.T.S.



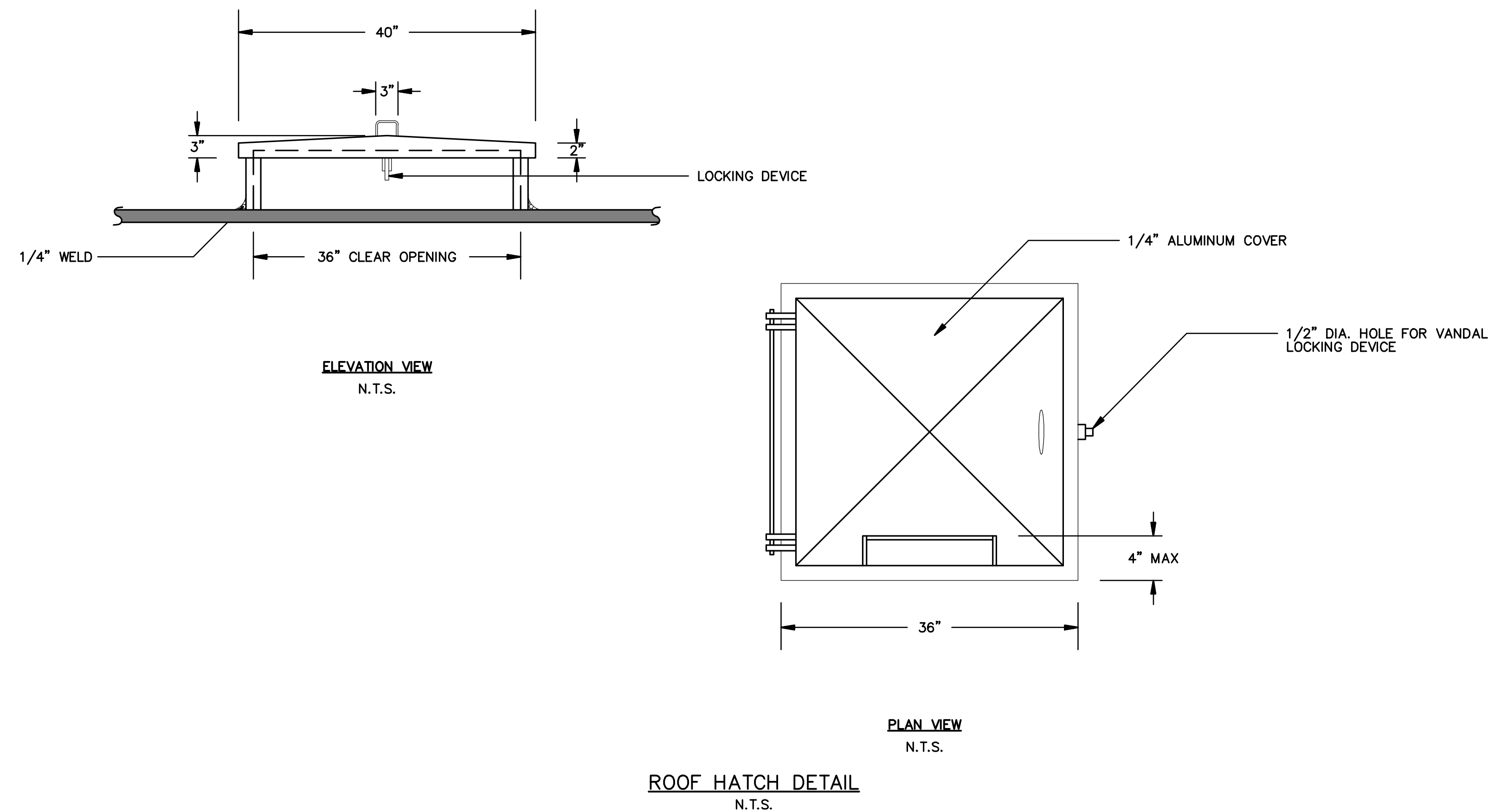
HANDRAILING DETAIL
N.T.S.



EXISTING SCADA IMAGES
N.T.S.

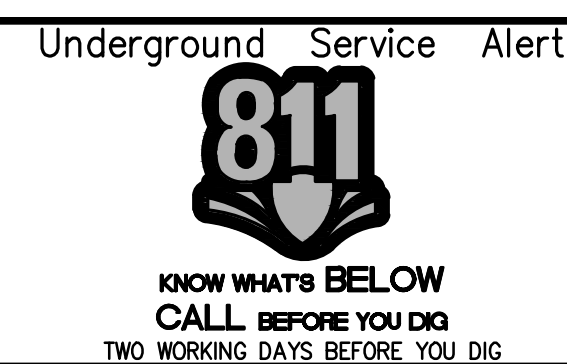


NOTE:
RELOCATE ALL THREE(3) EXISTING TELEMETRY EQUIPMENT TO NEW RESERVOIR AS SHOWN ON THE DRAWINGS. ALL FASTENERS, SCREWS, AND BOLTS SHALL BE 304SS OR BETTER. RELOCATION OF ALL THREE (3) TELEMETRY EQUIPMENT SHALL BE PER DISTRICT RECOMMENDATION.

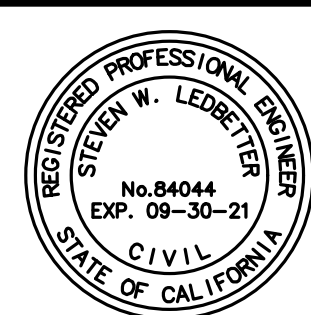


ROOF HATCH DETAIL
N.T.S.

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH10.dwg Aug 12, 2020 - 4:23pm



REVISIONS					
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REGISTERED ENGINEER No. 84044

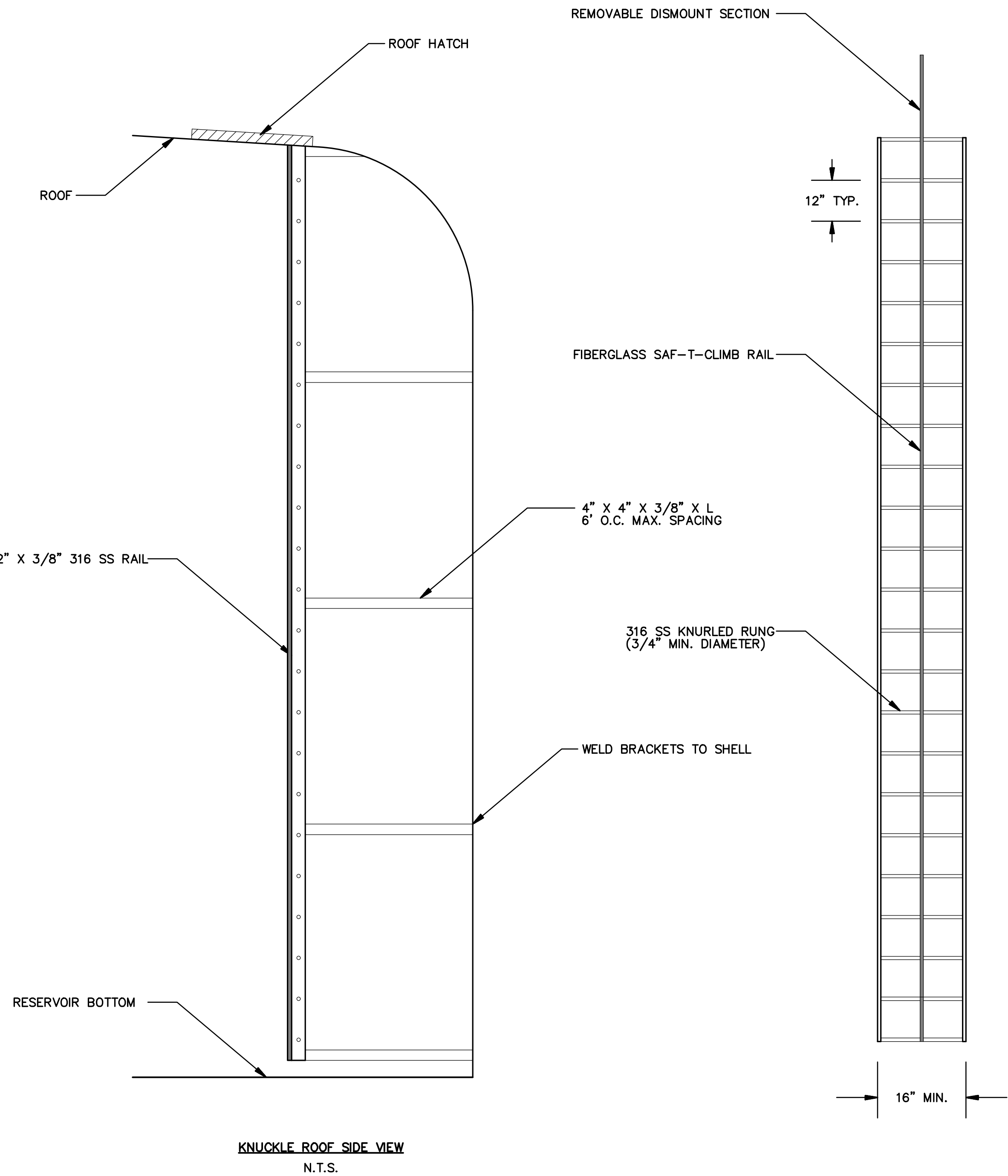
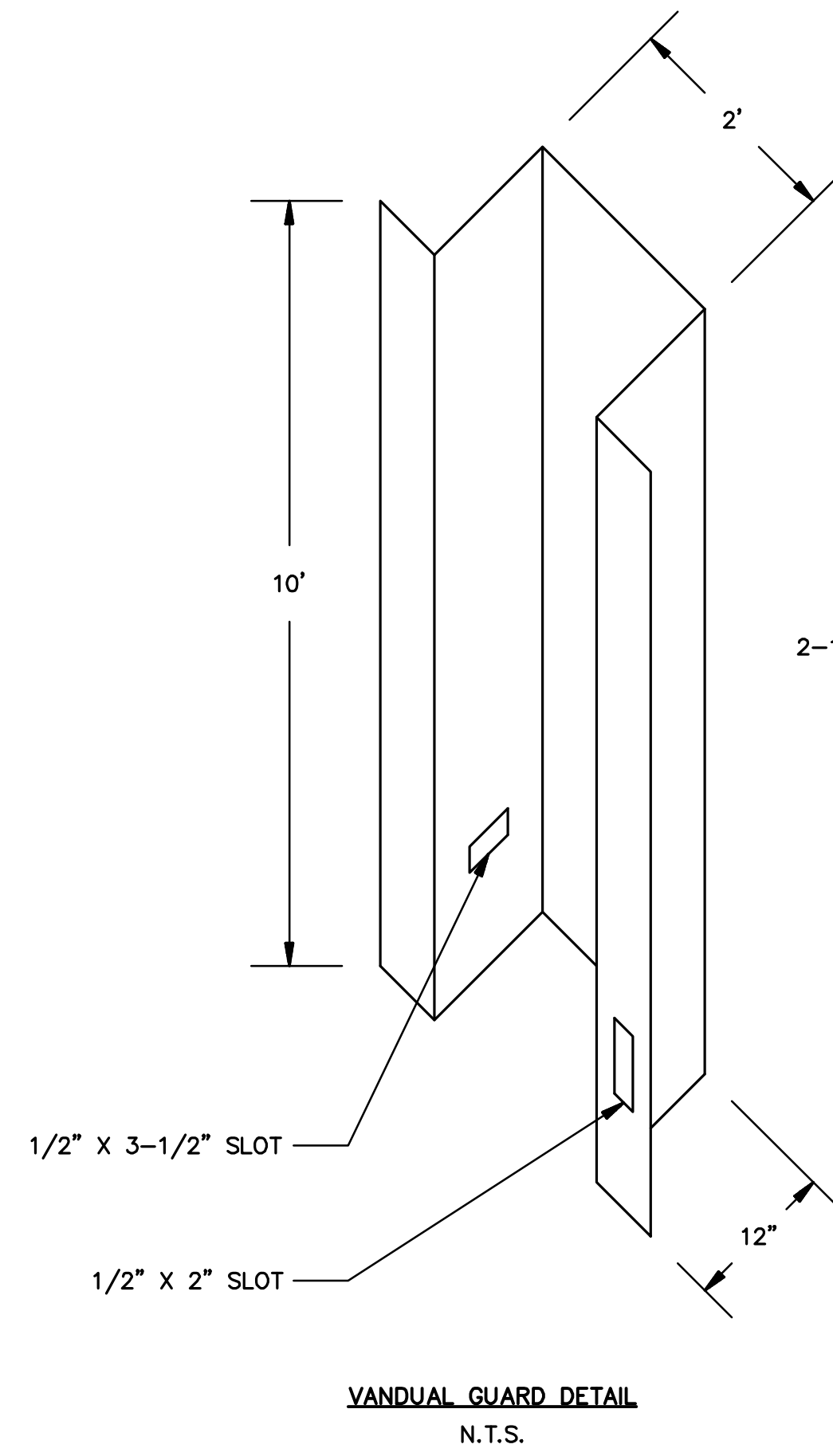
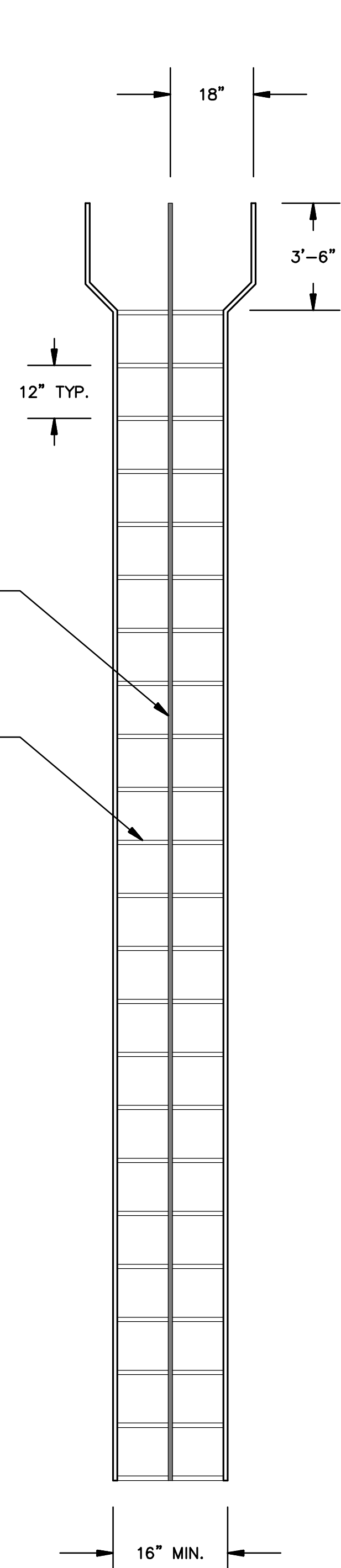
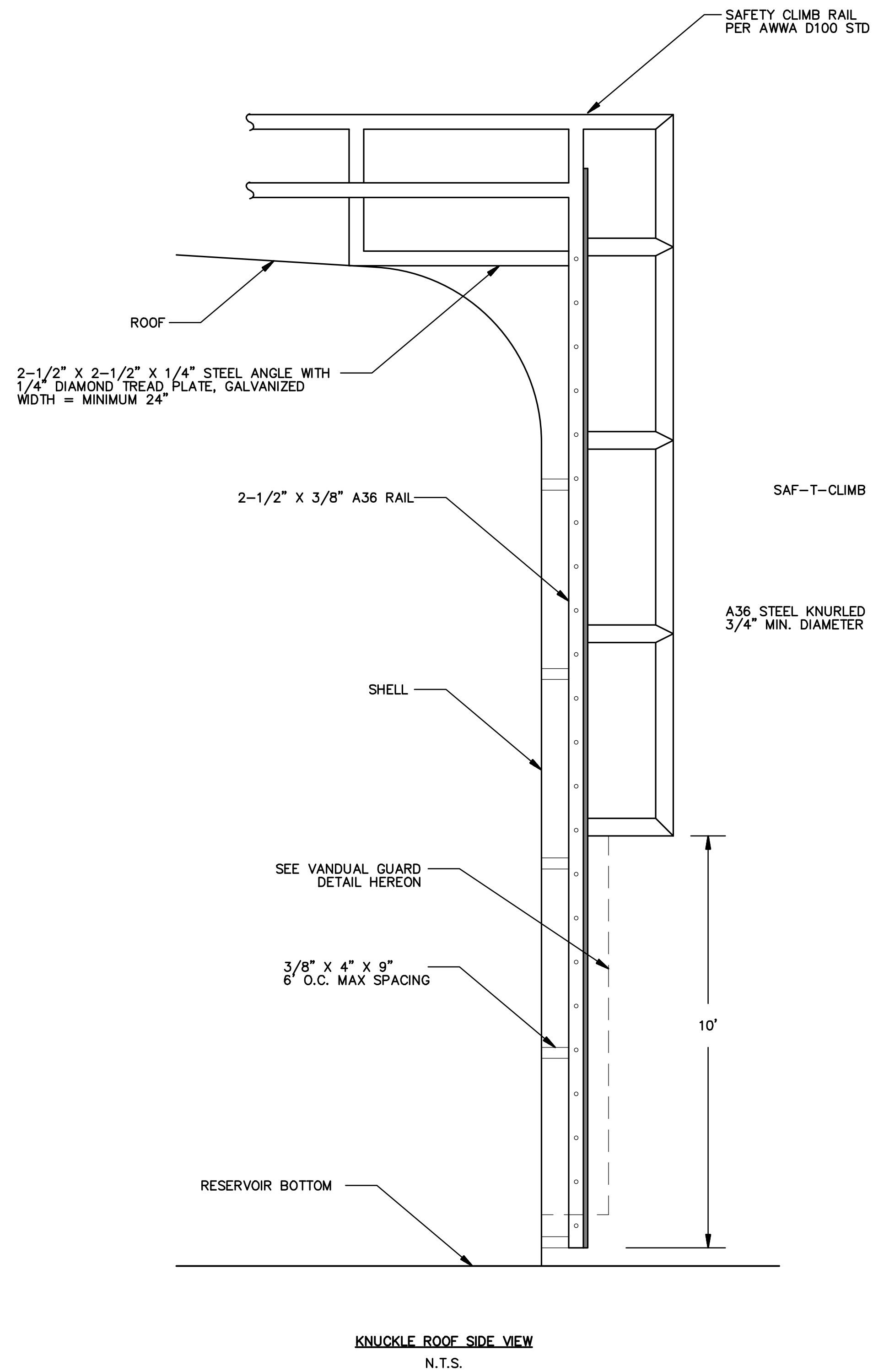
TKE ENGINEERING, INC.
2305 CHICAGO AVENUE
RIVERSIDE, CA 92507
(951) 680-0440
FAX: (951) 680-0490

DRAWN BY: KM
DESIGNED BY: SWL
CHECKED BY: SWL
RECOMMENDED BY: *[Signature]*
APPROVED BY: *[Signature]*
SAN ANTONIO WATER COMPANY GENERAL MANAGER
08/14/20 DATE

SAN ANTONIO WATER CO.
HOLLY DRIVE RESERVOIR
PHASE II
RESERVOIR DETAIL 3

WATER DRAWING NO. -
SHEET 10
OF 15 SHEET
DRAWING NO. D-4

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH11.dwg Aug 12, 2020 - 4:23pm



EXTERIOR LADDER DETAIL
N.T.S.

INTERIOR LADDER DETAIL
N.T.S.

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 TKE ENGINEERING, INC.
 2305 CHICAGO AVENUE
 RIVERSIDE, CA 92507
 (951) 680-0440
 FAX: (951) 680-0490
 08-13-2020
 STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

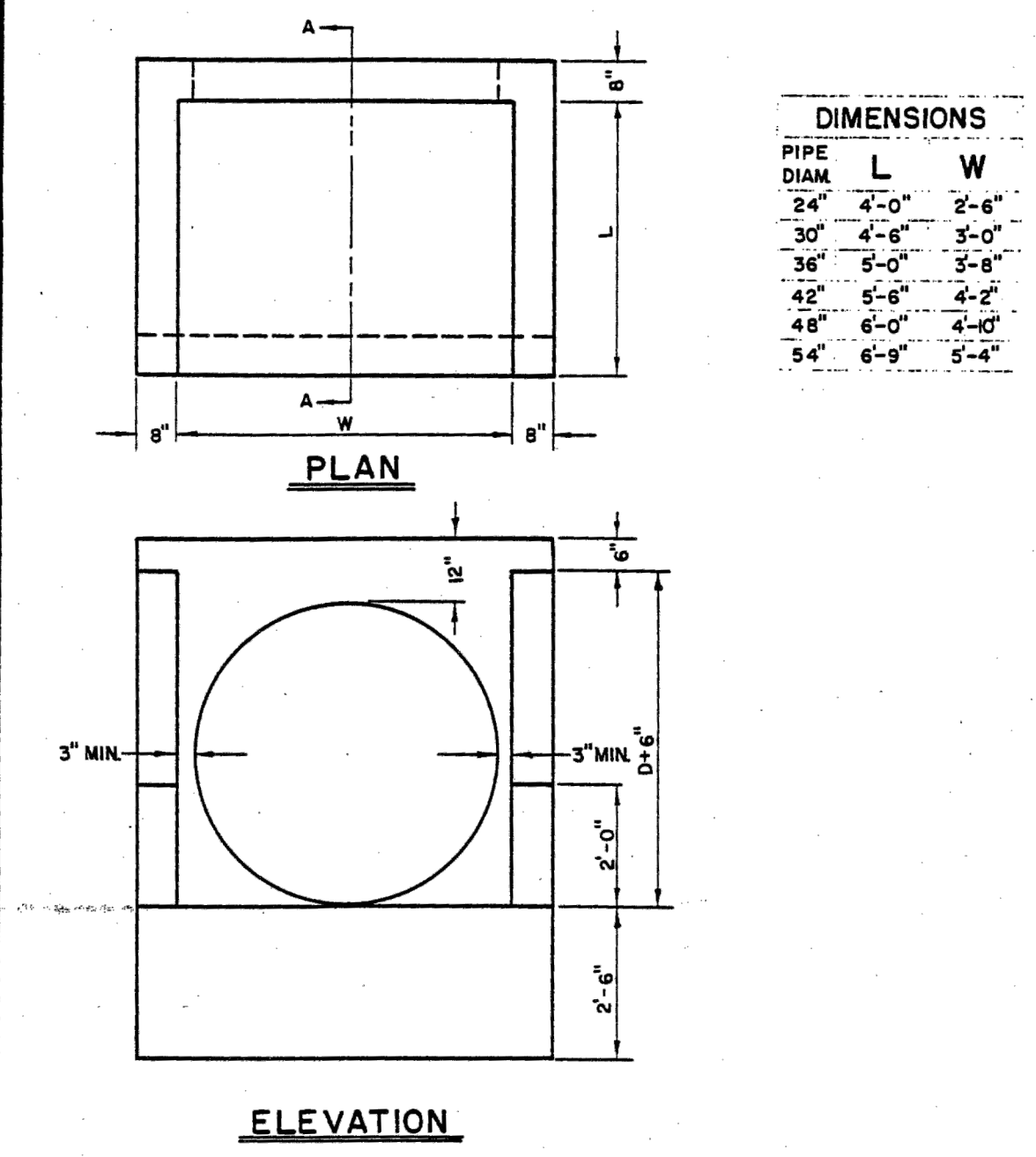
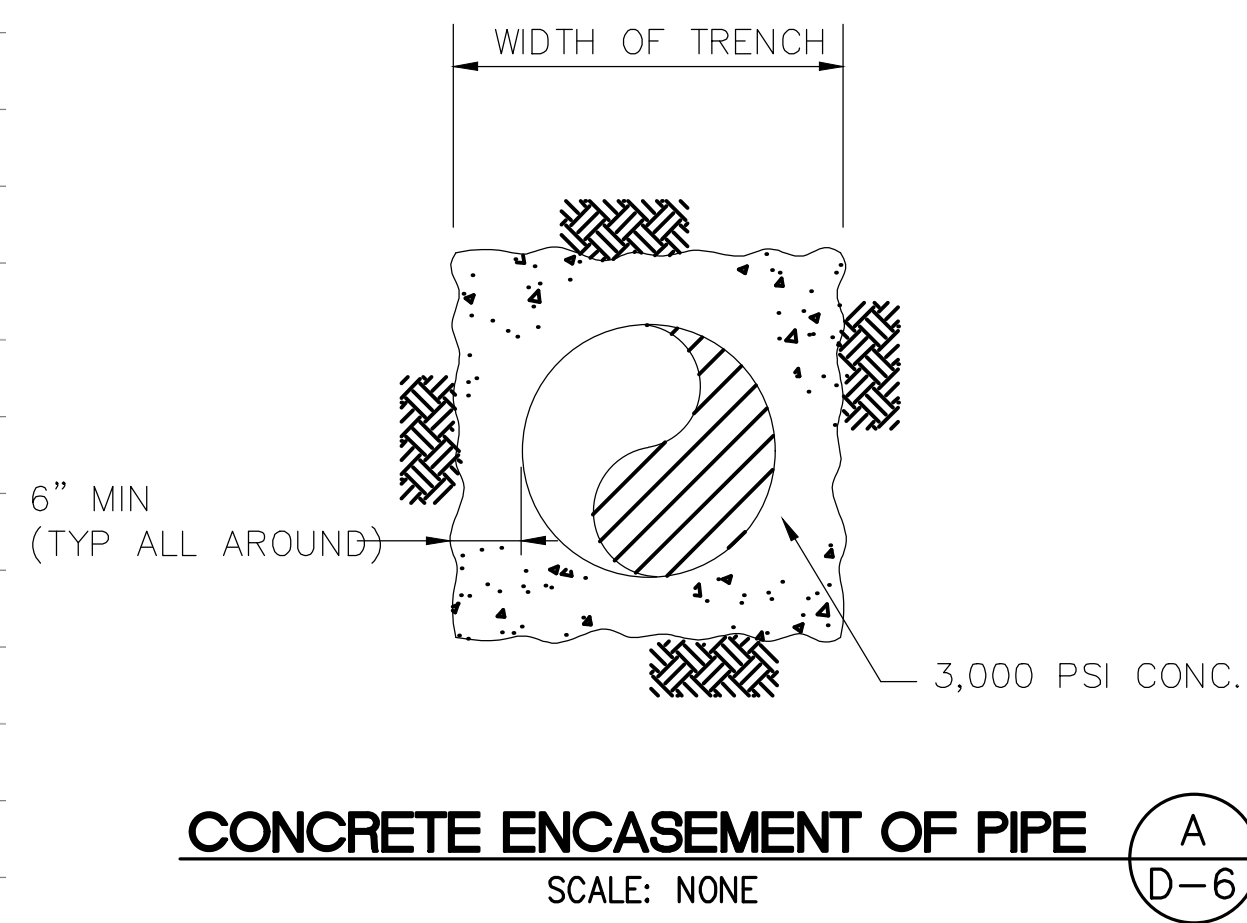
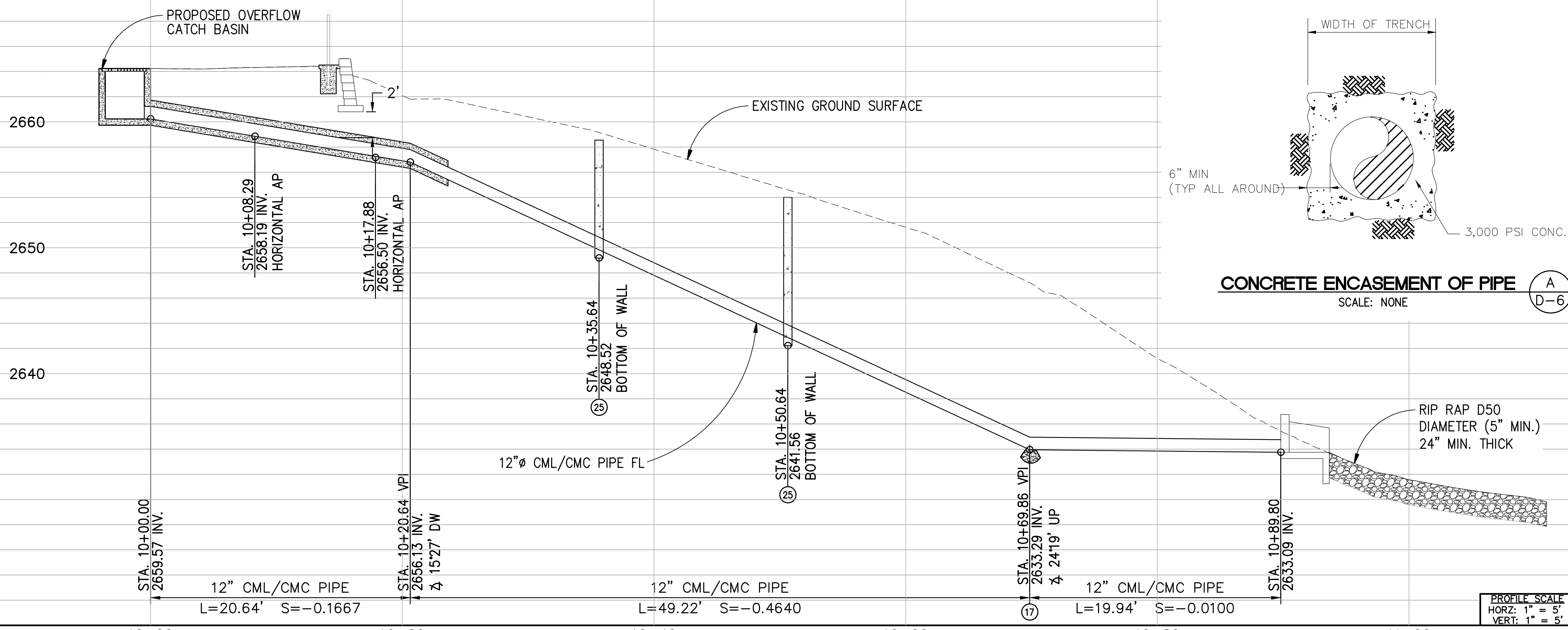
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 CHECKED BY: SWL
 RECOMMENDED BY:

APPROVED BY:

 SAN ANTONIO WATER COMPANY GENERAL MANAGER
 08/14/20
 DATE

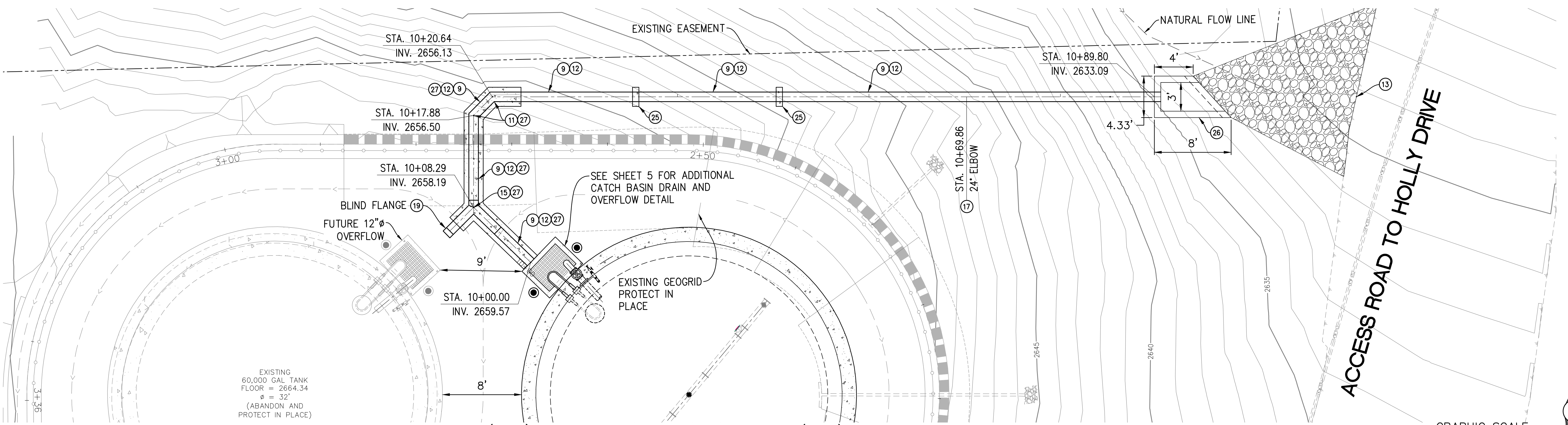
SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 RESERVOIR DETAIL 4

WATER DRAWING NO. -
 SHEET 11
 OF 15 SHEET
 DRAWING NO. D-5

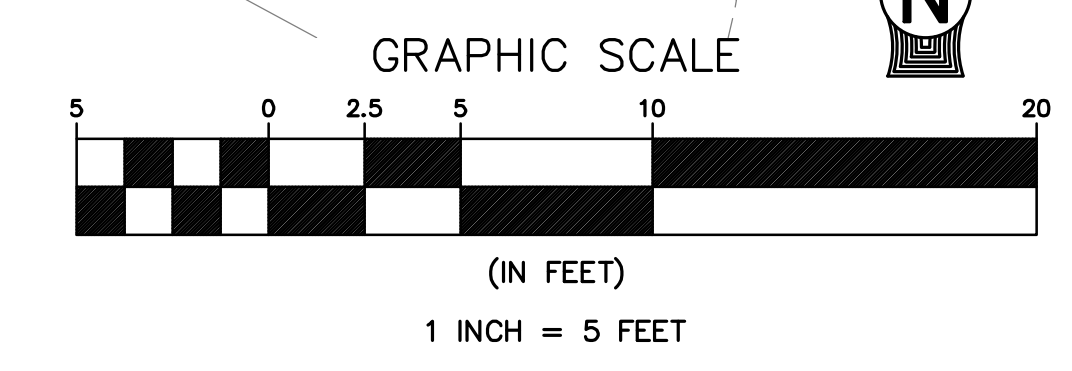


NOTES:
 1. REINFORCING STEEL IN WALLS AND BASE SHALL BE THE SAME AS STD. NO. 209.
 2. NOTES SHALL BE THE SAME AS STD. NO. 209.
 3. SECTION A-A IS THE SAME AS STD. NO. 209.

SAN BERNARDINO COUNTY ROAD DEPARTMENT DATE: 08-13-2020	M. A. Nicholas COUNTY ENGINEER	HEADWALL 'U'-TYPE	209A
---	-----------------------------------	----------------------	------



- CONSTRUCTION NOTES:**
- 9 EXCAVATION AND BACKFILL PER SAN ANTONIO WATER COMPANY STANDARD DRAWING NO. SAWCO-4.
 - 11 INSTALL 12" Ø STD. WT. 45' LR BEND (CML/CMC)
 - 12 CONSTRUCT 12" Ø DRAIN CML/CMC INLET/OUTLET PIPE.
 - 13 CONSTRUCT RIP-RAP D50 DIAMETER (5" MIN.), 24" MIN. THICK.
- CONSTRUCTION NOTES: (CONT.)**
- 15 INSTALL 12"x12"x12" Ø STEEL CML/CMC 90° WYE.
 - 17 CONSTRUCT HORIZONTAL BEND THRUST BLOCK PER STD SAWCO 13 (1 OF 3) ON SHEET 3.
 - 19 INSTALL 12" Ø BLIND FLANGE.
 - 25 CONSTRUCT SLOPE PROTECTION CUT-OFF WALL PER STD SAWCO-14 ON SHEET 3.
- CONSTRUCTION NOTES: (CONT.)**
- 26 CONSTRUCT HEADWALL PER SAN BERNARDINO COUNTY ROAD DEPARTMENT STANDARD DRAWING NO. 209A.
 - 27 CONSTRUCT 8" THICK, 12" MIN. ALL AROUND CONCRETE COLLAR (3,000 PSI) PER DETAIL "A" ON SHEET 12.



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TKE ENGINEERING

TKE ENGINEERING, INC.
 2305 CHICAGO AVENUE
 RIVERSIDE, CA 92507
 (951) 680-0440
 FAX: (951) 680-0490
 08-13-2020
 STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

DRAWN BY: KM
 DESIGNED BY: SWL
 CHECKED BY: SWL
 RECOMMENDED BY:

APPROVED BY: *[Signature]*
 SAN ANTONIO WATER COMPANY GENERAL MANAGER
 08/14/20 DATE

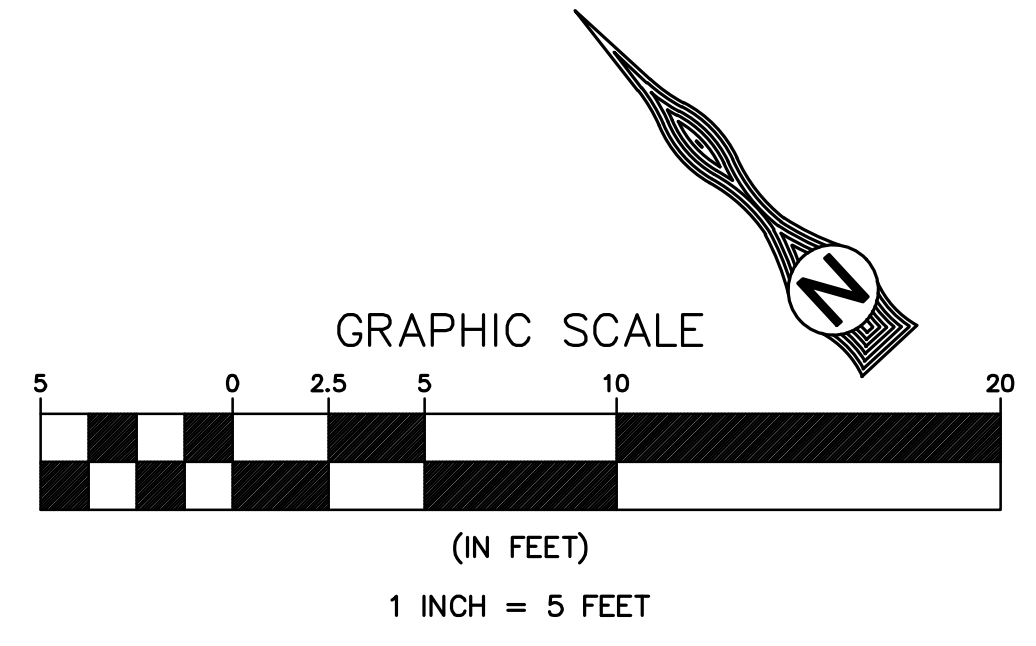
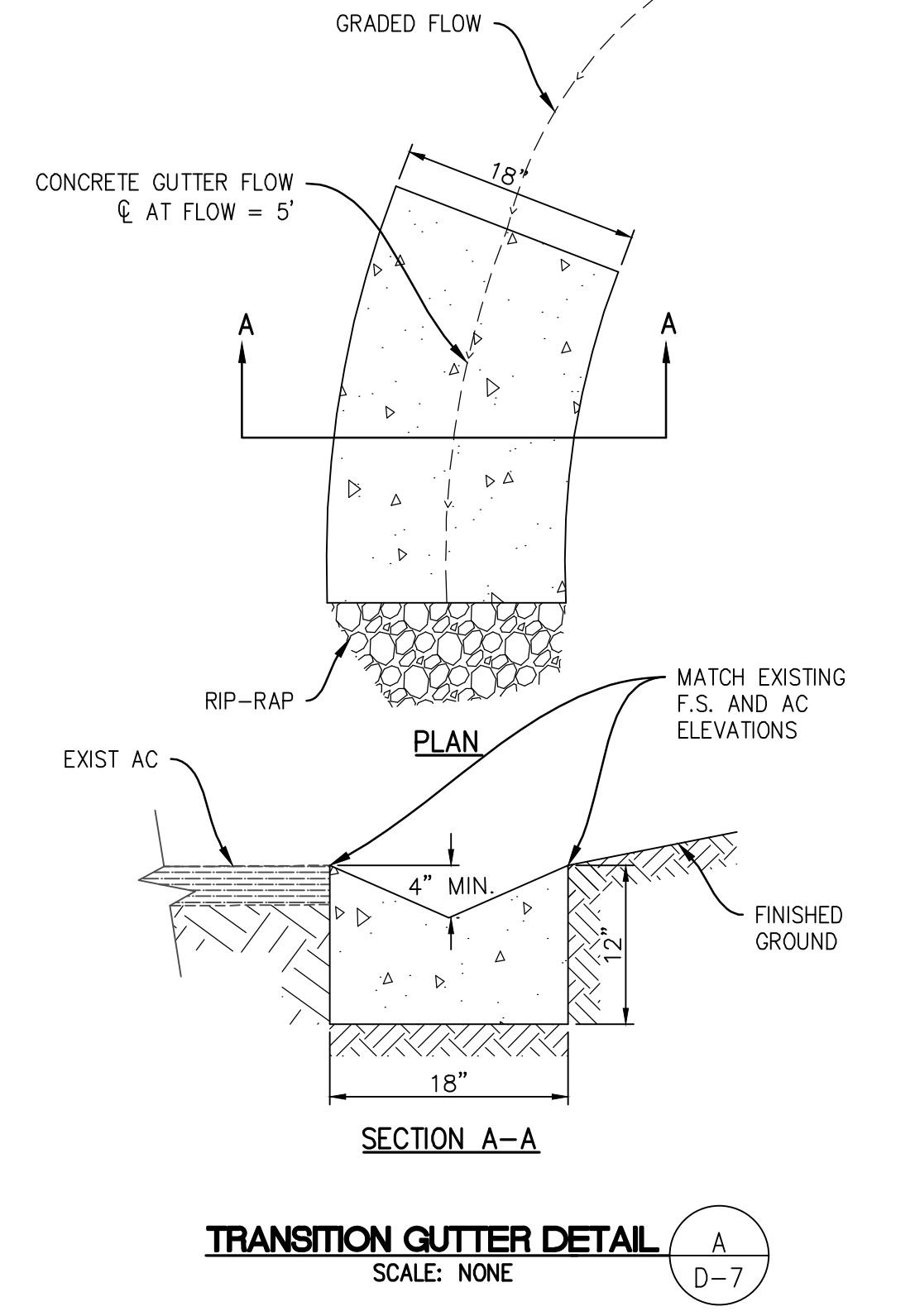
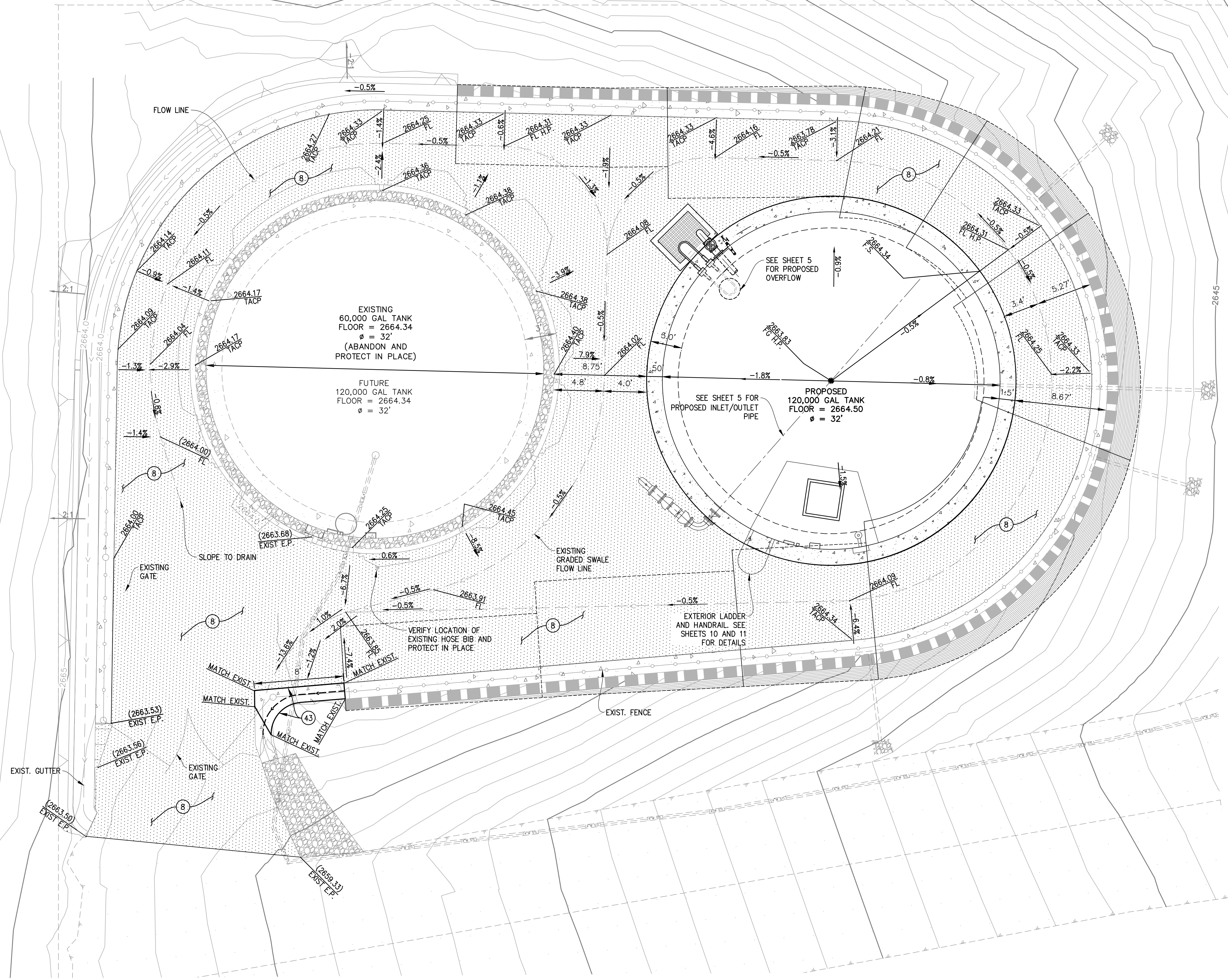
SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 12" OVERFLOW PROFILE REVISED

WATER DRAWING NO. -
 SHEET 12
 OF 15 SHEET
 DRAWING NO. D-6

CONSTRUCTION NOTES:

- 8) CONSTRUCT 3" AC PAVEMENT OVER 4" CLASS II BASE PER DETAIL "D" ON SHEET 6.
- 43) EXTEND 12" THICK, 18" WIDE CONCRETE SWALE TO MATCH EXISTING CONDITION PER DETAIL "A" ON SHEET 13.

HATCH LEGEND:



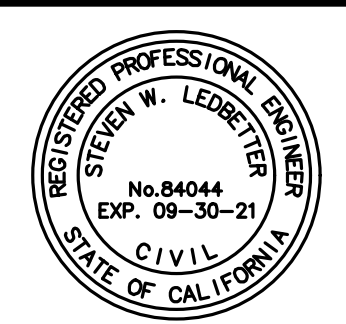
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2305 CHICAGO AVENUE
RIVERSIDE, CA 92507
(951) 680-0440
FAX: (951) 680-0490
08-13-2020
STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

DRAWN BY:	KM	APPROVED BY:	
DESIGNED BY:	SWL		
CHECKED BY:	SWL		
RECOMMENDED BY:			

08/14/20 DATE
SAN ANTONIO WATER COMPANY GENERAL MANAGER

SAN ANTONIO WATER CO.
HOLLY DRIVE RESERVOIR
PHASE II
PAVING PLAN

WATER DRAWING NO.	-
SHEET	13
OF 15 SHEET	
DRAWING NO.	D-7



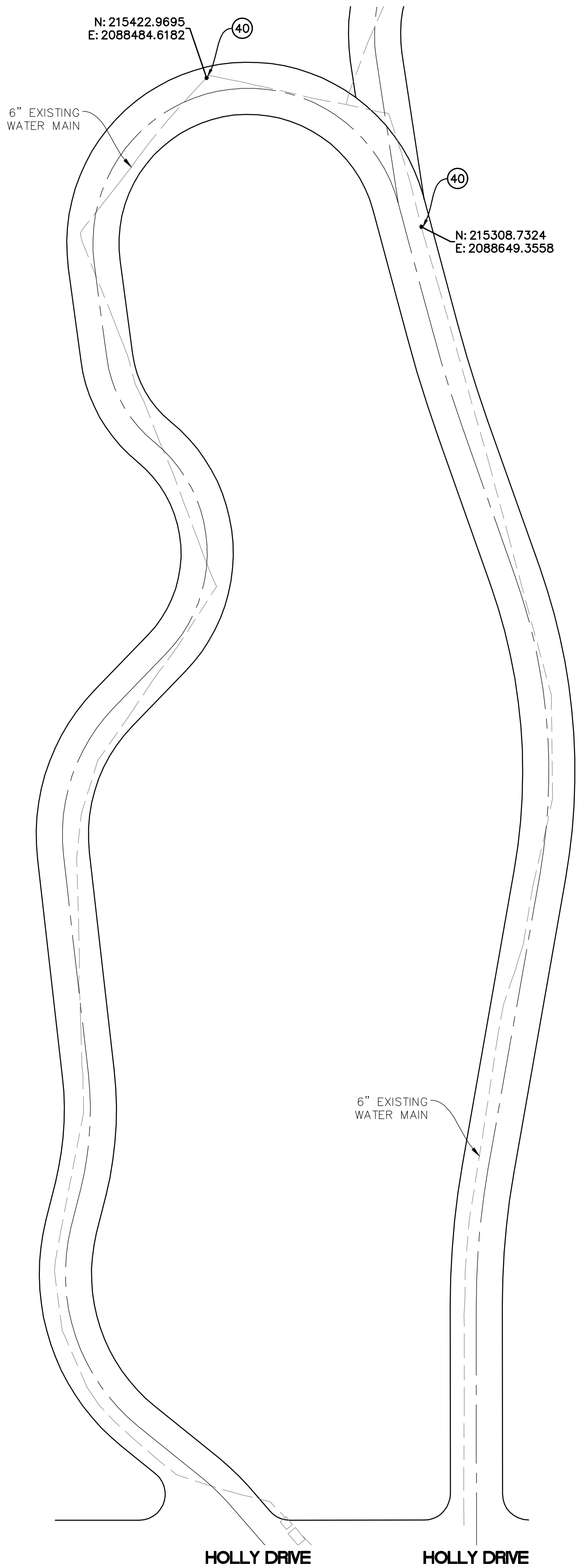
HOLLY DRIVE RESERVOIR — 0.6 MG
HWL = 2675

N: 215422.9695
E: 2088484.6182

N: 215308.7324
E: 2088649.3558

CONSTRUCTION NOTES:
 (40) INSTALL ISOLATION 6" GATE VALVE PER SAN ANTONIO WATER COMPANY STANDARD
 DRAWING NO. SAWCO - 2 AND SAWCO - 5.

NOTE:
 PRIOR TO CONSTRUCTION VERIFY LOCATION AND
 DEPTH OF THE EXISTING WATER MAIN AND VALVES.

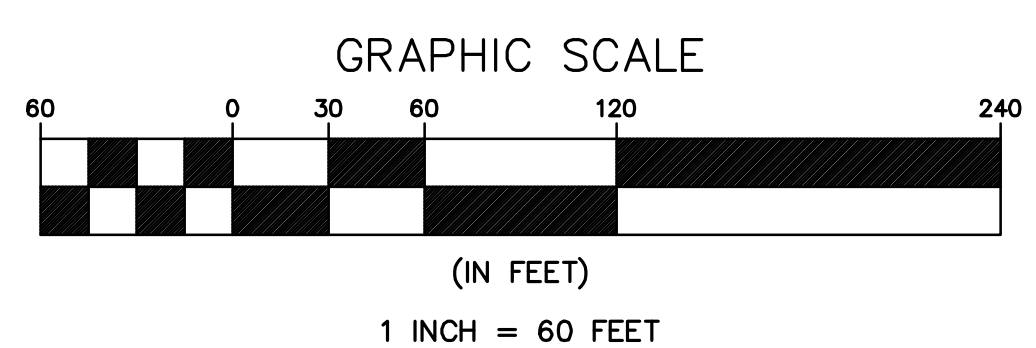
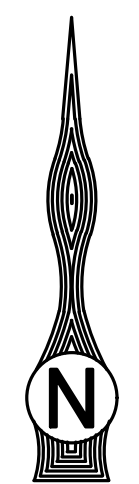
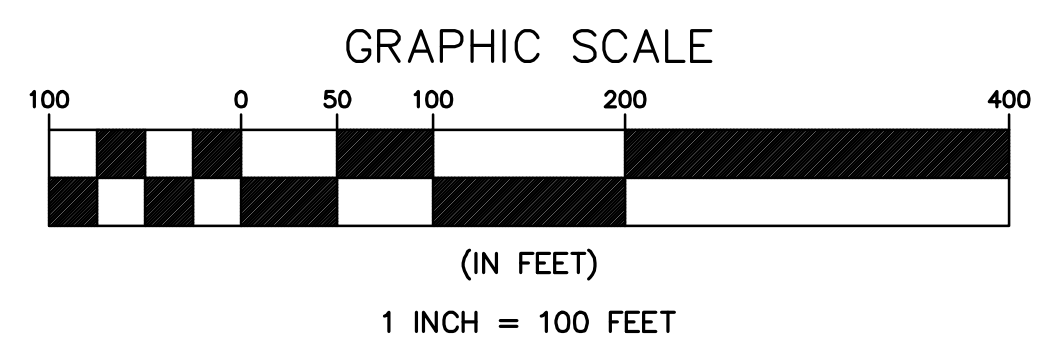
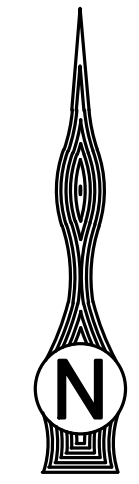


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E: 2088484.6182

N: 215308.7324
E: 2088649.3558

HOLLY DRIVE HOLLY DRIVE

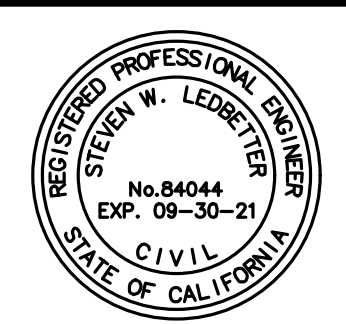
HOLLY DRIVE HOLLY DRIVE



BENCH MARK
 BENCH 23F-86 2" CITY OF UPLAND BRASS DISC
 SET IN PCC BASE FOR STREET LIGHT # 2269463E,
 41' WEST OF MOUNTAIN AVE CENTERLINE AND 272'
 SOUTH OF 24TH STREET CENTERLINE.
 ELEV. = 1988.288'

Underground Service Alert

REVISIONS					
MARK	DATE	INITIAL	DESCRIPTION	DATE	APP'VD



TKE
 ENGINEERING
 STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

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 2305 CHICAGO AVENUE
 RIVERSIDE, CA 92507
 (951) 680-0440
 FAX: (951) 680-0490

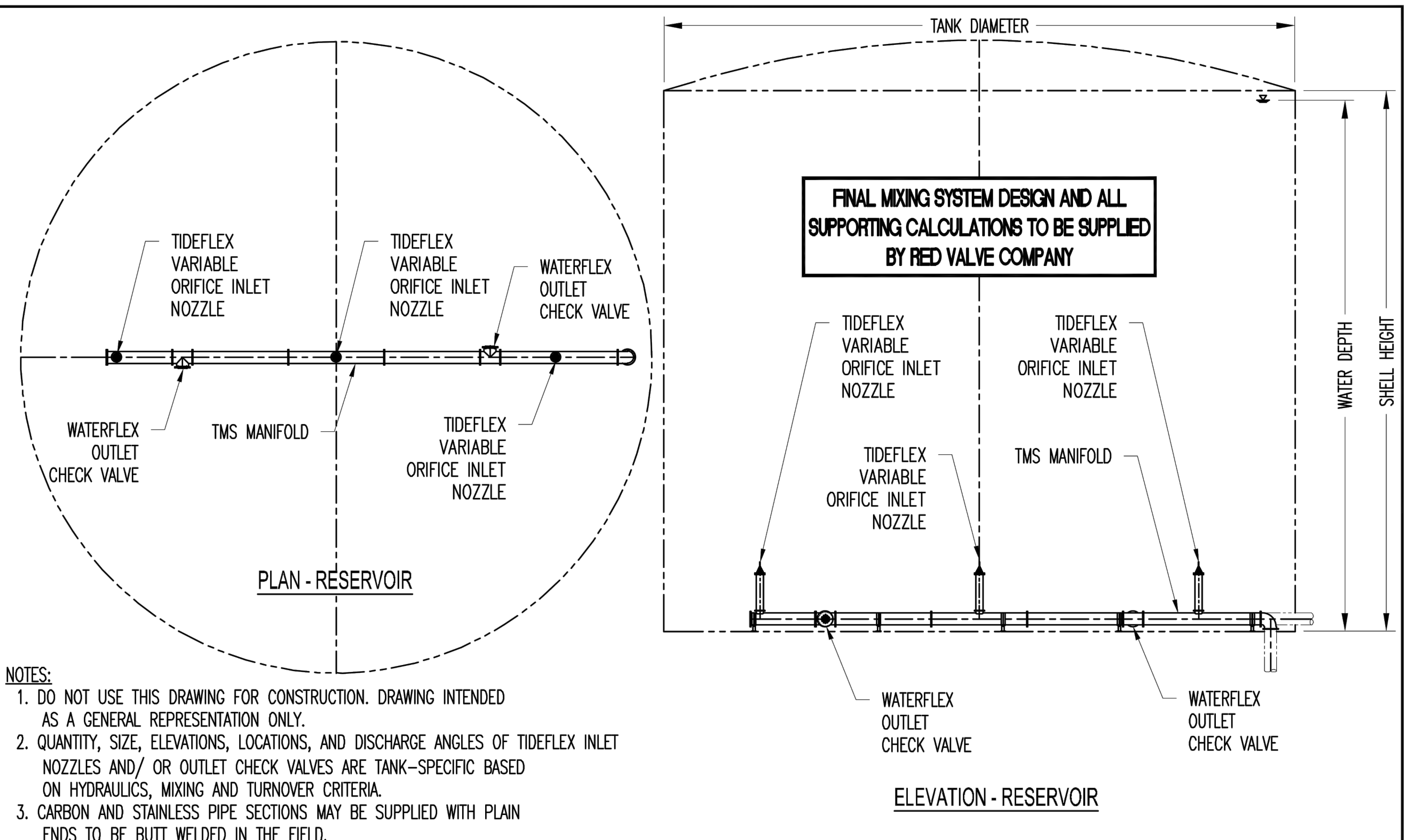
DRAWN BY: KM
 DESIGNED BY: SWL
 CHECKED BY: SWL
 RECOMMENDED BY: *John C. [Signature]*
 SAN ANTONIO WATER COMPANY GENERAL MANAGER
 DATE: 08/14/20

SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 OFFSITE HOLLY DRIVE
 SHUT OFF VALVES

WATER DRAWING NO. —
 SHEET 14
 OF 15 SHEET
 DRAWING NO. D-8

S:\CADD\112-16 Holly Drive Reservoir\Phase2\112-16-PH2-SH14.dwg Aug 12, 2020 - 4:24pm

CANADIAN PATENT NUMBER: 2,409,009
 UNITED STATES PATENT NUMBER: 7,104,279



NOTES:
 1. DO NOT USE THIS DRAWING FOR CONSTRUCTION. DRAWING INTENDED AS A GENERAL REPRESENTATION ONLY.
 2. QUANTITY, SIZE, ELEVATIONS, LOCATIONS, AND DISCHARGE ANGLES OF TIDEFLEX INLET NOZZLES AND/ OR OUTLET CHECK VALVES ARE TANK-SPECIFIC BASED ON HYDRAULICS, MIXING AND TURNOVER CRITERIA.
 3. CARBON AND STAINLESS PIPE SECTIONS MAY BE SUPPLIED WITH PLAIN ENDS TO BE BUTT WELDED IN THE FIELD.

FINAL MIXING SYSTEM DESIGN AND ALL SUPPORTING CALCULATIONS TO BE SUPPLIED BY RED VALVE COMPANY

THE DESIGN INFORMATION WITHIN THESE DOCUMENTS IS THE INTELLECTUAL PROPERTY OF RED VALVE COMPANY/TIDEFLEX TECHNOLOGIES. THESE DOCUMENTS SHALL NOT BE USED TO CONSTRUCT DUPLICATE SYSTEMS; USE OF THESE DOCUMENTS AND/OR CONSTRUCTION OF DUPLICATE SYSTEMS SHALL VIOLATE THE COPYRIGHT AND PATENT PROTECTION LAWS ASSOCIATED WITH THIS PATENTED PRODUCT. THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF RED VALVE COMPANY/TIDEFLEX TECHNOLOGIES AND ARE DISTRIBUTED FOR THE SOLE PURPOSE OF COORDINATING THE INSTALLATION OF THE SYSTEM(S) PROVIDED BY RED VALVE COMPANY / TIDEFLEX TECHNOLOGIES.

REV	BY	DATE	DESCRIPTION

Tideflex Technologies
 TIDEFLEX TECHNOLOGIES
 TIDEFLEX MIXING SYSTEM
 700 N. BELL AVENUE
 CARNEGIE, PA 15106 USA
 PHONE: 412-279-0044
 FAX: 412-279-5410
 WEBSITE: WWW.TIDEFLEX.COM
 EMAIL: INFO@TIDEFLEX.COM

A Division of Red Valve Company, Inc.

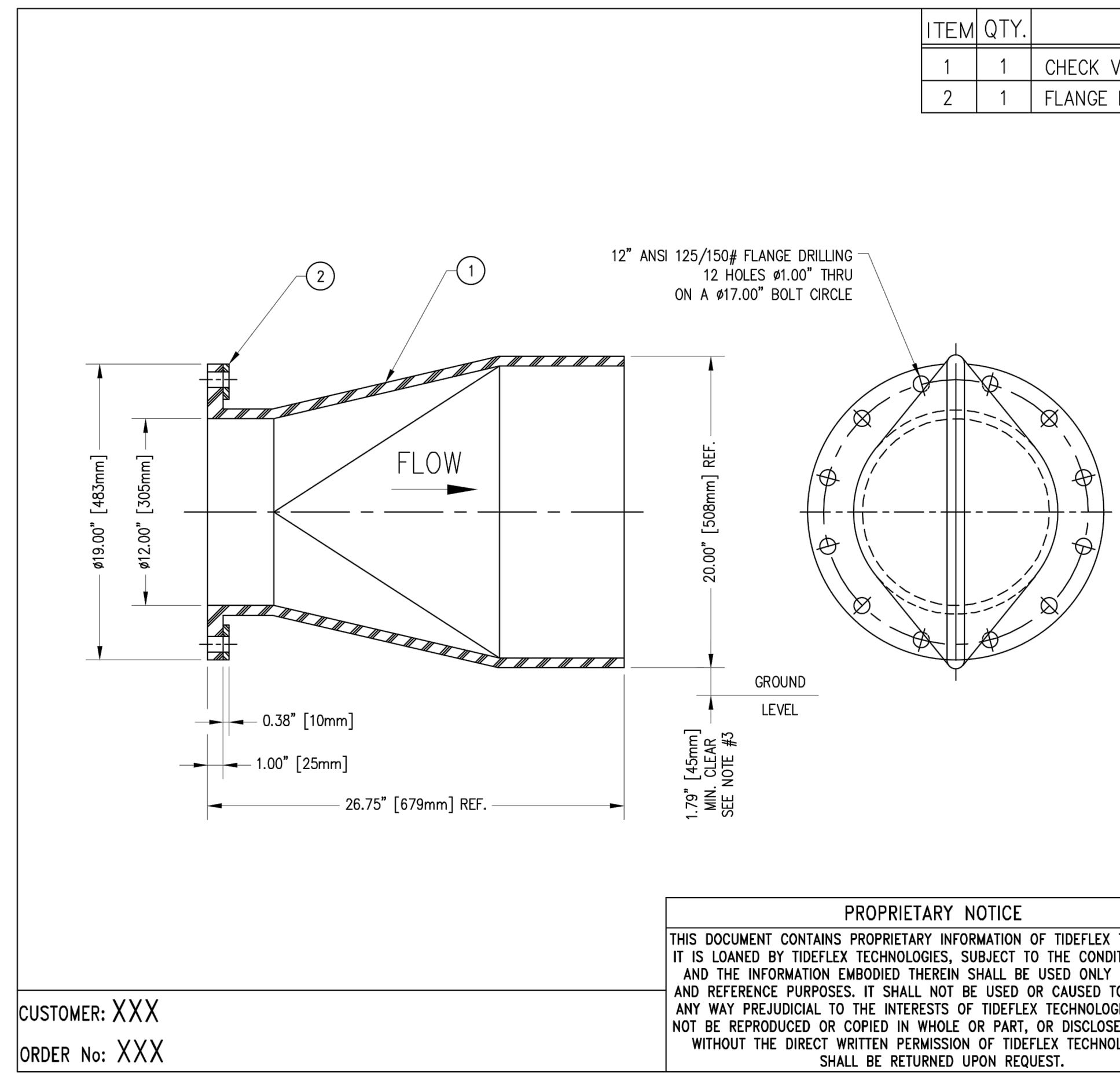
TMS GENERAL ARRANGEMENT FOR GROUND LEVEL CIRCULAR RESERVOIRS AND BOLTED COMPOSITE ELEVATED TANKS

CONSULTANT:
 APPLICATION: (TMS) TIDEFLEX MIXING SYSTEM
 SCALE: FULL PLOT: DWG. NO. TMS-CIR7 SHEET 1 OF 1
 DWG. BY: DJJ DATE: 12-30-15

TIDEFLEX DETAIL 1
 N.T.S

ITEM	QTY.	DESCRIPTION	MAT'L
1	1	CHECK VALVE SLEEVE	MUST BE SUPPLIED
2	1	FLANGE BACK-UP RING	MUST BE SUPPLIED

NOTES:
 1. MAXIMUM BACK PRESSURE: **MUST BE SUPPLIED**
 LINE PRESSURE: **MUST BE SUPPLIED**
 2. VALVE IS TO BE MOUNTED WITH THE OUTLET IN THE VERTICAL POSITION
 3. BECAUSE OF SAND, ROCK AND OTHER DEBRIS ACCUMULATION BY BACKFLOW OF WATER THE SUGGESTED BOTTOM CLEARANCE SHOULD BE PROVIDED

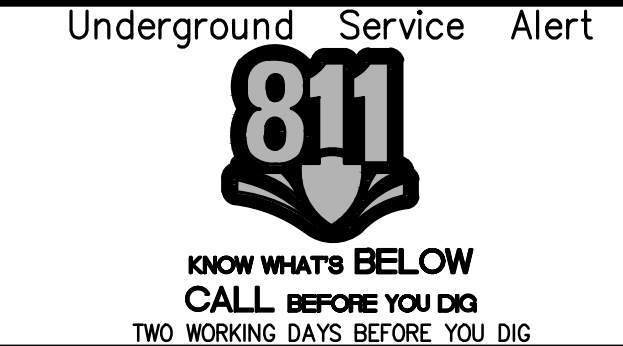


PROPRIETARY NOTICE
 THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF TIDEFLEX TECHNOLOGIES. IT IS LOANED BY TIDEFLEX TECHNOLOGIES, SUBJECT TO THE CONDITIONS THAT IT AND THE INFORMATION EMBODIED THEREIN SHALL BE USED ONLY FOR RECORD AND REFERENCE PURPOSES. IT SHALL NOT BE USED OR CAUSED TO BE USED IN ANY WAY PREJUDICIAL TO THE INTERESTS OF TIDEFLEX TECHNOLOGIES. IT SHALL NOT BE REPRODUCED OR COPIED IN WHOLE OR PART, OR DISCLOSED TO ANYONE WITHOUT THE DIRECT WRITTEN PERMISSION OF TIDEFLEX TECHNOLOGIES AND SHALL BE RETURNED UPON REQUEST.

CUSTOMER: XXX
 ORDER No: XXX

TIDEFLEX DETAIL 2
 N.T.S

BENCH MARK
 BENCH 23F-86 2" CITY OF UPLAND BRASS DISC SET IN PCC BASE FOR STREET LIGHT # 2269463E, 41' WEST OF MOUNTAIN AVE CENTERLINE AND 272' SOUTH OF 24TH STREET CENTERLINE.
 ELEV. = 1988.288'



MARK	DATE	INITIAL	DESCRIPTION	DATE	APP'VD



TKE ENGINEERING, INC.
 2305 CHICAGO AVENUE
 RIVERSIDE, CA 92507
 (951) 680-0440
 FAX: (951) 680-0490
 08-13-2020
 STEVEN W. LEDBETTER REGISTERED ENGINEER No. 84044

DRAWN BY: KM
 DESIGNED BY: SWL
 CHECKED BY: SWL
 RECOMMENDED BY:

APPROVED BY:

 SAN ANTONIO WATER COMPANY GENERAL MANAGER
 08/14/20 DATE

SAN ANTONIO WATER CO.
 HOLLY DRIVE RESERVOIR
 PHASE II
 RESERVOIR DETAIL 5

WATER DRAWING NO. -
 SHEET 15
 OF 15 SHEET
 DRAWING NO. D-9

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