



OMSBERG & PRESTON

Surveyors • Engineers • Planners

402 E Street
Eureka, CA 95501
(707) 443-8651

www.omsberg.com
kpreston@omsberg.com

25-2364

January 26, 2026 **REVISED**

Adam Molofsky
c/o Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

Re: **On-site Wastewater Treatment System (OWTS) Report for Nelson Subdivision
APN 313-081-028 / 1288 Hatchery Road, Arcata**

Dear Adam:

OWTS testing has been completed for Parcel 'B', demonstrating suitable primary and reserve leach field areas for the future on-site residential system associated with the subdivision of APN 313-081-028 into two (2) resultant parcels.

The parcel slopes gently to the northeast at approximately 2% - 3%. Review of historic aerial imagery shows this area as having been developed between 1947 and 1956, with new residential development showing up in 1983 on the surrounding properties. No logging has occurred. Per online mapping sources, no mapped water courses were found to be present onsite, as was confirmed by the property owner.



Photo #1 – Looking south at proposed Parcel 'B'



Photo #2 – Looking west at the proposed reserve leach field location for Parcel 'A'

Setbacks are as shown on the Tentative Parcel Map prepared by our office, with the future primary and reserve leach fields properly setback as required by County regulations. Photo #1 was taken looking south at Parcel 'B' (the currently undeveloped parcel), where the future primary and reserve leach field areas are to be located. Photo #2 was taken looking west on Parcel 'A', the currently developed parcel, where the proposed reserve leach field is proposed to be located.

On February 19th and 21st, 2025, four (4) groundwater monitoring wells were installed, and soils collected for laboratory analysis. Zone 2 soils were found at all test hole locations and all monitoring wells remained dry. A gravity system is proposed for the future primary and reserve leach fields for resultant Parcel 'B'.

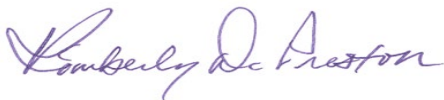
For resultant Parcel 'B', SN-4 is the test hole that demonstrates a suitable primary leach field area, while SN-3 is the test hole that demonstrates a suitable reserve leach field area. SN-1 is the test hole that demonstrates a suitable reserve leach field area for the existing two-bedroom residence on Parcel 'A' (refer to the attached Tentative Parcel Map).

The water source for proposed Parcel 'B' will be provided by the existing onsite well currently providing water to the existing residence on Parcel 'A'. Dry weather water production testing was completed by this office, with the Report being submitted for your review and approval.

Thank you, and please do not hesitate to contact me with any questions or comments you may have.

Sincerely,

OMSBERG & PRESTON



Kimberly D. Preston, R.C.E 62665
Owner / Manager



Enclosures: OWTS Checklist, Leach Field Calculations, Groundwater Monitoring Well Log,
Monitoring Well Diagrams, Subsurface Soil Logs, TA Results, Dry Weather
Water Production Report

ON-SITE WASTEWATER TREATMENT SYSTEM CHECKLIST

<P> 2 Bedroom Residence

JN: 25-2364

TYPE OF APPLICATION: On-site Wastewater Treatment System DATE: November 10, 2025

NAME: Siena Nelson SANITARIAN: Adam Molofsky

APN: 313-081-028 LOCATION: Arcata, Ca

WATER SUPPLY: PRIVATE X PUBLIC _____

DISPOSAL FIELD LOCATION W.R.T.: Average Slope Primary: 2% -3%

Perennial Stream >100 Ft. Buildings >10 Ft. Cut Banks >25 Ft.

Ephemeral Stream >50 Ft. Property Lines >50 Ft. Wells >100 Ft.
>10 Ft. with setback waiver

SOIL PROFILES:

Hole #	Date	Hole Depth	Observed G.W. Depth (Ft.)	Mottling Depth (Ft.)
SN-1	2/19/25	8.5'	None	None
SN-2	2/19/25	8.5'	None	None
SN-3	2/19/25	8.5'	None	None
SN-4	2/21/25	8.5'	None	None

SOIL ANALYSIS:

Bulk Sample							%Coarse Fragments by Volume	USDA Texture
Hole #	Dens	Depth	Zone	% Sand	% Clay	% Silt		
SN-1	No peds	5' - 6'	2	56.6	15.8	27.6	0.2	SANDY LOAM
SN-2	No peds	5' - 6'	2	43.7	23.9	32.4	0.1	LOAM
SN-3	No peds	5' - 6'	2	48.1	21.6	30.3	0.4	LOAM
SN-4	No peds	5' - 6'	2	48.2	21.6	30.2	2.9	LOAM

SN-1 is the test hole demonstrating a suitable proposed reserve leach field area for the existing residence.

SN-2 is the test hole demonstrating a suitable future reserve area.

SN-4 is the test hole demonstrating a suitable future primary area.

Gravity OWTS Design Calculations
for
Existing Residence at 1288 Hatchery Road, Arcata, CA 95521
APN 313-081-028

Existing Residence Size (Daily Flow) – Gallons Per Day (GPD)

- 2-bedroom
- **300 gpd**

Soil Application Rate

- Reserve (Gravity): Zone 2 Sandy Loam = **0.389 gpd/ft²**

Trench Depth/Width

- Reserve (Gravity): 3.0' of sidewall beneath perforated pipe = **6 ft² of absorption area per lineal foot**

Disposal Field Sizing

Reserve – 2 bedrooms (Gravity):

- $300 \text{ gpd} / 0.389/\text{ft}^2 = \mathbf{771 \text{ ft}^2}$
- $771 \text{ ft}^2 / 6\text{ft}^2 = \mathbf{129 \text{ feet of leach line (Three 43 ft. lines spaced 9 ft. on center)}}$

**Gravity OWTS Design Calculations
for
Proposed Subdivided Parcel of 1288 Hatchery Road, Arcata, CA 95521
APN 313-081-028**

Proposed Residence Size (Daily Flow) – Gallons Per Day (GPD)

- 3-bedroom
- **450 gpd**

Soil Application Rate

- Primary (Gravity): Zone 2 Loam= **0.363 gpd/ft²**
- Reserve (Gravity): Zone 2 Loam= **0.363 gpd/ft²**

Trench Depth/Width

- Primary (Gravity): 3.0' of side wall beneath the perforated pipe = **6 ft² of absorption area per lineal foot**
- Reserve (Gravity): 3.0' of sidewall beneath perforated pipe = **6 ft² of absorption area per lineal foot**

Disposal Field Sizing

Primary (Gravity):

- $450 \text{ gpd} / 0.363 \text{ gpd/ft}^2 = \mathbf{1,240 \text{ ft}^2}$
- $1,240 \text{ ft}^2 / 6 \text{ ft}^2 = \mathbf{207 \text{ feet of leach line (Four 52 ft. lines spaced 9 ft. on center)}}$

Reserve – 3 bedrooms (Gravity):

- $450 \text{ gpd} / 0.363 \text{ gpd/ft}^2 = \mathbf{1,240 \text{ ft}^2}$
- $1,240 \text{ ft}^2 / 6 \text{ ft}^2 = \mathbf{207 \text{ feet of leach line (Four 52 ft. lines spaced 9 ft. on center)}}$



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GROUNDWATER OBSERVATION WELL LOG

Project 1288 Hatchery Road APN 313-081-028

Project No. 25-2364

Location Arcata, CA

Client Name Siena Nelson

Well Designation SN-1

Date	Depth to GW (in)
2/19/25 (Inst)	Dry
2/26/25	Dry
3/05/25	Dry
3/12/25	Dry

Well Designation SN-2

Date	Depth to GW (in)
2/19/25 (Inst)	Dry
2/26/25	Dry
3/05/25	Dry
3/12/25	Dry

Well Designation SN-3

Date	Depth to GW (in)
2/19/25 (Inst)	Dry
2/26/25	Dry
3/05/25	Dry
3/12/25	Dry

Well Designation SN-4

Date	Depth to GW (in)
2/21/25 (Inst)	Dry
2/26/25	Dry
3/05/25	Dry
3/12/25	Dry

Well Designation _____

Date	Depth to GW (in)

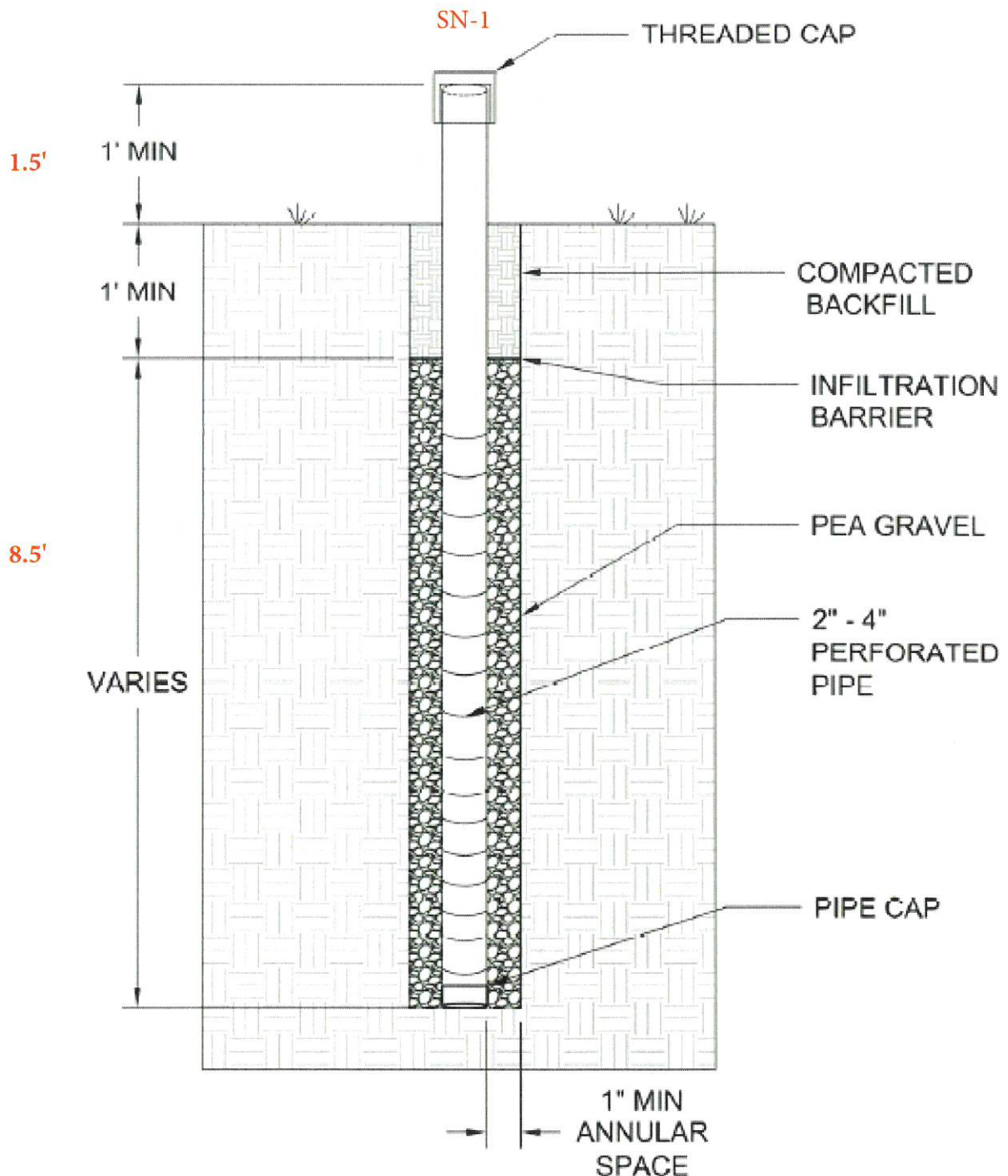
Well Designation _____

Date	Depth to GW (in)

APPENDIX D.2

NOTES

1. WELL DEPTH MUST BE SUFFICIENT TO VERIFY APPROPRIATE GROUNDWATER SEPARATION FROM THE BOTTOM OF PROPOSED DISPERSAL FIELD TRENCHES.
2. EACH SITE SHALL HAVE A MINIMUM OF TWO WELLS TO DEMONSTRATE GROUNDWATER LEVELS IN THE PROPOSED PRIMARY AND RESERVE AREAS.
3. PROVIDE A COMPLETED "NOTIFICATION OF WET WEATHER MONITORING WELL INSTALLATION" FORM TO DEH WITHIN FIVE (5) DAYS OF WELL CONSTRUCTION.



COUNTY OF HUMBOLDT

DIVISION OF ENVIRONMENTAL HEALTH
LAND USE UNIT

100 H Street, Suite 100 EUREKA, CA 95501
TEL (707) 445-6215 • envhealth@co.humboldt.ca.us

TYPICAL OBSERVATION WELL

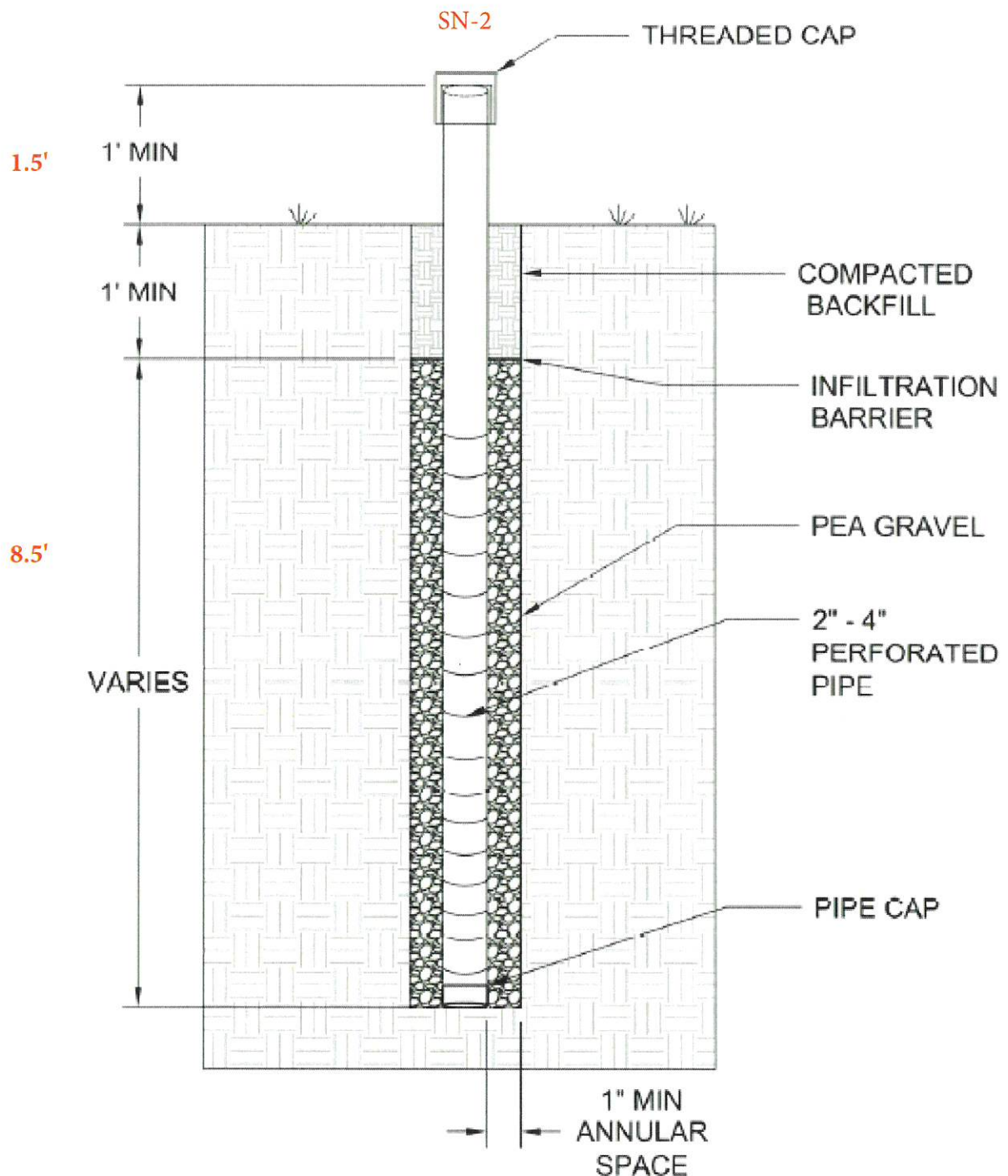
DRAWN BY: BWD

REVIEWED BY: DS

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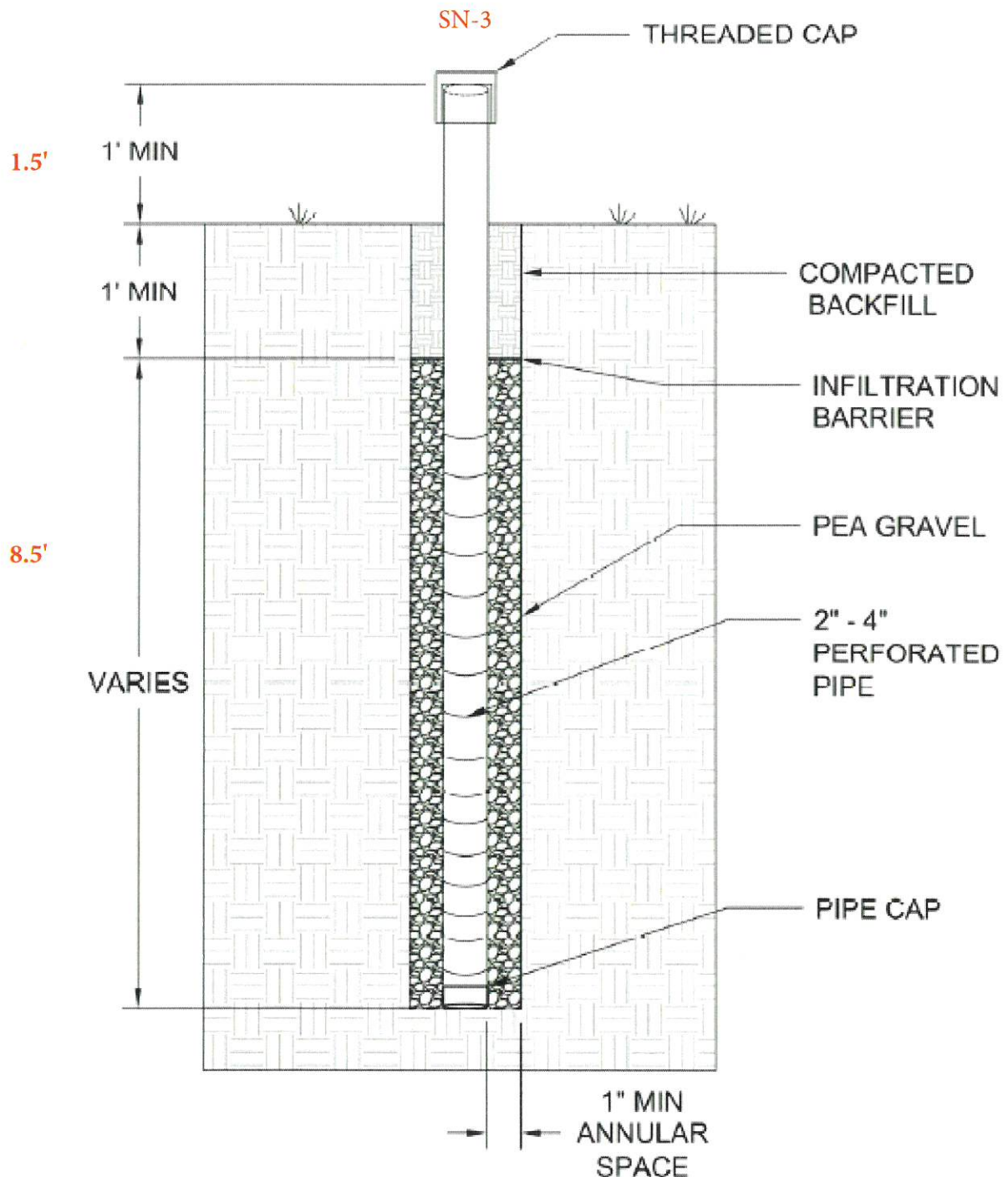
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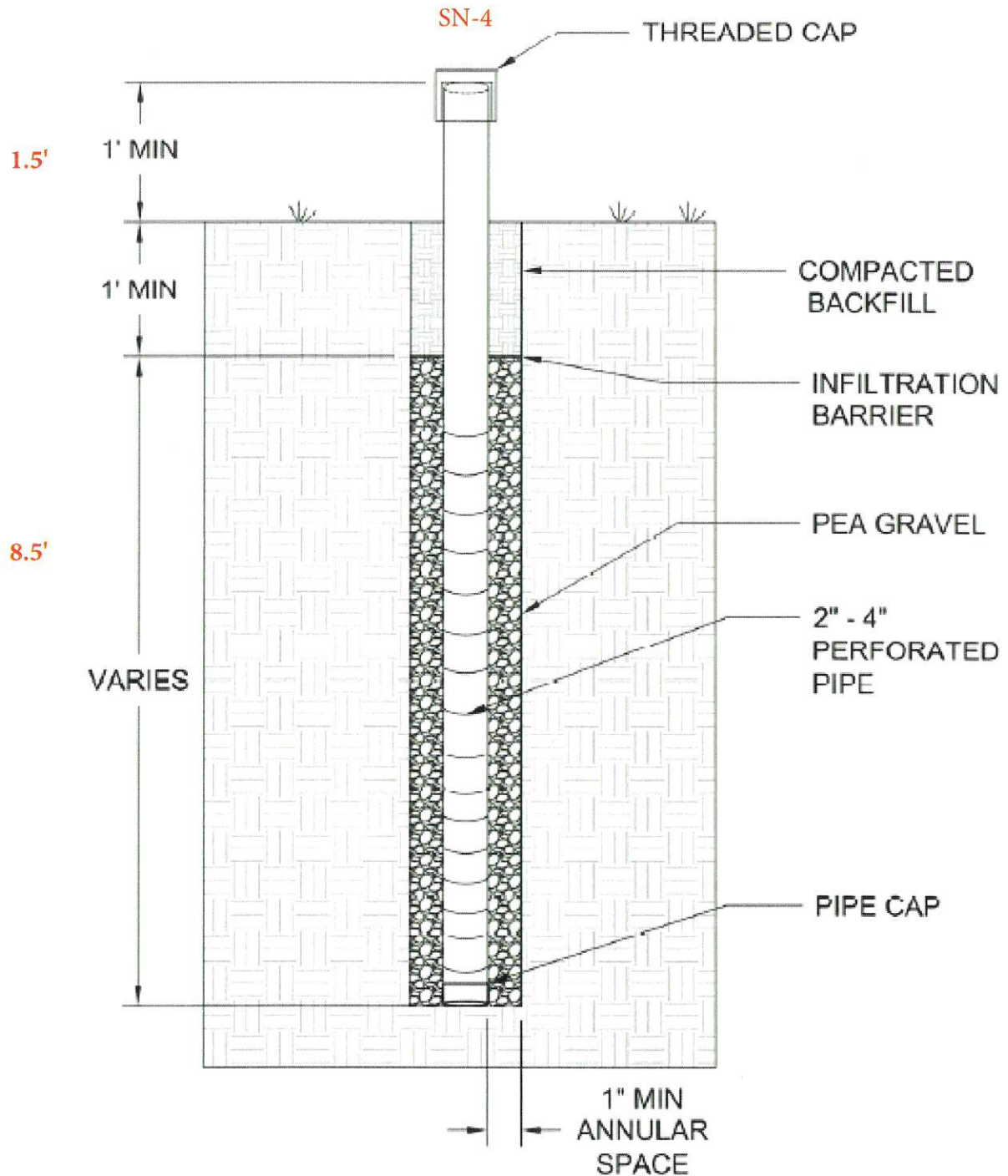
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TYPICAL OBSERVATION WELL

DRAWN BY: BWD

REVIEWED BY: DS



SUBSURFACE PROFILE LOG

CLIENT Siena Nelson PROJECT No. 25-2364 LOGGED BY JAK

LOCATION 1288 Hatchery Road, Arcata APN 313-081-028 HOLE No. SN-1

TESTING DATE 2/19/2025 EXCAVATION RIG Hand Auger

DESCRIPTION & REMARKS	COLOR	MOISTURE	CONSISTENCY	DEPTH (FT.)	SAMPLES
Topsoil	Dk Brown	Moist	Loose	1	
				1.5	
Clay Loam	Brown	Moist	Medium Stiff	2	
				3	
				4	
				5	
Silty Clay Loam	Gray	Moist	Loose	6	X
				7	
Sand	Gray	Moist	Loose	7.5	
Clay	Brown	Dry	Very Stiff	8	
	Gray			8.5	
Excavation terminated at 102" (8.5'). No groundwater encountered.				9	
				10	
				11	
				12	
				13	



SUBSURFACE PROFILE LOG

CLIENT Siena Nelson PROJECT No. 25-2364 LOGGED BY JAK

LOCATION 1288 Hatchery Road, Arcata APN 313-081-028 HOLE No. SN-2

TESTING DATE 2/19/2025 EXCAVATION RIG Hand Auger

DESCRIPTION & REMARKS	COLOR	MOISTURE	CONSISTENCY	DEPTH (FT.)	SAMPLES
Topsoil	Dk Brown	Moist	Loose	6"	
Clay Loam	Brown	Moist	Soft	1	X
				2	
				3	
				4	
				5	
				6	
Silty Clay Loam	Gray	Moist	Loose	7	
Clay	Brown Gray	Dry	Very Stiff	8	
				8.5	
Excavation terminated at 102" (8.5'). No groundwater encountered.				9	
				10	
				11	
				12	
				13	



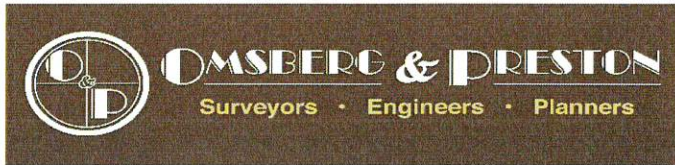
SUBSURFACE PROFILE LOG

CLIENT Siena Nelson PROJECT No. 25-2364 LOGGED BY JAK

LOCATION 1288 Hatchery Road, Arcata APN 313-081-028 HOLE No. SN-3

TESTING DATE 2/19/2025 EXCAVATION RIG Hand Auger

DESCRIPTION & REMARKS	COLOR	MOISTURE	CONSISTENCY	DEPTH (FT.)	SAMPLES
Topsoil	Dk Brown	Moist	Loose	1	
				1.5	
Clay Loam	Brown	Moist	Soft	2	
				3	
				4	
				5	
				6	
				7	X
Silty Clay Loam	Gray	Moist	Loose	8	
Clay	Br/Gr	Dry	Very Stiff	8.5	
Excavation terminated at 102" (8.5'). No groundwater encountered.				9	
				10	
				11	
				12	
				13	



SUBSURFACE PROFILE LOG

CLIENT Siena Nelson PROJECT No. 25-2364 LOGGED BY JAK

LOCATION 1288 Hatchery Road, Arcata APN 313-081-028 HOLE No. SN-4

TESTING DATE 2/21/2025 EXCAVATION RIG Hand Auger

DESCRIPTION & REMARKS	COLOR	MOISTURE	CONSISTENCY	DEPTH (FT.)	SAMPLES
Topsoil	Dk Brown	Moist	Loose	1	
				1.5	
Clay Loam	Brown	Damp	Soft	2	
				3	
				3.5	
Silty Clay Loam	Brown	Moist	Loose	4	X
				5	
				6	
				7	
				8	
Clay	Brown	Dry	Tough	8.5	
Excavation terminated at 102" (8.5'). No groundwater encountered.				9	
				10	
				11	
				12	
				13	



Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
812 W. Wabash Avenue, Eureka, CA 95501-2138

Reference: 023151

Omsberg and Preston

Siena Nelson
1288 Hatchery Road, Arcata
Project: 25-2364

SOIL PERCOLATION SUITABILITY / TEXTURAL ANALYSIS RESULTS

Job Name: Omsberg-Siena Nelson	Sampled By: JAK
Date Sampled: 2/19/25	Date Tested: 3/5/25
Date Received: 2/19/25	AP Number: 313-081-028

Sample ID	Depth	% Sand	% Clay	% Silt	% Coarse Fragments by	Zone	Bulk Density
					Volume		
SN-1	5'-6'	56.6	15.8	27.6	0.2	2	*
	Material: Sandy Loam						
SN-2	5'-6'	43.7	23.9	32.4	0.1	2	*
	Material: Loam						
SN-3	5'-6'	48.1	21.6	30.3	0.4	2	*
	Material: Loam						
SN-4	5'-6'	48.2	21.6	30.2	2.9	2	*
	Material: Loam						

Material:

* = no peds provided

Regional Water Quality Control Board Zone Descriptions:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from groundwater.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration of effluent. They are suitable for use of a conventional system without further testing.

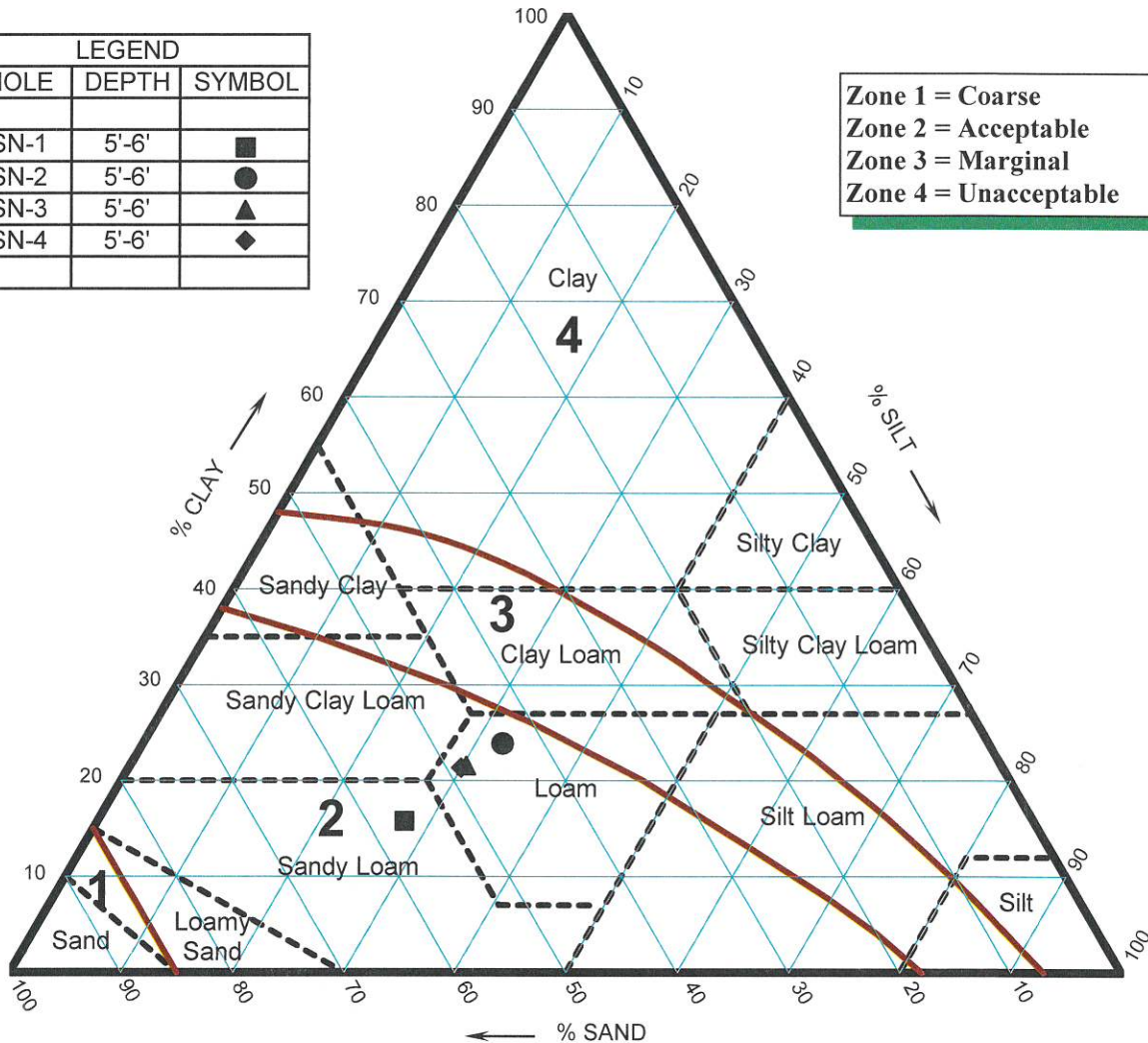
Zone 3 - Soils in this zone are expected to provide good filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leachfield methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leachfield because of their severe limitations for accepting effluent.

SOIL PERCOLATION SUITABILITY CHART

LEGEND		
HOLE	DEPTH	SYMBOL
SN-1	5'-6'	■
SN-2	5'-6'	●
SN-3	5'-6'	▲
SN-4	5'-6'	◆

Zone 1 = Coarse
Zone 2 = Acceptable
Zone 3 = Marginal
Zone 4 = Unacceptable



NOTES

1. Soil texture is plotted on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjustment for coarse fragments has been made by moving the plotted point in the sand direction an additional 2% for each 10% (by volume) of fragments greater than 2mm in diameter.
3. Adjustment for compactness of soil has been made by moving the plotted point in the clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc, when analyzed.
4. For soils falling in sand, loamy sand, or sandy loam, classification adjustment for bulk density will generally not affect suitability and a bulk-density analysis was not necessary.

JOB NUMBER: 023151
JOB NAME: Omsberg-Siena Nelson

DATE: 3/5/25
APN: 313-081-028



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