

ONSITE WASTEWATER TREATMENT SYSTEM DESIGN

25500 CA-1, TOMALES, CA 94940

SHEET INDEX	
C-0	TITLE SHEET
C-1	DETAILS
C-2	TANK AND PRE-TREATMENT DETAILS
C-3	PROJECT NOTES
C-4	CONSTRUCTION BMPs

DEVELOPER/APPLICANT
 TOM WILLIS
 25500 CA-1, TOMALES, CA 94940

SCOPE OF WORK
 1. NEW OWTS AND DRIP FIELD

SITE INFO
 25500 CA-1, TOMALES, CA 94940
 APN: 104-040-09

REV.	DATE	BY
REVISIONS		

REV.	DATE	DESC.
0	8/15/23	INITIAL RELEASE

ISSUES



AC ENGINEERING, INC.
 CIVIL & GEOTECHNICAL CONSULTANTS
 454 LAS GALLINAS AVE. SUITE 1047
 SAN MARINO, CA 91766
 PH: 415-868-6532
 FAX: 415-472-0603
 ADMIN@AGNEVCIVIL.COM

COVER SHEET
 Willis Residence
 25500 CA-1, Tomales, CA 94940
 104-040-09

216-1

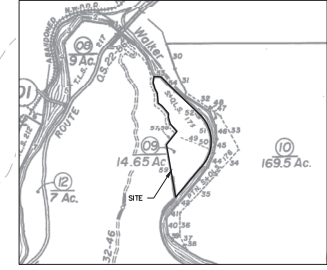
C-0

LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	SET BACK LINE
---	---	PROPERTY LINE
---	---	SEWER LINE
---	---	DIRECTION OF FLOW
---	---	CLEANOUT
---	---	BACK FLOW PREVENTION DEVICE
---	---	DETAIL NUMBER SHEET NUMBER
---	---	CONNECTION POINT



PARCEL LOCATION
SCALE: NA



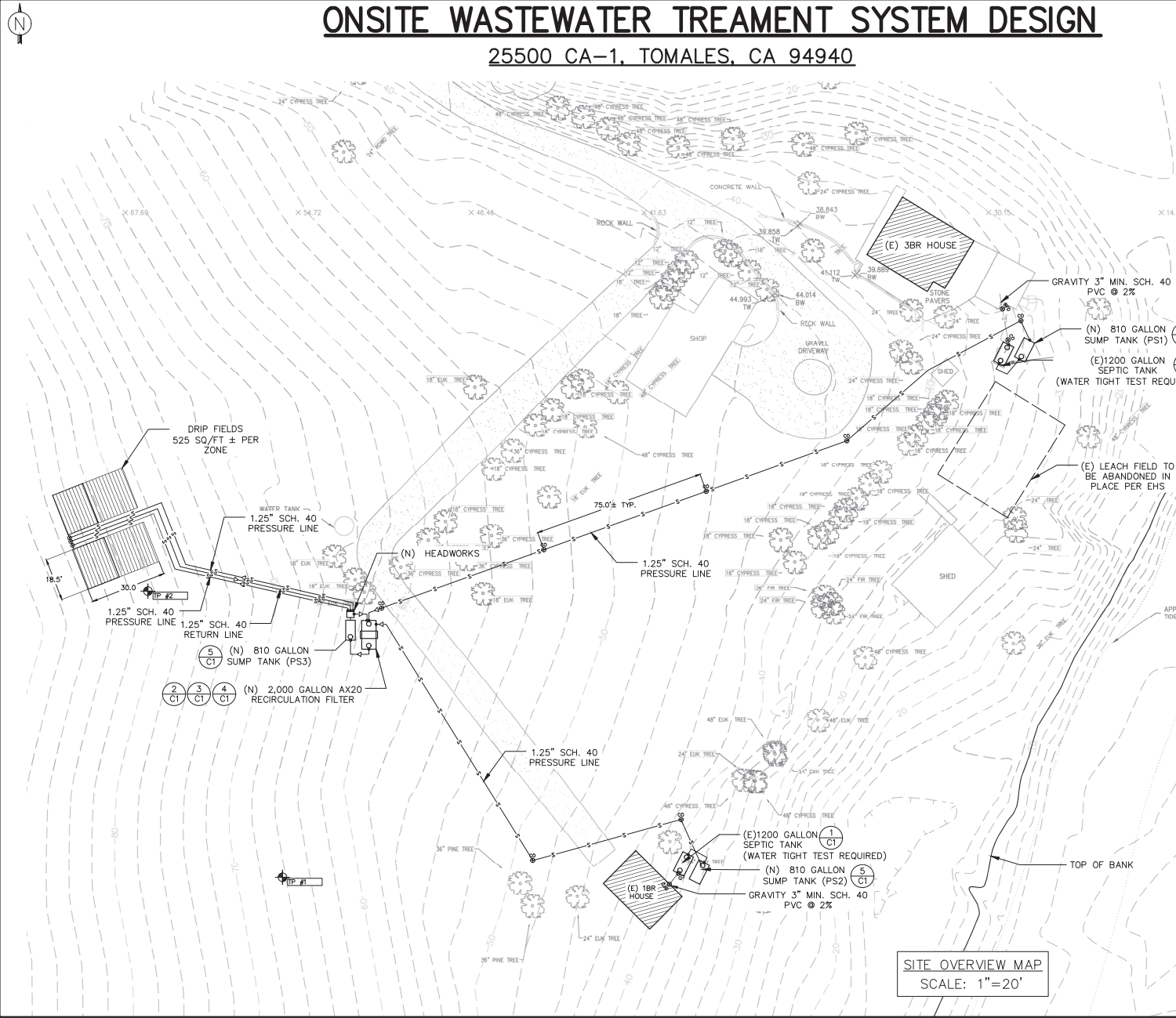
VICINITY MAP
SCALE: NA

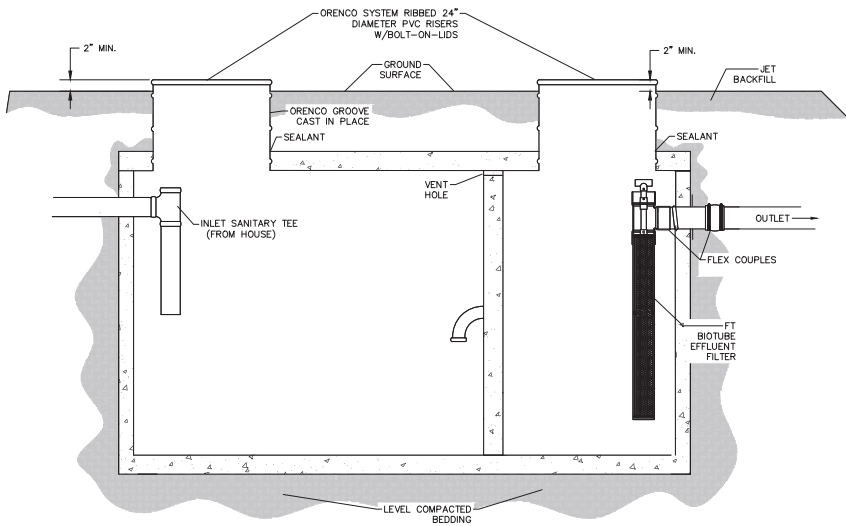


SITE OVERVIEW MAP
SCALE: 1"=20'

ALL CONTRACTORS WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING UTILITIES. CONTRACTORS SHALL CALL 811 AT 100-882-2008 48 HOURS BEFORE DIGGING AND OBTAIN AN IDENTIFICATION NUMBER FROM AGENCY OF THE GOVERNMENT CODES.

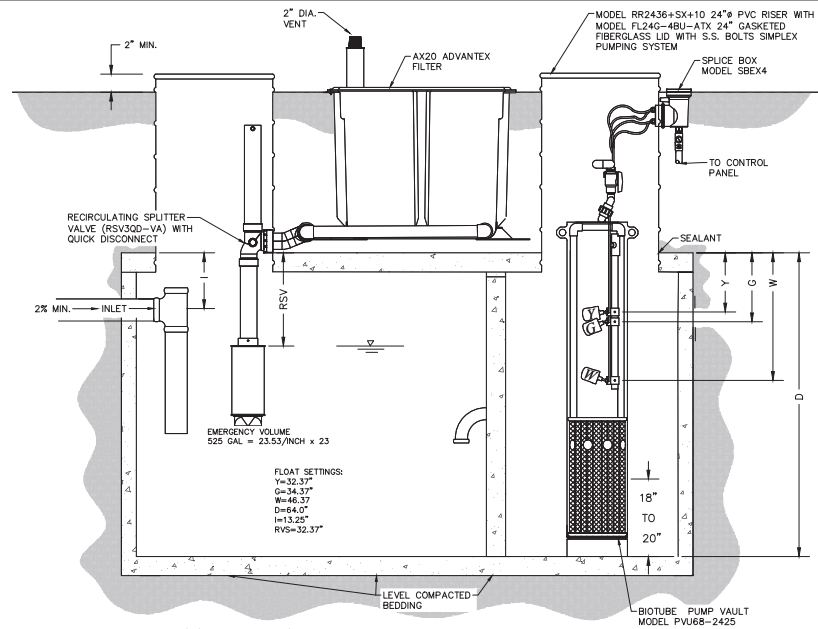
NOTES: NOTES ARE INTENDED TO BE USED AS A GENERAL GUIDELINE. THE REFERENCED SOils REPORT FOR THE PROJECT AND GOVERNING AGENCY REGULATIONS SHALL SUPERSEDE THESE NOTES. THE SOIL ENGINEER MAY MAKE ON-SITE RECOMMENDATIONS DURING THE GRADING OPERATIONS.





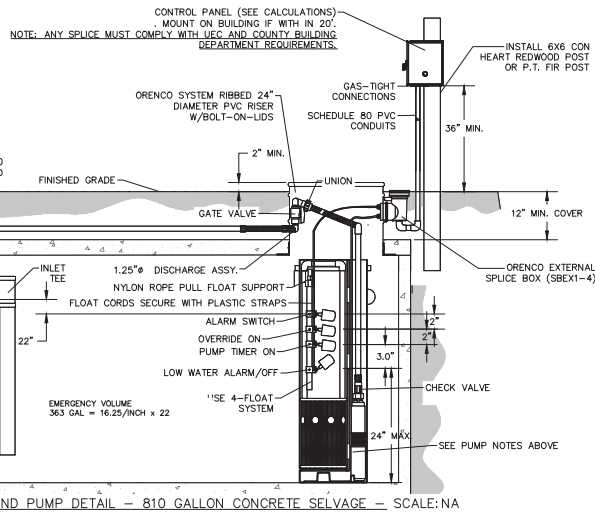
(N) SEPTIC TANK DETAIL
1200 GALLON CONCRETE SELVAGE
SCALE: N/A

1



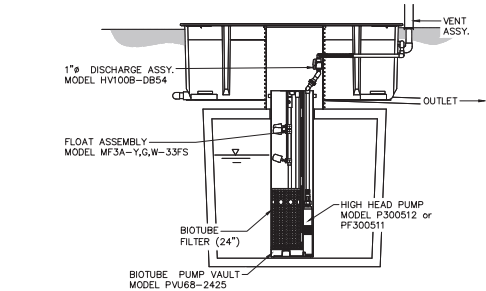
(N) ADVANTEK/TANK 2,000 GALLON CONCRETE SELVAGE
SIDE VIEW
SCALE: NA

2



(N) ADVANTEK/TANK 2,000 GALLON CONCRETE SELVAGE
TOP VIEW
SCALE: NA

3



(N) ADVANTEK/TANK 2,000 GALLON CONCRETE SELVAGE
END VIEW
SCALE: NA

4

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 30 MIN
ON 24 SEC
T OVERRIDE OFF 15 MIN
T OVERRIDE ON 24 SEC
RECOMMENDED CONTROL PANEL: VeriComm@S_R0 Control Panels

PS1 (SEE CALCULATIONS)
PUMP MODEL = GOULDS WE0511H
TOTAL DYNAMIC HEAD = 37 FT
GALLONS PER MINUTE (GPM) = 15.0 GPM
DOSE = 27.0 GALLONS
RECOMMENDED PUMP TYPE: GOULDS
WE0511H (15 GPM, 0.5H, 115 VOLTS)
TIMER CONTROLLED:
OFF 1 HR 58 MIN 12 SEC
ON 1 MIN 48 SEC
T OVERRIDE OFF 60 MIN
T OVERRIDE ON 3.0 MIN
RECOMMENDED CONTROL PANEL: S-Series Simplex Control Panel

PS2 (SEE CALCULATIONS)
PUMP MODEL = GOULDS WE0311M
TOTAL DYNAMIC HEAD = 25 FT
GALLONS PER MINUTE (GPM) = 15.0 GPM
DOSE = 15 GALLONS
RECOMMENDED PUMP TYPE: GOULDS
WE0311M (15 GPM, 0.33H, 115 VOLTS)
TIMER CONTROLLED:
OFF 1 HR 59 MIN 0 SEC
ON 1 MIN 0 SEC
T OVERRIDE OFF 60 MIN
T OVERRIDE ON 1.0 MIN
RECOMMENDED CONTROL PANEL: S-Series Simplex Control Panel

PS3 (SEE CALCULATIONS)
PUMP STA RITE SIOP4-IP05121 (10 GPM, 0.5H, 115 VOLTS)
TOTAL DYNAMIC HEAD = 175 FT
GALLONS PER MINUTE (GPM) = 5.0 GPM
DOSE = 35 GALLONS
RECOMMENDED PUMP TYPE: PUMP STA RITE
SIOP4-IP05121 (5 GPM, 0.5H, 115 VOLTS)
TIMER CONTROLLED:
OFF 1 HR 53 MIN 0 SEC
ON 7 MIN 0 SEC
T OVERRIDE OFF 60 MIN
T OVERRIDE ON 7.0 MIN
RECOMMENDED CONTROL PANEL: VeriComm@S_R0 Control Panels

CONTROL PANEL (SEE CALCULATIONS)
MOUNT ON BUILDING IF WITH IN 20'
NOTE: ANY SPICE MUST COMPLY WITH UCC AND COUNTY BUILDING
DEPARTMENT REQUIREMENTS.

SUMP AND PUMP DETAIL - 810 GALLON CONCRETE SELVAGE - SCALE: NA

5

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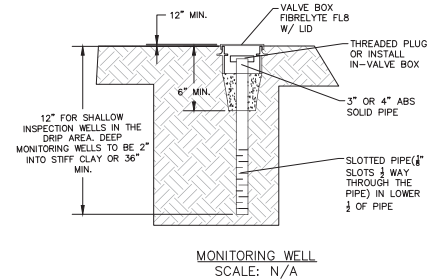
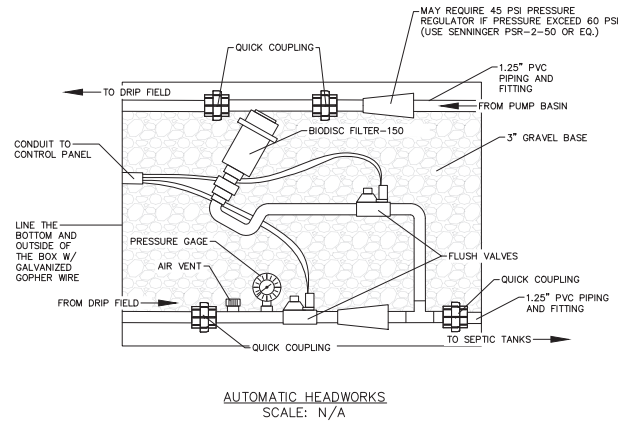
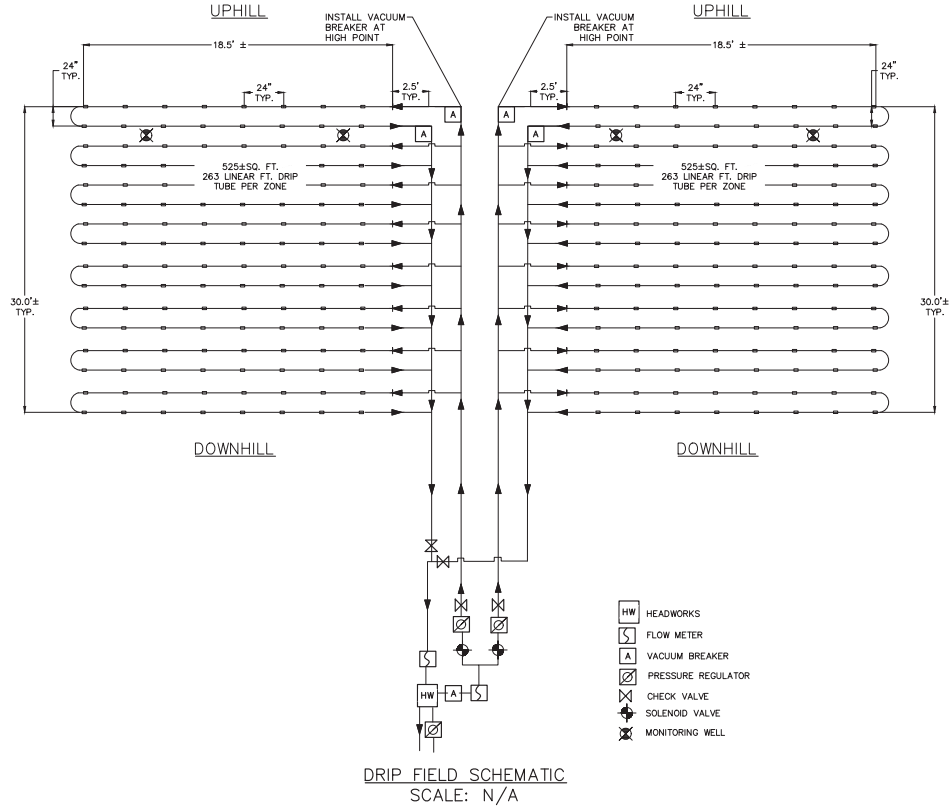
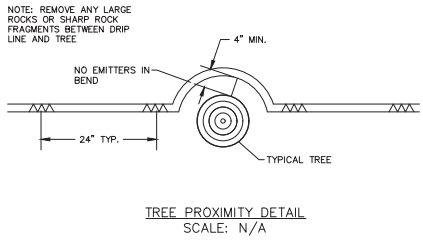
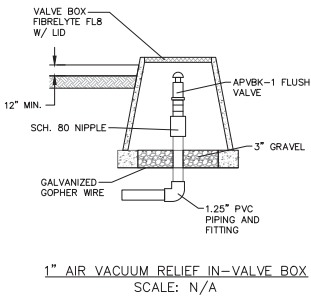
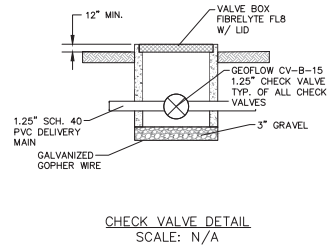
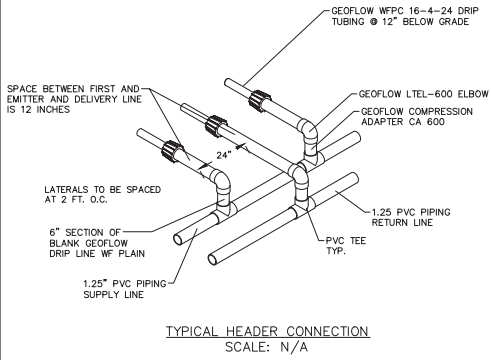
AC ENGINEERING INC.
CIVIL & GEOTECHNICAL CONSULTANTS
454 LAS GALLINAS AVE SUITE 1047
SAN JOSE CA 95128
PH: 415-868-0532
FAX: 415-472-0603
ADMIN@AGNECIVIL.COM

OWTS TANK DETAILS

WILLIS RESIDENCE
25500 CA-1, Tormalas, CA 94940
104-040-09

216-1

C-1



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ISSUES



A.C. ENGINEERING, INC.
CIVIL & GEOTECHNICAL CONSULTANTS
454 LAS GALLINAS AVE. SUITE 10471
SAN JOSE, CA 95131
PH: 415-868-0532
FAX: 415-415-472-0603
ADMIN@ACENGINEERING.COM

DRIP FIELD DETAILS
WILLIS RESIDENCE
25500 CA-1, Tormalas, CA 94940
104-040-09

216-1

C-2

GENERAL CONSTRUCTION NOTES

1. THE DESIGNING ENGINEER/SANITARIAN SHALL OBSERVE THE SITE AND WEATHER CONDITIONS PRIOR TO CONSTRUCTION OF THE SYSTEM. THE SITE MUST BE 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, CONTOURS, PERCOLATION AREA, EXPANSION AREA, ETC. SHALL BE VERIFIED.
3. THE CONTRACTOR SHALL PROVIDE THE COUNTY ENVIRONMENTAL HEALTH SERVICES (EHS) 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 ACCURATELY AND VERIFIED.
4. ALL CONSTRUCTION SHALL BE IN ACCORD WITH CURRENT MARIN COUNTY ENVIRONMENTAL HEALTH SERVICES DIVISIONS 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 DOUBLED BY PERMANENT STRUCTURES, OR DISTURBED BY GRADING, DIGGING, TILING OR EXCAVATION PRIOR TO CONSTRUCTION OF THE SYSTEM AND SHALL BE PROTECTED FROM SOIL DISJUNCTION 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. FRESH 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 STAKEOUT PRIOR TO CONSTRUCTION.
- B. INTERIM OBSERVATIONS, 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 MARIN COUNTY REP.
- D. FINAL OBSERVATION OF COMPLETED SYSTEM AND ALL RELATED ITEMS FOR 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 END OF THE SYSTEM IS NOT 50 MPH AS TO HAVE THE SOIL SWEAK OR COMPACT DUE TO CONSTRUCTION ACTIVITIES.
2. IMMEDIATE WEATHER CONDITIONS APPEAR THAT THEY WILL NOT CAUSE 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 MOUND, 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 OBSERVATIONS, THE FOLLOWING ELEMENTS SHALL BE VERIFIED BY VISUAL OBSERVATION AND OPERATION OF THE SYSTEM. NO ELEMENTS OF THE SYSTEM SHALL BE SHOVELLED 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, PIPERLINE 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 TESTS 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 DROOP 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 INSPECTION 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 MARIN COUNTY ENVIRONMENTAL HEALTH SERVICES SHALL STATE THAT ALL CONSTRUCTION HAS BEEN COMPLETED, APPROVED, AND IS IN CONFORMANCE WITH ALL SPECIFICATIONS.

NOTE: MARIN COUNTY ENVIRONMENTAL HEALTH 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.

ADVANTIX FILTER CONSTRUCTION - CONSTRUCTION OF THE ADVANTIX A20-4T TREATMENT SYSTEM SHALL BE BY AN ORNDO SYSTEMS AUTHORIZED INSTALLER PER INSTALLATION MANUAL. ADVANTIX AX-4T TREATMENT SYSTEMS - RESIDENTIAL APPLICATIONS REFER 3.0 OR MOST CURRENT.

DISPOSAL FIELD CONSTRUCTION

- A. EXCAVATION, TILING 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 GLEUED 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 WASTEWATER 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 WASTEWATER. IF 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. THE BEST PREPARATION IS TO MOISTEN THE SOIL SEVERAL DAYS BEFORE THE INSTALLATION OF THE WASTEWATER, SO THE SOIL HAS TIME TO DRAIN AND WILL NOT SWEAK WHEN EXCAVATED. THE SOIL SURFACE SHOULD BE DRY.
- D. INITIAL THE SYSTEM HEAD FIRST. TRENCH, REINFORCING TEXTILE FILTER, PUMPS, CONTROL VALVES, DOD FILTERS, BACKFLOW INJECTION, PRESSURE REGULATORS, PRESSURE GAGES AND WATER METER (AS APPLICABLE). THEN INSTALL THE PRESSURE MAIN AND BACKFLOW RETURN LINES. THESE SHOULD BE BURIED AT A DEPTH OF 18 INCHES. WILL BELOW THE DEPTH OF THE WASTEWATER LINES (12 INCHES). AT ALL TIMES, AVOID GETTING DEBRIS INTO THE SYSTEM. FLUSH MAIN LINES, TEST FOR LEAKS (HORIZONTALITY FOR 2 HRS @ 100 PSI) AND LEAVE THEM FULL OF WATER.
- E. OPEN TRENCHES FOR THE FEEDER AND BACKFLOW MANIFOLD. THESE TRENCHES SHOULD BE 18 INCHES INTO NARROW SOIL.
- F. CLEAN FEEDER AND BACKFLOW MANIFOLD TRENCHES, MOISTEN AND COMPACT THE BOTTOM OF THE TRENCH. IF THIS IS NOT DONE, THE MANIFOLD 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 BACKFLOW MANIFOLD 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 EXHAUST 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, REDUCES THE RISK OF DAMAGE TO THE TRENCHING EQUIPMENT.
- D. DO NOT BEND TUBING. USE PVC IPS TUBING AND PVC FITTINGS TO COUPLURE LOOPS.
- E. THE PIPE PULLER TIE MACHINE SHOULD NOT BE USED IN CLAY SOILS, AS IT FORMS AN UNDERGROUND "TYPE" AND THE WATER APPLIED BY THE SYSTEM TENDS TO RUN IN THE DOWNHILL DIRECTION.

CONCRETE SEPTIC TANK, HOLDING TANK, SEEPAGE PIT ABANDONMENT NOTES:

- 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 REINFORCED 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.
- ALTERNATELY THE TANK MAY BE REINFORCED WITH CONTINUED CONCRETE CURE FILL.
- ALL AT BOTH ENDS BURIED SNIP PIPES AND LEACH LINES, TO OR FROM THE OLD SEPTIC TANK SHALL BE CUT AND PLUGGED.

EROSION CONTROL NOTES:

10. 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 WEEP FREE STRAW, SEED AND MULCH SHALL BE AVAILABLE ONSITE BY OCTOBER 15 FOR APPLICATION PRIOR TO RAIN EVENT.
11. 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 EHS)

- 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 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 ON 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 PERFORMANCE IS DEMONSTRATED. ALSO, ANNUAL RENEWAL MAY BE REQUIRED FOR CERTAIN TYPES OF SYSTEMS OR SITUATIONS AS DEEMED 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 OCCUPANCY.
- 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. IDENTIFIED 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. ALL CASES IN WHICH A PUMP WITH A PUMP IS USED FOR A SEWAGE DISPOSAL SYSTEM, THE CONTRACTOR/OWNER 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 "VOICE ALARM" MERCURY/MECHANICAL C.S.H. INC. OR S.J. ELECTRO SYSTEMS SUPER SINGLE OR EQUAL - FLAT SWITCH SHALL BE USED TO ACTIVATE THE PUMP. THE ALARM/CONTROL BOX SHALL BE EQUIPPED WITH A NOTER CONTRACTOR FOR THE PUMP AND A MOMENTARY CONTACT "PUMP TEST" SWITCH TO MANUALLY RUN THE PUMP BYPASSING THE CONTROL PANEL AUTOMATIC NOISE.
- 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 CIRCUITS.
 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 FLAT SWITCH CONTROL WIRES SHALL NOT BE RUN IN A COMMON CORDSET.
 4. ALL WIRES GOING INTO THE SUMP SHALL BE INDIVIDUALLY SEALED WITH PVC GAS TIGHT FITTINGS (ON EITHER THE JUNCTION BOX OR 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, SHALLOW 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 "CAUTION - ELECTRICAL HAZARD" SAFETY SHEEDS 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 & REMOTE ALARM WITH AN ADDITIONAL LIGHT AND HORN SHALL BE PROVIDED WITHIN THE STRUCTURE SERVED.
 1. ENCLOSURES 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 SUMP 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 ADVANTIX 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 DISPOSAL FIELD. ADDITIONAL TREATMENT (PHYSICAL FLOCULATION 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 TRENDS 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 OF THE DISPOSAL FIELD IS DESIGNED TO ACCOMMODATE A PEAK DAILY FLOW OF 400 GALLONS PER DAY (DPD). AVERAGE DAILY FLOW AT FULL OCCUPANCY SHOULD BE LESS THAN 80% 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 ADJUST SHALL BE CONDUCTED.

ROUTINE OPERATION AND MAINTENANCE TASKS:
QUARTERLY:
 GENERALLY OBSERVE CONDITIONS OF SEWAGE DISPOSAL FIELD. LOOK FOR EVIDENCE OF PONDING OR SURFACING EFFLUENT, AREAS OF LUSH VEGETATIVE GROWTH AND OFFENSIVE ODORS.
SOIL 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 DISPOSAL FIELD MONITORING WELLS.
ANNUALLY:
 OWNER OR DESIGNATED OPERATOR SHALL REVIEW THE PLAN AND OPERATION AND MAINTENANCE REQUIREMENTS. CHECK SOLEM & SOLEM ACCUMULATION IN SEPTIC TANKS. CLEANOUT IF NECESSARY.
 RISE SEPTIC TANK EFFLUENT FILTER INTO THE FIRST CHAMBER OF THE TANK WITH FRESHWATER.

PERFORMANCE MONITORING AND REPORTING: (EXCERPTED FROM MARIN COUNTY EHS)

- A. A MONITORING PROGRAM WILL BE ESTABLISHED INDIVIDUALLY FOR EACH ALTERNATIVE SYSTEM AT THE TIME OF INSTALLATION OF THE OPERATING PERMIT. IT MAY BE AMENDED AT THE TIME OF PERMIT RENEWAL. SOIL 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 SYSTEMS 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 DOSE COUNTERS, ELAPSED THE METERS OR OTHER APPROVED METHODS.
 2. INSPECTION AND RECORDING OF WATER LEVELS IN MONITORING WELLS IN THE DISPOSAL FIELD.
 3. WATER QUALITY DATA OF SELECTED WATER SAMPLES TAKEN FROM POINTS IN THE TREATMENT PROCESS, FROM MONITORING WELLS, OR FROM SURFACE STREAMS OR DRAINAGE. PHYSICAL WATER QUALITY PARAMETERS TO BE ANALYZED FOR WATER TASTE, TOTAL AND FECAL COLOUR, 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 PERFORMANCE ESTABLISHED:
 - YEARS 1 AND 2 OPERATION - QUARTERLY MONITORING
 - YEARS 3 AND 4 OPERATION - SEMIANNUAL MONITORING
 - YEARS 5 AND BEYOND - ANNUAL MONITORING
- D. 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.
- E. 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 GENERALLY 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" ON-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 MARIN COUNTY ENVIRONMENTAL HEALTH 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 (ODOR, LIQUID LEVELS IN THE MONITORING WELLS, SPONGY EARTH AT THE TOP OF THE FIELD, ALARM EVENTS OR UNEXPECTED ODORS) THE OWNER SHOULD KEEP A LOG OF OCCURRENCES AND OBSERVATIONS. THE LOG SHOULD ALSO INCLUDE A RECORD OF PREVENTIVE DOSE 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 A SYSTEM FAILURE, IT MAY BE NECESSARY TO REMOVE 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 DISPOSAL SYSTEMS INVOLVE BIOLOGICAL PROCESSES THAT ARE SUBJECT TO UPSET UNDER CERTAIN CONDITIONS. THIS GUIDE PROVIDES GUIDELINES FOR MAINTAINING PROPER BALANCE IN THE SYSTEM.

PRODUCTS THAT SHALL BE AVOIDED OR USED SPARINGLY INCLUDE: ANTI-BACTERIAL SOAPS, LAUNDRY DETERGENTS WITH BLEACH, TOILET TISSUE THAT DISSOLVES READILY, GARBAGE DISPOSAL, AUTO DISPENSING TOILET CLEANERS, CHEMICAL DRAIN CLEANERS, MOURNINGING SOAPS / CLEANSING CREAMS.

FLUSH ONLY: HUMAN WASTE & TOILET PAPER

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

SUGGESTED ALTERNATIVES:
 REDUCE USE OF ANTI-BACTERIAL 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 AMPLE RUNNING WATER.

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

AVOID MOURNINGING SOAPS AND CLEANSING CREAMS (E.G. DOWS) 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 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. IF A GOOD TISSUE FOR SEPTIC SYSTEMS WILL STAY TOGETHER.

DON'T USE AUTOMATIC DISPENSING TYPE TOILET BOWL CLEANERS (E.G. TIDE BOWL, 2000 FLUSHES). THESE CONTAIN BLEACH, WHICH INTERRUPTS DIGESTION IN THE INTERCEPTOR TANK.

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

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

USE GARBAGE DISPOSAL SPARINGLY. MUCH OF WHAT YOU COULD PUT DOWN THE SINK SHALL END 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. DISPOSAL OF THESE PROPERLY AS ADVISED BY YOUR GARBAGE COMPANY.

DON'T LEAVE INDOOR FIXTURES RUNNING DURING FREEZING WEATHER. IF NECESSARY GRAB SOME BIR OUTSIDE.

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

REV.	DATE	BY
REVISIONS		

0	8/15/23	INITIAL RELEASE
REV.	DATE	DESC.

ISSUES



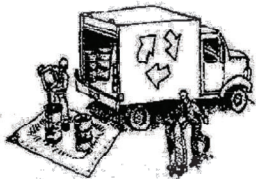
A.C. ENGINEERING, INC.
 CIVIL & GEOTECHNICAL CONSULTANTS
 454 LAS GALLINAS AVE. SUITE 1047
 SHERBORN, CA 94969
 PH: 415-868-4532
 FAX: 415-472-0603
 ADMIN@ACENGINEERING.COM

OWTS NOTES
 WILLIS RESIDENCE
 25500 CA-1, Tomales, CA 94940
 104-040-09

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



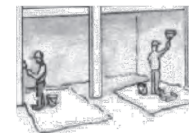
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that 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.

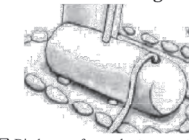
Painting & Paint Removal



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!

REV. DATE BY

REVISIONS

0 8/15/23 INITIAL RELEASE

REV. DATE DESC.

ISSUES



A.C. ENGINEERING, INC.
CIVIL & GEOTECHNICAL CONSULTANTS
454 LAS GALLINAS AVE. SUITE 1047
SAN JOSE, CA 95128
PH: 415-868-0532
FAX: 415-472-0603
ADMIN@ACENRVL.COM

CONSTRUCTION BEST
MANAGEMENT PRACTICES
WILLIS RESIDENCE
25500 CA-1, Tormalas, CA 94940
104-040-09

216-1

C-4

SITE BENCHMARK

SURVEY CONTROL
SET NAIL
ELEVATION=94.97'

EASEMENT NOTE:

A CURRENT TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY CLARK CIVIL ENGINEERS. EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.
UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.
BUILDING FOOTPRINTS ARE SHOWN AT GROUND LEVEL.
FINISH FLOOR ELEVATIONS ARE TAKEN AT DOOR THRESHOLD (EXTERIOR)

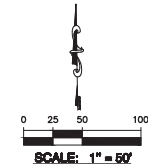
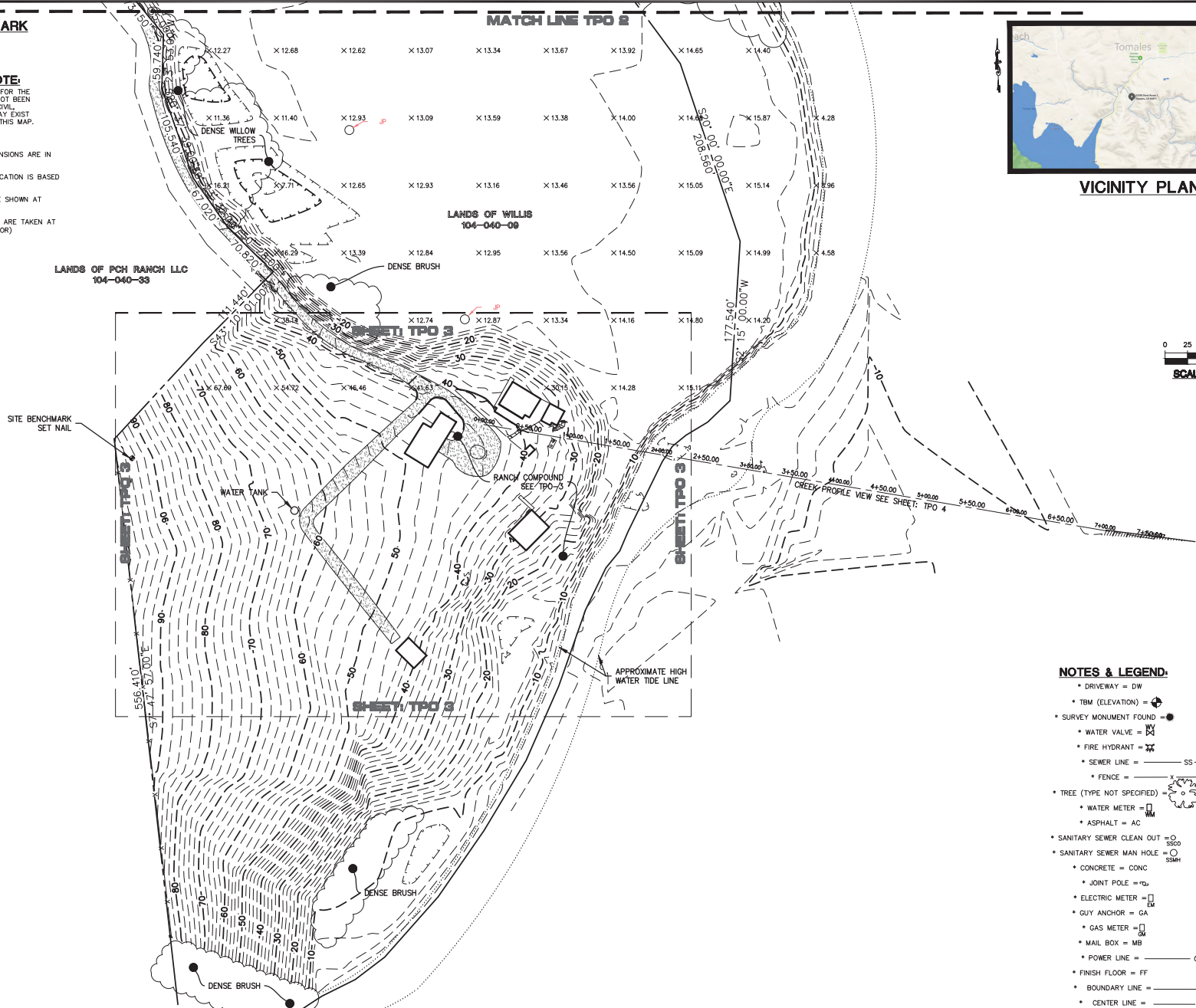
MATCH LINE TPO 2



VICINITY PLAN

LANDS OF PCH RANCH LLC
104-040-33

LANDS OF WILLIS
104-040-09



NOTES & LEGEND:

- DRIVEWAY = DW
- TBM (ELEVATION) = [Symbol]
- SURVEY MONUMENT FOUND = [Symbol]
- WATER VALVE = [Symbol]
- FIRE HYDRANT = [Symbol]
- SEWER LINE = [Symbol] SS
- FENCE = [Symbol]
- TREE (TYPE NOT SPECIFIED) = [Symbol]
- WATER METER = [Symbol]
- ASPHALT = AC
- SANITARY SEWER CLEAN OUT = [Symbol] SSSO
- SANITARY SEWER MAN HOLE = [Symbol] SSMH
- CONCRETE = CONC
- JOINT POLE = [Symbol]
- ELECTRIC METER = [Symbol]
- GUY ANCHOR = GA
- GAS METER = [Symbol]
- MAIL BOX = MB
- POWER LINE = [Symbol] OH
- FINISH FLOOR = FF
- BOUNDARY LINE = [Symbol]
- CENTER LINE = [Symbol]



CLARK CIVIL ENGINEERING
DESIGN • CONSULTING • SURVEY
3500 Nicasio Valley Rd., Nicasio, CA 94948
PH: 415-996-4450 FAX: 510-372-0259



25500 STATE ROUTE 1
TOMALES, CA

TOPOGRAPHIC SURVEY

NO.	REVISIONS	BY

JOB NO: 222030
DATE: 8/16/22
SCALE: 1" = 50'
DESIGN BY: RG
DRAWN BY: RG

SHEET NO:
TP01
1 OF 4 SHEETS

APN: 104-040-09
MARIEN COUNTY



CLARK CIVIL ENGINEERING
 DESIGN • CONSULTING • SURVEY
 2500 Nicasio Valley Rd., Nicasio, CA 94946
 PH: 415-298-4450 FAX: 510-372-0299



25500 STATE ROUTE 1
 TOMALES, CA

APN: 104-040-09

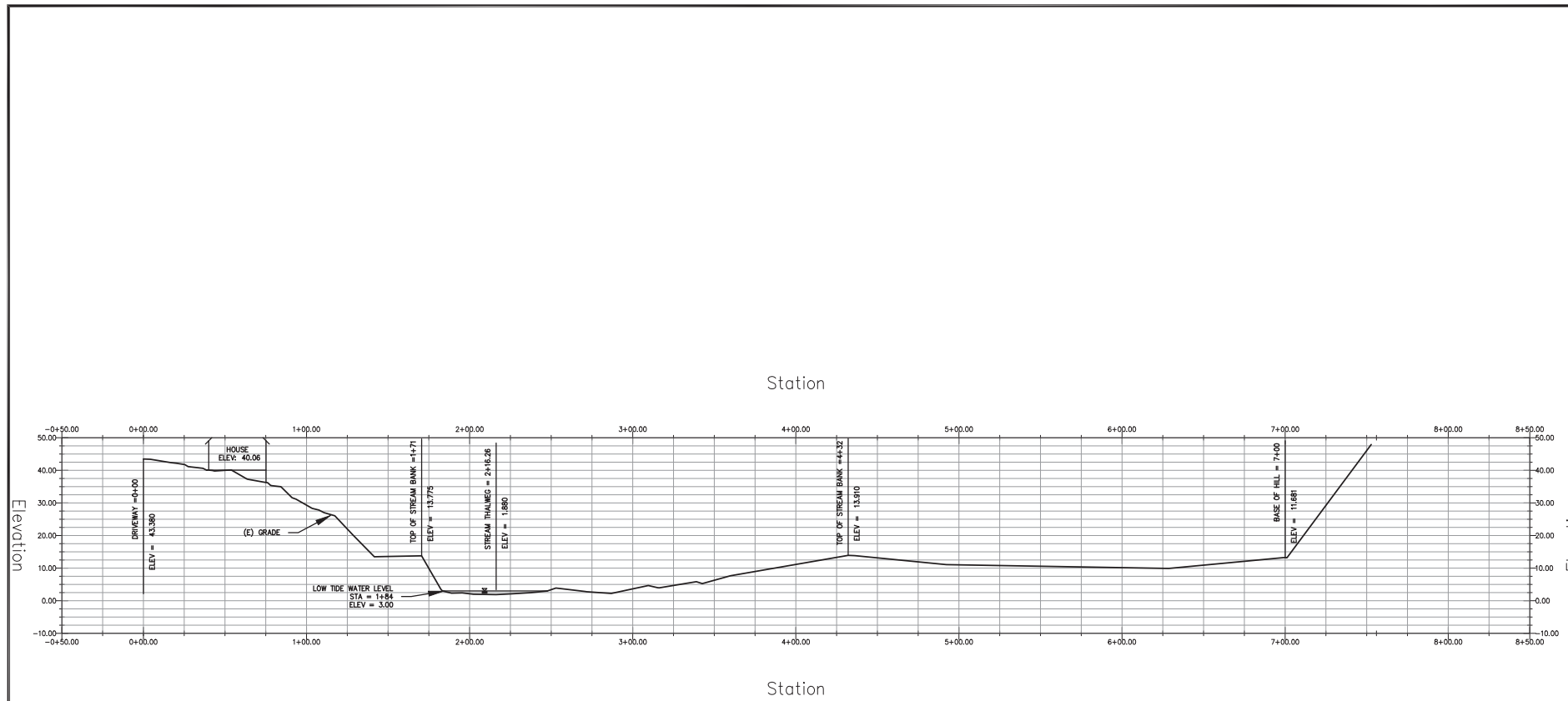
MARIN COUNTY

TOPOGRAPHIC SURVEY

REVISIONS	BY

JOB NO: 222071
 DATE: 2/06/23
 SCALE: 1" = 20'
 DESIGN BY: RG
 DRAWN BY: RG
 SHEET NO:

TP04
 4 OF 4 SHEETS



STREAM PROFILE
 HORZ. 1" = 30' VERT. 1"=15'