

# Saalsi Coastal Permit Onsite Wastewater System 286 Vallejo, Inverness, CA 94956

T1.	Title Sheet
TM	Partial Topographic Map
S-1	Property Setbacks/Constraints Map
C-1	Site Plan and Title Sheet
C-1.1	OWTS Notes
C-2.0	OWTS Tank Details
C-2.1	OWTS Schematic Field and Pre-Treatment
C-2.2	OWTS Details
C-3.0	OWTS Construction BMPs

**PROJECT DATA:**

General Plan C-SF2  
Zoning C-RSP-0.1

Lot Size 55,000 sq ft (1.2-acres)

	<u>Existing</u>	<u>Proposed</u>
Lot Area:	55,000	No Change
Building Area:	1,046	No Change
Floor Area:	440	No Change

Existing Development Area: 1,046 ft  
Proposed Development Area: No Change

Floor Area Ratio: . 008% No Change

Lot Coverage: 24,944 SQ FT N/A

Impervious: 3,600 SQ FT N/A  
Pervious: 51,400 SQ FT N/A

**Grading (cu yds)**

Cut:	N/A	N/A
Fill:	N/A	N/A
Off-haul:	N/A	N/A

Parking: 3 No Change

**Setbacks**

North:	102.5' (house)	5' (drip field)
South:	73.5' (house)	58' (septic tank)
West:	79.4' (house)	157' (drip field)
East:	153.5' (house)	42' (septic tank)

Max Height: 15'/25' N/A

**Septic Tank Infrastructure**

1,200 gallon septic tank  
800 gallon advantex circulating tank

**SCOPE OF WORK**

**ONSITE WASTEWATER TREATMENT SYSTEM  
REPAIR OF EXISTING INFRASTRUCTURE**

**PROJECT ADDRESS:**

286 Vallejo  
Inverness, CA 94956

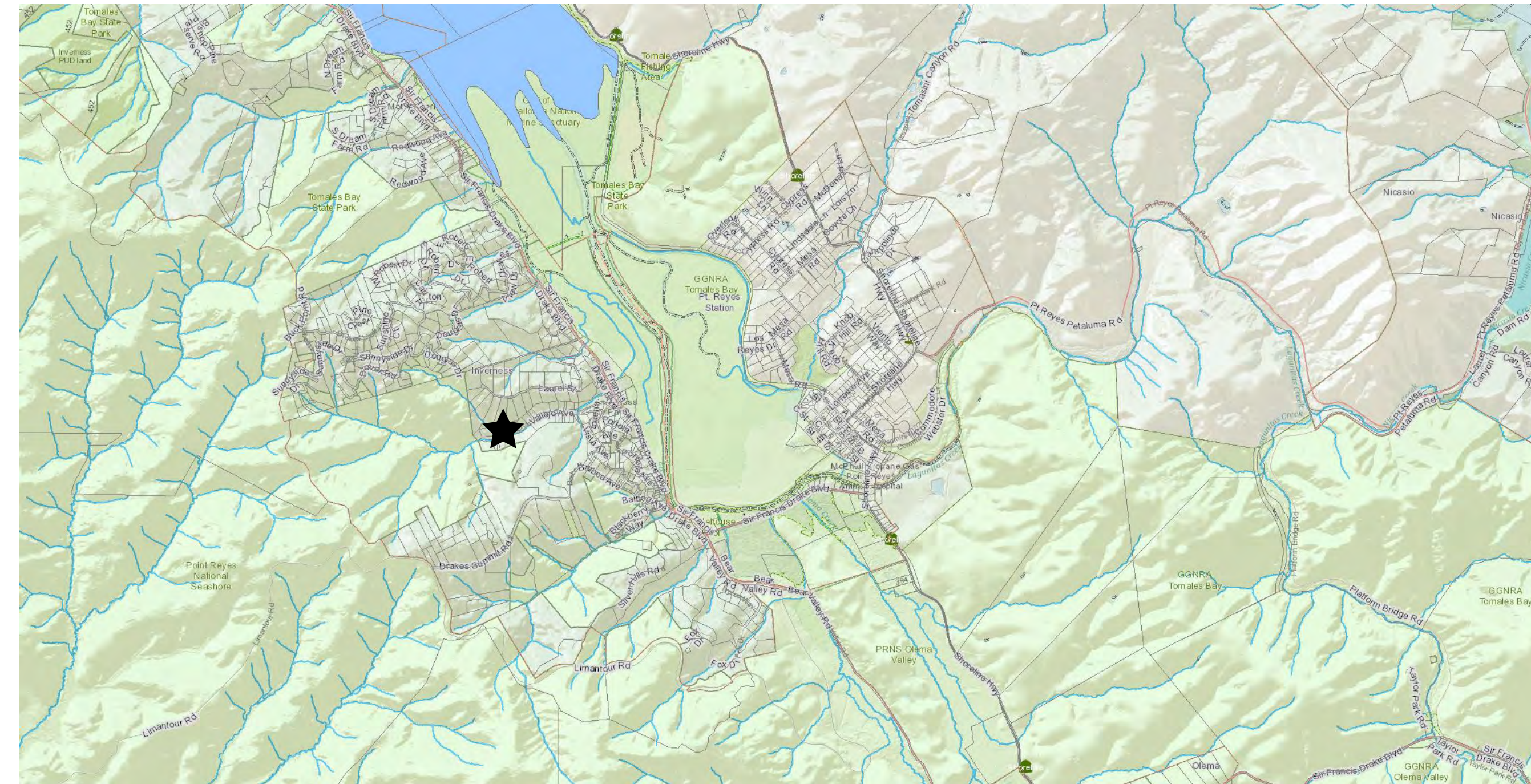
**APPLICANTS / PROPERTY OWNER:**

Dina and David Saalsi  
250 Pratt Ave  
St Helena, CA 94574

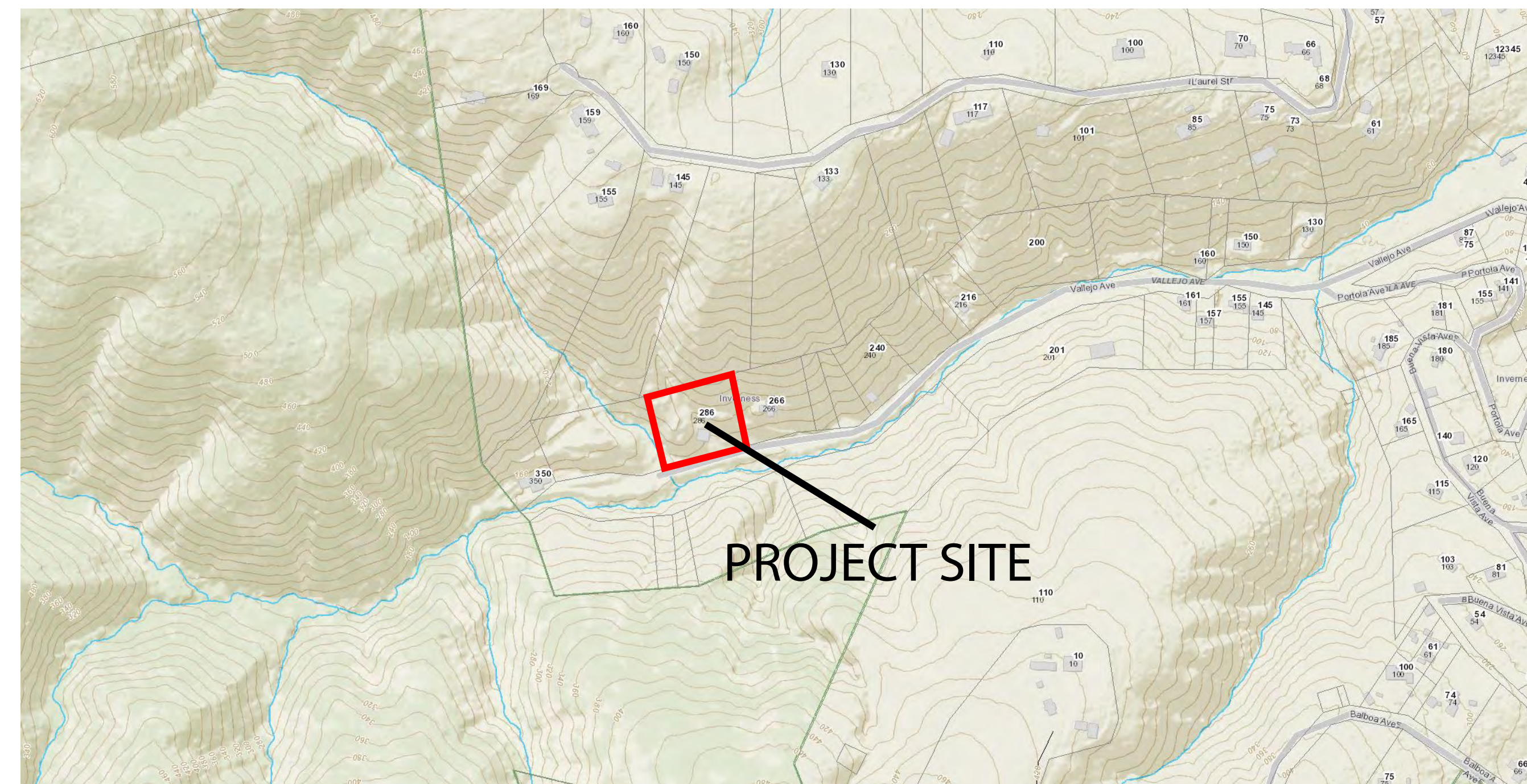
**PROJECT TEAM:**

Civil / OWTS Engineer  
Orion Agnew  
AC Engineering, Inc.  
454 Las Gallinas Ave, Suite 1047  
San Rafael, CA 95403  
P. (415) 295-2152

Survey  
1031 Survey, Inc..  
1857 Rainer Circle  
Petaluma, CA 94954  
415-827-6370



VICINITY MAP



LOCATION MAP (NOT TO SCALE)

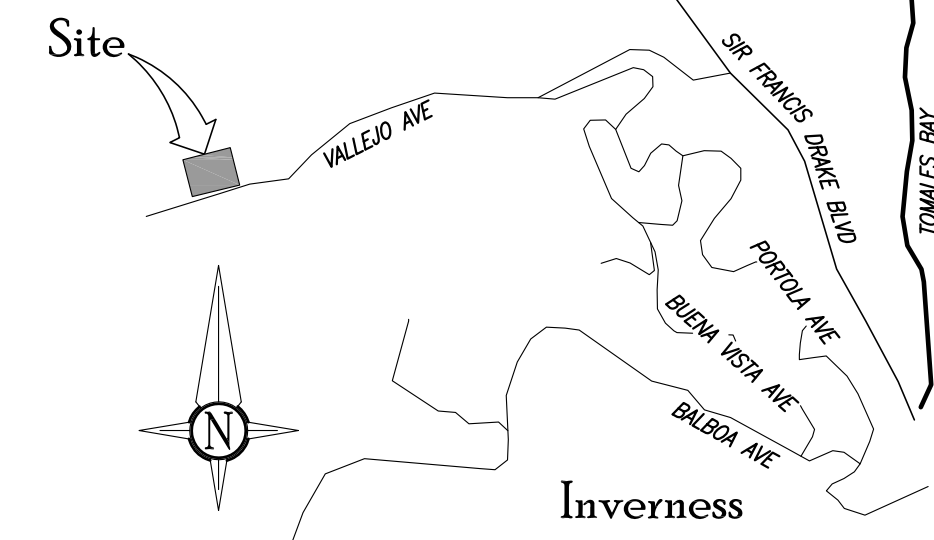
Revision	Date

APN: 114-241-16

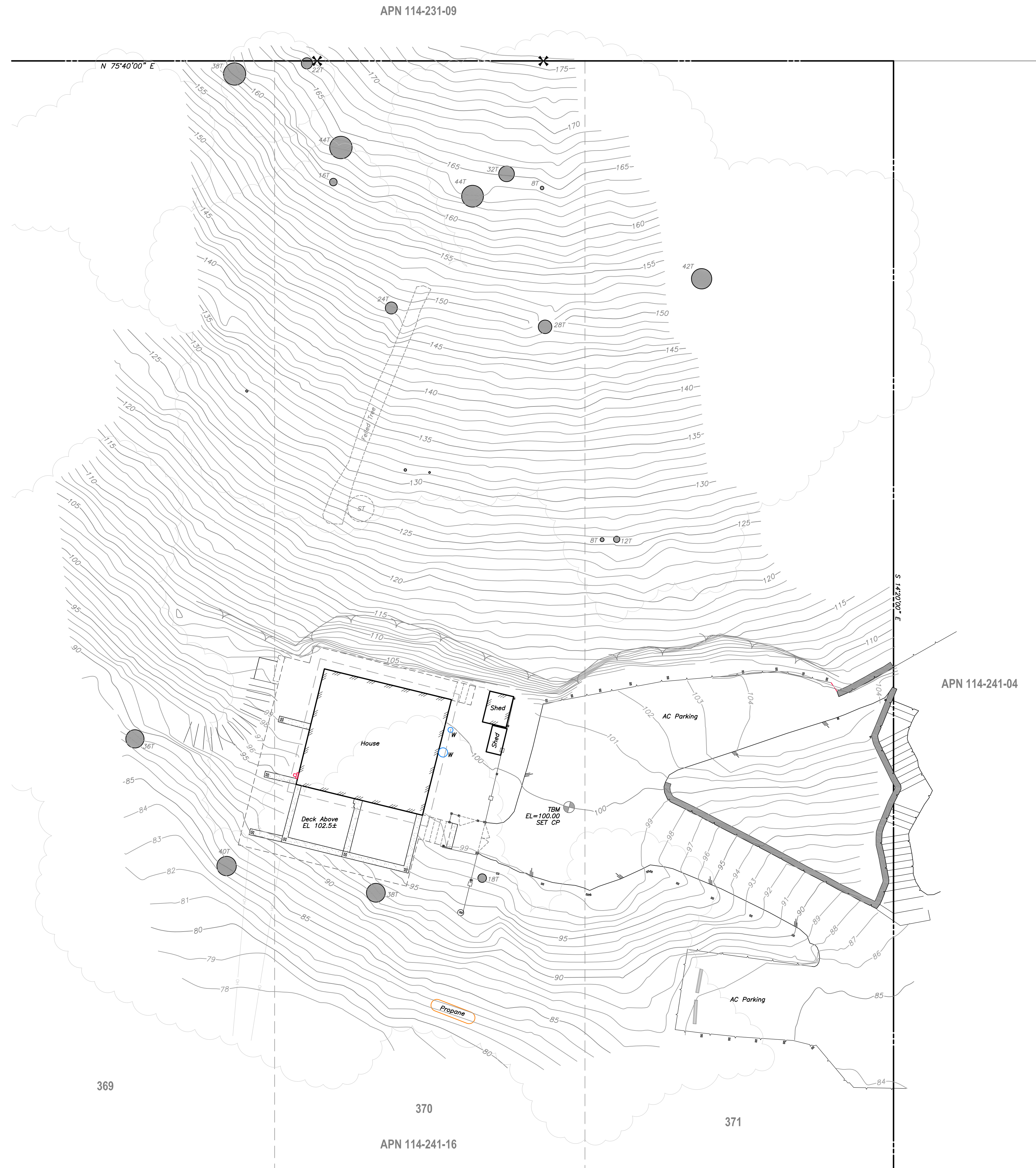
Drawings for:  
Saalsi Coastal Permit  
Onsite Wastewater System  
286 Vallejo Ave, Inverness, CA 94956

DRAWN
ISSUED
As Built
DATE
02/28/2025
SCALE

SHEET  
**T.1**



VICINITY MAP  
NTS

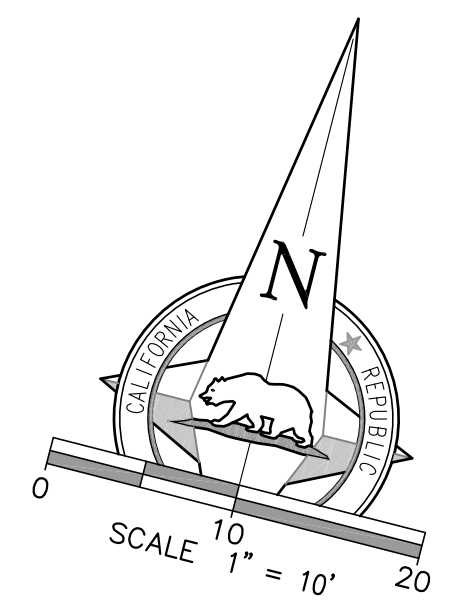


LEGEND

	BUILDING
	FENCE, WOOD
	EDGE OF PAVEMENT
	TOP OF SLOPE
	OVERHEAD UTILITIES
	RETAINING WALL, CONC
	RETAINING WALL, WOOD CONCRETE
	ELECTRIC MAIN
	GATE(S)
	TEMPORARY BENCHMARK
	TREE, TO SCALE, WITH DRIFLINE, DIAMETER
	SET 3 FOOT LATH ON LINE

ABBREVIATIONS

AC	ASPHALTIC CONCRETE
APN	ASSESSORS PARCEL NUMBER
EM	ELECTRIC METER
MCR	MARIN COUNTY RECORDS
OH	OVERHEAD UTILITY LINES
NTS	NOT TO SCALE
T	TREE
TBM	TEMPORARY BENCHMARK



LANDS OF SAALISI  
286 VALLEJO AVENUE  
APN 114-241-16  
INVERNESS, MARIN COUNTY, CALIFORNIA

Partial Topographic Map

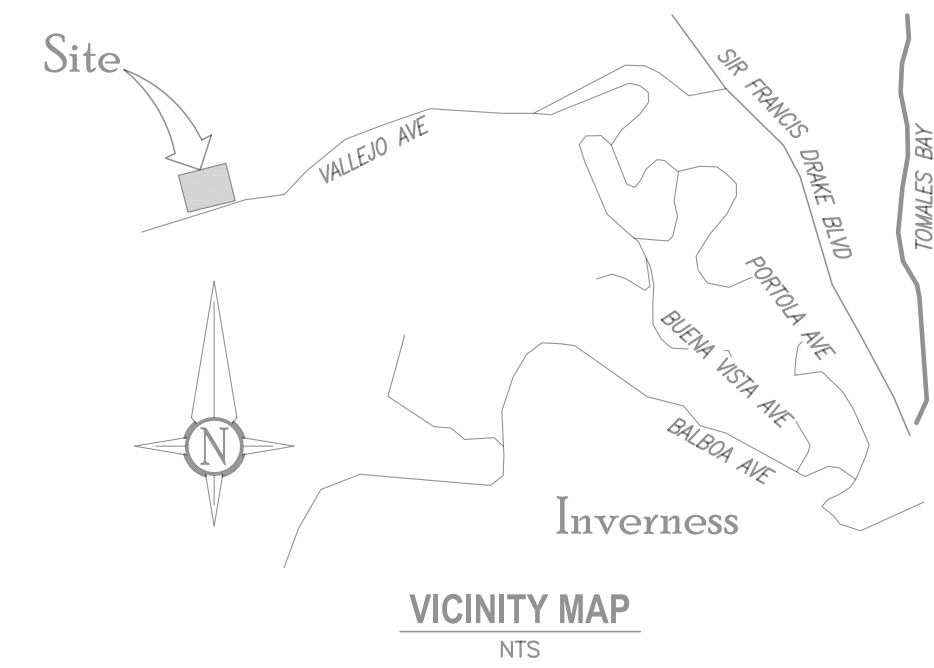
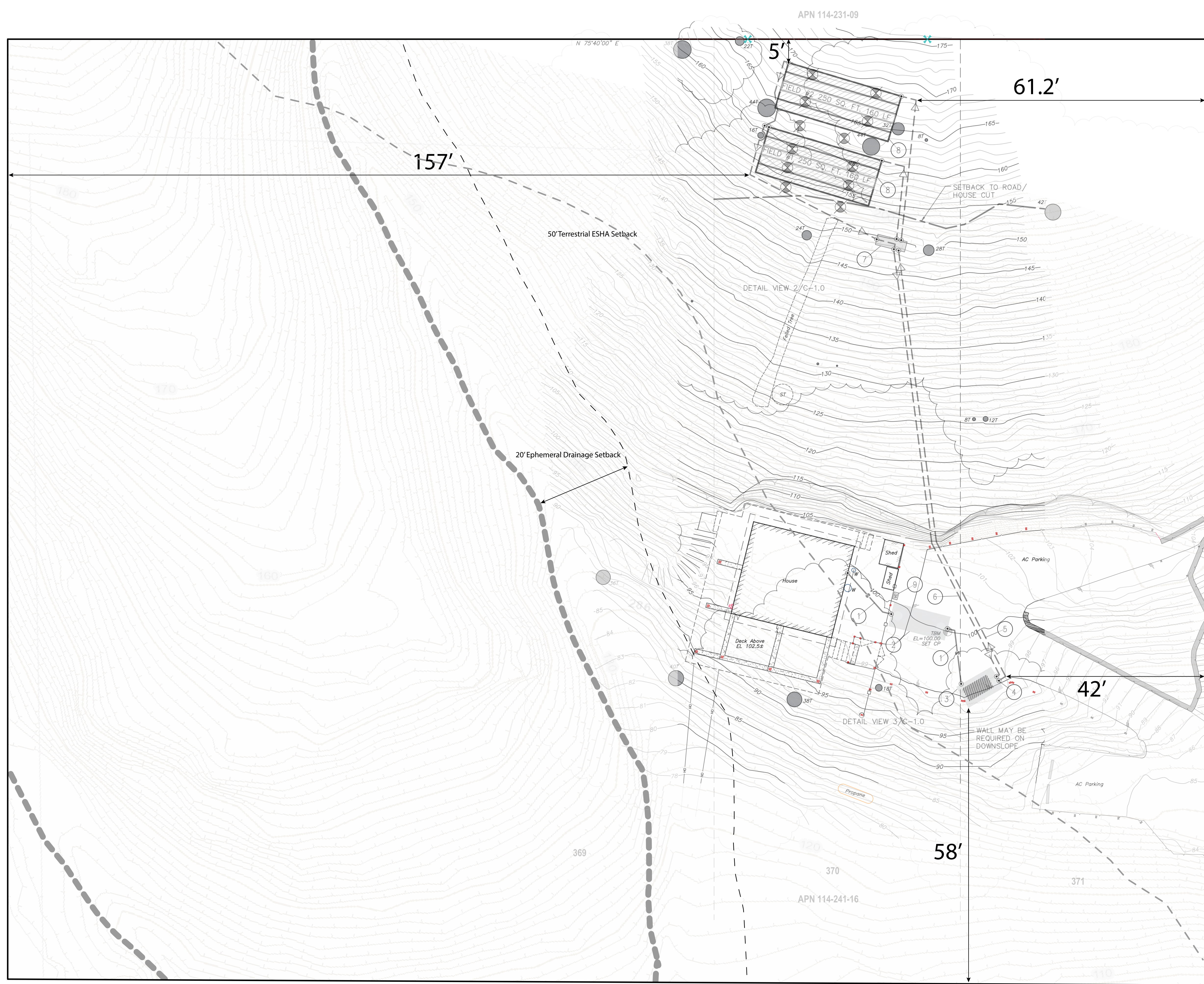
**1031Survey, Inc.**  
HIGH DEFINITION SURVEYING  
1857 Rainier Circle, Petaluma, California 94954  
415-827-6370 www.1031survey.com

DATE: 2024.06.21 SURVEY DATE: JUNE 2024  
SCALE: 1" = 10' SHEET: 1 OF 1  
FILE: 24548Topo

NOTES

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- VERTICAL DATUM: ELEVATION IS BASED ON A SET MAGNAIL & SHINER (CALLED CP) STAMPED 1031SURVEY CONTROL, LOCATED IN THE ASPHALT PARKING AREA EASTERLY OF THE BOUNDARY FENCE, ELEVATION=100.00, ASSUMED DATUM.
- BOUNDARY IS BASED UPON THAT CERTAIN RECORD OF SURVEY FILED IN BOOK 2014 OF MAPS, AT PAGE 163, MCR.
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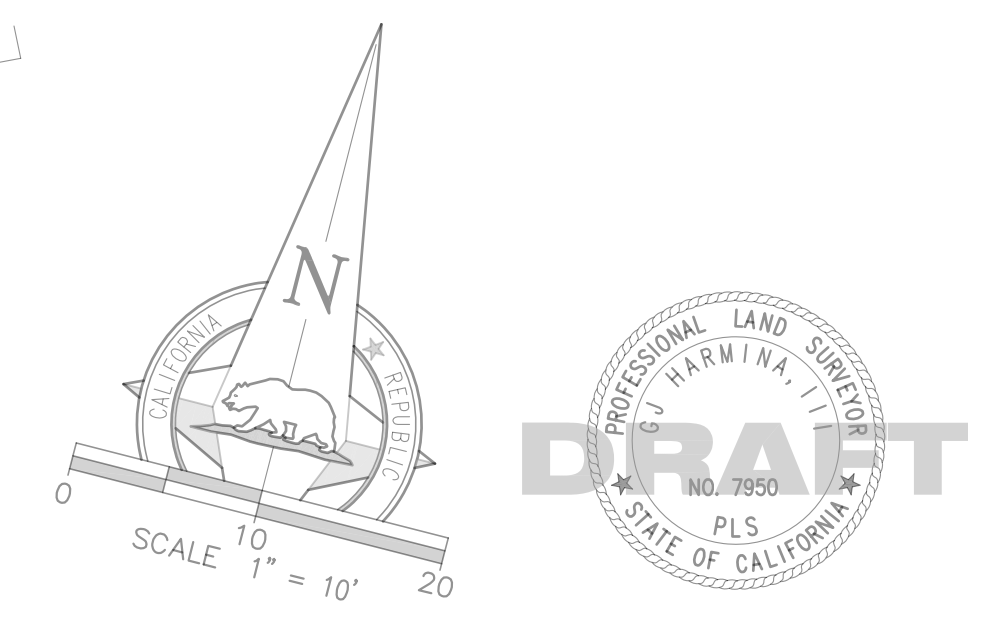
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**PROPERTY SETBACKS / CONSTRAINTS MAP**  
S-1



LANDS OF SAALISI  
286 VALLEJO AVENUE  
APN 114-241-16  
INVERNESS, MARIN COUNTY, CALIFORNIA

Partial Topographic Map

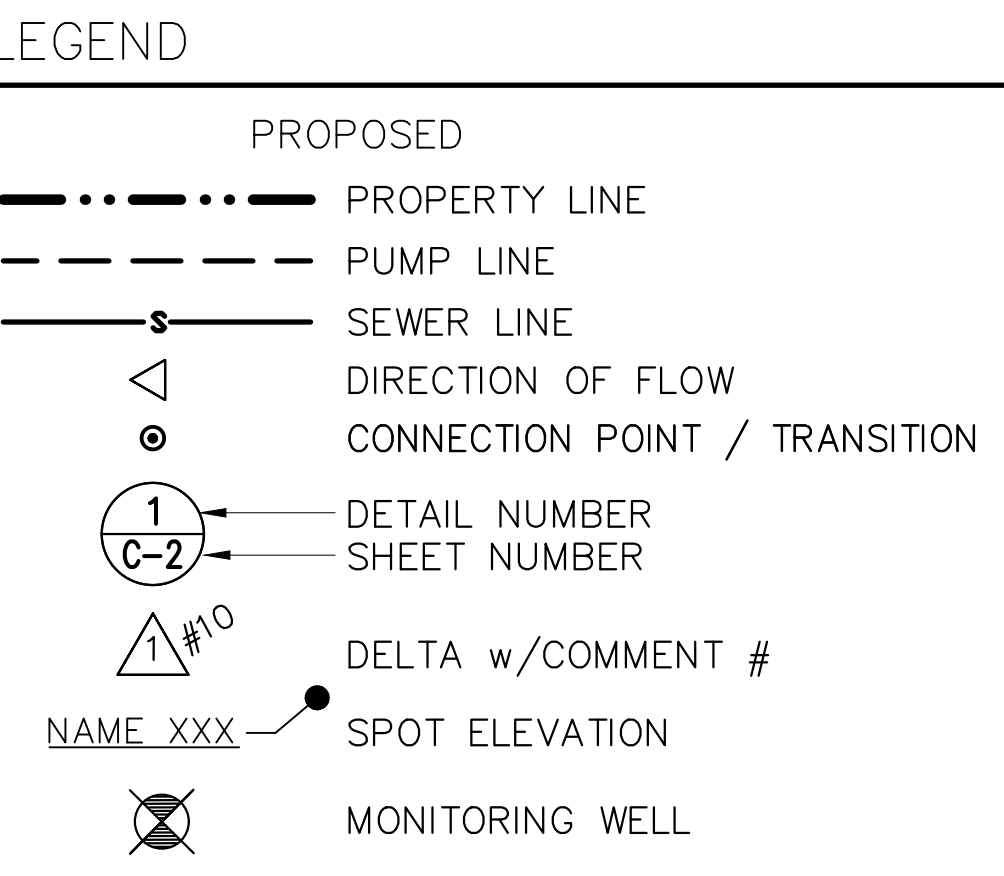
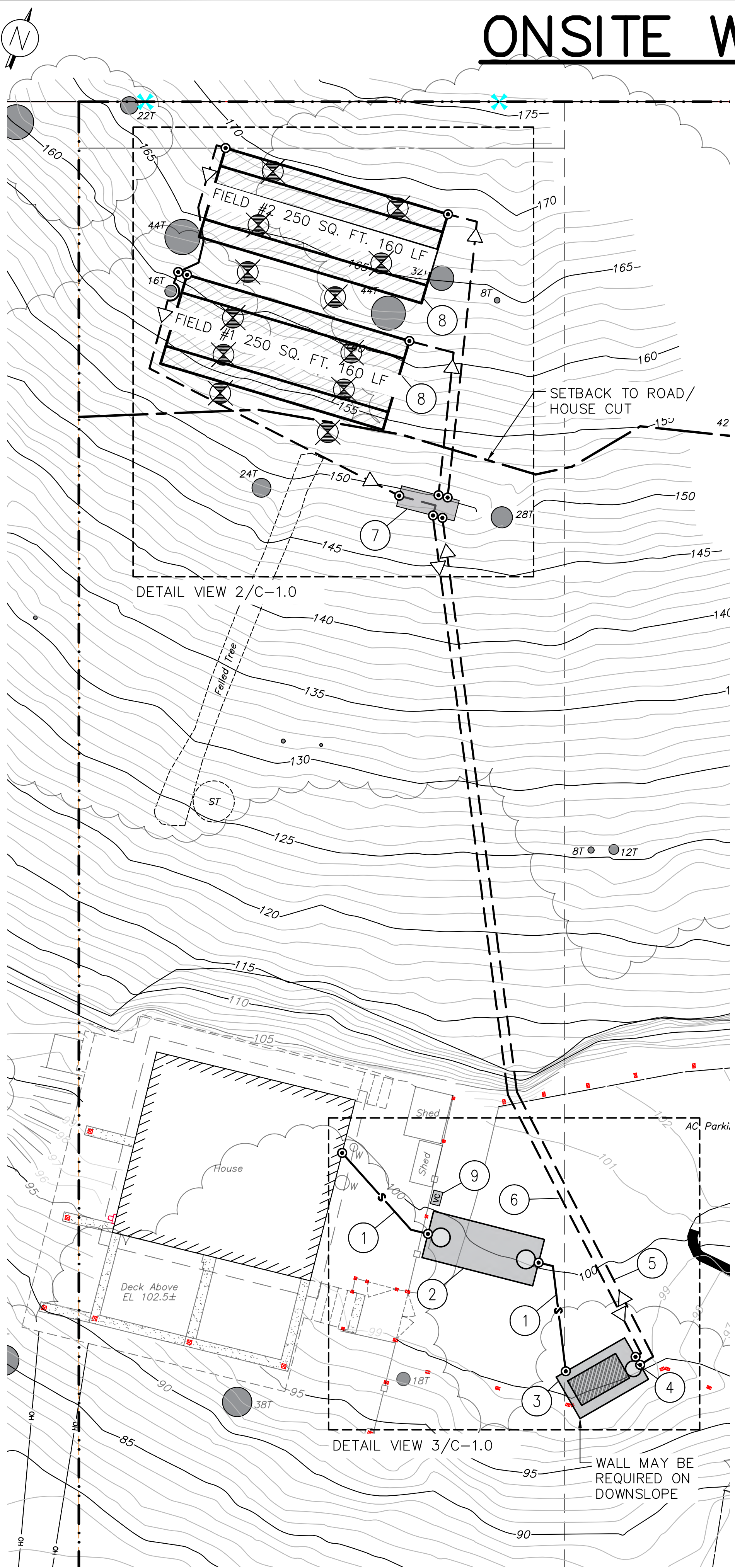
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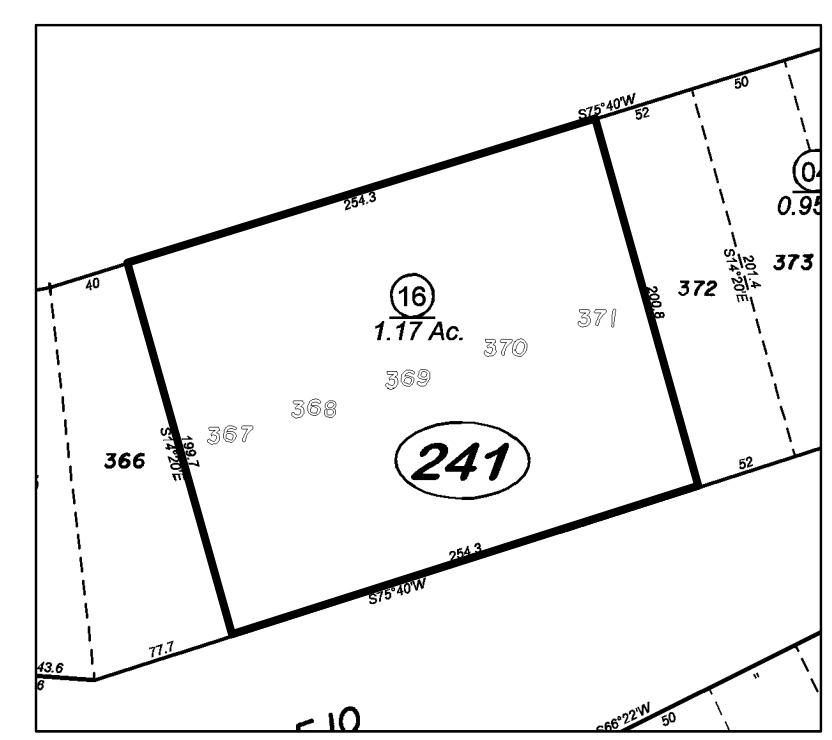
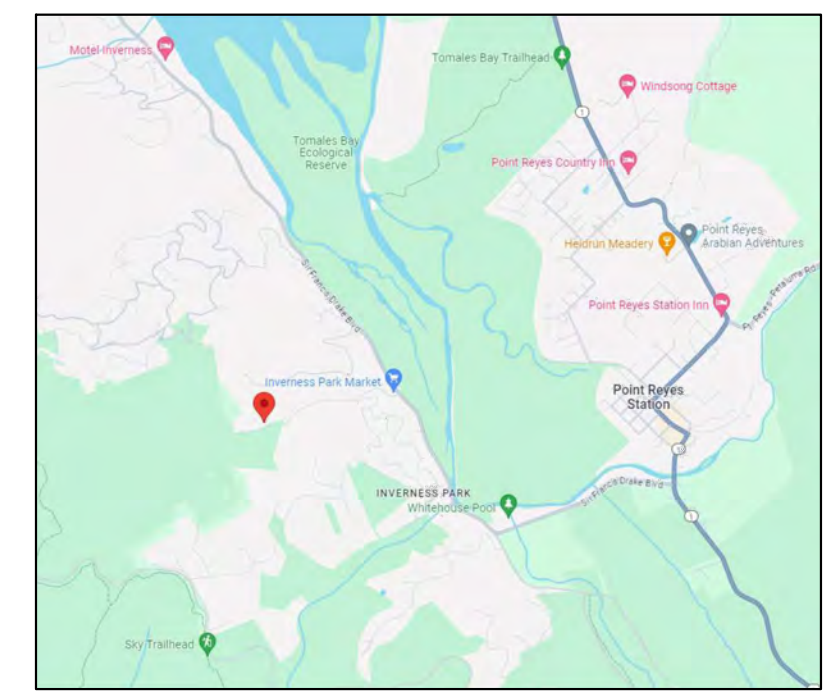
# ONSITE WASTEWATER TREATMENT SYSTEM DESIGN

286 VALLEJO AVE, POINT REYES STATION, CA 94956

SHEET SIZE: Arch. D (36"x48")



- PROJECT NOTES**
- ① 4" MIN SEWER LINE - SLOPE=2% MIN.
  - ② 1,200 GALLON POLY ROTH TANK W. DRIVE OVER LIDS
  - ③ ORENCO AX-RT TREATMENT SYSTEM
  - ④ DISCHARGE PUMP STA-RITE S20P4JP15221
  - ⑤ 1.25" PVC SCH. 40
  - ⑥ 1.25" PVC SCH. 40
  - ⑦ INSTALL HEADWORKS PER PLAN
  - ⑧ DRIP LINE FIELD - 250 SQ. FT. - 16OLF PER FIELD
  - ⑨ ORENCO VCOM CONTROL PANEL



**SHEET INDEX**

C-1	SITE PLAN AND TITLE SHEET
C-1.1	OWTS NOTES
C-2.0	TANK DETAILS
C-2.1	SCHEMATIC FIELD AND PRE-TREATMENT DETAILS
C-2.2	CONSTRUCTION BMPS

**DEVELOPER/APPLICANT**

DINA SAALISI

**SCOPE OF WORK**

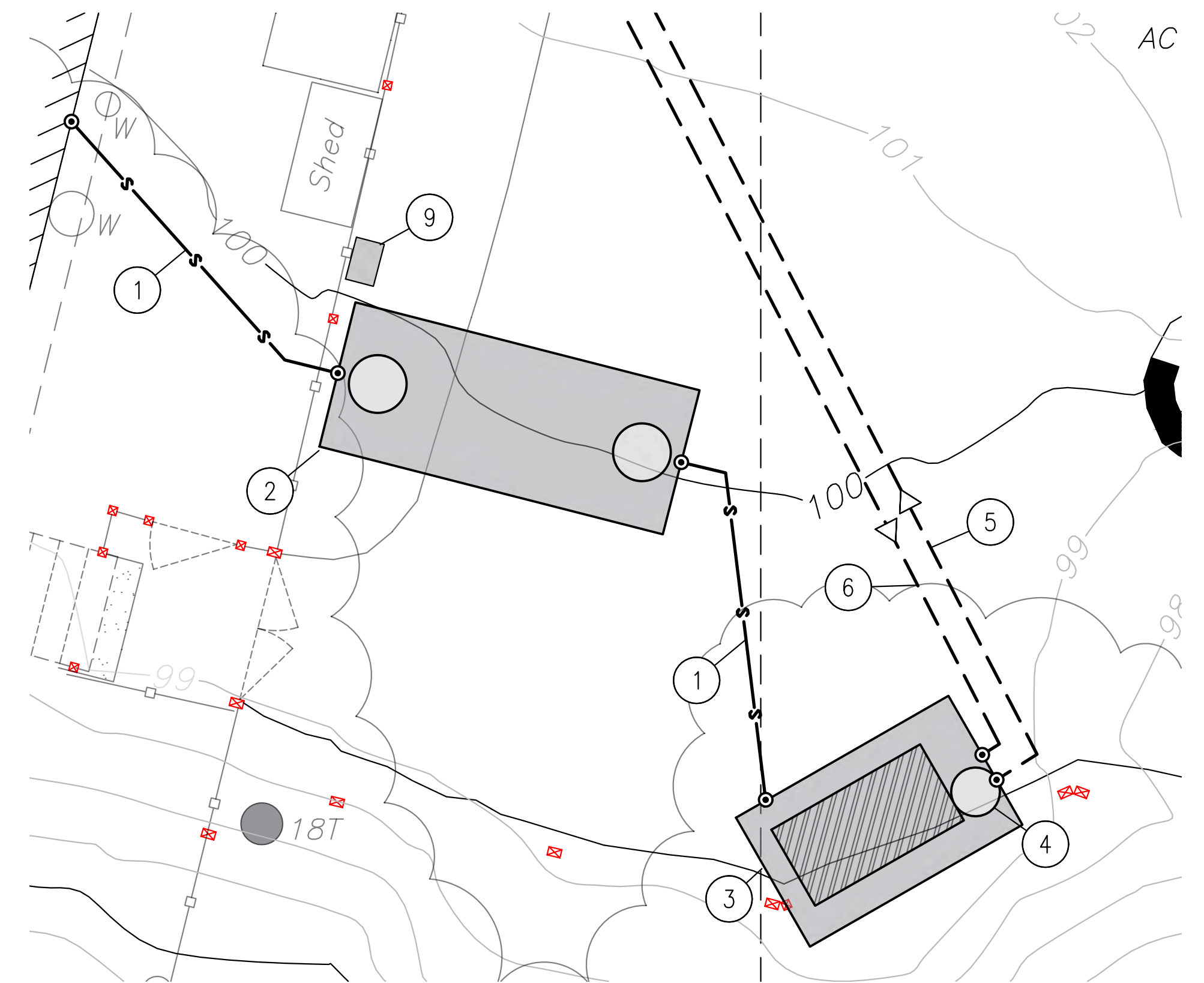
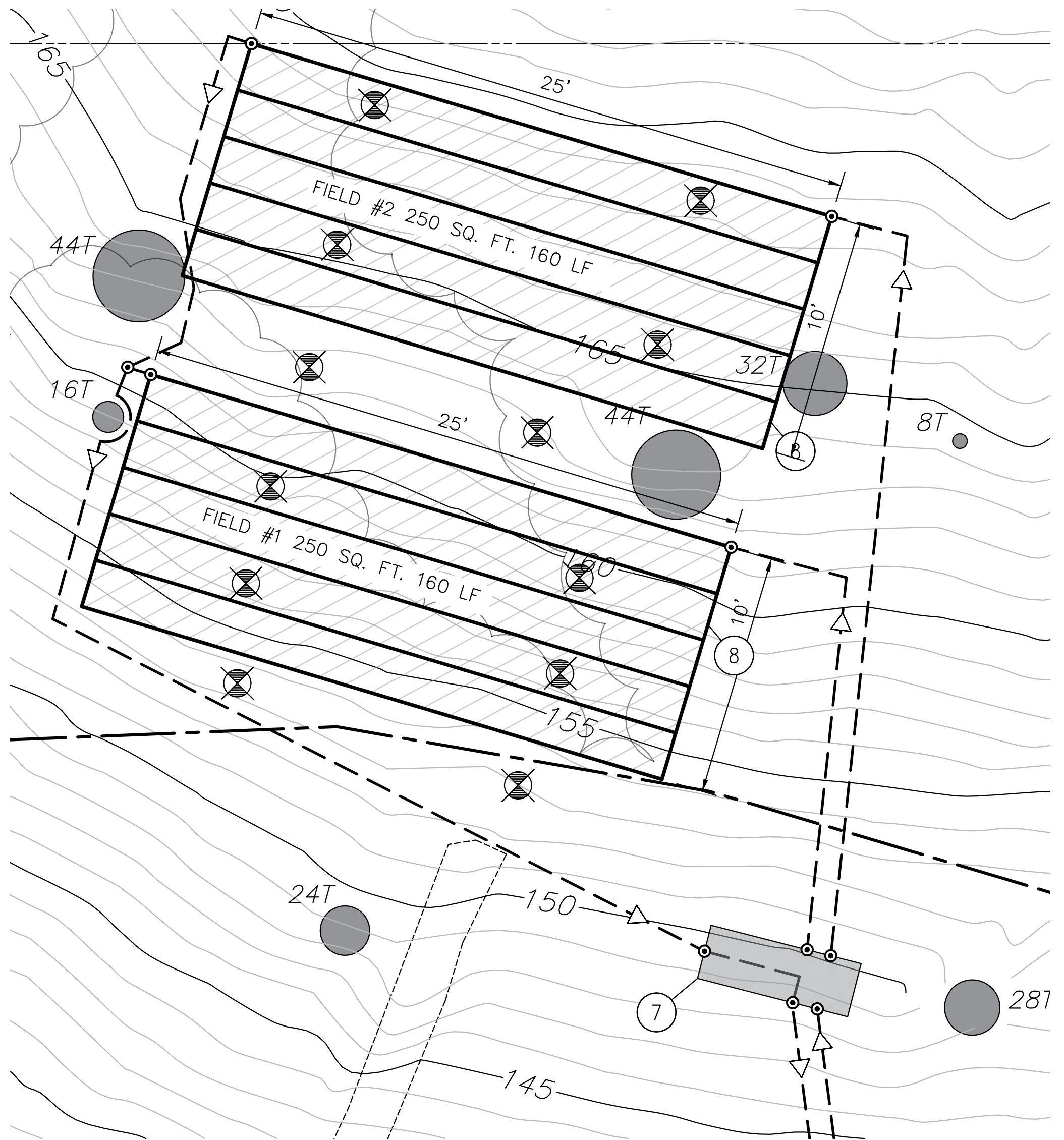
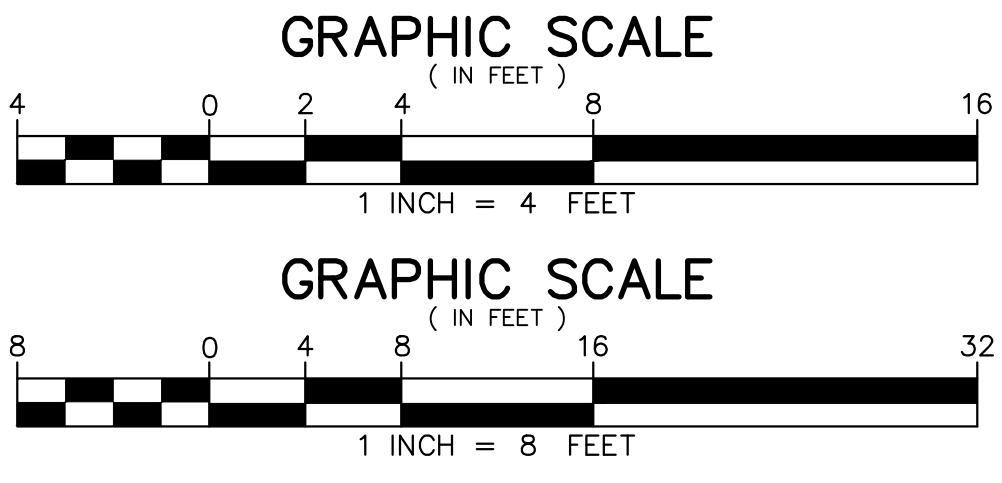
1. NEW OWTS AND DRIP FIELD

**SITE INFO**

286 Vallejo Ave, Point Reyes Station, CA 94956

**DESIGN**

150GPD OWTS USING A 1,200 GALLON SEPTIC TANK AND AN ORENCO AX20-RT FOR FILTRATION. ALL LIQUID IS DISCHARGED TO 2X 250 SQ. FT. / 16OLF DRIP FIELDS. CONTROLLED BY AN ORENCO VCOM CONTROL PANEL



1 SITE PLAN

Scale 1" = 8'

2 FIELD DETAIL VIEW

Scale 1" = 4'

3 TANK DETAIL VIEW

Scale 1" = 4'

**ISSUES**

NO.	DATE	DESCRIPTION
0	7/15/24	PERMIT

**AC ENGINEERING, INC.**  
CIVIL & GEOTECHNICAL CONSULTANTS

454 LAS GALLINAS AVE., SUITE 1047  
SAN RAFAEL, CA 94903  
P: 415-295-2152  
F: 415-472-0603  
admin@acnewcivil.com



**SITE OVERVIEW PLAN**

VALLEJO AVE.  
286 VALLEJO AVE, POINT REYES STATION, CA 94956  
APN: 114-241-16

341-1  
**C-1.0**

GENERAL CONSTRUCTION NOTES

- 1. THE DESIGNING ENGINEER/SANITARIAN SHALL OBSERVE 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 THE CONDITIONS ARE SUITABLE TO BEGIN CONSTRUCTION.
2. THE DESIGNING ENGINEER/SANITARIAN SHALL VERIFY (WITH THE CONTRACTOR) THE PROPER STAKING OF THE SYSTEM PRIOR TO ANY CONSTRUCTION. THE SYSTEM DETAILS, CONFIGURATION, LOCATION, CONTOUR, PERCOLATION AREA, EXPANSION AREA, ETC. SHALL BE VERIFIED.
3. THE CONTRACTOR SHALL NOTIFY THE SBCWD SERVICES ( ) A MINIMUM OF 24 HOURS IN ADVANCE OF WHEN CONSTRUCTION IS TO TAKE PLACE AND VERIFY THAT THE DESIGNING ENGINEER/SANITARIAN HAS STATED THAT SOIL CONDITIONS ARE ACCEPTABLE FOR CONSTRUCTION PURPOSES AND THAT THE STAKING OF THE SYSTEM HAS BEEN ACCOMPLISHED AND VERIFIED.
4. ALL CONSTRUCTION SHALL BE IN ACCORD WITH CURRENT SBCWD SERVICES GUIDELINES AND THE CURRENTLY ADOPTED EDITION OF THE UPC. ANY DISCREPANCIES BETWEEN THOSE CODES AND THESE PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION.
5. ONLY THE PRIMARY SYSTEM IS TO BE CONSTRUCTED AT THIS TIME. THE RESERVE AREAS ARE TO BE HELD FOR FUTURE REPAIRS AND POTENTIAL REPLACEMENT OF THE PRIMARY SYSTEM.
6. THE PRIMARY, RESERVE AND AREAS WITHIN 50 FEET SHALL NOT BE ENCUMBERED BY PERMANENT STRUCTURES, OR DISTURBED BY GRADING, DISCING, TILLING OR EXCAVATION PRIOR TO CONSTRUCTION OF THE SYSTEM AND SHALL BE PROTECTED FROM SUCH DISTURBANCE FOLLOWING CONSTRUCTION OF THE SYSTEM, EXCEPT AS INDICATED ON THIS PLAN.
7. CONSTRUCTION OF THE SYSTEM IS TO MINIMIZE GROUNDWATER INTRUSION INTO TANKS, RISERS AND VALVE BOXES. FINISH GRADING SHALL DIRECT SURFACE WATER AWAY FROM THE SYSTEM AND MINIMIZE PONDING WITHIN 50 FEET OF THE SYSTEM.

INSPECTION SCHEDULE

- A. PRE-CONSTRUCTION CONFERENCE TO REVIEW THE PLANS AND SYSTEM TAKEOUT PRIOR TO CONSTRUCTION.
B. INTERIM OBSERVATION(S), PERFORMED PRIOR TO COVERING ANY ELEMENTS OF THE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE COUNTY ENVIRONMENTAL HEALTH SPECIALIST A MINIMUM OF 48 HOURS IN ADVANCE.
C. A START-UP INSPECTION SHALL BE CONDUCTED AFTER THE SEPTIC ELECTRICAL INSPECTION HAS BEEN SIGNED OFF. CONTRACTOR, ENGINEER, SYSTEM OPERATOR AND SBCWD COUNTY REP.
D. FINAL OBSERVATION OF COMPLETED SYSTEM AND ALL RELATED ITEMS PER THE CONSTRUCTION DOCUMENTS.

- (A) AT THE PRE-CONSTRUCTION CONFERENCE, THE FOLLOWING ITEMS SHALL BE REVIEWED. CONSTRUCTION MAY PROCEED IF THE CONTRACTOR NOTIFIES THE COUNTY ENVIRONMENTAL HEALTH SPECIALIST VERBALLY THAT ALL ELEMENTS APPEAR TO CONFORM TO THE FOLLOWING REQUIREMENTS:
1. SOIL MOISTURE AT THE APPROPRIATE DEPTHS ARE NOT SO HIGH AS TO HAVE THE SOIL SMEAR OR COMPACT DUE TO CONSTRUCTION ACTIVITIES.
2. IMMINENT WEATHER CONDITIONS APPEAR THAT THEY WILL NOT CREATE UNSUITABLE SOIL MOISTURE CONDITIONS DURING THE COURSE OF CONSTRUCTION.
3. LAYOUT AND STAKING OF THE PRIMARY SYSTEM AND THE EXPANSION / RESERVE AREAS SUBSTANTIALLY CONFORMS TO THE APPROVED CONSTRUCTION DOCUMENTS.
4. FOR MOUNDS: THE SOURCE OF THE COVER SOIL AND MOUND SAND SHALL BE DESIGNATED AND REPRESENTATIVE SAMPLES PROVIDED FOR THE DESIGN ENGINEER'S APPROVAL.

- (B) AT THE INTERIM OBSERVATION(S), THE FOLLOWING ELEMENTS SHALL BE VERIFIED BY VISUAL OBSERVATION AND OPERATION OF THE SYSTEM. NO ELEMENTS OF THE SYSTEM SHALL BE BACKFILLED OR COVERED UNTIL THE COUNTY ENVIRONMENTAL HEALTH SPECIALIST AND DESIGN ENGINEER'S APPROVAL IS GIVEN WHEN ALL REQUIRED ITEMS ARE COMPLETED AND APPROVED, THE DISPOSAL FIELD, PRETREATMENT UNITS, PIPELINE TRENCHES AND TANKS MAY BE COVERED OR BACKFILLED.

- 1. LINE AND GRADE OF ALL EXCAVATIONS AND FILLS AS APPLICABLE.
2. FUNCTION AND SETTING OF ANY CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO VALVES, SWITCHES AND ALARMS.
3. HYDRAULIC TESTING OF ANY PUMP AND DISTRIBUTION SYSTEM TO ASSURE THAT THE PUMP IS ADEQUATE FOR DESIGN FLOWS.
4. THE SEPTIC AND SUMP TANKS SHALL BE TESTED FOR WATER TIGHTNESS. THERE SHALL BE NO DETECTABLE DROP IN WATER LEVEL WITHIN THE RISERS DURING A 30 MINUTE TEST.
5. ALL THE REMAINING ELEMENTS REQUIRED TO COMPLETE THE SYSTEM SHALL BE ON SITE AT THIS TIME FOR VERIFICATION AND APPROVAL BY THE DESIGN ENGINEER FOR CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.

- (A) A START-UP INSPECTION SHALL BE CONDUCTED AFTER THE SEPTIC ELECTRICAL INSPECTION HAS BEEN SIGNED OFF. CONTRACTOR, ENGINEER, SYSTEM OPERATOR AND COUNTY REP. SHALL BE PRESENT.

- (B) AT THE FINAL OBSERVATION, THE DESIGN ENGINEER SHALL VERIFY THAT ALL CONSTRUCTION IS IN GENERAL CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. A FINAL LETTER FROM THE DESIGNER TO THE SBCWD SERVICES SHALL STATE THAT ALL CONSTRUCTION HAS BEEN COMPLETED, APPROVED, AND IS IN CONFORMANCE WITH ALL SPECIFICATIONS.

NOTE: SBCWD SERVICES WILL NOT SIGN OFF THE PERMIT OR JOB CARD UNTIL THE DESIGN ENGINEER HAS SUBMITTED A CONSTRUCTION OBSERVATION LETTER AND THE BUILDING IS READY FOR OCCUPANCY.

- 8. ADVANTEX FILTER CONSTRUCTION - CONSTRUCTION OF THE ADVANTEX AX20-RT TREATMENT SYSTEM SHALL BE BY AN ORENCO SYSTEMS AUTHORIZED INSTALLER PER INSTALLATION MANUAL ADVANTEX AX-RT TREATMENT SYSTEMS - RESIDENTIAL APPLICATIONS REV 3.0 OR MOST CURRENT.

- 9. DISPOSAL FIELD CONSTRUCTION INSTALLATION GUIDELINES

- A. EXCAVATION, FILLING AND GRADING SHOULD HAVE BEEN FINISHED BEFORE INSTALLATION OF THE SUBSURFACE DRIP SYSTEM.
B. BE SURE YOU HAVE EVERYTHING REQUIRED FOR THE INSTALLATION BEFORE OPENING TRENCHES. PREASSEMBLE AS MANY SETS OF COMPONENTS AS PRACTICAL ABOVE GROUND AND IN A COMFORTABLE PLACE. COMPRESSION ADAPTERS SHOULD BE GLUED TO PVC TEES, RISER UNITS SHOULD BE PREASSEMBLED, THE SUB MAIN MANIFOLD WITH TEES CAN BE PRE ASSEMBLED AND USED TO MARK THE BEGINNING AND END OF WASTEFLOW ETC. DO NOT START OPENING TRENCHES UNTIL YOU ARE SURE YOU HAVE ALL THE MATERIALS REQUIRED.
C. CONDITION SOIL MOISTURE THE DAY BEFORE OPENING TRENCHES OR INSTALLING WASTEFLOW. REMEMBER, IT IS MUCH EASIER TO INSTALL THE SYSTEM IN MOST SOIL. THE SOIL SHOULD BE MOIST BUT STILL SHOULD ALLOW THE PROPER OPERATION OF THE INSTALLATION EQUIPMENT. THE BEST PREPARATION IS TO MOISTEN THE SOIL SEVERAL DAYS BEFORE THE INSTALLATION OF THE WASTEFLOW, SO THE SOIL HAS TIME TO DRAIN AND WILL NOT SMEAR WHEN EXCAVATED. THE SOIL SURFACE SHOULD BE DRY.
D. INSTALL THE SYSTEM HEAD FIRST: TANKS, RECIRCULATING TEXTILE FILTER, PUMPS, CONTROL VALVES, DISS FILTERS, CHEMICAL INJECTOR, PRESSURE REGULATORS, PRESSURE GAGES AND WATER METER (AS APPLICABLE), THEN INSTALL THE PRESSURE MAIN AND BACKFLUSH RETURN LINES. THESE SHOULD BE BURIED AT A DEPTH OF 18 INCHES, WELL BELOW THE DEPTH OF THE WASTEFLOW LINES (12 INCHES). AT ALL TIMES, AVOID GETTING DEBRIS INTO THE SYSTEM. FLUSH MAIN LINES, TEST FOR LEAKS (HYDROSTATICALLY FOR 2 HRS @ 150 PSI) AND LEAVE THEM FULL OF WATER.
E. OPEN TRENCHES FOR THE FEEDER AND BACKFLUSH MANIFOLDS. THESE TRENCHES SHOULD BE 18 INCHES INTO NATIVE SOIL.
F. CLEAN FEEDER AND BACKFLUSH MANIFOLD TRENCHES, MOISTEN AND COMPACT THE BOTTOM OF THE TRENCH. (IF THIS IS NOT DONE, THE MANIFOLDS MAY "SETTLE DOWN" AND SLOWLY PULL OUT THE COMPRESSION COUPLINGS). ASSEMBLE THE FEEDER MANIFOLD OUTSIDE THE TRENCH IF PRACTICAL. CONNECT TO PRESSURE MAIN LINES AND TO THE SYSTEM HEAD. FLUSH THESE LINES. A HIGH WATER VELOCITY IS REQUIRED TO CARRY AWAY DEBRIS WHICH MAY HAVE ENTERED THE PIPES BEFORE OR DURING INSTALLATION. PLACE THE FEEDER AND BACKFLUSH MANIFOLDS INTO THE TRENCHES.
G. THE PRIMARY DISPOSAL FIELD AND ALL AREAS OF DISTURBED SOILS SHALL BE SEEDED WITH A BLEND OF ANNUAL & PERENNIAL GRASSES AND ROSE CLOVER. IRRIGATION SHALL BE PROVIDED TO GERMINATE THE SEED AND ESTABLISH A WELL DEVELOPED VEGETATIVE STAND.

INSTALLATION METHOD

- A. TRENCHING BY HAND OR WITH A CHAIN TRENCHER MOST SUITABLE FOR THIS INSTALLATION.
B. COVER ALL OPEN ENDS INCLUDING DRIP LINES TO AVOID GETTING DEBRIS INTO THE SYSTEM.
C. LEAVE ENOUGH LENGTH AT THE BEGINNING AND END FOR CONNECTIONS. IT IS CONVENIENT TO FINISH THE LAST FOOT OF THE TRENCH BY HAND. THIS GIVES MORE ROOM FOR CONNECTIONS. BEWARE OF BENDING THE DRIP TUBING TOO TIGHT DURING INSTALLATION.
D. DO NOT BEND TUBING. USE PVC IPS TUBING AND PVC FITTINGS TO CONFIGURE LOOPS.
E. THE PIPE PULLER TYPE MACHINE SHOULD NOT BE USED IN CLAY SOILS, AS IT FORMS AN UNDERGROUND "PIPE" AND THE WATER APPLIED BY THE SYSTEM TENDS TO RUN IN THE DOWNHILL DIRECTION.

- 10. CONCRETE SEPTIC TANK, HOLDING TANK, SEEPAGE PIT ABANDONMENT NOTES:
A. THE EXISTING SEPTIC TANK SHALL BE ABANDONED AS FOLLOWS:
\* THE TANKS SHALL BE PUMPED BY A LICENSED SEPTIC TANK PUMPER.
\* THE TANK LIDS SHALL BE REMOVED, AND DISPOSED OF IN A SANITARY LANDFILL.
\* THE FLOOR OF THE TANKS SHALL BE RUPTURED IN BOTH TANK CHAMBERS.
\* THE TANKS SHALL BE COLLAPSED, AND THE REMAINING VOID FILLED WITH RIVER RUN MATERIAL TO WITHIN 12 INCHES OF FINISH GRADE.
\* THE REMAINING VOID SHALL BE FILLED WITH COMPACTED NATIVE SOIL MATERIAL.
B. ALTERNATELY THE TANK MAY BE RUPTURED AND FILLED COMPLETELY WITH CONTROLLED DENSITY CONCRETE FILL.
C. ALL AT BOTH ENDS BURIED SEWER PIPES AND LEACH LINES, TO OR FROM THE OLD SEPTIC TANK SHALL BE CUT AND PLUGGED.

EROSION CONTROL NOTES:

- 1. ALL AREAS OF DISTURBED OR BARE SOIL SHALL BE SEEDED WITH A BLEND OF ANNUAL GRASSES AND CLOVERS. ALL SEEDED AREAS SHALL BE MULCHED WITH A GENEROUS LAYER OF WEED FREE STRAW. SEED AND MULCH SHALL BE AVAILABLE ONSITE BY OCTOBER 15 FOR APPLICATION PRIOR TO RAIN EVENT.
2. ANY RAIN CAUSED EROSION OCCURRING OVER THE COURSE OF THE FIRST RAINY SEASON, SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE.

OPERATING PERMITS: (EXCERPTED FROM MARIN COUNTY )

- A. IN ADDITION TO A CONSTRUCTION PERMIT, AN OPERATING PERMIT IS REQUIRED FOR ALL ALTERNATIVE SYSTEMS, WITH THE EXCEPTION OF THOSE INSTALLED SOLELY FOR THE REPAIR OF EXISTING SYSTEMS FOR SINGLE FAMILY RESIDENCES. THE HEALTH OFFICER RESERVES THE RIGHT TO REQUIRE AN OPERATING PERMIT FOR REPAIR SYSTEMS WHERE, IN HIS/HER JUDGMENT, SUCH A PERMIT IS NECESSARY TO ASSURE PROTECTION OF WATER QUALITY AND PUBLIC HEALTH. ALSO, AN OPERATING PERMIT WILL BE REQUIRED FOR ANY REPAIR UTILIZING A NEW ALTERNATIVE SYSTEM WHICH IS NOT CLASSIFIED AS A CATEGORY 2 OR 3 SYSTEM; THESE CASES WILL REQUIRE REGIONAL BOARD REVIEW. THE OPERATING PERMIT PROVISIONS OUTLINED IN THIS SECTION ALSO APPLY TO ANY STANDARD SYSTEMS REQUIRING OPERATING PERMITS, AS DETERMINED BY THE HEALTH OFFICER.
B. OPERATING PERMITS SHALL BE ISSUED BY THE HEALTH OFFICER AT THE TIME OF INITIAL CONSTRUCTION OF THE SYSTEM; AND THEY ARE REQUIRED TO BE RENEWED AT LEAST EVERY TWO YEARS OR AS OTHERWISE SPECIFIED BY THE HEALTH OFFICER ON A CASE-BY-CASE BASIS. THE HEALTH OFFICER MAY REDUCE THE RENEWAL FREQUENCY TO ONCE EVERY THREE OR FOUR YEARS AFTER SUCCESSFUL PERFORMANCE IS DEMONSTRATED; ALSO, ANNUAL RENEWAL MAY BE REQUIRED FOR CERTAIN TYPES OF SYSTEMS OR SITUATIONS AS DEMAED NECESSARY BY THE HEALTH OFFICER. OPERATING PERMITS MUST ALSO BE RENEWED AT THE TIME OF SALE OR, IN THE CASE OF COMMERCIAL PROPERTIES, UPON CHANGE OF OCCUPANTS.
C. OPERATING PERMITS ARE INTENDED TO SERVE AS THE BASIS FOR VERIFYING THE ADEQUACY OF ALTERNATIVE SYSTEM PERFORMANCE AND MAINTENANCE. PERMIT CONDITIONS SHALL INCLUDE MONITORING AND INSPECTION REQUIREMENTS, PERMIT DURATION, AND OTHER PROVISIONS DEEMED APPROPRIATE BY THE HEALTH OFFICER.
D. RENEWAL OF AN OPERATING PERMIT REQUIRES THE SUBMISSION OF AN APPLICATION, A FEE, AND THE RESULTS OF REQUIRED SYSTEM INSPECTION AND MONITORING (PER SECTION 804 BELOW).
E. FAILURE TO SUBMIT A RENEWAL APPLICATION, THE REQUIRED FEE OR SPECIFIED MONITORING AND INSPECTION DATA, OR FAILURE TO UNDERTAKE ANY REQUIRED CORRECTIVE WORK SPECIFIED BY THE HEALTH OFFICER MAY BE CAUSE FOR NON-RENEWAL OR REVOCATION OF THE OPERATING PERMIT BY THE HEALTH OFFICER.
F. CERTIFIED COPIES OF OPERATING PERMITS AND NOTICES OF WITHDRAWAL OF OPERATING PERMITS, WHEN ISSUED, WILL BE RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF MARIN COUNTY.

REQUIRED ELECTRICAL FEATURES

- A. ALL MATERIALS, CONNECTIONS, AND SPECIFICATIONS SHALL MEET THE MARIN COUNTY/NATIONAL ELECTRICAL CODE:
1. IN ALL CASES IN WHICH A SUMP WITH A PUMP IS USED FOR A SEWAGE DISPOSAL SYSTEM, THE CONTRACTOR/DWNER SHALL OBTAIN AN ELECTRICAL PERMIT FROM THE MARIN COUNTY BLDG. DEPT.
2. THE BUILDING OFFICIAL SHALL BE RESPONSIBLE FOR INSPECTION AND APPROVAL OF ALL ELECTRICAL FEATURES OF ALL PUMP AND ELECTRICAL PARTS.
3. A DISCONNECTING MEANS SHALL BE LOCATED IN SIGHT FROM THE PUMP LOCATION PER THE COUNTY ADOPTED ELECTRICAL CODE.
B. A "WIDE ANGLE" MERCURY/MECHANICAL, C.S.H. INC., DR S.J ELECTRO SYSTEMS SUPER SINGLE OR EQUAL, FLUAT SWITCH SHALL BE USED TO ACTIVATE THE PUMP. THE ALARM/CONTROL BOX SHALL BE EQUIPPED WITH A MOTOR CONTRACTOR FOR THE PUMP AND A MEMENTARY CONTACT "PUMP TEST" SWITCH TO MANUALLY RUN THE PUMP BYPASSING THE CONTROL PANEL AUTOMATIC MODE.
C. ELECTRICAL SERVICE TO THE ALARM/CONTROL PANEL SHALL BE EQUIPPED WITH A BREAKER OR FUSE AT THE POWER SOURCE WHICH IS LARGER THAN THE CIRCUIT BREAKER FOR THE PUMP IN THE ALARM/CONTROL PANEL.
1. THE ALARM/CONTROL PANEL SHALL BE EQUIPPED INTERNALLY WITH SEPARATE CIRCUIT PROTECTION FOR THE CONTROL AND PUMP CIRCUITRY.
2. PUMP PROTECTION SHALL BE PROVIDED BY A THERMAL MAGNETIC CIRCUIT BREAKER FOR OVERLOAD AND SHORT CIRCUIT PROTECTION.
3. THE PUMP POWER LEAD AND THE FLUAT SWITCH CONTROL WIRES SHALL NOT BE RUN IN A COMMON CONDUIT.
4. ALL WIRES GOING INTO THE SUMP SHALL BE INDIVIDUALLY SEALED WITH PVC GAS TIGHT FITTINGS IN EITHER THE JUNCTION BOX DR ALARM/CONTROL PANEL AS APPROPRIATE.
5. METALLIC GAS TIGHT FITTINGS ARE NOT ALLOWED.
D. A NON-RE-SETTABLE DOSE COUNTER SHALL BE INSTALLED IN CONTROL BOXES UTILIZED FOR MOUND, SHALLOV TRENCH PRESSURE DISTRIBUTION, AND OTHER NON-STANDARD, SYSTEMS.
NOTE: CONTROL BOXES THAT MUST BE OPENED TO VIEW THE DOSE COUNTER SHALL BE EQUIPPED WITH A CLEAR PLASTIC OR PYREX SAFETY SHIELD INSIDE THE CONTROL BOX. THE CONTROL BOX SHALL HAVE A LABEL PLACED ON IT STATING "CAUTION - ELECTRICAL HAZARD".
E. ALARM/CONTROL PANEL ENCLOSURE SHALL BE NEMA TYPE 4. A REMOTE ALARM WITH AN ADDITIONAL LIGHT AND HORN SHALL BE PROVIDED WITHIN THE STRUCTURE SERVED.
1. ENCLOSURE FOR THE REMOTE AND AUDIO/VISUAL ALARM SHALL BE NEMA TYPE 1, IF MOUNTED INDOORS.
2. EMERGENCY DISCONNECT FOR THE ALARM/CONTROL PANEL IS PROVIDED FOR BY THE INTERNAL FUSED DISCONNECT AND PUMP CIRCUIT BREAKER.

SYSTEM OPERATION AND MAINTENANCE

GENERAL SYSTEM DESCRIPTION:

THIS SEWAGE TREATMENT AND DISPOSAL SYSTEM CONSISTS OF A GRAVITY FLOW SEWER THAT TERMINATES AT A SEPTIC TANK. THE SEWAGE RECEIVES PRIMARY TREATMENT IN THE SEPTIC TANK. SEPTIC TANK EFFLUENT RECEIVES ADDITIONAL TREATMENT IN A SECOND TANK AS IT IS RE-CIRCULATED THROUGH THE ADVANTEX FILTER VIA A PUMP IN THE SECOND SEPTIC TANK. THE FILTERED EFFLUENT FLOWS TO AN ADJACENT SUMP TANK WHICH HOUSES A PUMP THAT DELIVERS THE EFFLUENT TO THE DRIP DISPERSAL FIELD. ADDITIONAL TREATMENT (PHYSICAL FILTRATION AND BIOLOGICAL REDUCTION OF THE WASTE LOAD) IS ACCOMPLISHED IN THE SOIL SYSTEM.

THE PUMP AND ALARM FUNCTIONS ARE CONTROLLED BY A CONTROL PANEL LOCATED NEAR THE SUMP TANK. NORMAL OPERATIONS ARE AUTOMATIC. THE OWNER OR OPERATOR NEED ONLY RESPOND TO ROUTINE MAINTENANCE ITEMS AND ALARM EVENTS AS INDICATED BY THE AUDIBLE AND VISUAL INDICATORS IN THE CONTROL PANEL.

SAFETY: EXPOSURE TO WASTEWATER IS A BIOLOGICAL HAZARD. SYSTEM OPERATORS AND OTHERS EXPOSED TO WASTEWATER SHALL WEAR APPROPRIATE PROTECTIVE GEAR, RUBBER GLOVES, COVERALLS, EYE PROTECTION AND A PARTICULATE MASK. FOLLOWING EXPOSURE TO WASTEWATER, WASH THOROUGHLY AND CLEAN ALL PROTECTIVE GEAR WITH DISINFECTANT.

WORKING IN SEPTIC AND SUMP TANKS CONSTITUTES A CONFINED SPACE HAZARD. PROPER SUPERVISION AND VENTILATION EQUIPMENT SHALL BE PROVIDED TO COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY GUIDELINES.

ALL ELECTRICAL COMPONENTS POSE AN ELECTRICAL HAZARD. EXERCISE CAUTION TO AVOID ELECTRICAL SHOCK.

SYSTEM DESIGN FLOW: DESIGN FLOW: THE DISPOSAL FIELD IS DESIGNED TO ACCOMMODATE A PEAK DAILY FLOW OF 420 GALLONS PER DAY (GPD). AVERAGE DAILY FLOW AT FULL OCCUPANCY SHOULD BE LESS THAN 65% OF THE PEAK DAILY FLOW. THE HOMEOWNER OR DESIGNATED OPERATOR SHALL MONITOR THE QUANTITY OF WATER PROCESSED THROUGH THE SYSTEM. IF ACTUAL FLOW RATES EXCEED THESE VALUES A FLOW AUDIT SHALL BE CONDUCTED.

ROUTINE OPERATION AND MAINTENANCE TASKS:

QUARTERLY: GENERALLY OBSERVE CONDITIONS OF SEWAGE DISPERSAL FIELD: LOOK FOR EVIDENCE OF PONDING OR SURFACING EFFLUENT, AREAS OF LUSH VEGETATIVE GROWTH AND OFFENSIVE ODOORS.

SEMI ANNUAL: CHECK AVERAGE DISPOSAL FIELD LOADING RATE USING THE DOSE COUNTER IN THE PUMP CONTROL PANEL. TEST AUDIBLE & VISUAL ALARM USING A TEST SWITCH IN THE CONTROL PANEL. MEASURE WATER LEVELS IN DISPERSAL FIELD MONITORING WELLS.

ANNUALLY: OWNER OR DESIGNATED OPERATOR SHALL REVIEW THE PLAN AND OPERATION AND MAINTENANCE REQUIREMENTS. CHECK SLUDGE & SOLID ACCUMULATION IN SEPTIC TANKS, CLEANOUT IF NECESSARY. RINSE SEPTIC TANK EFFLUENT FILTER INTO THE FIRST CHAMBER OF THE TANK WITH FRESHWATER.

PERFORMANCE MONITORING AND REPORTING: (EXCERPTED FROM MARIN COUNTY )

- A. A MONITORING PROGRAM WILL BE ESTABLISHED INDIVIDUALLY FOR EACH ALTERNATIVE SYSTEM AT THE TIME OF ISSUANCE OF THE OPERATING PERMIT; IT MAY BE AMENDED AT THE TIME OF PERMIT RENEWAL. SAID MONITORING SHALL BE PERFORMED TO ENSURE THAT THE ALTERNATIVE SYSTEM IS FUNCTIONING SATISFACTORILY TO PROTECT PUBLIC HEALTH AND SAFETY. THE SPECIFIC REQUIREMENTS WILL INCORPORATE RECOMMENDATIONS OF THE SYSTEM DESIGNER ALONG WITH GENERAL MONITORING CRITERIA DEVELOPED BY THE HEALTH OFFICER.
B. MONITORING REQUIREMENTS WILL VARY DEPENDING UPON THE SPECIFIC TYPE OF ALTERNATIVE SYSTEM; BUT, IN GENERAL, THEY WILL INCLUDE THE FOLLOWING:
1. RECORDING OF WASTEWATER FLOW BASED ON WATER METER READINGS, PUMP EVENT COUNTERS, ELAPSED TIME METERS OR OTHER APPROVED METHODS;
2. INSPECTION AND RECORDING OF WATER LEVELS IN MONITORING WELLS IN THE DISPOSAL FIELD;
3. WATER QUALITY TASTING OF SELECTED WATER SAMPLES TAKEN FROM POINTS IN THE TREATMENT PROCESS, FROM MONITORING WELLS, OR FROM SURFACE

- STREAMS OR DRAINAGE; ATYPICAL WATER QUALITY PARAMETERS TO BE ANALYZED FOR MAY INCLUDE TOTAL AND FECAL COLIFORM, NITRATE, BIOCHEMICAL OXYGEN DEMAND (BOD), AND SUSPENDED SOLIDS;
4. INSPECTION AND OBSERVATION OF PUMP OPERATION OR OTHER MECHANICAL EQUIPMENT; AND,
5. GENERAL INSPECTION OF TREATMENT AND DISPOSAL AREA FOR EVIDENCE OF SEEPAGE, EFFLUENT SURFACING, EROSION OR OTHER INDICATORS OF SYSTEM MALFUNCTION.

- C. THE REQUIRED FREQUENCY OF MONITORING FOR EACH INSTALLATION WILL GENERALLY BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE, ASSUMING A RECORD OF SUITABLE PERFORMANCES ESTABLISHED:
-YEARS 1 AND 2 OPERATION - QUARTERLY MONITORING
-YEARS 3 AND 4 OPERATION - SEMIANNUAL MONITORING
-YEARS 5 AND BEYOND - ANNUAL MONITORING

MONITORING FREQUENCY MAY BE INCREASED IF SYSTEM PROBLEMS ARE EXPERIENCED. MONITORING FREQUENCY FOR EACH SYSTEM OR TYPE OF SYSTEM WILL BE ESTABLISHED BY THE HEALTH OFFICER

- D. MONITORING OF ALTERNATIVE SYSTEMS SHALL BE CONDUCTED BY OR UNDER THE SUPERVISION OF ONE OF THE FOLLOWING: 1) REGISTERED CIVIL ENGINEER OR 2) REGISTERED ENVIRONMENTAL HEALTH SPECIALIST.

THE COUNTY SHALL CONDUCT SPOT-CHECK INSPECTIONS OF ALTERNATIVE SYSTEMS ON THEIR OWN AND MAY ALSO BE PRESENT TO OBSERVE THE PERFORMANCE OF MONITORING ACTIVITIES BY OTHERS. THE COUNTY WILL ORDINARILY INSPECT ABOUT 20 PERCENT OF THE ALTERNATIVE SYSTEMS IN A GIVEN YEAR. COUNTY INSPECTIONS WILL BE MADE AS A QUALITY CONTROL CHECK AND TO ASSURE COUNTY STAFF MAINTAIN PERSONAL FAMILIARITY WITH THE OPERATION OF VARIOUS TYPES OF ALTERNATIVE SYSTEMS. APPROVED FOR USE IN THE COUNTY. ADDITIONALLY, THE HEALTH OFFICER RESERVES THE RIGHT TO REQUIRE, ON A CASE-BY-CASE BASIS, "THIRD PARTY" OR COUNTY INSPECTION AND MONITORING OF ANY ALTERNATIVE SYSTEM WHERE DEEMED NECESSARY BECAUSE OF THE COMPLEXITY OF THE SYSTEM OR THE SENSITIVE NATURE OF THE SITE.

CONTINGENCY PLAN:

- 1. SYSTEM REPAIRS GENERALLY REQUIRE A PERMIT FROM SBCWD SERVICES. AN EXPERIENCED SEWAGE DISPOSAL CONTRACTOR WILL BE ABLE TO PROVIDE ASSISTANCE WITH BASIC SYSTEM REPAIRS AND MAINTENANCE. IF SUBSTANTIAL REPAIRS ARE NECESSARY, THE DESIGN ENGINEER SHALL BE CONTACTED.
2. IF THE HOMEOWNER NOTICES ANYTHING UNUSUAL IN HOW THE SYSTEM OPERATES (HIGH LIQUID LEVELS IN THE MONITORING WELLS, SPONGY EARTH AT THE TOE OF THE FIELD, ALARM EVENTS OR UNPLEASANT ODOORS) THE OWNER SHOULD KEEP A LOG OF OCCURRENCES AND OBSERVATIONS. THE LOG SHOULD ALSO INCLUDE A RECORD OF FREQUENT DOX COUNTER READINGS. EVEN IF THE PROBLEM CORRECTS ITSELF, THESE RECORDS SHOULD BE KEPT ON FILE IN THE EVENT THAT THE PROBLEM RETURNS.
3. IF PROBLEMS PERSIST MORE THAN TWO WEEKS, OR IF THE OWNER BELIEVES THE SYSTEM IS IN FAILURE, THE OWNER SHOULD CONTACT THE DESIGNING ENGINEER OR OTHER QUALIFIED CONSULTANT TO ASSIST IN DIAGNOSING THE PROBLEM.
4. IN THE EVENT THAT A REPAIR OR REPLACEMENT OF THE DISPOSAL FIELD IS NECESSARY, WATER USE WITHIN THE STRUCTURES SERVED SHOULD BE REDUCED IMMEDIATELY. LAUNDRY SHOULD BE DONE OFF SITE. PUMPING AND HAULING OF SEWAGE MAY BE NECESSARY TO DRY OUT THE DISPOSAL FIELD FOR REPAIRS.
5. IN THE EVENT OF SYSTEM FAILURE, IT MAY BE NECESSARY TO REPLACE OR EXPAND THE SYSTEM. THE OWNER SHALL INVOLVE A QUALIFIED DESIGN ENGINEER IN THE REPAIR, REPLACEMENT EXPANSION PROCESS. THE OWNER IS RESPONSIBLE FOR NOTIFYING THE COUNTY HEALTH SPECIALIST OF NECESSARY REPAIRS, REPLACEMENT OR EXPANSION, AND FOR OBTAINING ALL NECESSARY PERMITS.

USE AND CARE OF YOUR SEPTIC SYSTEM - A GUIDE FOR USERS:

ONSITE SEWAGE TREATMENT AND DISPERSAL SYSTEMS INVOLVE BIOLOGICAL PROCESSES THAT ARE SUBJECT TO UPSET UNDER CERTAIN CONDITIONS. THIS GUIDE PROVIDED GUIDELINES FOR MAINTAINING PROPER BALANCE IN THE SYSTEM.

PRODUCTS THAT SHALL BE AVOIDED OR USED SPARINGLY INCLUDE: ANTBACTERIAL SOAPS, LAUNDRY DETERGENTS WITH BLEACH, TOILET TISSUE THAT DISSOLVES READILY, GARBAGE DISPOSAL, AUDIO DISPENSING TOILET CLEANERS, CHEMICAL DRAIN CLEANERS, MOISTURIZING SOAPS / CLEANSING CREAMS.

FLUSH ONLY: HUMAN WASTE & TOILET PAPER

DON'T FLUSH THESE ITEMS OR DUMP THEM DOWN THE DRAIN: TAMPONS OR SANITARY NAPKINS, PAPER TOWELS, CONDOMS, FATS, OILS & GREASE.

SUGGESTED ALTERNATIVES: REDUCE USE OF ANTBACTERIAL SOAPS OR CLEANERS. THESE PRODUCTS DO LITTLE TO PROTECT YOUR HEALTH. YOUR SEPTIC SYSTEM WILL BE MUCH HAPPIER IF YOU SIMPLY WASH THOROUGHLY WITH A REGULAR SOAP AND THOROUGHLY RINSE WITH AMPL E RUNNING WATER.

AVOID LAUNDRY DETERGENTS WITH BLEACH; USE A NON-BLEACH DETERGENT AND ADD BLEACH ONLY WHEN NECESSARY.

AVOID MOISTURIZING SOAPS, AND CLEANSING CREAMS (E.G.: DOVE) FOR REGULAR USE. THE SOFTENING AGENTS ARE OILS, MOST OF WHICH END UP DOWN THE DRAIN. YOUR SEPTIC SYSTEM WILL BE MUCH HAPPIER IF YOU USE A SEPARATE AFTER SHOWER MOISTURIZER.

DON'T USE TOILET TISSUE THAT DISSOLVES READILY. TO TEST IF YOUR BRAND IS APPROPRIATE FOR SEPTIC SYSTEMS, PLACE A FEW SHEETS IN A JAR OF WATER & SHAKE. AFTER A FEW MINUTES SHAKE AGAIN. IF THE TISSUE BREAKS UP INTO SMALL PIECES, TRY ANOTHER BRAND. A GOOD TISSUE FOR SEPTIC SYSTEMS WILL STAY TOGETHER.

DON'T USE AUTOMATIC DISPENSING TYPE TOILET BOWL CLEANERS (I.E.: TIDY BOWL, 2000 FLUSHES). THESE CONTAIN BLEACH, WHICH INTERRUPTS DIGESTION IN THE INTERCEPTOR TANKS.

DON'T PUMP FATS, OILS & GREASE DOWN THE DRAIN, DISPOSE OF THEM IN THE GARBAGE.

DON'T USE DRANO OR SIMILAR DRAIN CLEANING CHEMICALS. CALL THE PARK MANAGER OR A PLUMBER FOR DRAIN CLEANING SERVICE.

USE GARBAGE DISPOSAL SPARINGLY. MUCH OF WHAT YOU COULD PUT DOWN THE SINK SHALL GO IN THE GARBAGE. RESERVE THE GARBAGE DISPOSAL FOR FOOD SCRAPS THAT CANNOT BE SCRAPPED FROM DISHES, POTS AND PANS.

DON'T FLUSH OR DUMP ANY SOLVENTS, CHEMICALS OR HIGH STRENGTH WASTES DOWN THE DRAINS. DISPOSE OF THESE PROPERLY AS ADVISED BY YOUR GARBAGE COMPANY.

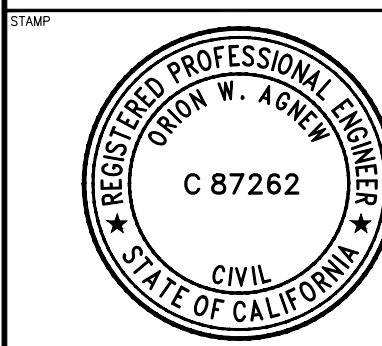
DON'T LEAVE INSIDE FIXTURES RUNNING DURING FREEZING WEATHER, IF NECESSARY CRACK HOSE BIB OUTSIDE.

FOLLOW-UP ON UNUSUAL OBSERVATIONS OR OCCURRENCES TO FIND OUT THE CAUSE AND A PROPER SOLUTION.

ISSUES

Table with 3 columns: ISSUE, DATE, DESCRIPTION. Row 1: 0, 7/15/24, PERMIT

AC ENGINEERING, INC. CIVIL & GEOTECHNICAL CONSULTANTS
454 LAS GALLINAS AVE., SUITE 1047
SAN RAFAEL, CA 94903
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F: 415-472-0603
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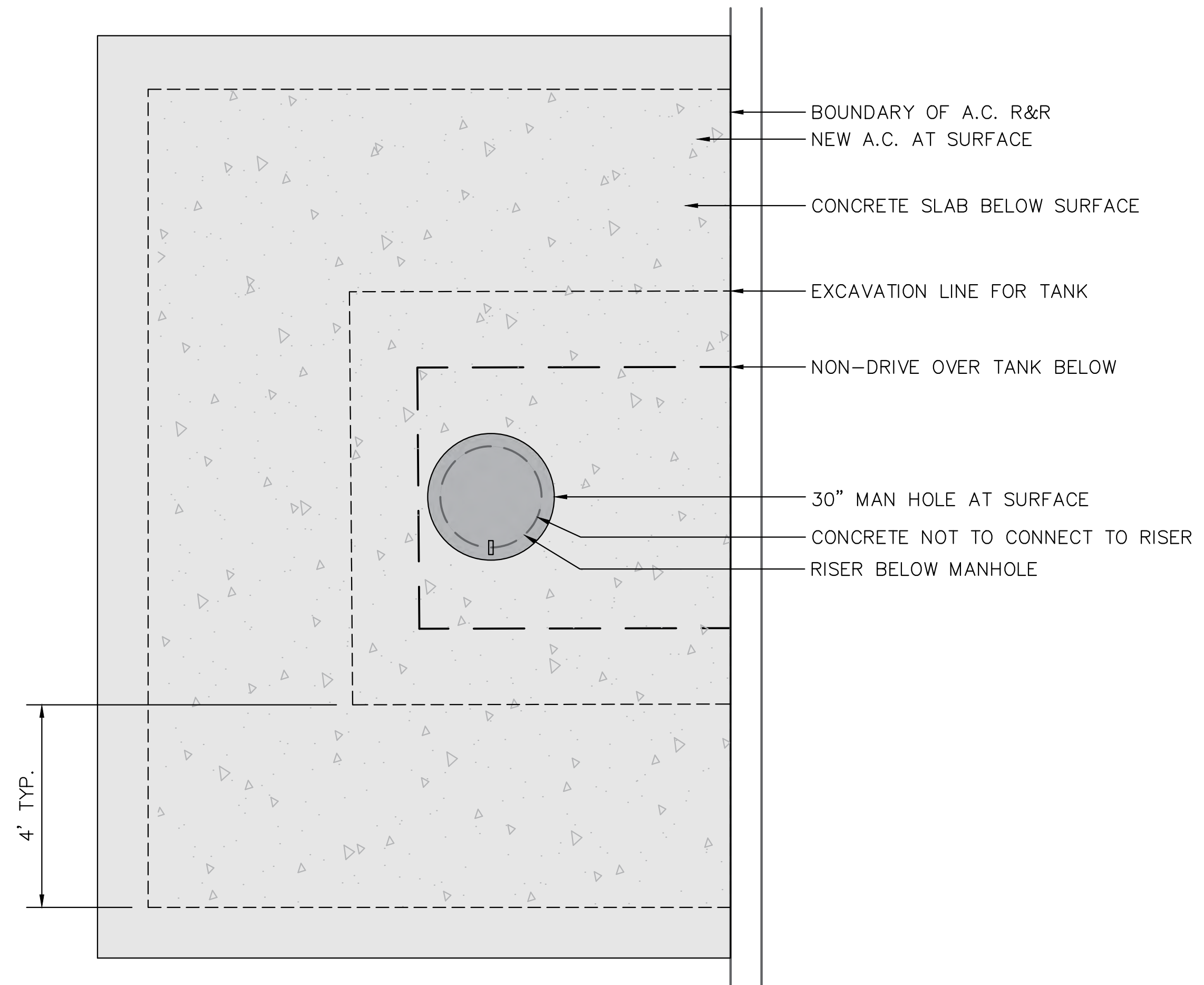
PROJECT NOTES

VALLEJO AVE.
286 VALLEJO AVE, POINT REYES STATION, CA 94956
APN: 114-241-16

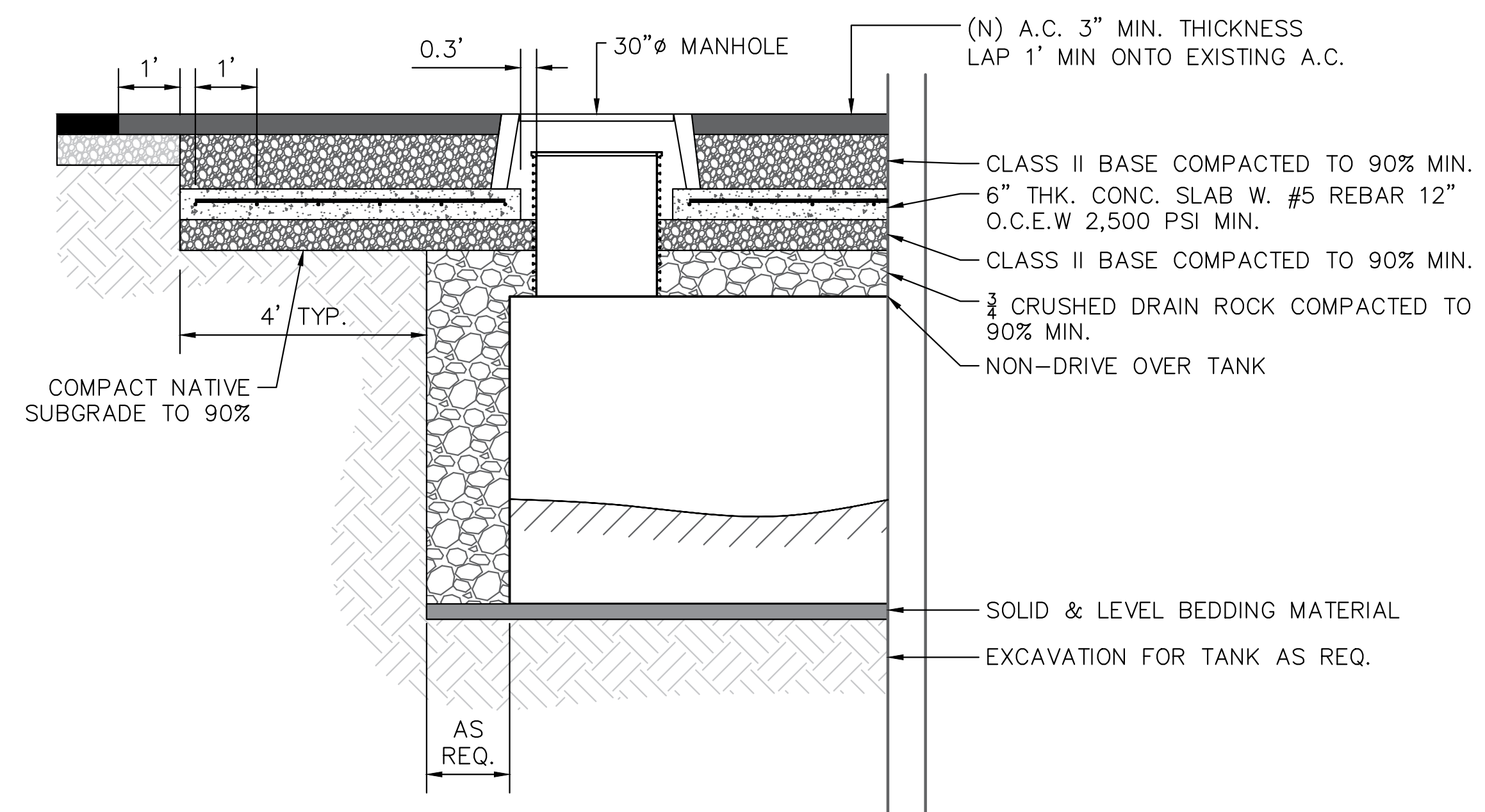
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SHEET SIZE: Arch. D (36"x48")



**PLAN VIEW**

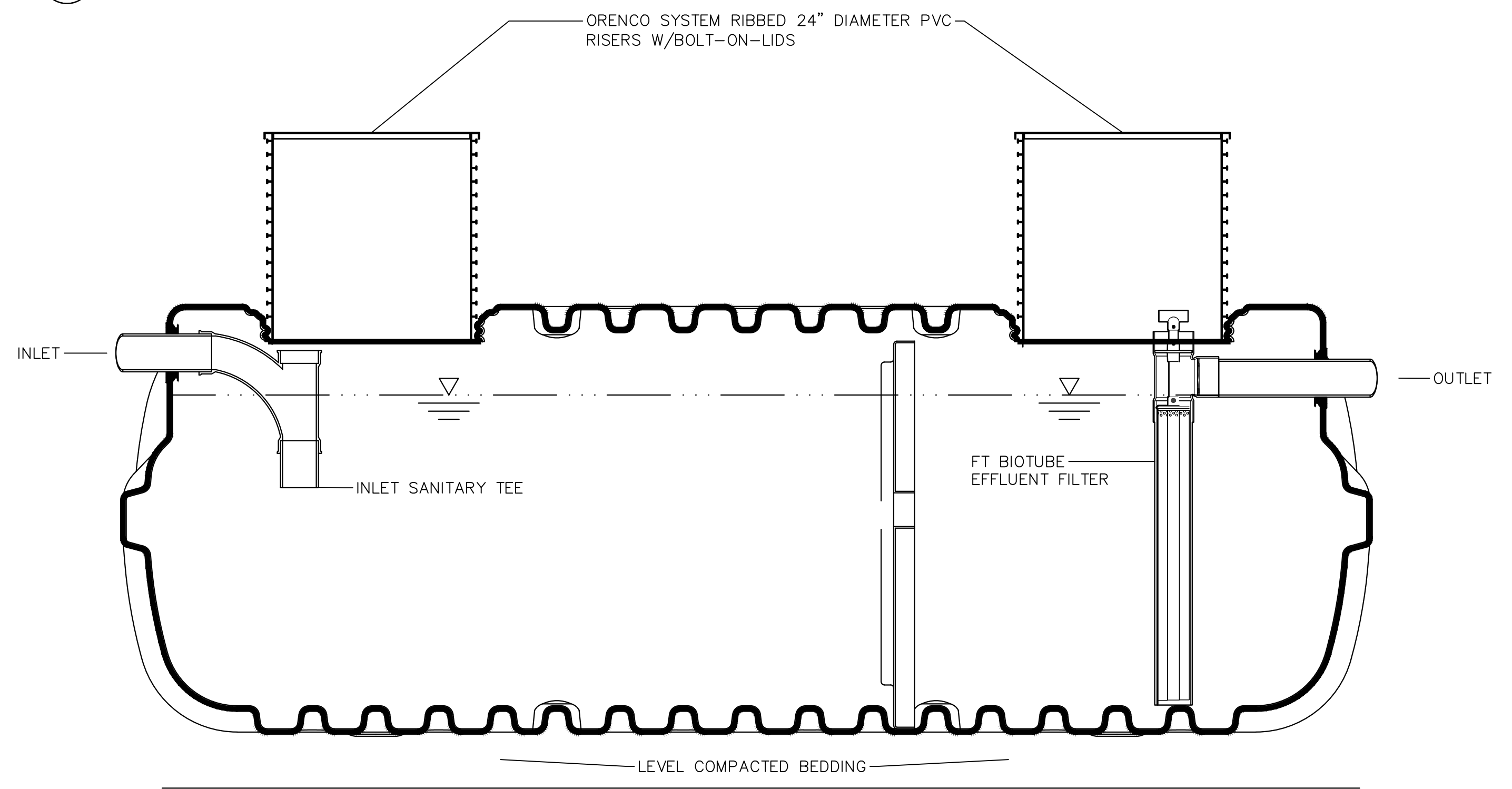


**SECTION VIEW**

**2 DRIVE OVER TANK DETAILS**

NTS

**2** SEE DRIVE OVER TANK DETAIL FOR FINISHED SURFACE REQUIREMENTS

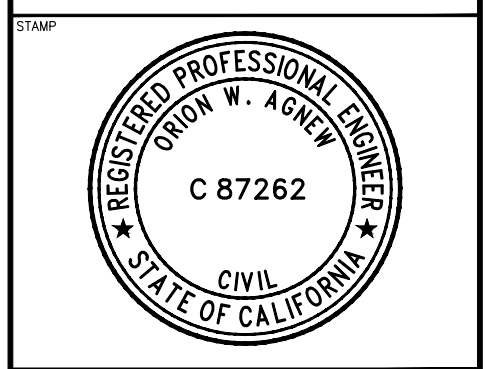


**1 POLY SEPTIC TANK**

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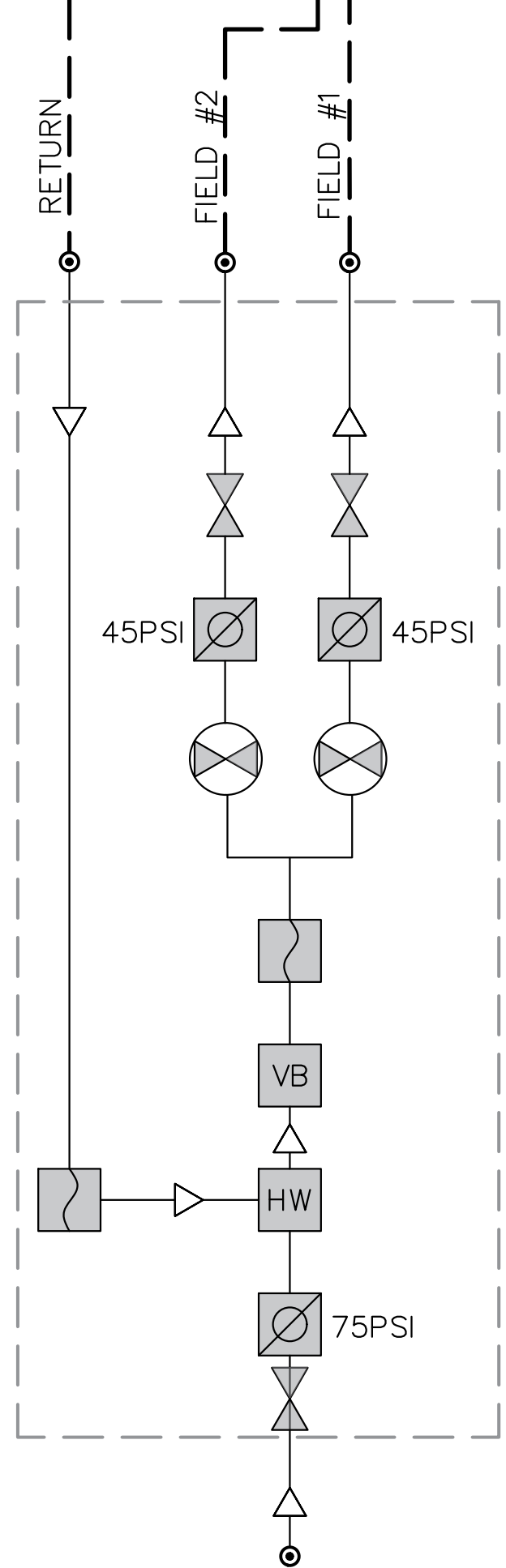
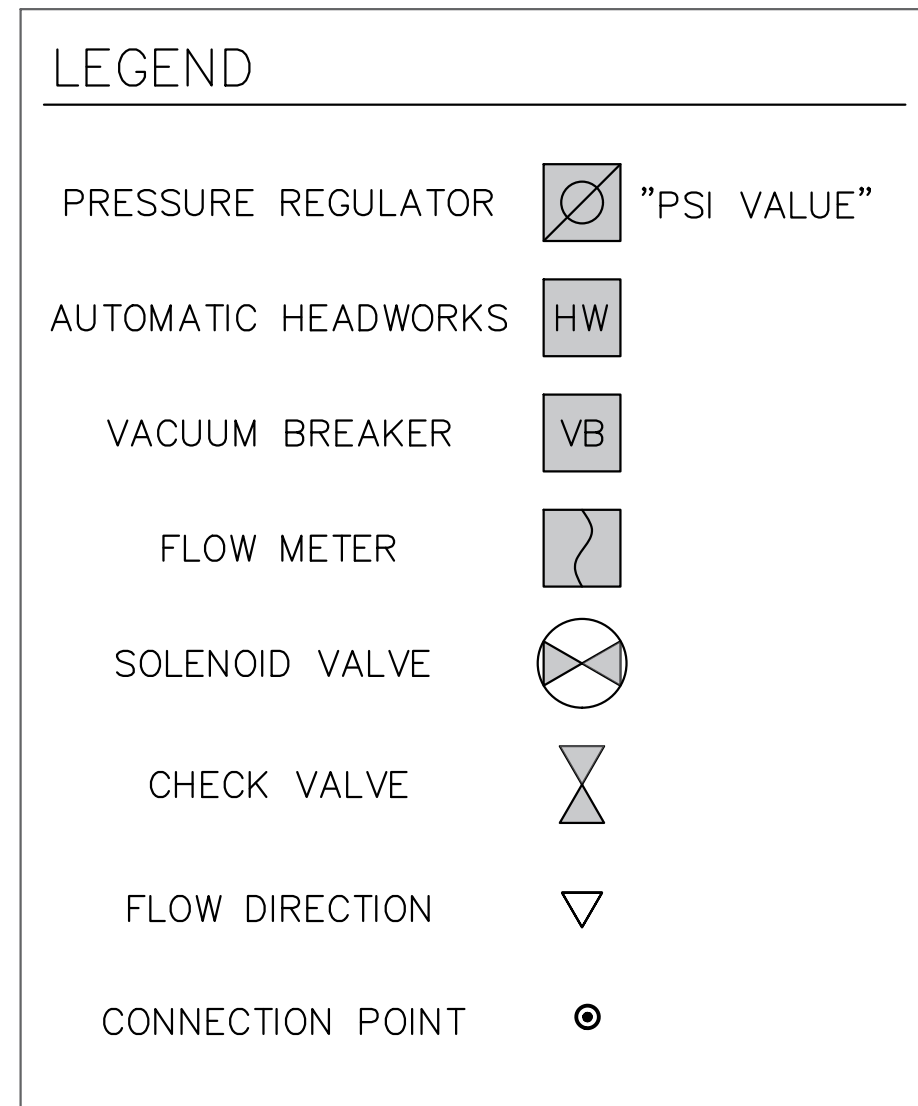
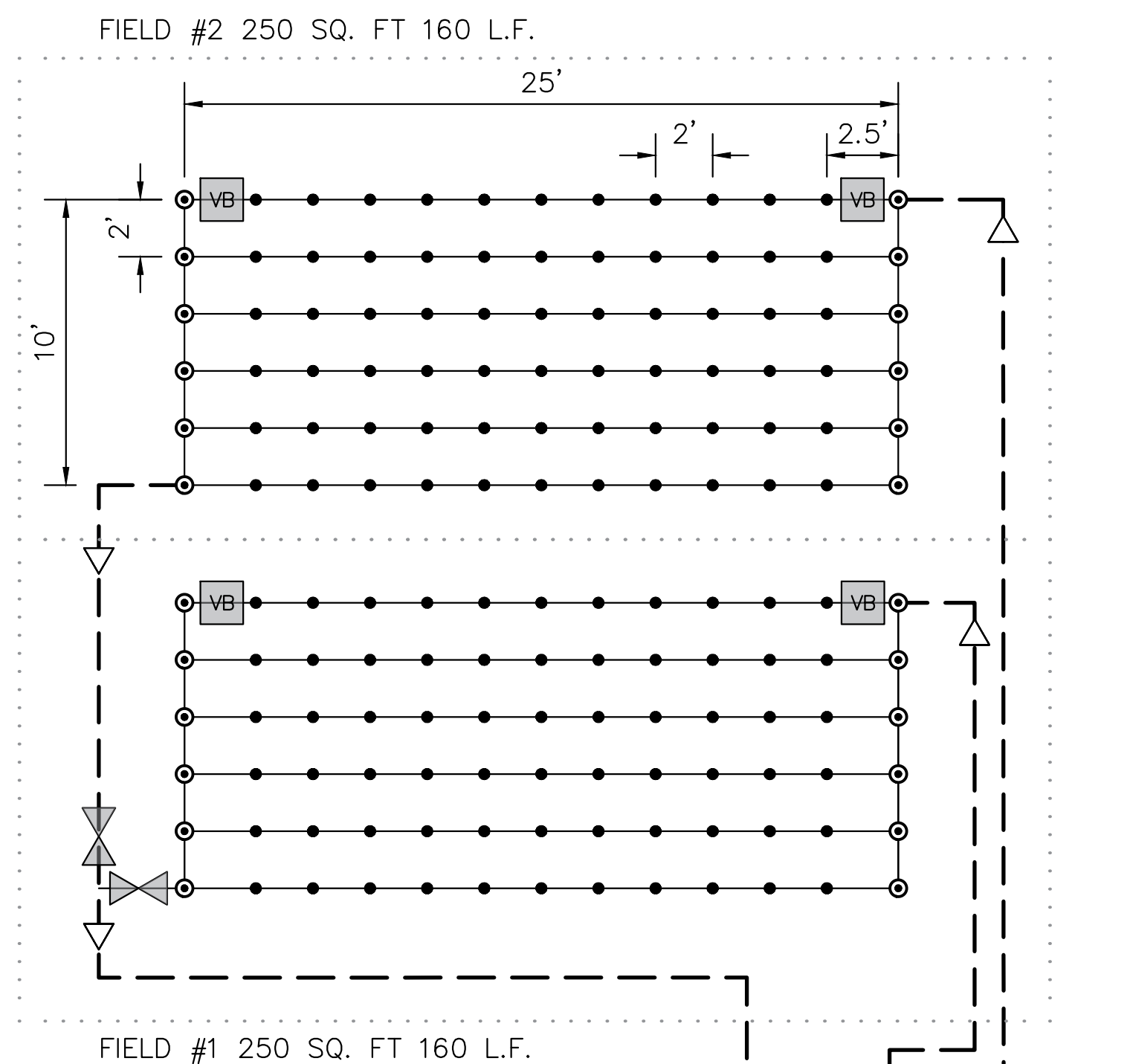


**TANK DETAILS**  
 VALLEJO AVE.  
 286 VALLEJO AVE, POINT REYES STATION, CA 94956  
 APN: 114-241-16

341-1

**C-2.0**

DRIP TUBING INFORMATION TABLE	
DESCRIPTION	VALUE
TUBING PART NUMBER	G-WFPC-17-4-12-ECO
DRIPLINE SPACING	2 FEET
EMITTER SPACING	2 FEET
DESIGN VALUE	150 G.P.D



2 DRIP FIELD SCHEMATIC LAYOUT

NTS

**ADVANTEK RECIRCULATION**

TOTAL DYNAMIC HEAD = 23 FT.  
 GALLONS PER MINUTE (GPM) = 32 GPM  
 DOSE = 13 GALLONS  
 RECOMMENDED PUMP TYPE: OSI PF300512 (0.5 HP, 115 VOLTS, SINGLE PHASE, 6.3 AMPS)

TIMER CONTROLLED:  
 OFF 58 MIN 27 SEC  
 ON 1 MIN 33 SEC

T OVERRIDE OFF 29 MIN  
 T OVERRIDE ON 1 MIN 33 SEC  
 RECOMMENDED CONTROL PANEL: ORENCO VCOM

ALLOWABLE RECIRC = 1,500 GALLONS (20 SQ. FT. \* 75 GPD)  
 1,200 GPD RECIRC. = 8X RECIRC RATIO  
 1,200 < 1,500 = OK RECIRC RATIO

FROM AX20-RT TO DRIP FIELD (SEE CALCULATIONS)

150GPD  
 TOTAL DYNAMIC HEAD = 240 FT  
 GALLONS PER MINUTE (GPM) = 2.5 GPM  
 DOSE = 12.5 GALLONS  
 RECOMMENDED PUMP TYPE: STA-RITE S20P4JP15221 (20 GPM, 1.5HP, 230 VOLTS)

TIMER CONTROLLED:  
 ON 5 MIN  
 OFF 115 MIN

T OVERRIDE OFF 57 MIN 30 SECONDS  
 T OVERRIDE ON 5 MIN 0 SECONDS

RECOMMENDED CONTROL PANEL: ORENCO VCOM

**AX20RT Treatment System - Pump Discharge**

**Design Notes**

- For residential strength waste up to 4 bedrooms.
- Installation to be performed by an AdvanTex Authorized Installer only.
- Start-up and service to be performed by an AdvanTex Authorized Service Provider only.

**11 gallons per inch. = 324 gal above high level alarm.**

**Discharge Chamber - End View**

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UNAUTHORIZED CHANGES & USES	PRODUCT CONFIGURATION DRAWINGS	Orenco Systems <sup>®</sup> Incorporated Changing the Way the World Does Wastewater <sup>®</sup>	Drawn By: BEN SMITH	Project: AX20RT Mode 3B	Scale: 1" = 2'-0"
Orenco has prepared these drawings for use by the design engineer. Orenco will not be responsible for errors, omissions, changes to or uses of these drawings. All changes to these drawings must be made in writing and must be approved by the design engineer.			Drawn For:	Title: NDW-ATX-RT-STD-09	Rev: A-05 Date: 4/22/2013

1 ORENCO AX-RT FILTER

NTS

**Orenco Technical Data Sheet**

**Components**

- Inlet
- Recirc/blend chamber
- Recirc transfer line
- Recirc pumping system
- Manifold and spin nozzles
- Treatment media
- Tank baffle
- Recirc return valve
- Recirc/filtrate chamber
- Discharge pumping system (pump discharge only)
- Outlet (pump discharge shown)
- Splice box
- Passive air vent
- Control panel (not shown)

**Specifications**

**Nominal Dimensions\***

Length, in (mm)	102 (2591)
Width, in (mm)	62 (1575)
Height, in (mm)	72 (1829)
Overall unit footprint, ft <sup>2</sup> (m <sup>2</sup> )	44 (4.09)
Visible footprint after installation, ft <sup>2</sup> (m <sup>2</sup> )	20 (1.86)
Lid insulation value	R-6 (RSI-1.1)

**Dry Weight**

	AX20-RT	AX25-RT
Gravity discharge model, lb (kg)	883 (401)	908 (412)
Pump discharge model, lb (kg)	923 (419)	948 (430)

\* Nominal values provided. See AdvanTex Treatment System drawings for exact dimensions.

NDW-ATX-AXRT-1  
 Rev. 3 © 07/21  
 Page 2 of 2

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**SCHEMATIC LAYOUT AND PRE-TREATMENT**

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 286 VALLEJO AVE, POINT REYES STATION, CA 94956  
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SHEET SIZE: Arch. D (36" x 48")

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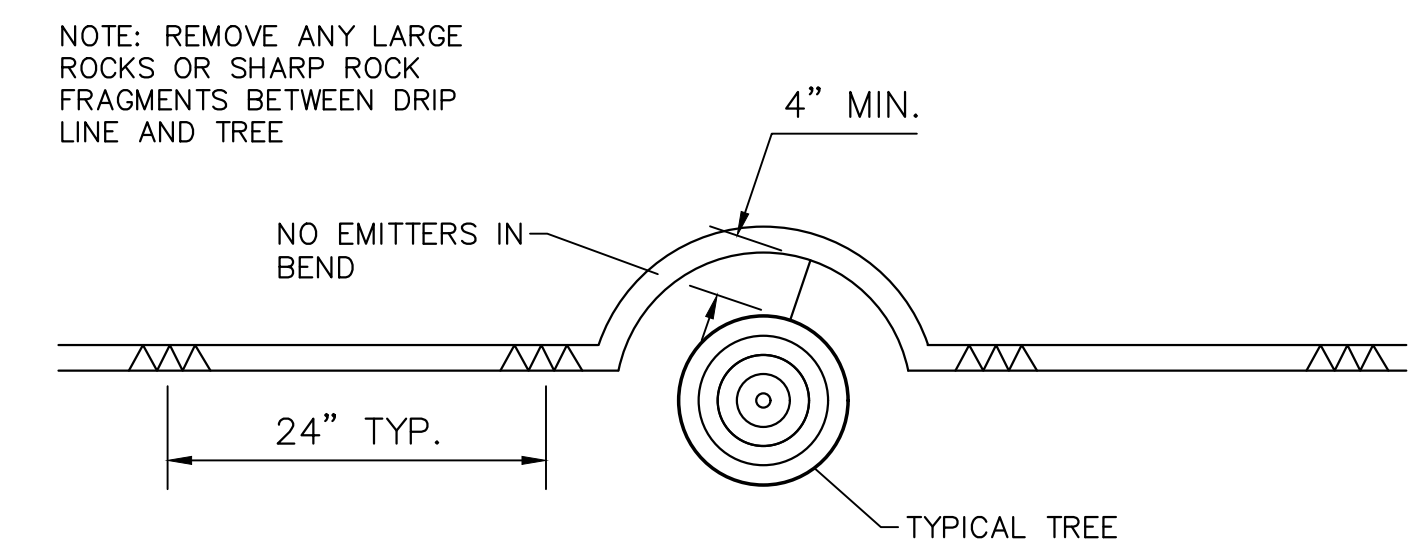
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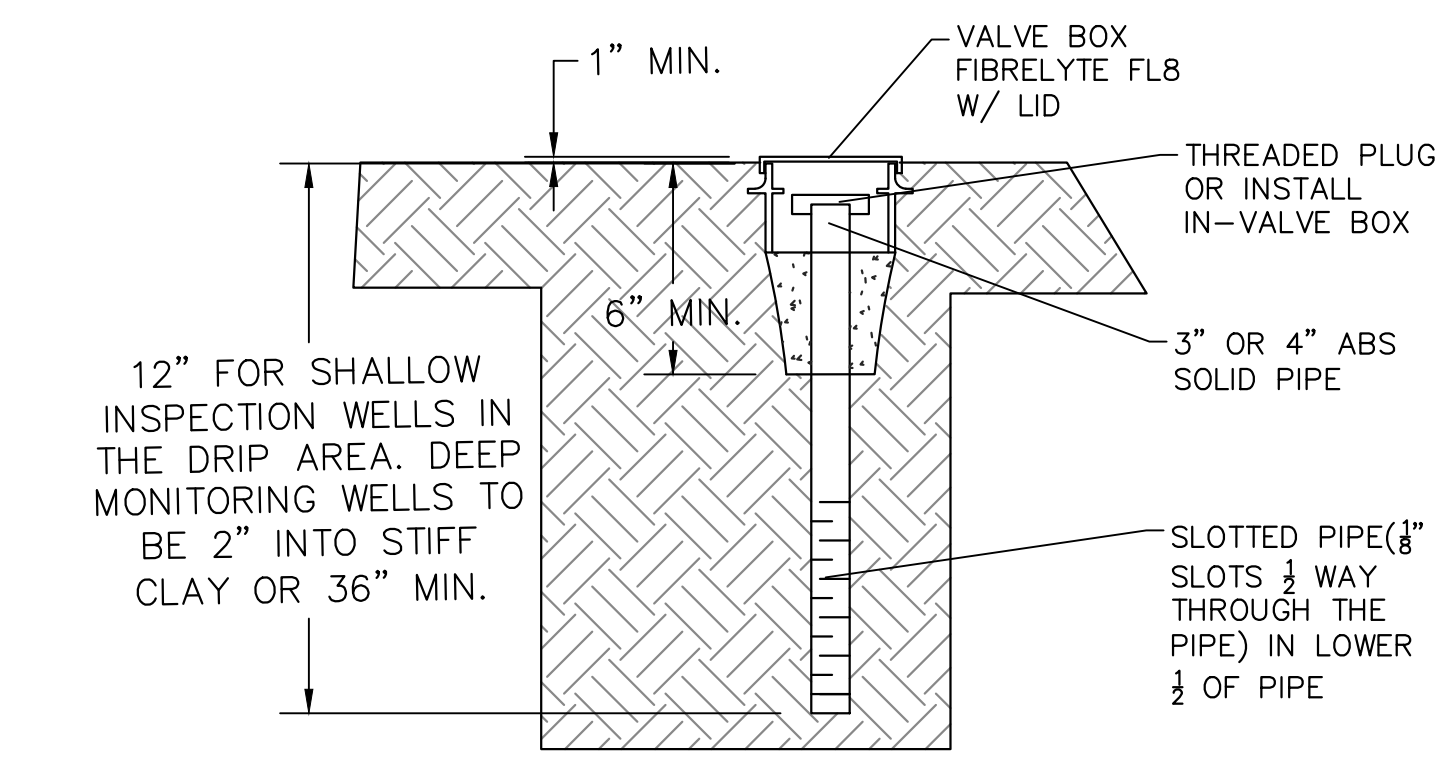
**DETAILS**  
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 286 VALLEJO AVE, POINT REYES STATION, CA 94956  
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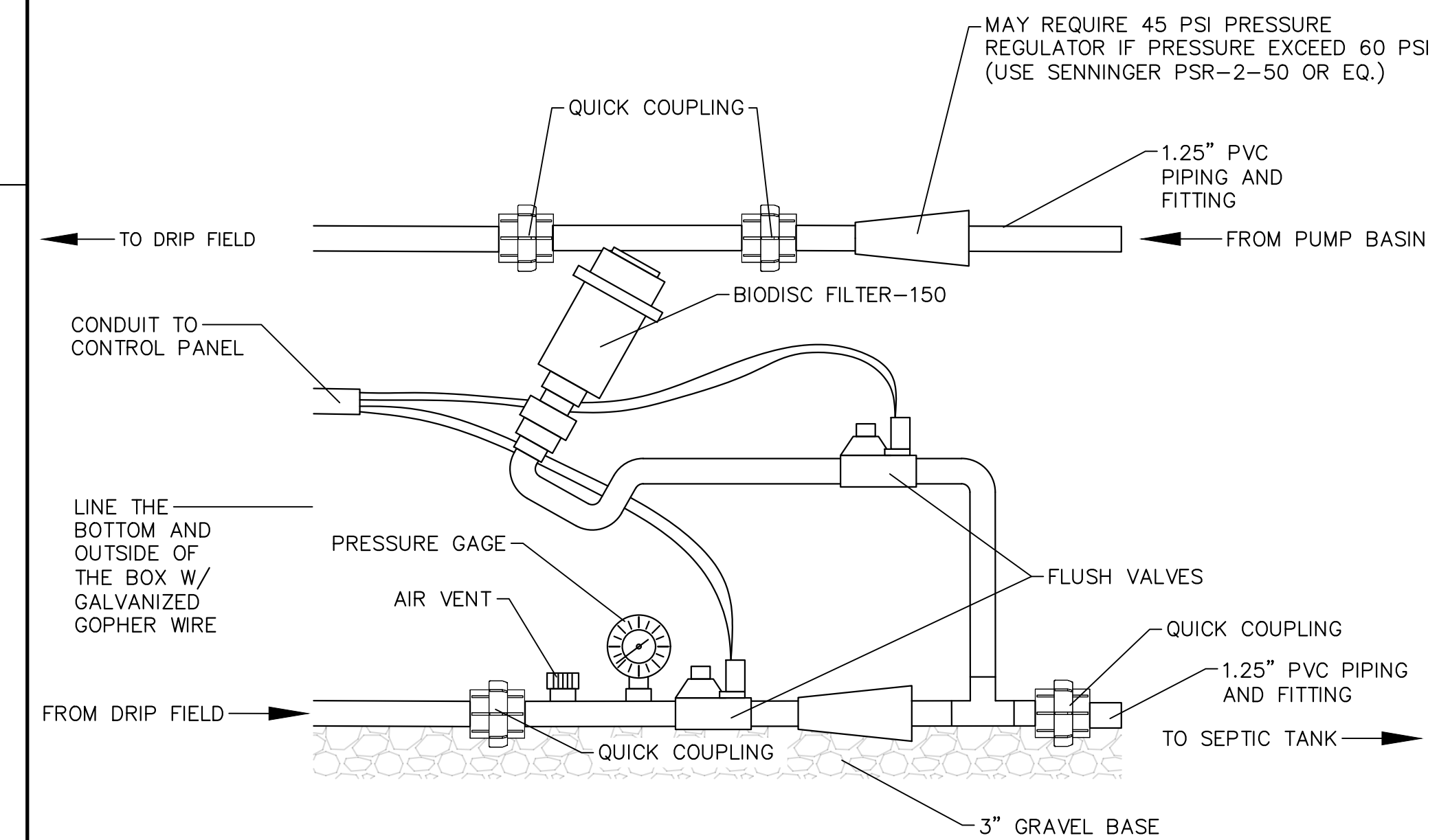
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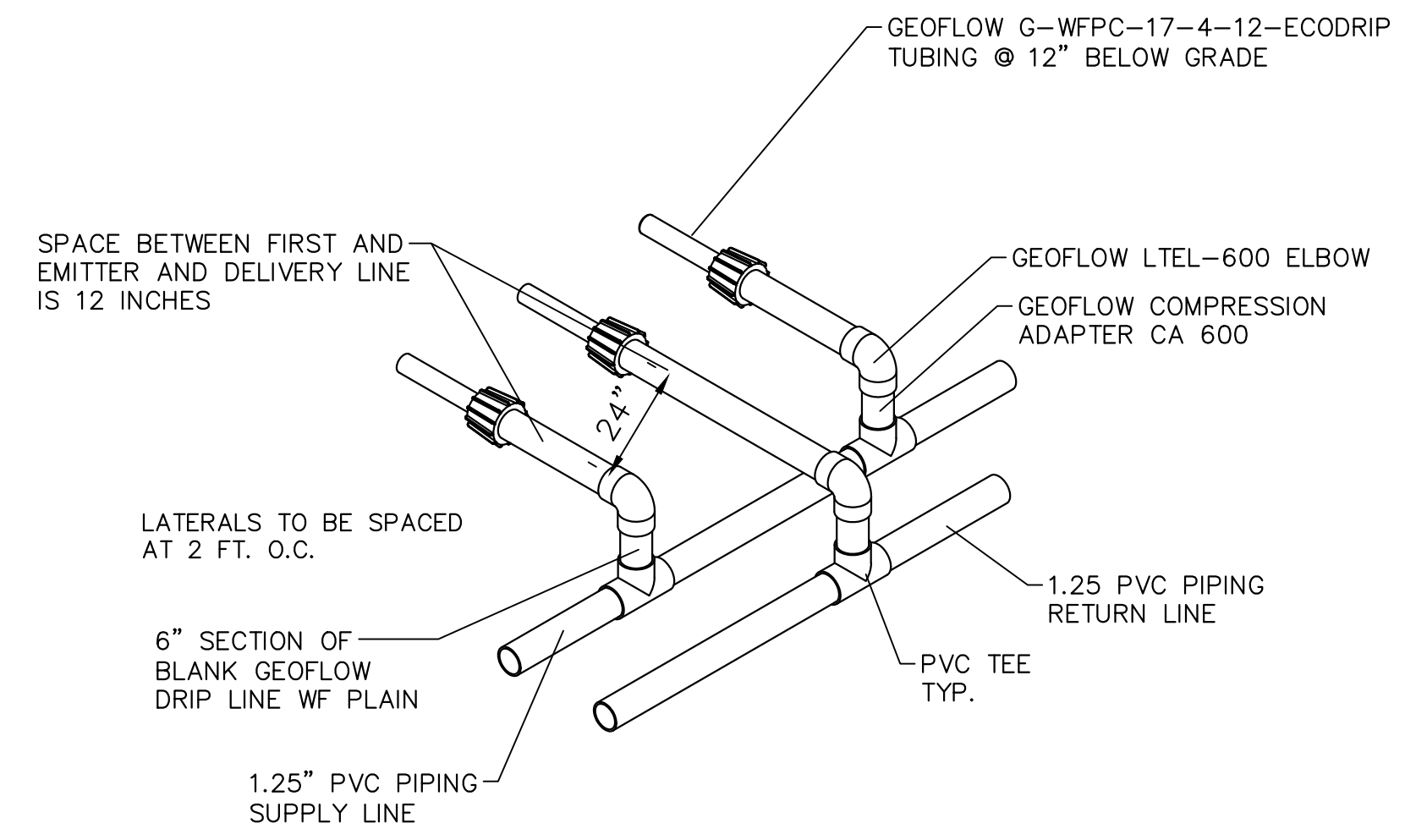
3 TREE PROXIMITY NTS



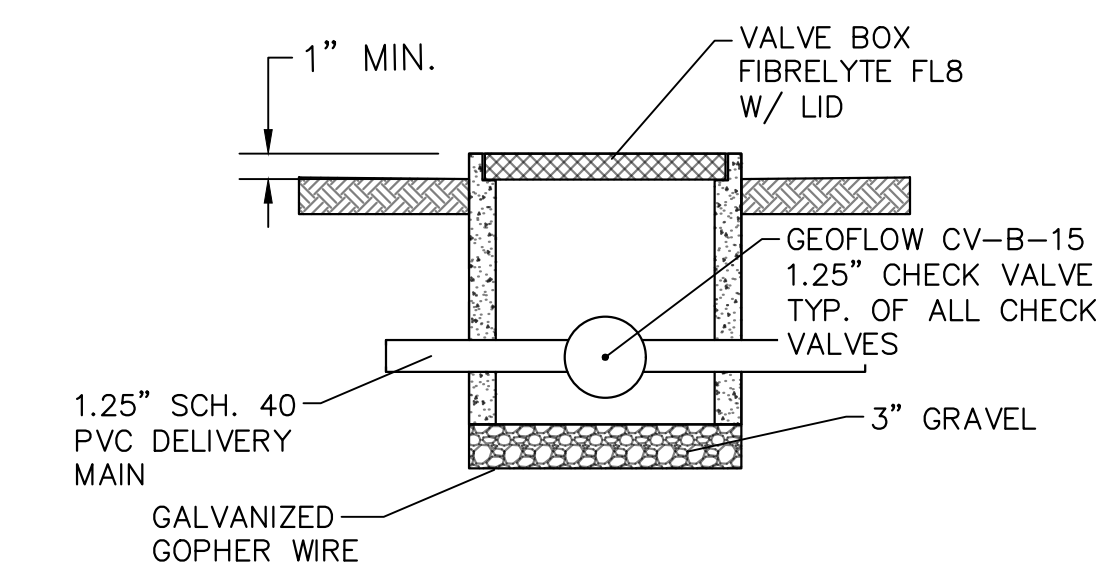
2 MONITORING WELLS NTS



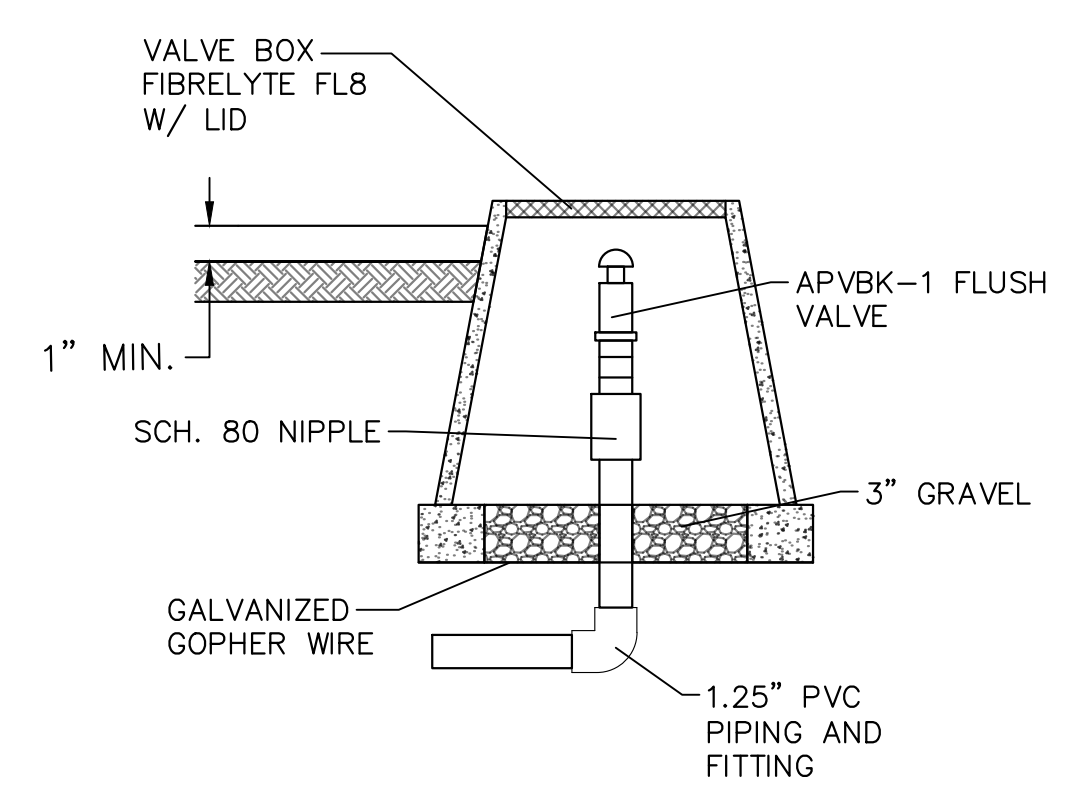
1 AUTOMATIC HEADWORKS NTS



6 PIPING DETAIL NTS



5 CHECK VALVE DETAIL NTS



4 AIR VAC. RELIEF IN-VALVE BOX NTS

**Orenco Systems Technical Data Sheet**  
**VeriComm® S\_RO Control Panels**

**Applications**  
 VeriComm® S1R0 and S2R0 remote telemetry control panels are used with on-demand simplex pumping operations. Coupled with the web-based VeriComm Monitoring System, these affordable control panels give wastewater system operators and maintenance organizations the ability to monitor and control each individual system's performance remotely, with real-time efficiency, while remaining invisible to the homeowner.

**Features, con't.**

- Communication and Alarm Management**
  - Provides remote telemetry and a web-based monitoring application for communication and alarm management (see VeriComm Monitoring System, MTD-CP-VCOM-1)
  - Updates point values (including timer settings) and queued changes during each host communication session
  - Contacts with host monthly, more frequently during alarm conditions
- Multiple Communication Methods**
  - Call-in to VeriComm® Host (phone line or optional high speed internet)
    - Signals critical fault conditions that require immediate attention (e.g., pump failure) through automatic alarm notifications
    - Signals less-critical fault conditions (e.g., stuck float switch) through automatic alert notifications and triggers the panel's troubleshooting logic and alternative operating mode
  - Sends updates through automatic update notifications, including alarm updates or all-clear notifications following alarms/alerts, as well as normally scheduled monthly panel reports
  - Allows manual, forced communication from panel to host for updating point values and receipt of queued changes
- Real-Time, Manual Direct Panel Connection**
  - Allows a local operator real-time access to detailed logged data and the ability to change point values through direct connection via RS-232 serial port from a laptop or Android® device with optional Bluetooth® kit
  - Allows a local operator to initiate an auto-answer mode in real-time to access detailed logged data and the ability to change point values via direct, forced communication at the site



**Features**

- Three Operating Modes**
  - "Start-Up Mode" collects trend data and establishes operating standards during the first 30 days of operation
  - "Normal Mode" manages day-to-day functions
  - "Test Mode" suspends data collection and alarm reporting during installation and service
- Data Collection and Utilization**
  - Compiles data logs of system conditions and events such as pump run times, pump cycles, and alarm conditions
- Troubleshooting and Diagnostic Logic**
  - Reports suspected component failures, which then trigger alarms
- Advanced Control Logic**
  - Activates system diagnostics in the event of a float failure or malfunction and maintains normal system operation until servicing can occur

Open-architecture software with password security is used during real-time, manual connections. Orenco offers BT-VCOM software as an option, but VeriComm panels require no proprietary software. VT100 protocol allows access and control from a Mac or PC computer using a simple communication program (e.g., Windows® HyperTerminal), with multilevel password protection ensuring that only qualified personnel can access the panel's data.

**Status Light Indicators**

- Flashing green LED for normal operation
- Yellow LEDs for status of digital inputs
- Red LEDs for status of digital outputs and modem activity

**UL-recognized and FCC-approved**

For more information, try our online demo at [www.vericom.net](http://www.vericom.net) (no password required).

Orenco Systems® Inc., 814 Airway Ave., Sutherlin, OR 97479 USA • 800-348-9843 • 541-459-4448 • [www.orenco.com](http://www.orenco.com)

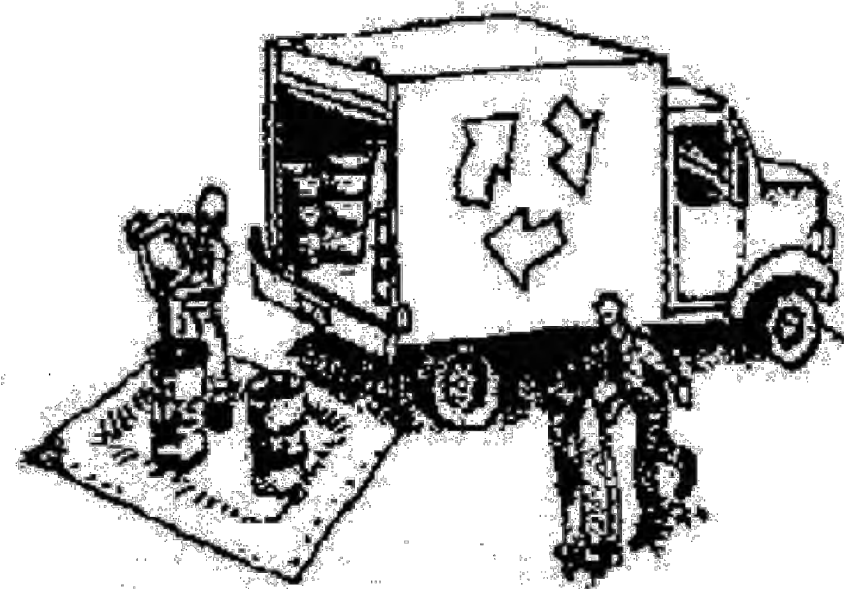
NTD-CP-VCOM-4  
 Rev. 1.0, © 06/18  
 Page 1 of 2

7 VCOM CONTROL NTS

# Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

## Materials & Waste Management



### Non-Hazardous Materials

- Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- Use (but don't overuse) reclaimed water for dust control.

### Hazardous Materials

- Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- Arrange for appropriate disposal of all hazardous wastes.

### Waste Management

- Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

### Construction Entrances and Perimeter

- Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

## Equipment Management & Spill Control



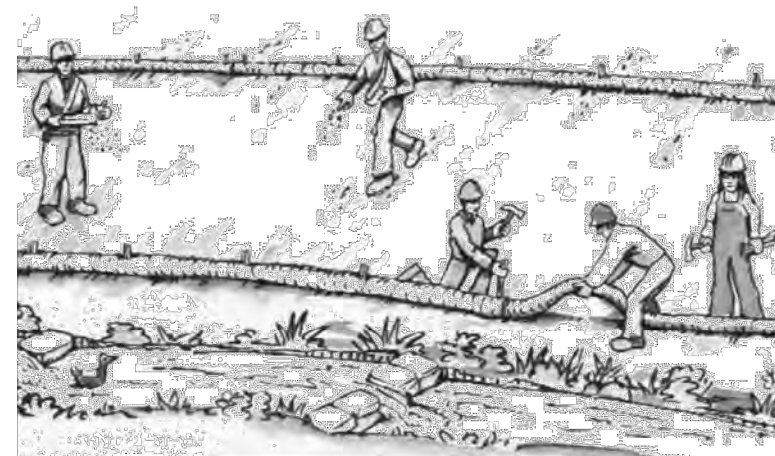
### Maintenance and Parking

- Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

### Spill Prevention and Control

- Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- Clean up spills or leaks immediately and dispose of cleanup materials properly.
- Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

## Earthmoving



- Schedule grading and excavation work during dry weather.
- Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

### Contaminated Soils

- If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

## Paving/Asphalt Work



- Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- Do not use water to wash down fresh asphalt concrete pavement.

### Sawcutting & Asphalt/Concrete Removal

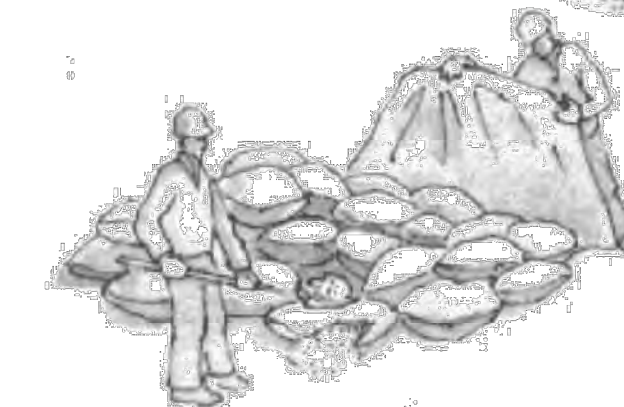
- Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- If sawcut slurry enters a catch basin, clean it up immediately.

## Concrete, Grout & Mortar Application



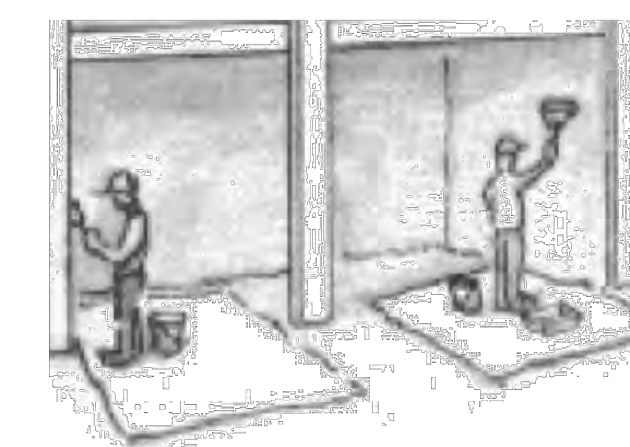
- Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

## Landscaping



- Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- Stack bagged material on pallets and under cover.
- Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

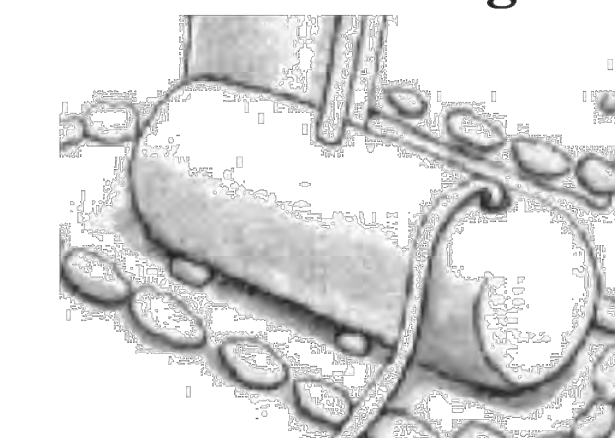
## Painting & Paint Removal



### Painting Cleanup and Removal

- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

## Dewatering



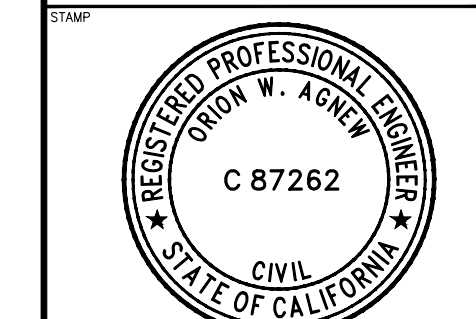
- Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- Divert run-on water from offsite away from all disturbed areas.
- When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

**Storm drain polluters may be liable for fines of up to \$10,000 per day!**

ISSUES		
NO.	DATE	DESCRIPTION
0	7/15/24	PERMIT

**AC ENGINEERING, INC.**  
CIVIL & GEOTECHNICAL CONSULTANTS

454 LAS GALLINAS AVE., SUITE 1047  
SAN RAFAEL, CA 94903  
P: 415-295-2152  
F: 415-472-0603  
admin@acengineer.com

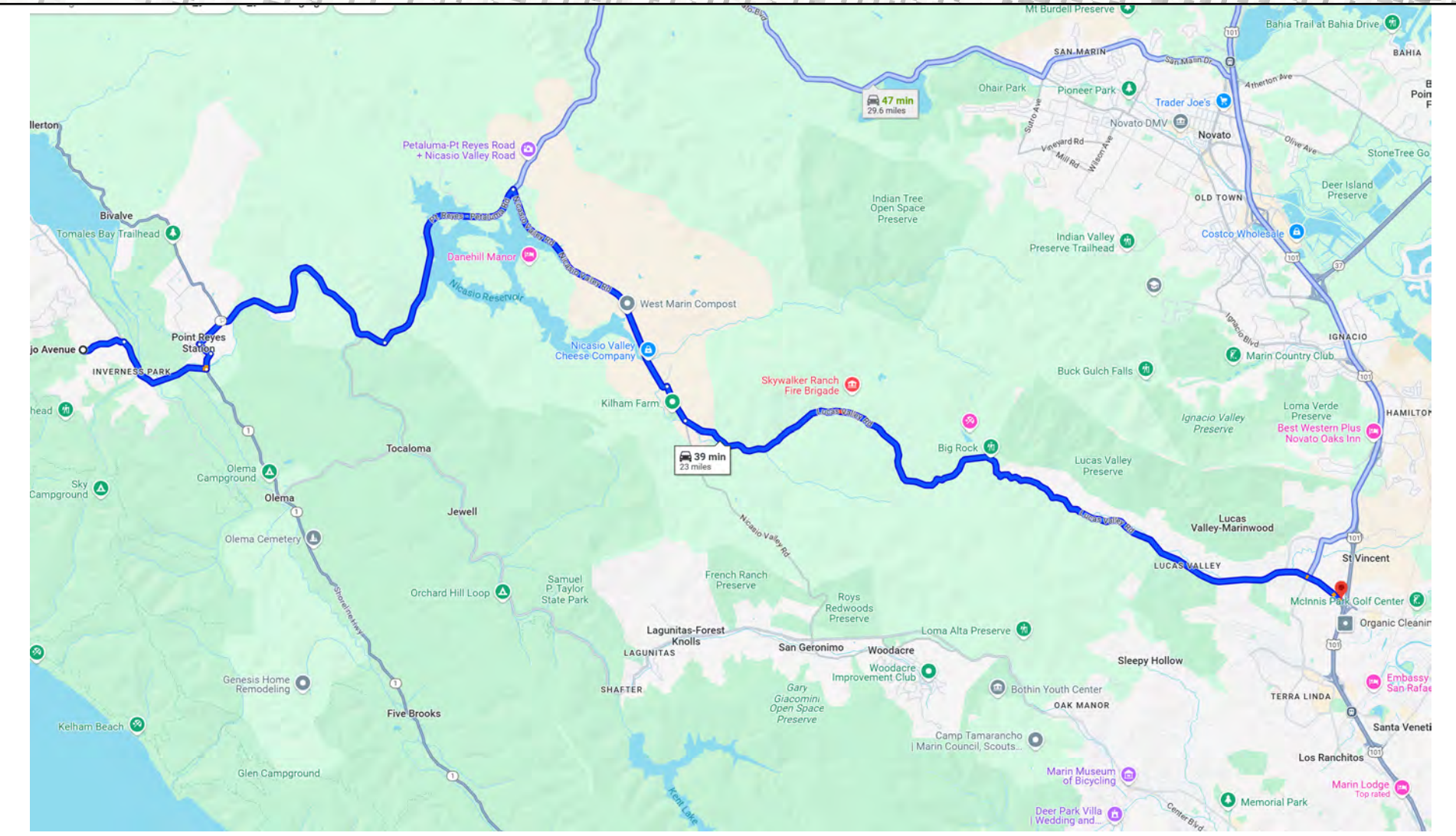


**BMPs**

VALLEJO AVE.  
286 VALLEJO AVE, POINT REYES STATION, CA 94956  
APN: 114-241-16

341-1

**C-3.0**



**Truck Route:**  
 Head east on Vallejo Ave toward Portola Ave (0.6 mi). Follow Pt. Reyes - Petaluma Rd, Nicasio Valley Rd and Lucas Valley Rd to your destination in San Rafael (22.4 mi). Turn right onto Sir Francis Drake Blvd (1.4 mi). Turn left onto CA-1 N (0.2 mi). Turn left to stay on CA-1 N (0.2 mi). Turn right after Wells Fargo Bank (on the right) (0.4 mi). Turn right onto Pt. Reyes - Petaluma Rd (3.1 mi). Turn left to stay on Pt. Reyes - Petaluma Rd (3.0 mi). Turn right onto Nicasio Valley Rd (3.4 mi). Turn right to stay on Nicasio Valley Rd (0.5 mi). Turn left onto Lucas Valley Rd (10.2 mi). Turn right onto the US 101 S ramp to San Francisco/Eureka

**Construction Hours (Per Marin County Code Section 6.70.030 (5)):**  
 Monday - Friday: 7 am to 6 pm; Saturday: 9 am to 5 pm. Prohibited on Sundays and Holidays (New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.) Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from eight a.m. to five p.m. Monday through Friday only.

**Construction Signs:**  
 Post a publicly visible sign with the construction supervisor's name, telephone number, and address to contact regarding dust control, noise control, or other complaints about the construction activities. Unless otherwise specified by the conditions of approval for a development project, construction signage shall consist of a single yard sign and shall remain on site until the outdoor construction activities are completed.

**Dust and Emission Control:**  
 (1) All unpaved exposed surfaces (e.g., parking areas, staging areas, soil piles, and graded areas, and unpaved access roads) shall be watered two times a day.  
 (2) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.  
 (3) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.  
 (4) All vehicle speeds on unpaved roads shall be limited to a maximum of 15 miles per hour.  
 (5) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.  
 (6) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California of Regulations). Clear signage shall be provided for construction workers at all access points.  
 (7) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified emissions evaluator.  
 (8) All construction areas shall be sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable dust control of areas subject to windblown erosion.  
 (9) All earthmoving or excavation activities shall be discontinued during periods of high winds to prevent excessive amounts of fugitive dust generation.

**Water Quality / Erosion Control Measures - see also sheets C1.1 and C3.0**  
 a. Revegetate all disturbed areas at the onset (October) of the first winter rainy season following completion of any phase of construction during a year and at a similar time during the next year as required to fully revegetate the site.  
 b. Install some type of biodegradable surface erosion protection (such as natural mulch, jute netting, erosion control blankets, punched straw) to reduce the erosive energy of incoming raindrops for the first couple of winter months.  
 c. Install silt fencing along the construction perimeter before the start of construction and retain it in-place until that particular phase of construction is complete and erosion control winterization measures are implemented.

**Road/Land Closures:**  
 Permits must be obtained from the Department of Public Works. Rpad Closures require posting signs a minimum of 48 hours in advance. Copies of permits must be maintained at the job site for the duration of the closure.

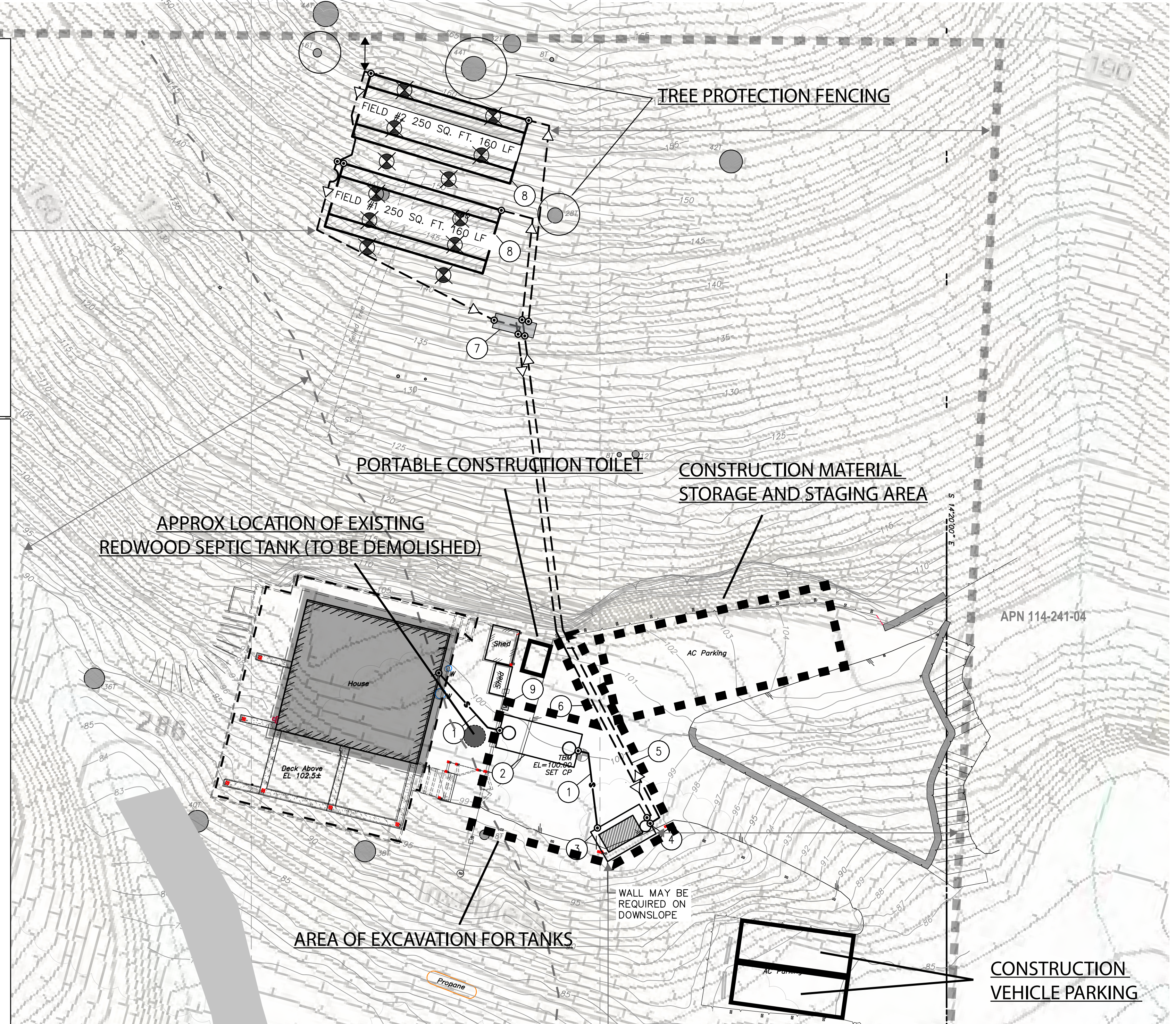
**Deliveries/Off Haul:** Deliveries are limited to weekdays between 10AM and 2PM for trucks exceeding 26' in length.

**Parking:**  
 All worker vehicles must park at the job site. Construction vehicle parking in the public right of way will be limited to the hours of work and not exceed posted limits.

**Overseize and/or Overweight vehicles:**  
 Per the State of California's Streets & Highways Code (SHC), transportation involving the operation of overseize and/or overweight vehicles on roads maintained by the County of Marin requires a permit from the Department of Public Works — Land Development Division

**Construction Management Plan:**  
 Construction will occur on APN: 114-241-16, 286 Vallejo Avenue, Inverness, CA

**Summary of Construction Activities:**  
 Task 1: Site Preparation will involve developing staging areas to place parking for construction vehicles, and material storage recycling and debris bins, storm drain and runoff protection and truck-wheel gratings/rock beds to keep soil from exiting the site onto Vallejo Avenue. Tree protection fencing installed around tree bases adjacent to leach line excavation areas. (See Biological Recommendations)  
 Task 2: Construction, involves:  
 a. Septic work: Trucks will be making deliveries for materials. These deliveries will primarily occur between the hours of 9:00 a.m. and 3:00 p.m. with generally no more than 1-2 truck deliveries per day outside that window during peak traffic hours. These trucks will mostly be 20' long flatbed trailers, and these deliveries will be limited to no more than 3-4 on any given work day.  
 b. Small excavators to dig areas for new tanks. Leach lines to be excavated using hand tools and small augers or handheld equipment. No tree removal for septic delivery lines and leach lines.  
 Task 3: Hardscape, Landscape and Cleanup, includes exterior paving area, some soil will be imported for landscaping and drainage.



**BIOLOGICAL SITE ASSESSMENT RECOMMENDATIONS:**  
 Recommendation 1: Inform all construction personnel of the tanoak forest boundary and denote the boundary with temporary signage. All equipment and materials should be laid down in the developed area, preferentially on the existing asphalt or similar existing hardscape  
 Recommendation 2: Project activities should occur during the dry season (approximately April 1 through October 15). If rainfall is in the forecast, standard erosion control measures (e.g., straw wattles, bales) should be deployed along the driveway edge of the ephemeral stream. Construction personnel should be informed of the location of the site's ephemeral stream with high visibility flagging or staking prior to construction. No materials or equipment shall be laid down in the setback to the aquatic resources, and spill prevention materials shall be deployed for all construction equipment.  
 Recommendation 3: Any tree removal should be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, it is recommended that a bat habitat assessment and survey effort (the latter if needed) be performed by a qualified biologist prior to tree removal to determine if bats are present in the trees. If no suitable roosting habitat for bats is found, then no further study is warranted. If special-status bat species or bat maternity roosts are detected, then roost trees should be avoided until the end of the maternity roosting season. If this avoidance is not feasible, appropriate species- and roost-specific mitigation measures should be developed in consultation with CDFW. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.  
 Recommendation 4: Vegetation removal and initial ground disturbance occur from August 16 to January 31, outside of the general bird nesting season. If tree and other vegetation removal during this time is not feasible, a pre-construction nesting bird survey should be performed by a qualified biologist no more than 7 days prior to the initiation of tree removal or ground disturbance is recommended. The survey should cover the Project Area (including tree removal areas) and surrounding areas within 500 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted, and work may be initiated within the buffer.  
 Additional surveys for NSO are recommended to determine if they are nesting within the Study Area or its immediate vicinity and could be impacted by Project activities. The nearest documented nesting activity is adjacent to the subject property (CNDDB 2025a). Because of this, it is recommended that surveys be conducted following the USFWS protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls (USFWS 2012). To complete the protocol, a biologist(s) would perform six surveys between March 15 and August 31, with at least four surveys conducted March through May. The surveys consist of a biologist mimicking NSO calls at night from established calling stations to determine: (1) presence/absence, (2) if present, the number, and sex of the birds, and (3) if a pair is present, the mating status/nest status of the pair. If there is a nesting pair of NSO within the Study Area or immediate vicinity, then the biologist would conduct an analysis to determine if the Proposed Project activities would impact owls following the USFWS guidance for Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets (USFWS 2006). If impacts would be unavoidable, then potentially impacting activities would only be initiated after it has been established that young owls have fledged the nest and have fully independent mobility.

Revision	Date

CONSTRUCTION MANAGEMENT PLAN

APN: 114-241-16

Drawings for:  
 Saalsti Coastal Permit  
 Onsite Wastewater System  
 286 Vallejo Ave, Inverness, CA 94956

DRAWN  
 ISSUED  
 As Built  
 DATE  
 04/04/2025  
 SCALE

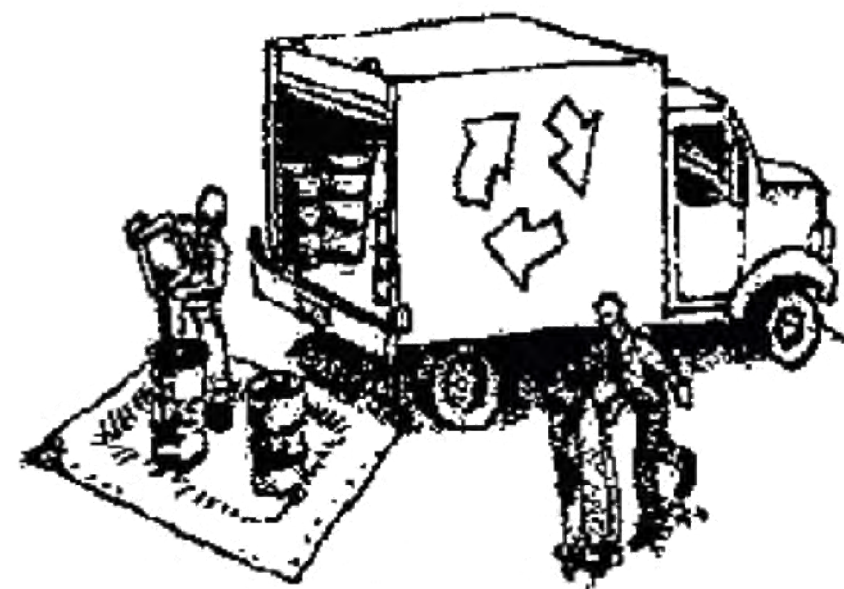
SHEET  
 CMP-1



# Construction Best Management Practices (BMPs)

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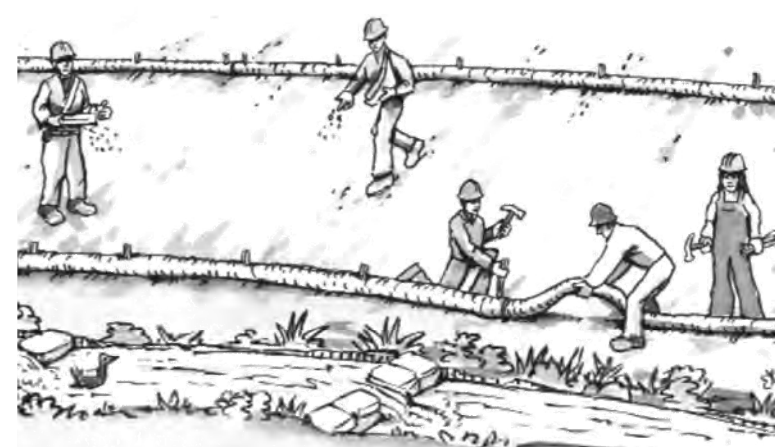
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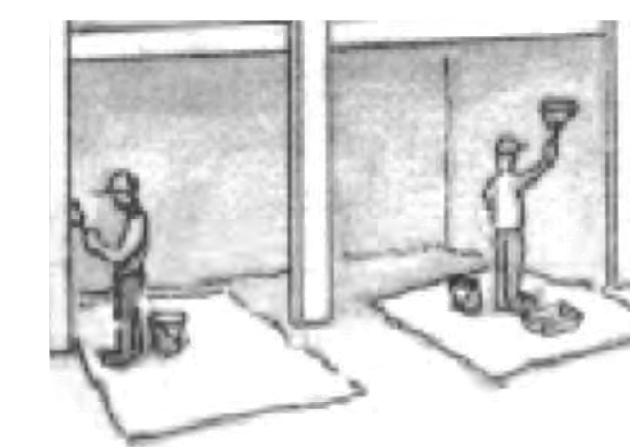
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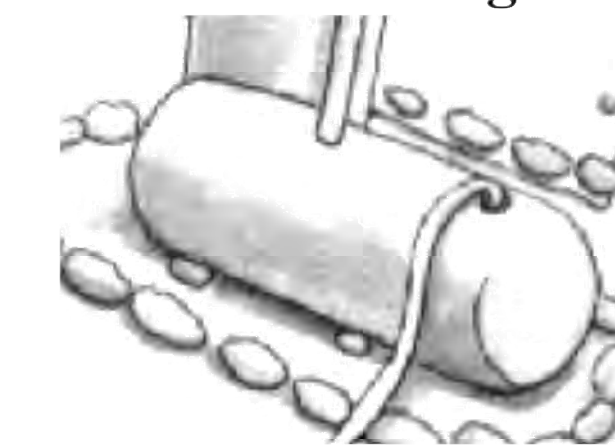
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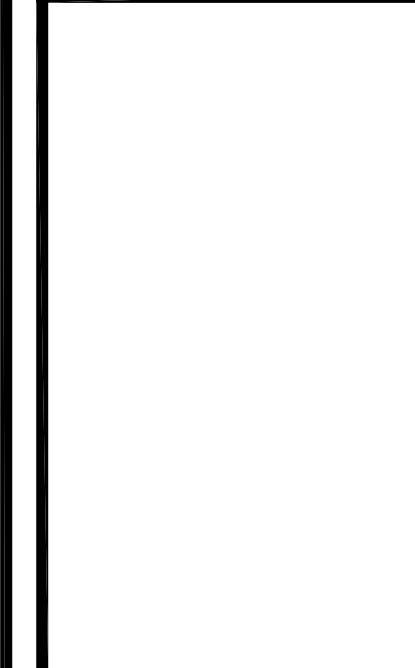
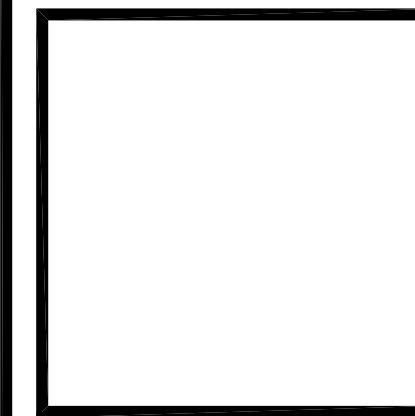
## Dewatering



- Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- Divert run-on water from offsite away from all disturbed areas.
- When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

**Storm drain polluters may be liable for fines of up to \$10,000 per day!**

Revision	Date



CONSTRUCTION MANAGEMENT PLAN BMPs

APN: 114-241-16

Drawings for:  
Saalisi Coastal Permit  
Onsite Wastewater System  
286 Vallejo Ave, Inverness, CA 94956

DRAWN
ISSUED As Built
DATE 04/04/2025
SCALE
SHEET

CMP-2