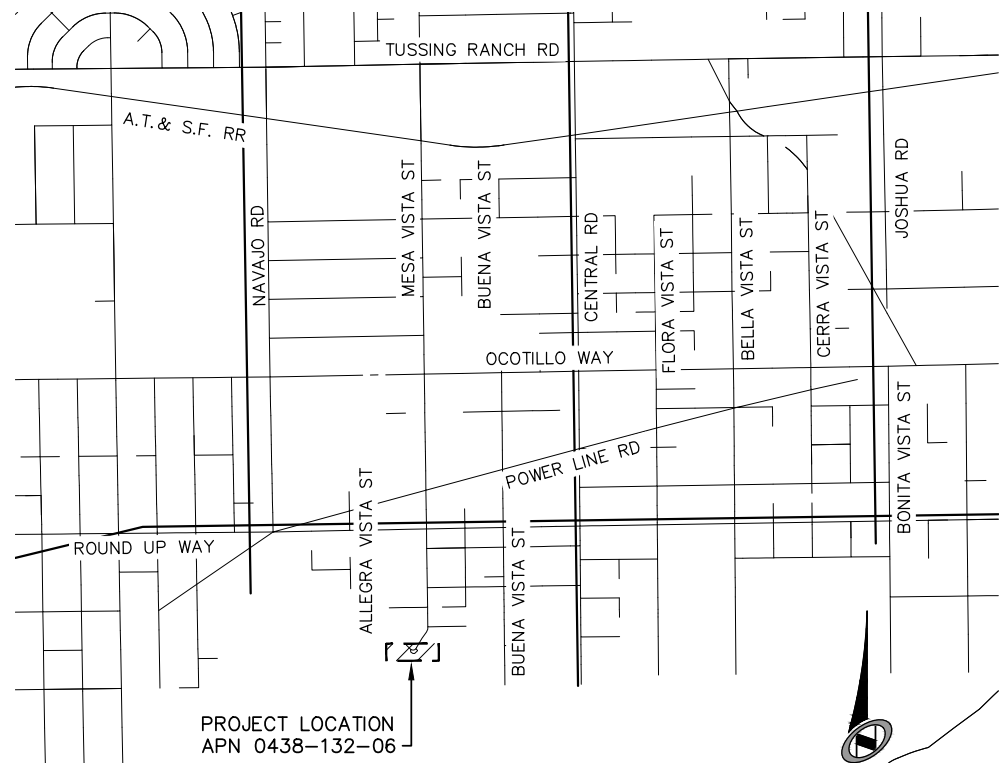


# APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

## MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT

60% SUBMITTAL  
OCTOBER 2019



PROJECT LOCATION  
APN 0438-132-06

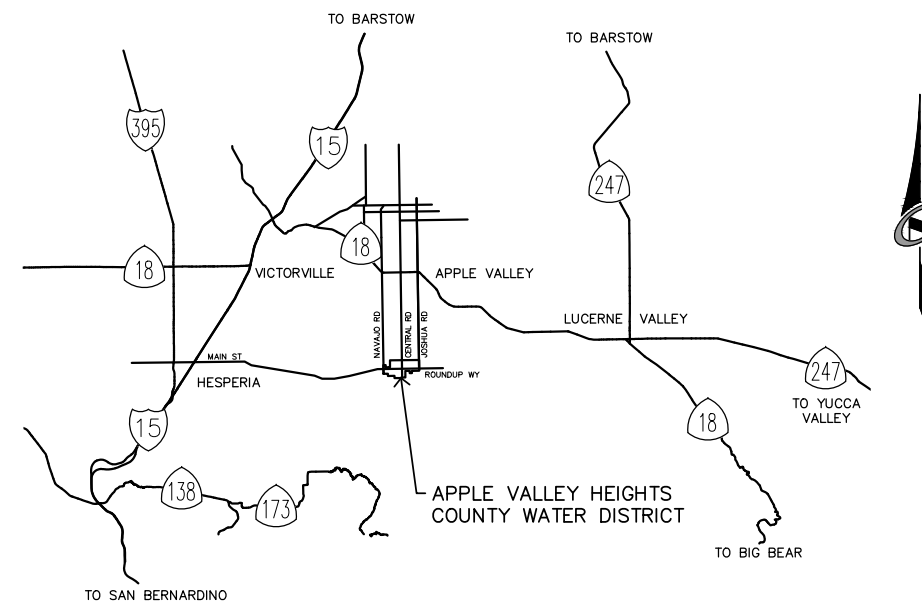
VICINITY MAP  
NTS

### SHEET INDEX

| SHEET NO: | DWG. NO: |
|-----------|----------|
| 1         | T-01     |
| 2         | G-01     |
| 3         | C-01     |
| 4         | C-02     |
| 5         | C-03     |
| 6         | C-04     |
| 7         | C-05     |

### DRAWING TITLE:

- TITLE SHEET
- NOTES, LEGEND, ABBREVIATIONS & SURVEY CONTROL
- EXISTING SITE PLAN AND DEMOLITION PLAN
- SITE PLAN AND YARD PIPING
- TANK DETAILS - 1
- TANK DETAILS - 2
- CIVIL DETAILS - 1



LOCATION MAP  
NTS



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| DRAWING NAME: T-01.DWG   |            |     |    |      |            |
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| DESIGNER: JW PROJ. MGR: JFD  |            |     |    |      |            |
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MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT  
TITLE SHEET

|                   |                   |
|-------------------|-------------------|
| DRAWING NUMBER    | T-01              |
| 1 OF 7 SHEETS     |                   |
| SCALE             |                   |
| VERTICAL: 1"=NA   |                   |
| HORIZONTAL: 1"=NA |                   |
| JOB NUMBER        | 226817-0000211.03 |

PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

DATE SUBMITTED: OCTOBER 2019

**GENERAL NOTES**

- POTABLE WATER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS AND MATERIALS AS SPECIFIED HEREIN AND PER THE CURRENT STANDARDS OF THE AMERICAN WATERWORKS ASSOCIATION (AWWA).
- UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING PIPELINES SHALL BE MADE DRY. THE TIME AND DURATION OF ANY SHUTDOWNS OF EXISTING MAINS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. OWNER SHALL BE NOTIFIED FIVE WORKING DAYS MINIMUM IN ADVANCE OF ANY SHUTDOWN. SYSTEM VALVES WILL BE OPERATED BY OWNER'S FORCES ONLY.
- CONTRACTOR SHALL COORDINATE WITH OWNER ALL ARRANGEMENTS FOR HIGH-LINING TEMPORARY SERVICES PRIOR TO SHUTDOWNS. NO SHUTDOWNS WILL BE SCHEDULED ON MONDAY, FRIDAY, HOLIDAY OR WEEKENDS.
- NO WORK MAY BEGIN OR PROCEED WITHOUT DIRECTION OF OWNER'S INSPECTOR. CONTRACTOR SHALL NOTIFY THE OWNER'S INSPECTOR 48 HOURS PRIOR TO THE BEGINNING OF WORK TO ARRANGE FOR INSPECTION OF THE PROJECT.
- THE CONTRACTOR MUST CALL "DIG ALERT OF SOUTHERN CALIFORNIA" TO HAVE UNDERGROUND SERVICE UTILITIES LOCATED PRIOR TO CONSTRUCTION. THIS CALL WILL BE MADE AT LEAST 48 HOURS IN ADVANCE PRIOR TO ANY WORK BEING PERFORMED IN PUBLIC RIGHT-OF-WAY. (DIG ALERT PHONE: 8-1-1)
- ALL EXISTING FACILITIES WHICH MAY AFFECT PROJECT CONSTRUCTION, I.E., LINE CROSSINGS, LINE PARALLELING, OR PROPOSED CONNECTIONS SHALL BE FIELD VERIFIED BEFORE ANY CONSTRUCTION BEGINS.
- CONTRACTOR SHALL TIE OFF ALL VALVE LOCATIONS AND PROVIDE WRITTEN DIMENSIONS TO INSPECTOR IMMEDIATELY UPON INSTALLATION OF VALVES.
- ALL DESIGN CHANGES TO THE WATER SYSTEM SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE CHANGE.
- THE WATER SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH THE PROCEDURES IN THE PROJECT SPECIFICATIONS.
- PIPELINES AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS PRIOR TO TIE-IN OR CONNECTION TO EXISTING SYSTEM FACILITIES. BACTERIOLOGIC QUALITY TEST RESULTS SHALL CONFORM TO THE CRITERIA SPECIFIED IN THAT SPECIFICATION.
- CONTRACT RECORD DRAWINGS MUST BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF WORK. THE PLANS MUST PROVIDE POST CONSTRUCTION VERIFICATION OF THE LOCATION AND ELEVATION OF PIPES AND APPURTENANCES.
- CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF ACCEPTANCE FOR THE PROJECT. CONTRACTOR SHALL REPAIR OR REPLACE ANY OR ALL SUCH WORK, TOGETHER WITH ANY OTHER WORK WHICH MAY BE DISPLACED IN SO DOING THAT MAY PROVE DEFECTIVE IN WORKMANSHIP AND/OR MATERIALS WITHIN THE ONE-YEAR PERIOD FROM THE DATE OF ACCEPTANCE WITHOUT EXPENSE WHATSOEVER TO THE OWNER, ORDINARY WEAR AND TEAR, UNUSUAL ABUSE OR NEGLIGENCE EXCEPTED.
- CONTRACTOR SHALL KEEP ACCESS TO DRIVEWAYS AND PRIVATE ROADS OPEN AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL KEEP NON-SKID STEEL PLATES ON SITE TO COVER EXPOSED TRENCHES AND PROVIDE IMMEDIATE VEHICULAR OR PEDESTRIAN ACCESS.
- CONSTRUCTION SEQUENCING AND FACILITY SHUTDOWN LIMITATIONS ARE ESSENTIAL TO THE EXECUTION OF THE WORK. SEE PROJECT SPECIFICATIONS.
- CONNECTIONS TO EXISTING ASBESTOS CEMENT PIPE SHALL BE MADE BY DISASSEMBLING THE EXISTING AC PIPE JOINT AND NOT CUTTING THE AC PIPE. PROVIDE NEW PVC PIPE SPOOLS AS REQUIRED TO COMPLETE CONNECTIONS.
- ANY PLANNED WATER SYSTEM OUTAGES DURING THE ERECTION OF THESE IMPROVEMENTS WILL BE COORDINATED WITH AVHCWD TWO WEEKS MINIMUM PRIOR TO PROPOSED SHUT DOWN. NO SHUT DOWN SHALL OCCUR WITHOUT AUTHORIZATION OF AVHCWD. CONTRACTOR SHALL ANTICIPATE HAVING NO LESS THAN ONE TANK IN OPERATION AND CONNECTED TO THE WATER SUPPLY AND AVHCWD CUSTOMERS AT ALL TIMES.

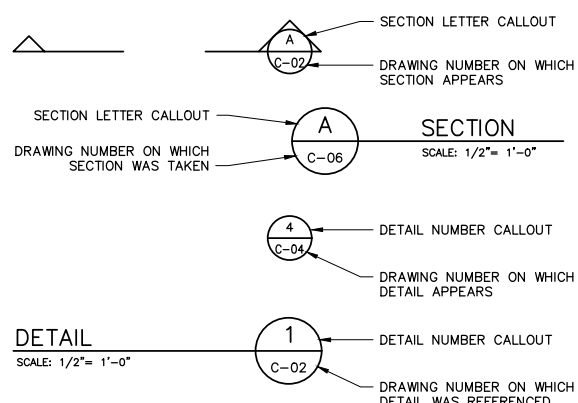
**ABBREVIATIONS**

|           |  |             |   |
|-----------|--|-------------|---|
| AB        | AGGREGATE BASE                             | MAX         | MAXIMUM                                       |
| AC        | ASBESTOS CEMENT                            | MFG         | MANUFACTURER                                  |
| ALT       | ALTERNATE                                  | MIN         | MINIMUM                                       |
| ANG       | ANGLE                                      | MIP         | MALLEABLE IRON PIPE                           |
| APPROX    | APPROXIMATE                                | MJ          | MECHANICAL JOINT                              |
| AWWA      | AMERICAN WATER WORKS ASSOCIATION           | N           | NORTH   |
| AVHCWD    | APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT | No. (OR #)  | NUMBER  |
| BF        | BLIND FLANGE                               | NTS         | NOT TO SCALE                                  |
| CA        | CALIFORNIA                                 | O.D.        | OUTSIDE DIAMETER                              |
| CAV       | COMBINATION AIR AND VACUUM VALVE           | OH          | OVERHEAD                                      |
| CL        | CENTERLINE                                 | OSHA        | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION |
| CONC      | CONCRETE                                   | PC          | POINT OF CURVATURE                            |
| CONN      | CONNECT/CONNECTION                         | PCC         | POINT OF COMPOUND CURVE                       |
| CMP       | CORRUGATED METAL PIPE                      | PE          | PLAIN END                                     |
| CY        | CUBIC YARDS                                | PH          | POT HOLE                                      |
| CMRS      | COUNTY MAINTENANCE ROAD SYSTEM             | PI          | POINT OF INTERSECTION                         |
| DEFL      | DEFLECTION                                 | PIP         | PROTECT IN PLACE                              |
| DEG       | DEGREE                                     | PL          | PROPERTY LINE                                 |
| DEMO      | DEMOLISH/DEMOLITION                        | PO          | PUSH ON                                       |
| DET       | DETAIL                                     | PP          | POWER POLE                                    |
| DI, DIP   | DUCTILE IRON, DUCTILE IRON PIPE            | PSI         | POUNDS PER SQUARE INCH                        |
| DIPS      | DUCTILE IRON PIPE SIZE                     | PT          | POINT, POINT OF TANGENCY                      |
| DIA       | DIAMETER                                   | PVC         | POLYVINYL CHLORIDE                            |
| DWG(S)    | DRAWING(S)                                 | PWR         | POWER   |
| DWY       | DRIVEWAY                                   | RAD         | RADIUS  |
| E         | EAST                                       | ROW         | RIGHT OF WAY                                  |
| EA        | EACH                                       | S           | SLOPE, SOUTH                                  |
| ELEC      | ELECTRIC                                   | S.B.CO.     | SAN BERNARDINO COUNTY                         |
| EOP       | EDGE OF PAVEMENT                           | SBCFCD      | S.B.CO. FLOOD CONTROL DISTRICT                |
| ETW       | EDGE OF TRAVEL WAY                         | SBCSD       | SAN BERNARDINO COUNTY SPECIAL DISTRICTS       |
| EX        | EXISTING                                   | SCE         | SOUTHERN CALIFORNIA EDISON                    |
| FCA       | FLANGED COUPLING ADAPTER                   | SF          | SQUARE FEET                                   |
| FLG       | FLANGE                                     | SFT         | SURVEY FEET                                   |
| FO        | FIBER OPTIC                                | SHT         | SHEET   |
| FH        | FIRE HYDRANT                               | SPEC(S)     | SPECIFICATION(S)                              |
| FT (OR ') | FEET                                       | SST         | STAINLESS STEEL                               |
| F&d       | FURNISH AND INSTALL                        | STA         | STATION                                       |
| G         | GAS  | STD         | STANDARD                                      |
| GV        | GATE VALVE                                 | STL         | STEEL   |
| H, HORIZ  | HORIZONTAL                                 | SWG         | SOUTHWEST GAS                                 |
| HDG       | HOT DIP GALVANIZED                         | TB          | THRUST BLOCK                                  |
| HDPE      | HIGH DENSITY POLYETHYLENE                  | TEL/TELCO   | TELEPHONE/TELECOMMUNICATION                   |
| ID        | INSIDE DIAMETER                            | TOP OF PIPE | TOP OF PIPE                                   |
| IE        | INVERT ELEVATION                           | TYP         | TYPICAL                                       |
| IN (OR ") | INCHES                                     | U.S.A.      | UNITED STATES OF AMERICA                      |
| LF        | LINEAR FEET                                | W           | WEST, WATER                                   |

**LEGEND**

- EX. MONUMENT
- EX. WATER VALVE
- EX. WATER METER
- EX. FIRE HYDRANT
- EX. POWER POLE
- EX. WIRE FENCE
- EX CENTERLINE
- EX. RIGHT OF WAY
- EX. SECTION LINE/PROPERTY LINE
- EX. EASEMENT
- EX. WATER LINE
- EX. ELECTRICAL CONDUIT
- PROPOSED EASEMENT
- PROPOSED PIPELINE
- PROPOSED OVERHEAD ELECTRICAL
- PROPOSED TELCO CONDUIT
- PROPOSED GATE VALVE
- PIPE, STRUCTURE, ETC. TO BE ABANDONED (PIPES ENDS TO BE PLUGGED)
- APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT SERVICE AREA

**SECTION AND DETAIL DESIGNATION**



**BASIS OF ELEVATION**

ELEVATIONS ARE REFERENCED TO NAVD88, AND DETERMINED LOCALLY BY OBSERVATION OF BENCHMARK M 327 (PID EV1642) PER NGS.

THE NAVD88 ELEVATION = 3425.05 sft

**BENCHMARK**

THE BENCHMARK IS A 2.5" BRASS DISK, STAMPED "M 327 1935" SET IN A CONCRETE POST 275 FEET NORTH OF THE CENTERLINE OF OCOTILLO WAY, AND EAST OF THE INTERSECTION OF VALLEY VISTA AVE.

**BASIS OF BEARINGS**

BEARINGS ARE REFERENCED TO GRID NORTH AS DEFINED BY THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE V AND ARE BASED ON THE CALCULATED LINE FROM POINT NALO TO POINT YUJO (POINT ID EV2858), SAID BEARING = N88°-51'-09"E.

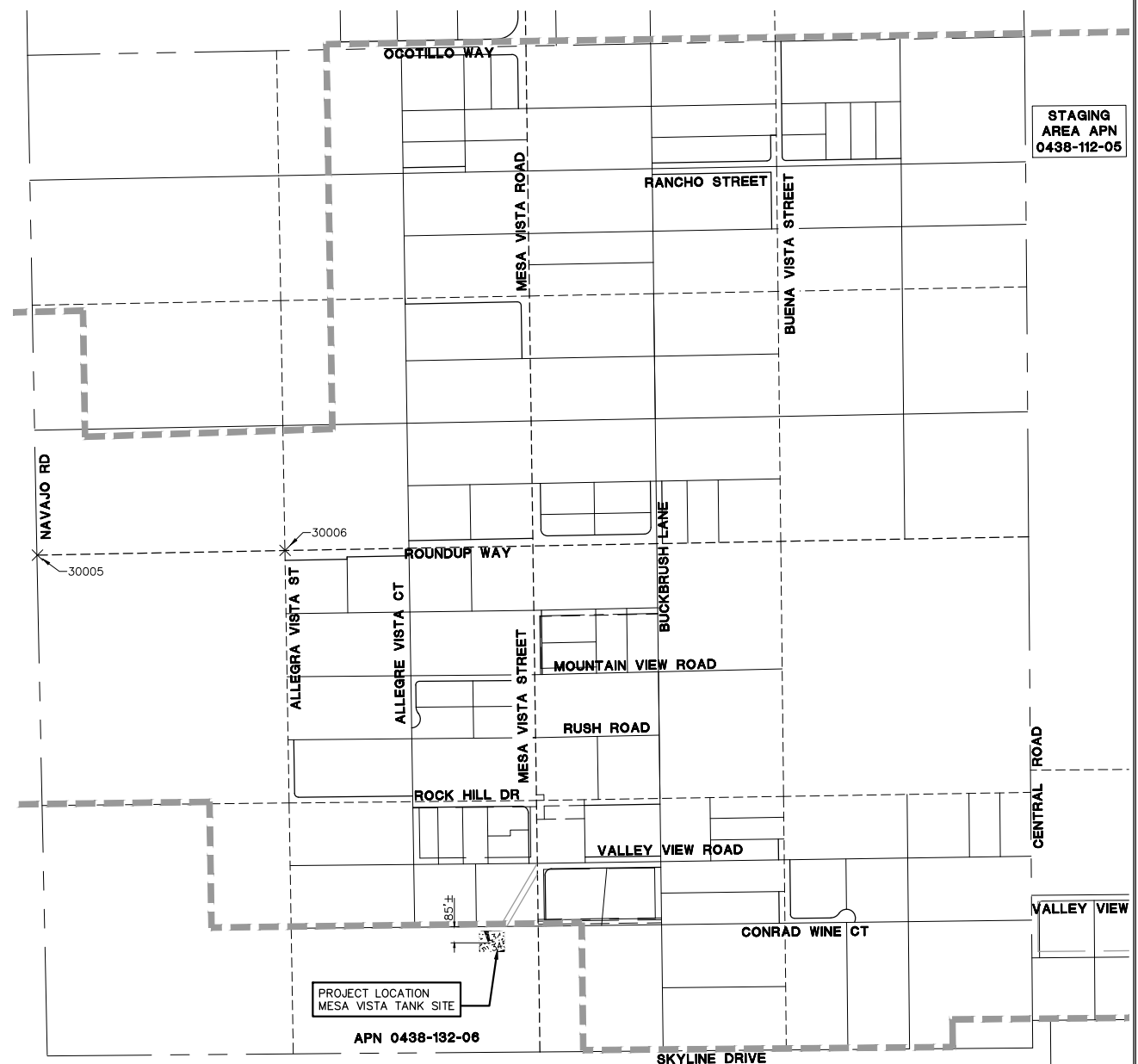
**BASIS OF COORDINATES**

THE COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 AND ARE EXPRESSED IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE V, AT EPOCH 1991.35, AND ARE BASED ON POINT NALO (POINT ID EV2860) PER PUBLISHED NGS CONTROL.

THE GRID VALUE FOR NALO = N-2005514.73 sft, E-6805380.95 sft.  
THE GRID VALUE FOR YUJO = N-2005730.56 sft, E-6816156.49 sft.

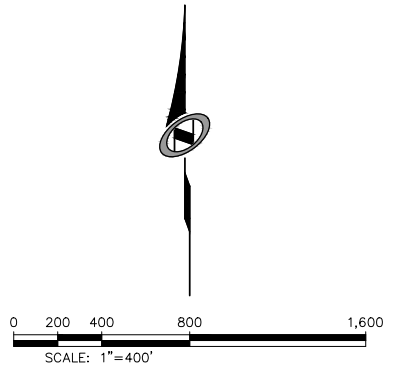
**DATE OF INITIAL SURVEY**

JANUARY 11, 2018 BY INLAND AERIAL SURVEYS, INC.



**KEY MAP & SURVEY CONTROL**

SCALE: 1"=400'



**GEOTECHNICAL INVESTIGATION REPORT**

GEOTECHNICAL INVESTIGATION REPORT NV5 WEST (NV5)  
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT  
APPLE VALLEY, CALIFORNIA  
PROJECT NO. 226817-0000211.01  
DATED: MAY 24, 2018

**CONTROL POINTS**

| POINT NO. | NORTHING    | EASTING     | ELEVATION | DESCRIPTION                                      |
|-----------|-------------|-------------|-----------|--|
| 30005     | 1976497.416 | 6805979.966 | 3155.460  | W 1/4 COR SEC. 22 2IN IP BRASS CAP LS 3980       |
| 30006     | 1976522.354 | 6807287.762 | 3171.580  | CEN WEST 1/16 COR SPIKE & WASHER COUNTY SURVEYOR |
| NALO      | 2005514.730 | 6805380.950 | 2950.780  | NGS PID EV2860 STAMPED NALO 1979                 |
| YUJO      | 2005730.560 | 6816156.490 | 2933.070  | NGS PID EV2858 STAMPED YUJO 1979                 |

\*POINTS NALO & YUJO OUTSIDE OF KEY MAP VIEWABLE AREA

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| DESIGNER: JW   | PROJ. MGR: JFO   |     |    |      |            |

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**MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT**

**NOTES LEGEND, ABBREVIATIONS & SURVEY CONTROL**

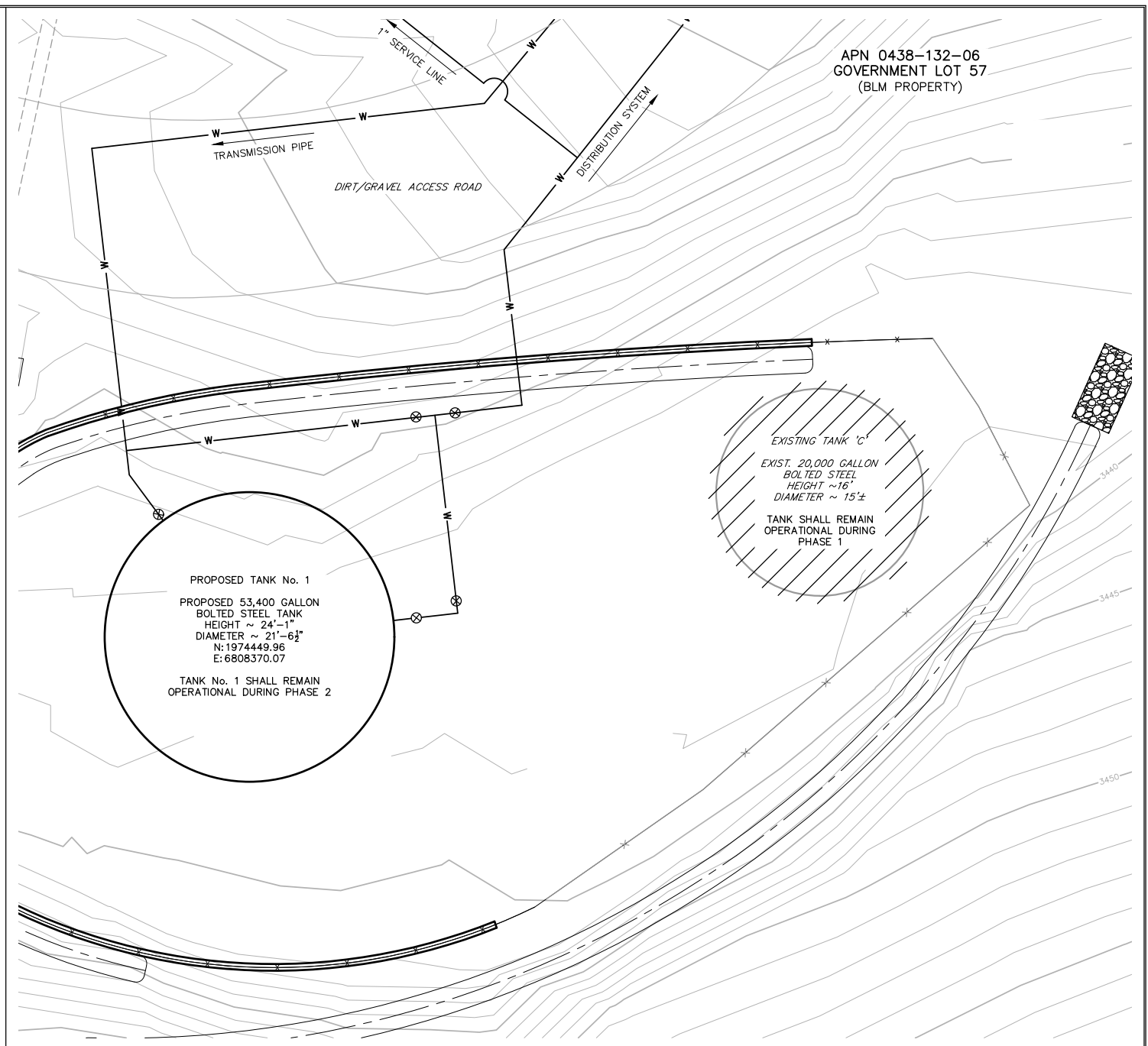
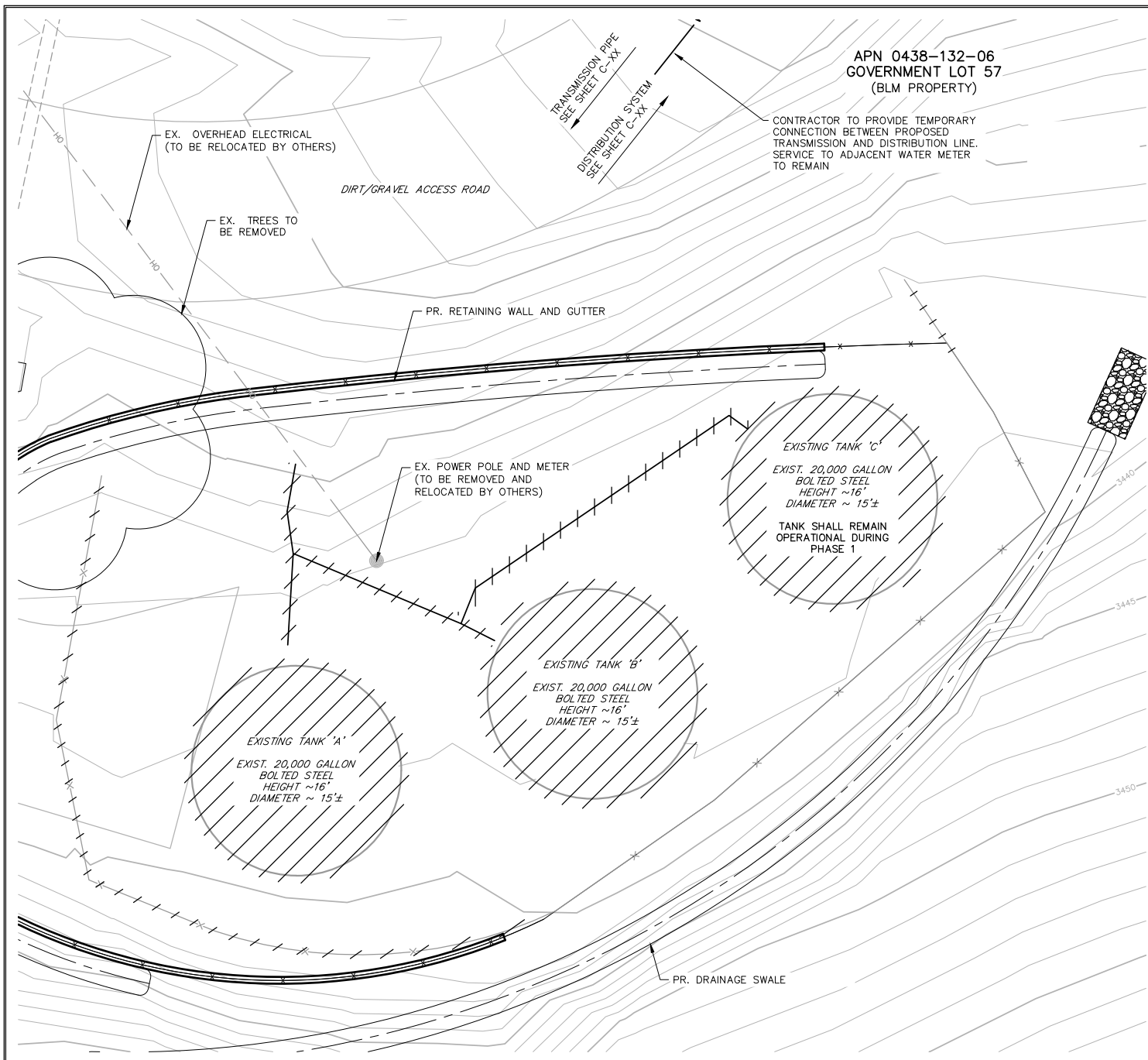
DRAWING NUMBER  
**G-01**  
2 OF 7 SHEETS  
SCALE  
VERTICAL: 1"= NA  
HORIZONTAL: 1"= 400'

JOB NUMBER  
**226817-0000211.03**

PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

DATE SUBMITTED: OCTOBER 2019

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.



SITE PLAN & DEMOLITION PLAN - PHASE 1

SCALE: 1"=5'

SITE PLAN & DEMOLITION PLAN - PHASE 2

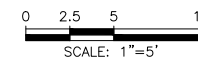
SCALE: 1"=5'

**DEMOLITION NOTES**

1. THE SCOPE OF DEMOLITION WORK SHALL NOT BE LIMITED TO THOSE ITEMS DEFINED ON THE DRAWING, BUT SHALL ALSO INCLUDE FIXTURES, CONDUITS, WIRING, MECHANICAL EQUIPMENT, MISCELLANEOUS CONCRETE, RUBBISH, AND ANY OTHER ITEMS OR MATERIAL NECESSARY FOR THE PERFORMANCE OF THIS CONTRACT.
2. THE CONTRACTOR SHALL PROTECT FROM DAMAGE THE EXISTING TANKS AND ANY OTHER PIPING OR EQUIPMENT NOT SUBJECT TO REMOVAL OR REQUIRED TO CONTINUE OPERATION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH AVHCWD FOR WHICH EQUIPMENT AND APPURTENANCES SHALL BE SALVAGED OR DISPOSED OF AND TO VERIFY THAT ALL ITEMS TO BE SALVAGED ARE IDENTIFIED HEREIN. ITEMS TO BE SALVAGED SHALL BE DISCONNECTED, HANDLED WITH CARE SO AS TO AVOID DAMAGE, AND TRANSPORTED TO A LOCATION SPECIFIED BY AVHCWD. STORAGE AREA SHALL BE IDENTIFIED PRIOR TO BEGINNING SALVAGE OPERATIONS. DAMAGE TO ITEMS TO BE SALVAGED THAT IS DIRECTLY ATTRIBUTED TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE HIS DEMOLITION WORK WITH THE OPERATION OF THE EXISTING TANKS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THIS COORDINATION. THE DEMOLITION WORK FOR THIS PROJECT SHALL ALSO INCLUDE THE REMOVAL AND OFF-SITE DISPOSAL OR SALVAGE OR RELOCATION OF CONCRETE, SIGNAGE, PIPING EQUIPMENT, AND OTHER NON-NATIVE MATERIALS FOR THE CONSTRUCTION OF THE PROPOSED TANKS.
5. CONTRACTOR SHALL PROVIDE TEMPORARY PIPING TO CONNECT EXISTING TANK 'C' DURING PHASE 1 DEMOLITION AND SITE WORK. CONNECTION BETWEEN AT LEAST 1 TANK AND THE DISTRIBUTION LINE SHALL BE ACTIVE AT ALL TIMES.

**GENERAL NOTES**

1. CONTRACTOR SHALL REFER TO CONSTRUCTION SEQUENCING REQUIREMENTS OUTLINED IN SPECIFICATION SECTION 01040.
2. ANY PLANNED WATER OUTAGES DURING THE ERECTION OF THESE IMPROVEMENTS WILL BE COORDINATED WITH AVHCWD TWO WEEKS MINIMUM PRIOR TO PROPOSED SHUT DOWN. NO SHUT DOWN SHALL OCCUR WITHOUT AUTHORIZATION OF AVHCWD. CONTRACTOR SHALL ANTICIPATE HAVING NO LESS THAN ONE TANK IN OPERATION AND CONNECTED TO THE WATER SUPPLY AND AVHCWD CUSTOMERS AT ALL TIMES.
3. DURING CONSTRUCTION, CONTRACTOR SHALL PLACE TEMPORARY FENCING AROUND ALL EXISTING AND PROPOSED FACILITIES WHEN NOT ACTIVELY WORKING ON-SITE.
4. INSTALL DUCTILE IRON FITTINGS AND THRUST BLOCKS ON TEMPORARY PIPING AT ALL BENDS. INSTALL THRUST BLOCKS PER DETAIL 3, DWG. C-05
5. DO NOT CONNECT PORTION OF 4" PIPING UNTIL TANK NO. 1A AND ASSOCIATED PIPING AS SHOWN ON C-02 HAVE BEEN INSTALLED, INSPECTED, DISINFECTED, TESTED, AND PLACED INTO SERVICE.



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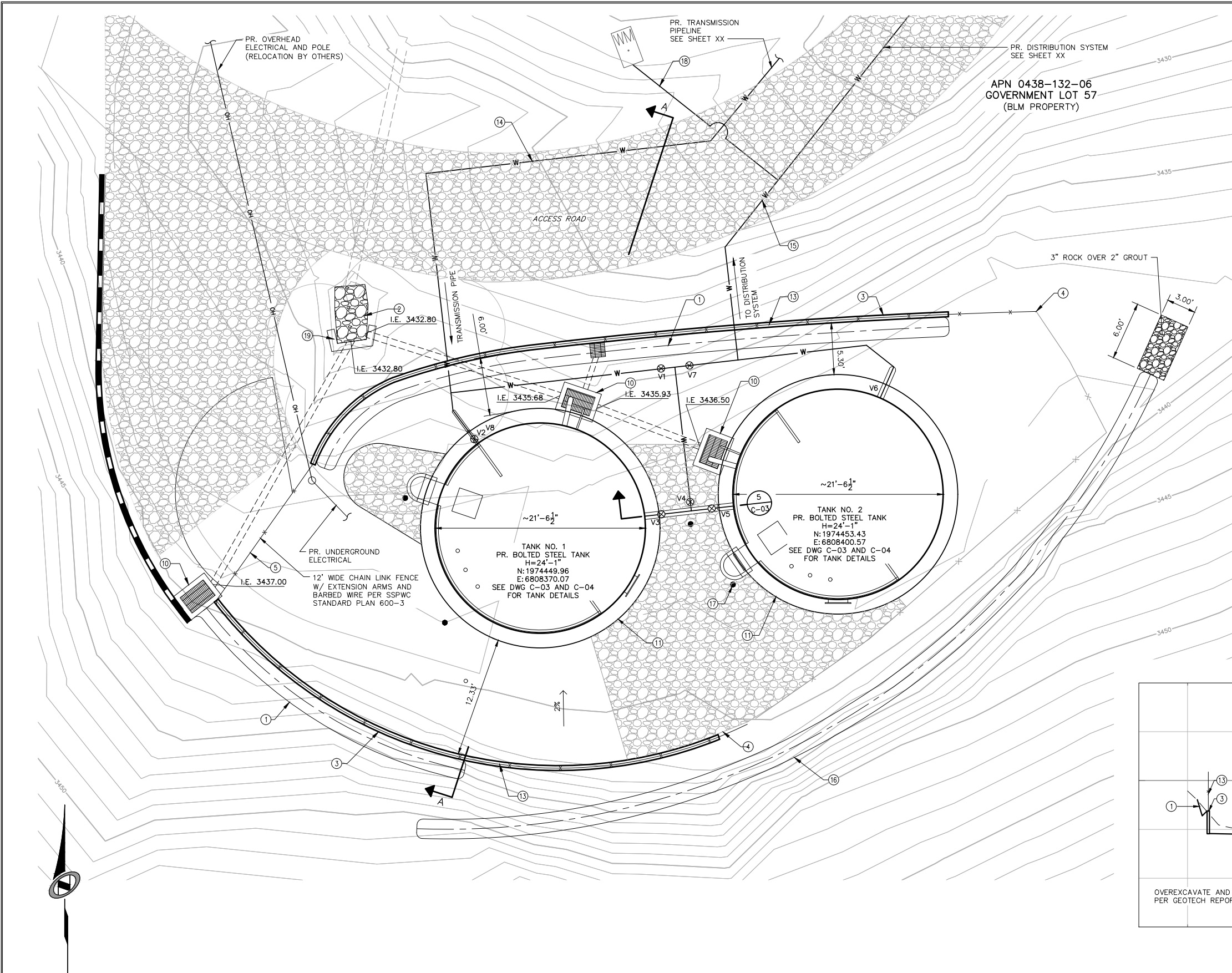
**MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT  
EXISTING SITE PLAN AND DEMOLITION PLAN**

PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

DATE SUBMITTED: OCTOBER 2019

|                   |                   |
|-------------------|-------------------|
| DRAWING NUMBER    | C-01              |
| SCALE             | 3 OF 7 SHEETS     |
| VERTICAL: 1"=5'   |                   |
| HORIZONTAL: 1"=5' |                   |
| JOB NUMBER        | 226817-0000211.03 |

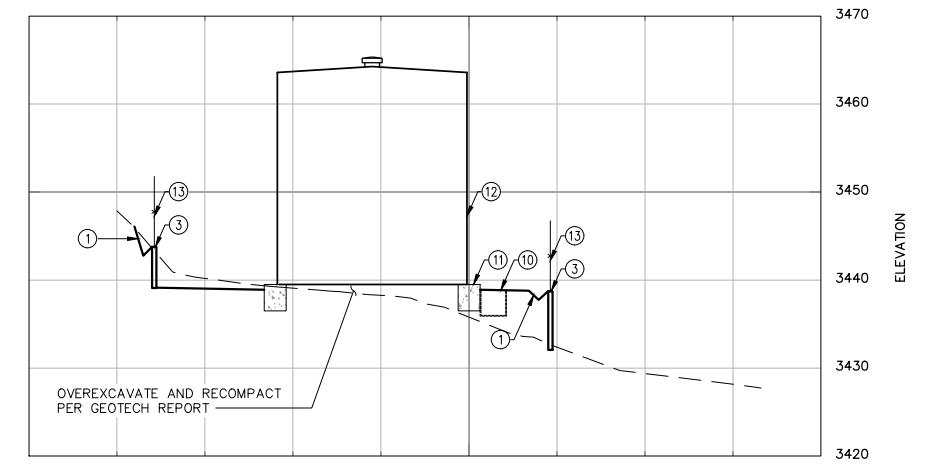




- GENERAL NOTES**
- ① PR. CONCRETE DRAINAGE SWALE
  - ② PR. DRAINAGE SWALE TO DRAIN TO EXISTING CATCH BASIN AND THROUGH EX CULVERT
  - ③ PR. RETAINING WALL
  - ④ PR. FENCE TO TIE INTO EX FENCE AT FENCEPOST
  - ⑤ PR. GATE
  - ⑥ -
  - ⑦ EX. YARD PIPING AND VALVES TO BE REMOVED
  - ⑧ PR. 8" PVC DRAINAGE PIPE
  - ⑨ EX. FENCE TO BE REMOVED
  - ⑩ INSTALL PRECAST CONC. CALTRANS TYPE G1 DRAINAGE INLET. SLOPE BOTTOM TO 8" DRAIN OUTLET. SEE DETAIL 5, DWG C-04. BACKFILL AREA BETWEEN DRAINAGE INLET AND RINGWALL FOUNDATION WITH GROUT.
  - ⑪ PR. RINGWALL FOUNDATION, SEE STRUCTURAL DETAILS
  - ⑫ -
  - ⑬ PR. 6' CHAIN LINK FENCE
  - ⑭ PR. POTABLE 6" WATER TRANSMISSION LINE, SEE SHEET XX
  - ⑮ PR. POTABLE 8" WATER DISTRIBUTION LINE, SEE SHEET XX
  - ⑯ PR. EARTHEN SWALE
  - ⑰ PR. POST INSTALLATION PER DETAIL 4, DWG C-05
  - ⑱ PR. 1" COOPER SERVICE LINE W/ CORPORATION STOP. REPLACE EXISTING ANGLE METER STOP. REMOVE AND CLEAN DEBRIS WITHIN METER BOX.
  - ⑲ PR. DRAIN OUTLET PER DETAIL 6, DWG C-05

- GENERAL NOTES**
1. PROPOSED FILL LINE CAPABLE OF SUPPLYING INTERCONNECTION WITH NEARBY AGENCIES AT AVHCWD WELL SITE.

| TANK SITE VALVE TABLE |           |                  |                             |                             |
|-----------------------|-----------|------------------|-----------------------------|-----------------------------|
| VALVE NO.             | TYPE/SIZE | NORMAL OPERATION | ONLY TANK NO. 1A IN SERVICE | ONLY TANK NO. 2A IN SERVICE |
| V1                    |           | CLOSED           | CLOSED                      | OPEN                        |
| V2                    |           | OPEN             | OPEN                        | CLOSED                      |
| V3                    |           | OPEN             | OPEN                        | CLOSED                      |
| V4                    |           | CLOSED           | OPEN                        | OPEN                        |
| V5                    |           | OPEN             | CLOSED                      | OPEN                        |
| V6                    |           | OPEN             | CLOSED                      | OPEN                        |
| V7                    |           | CLOSED           | OPEN                        | CLOSED                      |
| V8                    |           | NORMALLY CLOSED  | NORMALLY CLOSED             | NORMALLY CLOSED             |



**SITE PLAN AND PIPING PLAN**  
SCALE: 1"=5'

**PROFILE SECTION A-A**  
HORIZ SCALE: 1"=10'  
VERT SCALE: 1"=10'

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**MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT**  
**SITE PLAN AND YARD PIPING**

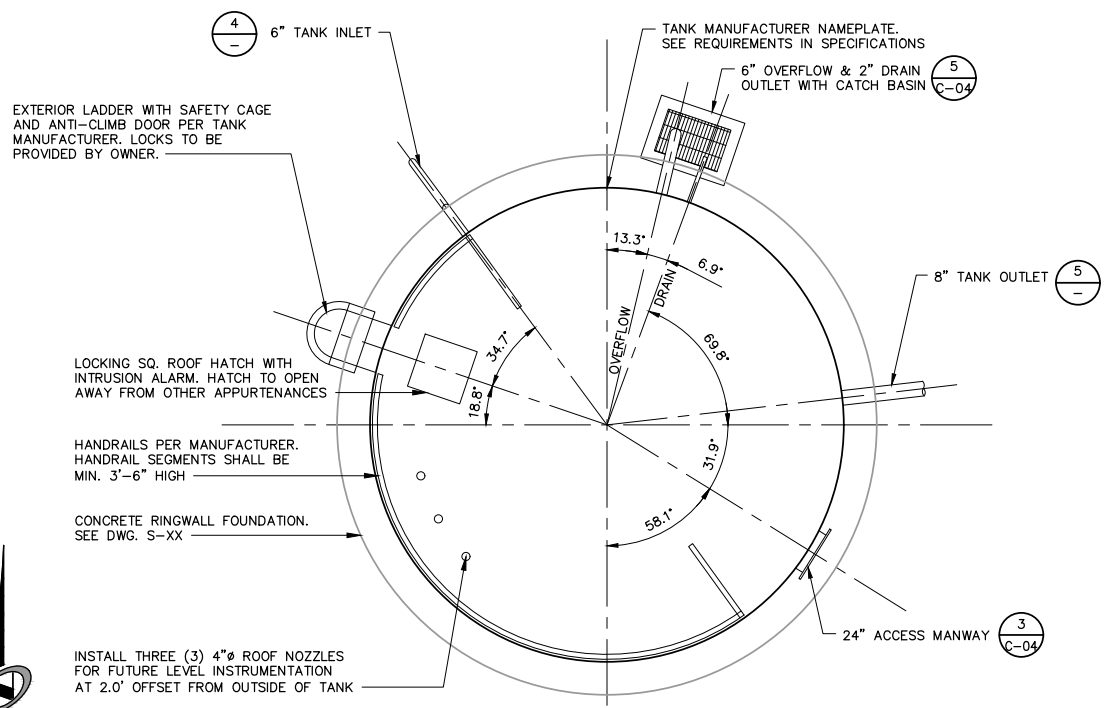
DRAWING NUMBER  
**C-02**  
4 OF 7 SHEETS  
SCALE  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=5'

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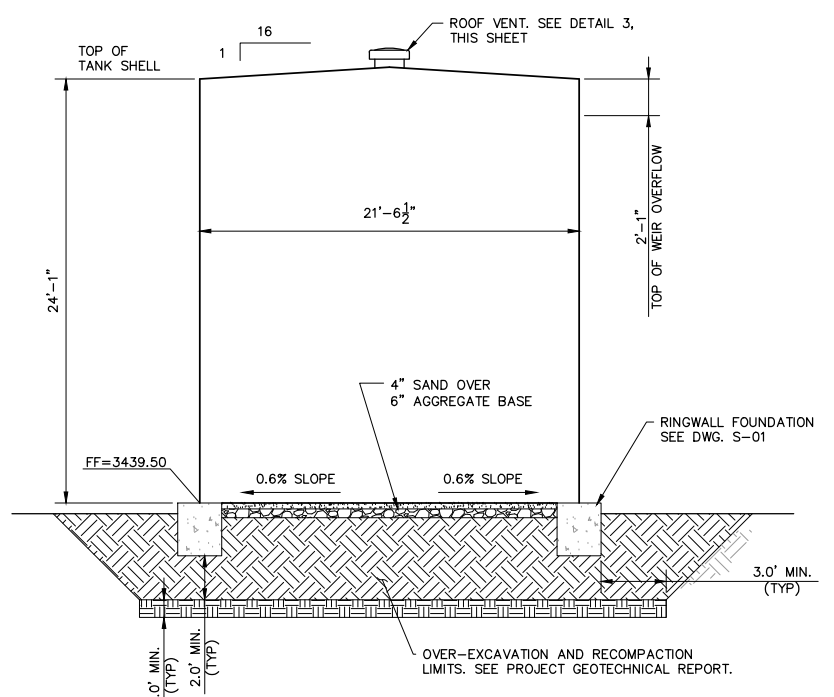
PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

DATE SUBMITTED: OCTOBER 2019

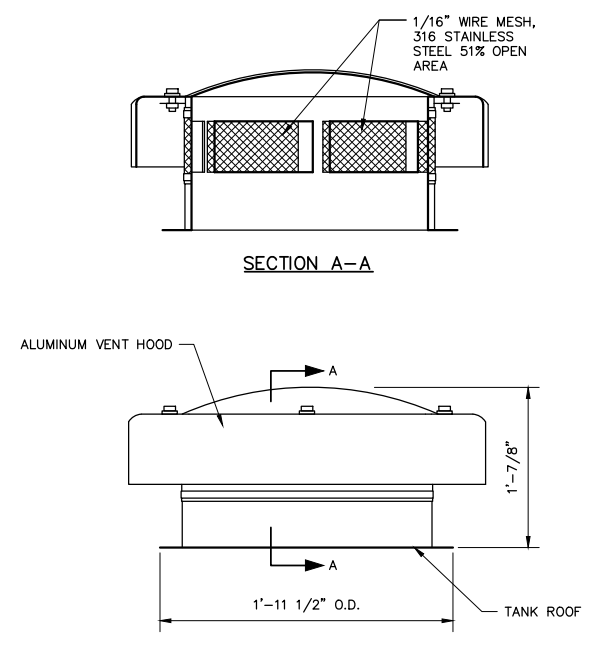
JOB NUMBER  
**226817-0000211.03**



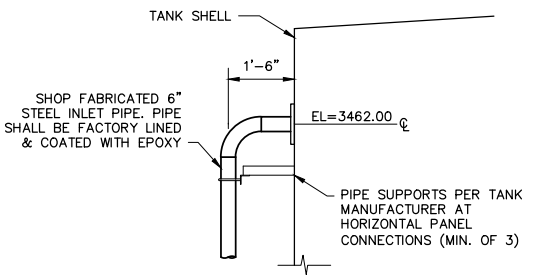
**1** BOLTED STEEL TANK NO. 1 - PLAN  
SCALE: 1" = 4'



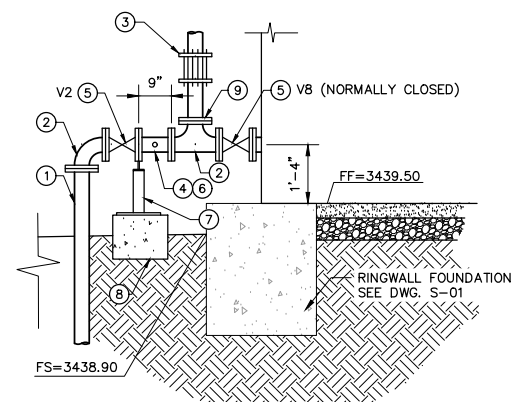
**2** BOLTED STEEL TANK NO. 1 - EAST/WEST ELEVATION VIEW  
SCALE: 1" = 4'



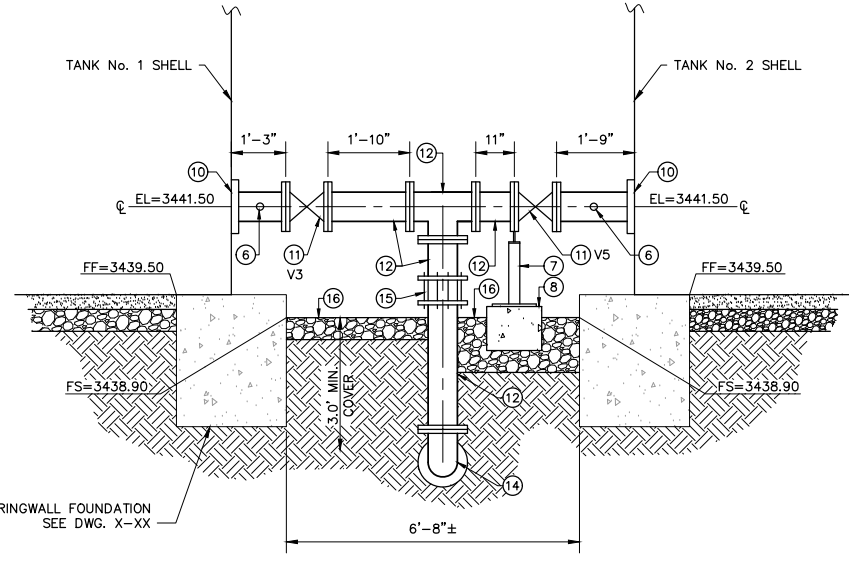
**3** ROOF VENT DETAIL  
NOT TO SCALE



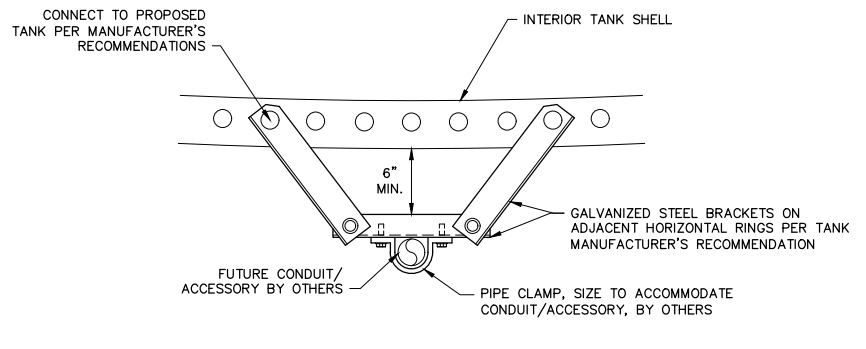
- MATERIALS LIST**
- ① 6" DI SPOOL, FL. LENGTH AS NEEDED
  - ② 6" DI CROSS
  - ③ 6" DIAMETER DRESSER STYLE 38 STEEL COUPLING OR APPROVED EQUAL
  - ④ 6" DI SPOOL PIECE, FL, WITH 1" TAP
  - ⑤ 6" GATE VALVE, FL
  - ⑥ SAMPLE TAP - 1" NIPPLE & BALL VALVE CORP STOP
  - ⑦ UNDER FLANGE PIPE SUPPORT. SEE DETAIL 5, DWG. C-05
  - ⑧ PIPE SUPPORT CONCRETE BLOCK (18"x18"x12")
  - ⑨ SLIP-ON FLANGE WITH INSULATING FLANGE KIT
  - ⑩ 8" BOLTED TANK NOZZLE, FL
  - ⑪ 8" GATE VALVE, FL
  - ⑫ 8" DI SPOOL, FL, LENGTH AS NEEDED
  - ⑬ 8" DI TEE, FL
  - ⑭ 8" DI 90° ELBOW WITH THRUST BLOCK PER DETAIL 3, DWG. C-05
  - ⑮ 8" DIAMETER DRESSER STYLE 38 STEEL COUPLING OR APPROVED EQUAL
  - ⑯ 6" OF 1" CRUSH ROCK



**4** TANK NO. 1 6" INLET CONNECTION DETAIL  
NOT TO SCALE



**5** TANK NO. 1 & 2 INTERCONNECTION DETAIL  
NOT TO SCALE



**6** CONDUIT/ACCESSORY SUPPORTS (TYP OF 4 SETS) TANK 1 ONLY  
NOT TO SCALE

|  |                  |     |    |      |            |
|--|------------------|-----|----|------|------------|
| DATE: 10/8/19  | TIME: 2:32:48 PM | NO. | BY | DATE | REVISIONS: |
| SERVER: LAYOUT   | C-03             |     |    |      |            |
| PATH: \\226817-0000211-03\CADD\CIVIL\MESA VISTA TANKS\   |                  |     |    |      |            |
| DRAWING NAME: C-03.DWG   |                  |     |    |      |            |
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| DESIGNER: JW PROJ. MGR: JFD  |                  |     |    |      |            |
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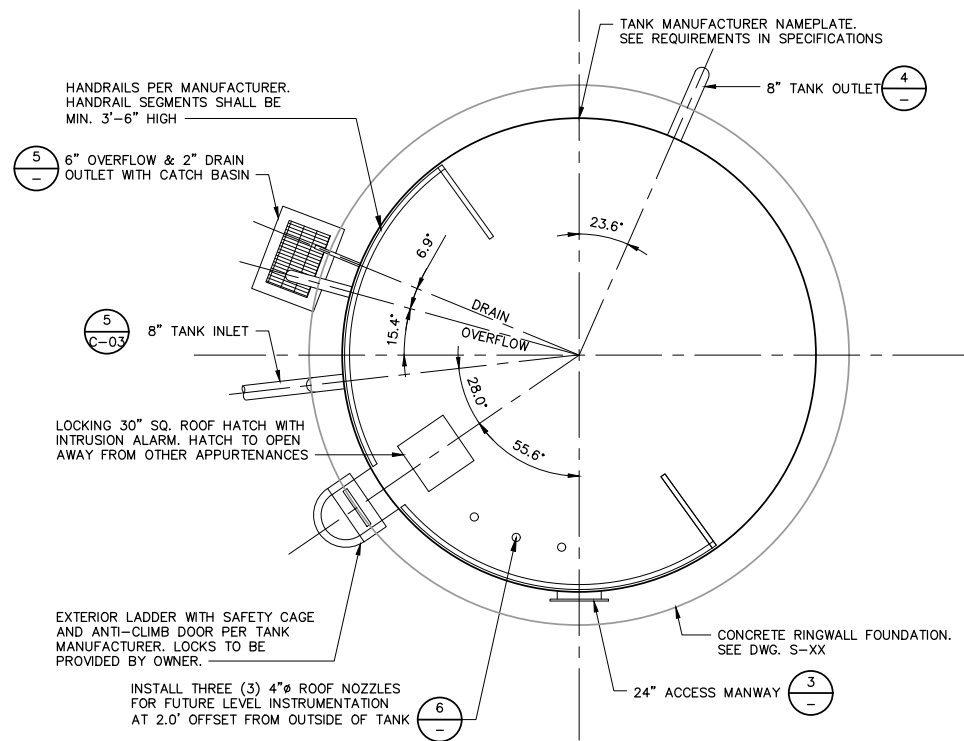
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SAN DIEGO, CA 92128  
P: 858.365.0500 WWW.NV5.COM

**MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT**  
**TANK DETAILS - 1**

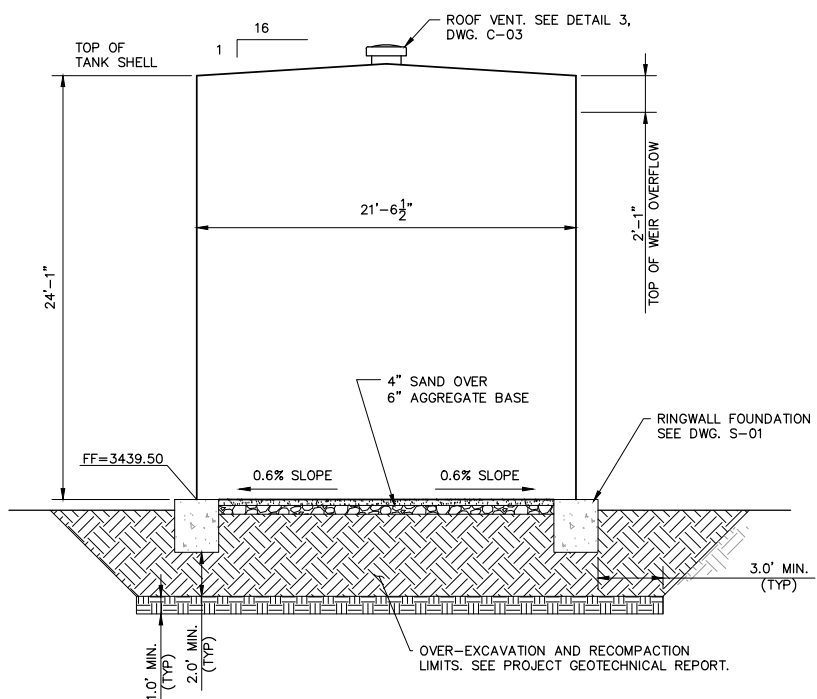
PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

DATE SUBMITTED: OCTOBER 2019

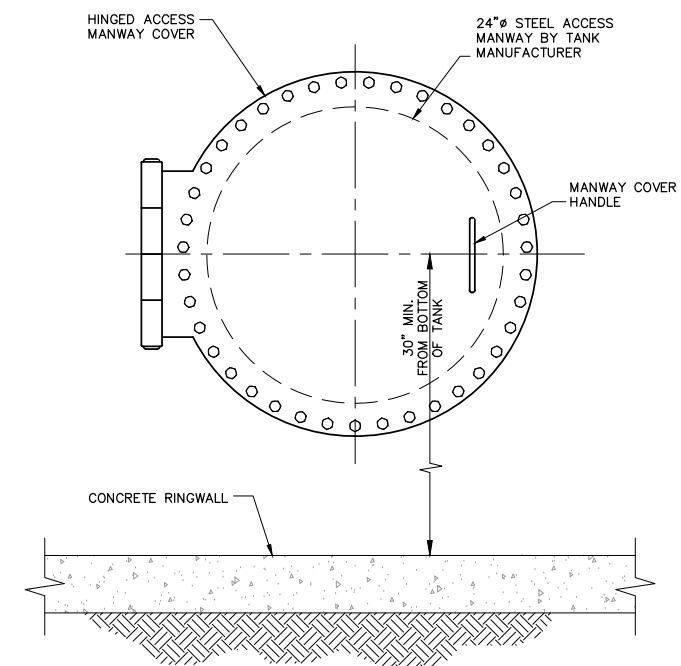
DRAWING NUMBER  
**C-03**  
5 OF 7 SHEETS  
SCALE  
VERTICAL: 1"=NA  
HORIZONTAL: 1"=NA  
JOB NUMBER  
**226817-0000211.03**



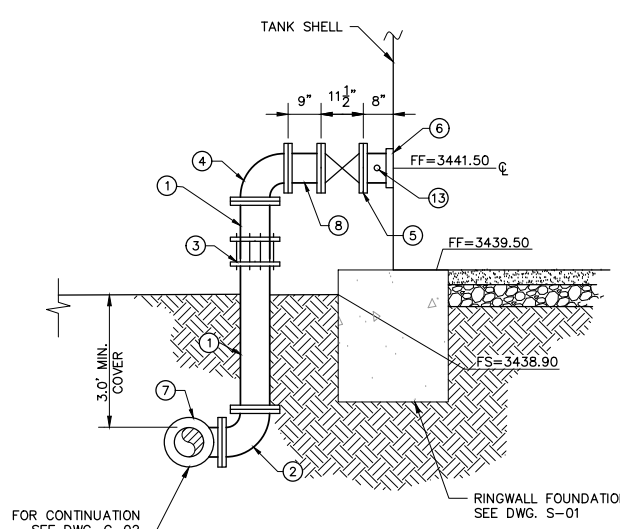
**1 BOLTED STEEL TANK NO. 2 - PLAN**  
SCALE: 1" = 4'



**2 BOLTED STEEL TANK NO. 2 - EAST/WEST ELEVATION VIEW**  
NO SCALE

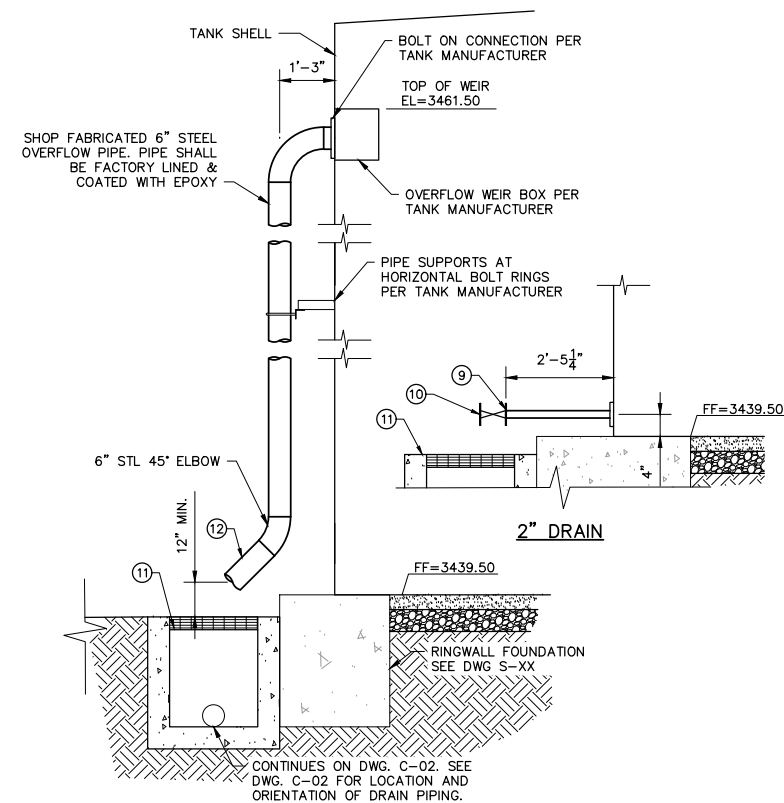


**3 ACCESS MANWAY COVER DETAIL**  
NO SCALE

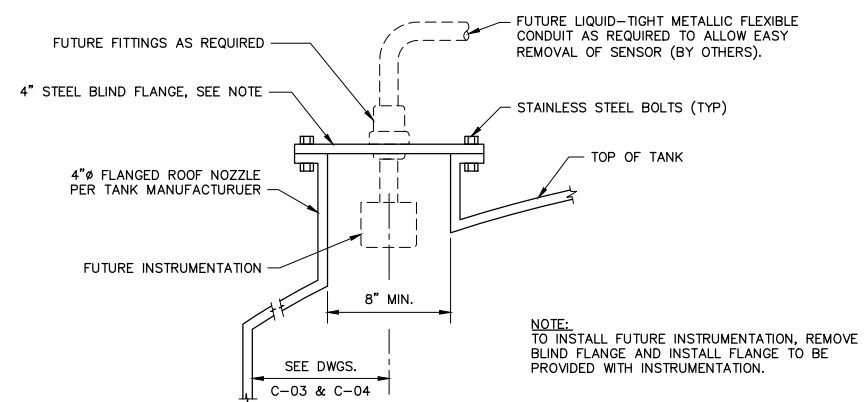


**4 TANK NO. 2 8" OUTLET CONNECTION DETAIL**  
NOT TO SCALE

- MATERIALS LIST**
- 1 8" DI SPOOL, FL. LENGTH AS NEEDED
  - 2 8" DI 90° ELBOW, FL
  - 3 8" DIAMETER DRESSER STYLE 3B STEEL COUPLING OR APPROVED EQUAL
  - 4 8" DI 90° ELBOW, FL, WITH 1" FACTORY DRILLED TAP
  - 5 8" GATE VALVE, FL W/ INSULATING FLANGE KIT
  - 6 8" BOLTED TANK NOZZLE, FL
  - 7 8" DI TEE, MxMxJxFL. CONSTRUCT THRUST BLOCK PER DETAIL 3, DWG. C-05
  - 8 8" DI SPOOL PIECE, FLxFL
  - 9 2" STEEL SPOOL INSTALL SLIP-ON FLANGE WITH INSULATING FLANGE KIT.
  - 10 INSTALL 2" GATE VALVE, FL. INSTALL 2-1/2" NH/NST MALE X 2" CARBON STEEL FLANGE (KOCHEK FGM252 OR APPROVED EQUAL) W/ CAP AND CHAIN AT OUTLET.
  - 11 INSTALL PRECAST CONC. CALTRANS TYPE G1 DRAINAGE INLET. SLOPE BOTTOM WITH GROUT TO 8" OVERFLOW PIPE OUTLET. SEE DWG. C-02 AND RSP D73
  - 12 INSTALL 1/8" STAINLESS STEEL WOVEN WIRE MESH SCREEN COVERING 6" DRAIN PIPE OPENING. SECURE SCREEN TO PIPE WITH STAINLESS STEEL CLAMPS.
  - 13 SAMPLE TAP - 1" NIPPLE & BALL VALVE CORP STOP



**5 PROPOSED 6" OVERFLOW AND 2" DRAIN**  
SCALE: 1/2"=1'-0"



**6 4"Ø ROOF NOZZLE FOR FUTURE INSTRUMENTATION (TYP OF 6)**  
TYP NOT TO SCALE

|  |                  |     |    |      |            |
|--|------------------|-----|----|------|------------|
| DATE: 10/8/19  | TIME: 2:32:57 PM | NO. | BY | DATE | REVISIONS: |
| SERVER: LAYOUT: C-04                                   |                  |     |    |      |            |
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| DRAWING NAME: C-04.DWG                                 |                  |     |    |      |            |
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| DESIGNER: JH PROJ. MGR: JFD                            |                  |     |    |      |            |

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P: 858.365.0500 WWW.NIV5.COM

**MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT**

**TANK DETAILS - 2**

PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

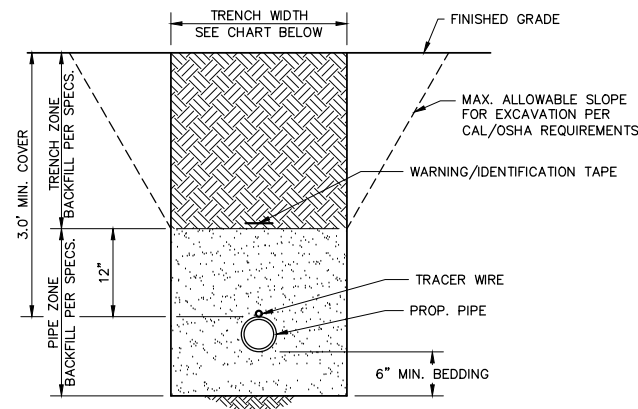
DRAWING NUMBER  
**C-04**

6 OF 7 SHEETS

SCALE  
VERTICAL: 1"=NA  
HORIZONTAL: 1"=NA

JOB NUMBER  
**226817-0000211.03**

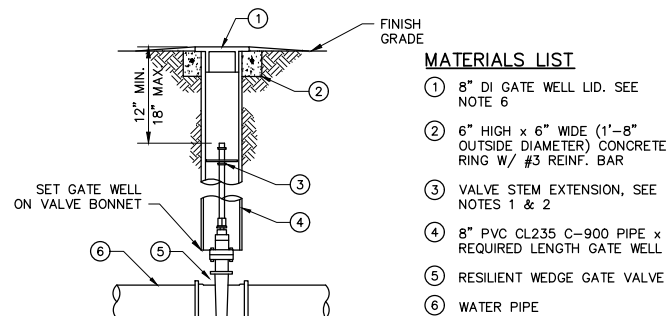
DATE SUBMITTED: OCTOBER 2019



- NOTES:**
- EXCAVATE BELL HOLES AT EACH PIPE JOINT TO PERMIT PROPER ASSEMBLY AND INSPECTION OF THE ENTIRE JOINT.
  - ALL PIPELINE TRENCHES SHALL BE EXCAVATED SO THAT THE DISTANCE BETWEEN TRENCH WALLS AT THE TOP OF PIPE SHALL BE AS SHOWN BELOW:

| NOMINAL PIPE DIAMETER | MIN. DISTANCE | MAX. DISTANCE |
|-----------------------|---------------|---------------|
| 4" & SMALLER          | 18"           | 28"           |
| 6" & 8"               | 24"           | 32"           |

**1** PIPE BEDDING AND TRENCH BACKFILL  
NOT TO SCALE



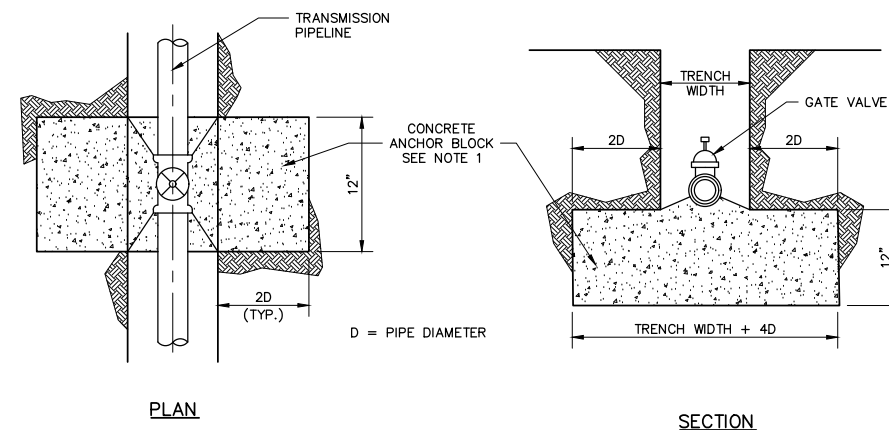
- NOTES:**
- VALVES DEEPER THAN 5.0' REQUIRE A VALVE STEM EXTENSION
  - EXTENSION STEMS SHALL NOT BE ATTACHED/BOLTED TO OPERATING NUT
  - GATE WELL AND LID SHALL BE SET SO THAT NO MORE THAN TWO 1" ADJUSTMENT RINGS ARE USED
  - GATE WELL LIDS SHALL BE CAST WITH THE AGENCY NAME AND THE WORD WATER
  - PVC GATE WELLS SHALL BE MANUFACTURED IN WHITE OR BLUE FOR USE WITH POTABLE WATER



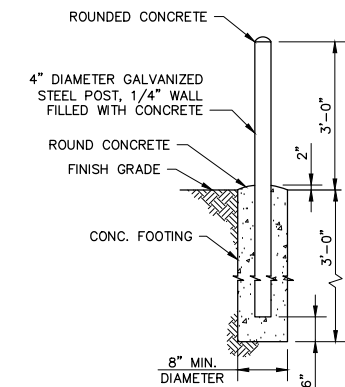
**2** GATE WELL INSTALLATION FOR VALVES 4" AND LARGER  
NOT TO SCALE

| REQUIRED BEARING AREA - TOTAL SQUARE FEET |          |          |                         |                 |
|---|----------|----------|-------------------------|-----------------|
| TYPE OF FITTING                           | 90° BEND | 45° BEND | 11 1/4" OR 22 1/2" BEND | TEE OR DEAD END |
| TYPICAL INSTALLATION                      |          |          |                         |                 |
| SIZE OF PIPE                              | 4"       | 6"       | 8"                      |                 |
|   | 1.5      | 3.0      | 5.5                     |                 |

- NOTES:**
- THRUST BLOCKS TO BE CONSTRUCTED OF 2500 PSI CONCRETE.
  - AREAS GIVEN ARE FOR TEST PRESSURE OF 100 P.S.I. IN SOIL WITH 2,000 P.S.F. BEARING CAPACITY.
  - BLOCKS TO BE POURED AGAINST UNDISTURBED SOIL.
  - JOINTS AND FACE OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
  - THRUST BLOCKS ARE REQUIRED AT EVERY ANGLE, TEE, AND CROSS FOR PRESSURIZED PIPE. ANGLES ACHIEVED BY PULLING A BELL AND SPIGOT JOINT WITHIN SPECIFIED TOLERANCES WILL NOT REQUIRE THRUST BLOCKS.

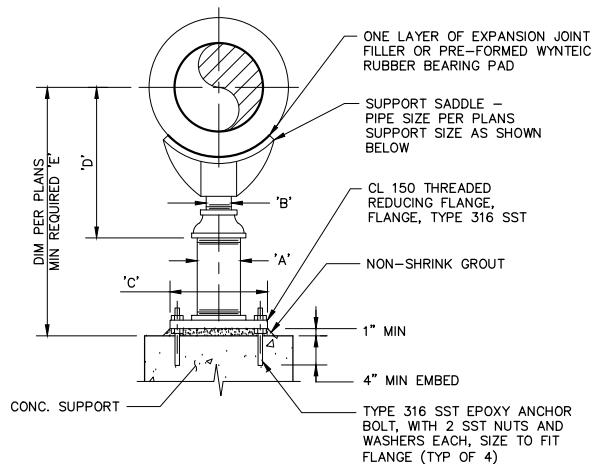


**3** THRUST BLOCKS & VALVE ANCHOR BLOCK  
NOT TO SCALE



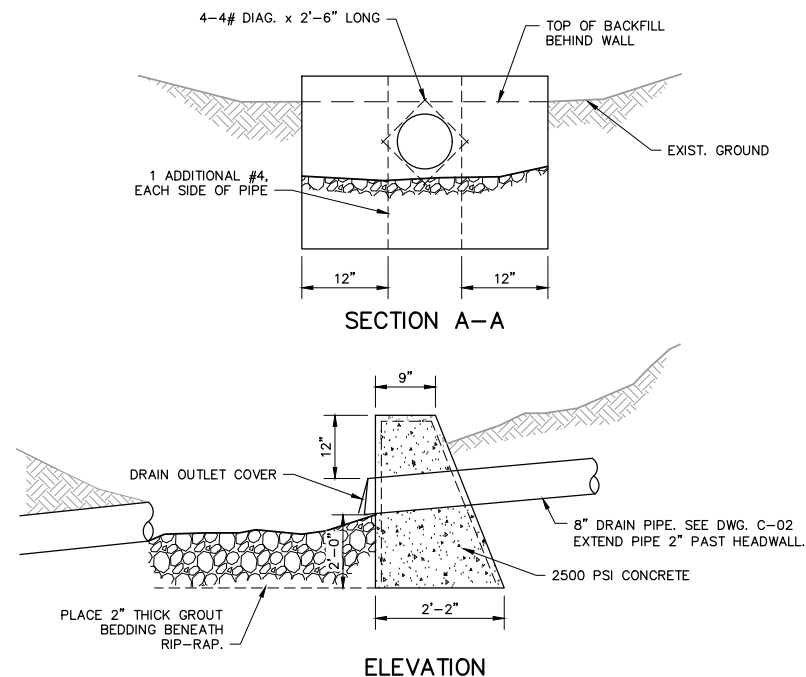
- NOTES:**
- PROTECTION POSTS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE CONSTRUCTION MANAGER.
  - PROTECTION POSTS SHALL BE COATED IN SAFETY YELLOW
  - CONCRETE SHALL BE 2,500 PSI MIN.

**4** PROTECTION POST INSTALLATION DETAIL  
NOT TO SCALE

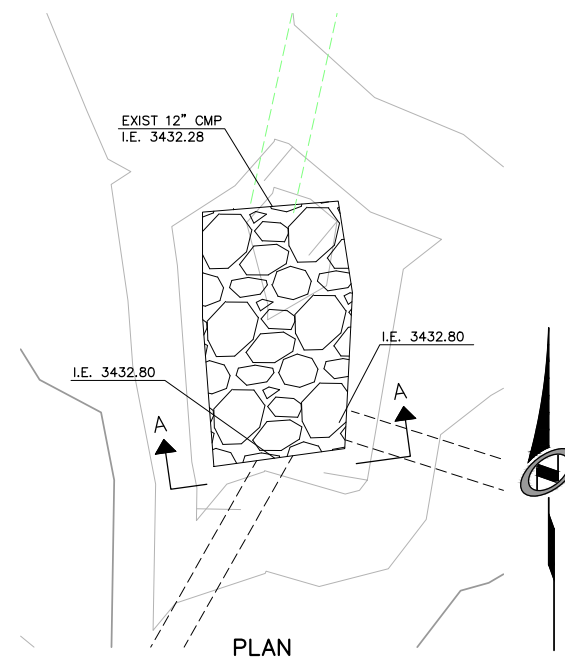


| UNDER FLANGE ADJUSTABLE SUPPORT APPROXIMATE DIMENSIONS (INCHES) |        |           |   |       |    |    |       |
|---|--------|-----------|---|-------|----|----|-------|
| PIPE SIZE   | FLG OD | SPRT SIZE | A | B     | C  | D  | E MIN |
| 4   | 9.0    | 8         | 3 | 2-1/2 | 9  | 13 | 17    |
| 8   | 13.5   | 14        | 4 | 3     | 11 | 17 | 22    |

**5** UNDER FLANGE PIPE SUPPORT DETAIL  
NOT TO SCALE



**6** DRAIN OUTLET DETAIL  
NOT TO SCALE



| DATE:  | TIME:      | NO. | BY | DATE | REVISIONS: |
|--|------------|-----|----|------|------------|
| 10/8/19  | 2:33:06 PM |     |    |      |            |
| SERVER: LAYOUT: C-05                                   |            |     |    |      |            |
| PATH: \\226817-0000211-03\CADD\CIVIL\MESA VISTA TANKS\ |            |     |    |      |            |
| DRAWING NAME: C-05.DWG                                 |            |     |    |      |            |
| PAGE SETUP: 11x17_PDF-NoMerge                          |            |     |    |      |            |
| DESIGNER: JW PROJ. MGR: JFD                            |            |     |    |      |            |

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**MESA VISTA POTABLE WATER STORAGE TANK REPLACEMENT**  
CIVIL DETAILS - 1

PREPARED FOR: APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT

DATE SUBMITTED: OCTOBER 2019

DRAWING NUMBER  
**C-05**  
7 OF 7 SHEETS  
SCALE  
VERTICAL: 1"=8'  
HORIZONTAL: 1"=8'  
JOB NUMBER  
**226817-0000211.03**