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Certified Sewage Site Plan Guidance

The Certified Sewage Site Plan (CSSP) was developed to inventory and detail the location and capacity of existing on-site sewage systems that were installed prior to 1979 with no on-site sewage permit records. A CSSP is a tool used to document an existing on-site sewage system during review of land use projects or building permit applications. The CSSP does not result in permit approval of the existing system and is not a record drawing.

Upon receipt of land use projects or building site applications, Environmental Health Staff conduct a review of records to confirm existing on-site sewage systems are conforming. If there are no permit records on file to confirm the size or location of the existing on-site sewage system, and the system appears to have been installed prior to 1979, a Certified Sewage Site Plan is required.

CSSP Submittal Requirements:

A CSSP is a scaled site plan prepared by a licensed on-site sewage system designer or professional engineer. The site plan shall be 11"x17" drawn to a standard engineer scale and include the following information:

- Labeled "Certified Sewage Site Plan"
- A north arrow, map scale, site address, and tax parcel number
- The property size, boundaries, and dimensions
- The location of all existing and proposed structures properly labeled (e.g. house, barn, shop, etc.)
- The location of all existing and proposed driveways and parking areas
- The location of all existing on-site sewage components, including septic tanks, pump chambers, transport lines, distribution boxes, pretreatment components, and drainfields
- Documentation of methods used to locate on-site sewage components
- Details of the on-site sewage system components (e.g. material, style, manufacturer, and age)
- Soil type, percolation rate, and drainfield calculations establishing the number of bedrooms or commercial wastewater flows using the *Manual of Septic-Tank Practice*, Public Health Service Publication No. 526 (526 Manual)
- Assessor's Office details of when the structure(s) were originally constructed on the site
- Designated reserve drainfield area (test holes will be required when there is limited soil and land area)
- All existing and proposed water supplies and water lines
- All wells must be shown with their associated 100' sanitary control radii
- All known critical areas and buffers, including wetlands, streams, steep slopes, flood plains

- Designer or engineer stamp, signature, and date of creation

Drainfield Calculations:

The licensed designer or professional engineer is responsible for evaluating the actual trench depths and soil types on the site in order to utilize the following tables. Percolation rates applicable to historic systems are outlined below. The *Manual of Septic-Tank Practice*, Public Health Service Publication No. 526 (526 Manual) shall be used to determine drainfield sizing and if the drainfield meets the requirements to be eligible for a deep trench reduction.

Article IV Percolation Rates (February 1980 to February 1983, Appendix B):

TABLE 2
DRAIN FIELD SIZING AND EFFLUENT APPLICATION RATES

STANDARD (6 in. gravel below pipe) TRENCH (up to 3 ft. wide)					
Soil Class	Soil Description	Unified Classification	Estimated Percolation Rate	Application Rate G/ft ² /D*1	Ft ² Per Bedroom
1	Gravel, coarse sand	GW, GP GM, GC	<1 min./in.	Unsuitable*2	
2	Sandy soil, some loam, some gravel	SW SW-SH	1-4 min./in.	1.20	125
3	Finer sand/silt Few gravels	SP-SC	5-9 min./in.	.80	188
4	Mostly silt or clay, some sand, shot clay	SC SM-SC	10-19 min./in.	.60	250
5	Silt or clay - without expandable clays	ML, ML-CL	20-29 min./in.	.40	375
6	Silt or clay - without expandable clays	CL, MH	30-60 min./in.	See *3 below	See *3 below
7	Gumbo, clay hardpan	MH, CH, OH PT, OL, CL, ML	>60 min./in.	Unacceptable for on-site disposal	

*1 Application rates are for trench systems up to 3 feet in width. For beds or trenches wider than 3 feet, add 40% of square footage.

*2 Soils with percolation rates of <1 min./in. may be used if the over-porous soil is replaced with a suitably thick layer (two (2) feet or greater) of loamy sand or sand and dwelling unit density will not adversely impact the ground water.

*3 Unacceptable for standard on-site sewage disposal. Special systems may be considered. See Section 6 of Article IV.

4.8.1 Standard trench drain fields may be converted to deep trenches only by approval of the health officer.

Once the percolation rate has been determined, the 526 Manual should be referenced to match the presented percolation rate to determine the required absorption rate per bedroom.

Example:

If the licensed engineer or designer is proposing a percolation rate of 3 min/in based on Soil Class 2 in Table 2 above, the required absorption area per bedroom will be 100SF per bedroom as shown in Table 1 below.

526 Manual Required Absorption Area:**Table 1.—Absorption-area requirements for individual residences (a)**

[Provides for garbage grinder and automatic clothes washing machines]

Percolation rate (time required for water to fall one inch, in minutes)	Required absorption area, in sq. ft. per bedroom (b), standard trench (c), seepage beds (c), and seepage pits (d)	Percolation rate (time required for water to fall one inch, in minutes)	Required absorption area in sq. ft. per bedroom (b), standard trench (c), and seepage beds (c), and seepage pits (d)
1 or less	70	10	165
2	85	15	190
3	100	30 (e)	250
4	115	45 (e)	300
5	125	60 (e), (f)	330

Example:

A trench length has been calculated as 102'. The measurements presented for the trench legs are 55' and 47' for a total of 102'. The trench width is presented on the drainfield calculations as 3'. Taking 3'x102', the drainfield size is 306SF. This demonstrates that the drainfield is suitable to serve a 3- bedroom residence based on the 526 Manual calculations.

526 REFERENCE	DRAINFIELD CALCULATIONS (PER 526)
PG. 8 - TBL 1	PERCOLATION RATE = 3 MIN/IN = 100 FT ² / BDRM
	TOTAL REQUIRED ABSORPTION AREA (3 BDRM) = 300 FT ²
	TRENCH LENGTH = 102'
	TRENCH WIDTH = 3FT
	ACTUAL DRAINFIELD SIZE = <u>306 FT²</u>

Deep Trench Calculations for Reduction:

"In some cases where the depth of filter material below (usually drain rock) the drain lateral pipe exceeds the standard six-inch depth, credit maybe be given for the added absorption area provided in deeper trenches with a resultant decrease in the length of trench" (526 Manual, pg.20). See below for Table 3 from the 526 Manual in which credit is given when the depth exceeds the standard six inches.

Table 3.—Percentage of length of standard trench ¹

Depth of Gravel Below Pipe in Inches ¹	Trench width 12"	Trench width 18"	Trench width 24"	Trench width 36"	Trench width 48"	Trench width 60"
12.....	75	78	80	83	86	87
18.....	60	64	66	71	75	78
24.....	50	54	57	62	66	70
30.....	43	47	50	55	60	64
36.....	37	41	44	50	54	58
42.....	33	37	40	45	50	54

¹ The standard absorption trench is one in which the filter material extends two inches above and six inches below the pipe.

² For trenches or beds having width not shown in Table 3, the percent of length of standard absorption trench may be computed as follows:

$$\text{Percent of length standard trench} = \frac{w + 2}{w + 1 + 2d} \times 100$$

Where w = width of trench in feet

d = depth of gravel below pipe in feet

To use this table, consider the example on page 12. Using a trench 2 feet wide with 6" of gravel under tile, 285 feet are required. If the depth of gravel is increased to 18", keeping trench width at 2 feet, only 66% of 285 feet is required, or 188 feet. If 4 laterals are used, the length would be 188 divided by 4 = 47 feet.

The space between lines for serial distribution on sloping ground is 6 feet × 3 spaces = 18 feet, plus 4 lines × 2 feet = 8 feet. Total land required is 26 feet in width × 47 feet in length = 1,222 square feet, plus additional area required to keep the field away from wells, property lines, etc.

Commercial Drainfield Calculations:

The CSSP must include commercial wastewater flows obtained through one of the following methods:

1. Recorded water meter readings from the existing commercial facility.
2. Obtaining wastewater flows or water meter readings from three similar commercial facilities.
3. Wastewater flows identified for the specific commercial use as outlined in the 526 Manual, Table 7.

526 Manual, Table 7 – Commercial Wastewater Flows:

Table 7.—Quantities of sewage flows

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Airports (per passenger)	5
Apartments—multiple family (per resident)	60
Bathhouses and swimming pools	10
Camps:	
Campground with central comfort stations	35
With flush toilets, no showers	25
Construction camps (semi-permanent)	50
Day camps (no meals served)	15
Resort camps (night and day) with limited plumbing	50
Luxury camps	100
Cottages and small dwellings with seasonal occupancy	50
Country clubs (per resident member)	100
Country clubs (per non-resident member present)	25
Dwellings:	
Boarding houses	50
additional for non-resident boarders	10
Luxury residences and estates	150
Multiple family dwellings (apartments)	60
Rooming houses	40
Single family dwellings	75
Factories (gallons per person, per shift, exclusive of industrial wastes)	35
Hospitals (per bed space)	250+
Hotels with private baths (2 persons per room)	60
Hotels without private baths	50
Institutions other than hospitals (per bed space)	125
Laundries, self-service (gallons per wash, i.e., per customer)	50
Mobile home parks (per space)	250
Motels with bath, toilet, and kitchen wastes (per bed space)	50
Motels (per bed space)	40
Picnic Parks (toilet wastes only) (per picknicker)	5
Picnic parks with bathhouses, showers, and flush toilets	10
Restaurants (toilet and kitchen wastes per patron)	10

Table 7.—Continued

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Restaurants (kitchen wastes per meal served)	3
Restaurants additional for bars and cocktail lounges	2
Schools:	
Boarding	100
Day, without gyms, cafeterias, or showers	15
Day, with gyms, cafeteria, and showers	25
Day, with cafeteria, but without gyms, or showers	20
Service stations (per vehicle served)	10
Swimming pools and bathhouses	10
Theaters:	
Movie (per auditorium seat)	5
Drive-in (per car space)	5
Travel trailer parks without individual water and sewer hook-ups (per space)	50
Travel trailer parks with individual water and sewer hook-ups (per space)	100
Workers:	
Construction (at semi-permanent camps)	50
Day, at schools and offices (per shift)	15