

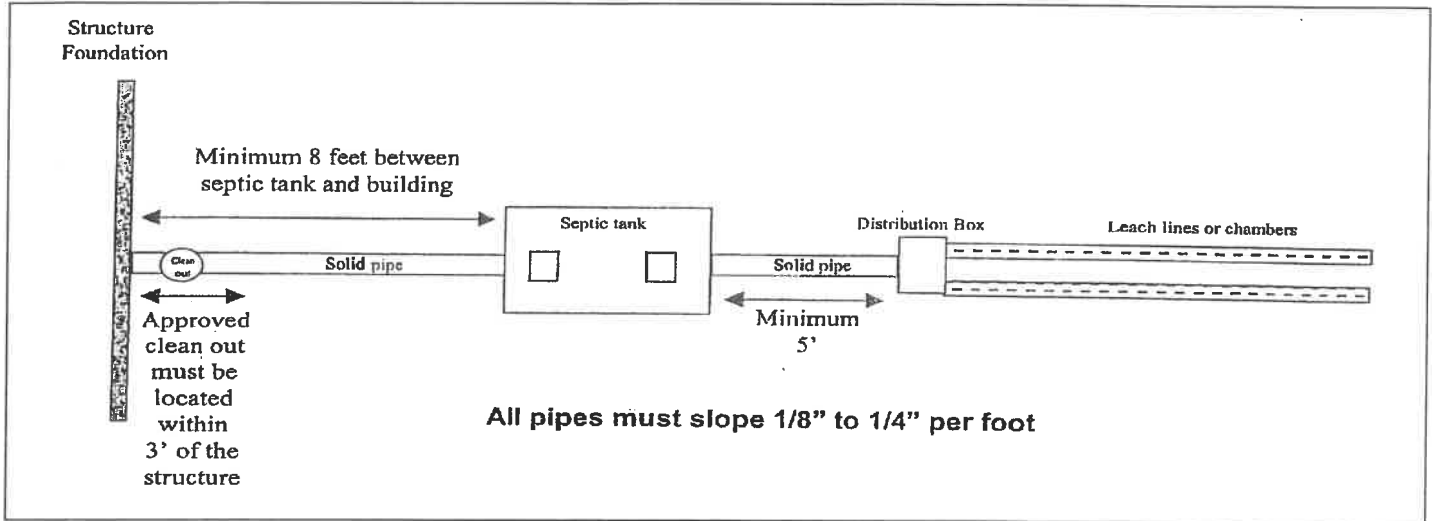
City of Fernley
 Building Division
 595 Silver Lace Blvd.
 Fernley NV. 89408
WWW.CITYOFFERNLEY.ORG
 Shawn Keating CBO
 Building Official

Building Permits
 Building Inspection
 Building Plan Review
 Disaster Assessment
 Code Enforcement

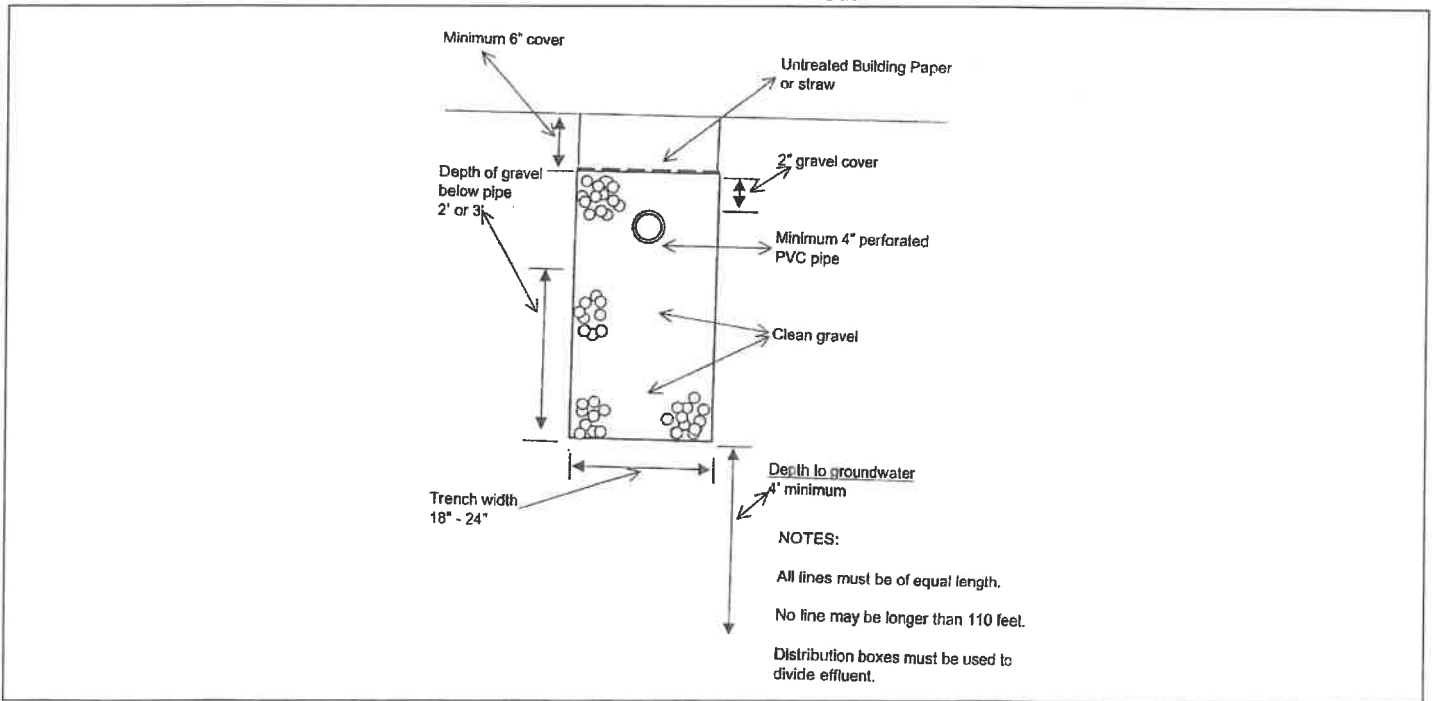
 Tel 775-784-9900

Building Department Handout

TYPICAL SEPTIC SYSTEM



TYPICAL TRENCH



PLOT PLAN INFORMATION: (NAC 444.784)

The Following Items shall be shown on the Plot Plan: (use page 4 to draw plot plan)

1. Location as to roads and streets.
2. Location and distance to well and sewage systems on surround lots (if vacant, so indicate).
3. Direction of North clearly indicated.
4. The distance to any watercourse (pond, lagoon, stream, irrigation ditch or drainage ditch) within 500 feet.
5. The location of the percolation test sites and the soil profile test pit must be shown on the plans.
6. The location and depth of the well (existing or proposed). Indicate the depth of the casing or surface grout seal.
7. All septic system components must be properly marked and located at the specified distances.
8. The distance to community sewerage. If none, so indicate.
9. Distance of septic system components and well to the property line.
10. Plans must be drawn to scale (1 inch = 30', 40', 50', etc.)
11. The capacity of the septic tank.
12. The maximum slope across the absorption system (leach field) area.
13. Lot dimensions.
14. Depth, length and width of trenches and distance between trenches (between center lines of trenches).
15. Water supply lines and sewer lines.
16. Location of all structures, paved areas and areas of vehicular traffic.

SET-BACK INFORMATION:

Minimum horizontal distance in clear, required from:	Building sewer drain	Septic Tank	Disposal Field (shallow)
Building or structure	---	8'	8'
Property lines	10'	10'	10'
Public water supply wells	50'	150'	150'
Water supply wells sealed to 50'	50'	100'	100'
Water supply wells not sealed to 50'	50'	100'	150'
Streams or watercourse	50'	100'	100'
Drainage channels	25'	25'	25'
Large trees or shrubs	---	10'	10'
Disposal (leach) fields	---	5'	---
Community water main line	10'	10'	25'
Individual water service line	10'	10'	25'
Dry wells	---	6'	20'

SEPTIC TANK SIZES

Percolation Rate (min/in)	1000 Gallon Tank 3 Bedrooms or Less						1250 Gallon Tank 4 Bedrooms						1500 Gallon Tank 5 or 6 Bedrooms					
	Equalizer 24 1.5' Wide Trench	Quick 4 Equalizer 36 2' Wide Trench	Equalizer 36 2' Wide Trench	Quick 4 Standard 3' Wide Trench	Standard and Sidewinder 3' Wide Trench	High Capacity Sidewinder 3' Wide Trench	Equalizer 24 1.5' Wide Trench	Quick 4 Equalizer 36 2' Wide Trench	Equalizer 36 2' Wide Trench	Quick 4 Standard 3' Wide Trench	Standard and Sidewinder 3' Wide Trench	High Capacity Sidewinder 3' Wide Trench	Equalizer 24 1.5' Wide Trench	Quick 4 Equalizer 36 2' Wide Trench	Equalizer 36 2' Wide Trench	Quick 4 Standard 3' Wide Trench	Standard and Sidewinder 3' Wide Trench	High Capacity Sidewinder 3' Wide Trench
10 or less	15" W 8.33' L	22" W 4.0' L	22" W 8.33' L	34" W 4.0' L	34" W 6.25' L	34" W 6.25' L	15" W 8.33' L	22" W 4.0' L	22" W 8.33' L	34" W 4.0' L	34" W 6.25' L	15" W 8.33' L	22" W 4.0' L	22" W 8.33' L	34" W 4.0' L	34" W 6.25' L	34" W 6.25' L	
11-15	17	30	15	26	18	15	22	37	18	32	22	26	45	22	38	27	23	
16-20	21	37	18	32	22	19	27	46	22	39	27	32	55	27	47	33	28	
21-25	25	43	21	37	26	22	31	54	26	46	32	37	65	31	56	39	33	
26-30	25	48	23	41	28	24	34	60	29	51	35	41	71	34	61	42	36	
31-40	31	53	26	45	32	27	38	66	32	57	39	46	79	38	68	47	40	
41-50	34	60	29	51	35	30	43	74	36	64	44	51	89	43	76	53	45	
51-60	39	68	33	58	40	35	49	85	41	73	50	59	102	49	87	60	52	
	46	79	38	68	47	40	57	99	48	85	59	68	119	57	101	70	60	

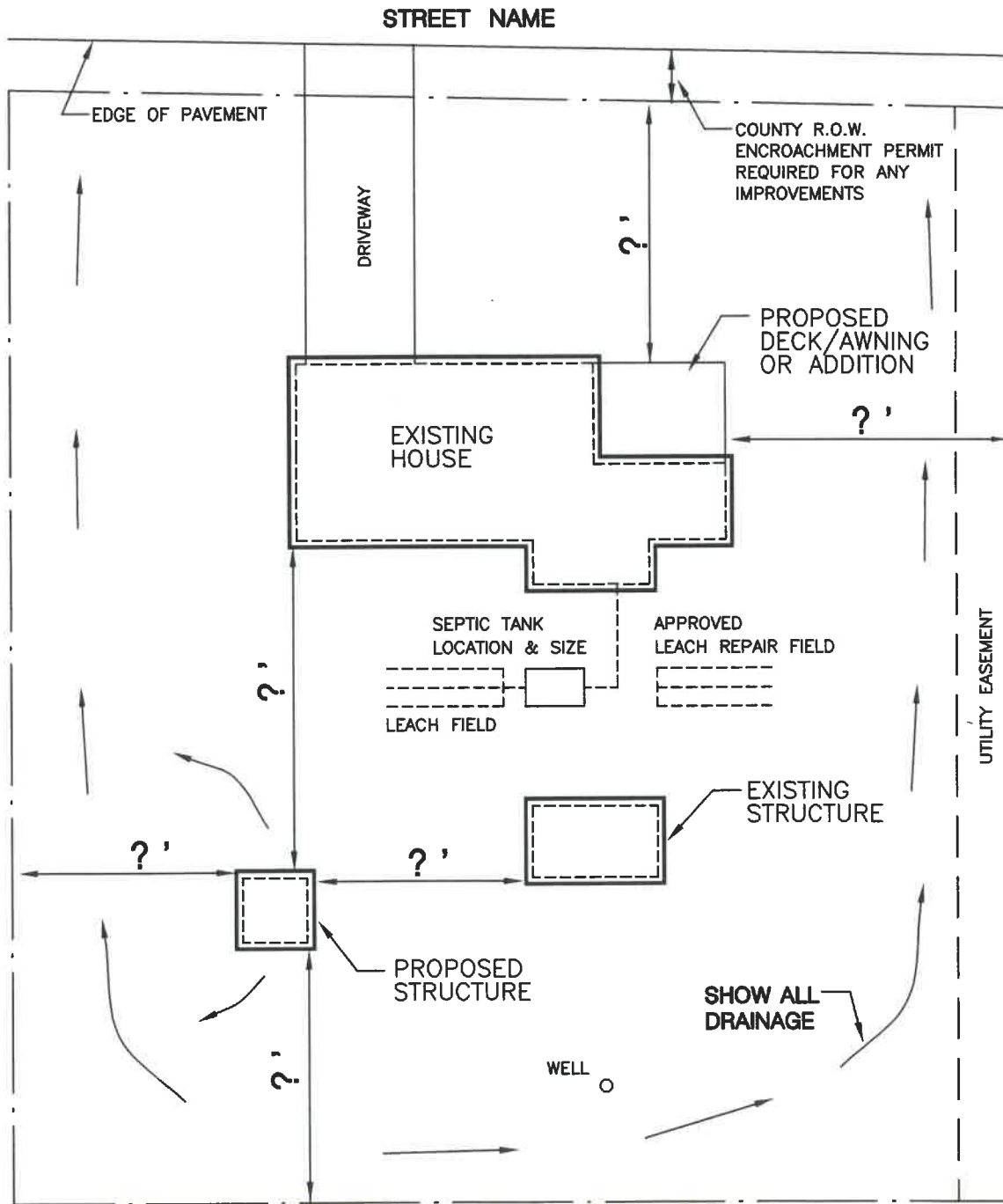
Minimum number of chambers required per dwelling is 15 chambers. Please refer to sizing chart.

CIRCLE OR HIGHLIGHT YOUR SELECTION

NAME:
 ADDRESS:
 PARCEL NUMBER:

CHECKLIST

- SHOW ALL DIMENSIONS BETWEEN STRUCTURES
- SHOW NEW STRUCTURE DIMENSIONS
- SHOW DISTANCES TO PROPERTY LINES
- SHOW PROPANE TANK LOCATIONS
- SHOW DISTANCES FROM WELL TO LEACH FIELDS
- SHOW ADDRESS & PARCEL NUMBER
- SHOW SEPTIC TANK LOCATION & SIZE
- SHOW ALL UTILITY & ACCESS EASEMENTS
- ** ADDITIONAL GRADING INFO MAY BE REQUIRED



PLOT PLAN EXAMPLE

SCALE (1" = 30'-0" IS RECOMMENDED)

b1dwg1



NAC 444.796 Performance of percolation test by property owner; verification of certain data by engineer. (NRS 439.200, 444.650)

1. Data from percolation tests from a minimum of two test holes in the area of the proposed soil absorption system is required. The property owner shall perform a percolation test in accordance with this section and NAC 444.7962 to 444.7968, inclusive.
2. The hole must be dug or bored to the proposed depth of the absorption trench. The hole must have vertical sides and have a horizontal dimension of 4 to 12 inches. The bottom and sides of the hole must be carefully scratched with a sharp-pointed instrument to expose the natural soil interface. All loose material must be removed from the bottom of the hole which must then be covered with 2 inches of coarse sand or gravel when necessary to prevent scouring. Any soil which has sloughed into the hole before or during the percolation test must be removed.

NAC 444.7962 Determination of appropriate percolation test procedure. (NRS 439.200, 44.650)

In Conduction a percolation test, the following flow chart must be used to determine which test procedure to follow:

1. Fill the percolation hole with water to a depth of at least 12 inches over the aggregate. Determine the time needed for the water to seep away completely.
2. Fill the percolation hole with water again to a depth of at least 12 inches over the aggregate. Determine if the water seeps away in 10 minutes or less.
- 3a. If water is left in the percolation hole after 10 minutes, proceed with the **PRESOAKING PROCEDURE**, followed by the **SLOW PERCOLATION TEST PROCEDURE**.
- 3.b if the water has completely seeped away after 10 minutes, proceed with the **FAST PERCOLATION TEST PROCEDURE**.

NAC 444.7964 Fast percolation test procedure. (NRS 439.200, 444.650) The following flow chart illustrates the fast percolation test procedure:

1. Fill the percolation hole with water to a level that is no more than 6 inches over the aggregate.
2. From a fixed reference point, determine at 10-minute intervals how much the water drops over the next 60 minutes. If 6 inches of water seeps away in less than 10 minutes, a shorter interval between measurements must be used.
3. Refill the hole as necessary to prevent all water from seeping away. The level of the water must never exceed 6 inches in depth over the aggregate.
4. The amount of the drop in the level of the water recorded for the final 10-minute period must be used to determine the percolation rate.

NOTE: The minimum time in which a fast percolation test may be completed is 1 hour. The level of the water must never exceed 6 inches over the aggregate during a fast percolation test.

NAC 444.7966 Presoaking procedure for slow percolation test. (NRS 439.200, 444.650) The following flow chart illustrates the presoaking procedure for a slow percolation test:

1. Fill the percolation hole with clear water to a minimum depth of 12 inches over the aggregate.
2. Maintain at least 12 inches of water over the aggregate in the hole for 4 hours.
3. Any water remaining in the hole at the end of the 4-hour period must be allowed to seep away. Do not remove the water.
4. Let the hole sit for not less than 16 hours or more than 30 hours. Swelling of the soil will occur during this period. The **SLOW PERCOLATION TEST PROCEDURE** must begin no sooner than 16 hours and no later than 30 hours after the end of the 4-hour soaking period.

NAC 444.7968 Slow percolation test procedure. (NRS 439.200, 444.650) The following flow chart illustrates the slow percolation test procedure:

1. Fill the percolation hole with water to a maximum depth of 6 inches over the aggregate.
2. From a fixed reference point, measure the drop in the level of the water at 30-minute intervals, for a total of 4 hours. If the first 6 inches of water seeps away in less than 30 minutes, the interval between measurements must be reduced to 10 minutes and the length of the test must be reduced to 1 hour.
3. Fill the hole to a maximum depth of 6 inches over aggregate as often as necessary to prevent the hole from becoming empty.
4. The amount of the drop in the level of the water during the last interval must be used to determine the percolation rate, except that if two successive measurements do not vary more than 1/16 inch, the test may be stopped, and the percolation rate may be determined.

Percolation Test #1

Performed By _____

Time	Time Interval in Minutes	Measurements in inches	Drop in water level in inches	Percolation rate in minutes per inch

Percolation rate = minutes per inch
(Divided time interval in minutes by drop in inches)

Percolation Test #2

Performed By _____

Time	Time Interval in Minutes	Measurements in inches	Drop in water level in inches	Percolation rate in minutes per inch

Percolation rate = minutes per inch
(Divided time interval in minutes by drop in inches)

3 or less bedrooms
1000-gallon tank

Perc rate (min/in)	Feet of gravel below leach pipe		
	1 ft	2 ft	3 ft
	Lineal feet of leach trench		
0-10	312	156	104
11-15	384	192	128
16-20	454	227	151
21-25	500	250	167
26-30	556	278	185
31-40	625	312	208
41-50	714	357	238
51-60	835	417	277

4 bedrooms
1200/1250-gallon tank

Perc rate (min/in)	Feet of gravel below leach pipe		
	1 ft	2 ft	3 ft
	Lineal feet of leach trench		
0-10	375	188	125
11-15	462	231	154
16-20	545	273	182
21-25	600	300	200
26-30	667	333	222
31-40	750	375	250
41-50	857	429	286
51-60	1000	500	333

5 or 6 bedrooms
1500-gallon tank

Perc rate (min/in)	Feet of gravel below leach pipe		
	1 ft	2 ft	3 ft
	Lineal feet of leach trench		
0-10	469	235	156
11-15	577	289	192
16-20	682	341	227
21-25	750	375	250
26-30	834	417	279
31-40	938	469	313
41-50	1072	536	357
51-60	1250	625	417

If the percolation rate of the soil is greater than 60 minutes per inch, the system must be designed by an engineer.

