

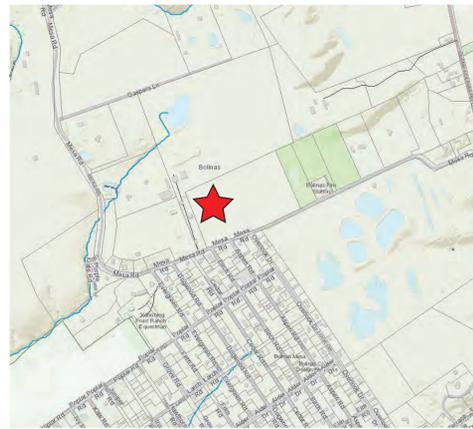


EMERGENCY WORKFORCE HOUSING MOBILE / TRAILER UNITS MESA ROAD BOLINAS CA, 94924 APN: 193-020-38

ABBREVIATIONS

ADJ	ADJACENT OR ADJUSTABLE	FD	FLOOR DRAIN	PSI	POUNDS PER SQUARE INCH
A/C	AIR CONDITIONING	FT	FOOT OR FEET	PT	PRESSURE TREATED
AC	ASPHALT CONCRETE	FTG	FOOTING	PTDF	PRESSURE TREATED DOUGLAS FIR
ALT	ALTERNATE	FAU	FORCED AIR UNIT	PL	PROPERTY LINE
AB	ANCHOR BOLT	FDN	FOUNDATION	RAD	RADIUS
AFF	ABOVE FINISH FLOOR	GA	GAUGE	REF	REFERENCE OR REFRIGERATOR
AGG	AGGREGATE	GI	GALVANIZED IRON	RESIL	RESILIENT
BSMT	BASEMENT	GAL	GALVANIZED	RA	RETURN AIR
BRG	BEARING	GFI	GROUND FAULT CIRCUIT	REV	REVISION
BM	BENCH MARK	INT	INTERRUPTER	RH	RIGHT HAND
BET	BETWEEN	GL	GLASS OR GLAZING	RD	ROOF DRAIN
BLK	BLOCK	GB	GRAB BAR	RFG	ROOFING
BLW	BELOW	HDW	HARDWARE	RM	ROOM
BLKG	BLOCKING	HR	HEADER	RO	ROUGH OPENING
BD	BOARD	HTG	HEATING	SC	SOLID CORE
BW	BOTH WAYS	HVAC	HEATING/ VENTING/ AIR	SCH	SCHEDULE
BOT	BOTTOM	HT	HEIGHT	SCR	SCREEN
BRNZ	BRONZE	HTC	HOLLOW CORE	SHT	SHEET
CL	CENTERLINE	HOR	HORIZONTAL	SH	SHELF OR SHELVING
COMB	COMBINATION OR COMBUSTION	HOR	HORIZONTAL	SM	SIMILAR
CO	CLEANOUT	HB	HOSE BIB	S and P	SHELF AND POLE
COMP	COMPOSITION	ID	INSIDE DIAMETER	SPKR	SPEAKER
CONC	CONCRETE	INT	INTERIOR	SPEC	SPECIFICATIONS
CMU	CONCRETE MASONRY UNIT	JNT	JOINT	SO	SQUARE
CONST	CONSTRUCTION	KIT	KITCHEN	STD	STANDARD
CONT	CONTINUOUS	KO	KNOCK-OUT	STSTL	STAINLESS STEEL
CNTR	COUNTER	LB	LAG BOLT	ST	STEEL
CS	COUNTERSINK	LAM	LAMINATE	STRUC	STRUCTURAL
CF	CUBIC FOOT	LAV	LAVATORY	SA	SUPPLY AIR
CU	CUBIC	LH	LEFT HAND	SUS	SUSPENDED
DTL	DETAIL	L	LENGTH	SYS	SYSTEM
DIAG	DIAGONAL	LT	LIGHT	TEL	TELEPHONE
DIA	DIAMETER	LTWT	LIGHTWEIGHT	TEL	TELEVISION
DIM	DIMENSION	MB	MACHINE BOLT	TH	THICK OR THICKNESS
DW	DISHWASHER	MFR	MANUFACTURER	THR	THRESHOLD
DIV	DIVISION	MAS	MASONRY	T and G	TONGUE AND GROOVE
DR	DOOR	MAX	MAXIMUM	TOC	TOP OF CONCRETE
DS	DOWNSPOUT	MECH	MECHANICAL	TP	TOP OF PAVING
DWR	DRAWER	MC	MEDICINE CABINET	TW	TOP OF WALL
DRN	DRAIN	MET	METAL	TB	TOWEL BAR
DWG	DRAWING	MIN	MINIMUM	TH	TOILET PAPER HOLDER
ELEC	ELECTRICAL	MISC	MISCELLANEOUS	TS	TUBE STEEL
EL	ELEVATION	MT	MOUNT	TYP	TYPICAL
EMER	EMERGENCY	NAT	NATURAL	UN	UNLESS OTHERWISE NOTED
EXH	EXHAUST	NIC	NOT IN CONTRACT	VCT	VINYL COMPOSITION TILE
(E)	EXISTING	NTS	NOT TO SCALE	VERT	VERTICAL
EB	EXPANSION BOLT	OBS	OBSCURE	VF	VERIFY IN FIELD
EXP	EXPOSED	OC	ON CENTER	WSCOT	WAINSCOT
EXT	EXTERIOR	OPG	OPENING	WC	WATER CLOSET
FOC	FACE OF CONCRETE	OPP	OPPOSITE	WN	WINDOW
FOF	FACE OF FINISH	OH	OVERHEAD	WP	WEATHER OR WATER PROOF
FOS	FACE OF STUD	PK	PARKING	WH	WATER HEATER
FIN	FINISH	PTN	PARTITION	WTR	WATER
FFL	FINISH FLOOR LINE	PVMT	PAVEMENT	WT	WEIGHT
FE	FIRE EXTINGUISHER	PLAS	PLASTIC OR PLASTER	W/	WITH
FP	FIREPROOF	PLYWD	PLYWOOD	W/O	WITHOUT
FLR	FLOOR	PVC	POLYVINYL CHLORIDE		
		PSF	POUNDS PER SQUARE FOOT		

VICINITY MAP



PROJECT MAP



ZONING PARAMETERS

ZONING	EXISTING	PROPOSED	REQUIREMENT
	C-ARP-10	C-ARP-10	
LOT AREA	877,254 SF	877,254 SF	
TOTAL FLOOR AREA	N/A	N/A	
MAXIMUM HEIGHT	25' / 15'	11' 4"	
LOT COVERAGE			N/A
PARKING	N/A	14	N/A
FRONT SETBACK	N/A	445' / 680'	N/A
REAR SETBACK	N/A	170' / 30'	N/A
LEFT SIDE YARD	N/A	30' / 405'	N/A
RIGHT SIDE YARD	N/A	830' / 550'	N/A

DRAWING INDEX

- T.0. PROJECT TITLE SHEET
- CM. CONSTRAINTS MAP
- E0. EXISTING SITE PLAN
- C0. PROPOSED SITE PLAN
- C1. DETAIL SITE PLAN / TRAILER PLAN
- C2. TYPICAL TRAILER ELEVATION / IMAGES
- S1. WASTEWATER SITE PLAN
- S2. WASTEWATER SITE PLAN
- S3. WASTEWATER CONSTRUCTION DETAILS
- S\$. WASTEWATER CONSTRUCTION DETAILS

PROJECT DIRECTORY

OWNER/APPLICANT
BCLT
6 Wharf Road, #8
Bolinas, CA 94924

BIOLOGIST
Julia King
14015 Murphy Avenue
San Martin, CA 95046
408-591-6465

SEPTIC ENGINEER
ECKMAN ENVIRONMENTAL
100 Shoreline Highway, Bldg B
Mill Valley, CA 94941
415-895-0364

PROJECT SCOPE

- EMERGENCY / TRAILER WORKFORCE HOUSING
- ONSITE WASTEWATER SYSTEM

Revisions



Issue



APN: 193-020-38
 BCLT - MESA ROAD
 BOLINAS, CA 94924

Title TITLE SHEET

Scale

Date February 25, 2023

Sheet

T.0

of



Revisions

- △
- △
- △
- △

Issue

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APN: 193-020-38
 BCLT - MESA ROAD
 BOLINAS, CA 94924

Title CONSTRAINTS MAP

Scale

Date February 25, 2023

Sheet

CM

of

TACHERRA RANCH

wastewater dispersal study area

existing agriculture access road

BCPUD

existing "distrubed" livestock pen to be used for mobile trailers
(approximately 100' w x 315' l)

existing agriculture access road to be used for trailer access/maintenance
14' wide gravel roadbed

BCPUD

CONSTRAINTS MAP

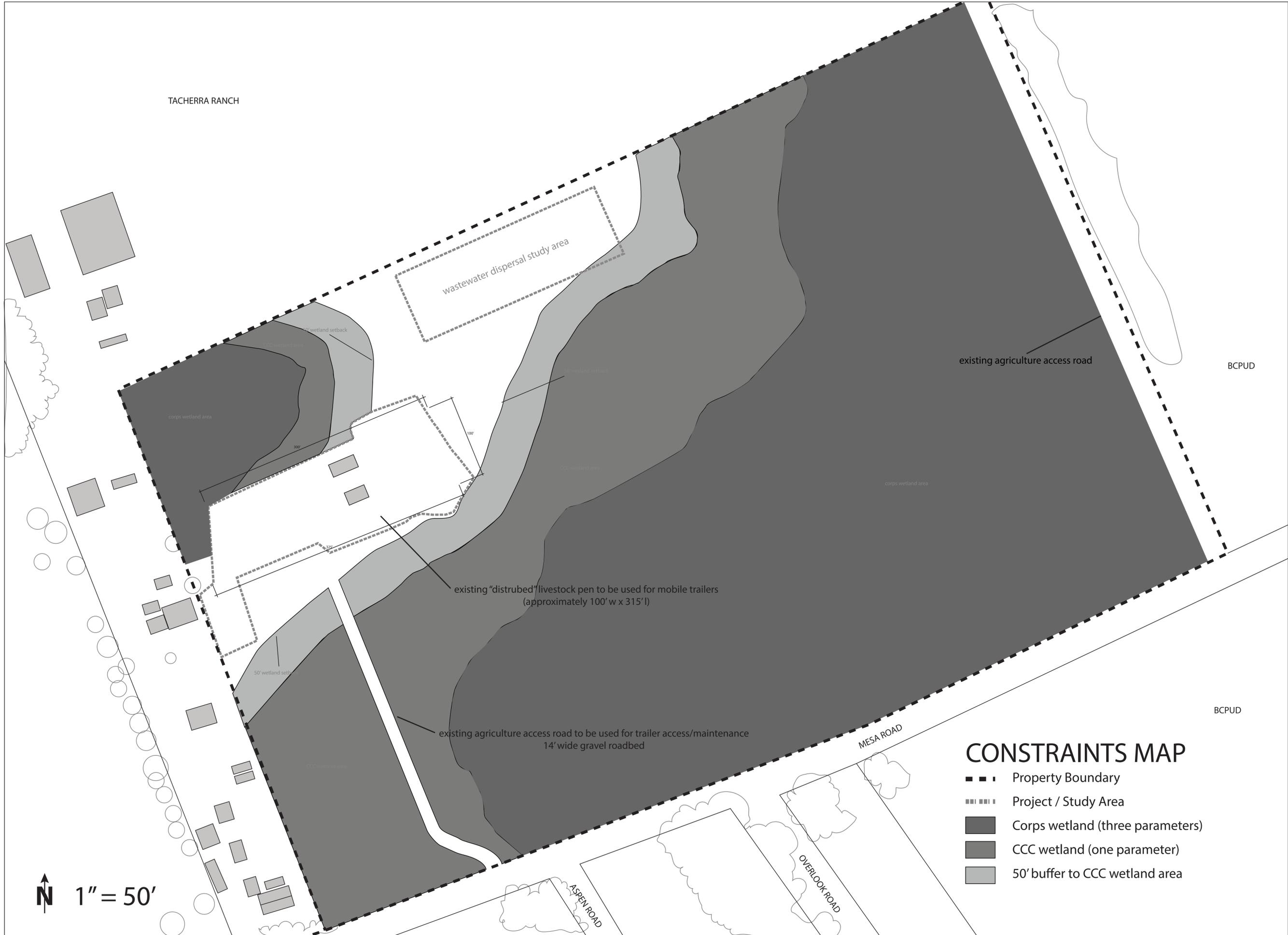
- ■ ■ Property Boundary
- ■ ■ Project / Study Area
- Corps wetland (three parameters)
- CCC wetland (one parameter)
- 50' buffer to CCC wetland area

N 1" = 50'

MESA ROAD

OVERLOOK ROAD

ASPEN ROAD





Revisions

- △
- △
- △
- △

Issue

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- △
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APN: 193-020-38
BCLT - MESA ROAD
BOLINAS, CA 94924

Title EXISTING SITE PLAN

Scale

Date February 25, 2023

Sheet

S.0

of

TACHERRA RANCH

wastewater dispersal study area

830'

existing agriculture access road

BCPUD

corps wetland area

170'

CCC wetland area

corps wetland area

existing "disturbed" livestock pen to be used for mobile trailers
(approximately 100' w x 315' l)

30'

50' wetland setback

445'

existing agriculture access road to be used for trailer access/maintenance
14' wide gravel roadbed

CCC wetland area

MESA ROAD

BCPUD

N 1" = 50'

ASPEN ROAD

OVERLOOK ROAD



Revisions

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Issue

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APN: 193-020-38
BCLT - MESA ROAD
BOLINAS, CA 94924

Title: PROPOSED SITE PLAN

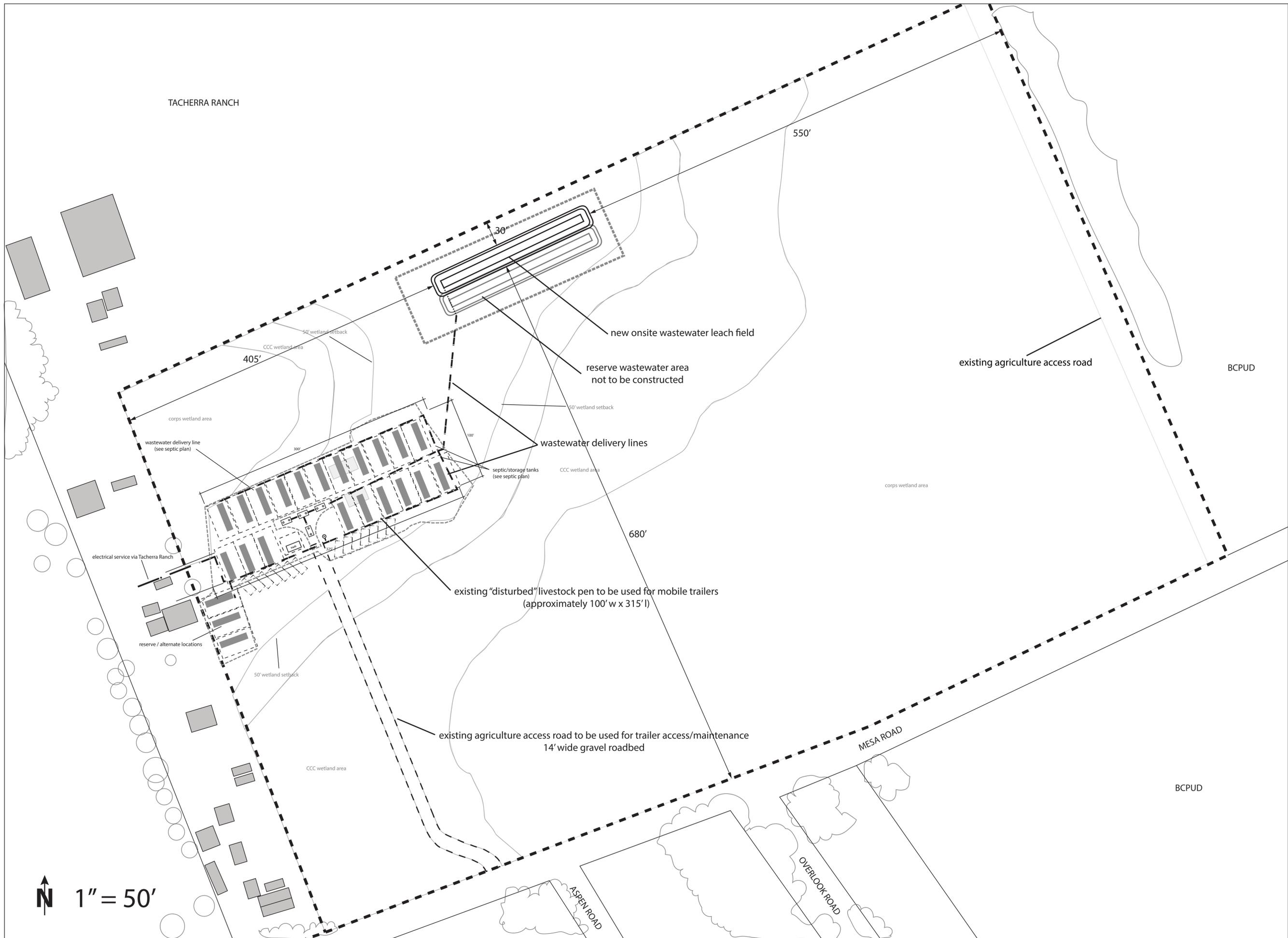
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N 1" = 50'



Revisions
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APN: 193-020-38
 BCLT - MESA ROAD
 BOLINAS, CA 94924

Title: **DETAIL SITE PLAN**

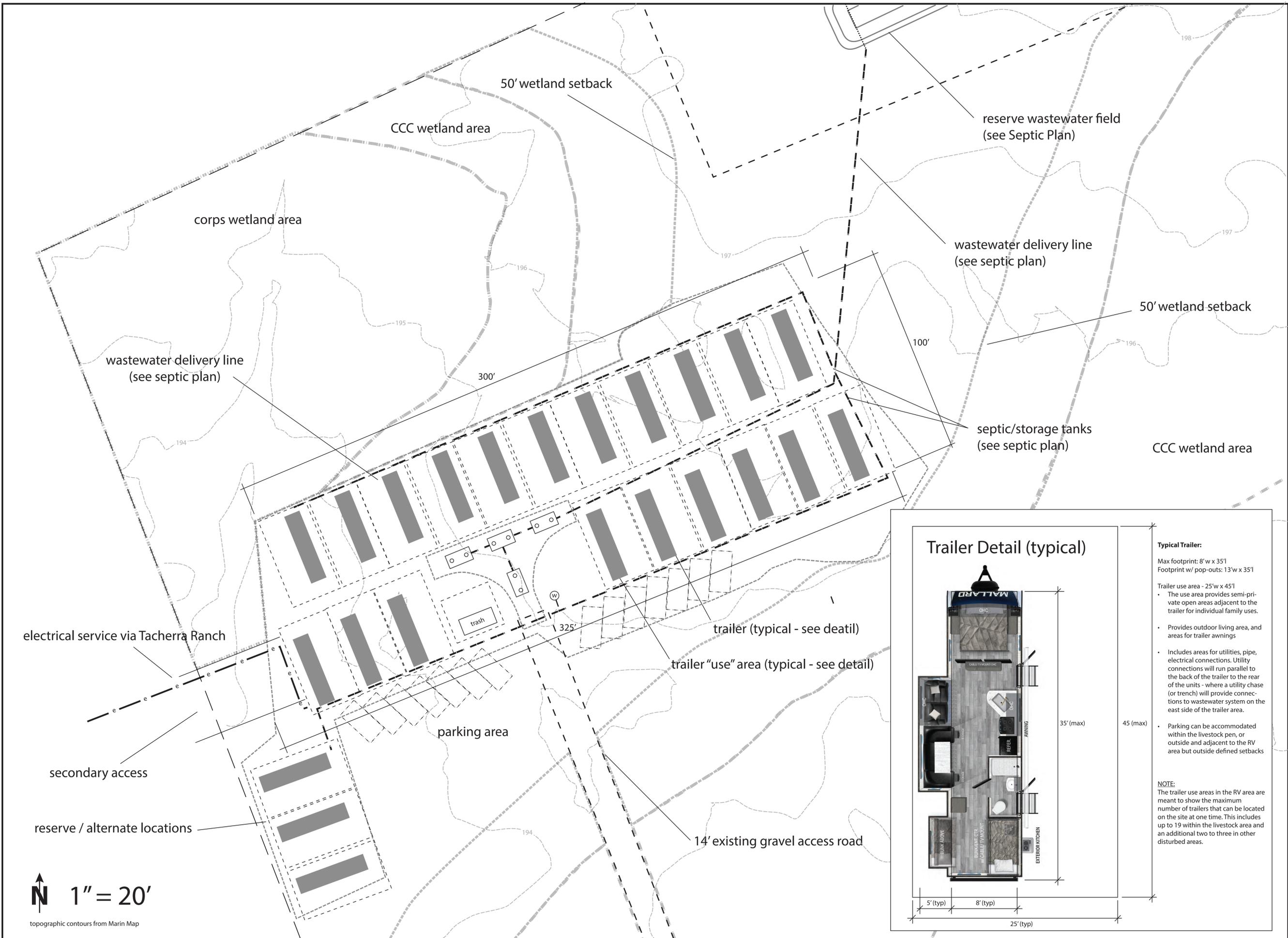
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Date: February 25, 2023

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C.2

of



Trailer Detail (typical)



Typical Trailer:
 Max footprint: 8' w x 35' l
 Footprint w/ pop-outs: 13' w x 35' l
 Trailer use area - 25' w x 45' l

- The use area provides semi-private open areas adjacent to the trailer for individual family uses.
- Provides outdoor living area, and areas for trailer awnings
- Includes areas for utilities, pipe, electrical connections. Utility connections will run parallel to the back of the trailer to the rear of the units - where a utility chase (or trench) will provide connections to wastewater system on the east side of the trailer area.
- Parking can be accommodated within the livestock pen, or outside and adjacent to the RV area but outside defined setbacks

NOTE:
 The trailer use areas in the RV area are meant to show the maximum number of trailers that can be located on the site at one time. This includes up to 19 within the livestock area and an additional two to three in other disturbed areas.

↑ N
 1" = 20'
 topographic contours from Marin Map

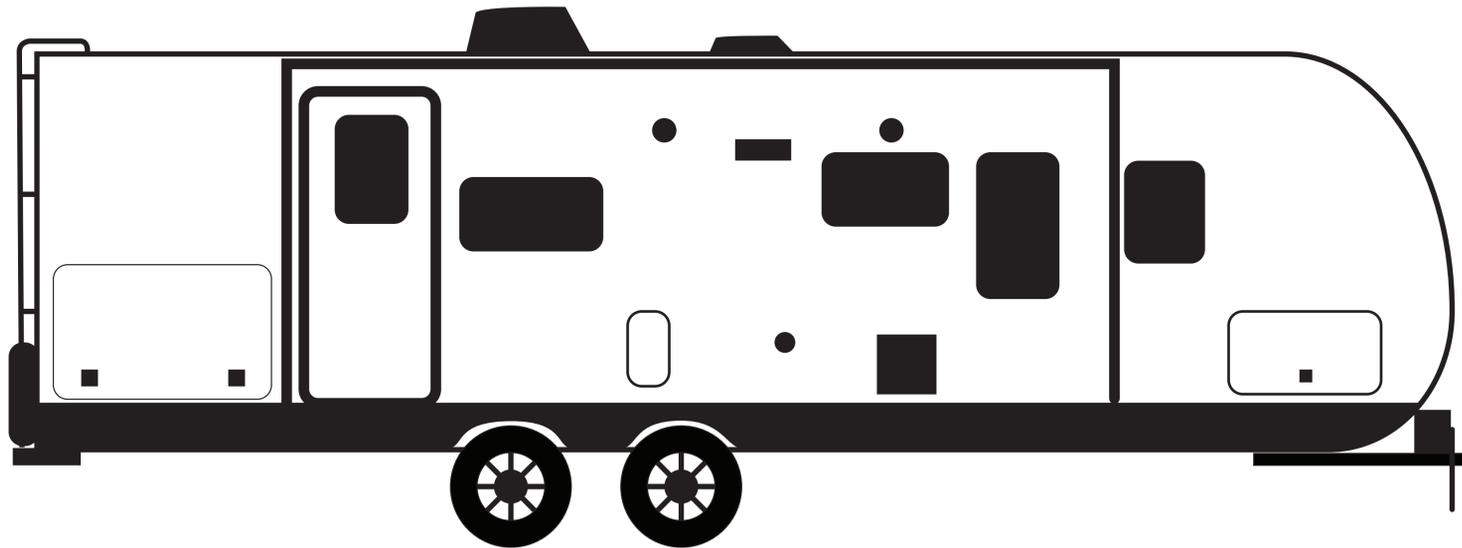
TYPICAL ELEVATIONS - MAX SIZED RV (SLEEPS 6-10)



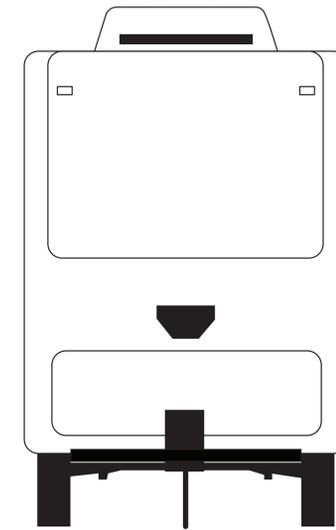
RIGHT ELEVATION



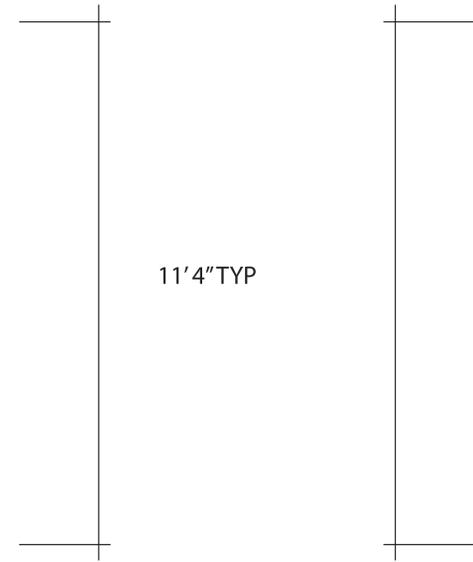
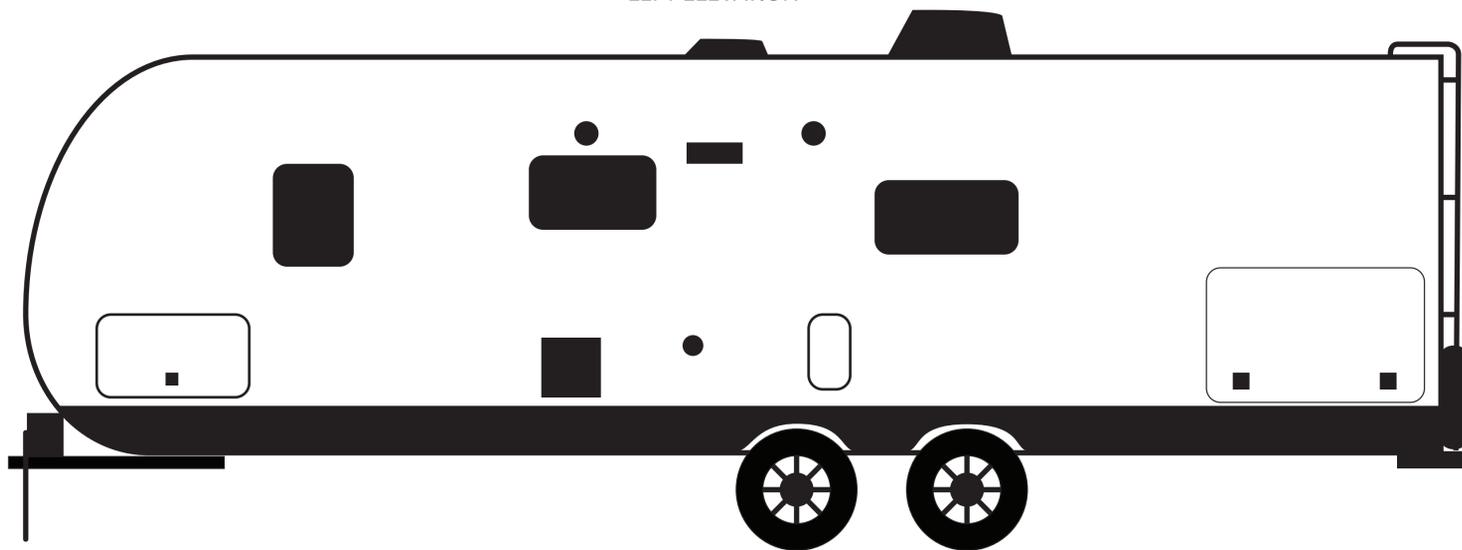
FRONT ELEVATION



LEFT ELEVATION

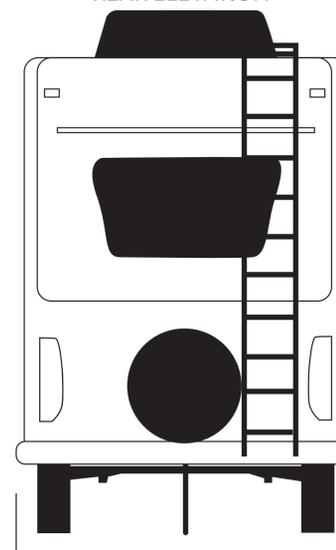


REAR ELEVATION



11' 4" TYP

1" = 2'



8' 1/2"

34' 9-1/2" MAX



Revisions

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Issue

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APN: 193-020-38
 BCLT - MESA ROAD
 BOLINAS, CA 94924

Title ELEVATIONS

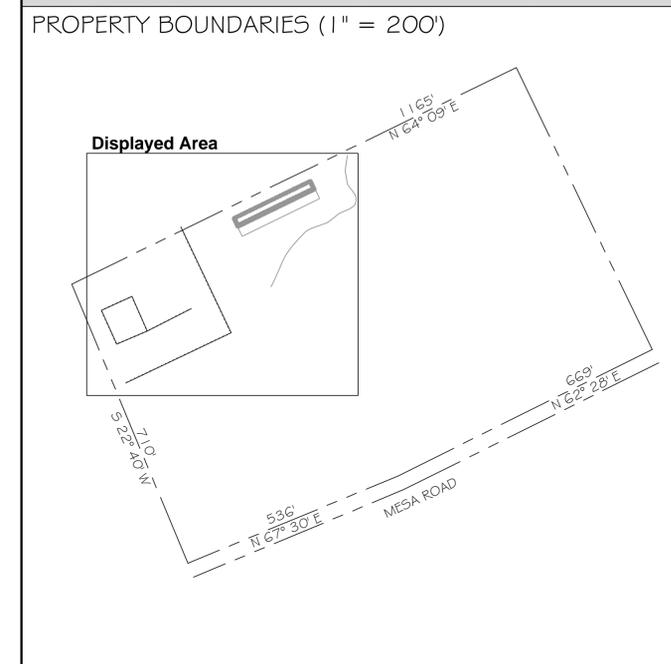
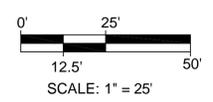
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Date February 25, 2023

Sheet

E.0

of

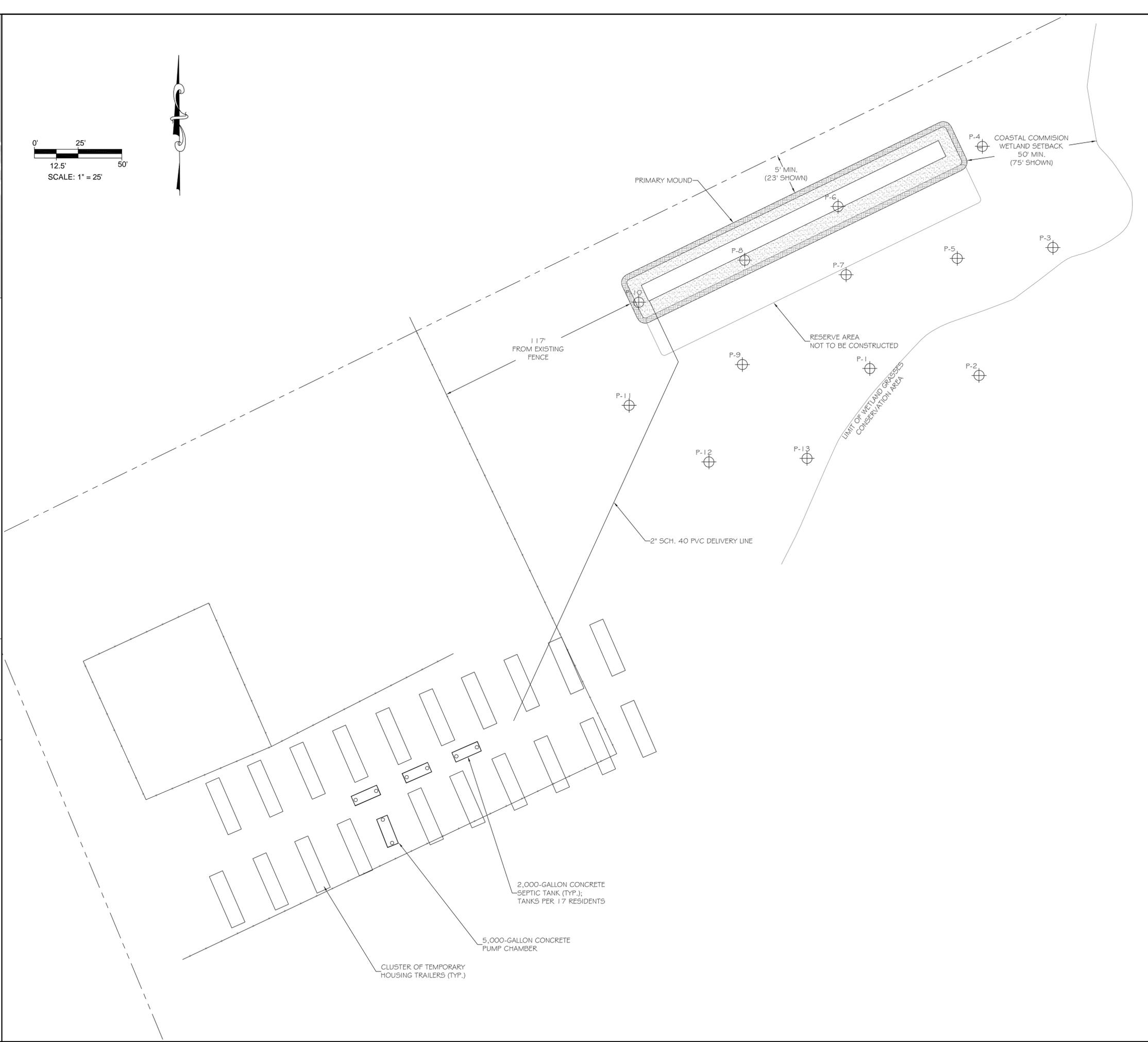


LEGEND

	Soil Profile Trench
	Percolation Test

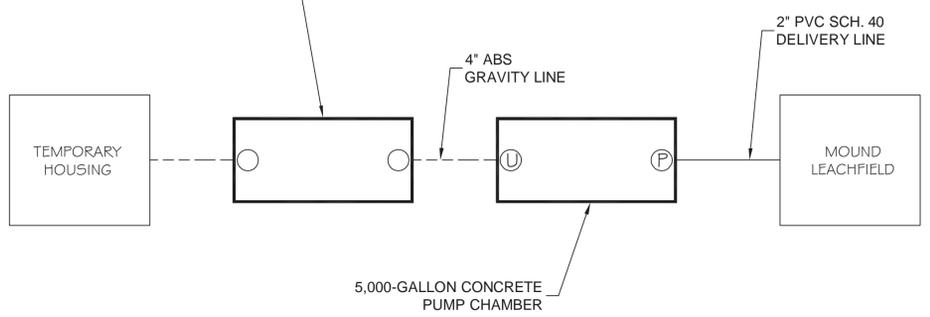
NOTES

- * Survey provided by Bolinas Land Trust. EED, Inc. assumes no responsibility.
- * 1,890 GPD System
- * Contours less than 2%



APN 193-020-38	DATE / REV. 10-04-2022 / A	SCALE / SIZE 1" = 25' / ARCHD	SHEET 1 OF 4
ON-SITE WASTEWATER SYSTEM PLAN SITE PLAN			
TACHERRA RANCH AFFORDABLE HOUSING PROJECT 130 MESA ROAD BOLINAS, CALIFORNIA			
<small>100 Shoreline Highway Burlingame, CA 94010 Mil Valley, CA 94041 415.895.0364</small>			

(THREE) 2,000-GALLON CONCRETE SEPTIC TANKS FOR 17 RESIDENTS

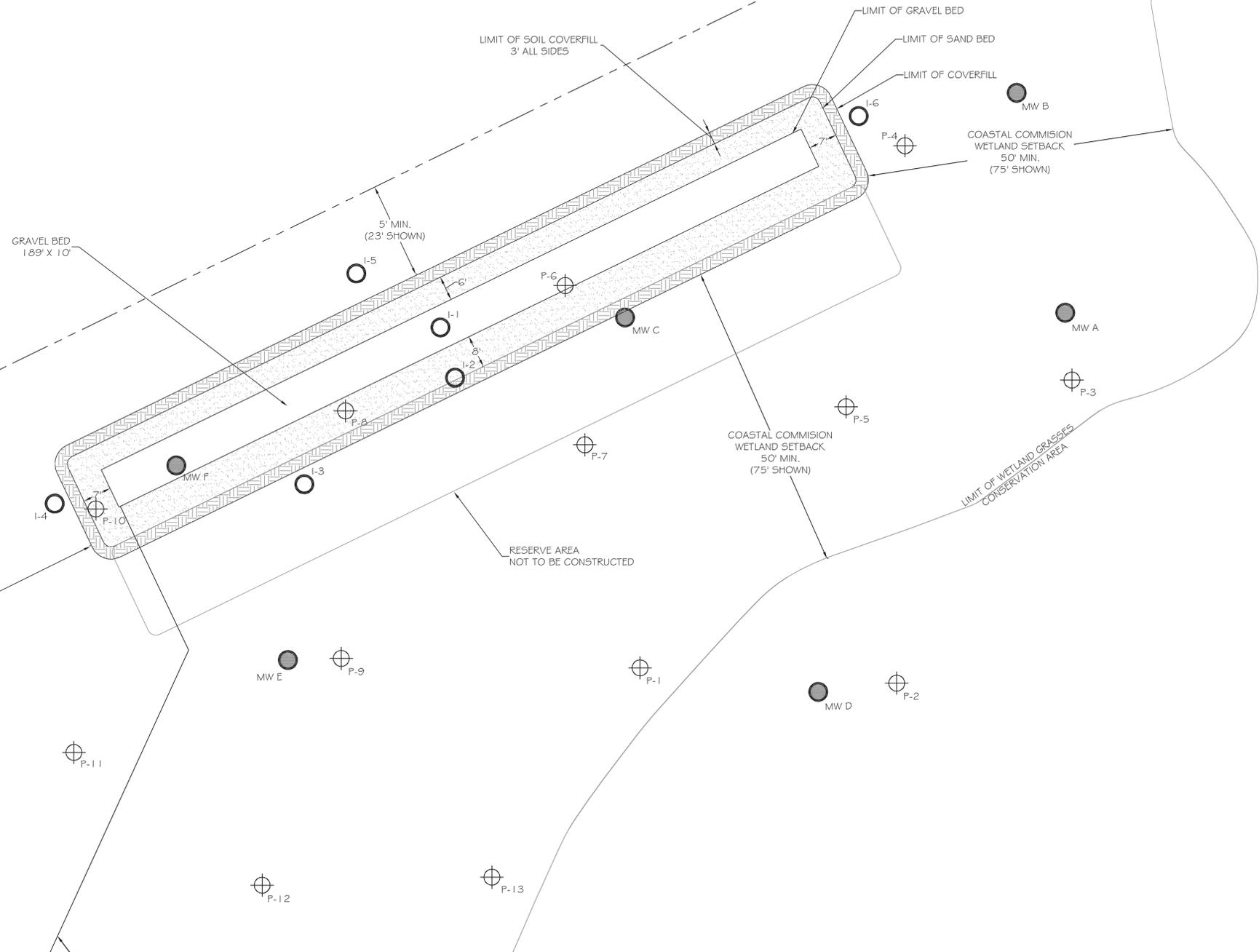
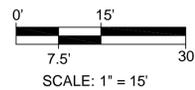


LEGEND

- ⊞ Soil Profile Trench
- ⊕ Percolation Test
- ⊙ GW Monitoring Well
- Inspection Well

NOTES

- * Survey provided by Bolinas Land Trust. EED, Inc. assumes no responsibility.
- * 1,890 GPD System
- * Contours less than 2%



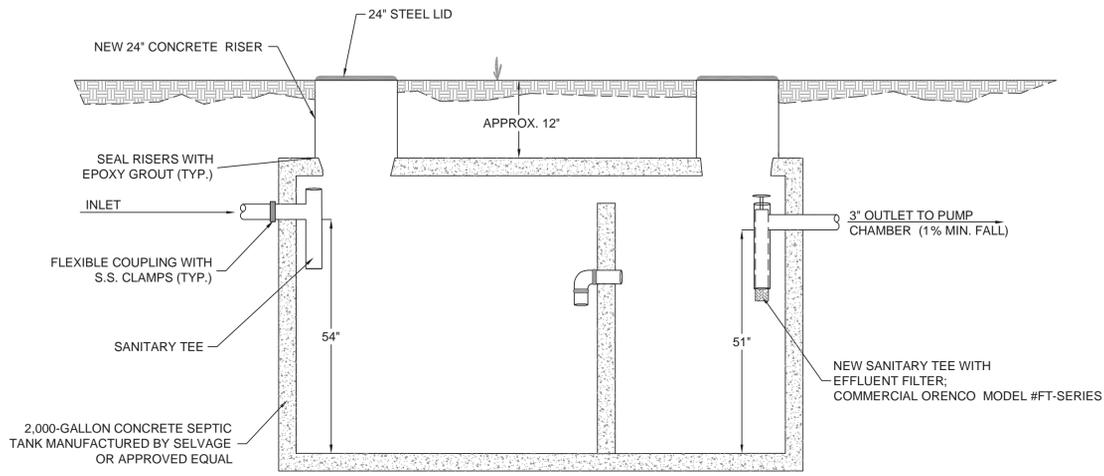
APN	193-020-38
DATE / REV.	10-04-2022 / A
SCALE / SIZE	1" = 15' / ARCHD
SHEET	2 OF 4

ON-SITE WASTEWATER SYSTEM PLAN
SITE PLAN

TACHERRA RANCH AFFORDABLE HOUSING PROJECT
130 MESA ROAD
BOLINAS, CALIFORNIA

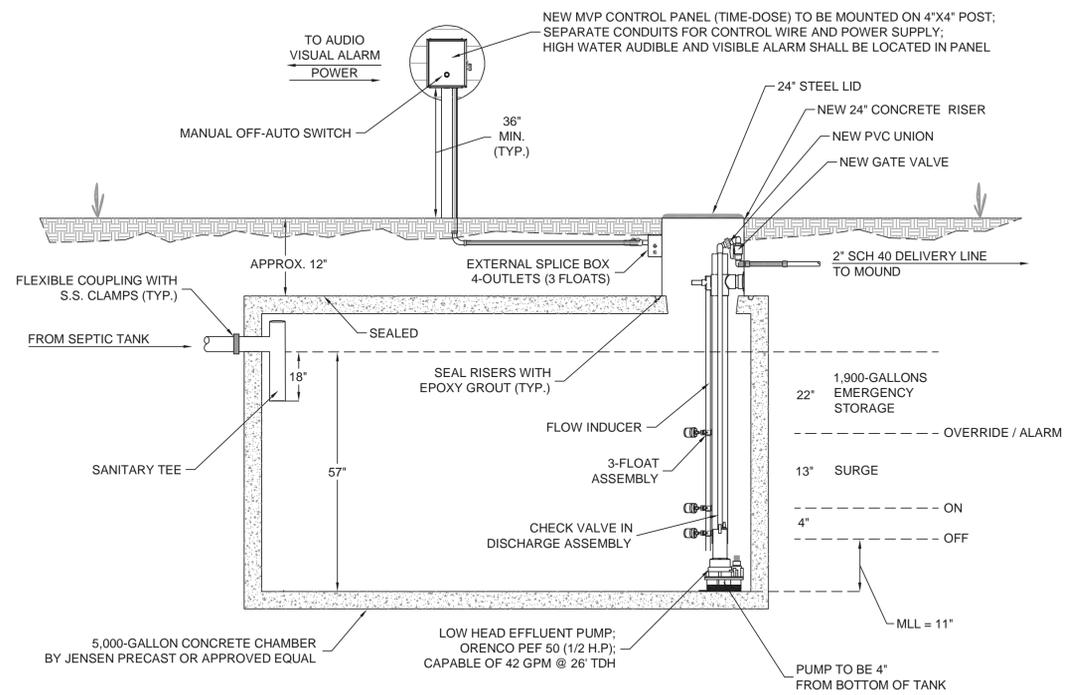


100 Shoreline Highway
Burlingame, CA 94684
415.895.0364
eckman environmental
designs, inc



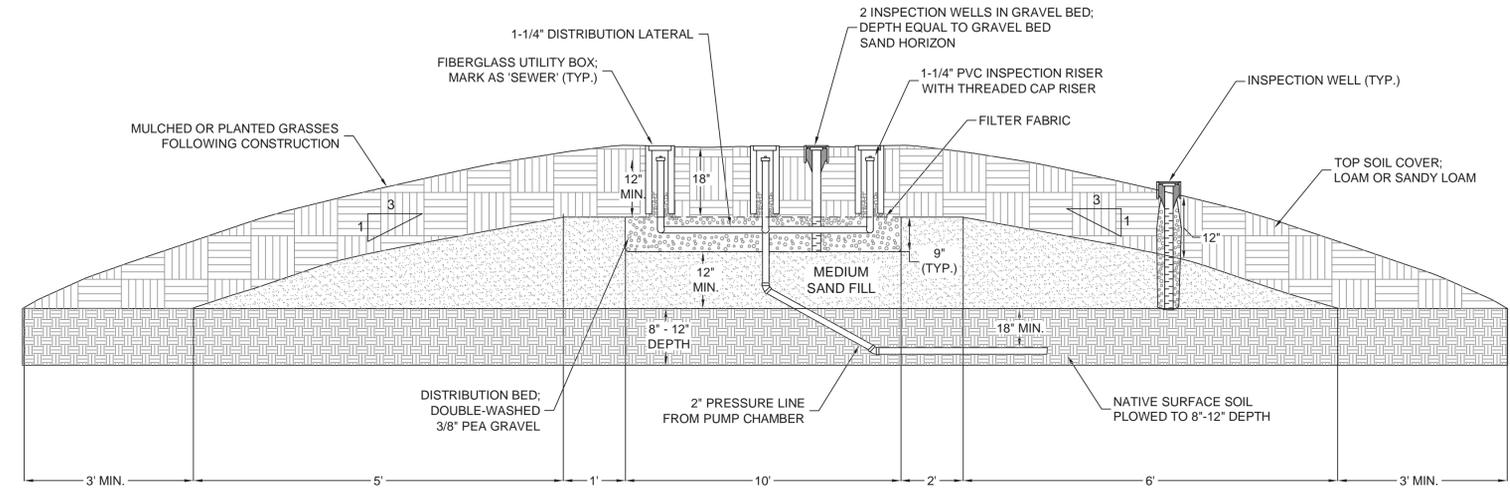
**2,000-GALLON TRAFFIC-RATED
CONCRETE SEPTIC TANK**

1



**5,000-GALLON TRAFFIC-RATED
CONCRETE PUMP CHAMBER**

2



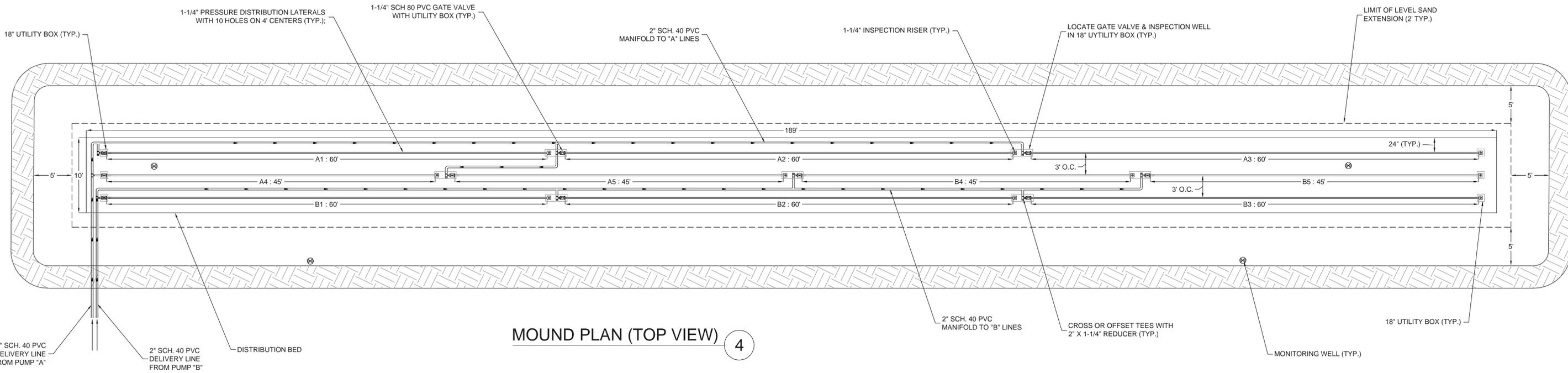
MOUND PLAN (CROSS VIEW)

3

PIPING ZONE "A" & "B"

- 1-1/4" PIPE
- 3/16 HOLES
- 4.5" ORFICE SPACING
- 65 ORFICES EACH ZONE
- 3' HEAD
- 270 L.F. EACH ZONE
- 5 LATERALS EACH ZONE

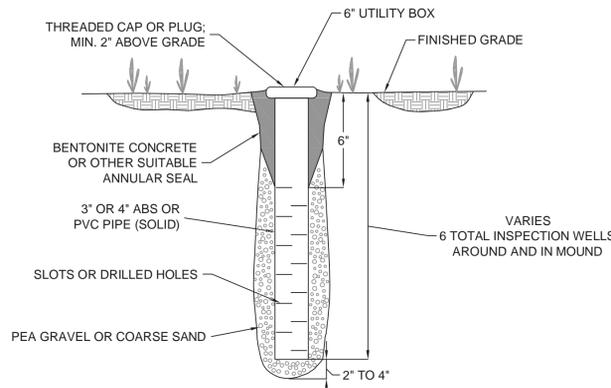
50 GPM
40' TDH
1 HP PUMP



MOUND PLAN (TOP VIEW)

4





MONITORING WELL 5

CONSTRUCTION SPECIFICATIONS

GENERAL

- Plan Changes.** Changes in plans or specifications shall be made only after consultation with and approval of the Designer.
- Property Lines.** Property lines shown on drawing are approximate. The owner has had the property boundaries marked by a licensed surveyor.
- Mound Construction.** Mound shall be created with a crawler tractor; no rubber-tired vehicles shall be permitted in mound area.
- Construction Inspection.** Construction inspection by the Designer shall be required at checkpoints as outlined in the attached Construction Inspection Schedule. It shall be the responsibility of the contractor to call for the required inspections, and to provide at least 48-hours advance notification of the Designer and Marin County Environmental Health Department.

MATERIALS

- General.** All construction materials shall be approved by the designer prior to their placement. Marin County electrical permit is required.
- Sand Fill.** Sand fill for the mound shall be a medium to coarse textured sand conforming to the following specifications:

Sieve Size	Percent Passing
3/8	100
#4	90 - 100
#10	62 - 100
#16	45 - 82
#30	25 - 55
#50	5 - 20
#60	0 - 10
#100	0 - 4

- Pea Gravel.** Shall be cleaned and nominally 3/8"-size.
- Distribution Piping.** All piping for the delivery and pressure distribution network shall be Schedule 40 PVC and have a minimum pressure rating of 150 psi unless otherwise specified. All joints shall be solvent-cement socket type conforming to ASTM D-2672.

Perforations for the pressure distribution network shall be drilled in a straight line along the invert of the pipe according to the hole diameter and spacing as shown on the plans or as modified by the designer. Clean all drilling burrs from the inside and outside of the pipe prior to installation.

- Filter Fabric.** Filter fabric shall be Mirafi 140N or approved equal. Filter fabric shall be handled and installed in accordance with manufacturer's recommendations. Borders of fabric shall be overlapped 12 to 18 inches. Any torn or damaged sections of fabric shall be covered with additional pieces of filter fabric sufficient to meet the above overlapping requirement.
- Effluent Filter.** Contractor shall use Orenco commercialized filter.
- Septic Tank.** (Three) 5,000-gallon concrete septic tank as manufactured by Jensen Precast Concrete Products, 478 Roseville Road, Roseville, CA 95678, (916) 783-0800, or equal, shall be used for septic tank shown on the plans. Septic tanks shall be water tight construction and certified as such. Field testing of septic tank integrity shall be required.
- Pump Chamber.** A 2,000-gallon concrete pump chamber as manufactured by Jensen Precast Concrete Products, 478 Roseville Road, Roseville, CA 95678, (916) 783-0800, or equal, shall be used for pump chamber shown on the plans. The pump chamber shall be of watertight construction and certified as such. Field-testing of the chamber shall be required.
- Pumps.** The pumps are to be Orenco Pump Company, #PEF 50 , 1/2 HP or equal for the mound capable of 42 gpm and 26' TDH.
- Control Panel.** Contractor shall use Orenco control panel MVP, or equal, to control the mound pump. The 3-float configuration on the plans supports time-dose (Mound). Distributed by Pace Supply, Santa Rosa, CA, 707-545-7101.
- Access Risers.** Watertight and gas tight access risers shall be installed over the inlet and outlet openings of both the septic tank and the pump chamber. Access risers shall be installed from the top of the tanks to about 1/2-inch above ground surface at all tank openings. The riser must be watertight at all points and have a watertight seal at the top of the tank.

CONSTRUCTION

- Installation.** All installation work shall be in accordance with applicable Marin County Regulations.
- Mound Area Compaction.** Vehicle traffic shall not be permitted within an area of ten feet downslope of the mound and five feet of the sideslope.
- Location of Mound.** Location shown for the mound is approximate, subject to adjustment in the field by the Contractor according to building constraints and noted setback requirements.
- Septic Tank and Pump Chamber Location.** Location for the septic tank and pump chamber is approximate, subject to adjustment in the field by the contractor according to building constraints and noted setback requirements. They shall be located and installed to be free from vehicle traffic and protected against entry of surface runoff. Install clean-outs every 100 feet and on turns to septic tank.
- Septic Tank/Pump Chamber Leak Test.** The new septic tank and new pump chamber shall be required to be certified as watertight. Field testing of tanks shall be required and conducted as follows:

Designer to visually inspect tank prior to conducting leak test. Fill tank and pump chamber so water level is 2 inches ± above tank/access riser joints. Note depth of water and re-measure not less than one hour later. A water level drop of 0.25 inches or greater shall be considered to be an indicator of a leaking tank; a tank shall be repaired or replaced to the satisfaction of the engineer. **Note:** The septic tank and pump chamber excavation are **not** to be backfilled until the leak test is completed.

22. Electrical.

- High water audio and visual alarm shall be located within the house.
- All electrical work shall conform to procedures and codes of Marin County Building Department.

Effluent Pump: The pump shall be of the size and type to accommodate the intended use and shall include the following:

- A "Hand-off-auto" (HOA) switch.
- An audio and visible alarm and necessary sump water sensing device to indicate a "high water" condition.
- Float switches shall be anchored to a suitable float tree for controlling the starting and stopping of pump operation.
- The pump intake shall be set a minimum of 4 inches above the sump bottom.

Sump:

- Access shall be provided by a minimum 24-inch diameter opening;
- All pipes and/or electrical conduits through the sump shall be either precast into the sump or sealed with gas-tight compression connectors.

Electrical Features: The following electrical features shall be provided:

- An outdoor-type control box containing fused disconnect and motor protection switch.
- The control box may be mounted on the building served if located within 30 feet and within direct view of the sump, otherwise the control box shall be mounted on a pipe stand or wooden post.
- Electrical conduit shall be PVC. Separate conduits shall be provided for control wire and power supply. Separate circuits with individual breakers at the main panel shall be provided for the control panel/alarm and pump.

23. Pressure Pipe Network.

- All pressure pipe shall be Schedule 40 PVC or approved equal.
- All joints shall be glued with solvent cement.
- Distribution pipe shall be laid level with a maximum permissible slope of three (3) inches in 100 feet.
- Hydraulic testing shall be conducted in the presence of the Designer to determine any leaks in the system and to check the discharge head and pump operation.
- A concrete thrust block shall be installed at all pipe bends of 45° or greater in the 2-inch pressure line from the pump to the sand filter and mound.

24. Erosion Protection. Re-seed mound area for erosion protection following final cover placement. Divert existing garage roof drainage away from mound area.

25. Clearing and Grubbing Limits. All disposal sites will be cleared and grubbed. These areas will be cleared and grubbed only after the Designer has observed and approved the Contractors staking of the clearing limits, to ensure that no more clearing and grubbing is done than necessary.

Mound Construction

Mound construction shall be in accordance with the following guidelines, or as may be modified in consultation with the Design Engineer:

a) Pump Chambers and Pumps

All electrical, mechanical, and plumbing work, and the methods of construction shall meet Uniform Plumbing Code and National Electrical Code, and shall conform to all local, state, federal and other laws pertaining to this work.

b) Disposal Site Preparation

Rope off the site of the mound including the area extending five feet beyond the mound on all sides to prevent damage to the area during other construction activity on the lot. Vehicular traffic over the area shall be prohibited to avoid soil compaction.

Stake out the mound perimeter and beds in the proper orientation. Reference stakes set some distance from the mound perimeter are also required in case the corner stakes are disturbed.

Cut and remove vegetation.

Install the delivery pipe from the sump to the mound. Lay the pipe at a depth of 24 inches and slope it uniformly back to the pump chamber. Backfill and compact the soil around the pipe.

Plow the area within the mound perimeter. Use a two bottom or larger moldboard plow or chisel plow, plowing 8-12 inches deep, parallel to the slope contour. Plowing should be done when the soil is dry. The Designer shall be consulted to determine if proper soil moisture conditions exist.

c) Fill Placement

Place the fill materials on the edges of the plowed area, keeping trucks off the plowed area.

Move the medium sand fill material into place using a track type tractor with a blade. Maintain a minimum of 6 inches of material beneath the tracks of the tractor to minimize compaction of the natural soil. The fill material should be worked in this manner until the height of the fill reaches the elevation of the top of the absorption bed.

With the blade of the tractor or by hand, form the absorption bed. Hand level the bottom of the bed, checking for the proper elevation. Shape the sides to the desired slope.

d) Distribution Network Placement

Carefully place the pea gravel in the bed, taking care not to create ruts in the bottom of the bed. Level the pea gravel to a minimum depth of 6 inches.

Assemble the distribution network on the pea gravel, laying the lateral level. Perform hydraulic test of distribution system in the presence of the Design Engineer.

Place additional pea gravel to a depth of at least 2 inches over the crown of the pipe.

Place filter fabric over the pea gravel to form silt barrier; filter fabric shall be Mirafi 140N for approved equal.

e) Mound Covering

Place good quality topsoil over the entire mound surface. Topsoil depth should be roughly 18 inches over the center and 12 inches minimum over the side slopes. The soil cover of the mound should be compacted with a small track machine or by hand.

Plant grass over the entire mound using grasses adapted to the area that shall aid in protecting the mound from erosion. Shrubs can be planted around the base and up the side slopes. Shrubs should be somewhat moisture tolerant since the downslope perimeter may become moist during early spring and late fall. Plants placed on top of the mound should be drought tolerant.

Inspection of the system shall be performed by the Designer at various stages of construction to verify adherence to design specifications. Inspections are recommended as indicated in the attached schedule.

RECOMMENDED CONSTRUCTION INSPECTION SCHEDULE

In accordance with requirements of Marin County Environmental Health Department, the following construction activities will be inspected by the Designer.

INSPECTION #1

On-site preconstruction conference to discuss project with contractor;

Staking of septic tanks and pump chamber;

Staking and layout of mound disposal area; and

Review/approval of material.

INSPECTION #2/3

Placement of 4-inch tight line;

Septic tank and pump chamber installation;

Leak testing of septic tank and pump chamber;

Clearing of mound site;

Plowing of surface soils; and,

Placement of sand fill.

INSPECTION #4

Placement of mound pea gravel in distribution bed;

Assembly and layout of mound distribution pipe network;

Placement of 2-inch pressure line;

INSPECTION #5/6

Testing of pumps and distribution systems.

Installation of monitoring wells; and,

Final fastening of pipe connections.

INSPECTION #7

Placement of filter fabric;

Placement of topsoil cover;

Final shaping of mound;

Seeding of mound; and,

Pump alarm; Confirm low flow fixtures

