

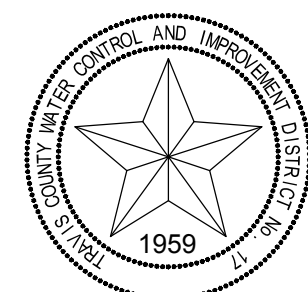
NOTES:

1. MINIMUM 5' CLEARANCE REQUIRED AROUND ALL EQUIPMENT.
2. FENCE TO BE LOCATED 9" FROM EDGE OF PAVEMENT.
3. FENCE TO BE MINIMUM 8' TALL AND SHALL BE PER WCID 17 STANDARD DETAIL OR A CMU WALL FENCE.
4. WHERE PIPE SLOPE EXCEEDS 10%, CONCRETE RETARDS TO BE INSTALLED PER WCID 17 STANDARD DETAIL.
5. PIPE BEDDING TO BE  $\frac{3}{8}$ " F GRAVEL UNLESS SPECIFIED OTHERWISE.
6. FORCEMAIN AND WATER LINES TO BE PLACED AT A MAXIMUM DEPTH OF 4 FEET.
7. ALL VALVES, MANHOLES, LIDS, ETC. IN PAVEMENT AREA SHALL BE ADJUSTED TO FINISHED GRADE
8. WET-WELL AND MANHOLES SHALL BE IN ACCORDANCE WITH NOTES ON "TYPICAL WET-WELL AND VALVE-VAULT PLAN AND SECTION" SHEET.
9. ALL ISOLATION VALVES SHALL BE RESILIENT WEDGE GATE VALVES.
10. ALL CHECK VALVES TO BE LEVER AND WEIGHT SWING CHECK VALVES WITH EXTERNAL ARM.
11. ALL RESTRAINED FLEXIBLE JOINTS SHALL USE MJ SSB DUCTILE IRON CLASS 350 FITTINGS WITH UNIFLANGE 1400 SERIES RESTRAINTS OR APPROVED EQUAL. ALL UNRESTRAINED FLEXIBLE JOINTS SHALL USE SMITH BLAIR TYPE 441 OR APPROVED EQUAL.
12. PULL BOXES ARE TO BE MOUNTED ON TOP OF THE WET-WELL OPPOSITE THE VALVE VAULT.
13. A HINGED PROTECTIVE GRATING PANEL SHALL BE INSTALLED BENEATH THE WET-WELL AND VALVE-VAULT DOW OPENING.
14. AN ANTI-FREEZE AND BFD HOSE BIB SHALL BE INSTALLED INSIDE THE FENCED AREA.
15. THE WATERLINE SERVING THE LIFT STATION SHALL HAVE AN RPZ ABOVE GROUND IN AN INSULATED ENCLOSURE (HOT BOX OR EQUAL).
16. NO 90° BENDS SHALL BE INSTALLED ON THE FORCE MAIN.
17. THERE SHALL NOT BE ANY TRANSFORMER, GENERATOR PAD, CONTROL PAD, OR ANY OTHER STRUCTURE INSTALLED WITHIN 5-FEET OF THE FORCE MAIN.
18. SUBSURFACE DRAINAGE ENTERING THE WET-WELL THROUGH PIPE TRENCHES SHALL BE ADDED. CONCRETE RETARDS PLACED ON THE PIPE OR A FRENCH DRAIN SYSTEM MAY BE USED.
19. ELECTRICAL TRANSFORMER PADS ARE TO BE 8-FOOT BY 8-FOOT (AUSTIN ENERGY STD.) W/METER PAD, AND SHALL BE PLACED OUTSIDE OF THE FENCED AREA.
20. ELECTRICAL GENERATOR SHALL BE INSTALLED WITHIN 15-FEET OF THE ACCESS DRIVE.
21. POSITIVE DRAINAGE AROUND THE WET-WELL SHALL BE MAINTAINED. THE SLAB ELEVATIONS OF THE WET-WELL AND VALVE-VAULT SHALL BE 6-INCHES ABOVE THE SURROUNDING GRADE. THE TOP ELEVATION OF THE WET-WELL AND VALVE-VAULT SHALL BE THE SAME WHENEVER POSSIBLE. A 2-PERCENT CROSS SLOPE SHALL BE USED ON THE CONCRETE SLAB.
22. PRIOR TO POURING CONCRETE AROUND THE WET-WELL AND VALVE-VAULT, THE CONTRACTOR SHALL TAKE STANDARD PROCTOR DENSITIES AND SUBMIT THE RESULTS TO THE INSPECTOR FOR APPROVAL.

PIPE MATERIAL:

1. GRAVITY WASTEWATER LINE TO BE SDR 26 PVC COLORED GREEN.
2. FORCE MAIN LINES 2" IN DIAMETER OR LESS TO BE SCHEDULE 80 PVC.
3. FORCE MAIN LINES 3" IN DIAMETER TO BE SDR 21 PVC.
4. FORCE MAIN LINES 4" IN DIAMETER OR GREATER TO BE C900 PVC DR 14
5. ALL BURIED PIPING TO HAVE PROPERLY LABELED DETECTABLE TAPE.
6. ALL EXPOSED PIPING TO HAVE FLANGED FITTINGS, UNLESS NOTED OTHERWISE. SCHEDULE 80 PVC TO HAVE FLANGED BY GLUE FITTINGS. ALL BURIED PIPING TO HAVE MECHANICAL JOINT FITTINGS WITH RESTRAINTS, UNLESS NOTED OTHERWISE.
7. ALL HORIZONTAL AND VERTICAL FORCEMAIN BENDS SHALL BE MECHANICALLY RESTRAINED TO THE PIPE USING MEGA-LUG OR APPROVED COA EQUAL, AND HAVE CONCRETE THRUST BLOCKING

TYPICAL DRAWINGS TO BE USED AS REFERENCE ONLY.  
NOT FOR PERMITTING, BIDDING OR CONSTRUCTION PURPOSES.  
EACH PROJECT TO BE INDIVIDUALLY DESIGNED

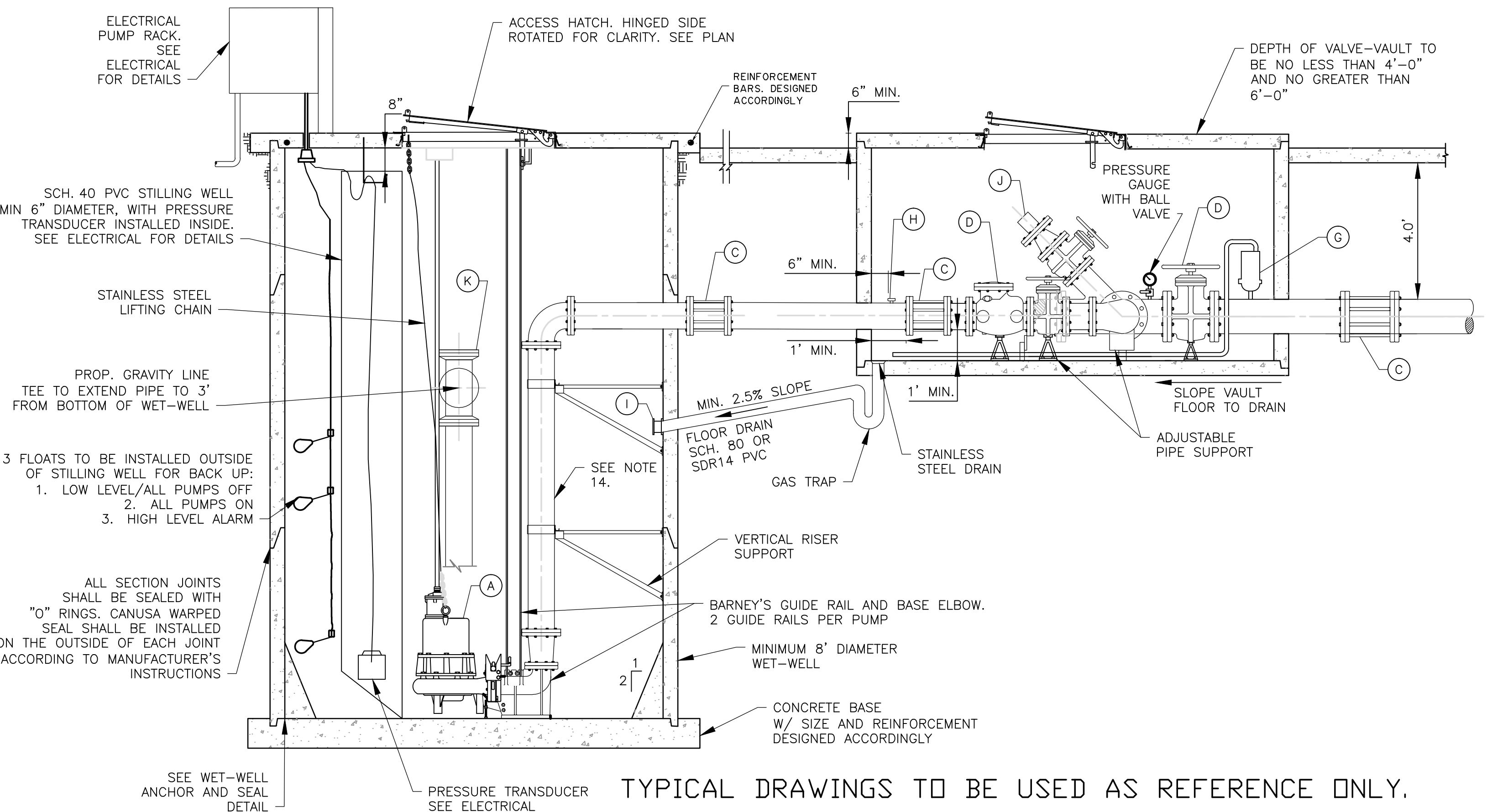


TRAVIS COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT NO. 17  
TYPICAL LIFT STATION DRAWINGS

### TYPICAL LIFT STATION LAYOUT

PREPARED BY:





**NOTES:**

1. WET-WELLS AND MANHOLES:
  - 1.A. WET-WELLS SHALL BE STANDARD CONCRETE, POLYMER CONCRETE (BY U.S. COMPOSITE PIPE OR APPROVED EQUAL), OR FIBERGLASS.
  - 1.B. MANHOLES SHALL BE STANDARD CONCRETE OR POLYMER CONCRETE (BY U.S. COMPOSITE PIPE OR APPROVED EQUAL).
  - 1.C. POLYMER CONCRETE AND FIBERGLASS: NO LINING REQUIRED.
- 1.D. STANDARD CONCRETE: SHALL BE LINED INSIDE WITH ALUMINUM SILICATE COMPOUND (LAFARGE SEWPER COAT, OR APPROVED EQUAL) TO THE FOLLOWING THICKNESS:  
WET-WELLS: ONE-INCH (1") MINIMUM  
MANHOLES: HALF-INCH (½") MINIMUM
2. THE ACCESS COVERS SHALL BE A MINIMUM OF TWO (2) 36-INCH BY 36-INCH, PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF ACCESS OVER THE WET-WELL TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT. THE ACCESS FRAME AND COVER THE VAULT SHALL BE CONSTRUCTED OF ALUMINUM THREAD PLATE AND SHALL BE TIGHT (GASKET). THE DOORS SHALL OPEN TO 90° AND AUTOMATICALLY LOCK. THE LIFTING HANDLES, HANDLES, HINGES, AND ALL FASTENING HARDWARE SHALL BE ALUMINUM OR STAINLESS STEEL. TYPE 316. ACCESS COVERS ON VALVE VAULT SHALL BE CENTERED ON THE VALVES AND CLEANOUT FOR ACCESS. ACCESS COVERS SHALL INCLUDE A HINGED PROTECTIVE GRATING PANEL.
3. GUIDE RAILS MUST BE SUPPLIED BY BARNEY'S PUMPS INC. BASE ELBOW, FLANGE GRONNET AND DISCHARGE FLANGE MUST ALSO BE PROVIDED BY BARNEY'S PUMPS. THE PUMP SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE. PERSONNEL SHALL HAVE NO REASON TO ENTER THE WET WELL. GUIDE RAILS SHALL BE SUPPORTED EVERY 10 FEET WITH STAINLESS STEEL SUPPORTS.
4. ALL HARDWARE AND FASTENERS USED SHALL BE CONSTRUCTED OF 300 SERIES STAINLESS STEEL. GUIDE BRACKETS FOR EACH PUMP MUST BE SUPPLIED BY THE PUMP MANUFACTURER TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
5. EACH PUMPING UNIT SHALL BE PROVIDED WITH A STAINLESS STEEL LIFTING CHAIN. LIFTING CHAIN SHALL EXTEND AT LEAST 3-4 FEET ABOVE WET WELL.
6. A 316 STAINLESS STEEL FLOAT MOUNTING ASSEMBLY SHALL BE PROVIDED. THE FLOATS SHALL BE MOUNTED AWAY FROM THE WET WELL INLET, ANY CONTROL WIRING, AND THE PUMPS TO MINIMIZE DISTURBANCE. FLOATS SHALL BE LOCATED OUTSIDE OF STILLING WELL.
7. PUMP DISCHARGE LINES SHALL HAVE 1/4 INCH TAPS WITH STAINLESS STEEL OR BRONZE BALL VALVES. THE TAPS SHALL BE ACCESSIBLE AND LOCATED UPSTREAM OF THE VALVES (ON THE PUMP SIDE) IN THE EXTERNAL VAULT VAULT.
8. IN THE VAULT ALL DISCHARGE LINES SHALL HAVE ADEQUATE THRUST SUPPORT MEMBERS AT EACH FITTING. WHERE POSSIBLE, LONG RADIUS 90 DEGREE BENDS SHALL BE USED.
9. THE DISCHARGE LINE FROM EACH PUMP SHALL BE FITTED WITH A CHECK VALVE AND A RESILIENT WEDGE GATE VALVE, WITH THE CHECK VALVE ON THE PUMP SIDE OF THE GATE VALVE. AIR RELEASE VALVE(S) SHALL BE INSTALLED DOWNSTREAM OF THE GATE VALVES.
10. THE VALVE VAULT SHALL BE SIZED LARGE ENOUGH TO PROVIDE AT LEAST 1 FOOT OF CLEARANCE AROUND ALL VALVES AND 6 INCHES OF CLEARANCE TO ALL FLANGES. THE COVERS SHALL BE ABLE TO BE SECURED BY A PADLOCK USING A HEAVY DUTY HASP. ALL PIPING SHALL BE SHOP PRIMED AND FIELD COATED WITH TWO (2) COATS OF TNEEC SERIES 69 HI-BUILD EPOXOLINE II, OR APPROVED EQUAL, PROVIDING A TOTAL OF 12 MILS DFT.
11. THE VALVE VAULT SHALL HAVE A DRAIN TO THE WET WELL. THE DRAIN SHALL HAVE A MINIMUM 5-INCH DIAMETER STAINLESS STEEL SCREEN. THE DRAIN LINE SHALL BE A MINIMUM 2 INCH DIAMETER AND BE FITTED WITH A STAINLESS STEEL CHECK VALVE AND A TRAP TO PREVENT GASES OR WATER FROM ENTERING THE VALVE VAULT.
12. ALL VENTS SHALL BE STAINLESS STEEL. VENTS SHALL BE COATED INSIDE AND OUT PER CITY OF AUSTIN STANDARD SPECIFICATIONS. VENTS TO HAVE A 180 DEGREE BEND, A PROTECTIVE STAINLESS STEEL SCREEN, AND THE HEIGHT OF SCREEN FROM TOP OF CONCRETE SHALL BE 2'.
13. CONNECTION TO PROPOSED WET-WELL SHALL INCLUDE A PVC TEE INSIDE OF WET-WELL, CONNECTED TO PVC PIPE DIRECTED TOWARD THE BOTTOM OF THE WET-WELL. PROVIDE MINIMUM OF 8' FROM GRAVITY LINE INLET TO BOTTOM OF WET-WELL.
14. DISCHARGE LINES 3" AND SMALLER TO BE SCH. 80 PVC AND 4" AND LARGER TO BE CLASS 350 DUCTILE IRON LINED AND COATED IN ACCORDANCE WITH CITY OF AUSTIN STANDARDS. IF SCH. 80 PVC PIPE IS USED, AN ADDITIONAL FLANGE MOUNTED PIPE SUPPORT IS REQUIRED FOR THE PIG PORT.
15. PUMP/MOTOR DATA:

NO. OF PUMPS:

Q = GPM                      RPM = RPM (MAXIMUM)

H = FT TDH                V = PHASE

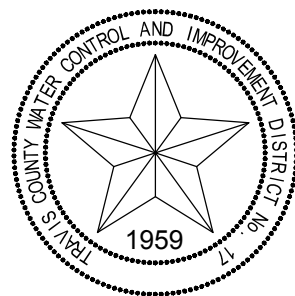
HP = HP



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## TYPICAL WET-WELL AND VALVE-VAULT PLAN AND SECTIONS



TRAVIS COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT NO. 17  
TYPICAL LIFT STATION DRAWINGS



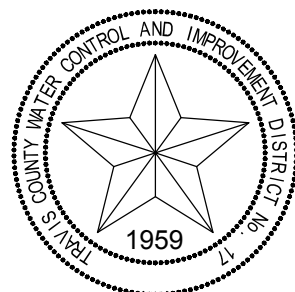
NOTES:

1. ODOR CONTROL STORAGE TANK, PIPING, METERING PUMP, AND APPURTENANCES TO BE SIZED ACCORDINGLY BASED ON APPLICATION AND SIZE OF LIFT STATION. SIZES SHOWN ARE TYPICAL MINIMUMS. COORDINATE WITH WCID 17. TANK MATERIAL, DIMENSIONS, AND APPURTENANCES TO BE DESIGNED ACCORDINGLY.
2. ORIENTATION OF PIPING AND APPURTENANCES IN ELEVATION AND SCHEMATIC ARE ROTATED FOR CLARITY. SEE PLAN VIEW FOR CORRECT ORIENTATION
3. METERING PUMP TO BE MOUNTED ON THE SIDE OF THE ELECTRIC PANEL AWNING. SEE ELECTRICAL FOR DETAILS



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TYPICAL ODOR CONTROL DETAIL

