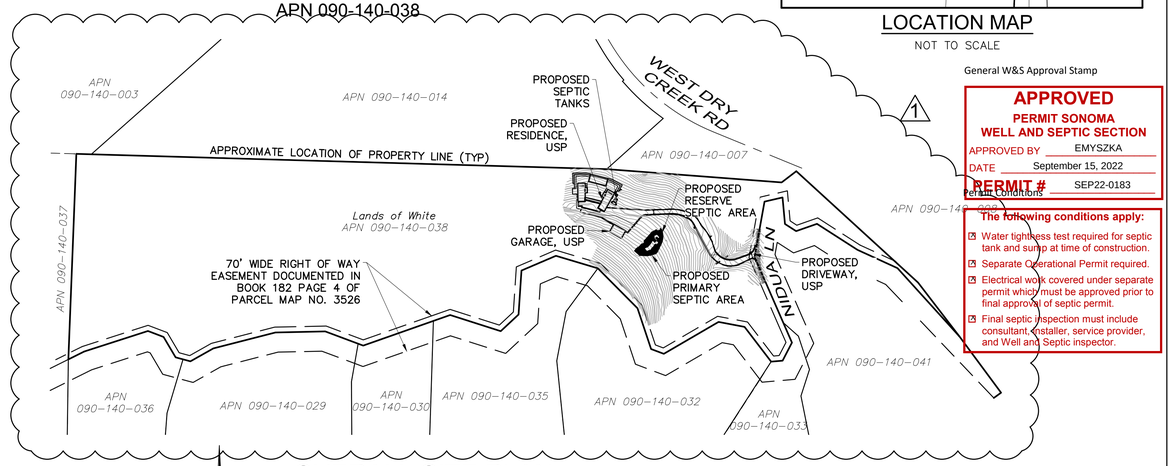
DRIP IRRIGATION TYPE DOMESTIC WASTEWATER SYSTEM

3210 West Dry Creek Road
Healdsburg, California

APN 090-140-038

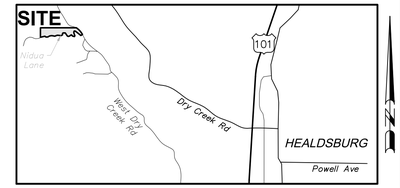


OVERALL SITE PLAN

200' 100' 0 100' 200' 400' 600'

Graphic Scale: 1" = 200'

Pretreatment Device	ORENCO AX25RT
Disinfection Unit	N/A
Septic	2,000 GAL
Sump	810 GAL
Time On	00:10:16
Time Off	01:49:00
Gal/Min	4.8
Doses/Day	12
Depth	12"
Width	4"
Length	560'
Gal/Dose	60
Gal/Day	720
Number of Bedrooms	6



LOCATION MAP

NOT TO SCALE

General W&S Approval Stamp

APPROVED
PERMIT SONOMA
WELL AND SEPTIC SECTION
APPROVED BY EMYSZKA
DATE September 15, 2022
PERMIT # SEP22-0183
Permit Conditions

The following conditions apply:
- Water tightness test required for septic tank and sump at time of construction.
- Separate Operational Permit required.
- Electrical work covered under separate permit which must be approved prior to final approval of septic permit.
- Final septic inspection must include consultant, installer, service provider, and Well and Septic inspector.

OWNER INFO

JUSTIN WHITE AND REBECCA KILHEFNER–WHITE
EMAIL: JPWHITE03@GMAIL.COM
7210 GLENBROOK ROAD
BETHESDA, MARYLAND 20814

SHEET INDEX

1. COVER SHEET
2. SEPTIC SYSTEM PLAN
3. DETAILS & NOTES
4. ADVANTEX DETAIL

ENGINEERING NOTES

1. The design engineer shall inspect the site and weather conditions prior to construction of the system. He/she must verify dry and acceptable soil and weather conditions for construction and decide if conditions are suitable to begin construction.

2. The design engineer shall verify (with the contractor) the proper staking of the system prior to construction. The primary system area, system details, configuration, location, contours, percolation area, expansion area, etc. Shall be verified.

1. The design engineer or contractor shall notify the Sonoma County Permit & Resource Management Department (P.R.M.D.), a minimum of 48 hours in advance when construction is to take place and certify that the soil conditions are acceptable for construction purposes and that the staking of the entire system has been accomplished and certified. The contractor is also required to notify the P.R.M.D the method they are proposing to use to install the drip irrigation lines.

4 All meetings and inspections shall be scheduled with the design engineer a minimum of 48 hours in advance. These meetings and inspections shall include as a minimum:
A) Pre–construction conference
B) Inspection of fill soil
C) Interim inspection, performed prior to covering any elements of the system.
D) Final inspection of the completed system and all related items per the construction drawings and Documents. (This meeting is required to have the design engineer, installer, service provider and well and septic staff present and shall be conducted after the #189 electrical inspection has been completed.)

5. At the pre–construction conference, the following items shall be reviewed. Construction may proceed if the design engineer notifies the Permit & Resource Management Department Health Specialist verbally that all elements appear to conform to the following requirements:
A) Soil moisture at the appropriate depths are not so high as to have the soil smear or compact due to construction activities.
B) Imminent weather conditions appear that they will not create unsuitable soil moisture conditions during the course of construction.
C) The source of the soil cover material shall be designated, and a sample shall be made available and approved by the design engineer prior to placement.
D) Layout and staking of the primary leach field area and the reserve leach field area boundaries substantially conform to the approved construction drawings and all related documents. (This meeting is required to have the design engineer, installer, service provider and well and septic staff present and shall be conducted after the #189 electrical inspection has been completed.)

6. At the interim inspection, the following elements (when required) shall be verified.
A) Inspect fill soil for quality and proper placement.

7. At the interim inspection, the following elements (when required), shall be verified by the design engineer and the Sonoma County P.R.M.D, by visual inspection and operation of the system. When all required items are completed and approved, the disposal field, trenches and tanks may be covered or backfilled. If another method of inspection has been approved by the well and septic staff then the drip lines and fittings may be covered before this meeting. This may be necessary when using a vibratory plow to construct the system.
A) Line and grade of all excavations and fills as applicable.
B) Function and setting of the control devices, including but not limited to valves, switches, and alarms.
C) Hydraulic testing of any pump and distribution system to assure that the pump is adequate for design flow.
D) All the remaining elements required to complete the system shall be on site at the time for verification and approval by the design engineer for conformance to the construction drawings and specifications.
E) The septic tank shall be IAPMO approved, the sump pump tank IAPMO listed. The septic tank and pump sump tank will be subjected to a water tightness test by the Sonoma County P.R.M.D. The water test shall be performed by the contractor and consists of filling the tanks 2" into the risers with clear water. The tanks may be tested separately and shall be considered adequately water tight if no measurable drop of water in 1/2 hour.

8. During the final/start up inspection, the design engineer shall verify that all construction is in general conformance with the approved construction drawings and specifications. (This meeting is required to have the design engineer, installer, service provider and well and septic staff present and shall be conducted after the #189 electrical inspection has been completed.)

9. A final letter from the designing engineer to the Sonoma County P.R.M.D. Shall state that all construction has been completed, approved, and is in conformance with all specifications.

10. The Sonoma County P.R.M.D. Environmental Health Specialist will perform a final inspection of the system following receipt of the design engineer's approval letter. The P.R.M.D. Sanitarian will not sign off the permit or job card until the residence or structure is ready for occupancy. At this time the operational permit will be issued and the anniversary date established.

11. At the start–up of the system, after the #189 electrical inspection, the installer, engineer, service provider, and PRMD environmental health specialist shall be present to verify proper operation and settings of all controls. A copy of the contract with the service provider shall be given to the County at this time.

CONCRETE SEPTIC TANK NOTES

1. Seal interior of septic tank with Thoroseal or equal. Seal all joints with mastic. Seal precast concrete joints with Ramnek or equal.

2. Pipes through holes in the septic tank or riser must be sealed with gas–tight compression connectors or waterproof sealant or precast into septic tank.

3. Tank and riser joint shall be sealed and made water tight with non–shrink grout overlaid with Xypex or Thoroseal.

4. The septic tank shall be IAPMO listed. Water tightness test is required by Sonoma County Permit & Resource Mgmt. Dept. The water tightness test consists of filling the tank 2 inches into the risers with clear water.

5. The tank shall be considered adequately water tight if there is no measurable fall of water in the tank in 1/2 hour.

CONCRETE PUMP SUMP NOTES

1. Seal interior of pump sump with Thoroseal or equal. Seal all joints with mastic. Seal precast concrete joints with Ramnek or equal.

2. Penetrations in the pump sump or riser must be sealed with gas–tight compression connectors or waterproof sealant or precast into pump sump.

3. Tank and riser joint shall be sealed and made water tight with non–shrink grout overlaid with Xypex or Thoroseal.

4. The pump sump shall be IAPMO listed. Water tightness test is required by Sonoma County Permit & Resource Management Department. The water tightness test consists of filling the tank full to 2 inches into the risers with clear water.

5. The tank shall be considered adequately water tight if there is no measurable fall of water in the tank in 1/2 hour.

SUBSURFACE DRIP ADDITIONAL NOTES

1. Soils with this parcel are described in the "Soil Survey for Sonoma, California", United States Department of Agriculture, May 1972.

2. Homeowners and contractors are prohibited from placing unacceptable plants, shrubs, trees, ornaments, vegetative cover, and irrigation systems over or to close to a subsurface drip irrigation system. All landscaping plans shall be reviewed by the Design Engineer and P.R.M.D. as part of the plan checking and inspection of the system.

3. Homeowners will be required to inspect the sub–surface drip irrigation system regularly as part of the Sonoma County Monitoring Program, with special attention checking for gopher strikes, damaged or torn sub–surface drip irrigation lines and equipment. Owners shall only have licensed and experienced professional C–36, C–42, or a licensed general engineering contractor install and/or repair damaged sub–surface drip irrigation lines and equipment.

4. Restrictions shall be reviewed and recorded so as to prevent property owners from placing incompatible landscaping and/or landscaping activities over or around the sub–surface drip irrigation systems that have been permitted and installed on their parcel, that may damage the system and cause a public health concern.

GENERAL NOTES

1. Low flow toilets (1.6 gal. Max.) are required in all bathrooms and lavatories.

2. Water service lines to observe all setbacks required by the Sonoma County Permit and Resource Management Department.

3. Contours shown are based on field work performed by Adobe Associates, Inc. on May 2, 2017. Contour interval is two (2) foot, datum assumed.

4. No foundation and/or driveway cuts, and no surface or sub–surface drains are to be located within 50 feet downslope or laterally of the primary or expansion/repair area of any leachfield. Direct downspouts away from leach field.

5. The boundary information shown is per record information and is not the result of a survey by Adobe Associates, Inc.

6. Any proposed change to house design or location is to be approved by Adobe Associates, Inc. and the the Sonoma County Permit and Resource Management Environmental Health Specialist for compatibility with the septic system.

7. Removal of trees within any proposed fill area is required. Trees allowed to remain in the fill area may be damaged or destroyed by the deleterious effects of the fill soil.

SUBSURFACE DRIP NOTES

1. All materials and workmanship shall conform to the requirements of the Sonoma County P.R.M.D. All mechanical, plumbing and electrical work shall conform to the appropriate codes adopted by the County of Sonoma.

2. The contractor shall utilize caution and be solely responsible for field locating and avoiding all utility lines in the work area.

3. The installation of this sewage disposal subsurface drip irrigation system may be restricted to certain times of the year based on seasonal ground water and weather conditions. Contractor shall verify starting times with the Sonoma County P.R.M.D.

4. The contractor shall provide the design engineer Adobe Associates, Inc. (1–707–541–2300) 48 hours notice of commencement of construction and prior to required inspections. The contractor shall give 48 hours minimum notice to the Sonoma County P.R.M.D (1–707–565–1900). Prior to commencement of work.

5. Distribution bed and/or trenches shall be excavated level and parallel with the existing natural ground contours shown on the plans.

6. Questions regarding the suitability of any materials or construction procedures used in connection with the work shown on these plans shall be directed solely to the design engineer prior to installation or use.

7. Seed and fertilizer shall be either applied mechanically or by hydro–seeding immediately after installation hydro–seeding requires the application of fiber and stabilizing emulsion. Mechanical application shall require rolling, tamping, or otherwise working the seed and fertilizer into the soil. Seed the area with grasses providing high rates of evapotranspiration.

8. Seal interior of septic tank and pump sump tank with Thoroseal or equal. Seal all exterior joints with mastic. Seal precast concrete joints with Ramnek or equal. Seal pipes extending through tank walls with non–shrink grout or precast into pump sump tank. Tanks and riser joints shall be sealed and made water tight with non–shrink grout overlaid with Xypex or Thoroseal.

9. This sewage disposal system has been designed to accommodate a peak daily flow of 120 gallons per bedroom, and a long term average daily flow of 60 gallons per bedroom. Water conservation measures may be necessary to maintain these water usage limits.

10. Minimum clearance from any existing or proposed structure to any septic tank shall be a minimum of 5.0' unless greater clearance is required by others.

11. Minimum clearance from any roadway or parking area to any septic tank shall be 5.0' unless greater clearance is required by others.

12. Drip lines shall be placed a minimum of 6" deep, or maximum of 12" deep. The depth will be site specific; refer to plan details for trench depth. When drip lines are installed 6" deep, contractor must utilize a UV disinfection unit in addition to an Advantex pre–treatment unit.

13. Seeding and straw placement may be required over the system after construction (ask the design engineer).

NOTES:

A MANUAL SWITCH FOR THE PUMP SHALL BE LOCATED WITHIN 25' AND IN CLEAR VIEW OF THE SUMP. MOUNT CONTROL PANEL ON HOUSE OR ON A POST WITHIN 25' OF THE SUMP AND IN CLEAR VIEW OF THE SUMP. IF CONTROL PANEL IS MORE THAN 75' FROM HOUSE, PROVIDE A REMOTE ALARM WITH AN ADDITIONAL LIGHT AND HORN AT THE HOUSE.

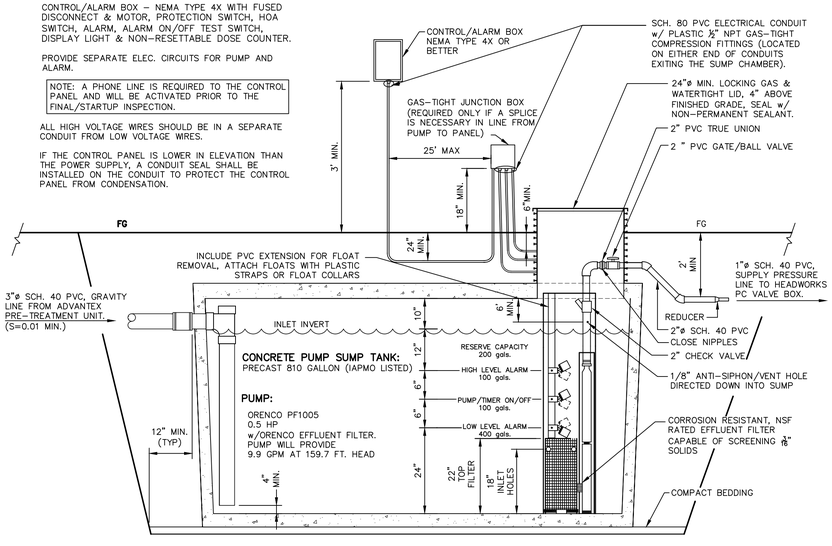
CONTROL/ALARM BOX – NEMA TYPE 4X WITH FUSED DISCONNECT & MOTOR, PROTECTION SWITCH, HOA SWITCH, ALARM, ALARM ON/OFF TEST SWITCH, DISPLAY LIGHT & NON–RESETTABLE DOSE COUNTER.

PROVIDE SEPARATE ELEC. CIRCUITS FOR PUMP AND ALARM.

NOTE: A PHONE LINE IS REQUIRED TO THE CONTROL PANEL AND WILL BE ACTIVATED PRIOR TO THE FINAL/STARTUP INSPECTION.

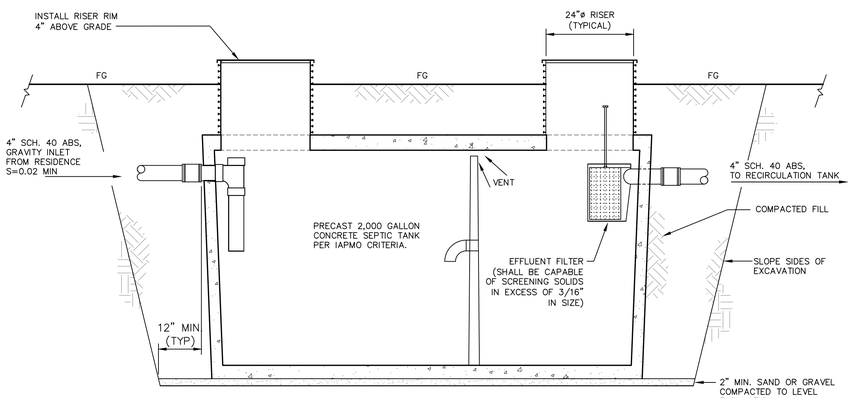
ALL HIGH VOLTAGE WIRES SHOULD BE IN A SEPARATE CONDUIT FROM LOW VOLTAGE WIRES.

IF THE CONTROL PANEL IS LOWER IN ELEVATION THAN THE POWER SUPPLY, A CONDUIT SEAL SHALL BE INSTALLED ON THE CONDUIT TO PROTECT THE CONTROL PANEL FROM CONDENSATION.



810 GALLON CONCRETE PUMP SUMP TANK DETAIL

NTS



2,000 GALLON CONCRETE SEPTIC TANK

NTS

No.	Revisions Description	Date	Approved
1	PC REPLY #1	09/06/22	GMS

adobe associates, inc.
civil engineering | land surveying | wastewater
1220 N. Dutton Ave., Santa Rosa, CA 95401
P: (707) 541-2300 F: (707) 541-2301
Website: www.adobeinc.com
"A Service You Can Count On"

Gregory M. Schram, RCE 73540
My License Expires 12/31/2022

REGISTERED PROFESSIONAL ENGINEER * GREGORY M. SCHRAM * No. 73540 Exp. 12/31/2022 * CIVIL * STATE OF CALIFORNIA

DRIP TYPE PRIVATE
SEWAGE DISPOSAL SYSTEM
COVER SHEET
3210 West Dry Creek Road
Healdsburg, California
APN 090-140-038

Scale:	AS SHOWN
Date:	April 18, 2022
Design by:	SFG
Drawn by:	SFG
Checked by:	GMS

Sheet
W1
of 4 Sheets
Job No. 21387

File: T:\2021 PROJECTS\21387\DWG\ADOBE-INVISTA\21387-DRIP IRRIGATION.DWG 8/6/2022 2:11:19 PM Plotted By: Pierre Garcia

General W&S Approval Stamp

DESIGN CRITERIA

DESIGN PURPOSE
THE PURPOSE OF THIS PROJECT IS TO PROVIDE SEPTIC DISPOSAL CAPACITY FOR A PROPOSED 6–BEDROOM RESIDENCE ON THE PARCEL LOCATED AT 3210 WEST DRY CREEK ROAD (APN 090–140–038). THE PROPOSED SYSTEM IS A NONSTANDARD DRIP IRRIGATION SYSTEM. THE PROPOSED DESIGN MEETS ALL CURRENT SONOMA COUNTY OWTS STANDARDS.

SITE REVIEW:
A SITE REVIEW WAS CONDUCTED BY A REPRESENTATIVE FROM THE SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT ON JULY 7, 2004 (SEV04–1126).

PERCOLATION TEST:
PERCOLATION TESTING WAS CONDUCTED BY FRANK DONO ON AUGUST 27, 2004 (SEV04–1358).

AVERAGE PERCOLATION RATE: 19 MINUTES PER INCH AT DEPTHS OF 36" AND 48".
SOIL APPLICATION RATE: 0.671 GAL/SF/DAY

AVERAGE GROUND SLOPE = 10–30%

6 BEDROOM RESIDENCE

SYSTEM DESIGN CALCULATIONS/FLOWS:
(120 GAL/DAY/BDRM)(6 BEDROOMS) = 720 TOTAL GALLONS/DAY
(720 TOTAL GALLONS/DAY)/(0.671 (HLR) GAL/SF/DAY) = 1,073 TOTAL SQUARE FEET

DRIP IRRIGATION PRIMARY SEPTIC SYSTEM DESIGN:
1,073 SQUARE FEET (100%) PRIMARY DRIP IRRIGATION DISPOSAL FIELD REQUIRED.
1,120 SQUARE FEET PRIMARY DRIP IRRIGATION DISPOSAL FIELD SHOWN.
(TO BE CONSTRUCTED)

DRIP IRRIGATION RESERVE SEPTIC SYSTEM DESIGN:
2,146 SQUARE FEET (200%) RESERVE DRIP IRRIGATION DISPOSAL FIELD REQUIRED.
2,172 SQUARE FEET RESERVE DRIP IRRIGATION DISPOSAL FIELD SHOWN.
(NOT TO BE CONSTRUCTED)

NOTES

1. NO FOUNDATION AND/OR DRIVEWAY CUTS, AND NO SURFACE OR SUB–SURFACE DRAINS ARE TO BE LOCATED WITHIN 50 FEET DOWNSLOPE OR LATERALLY OF THE PRIMARY OR EXPANSION/REPAIR AREA OF ANY LEACH FIELD. DIRECT DOWNSPOUTS AWAY FROM LEACH FIELD.
2. ALL UNDERGROUND BOXES REQUIRE INSTALLATION OF GOPHER–RESISTANT BARRIERS.
3. THE ENGINEER, INSTALLER, AND SERVICE PROVIDER WILL BE PRESENT WITH WELL AND SEPTIC STAFF AT THE START UP INSPECTION AFTER THE #189 ELECTRICAL INSPECTION.

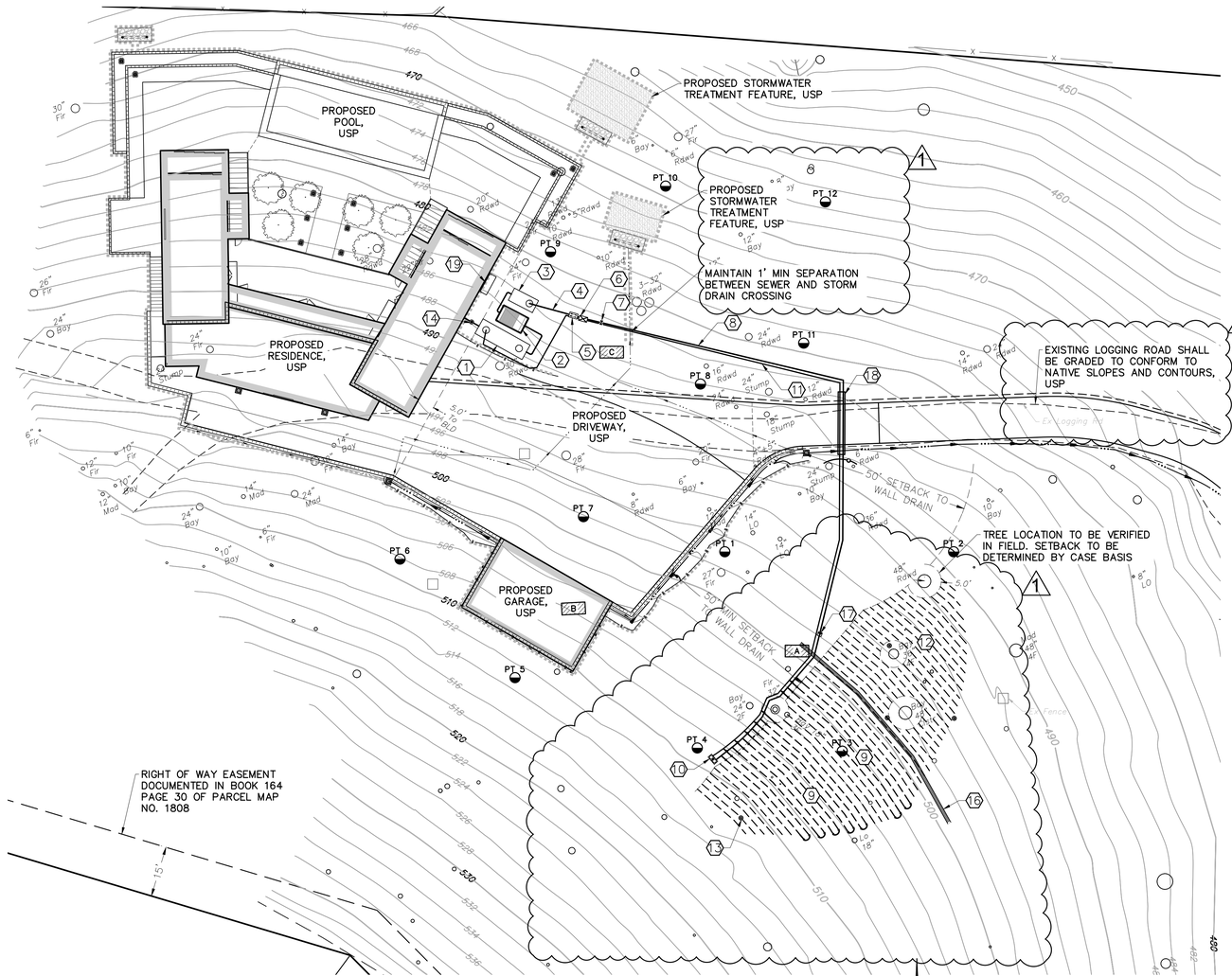
APPROVED
PERMIT SONOMA
WELL AND SEPTIC SECTION
APPROVED BY EMYSZKA
DATE September 15, 2022
PERMIT # SEP22-0183
Permit Conditions

The following conditions apply:
- Water tightness test required for septic tank and sump at time of construction.
- Separate Operational Permit required.
- Electrical work covered under separate permit which must be approved prior to final approval of septic permit.
- Final septic inspection must include consultant, installer, service provider, and Well and Septic inspector.

LEGEND

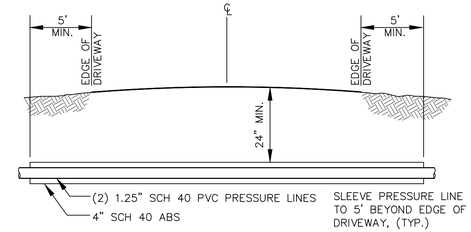
1. 2,000 GALLON (IAPMO APPROVED) CONCRETE SEPTIC TANK WITH 24"ø RISERS OVER BOTH PORTS (SEE DETAIL, SHEET W1)
2. ORENCO ADVANTEX TREATMENT SYSTEM, MODEL AX–25RT (SEE DETAILS, SHEET W4) 1"ø SUPPLY LINE TO HEADWORKS BOX)
3. 810 GALLON (IAPMO LISTED) CONCRETE PUMP SUMP TANK AND SUMP PUMP WITH 24"ø RISER OVER SUMP PUMP PORT (SEE DETAIL, SHEET W1)
4. 1"ø SUPPLY LINE TO HEADWORKS BOX
5. GEOFLOW HEADWORKS PC, VALVE BOX, WITH GEOFLOW, VORTEX FILTER, FLUSH VALVES (SEE DETAIL, SHEET W4)
6. FLOW METER IN VALVE BOX ON SUPPLY AND RETURN LINES (SEE DETAIL, SHEET W3)
7. CHECK VALVE IN VALVE BOX
8. 1"ø SUPPLY LINE TO SEPTIC FIELD
9. PRIMARY (100%) DRIP IRRIGATION DISPOSAL FIELD CONTAINING 560 LF OF DRIP LINE SPACED 2 FEET APART WITH 280 EMITTERS. PRESSURE COMPENSATED EMITTERS SET AT 1 GPH. TRENCHES TO BE AT A DEPTH OF 12" (SEE SYSTEM SCHEMATIC, SHEET W3) (TO BE CONSTRUCTED)
10. GEO–FLOW AIR/VACUUM VENT (SCHRADER), TYP; INSTALL AT HIGH POINTS OF PRIMARY SUB–SURFACE DRIP IRRIGATION DISPOSAL FIELD (SEE DETAIL, SHEET W4)
11. 1"ø RETURN LINE TO HEADWORKS BOX
12. RESERVE DRIP IRRIGATION DISPOSAL FIELD (NOT TO BE CONSTRUCTED)
13. MONITORING WELL, 4 MIN (SEE DETAIL, SHEET W4)
14. TWO–WAY GRAVITY TYPE CLEANOUT; INSTALL 2' MAX FROM RESIDENCE EXTERIOR WALL (SEE DETAIL, SHEET W3)
15. ONE–WAY GRAVITY TYPE CLEANOUT; INSTALL AT ANGLE POINTS AND AT 100' MAX INTERVALS ON GRAVITY LINE (SEE DETAIL, SHEET W3)
16. STRAW WATTLE CHECK DAM (SEE DETAIL, THIS SHEET)
17. 40 PSI PRESSURE REDUCER ON SUPPLY LINE IN VALVE BOX
18. DRIVEWAY CROSSING (SEE DETAIL, THIS SHEET)
19. CONTROL PANEL (SEE DETAIL, SHEET W1)

SOIL PROFILE HOLE
PT X PERCOLATION TEST PIT
CONTROL POINT



SEPTIC SYSTEM PLAN

20' 10' 0 10' 20' 40' 60'
Graphic Scale: 1" = 20'

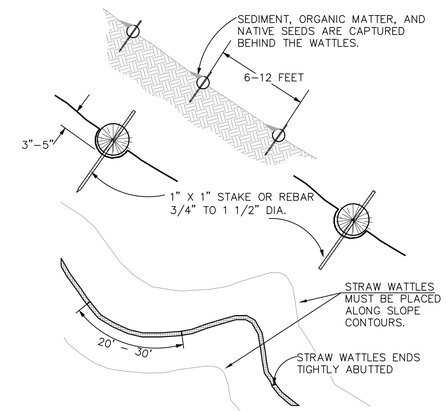


DRIVEWAY CROSSING DETAIL
NTS

DRIP IRRIGATION SYSTEM DOSING NOTE

00:12:36 MINUTES ON
01:47:00 MINUTES OFF

12 2–HOUR CYCLES PER DAY FOR 720 GAL/DAY (DESIGN VOLUME)
AT 4.8 GAL/MIN (1.0 GAL/HOUR NOMINAL EMITTER FLOW RATE)



NOTES:
1. STRAW WATTLES ARE TUBES MADE FROM STRAW BOUND W/ PLASTIC NETTING. THEY ARE APPROX. 8" DIA. AND 20 – 30 FT. LONG.
2. STRAW WATTLES TRAP SEDIMENT AND REDUCE SHEET & RILL EROSION BY REDUCING SLOPE GRADIENT, INCREASING INFILTRATION RATES AND BY PRODUCING A FAVORABLE ENVIRONMENT FOR PLANT ESTABLISHMENT.
3. STRAW WATTLE INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE WATTLE IN A TRENCH, 3" – 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND WATTLE.

STRAW WATTLE CHECK DAM
NTS

Revisions

No.	Date	Description	Approved
1	09/06/22	PC REPLY #1	GMS

adobe associates, inc.
civil engineering | land surveying | wastewater
1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com
"A Service You Can Count On!"

Gregory M. Schram, RCE 73540
My License Expires 12/31/2022

REGISTERED PROFESSIONAL ENGINEER * GREGORY M. SCHRAM * No. 73540 * Exp.12/31/2022 * CIVIL * STATE OF CALIFORNIA

DRIP TYPE PRIVATE SEWAGE DISPOSAL SYSTEM SEPTIC SYSTEM PLAN

3210 West Dry Creek Road
Healdsburg, California
APN 090-140-038

Scale: AS SHOWN
Date: April 18, 2022
Design by: SFG
Drawn by: SFG
Checked by: GMS

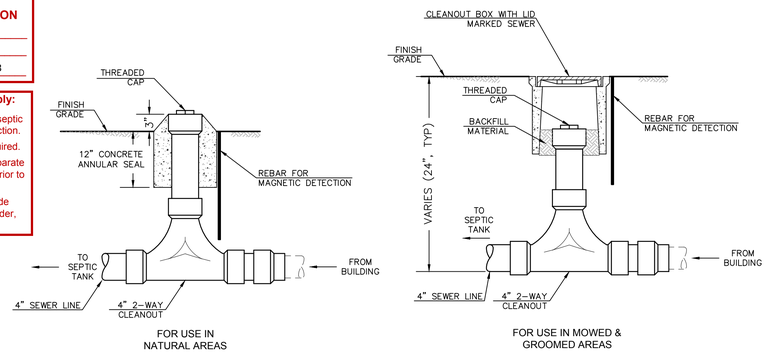
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of 4 Sheets
Job No. 21387

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General W.S.S Approval Stamp

APPROVED
PERMIT SONOMA
WELL AND SEPTIC SECTION
APPROVED BY EMYSZKA
DATE September 15, 2022
PERMIT # SEP22-0183
Permit Conditions

The following conditions apply:
- ☑ Water tightness test required for septic tank and sump at time of construction.
- ☑ Separate Operational Permit required.
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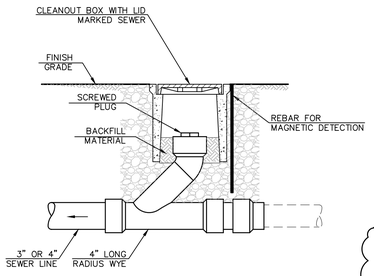


FOR USE IN NATURAL AREAS

FOR USE IN MOWED & GROOMED AREAS

TWO-WAY GRAVITY CLEANOUT DETAIL

NTS

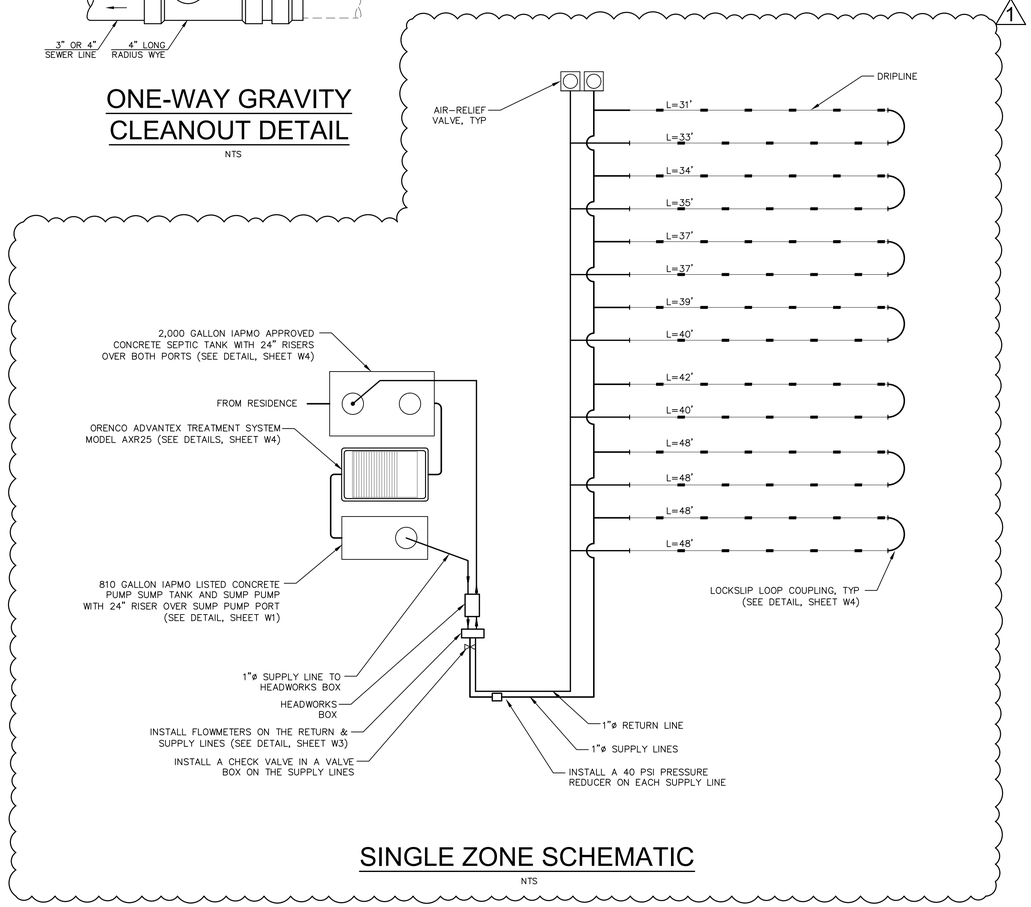


ONE-WAY GRAVITY CLEANOUT DETAIL

NTS

NOTE:
SEPTIC TANKS TO MAINTAIN 5' SETBACK FROM ANY STRUCTURE

NOTE: ALL UNDERGROUND BOXES REQUIRE INSTALLATION OF GOPHER-RESISTANT BARRIERS



SINGLE ZONE SCHEMATIC

NTS

GEOFLOW DRIP SYSTEM INSTALLATION GUIDELINES:
All Geoflow drip systems require: 100 micron / 150 mesh filter Filter flush valve Field flush valve and Air vent in each zone.

All Wasteflow Classic drip systems require pressure regulation: Handle your dripline and components with care. ROOTGUARD is temperature sensitive. To assure a long life store the drip line out of direct sunlight in a cool place. This should be a consideration when installing the system in very hot and sunny areas. Your system life span will be increased if it is buried an extra two or three inches below the soil surface, to avoid the warm temperature extremes.

A. All dripfield construction shall be done in accordance with Local rules and regulations.

B. No utilities, cable wire, drain tile, etc shall be located in dripfield.

C. Fence off entire dripfield prior to any construction.

D. System is not to be installed when ground is wet or frozen.

E. Divert all down spouts and surface waters away from dripfield or into curtain drains.

F. Excavation, filling and grading should have been finished before installation of the subsurface drip system.

G. Be sure you have everything required for the installation before opening trenches. Pre-assemble as many sets of components as practical above ground and in a comfortable place. Compression or Lockslip adapters should be glued to PVC tees, riser units should be pre-assembled, the submain manifold with tees can be pre-assembled and used to mark the beginning and end of WASTEFLOW lines.

H. For particularly tough soil conditions moisten the soil the day before opening trenches or installing WASTEFLOW. Remember it is much easier to install the system in moist soil. The soil should be moist but still should allow the proper operation of the installation equipment and not cause smearing in the trenches. The soil surface should be dry so that the installation equipment maintains traction.

I. Mark the four corners of the field. The top two corners should be at the same elevation and the bottom two corners should be at a lower elevation. In freezing conditions the bottom dripline must be higher than the supply and return line elevation at the dosing tank.

J. Install a watertight dosing tank. In freezing conditions the dosing tank should be at the lowest elevation of the entire system. Install a watertight riser on the dosing tank if necessary.

K. Determine the proper size for the supply and return manifolds. See Worksheet line (L).

L. Install the PVC supply line from the dosing tank, up hill through one lower and one upper corner stake of the dispersal field. Please refer to your State guidelines for depth of burial.

M. Paint a line between the two remaining corner stakes.

N. Install the Geoflow WASTEFLOW dripline from the supply line trench to the painted line, approximately 12" deep as specified. Upon reaching the painted line, pull the plow out of the ground and cut the dripline 1 foot above the ground. Tape the end of the dripline to prevent debris from entering. Continue this process until the required footage of pipe is installed. Geoflow dripline must be spaced according to specification (2 feet is standard). Depth of burial of dripline must be consistent throughout the field. Take care not to get dirt into the lines.

O. Install the supply header with tees lined up at each Geoflow line. Hook up the Geoflow lines to the supply header. Do not glue WASTEFLOW dripline.

INSTALLING LOCKSLIP FITTINGS:

1. Hold the fitting in one hand and position the tubing with the other hand.
2. Move the sleeve back, and push the tubing onto the exposed stem as far as possible.
3. Push the sleeve out over the tubing and thread the sleeve on the tubing, as though tightening a nut to a bolt. Hand tighten. Do not use tools.

P. Install the Vortex filter and filter flush valve, or install the pre-assembled Headworks between the field and the pump tank on the supply line. *Insulate the box in freezing conditions.

Q. If using a pressure regulator, install it downstream of the filter or Headworks, just ahead of the dispersal field, on the supply line. Although the pressure regulator can be buried directly into the soil, it is preferable to install it inside a small valve box for easy access. *Insulate the box in freezing conditions.

R. Install the floats in the dosing tank and wire up to the timer control. The timer control should be set to pump no more than the design flow, do not set to match the treatment capacity.

S. Install the pump. Fill the dosing tank with fresh water and turn on the pump. Check for flow out the ends of all of the Geoflow lines. Let the pump run for about five minutes to flush out any dirt. Shut off the pump and tape the ends of the lines.

T. Dig the return header ditch along the line painted on the ground and back to the pre-treatment tank. Start the return header at the farthest end from the dosing tank. The return line must have slope back to the treatment tank or septic tank.

U. Install the return header and connect all of the Geoflow lines. Care must be taken not to kink the dripline.

V. Install air vacuum breakers at the highest points in the dispersal field. Use pipe dope or Teflon tape and hand tighten.

W. Install a ball or solenoid field flush valve on the return line to the pretreatment or pump tank unless a pre-assembled Wasteflow Headworks is being used. If a Headworks was installed on the supply line, connect the return line back through the Headworks box. Open the field flush valve and turn on the pump to flush lines then close the valve and check the field and all piping and connections for leaks. Turn off the system.

X. Turn on the pump and check the pressure at the air vacuum breaker(s). It should be between 15 to 45 PSI. Check the pressure in the WASTEFLOW Headworks if used. It should be five psi or higher. If using a manual valve for field flushing, crack it open until at least one PSI is lost or design pressure is reached and leave in that position.

Y. Check the filter for construction debris and clean.

Z. Provide owner with final as-built diagrams, flow measurements and pressure readings at startup.

WINTERIZATION: Buried drip systems are not prone to frost damage because, in their design, vacuum release and drain valves are provided. the dripline itself is made of polyethylene and not susceptible to freezing. it drains through the emitters so will not be full of water after pumps are turned off. please follow these precautions:

1. Manifolds, supply lines and return lines must be sloped back to their respective dosing or treatment tanks. these lines need to drain rapidly. Under extreme conditions return and supply manifolds must be insulated or buried below frost-line. Be sure drain valve on flush line remains open long enough for entire field to drain.
2. Remove the check valve at the pump.
3. Insulate equipment boxes, including headworks box or filter and field flush valve boxes as well as zone dosing valves, pressure regulator and air vacuum relief valves. Use closed-cell insulation such as perlite in a plastic bag.
4. In severe freezing conditions, use heat tape or small heater in the headworks box.
5. The top of air vacuum relief valves must be no higher than soil surface.
6. If using an index valve to split field zones, be sure it is capable of self-draining.
7. Wasteflow lines will self-drain through the emitters into the soil. if the cover crop over the dripfield is not yet adequately established, add hay or straw over the field for insulation.
8. Mark the valve box with a metal pin so you can find it in the winter when covered in snow.
9. If using manual filter flush valves or manual field flush valves, they should be left cracked open slightly to provide for rapid drainage of the flush line in freezing conditions.
10. Fields dosed with relatively small quantities of effluent are more likely to freeze than those dosed with design quantities. If winter use is less than summer use, then only use proportional number of fields to maintain water application rates in the field being dosed.

VALVE INSTALLATION AND OPERATION:
1. Wrap male adapters with 2 wraps of Teflon tape and thread the adapters into the valve inlet and outlet 1 turn past hand tight. CAUTION: over tightening may cause damage to the valve. The solenoid is located on the downstream side of the valve.
2. Using watertight connectors, connect the valve common and an individual output wire to the solenoid leads.
3. Flush the laterals by opening the internal manual bleed lever on the downstream side of the solenoid. Turn the flow control stem fully open (counterclockwise) for flow control models.
4. Close the internal manual bleed after flushing the system.

SYSTEM MAINTENANCE: The best way to assure years of trouble free life from your system is to continuously monitor the system and to perform regular maintenance functions. For large systems or systems with a BOD > 30 mg/l automation of maintenance is essential. For smaller systems with a BOD < 30 mg/l inspection and maintenance should be performed every six months.

ROUTINE AND PREVENTATIVE MAINTENANCE

1) Remove the spin filter and install a clean cartridge. Clean the used filter cartridge back at the shop with a pressure hose. The filter cartridge should be cleaned from the outside inwards. If bacteria buildup is a problem we advise first trying lye, and if the problem persists, soak the filter cartridge in a chlorine bath – a mixture of 50% bleach and 50% water.

2) Open the field flush valve and flush the field for 3-5 minutes by activating the pump in "manual" position. Close the flush valve. On automatic solenoid valves the manual bleed lever should always be in the horizontal position and the dial on top should be free spinning. Clockwise rotation closes valve

3) With the pump in the "manual" position, check the pressure in the drip field by using a pressure gauge on the Schrader valve located on the air vents and by reading the pressure gauge located in the Wasteflow Headworks box. The pressure should be the same as shown on the initial installation records. On systems with manual flush valves, close the field flush valve completely and then open the valve slightly until there is a 1-2 psi drop or design pressure is reached. This will allow the field to drain after each dose to prevent the manifold lines from freezing.

4) Remove the lids on the vacuum breaker and check for proper operation. If water is seen leaking from the top of the vacuum breaker, remove the cap of the vacuum breaker and press down on the ball to allow any debris to be flushed out. Be careful not to come in contact with the effluent.

5) Turn off the pump and reset the controller for auto mode.

6) Periodically remove and clean the air vents, field flush and filter flush valves.

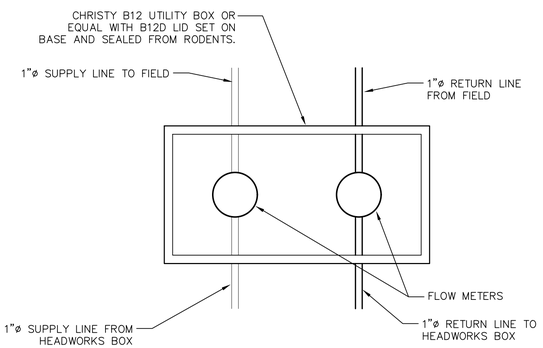
7) Visually check and report the condition of the drip field, including any noticeable wetness.

8) Treatment and distribution tanks are to be inspected routinely and maintained when necessary in accordance with their approvals.

9) Record the elapsed time meter, pump counter, override counter, high-level alarm and power failures. This information can be obtained from the controller. Geoflow Design and Installation Manual 22

TABLE 3. SUBSURFACE DRIP INSTALLATION METHODS
NOTE: Disturbing the soil may effect the pore structure of the soil and create hydraulic conductivity problems. Please consult with your soil scientist or professional engineer before making the installation technique decision.

INSERTION METHOD	*ADVANTAGES*	*DISADVANTAGES*
a) Hand Trenching	*Handles severe slopes and confined areas. Uniform depth.*	*Slow. Labor intensive. Disrupts existing turf and ground. Back fill required.*
b) Oscillating or Vibrating plow. Use the type that inserts the dripline directly in place, not one that pulls the dripline through the soil.	*Fast in small medium installations. Minimal ground disturbance. No need to back fill the trench.*	*Depth has to be monitored closely. Cannot be used on steeper slopes (>20%). Requires practice to set and operated adequately. Tends to "stretch" \ pipe. Short runs are required.*
c) Trenching machine:	*Fast. May use the 1" blade for most installations. Uniform depth.*	*Slower requires labor. Disrupts surface of existing turf. Back fill required.*
d) Tractor with drip- line insertion tool-See diagram in Geoflow Wastewater Design Installation, and Maintenance Guidelines Manual, dated October 2003, page 20.	*Fast. Little damage to existing turf because of the turf knife. Minimal ground disturbance. Does not stretch drip line. Adaptable to any tractor.*	*The installation tool is designed specifically for this purpose.*
e) Tractor mounted 3-point hitch insertion implement.	*Faster. Up to four plow attachments with reels. A packer roller dumps back soil on top of the pipe.*	*Suitable for large installations. only.*



FLOWMETER BOX DETAIL

NTS

NOTE:
Install "Badger" or "Census" Flow Meters
Meters SHALL BE INSTALLED ON BOTH Supply and Return Pressure Lines.

No.	Date	Revisions Description	Approved
1	06/06/22	PC REPLY #1	GMS

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My License Expires 12/31/2022

PROFESSIONAL ENGINEER * REGISTERED * GREGORY M. SCHRAM No. 73540 Exp. 12/31/2022 CIVIL * STATE OF CALIFORNIA

DRIP TYPE PRIVATE SEWAGE DISPOSAL SYSTEM DETAILS

3210 West Dry Creek Road
Healdsburg, California
APN 090-140-038

Scale: AS SHOWN
Date: April 18, 2022
Design by: SFG
Drawn by: SFG
Checked by: GMS

Sheet
W3
of 4 Sheets
Job No. 21387

File:T:\2021 PROJECTS\21387\DWG\ADOBE-WASTEWATER\21387-DRIP IRRIGATION.DWG 6/6/2022 2:11:22 PM Stefan Eyer-Garcia

1

General W&S Approval Stamp

APPROVED
PERMIT SONOMA
WELL AND SEPTIC SECTION
APPROVED BY EMYSZKA
DATE September 15, 2022
PERMIT # SEP22-0183
Permit Conditions

The following conditions apply:

- Water tightness test required for septic tank and sump at time of construction.
- Separate Operational Permit required.
- Electrical work covered under separate permit which must be approved prior to final approval of septic permit.
- Final septic inspection must include consultant, installer, service provider, and Well and Septic inspector.

ORENCO SYSTEMS NOTES:

SEE ADVANTEX-AX TREATMENT SYSTEM "INSTALLATION GUIDE" AVAILABLE FROM ORENCO SYSTEMS, INC. 1-800-348-9843

SEE ORENCO SYSTEMS, INC. "ADVANTEX TREATMENT SYSTEMS FOR TREATMENT OF ON SITE WASTEWATER, DESIGNER/ENGINEERING PACKAGE" FOR PARTS, ASSEMBLY AND DESIGN INFORMATION.

USE A 5 TO 1 RECIRCULATION RATIO BASED ON THE EXPECTED ACTUAL AVERAGE DAILY FLOW.

SAME CONTROL PANEL REQUIRED FOR BOTH PUMPS WHEN USING A PRESSURE DOSING SYSTEM.
CONTROL/ALARM BOX – Advantex VeriComm Mode 3B "Sonoma" style control panel. See (PUMP SUMP DETAIL) with fused disconnect & motor protection switch, HOA switch, alarm, alarm on/off test switch, light & non-resettable dose counter.

NOTE:

1. DO NOT INSTALL JUNCTION BOX IN TANK RISERS.
2. INSTALL GAS TIGHT FITTINGS IN JUNCTION BOX CONDUIT AT EXIT OF TANK RISER.
3. JUNCTION BOX, IF REQUIRED NEEDS TO BE 18" MINIMUM ABOVE GROUND SURFACE.
4. CONTROL PANEL TO BE MOUNTED 36" MINIMUM ABOVE GROUND SURFACE.

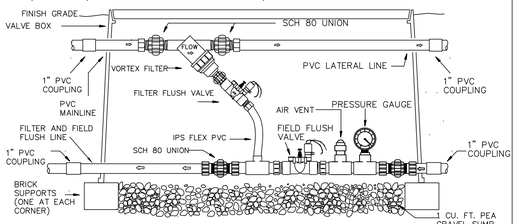
NOTES:
A PHONE LINE TO THE CONTROL PANEL IS REQUIRED; PHONE LINE WILL BE ACTIVATED PRIOR TO THE FINAL/STARTUP INSPECTION.

PROVIDE SEPARATE ELEC. CIRCUITS FOR PUMP AND ALARM.

ALL HIGH VOLTAGE WIRES SHOULD BE IN A SEPARATE CONDUIT FROM LOW VOLTAGE WIRES.

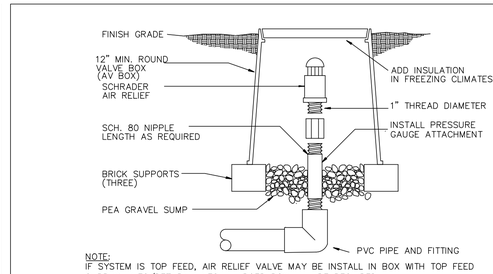
IF THE CONTROL PANEL IS LOWER IN ELEVATION THAN THE POWER SUPPLY, A CONDUIT SEAL SHALL BE INSTALLED ON THE CONDUIT TO PROTECT THE CONTROL PANEL FROM CONDENSATION.

THE VORTEX FILTER FLUSH WILL OCCUR FOR 15 SECONDS AT THE END OF EACH PUMP CYCLE PER 'GEOFLOW, WASTEWATER DESIGN, INSTALLATION AND MAINTENANCE GUIDELINES' MANUAL APPENDIX 3, PAGE 37, 'GEO AUTOMATIC CONTROLLERS', DATED OCTOBER 2003.



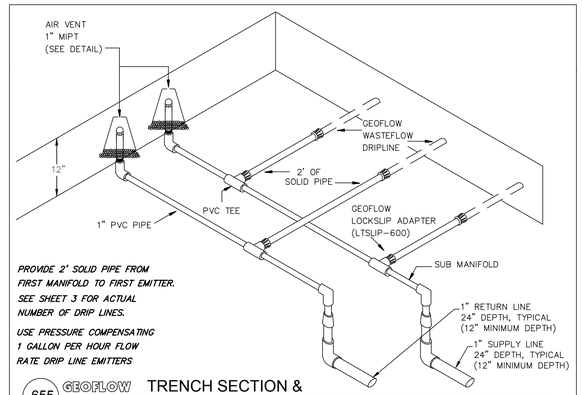
NOTE:
Install "Badger" or "Census" Flow Meters
Meters SHALL BE INSTALLED ON BOTH Supply and Return Pressure Lines.

575 GEOFLOW SIMPLE WASTEFLOW HEADWORKS BOX - AUTOMATIC
SECTION SCHEMATIC - WHW-.75 / AUT
Not To Scale
09-02 GEOFLOW ©



NOTE:
IF SYSTEM IS TOP FEED, AIR RELIEF VALVE MAY BE INSTALL IN BOX WITH TOP FEED SUPPLY LINES/RETURN LINES. LARGER BOX WILL BE REQUIRED

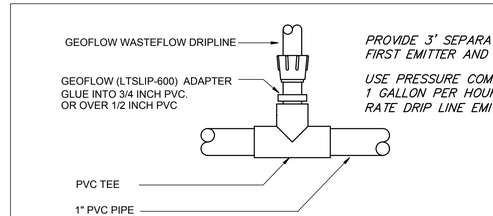
522 GEOFLOW 1" AIR/VACUUM BREAKER(SCHRADER)
SECTION (PLUMBED TO PVC)
NOTE: SCHRADER VALVE CAN ALSO BE PLACED WITHIN THE SAME VALVE BOX AS THE TOP FEED MANIFOLD
Not To Scale
09-02 GEOFLOW ©



PROVIDE 2' SOLID PIPE FROM FIRST MANIFOLD TO FIRST EMITTER. SEE SHEET 3 FOR ACTUAL NUMBER OF DRIP LINES.

USE PRESSURE COMPENSATING 1 GALLON PER HOUR FLOW RATE DRIP LINE EMITTERS

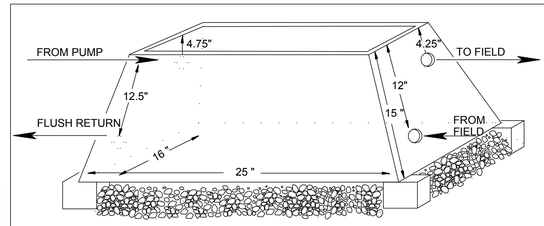
655 GEOFLOW SECTION TRENCH SECTION & MANIFOLD DETAIL
Not To Scale
08-02 GEOFLOW ©



PROVIDE 3' SEPARATION FROM FIRST EMITTER AND MANIFOLD.

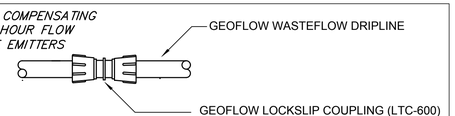
USE PRESSURE COMPENSATING 1 GALLON PER HOUR FLOW RATE DRIP LINE EMITTERS

504LS GEOFLOW MANIFOLD CONNECTION (PVC TO ADAPTER)
SECTION
Not To Scale
08-02 GEOFLOW ©



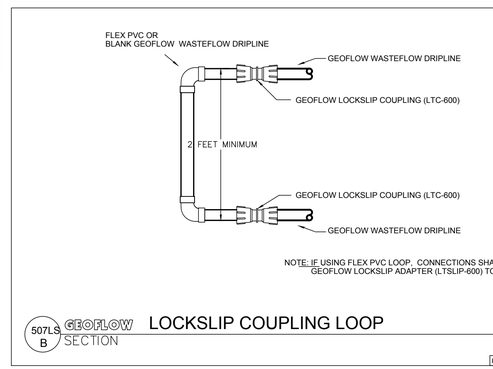
577 GEOFLOW SIMPLE WASTEFLOW HEADWORKS BOX - DIMENSIONS
1" AND 3/4" MODELS
Not To Scale
09-02 GEOFLOW ©

USE PRESSURE COMPENSATING 1 GALLON PER HOUR FLOW RATE DRIP LINE EMITTERS



501LS GEOFLOW SECTION LOCKSLIP COUPLING (LTC-600)
Not To Scale
09-02 GEOFLOW ©

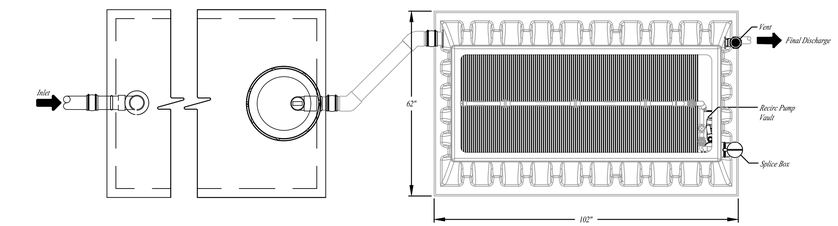
Note: Contact Geoflow Inc. for all Geoflow parts.



NOTE: IF USING FLEX PVC LOOP, CONNECTIONS SHALL BE GEOFLOW LOCKSLIP ADAPTER (LTSLIP-600) TO PVC COUPLING

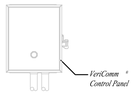
507LS B GEOFLOW SECTION LOCKSLIP COUPLING LOOP
Not To Scale
09-02 GEOFLOW ©

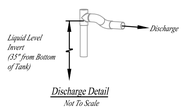
AX25RT Treatment System - Gravity Discharge



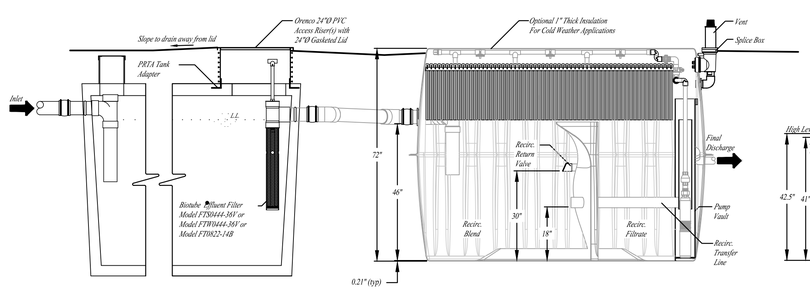
* Primary Tank - Top View

AX25 800 gal. Recirc. Tank - Top View



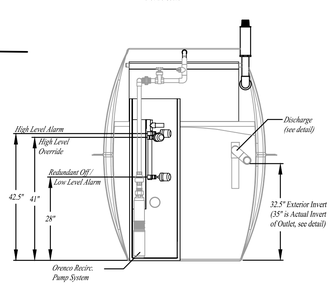


Discharge Detail
Not To Scale

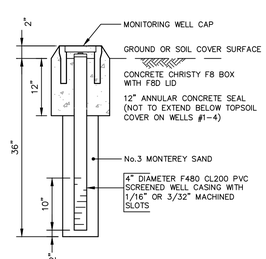


* Primary Tank - Side View

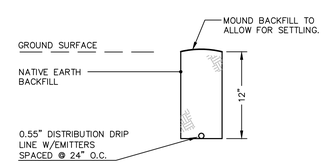
AX25 800 gal. Recirc. Tank - Side View



Discharge Chamber - End View



MONITORING WELL DETAIL
NTS



TRENCH SECTION
NTS

AX25RT Mode 1A

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Revisions

No.	Date	Description	Approved
1	09/06/22	PC REPLY #1	GMS

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P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com
"A Service You Can Count On!"

Gregory M. Schram, RCE 73540
My License Expires 12/31/2022

PROFESSIONAL ENGINEER * REGISTERED * GREGORY M. SCHRAM No. 73540 Exp. 12/31/2022 CIVIL * STATE OF CALIFORNIA

DRIP TYPE PRIVATE SEWAGE DISPOSAL SYSTEM DETAILS

3210 West Dry Creek Road
Healdsburg, California
APN 090-140-038

Scale: AS SHOWN
Date: April 18, 2022
Design by: SFG
Drawn by: SFG
Checked by: GMS

Sheet
W4
of 4 Sheets
Job No. 21387