

**CALAVERAS COUNTY
WATER DISTRICT**

INSTALLATION

of

PRESSURE SEWER SERVICE

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GENERAL

Pressure sewer service consists of the installation of a grinder pump and pressure piping to the property line cleanout. Typically, private pump stations are only allowed in conditions where it is impractical and not feasible to obtain a gravity connection. Only one private pump per parcel or unit is allowed. The following information is intended to assist the contractor or homeowner in the installation of these items. The building sewer service line is that portion of the line from two (2) feet outside the building to the property line cleanout, including the grinder pump. Work performed on private property may be performed by the owner provided that all materials and methods are in accordance with these Standards, the Standard Drawings, and the Uniform Plumbing Code.

No roof gutters, surface or subsurface drains, or other such appurtenances shall be connected to the building sewer.

PUMP SYSTEM SHEET

The pumping system data sheet is attached to this packet, and is to be completed and submitted to the District.

INSPECTION

The District shall inspect the installation of the service. The District requires a minimum of 48-hours notice prior to the start of construction. The District inspector will meet and coordinate with homeowner/contractor to discuss the requirements of the District and the location of the service(s) as submitted with the application. Additional time may be required for testing the pump system operations.

When an inspection is scheduled but the work is not complete and/or not acceptable, a re-inspection fee will be charged.

Trenches shall be kept open until the piping has passed inspection.

GRINDER PUMP and HOLDING TANK

The District neither maintains, nor is responsible for the costs of, the pump station. The following criteria are general guidelines and minimum requirements. The property owner may select alternative equipment if submitted for review to the District.

A. Type. The type of pump station is generally one unit and is a simplex or duplex type grinder pump station that includes a basin, pump assembly, guide rails (recommended), discharge/inlet connections, control panel, alarms, and level controls.

B. Location. The location of the pump station shall be external of the building and no closer than 5 feet from any structure. The pump station shall not be in an area where surface runoff or flooding can enter into the station.

C. Size. The diameter and height of the station depends on flows and desired storage amount for emergencies and power outages.

D. Installation. Pump and holding tank shall be installed in accordance with the manufacturer's specifications for outdoor installations. Manufacturer procedures for backfilling, venting, making electrical connections, and testing shall be followed. The pump, at a minimum, shall meet the operational requirements as submitted with the application package. The District must approve changes to the design criteria before the installation of the pump.

Finish grading around the holding tank shall be sloped away from the tank to allow for drainage. The tank shall be anchored to prevent uplift from possible groundwater. The access lid to the tank shall extend six (6) inches above the ground surface.

Level control and alarm systems shall have intrinsically safe circuits. The alarm system shall be on a separate circuit from the pump motor. The control panel shall be mounted externally to the pump as shown on the Standards Drawing. The panel shall have a MENA 3R classification. Rigid conduit, with seal offs, is required for all above-ground extensions. All electrical work shall conform to the applicable National Electric Code (NEC).

DISCHARGE LINE

A. Pipe Material. See Approved Material List for pressure pipe. All joints shall be watertight. Glued joints shall be joined by solvent cement of the type and method specified by the pipe manufacturer.

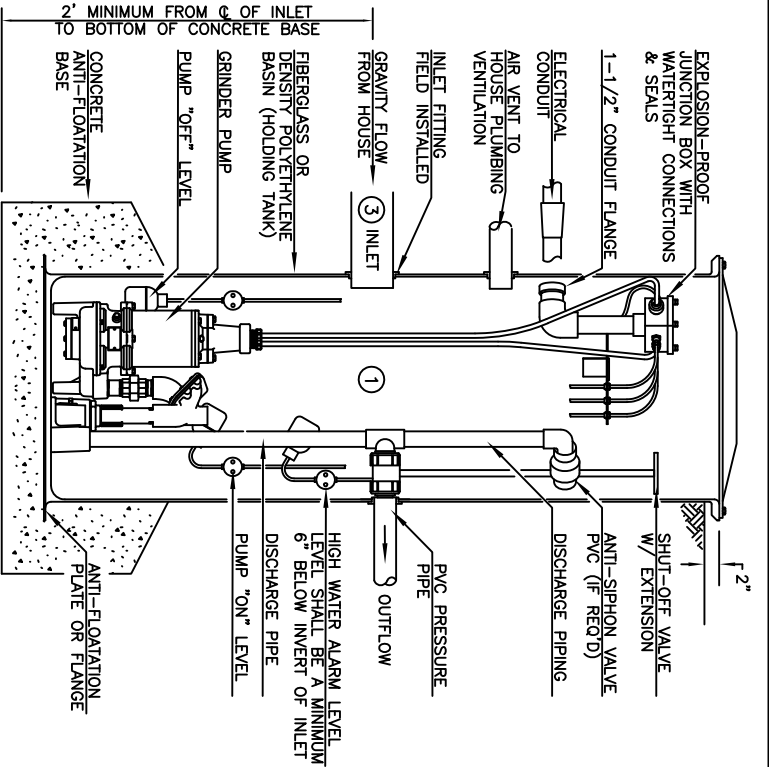
B. Pipe Size. The discharge pipe shall, at a minimum, equal the diameter of the pump's discharge outlet.

C. Location. The owner is responsible for verification, prior to construction, that the property line cleanout is located on the parcel to be served. No building sewer shall be installed under any building or structure such as patios, stairs, carports, pools, driveways, or other such appurtenances. No building sewer shall be laid parallel within five (5) feet of a retaining wall foundation.

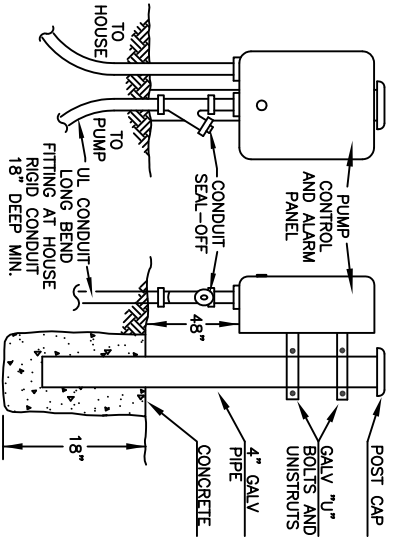
D. Excavations. All excavations shall be open trench and be inspected by the District. The trench section shall be in accordance with the standard detail provided herein.

- E. Common Trench. Pressure sewer service is not allowed to be installed in the same trench as the water service. Electrical service is prohibited in the same trench as the water and sewer.
- F. Minimum Cover. Minimum cover shall be eighteen (18) inches from top of pipe to finish surface.
- G. Crossings. Pressure sewers are to cross under water pipes by a minimum of twelve (12) inches. A minimum vertical clearance of twelve (12) inches is required for all other utilities.
- H. Pipe Bedding. See Approved Material List. Bedding material shall be placed two (2) inches below and six (6) inches above the pipe.
- I. Backfill Material. Native material may be used provided it is free from organic debris and rock 3-inches and smaller. Prior to backfilling over a building sewer, all construction shall be inspected and approved by District's inspector. Any building sewer backfilled prior to inspection approval shall be required to be re-excavated for proper inspection and approval.
- J. Tracer Wire. Building service is to have tracer wire along the entire length from the connection to the pump.
- K. Testing. Test the pressure system in the presence of the District's Inspector and to a minimum pressure 1.5 times the working pressure.

END



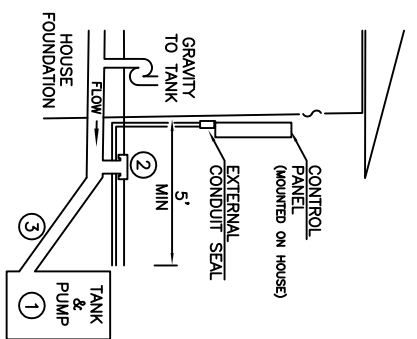
GRINDER PUMP WITH REMOTE MOUNTED CONTROL PANEL AND HOLDING TANK



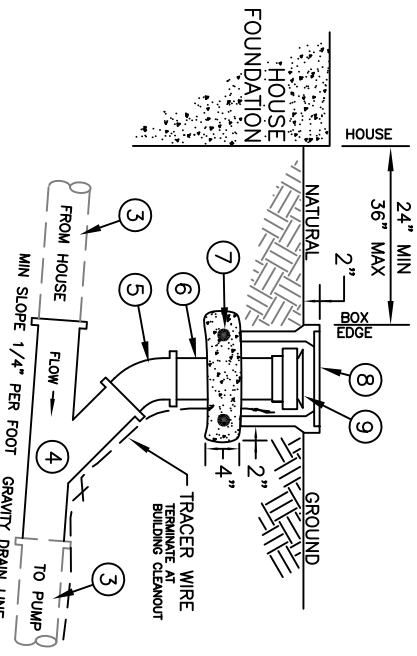
GENERAL CONTROL PANEL
MAY ALSO BE MOUNTED ON HOUSE
USING N.E.C. INSTALLATION STANDARDS

1. SEWER SERVICE TO BE INSPECTED BY CCWD PRIOR TO BACKFILLING OF TRENCH. CALL CCWD FOR AN INSPECTION AFTER HOOK-UP IS MADE ALLOW 48 HOURS NOTICE FOR INSPECTION.
2. GRADING AROUND HOLDING TANK SHALL SLOPE AWAY FOR DRAINAGE.
3. INSTALL GRINDER PUMP AND HOLDING TANK PER MANUFACTURERS SPECIFICATIONS.
4. WRAP AND TAPE TRACER WIRE EVERY 10'(ft) TO PVC PRESSURE PIPE.
5. GRINDER PUMP VENTILATION SHALL BE CONNECTED TO HOUSE SEWER VENTING SYSTEM PER NFPA CODE.
6. THESE REQUIREMENTS MAY BE MODIFIED BY CCWD FOR PROPERLY SPECIFIC CONDITIONS.
7. GRINDER PUMPS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC. IF LOCATED IN TRAFFIC AREA, UNIT SHALL BE TRAFFIC RATED AND INSTALLED FLUSH WITH ASPHALT OR CONCRETE SURFACE.

ITEM#	DESCRIPTION
①	GRINDER PUMP & HOLDING TANK
②	CLEANOUT, 2' FROM BUILDING SEE DETAIL
③	GRAVITY LINE FROM HOUSE TO TANK
④	4" WYE (MIN), PVC
⑤	LONG-RADIUS SWEEP, PVC
⑥	4" PVC
⑦	#4 REBAR REINFORCEMENT
⑧	CLEANOUT BOX
⑨	SEWER POPPER



TANK AND PANEL
TYPICAL LOCATION
SEE SHEET 2A FOR PRESSURE PIPING

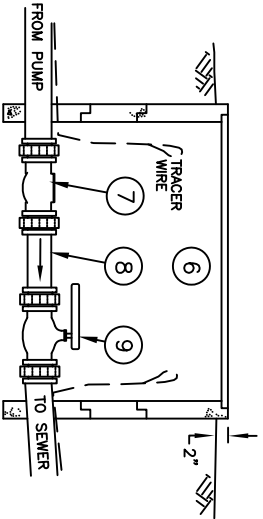
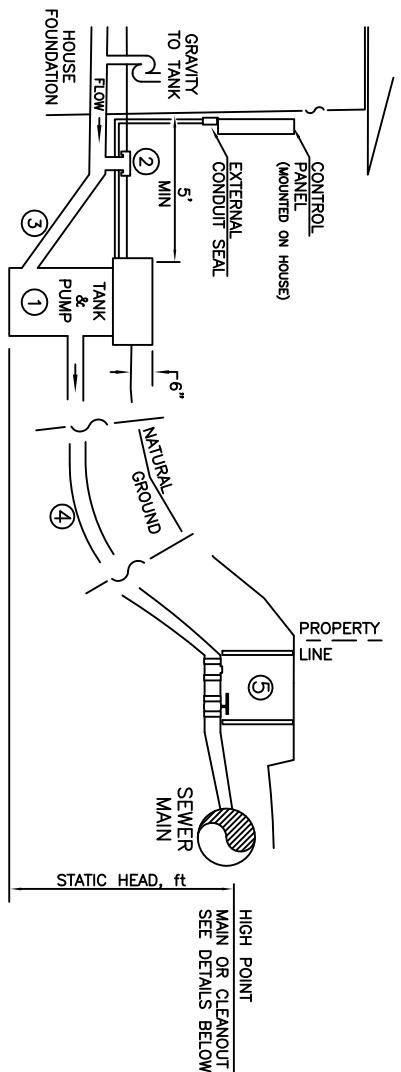


BUILDING SEWER LATERAL & CLEANOUT

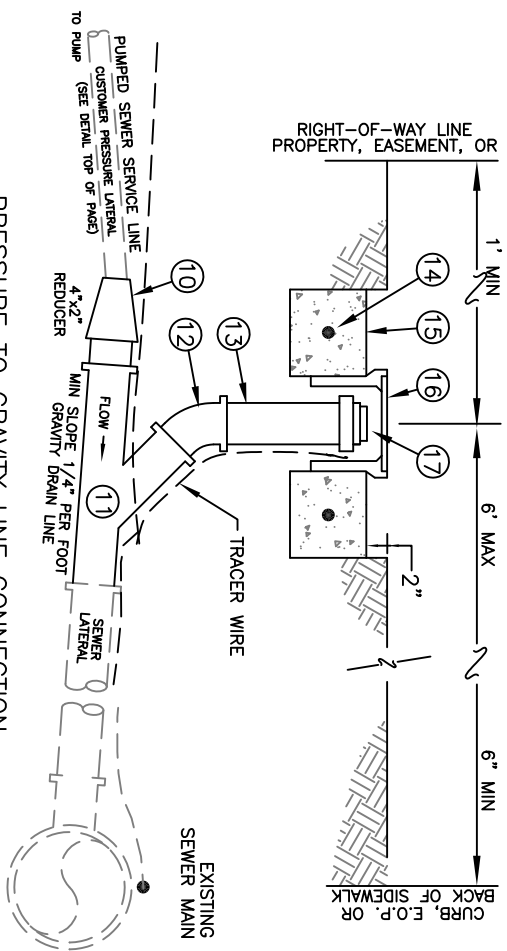
CALAVERAS COUNTY WATER DISTRICT

CUSTOMER SERVICE DETAILS PUMPED SEWER SERVICE

DRAWN BY: CCWD STAFF	SCALE: NONE	CCWD STANDARD DRAWING NO. SERVICE CONNECTION SEWER HANDOUT 2
APPROVED: S.HUTCHINGS	DATE: 11/12/2008	



PUMPED SEWER SERVICE CONNECTION
SEWER MAIN HIGHER THAN CONNECTION



PRESSURE TO GRAVITY LINE CONNECTION
SEWER MAIN LOWER THAN CONNECTION

PUMP DESIGN HEAD	
STATIC HEAD (AT HIGHEST POINT)	ft
HEAD LOSSES	ft
TOTAL DESIGN HEAD	ft
PUMP CAPACITY	
_____ gpm @ _____ TOH	

ITEM#	DESCRIPTION
1	GRINDER PUMP & HOLDING TANK
2	CLEANOUT, 2' FROM BUILDING SEE DETAIL
3	GRAVITY LINE FROM HOUSE TO TANK
4	PVC PRESSURE PIPE (200 PSI) W/ TRACER WIRE
5	PUMPED OR GRAVITY CONNECTION SEE DETAILS BELOW
6	UTILITY BOX W/ LID MARKED "SEWER"
7	2" PVC BALL VALVE W/ UNION
8	2" PIPE, SCH 80
9	TRUE UNION SWING CHECK VALVE, PVC
10	
11	4" WYE (MIN), PVC
12	LONG-RADIUS SWEEP, PVC
13	4" PVC
14	#4 REBAR REINFORCEMENT
15	18"x18"x6" CONCRETE PAD
16	CLEANOUT BOX
17	THREADED PLUG, PVC

SEE PUMPED SEWER SERVICE HANDOUT SHEET 2 FOR NOTES

CALAVERAS COUNTY WATER DISTRICT

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DRAWN BY:	CCWD STAFF	SCALE:	NONE	CCWD STANDARD DRAWING NO.
APPROVED:	S.HUTCHINGS	DATE:	11/2008	SERVICE CONNECTION SEWER HANDOUT 2A