

A.M. BAIRD

ENGINEERING & SURVEYING, INC.

1257 Main Street • P.O. Box 396 • Fortuna, CA. 95540 • (707) 725-5182 • Fax (707) 725-5581

CONSULTING - LAND DEVELOPMENT - DESIGN - SURVEYING

SEPTIC DISPOSAL DESIGN

Standard Conventional Class "D"
Two Employee Storage Facility

Primary and Reserve Field

PREPARED FOR

Greg Ester

APN: 211-184-006

Pagoda

West Area of Panther Gap



HUMBOLDT COUNTY, CA

PREPARED BY:

ALLAN M. BAIRD, RCE 23681



July 19, 2021
Job# 15-4310-6

APPS #10920

July 19, 2021

Humboldt County Department of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: CLIENT: Greg Ester
Design for a **conventional, CLASS D SEPTIC SYSTEM.**
APN: 211-184-006, Humboldt County, CA.

INTRODUCTION

The following septic design report is being submitted for the above referenced property in the western region of Panther Gap, CA. The following design is furnished to satisfy the requirements for an individual septic disposal system as required by the County of Humboldt. This office is preparing as-built plans for the existing structure, which shall be used for storage with a restroom solely used by two maximum employees over a six-month term each year. Soil analyses and percolation testing were conducted in October 2015.

SITE AND SOILS DESCRIPTION

The total area of the parcels is ± 41.5 acres. Access to the parcel will be provided via Panther Gap. The proposed lot has widely varying slopes with exposure generally from the south. In the vicinity of the test hole (TH) location, the slopes are less than 10%.

A trench was excavated by backhoe to a depth of 8 feet and soil samples were taken from each unique layer; location shown on the site plan (TH#4). No evidence of soil mottling or groundwater was observed.

Laboratory texture analysis of the samples revealed Zone 2 Sandy Loam at 3 feet and 5 feet. The soils at both test depths are suitable for leaching. These soil profiles are assumed to be representative of the entire designed leach area. See enclosed sheets for subsurface texture analysis data.

DESIGN RESULTS

The existing leach field has approximate location shown on the site map, was reported by the client to be comprised of infiltrators around 200-ft in length. Based on proximal soil analysis, the required length of this field is 60-ft, and no evidence of groundwater was observed.

Based on the site investigation, a standard design has been provided. If conditions of the existing field are determined to be inadequate, the required length of

leach line to treat the effluent for a storage unit with two employees for six months shall have a minimum design with 5.0-foot-deep, 1.5-foot-wide trenches, septic lines at a depth of 2.0 feet, 3-foot gravel depth below leach lines is 30 feet for both the primary and reserve fields. Required line lengths for both designs are shown on the attached site map.

Leach lines should be placed parallel to contour lines and shall be 10 feet away from adjacent leach lines, structural foundations, and property lines. Additionally, they cannot be placed under driveways and must be set back 25 feet from any slopes dropping over 30%. A 1,200-gallon minimum capacity septic tank will be required for storage of waste. It is recommended that all surface water drainage from surrounding structures be diverted away from the location of the sewage disposal fields. Enclosed are the following items:

- A design evaluation summary
- Site & location maps with disposal field locations
- Soil texture sheet for TH#4
- Typical trench cross-section
- Minimum setbacks for septic tanks and disposal fields

Please feel free to contact this office should any questions arise concerning this report (707) 725-5182.

Sincerely,



Allan M. Baird
Principal, RCE# 23681



**SITE EVALUATION REPORT
INDIVIDUAL SEWAGE DISPOSAL SYSTEMS DESIGN**

DATE: 5/16/16

AP#: 211-184-006

WATER SUPPLY: Private

SITE ADDRESS: TBA

CITY: Honeydew, CA

OWNER: Greg Ester

CLIENT: Greg Ester

MAIL: 600 F Street #3, Box 208

CITY: Arcata, CA 95521

PHONE NUMBER: (707) 599-7705

SINGLE FAMILY RESIDENCE / NO. OF BEDROOMS (N): 2 (35GPD)

EXISTING FIELD

LOCATION: TH#4
SLOPE: 0-5%
DEPTH: 5 Feet
TEXTURE ZONE: Zone 2
USDA CLASS: Sandy Loam

DEPTH TO WATER TABLE: >8 feet (no mottling observed)

STANDARD CONVENTIONAL DESIGN, CLASS D

DEPTH OF PIPE: 1.25 ft
DEPTH OF GRAVEL (D): 3 ft below pipe (standard)
TRENCH WIDTH (W): 1.5 ft (standard)
ABSORPTION AREA (A_T): 0.398

Primary LINEAR FT. OF SYSTEM: $70/(A_T \cdot 2 \cdot D) = 70 / (0.398 \cdot 6) = \underline{\underline{30\text{-ft}}}$

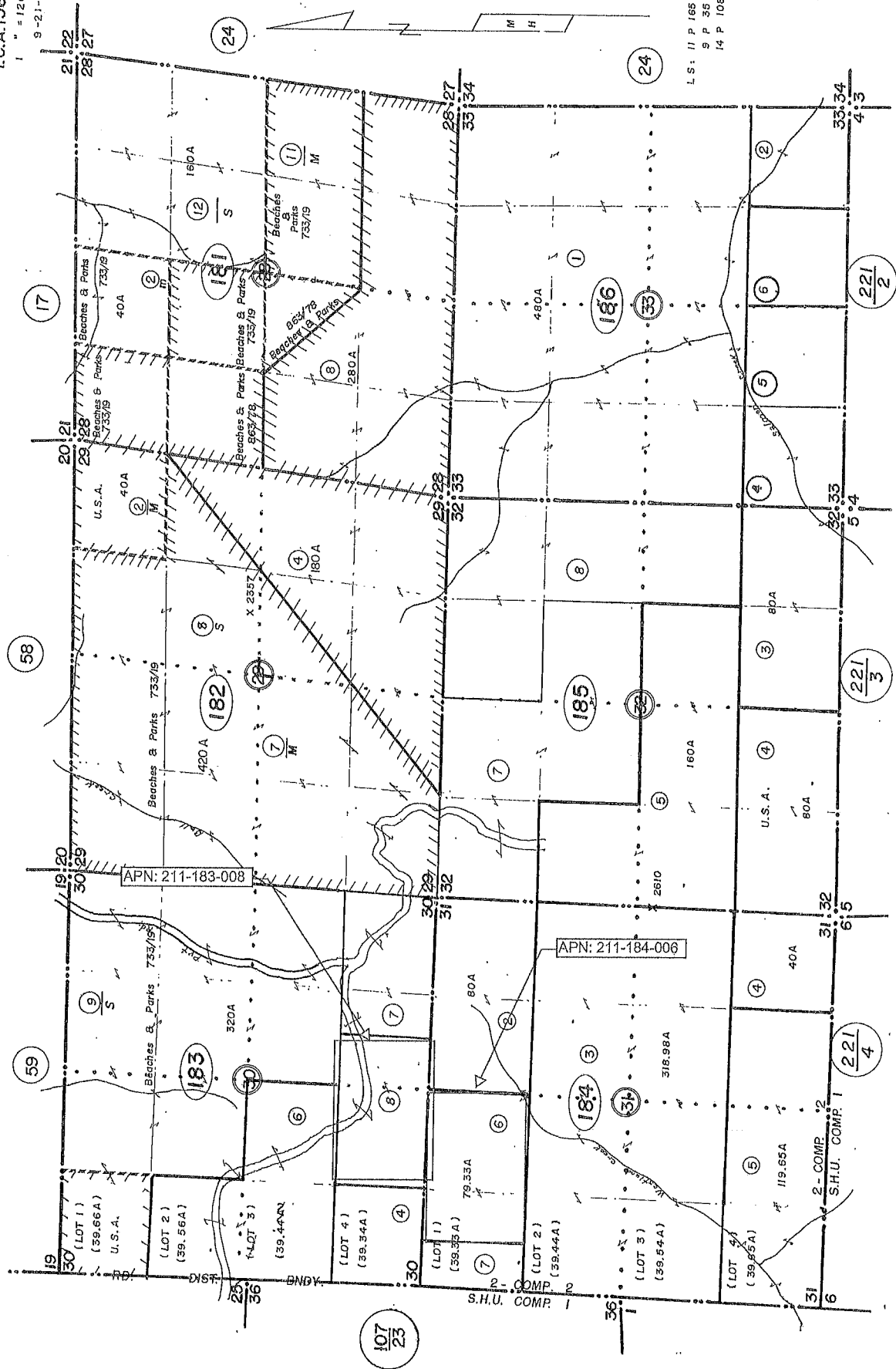
Reserve LINEAR FT. OF SYSTEM: $70/(A_T \cdot 2 \cdot D) = 70 / (0.398 \cdot 6) = \underline{\underline{30\text{-ft}}}$

DESIGN SUMMARY: One 30-ft length: Primary Field
One 30-ft length: Reserve Field

SECS 28, 29, 30, 31, 32 & 33, 2S 2E

211-18
T.C.A. 156-04

1" = 1200'
9-21-82



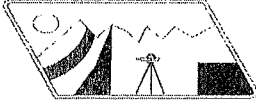
L.S.: 11 P 168
9 P 35
14 P 108

107
25

221
2

221
3

221
4



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WORKSHEET FOR SOIL TEXTURE

Project: ESTER

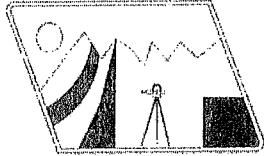
by: PDS

AP#: 211-184-006

Lab Test Date: 10/12/2015

1	2	SAMPLE NUMBER
4	4	TEST HOLE
3	4 1/2	Depth (ft)
880.8	878.1	TOTAL SAMPLE WEIGHT (gm)
627.1	678.8	Coarse Weight (gm)
75	75	A. Owendry Weight (gm)
10:11	10:14	B. Starting Time (hr:min:sec)
68	69	C. Temp @ 40 sec. (°F)
37	36	D. Hydrometer Reading @ 40 sec. (gm/l)
-6.5	-6.3	E. Composite Correction (gm/l)
30.5	29.7	F. True Density @ 40sec. (gm/l), (D-E)
71	72	G. Temp @ 2 hrs. (°F)
20	19	H. Hydrometer Reading @ 2hrs. (gm/l)
-5.9	-5.7	I. Composite Correction (gm/l)
14.1	13.3	J. True Density @ 2 hrs. (gm/l), (H-I)
59.3	60.4	K. % Sand = 100 - [(F/A) x 100]
18.8	17.7	L. % Clay = (J/A) x 100
21.9	21.9	M. % Silt = 100 - (K + L)
SANDY LOAM	SANDY LOAM	N. USDA Texture
2	2	O. Soil Percolation Suitability Chart Zone
40.7	39.6	P. Combined % Silt and Clay
71.2	77.3	Q. Coarse % by weight
11.3	12.7	R. % Coarse Adjustment*

* [(.2)(.00003Q^3+.0006Q^2+.5968Q-.0941)]



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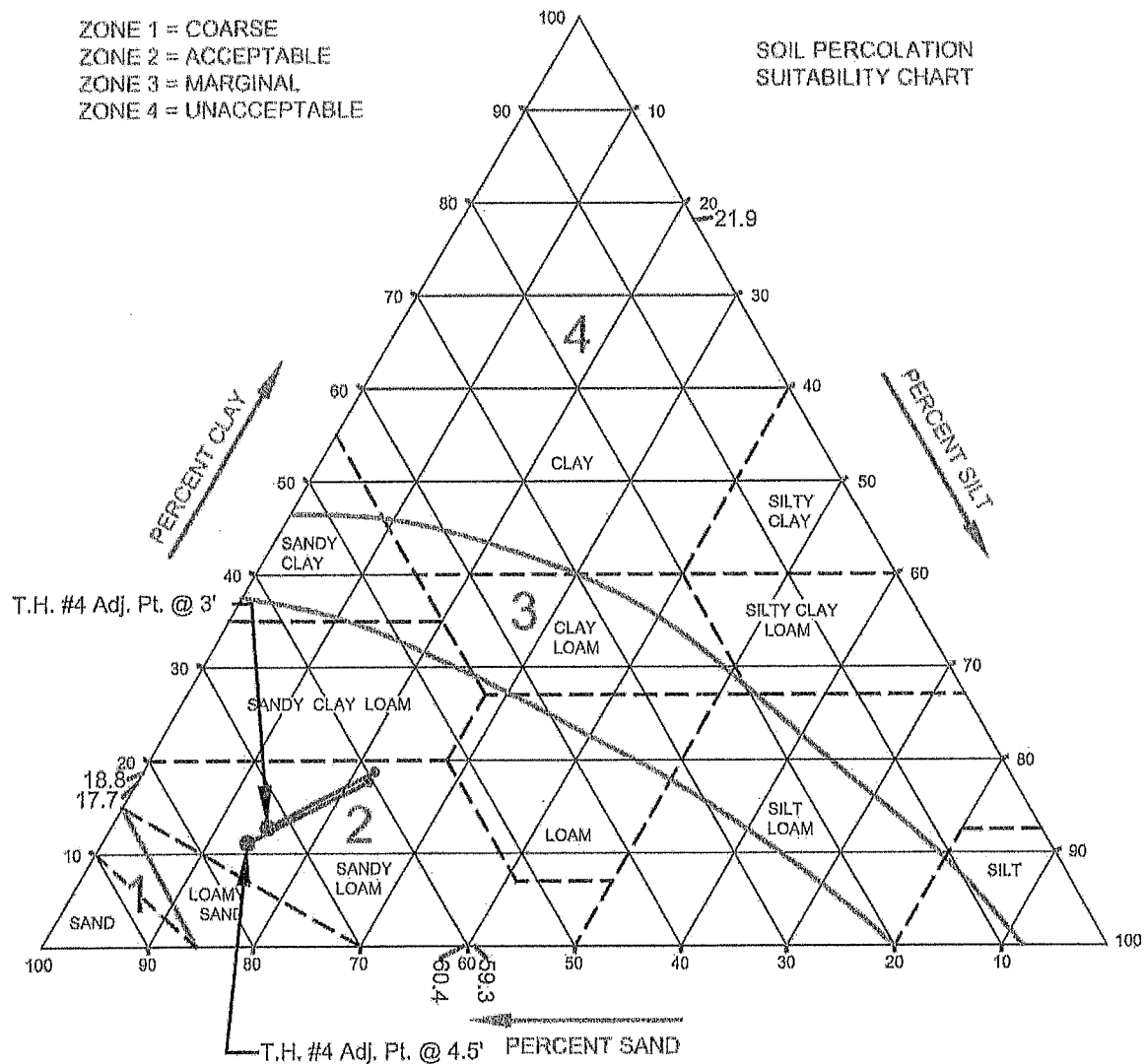
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CLIENT: ESTER

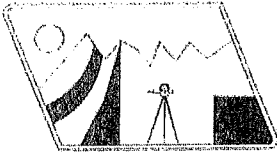
DATE: 10/12/2015

APN: 211-184-006



1. COARSE ADJUSTMENT: T.H. #4 @ 3' = 11.3%; T.H. #4 @ 4.5' = 12.7%

2. BULK-DENSITY ADJUSTMENT: NOT TESTED



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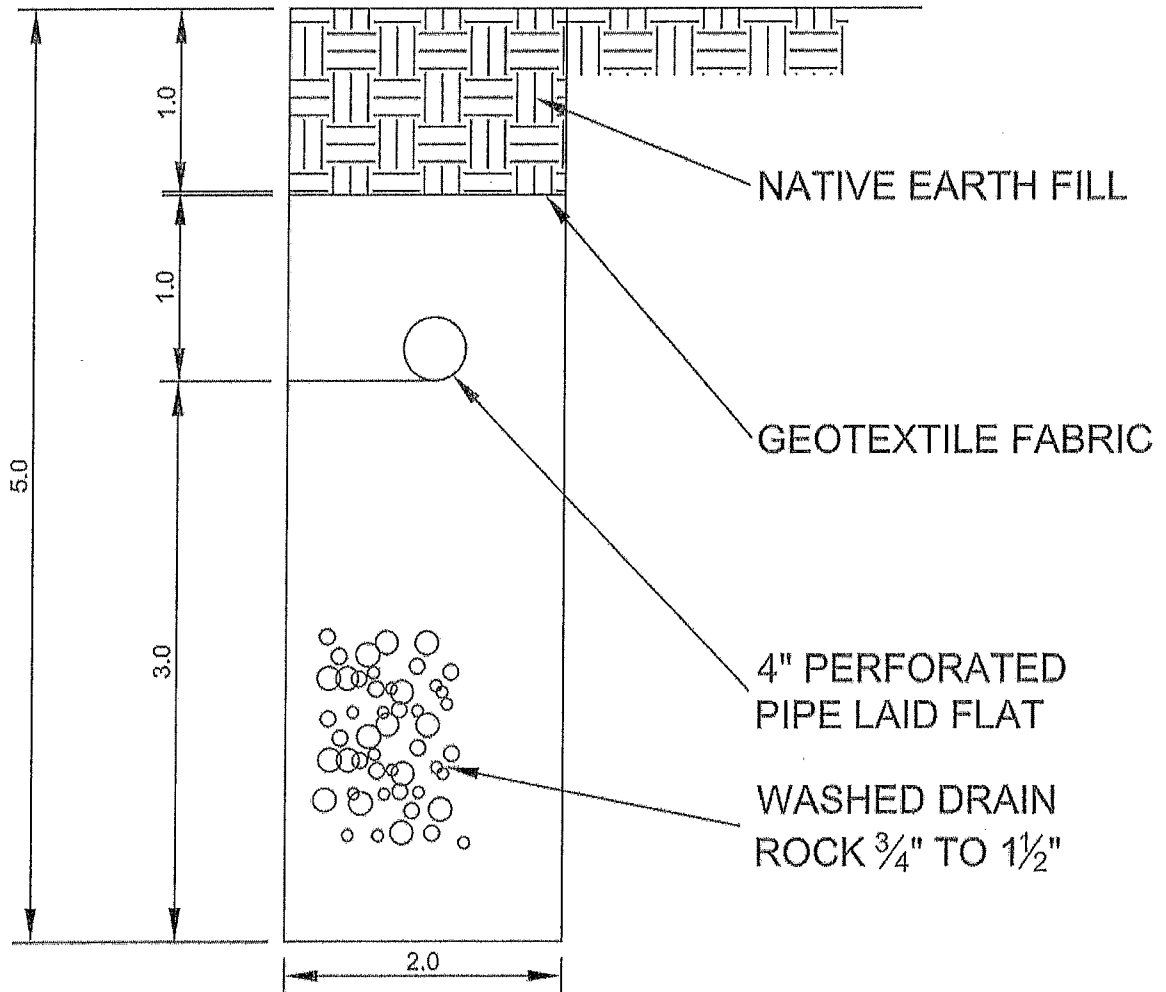
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SEPTIC DESIGN: TYPICAL X-SECTION

CLIENT: GREG ESTER
JOB#: 15-4310-6
DATE: MAY 17, 2016
BY: ASB

APN 211-184-006
& 211-183-008



TRENCH X-SECTION
NOT TO SCALE

SETBACKS FOR SEPTIC TANKS AND DISPOSAL FIELDS

	Property on Public Water System		Property on Individual Water System	
	Septic Tank (ft.)	Disposal Field (ft.)	Septic Tank (ft.)	Disposal Field (ft.)
Property Line	5	10	25	50
Foundation of Building or outside wall of Mobile Home	5	10	5	10
Wells, Springs, Ocean, Lake or Reservoir	100	100	100	100
Perennial stream (1)	100	100	100	100
Ephemeral stream (2)	50	50	50	50
Fill area, top of cuts, or edge of steep slopes (3)	25	25	25	25
Unstable Land Forms	50	50	50	50
Swimming Pools	25	50	25	50

(1) As measured from the line which defines the limit of a 10-year Frequency Flood.

(2) Measured from the edge of the water source.

(3) Where soil depth or depth to groundwater below the leaching trench is less than five (5) feet, a minimum set-back distance of fifty (50) feet shall be required.