CHAPTER 62-03.1-03
PRIVATE SEWAGE DISPOSAL SYSTEMS

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62-03.1-03-01. General provisions.

1. All sewage treatment systems shall be constructed, added to, or altered in accordance with this chapter. When a public or noncommunity sewerage system is deemed available to a premise used for human occupancy if such premise is within two hundred feet [60.96 meters], the approving authority shall require that sewage be discharged into that system.

2. Where public or noncommunity sewage treatment systems are not available and construction of an individual sewage treatment system is contemplated for a building of human occupancy or use or addition to, or alteration of any existing sewage treatment system, the master plumber or sewer and water contractor, or septic system installer, previous to beginning any construction may be required to make application to the local or district health units for a written permit to make the desired installation.

3. "Sewage treatment" under this section means all private methods of collecting and disposing of domestic sewage including septic tanks, privies, chemical toilets, and any others.

4. All domestic sewage shall be disposed of by an approved method of collection, treatment, and effluent discharge. Domestic sewage or sewage effluent shall not be disposed of in any manner that will cause pollution of the ground surface, ground water, bathing area, lake, pond, watercourse, or create a nuisance. It shall not be discharged into any abandoned or unused well, or into any crevice, sink hole, or other opening either natural or artificial in a rock formation.

5. Where water under pressure is not available, all human body wastes shall be disposed of by depositing them in approved privies, chemical toilets, or such other installations acceptable to the administrative authority.

6. Water-carried sewage from bathrooms, kitchens, laundry fixtures, and other household plumbing shall pass through a septic or other approved sedimentation tank prior to its discharge into the soil or into an alternative system. Where underground disposal for treatment is not feasible, consideration will be given to special methods of collection and disposal.

7. The building contractor, owner, plumbing contractor, or disposal system installer are jointly responsible for compliance with this chapter.

8. Abandoned disposal systems, septic tanks, pumping and other chambers, and seepage beds shall be disconnected from the buildings. The tanks and chambers shall be pumped out and filled with earth.

9. No property shall be improved in excess of its capacity to properly absorb sewage effluent in the quantities and by the means provided in this code.

10. When there is insufficient lot area or improper soil conditions for adequate sewage treatment for the building or land use proposed, and the administrative authority so finds, no building permit shall be issued and no private sewage treatment shall be permitted. Where space or soil conditions are critical, no building permit shall be issued until engineering data and test reports satisfactory to the administrative authority have been submitted and approved or a private sewage treatment system complying with the provisions of this article has first been designed.

11. Nothing contained in this chapter shall be construed to prevent the administrative authority from requiring compliance with higher requirements than those contained herein where such higher requirements are essential to maintain a safe and sanitary condition.

12. "Administrative authority" under this section means the North Dakota department of environmental quality, district health units, or county or city health departments that have expertise in onsite sewage treatment systems, or individual official, board, department, or agency established and authorized by a state, county, city, or other political subdivision created by law to administer and enforce the provisions of this chapter.

13. "Continuing education" under this section means a structured, professionally presented curriculum dealing with onsite sewage treatment systems sanctioned wholly or in part by the administrative authority.

14. "Installer" under this section means an individual or contractor that engages in the construction of onsite sewage treatment systems. Homeowners who work on their own systems are not included in this definition.

15. "Mottled soil" under this section means soil from a soil boring which is marked with spots of contrasting colors. Any soil having spots of contrasting colors is considered to be mottled.

16. "Sewage treatment" under this section means all private methods of collecting and disposing of domestic sewage including septic tanks, privies, chemical toilets, and any others.

17. A "chamber or pump chamber" under this section means a watertight receptacle for receiving effluent from the septic tank which will be used for placement of an effluent grade pump to distribute that effluent to the treatment area.

18. "Noncommunity" under this section means a collector system for sewage disposal serving a group of homes which uses lagoons or other collective methods of disposal and treatment which are not otherwise regulated by the environmental protection agency or state regulations.

History: Effective March 1, 2000; amended effective July 1, 2015.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-02. Installation - Excavator and installer requirements.

1. Individuals or business contractors may be required by the administrative authority to have or obtain a license or permit to install individual onsite sewage treatment systems as described in this chapter.

2. Where required by administrative authority, installers of septic systems must obtain at least eight contact hours of suitable continuing education every two years which pertains to onsite septic system installation. Reciprocity for training in other states can be made on an individual basis by the administrative authority.

3. The installer of a treatment system shall submit an "as built" drawing of the system to the administrative authority within thirty days after the system has been completed.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-03. Design of individual sewage system.

1. **Design.** The design of the individual sewage treatment system must take into consideration location with respect to wells or other sources of water supply, topography, water table, soil characteristics, area available, and maximum occupancy of the building.

2. **Type of system.** The type of system to be installed shall be determined on the basis of location, soil permeability, and ground water elevation.

3. **Sanitary sewage.** The system shall be designed to receive all sanitary sewage, including laundry waste, from the building. Drainage from footings or roofs shall not enter the system.

4. **Discharge.** The system shall consist of a septic tank discharging into either a subsurface treatment field or one or more seepage beds or into a combination of both, if found adequate as such and approved by the administrative authority.

5. **Ground water.** No plumbing fixture may be connected to any individual sewage treatment system where ground water may collect above the sewage treatment system causing a flooded condition, unless the elevation of the fixture trap is a sufficient height above the elevation of the finished grade of the ground in which the sewage treatment field is installed to prevent backup. The minimum separation distance from the bottom of the treatment area must equal or exceed twenty-four inches [60.96 centimeters].

6. **Alternate design.** Where soil conditions are such that neither of the systems mentioned in subsection 4 can be expected to operate satisfactorily, approval of an alternate design shall be secured from the administrative authority.

7. **Sewage flow.** Design criteria for sewage flow according to the type of establishment is indicated in the following table:

SEWAGE FLOWS ACCORDING TO TYPE OF ESTABLISHMENT

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Airports (per passenger)	5
Apartments-multiple family (per resident)	60
Assembly halls (per seat)	2
Bars (per seat)	5
Bathhouses and swimming pools	10
Bowling alleys (per lane)	75
Camps:	
Campground with central comfort stations	35

With flush toilets, no showers	25
Construction camps (semipermanent)	50
Day camps (no meals served)	15
Resort camps (night and day) with limited plumbing	50
Luxury camps	100
Churches (per sanctuary seat)	5
Churches with kitchens (per sanctuary seat)	7
Cottages and small dwellings with seasonal occupancy	50
Country clubs (per member present)	25
Dwellings:	
Boardinghouses	50
Additional for nonresident boarders	10
Luxury residences and estates	150
Multiple family dwellings (apartments)	60
Roominghouses	40
Single-family dwellings	75
Factories (gallons per person, per shift, exclusive of industrial wastes)	35
Hospitals (per bed space)	250
Hotels (per guest)	50
Institutions other than hospitals (per bed space)	100
Laundries, self-service (gallons per machine)	500
Mobile home parks (per space)	250
Motels (per bed space)	50
Picnic parks (sanitary waste only)	5
Picnic parks with bathhouses, showers, and flush toilets	10
Restaurants (toilet and kitchen wastes per patron)	10
Restaurants (kitchen wastes per meal served)	3
Restaurants additional for bars and cocktail lounges	2
Schools:	
Boarding	75
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
Theaters:	
Movie (per auditorium seat)	5
Drive-in (per car space)	5
Travel trailer parks without individual water and sewer hookups (per space)	50
Travel trailer parks with individual water and sewer hookups (per space)	100
Workers:	
Construction (at semipermanent camps)	50
Day, at school and offices (per shift)	15

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-04. Location of sewage system.

1. The minimum lot size in which a private treatment system may be installed is forty thousand square feet [3716.00 square meters]. Smaller lot sizes may be approved by the administrative authority if a centralized sewage treatment system is provided or the soil conditions present throughout the lot are such that a second treatment area is able to be installed in the lot.

2. The following table provides for the minimum distances that shall be observed in locating the various components of the treatment system:

	Well <100'	Well >100'	Distribution Device	Treatment Area	Property Lines	Building
Building Sewer	100	50	-	-	-	-
Septic Tank	100	50	5	10	10	10
Distribution Device	100	50	-	-	10	20
Treatment Area	100	50	5	-	10	10
Well <100'	-	-	100	100	n/a	n/a
Well >100'	-	-	50	50	n/a	n/a
Water line (pressure)	-	-	10	10	n/a	n/a
Water line (suction)	-	-	50	50	n/a	n/a
Surface water bodies	n/a	n/a	100	100	n/a	n/a

3. All proposed sites for individual sewage treatment systems must be evaluated as to:

   a. Depth to the highest known or calculated ground water table or bedrock;

   b. Soil conditions, properties, and permeability;

   c. Slope;

   d. The existence of lowlands, local surface depressions, and rock outcrops;

   e. All legal setback requirements from existing and proposed buildings, propertylines, sewage tanks, soil treatment systems, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, flowages, and the location of all soil treatment systems and water supply wells on adjoining lots to the proposed soil treatment system, sewage tank, and water supply well; and

   f. Surface water flooding probability.

4. Privies, septic tanks, and underground treatment means shall not be within two hundred feet [60.96 meters] measured horizontally from the high water level in the reservoir or the banks of tributary streams when situated less than three thousand feet [914.4 meters] upstream from potable water intake structures. Sewage treatment facilities situated beyond three thousand feet [914.4 meters] upstream from intake structures shall be located no less than one hundred feet [30.48 meters] measured horizontally from the high water level in the reservoir or the banks of the tributary streams.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09

Law Implemented: NDCC 43-18-09

62-03.1-03-05. Percolation tests.

When percolation tests are required, they must be made as follows:

1. **Test hole dimensions and locations.** Each test hole must be six inches [15.24 centimeters] in diameter, have vertical sides, and be bored or dug to the depth of the bottom of the proposed individual sewage treatment system. Soil texture descriptions must be recorded noting depths where texture changes occur.

2. **Preparation of the test hole.** The bottom and sides of the hole must be carefully scratched to remove any smearing and to provide a natural soil surface into which water may penetrate.

   All loose material must be removed from the bottom of the test hole and two inches [5.08 centimeters] of one-fourth-inch to three-fourths-inch [.635-centimeter to 1.90-centimeter] gravel must be added to protect the bottom from scouring.

3. **Soil saturation and swelling.** The hole must be carefully filled with clear water to a minimum depth of twelve inches [30.48 centimeters] over the soil at the bottom of the test hole and maintained for no less than four hours. The soil must then be allowed to swell for at least sixteen, but no more than thirty hours. In sandy soils, the saturation and swelling procedure is not required and the test may proceed if one filling of the hole has seeped away in less than ten minutes.

4. **Percolation rate measurement.**

   a. In sandy soils. Adjust the water depth to eight inches [20.32 centimeters] over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level must be measured in inches [centimeters] to the nearest one-eighth inch [.34 centimeter] at approximately ten-minute intervals. A measurement can also be made by determining the time it takes for the water level to drop one inch [2.54 centimeters] from an eight-inch [20.32-centimeter] reference point. If eight inches [20.32 centimeters] of water seeps away in less than ten minutes, a shorter interval between measurements must be used, but in no case may the water depth exceed eight inches [20.32 centimeters]. The test must continue until three consecutive percolation rate measurements vary by a range of no more than ten percent.

   b. In other soils. Adjust the water depth to eight inches [20.32 centimeters] over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level must be measured in inches [centimeters] to the nearest one-eighth inch [.34 centimeter] at approximately thirty-minute intervals, refilling between measurements to maintain an eight-inch [20.32-centimeter] starting head. The test must continue until three consecutive percolation rate measurements vary by a range of no more than ten percent. The percolation rate can also be made by observing the time it takes the water level to drop one inch [2.54 centimeters] from an eight-inch [20.32-centimeter] reference point if a constant water depth of at least eight inches [20.32 centimeters] has been maintained for at least four hours prior to the measurement.

5. **Calculating the percolation rate.** Divide the time interval by the drop in water level to obtain the percolation rate in minutes per inch [2.54 centimeters].

   Percolation rates determined for each test hole must be averaged to determine the final soil treatment system design.

   A percolation test may not be run where frost exists below the depth of the proposed soil treatment system.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-06. Soil borings.

When soil borings are required, they must be made as follows:

1. Each boring or excavation must be made to a depth at least three feet [0.91 meters] deeper than the bottom of the proposed system or until bedrock or a water table is encountered, whichever is less.

2. A soil texture description must be recorded by depth and notations made where texture changes occur.

3. Particular effort must be made to determine the highest known water table by recording the first occurrence of mottling observed in the hole, or if mottling is not encountered, the open holes in clay or loam soils must be observed after standing undisturbed a minimum of sixteen hours, and depth to standing water, if present, must be measured.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-07. Septic tanks.

1. **Liquid capacity.** The liquid capacity of all septic tanks shall conform to the tables contained in subsection 7 of section 62-03.1-03-03 and this subsection as determined by the number of bedrooms or apartment units in dwelling occupancies and the occupant load or the number of plumbing fixture units as determined from table 7-3 of the Uniform Plumbing Code, whichever is greater, in other building occupancies.

CAPACITY OF SEPTIC TANKS*

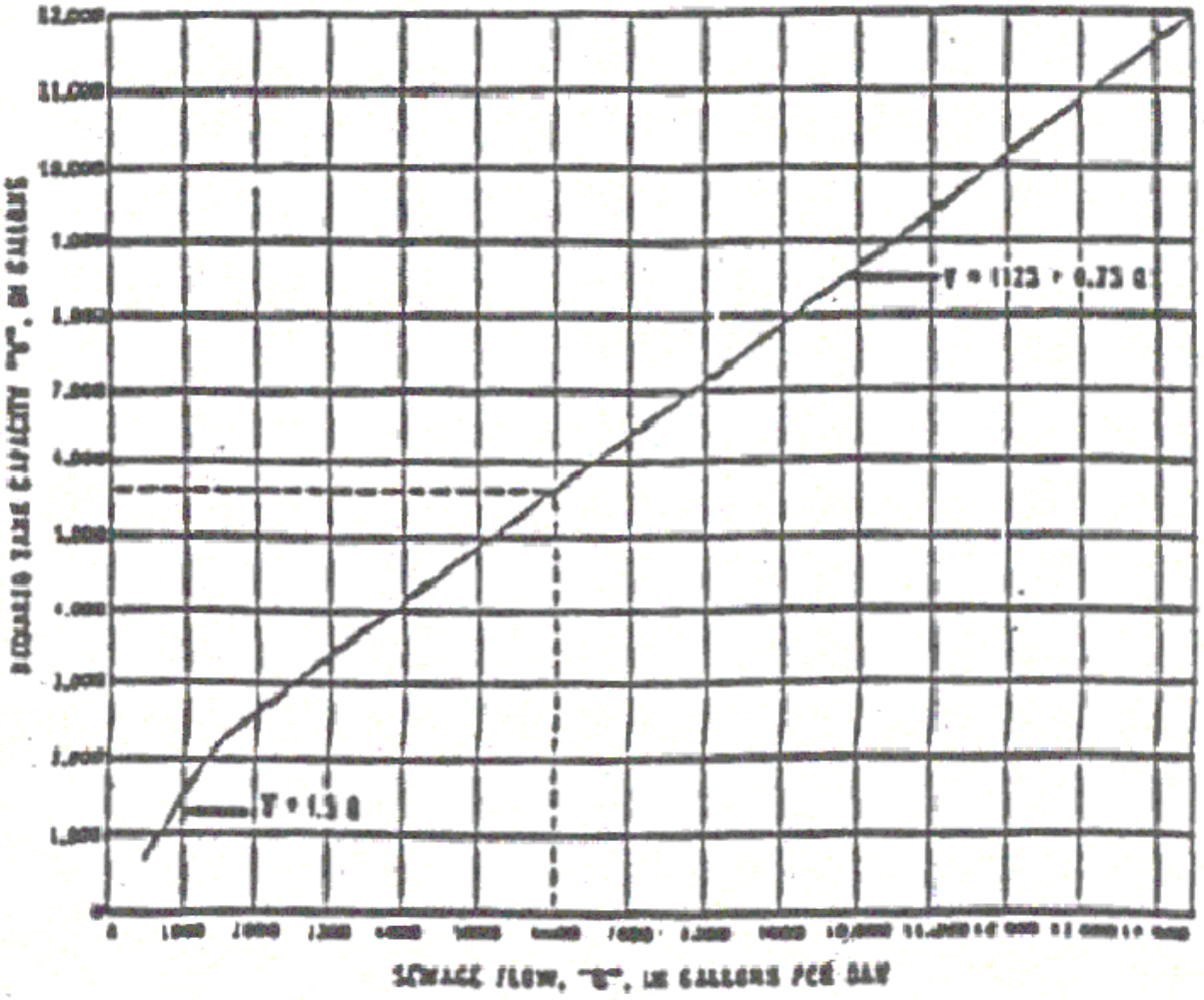
Single-Family Dwellings - Number of Bedrooms	Multiple Dwelling Units or Apartments - One Bedroom Each	Other Uses - Maximum Fixture Units Served	Minimum Septic Tank Working Capacity in Gallons
1-3		20	1000
4	2	25	1200
5 or 6	3	33	1500
7 or 8	4	45	2000
	5	55	2250
	6	60	2500
	7	70	2750
	8	80	3000
	9	90	3250
	10	100	3500

Extra bedroom, 150 gallons each.

Extra dwelling units over 10, 250 gallons each.

Extra fixture units over 100, 25 gallons per fixture unit.

*NOTE: Septic tank sizes in this table include sludge storage capacity and the connection of domestic food waste disposal units without further volume increase



2. **Septic tank construction.** Septic tanks must be constructed of sound durable materials not subject to excessive corrosion or decay and must be watertight. Each such tank must be structurally designed to withstand all anticipated earth or other loads and must be installed level and on a solid bed. All tanks regardless of material or method of construction must conform to the following criteria:

   a. The liquid depth of any septic tank or compartment shall be not less than thirty inches [76.20 centimeters], nor more than six and one-half feet [1.97 meters]. No tank may have an inside horizontal dimension less than twenty-four inches [60.96 centimeters].

   b. The space in the tank between the liquid surface and the top of the inlet and outlet baffles must be not less than twenty percent of the total required liquid capacity, except that in horizontal cylindrical tanks this space must be not less than fifteen percent of the total required liquid capacity.

   c. There must be at least one inch [2.54 centimeters] between the underside of the top of the tank and the highest point of the inlet and outlet devices. The inlet invert must be not less than three inches [7.62 centimeters] above the outlet invert.

d. Baffles must be integrally cast with the tank, affixed with a permanent waterproof adhesive or affixed with stainless steel connectors, top and bottom, and be constructed of acid-resistant concrete, acid-resistant fiberglass or plastic.

e. The inlet baffle must extend at least six inches [15.24 centimeters], but not more than twenty percent of the total liquid depth below, the liquid surface and at least one inch [2.54 centimeters] above the crown of the inlet sewer.

f. The outlet baffle and the baffles between compartments must extend below the liquid surface a distance equal to forty percent of the liquid depth, except that the penetration of the indicated baffles or sanitary tees for horizontal cylindrical tanks must be thirty-five percent of the total liquid depth. They also must extend above the liquid surface. In no case may they extend less than six inches [15.24 centimeters] above the liquid surface.

g. Inlet baffles must be no less than six inches [15.24 centimeters] or no more than twelve inches [30.48 centimeters] measured from the end of the inlet pipe to the nearest point on the baffle. Outlet baffles must be six inches [15.24 centimeters] measured from beginning of the outlet pipe to the nearest point on the baffle. Sanitary tees used as baffles must be at least four inches [10.16 centimeters] in diameter.

h. The inlet and outlet must be located opposite each other along the axis of maximum dimension. The horizontal distance between the nearest points of the inlet and outlet devices must be at least four feet [1.22 meters].

i. There may be one or more manholes. Manholes must be at least eighteen inches [45.72 centimeters] in diameter, and located within six feet [1.83 meters] of all walls of the tank. The manhole must extend through the cover to a point within twelve inches [30.48 centimeters] but no closer than six inches [15.24 centimeters] below finished grade. The manhole cover must be corrosion resistant, rated three hundred-pound [136.07-kilogram] load bearing, and covered with at least six inches [15.24 centimeters] of earth. When in the opinion of the administrative authority the manhole is permitted above finish grade, it must be safely secured.

j. There must be an inspection pipe of at least four inches [10.16 centimeters] in diameter or a manhole over both the inlet and outlet devices. The inspection pipe must extend through the cover and be capped flush or above finished grade. A downward projection of the centerline of the inspection pipe must be directly in line with the centerline of the inlet or outlet device.

3. **Multiple tanks.**

a. When more than one tank is used to obtain the required liquid volume, the tanks must be connected in series.

b. No more than four tanks in series can be used to obtain the required liquid volume.

c. The first tank must be no smaller than any subsequent tanks in series.

4. **Septic tank materials.** See table 14-1 of the Uniform Plumbing Code.

5. **Depth of septic tank.** Where septic tanks are installed above frostline, precautions must be taken to prevent the septic tank from freezing.

6. **Service limited.** No septic tank shall serve more than one property unless authorized by the administrative authority.

7. **Disposal of effluent.** The effluent from all septic tanks shall be disposed of underground by subsurface absorption trench, seepage beds, or approved alternative systems.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-08. Distribution box.

1. **Use.** A distribution box may be used when more than one line of absorption field or more than one seepagebed is used.

2. **Connection.** Each lateral line shall be connected separately tothe distribution box and shall not be subdivided.

3. **Invert level.** The inlet invert shall be at least one inch [2.54 centimeters] above the invert of the outlets. The size of the distribution box shall be sufficient to accommodate the number of lateral lines.

4. **Watertight.** The distribution box shall be of watertight construction arranged to receive the septic tank effluent sewer and with an outlet or connecting line serving each trench or seepage bed.

5. **Inspection.** The sides of the box should extend to within a short distance of the ground surface to permit inspection and shall have a concrete marker at grade.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-09. Absorption trenches.

1. **Design.** Absorption trenches shall be designed and constructed on the basis of the percolation test results or other soil data. Trench bottom area required is shown in the table in subsection 4. The bottom of the trench shall be dug so it is dead level throughout its length. The maximum depth to the bottom of absorption trenches may not exceed forty-eight inches [121.92 centimeters]. The trench bottom must be at least twenty-four inches [60.96 centimeters] above the mottled soil condition indicating a water table or from standing water in the borehole.

2. **Filter material.** The filter material shall cover the four-inch [10.16-centimeter] diameter pipe to a depth of two inches [3.08 centimeters] measured from the crown of the pipe and extend the full width of the trench and shall be not less than six inches [15.24 centimeters] deep beneath the bottom of the four-inch [10.16-centimeter] diameter pipe. The filter material may be washed rock or crushed stone ranging in size from one inch to three inches [2.54 centimeters to 7.62 centimeters]. The filter material shall be covered by red rosin paper40 , hay, straw, or approved filter fabric40 , as the laying of the pipe proceeds. Approved graveless systems may be used in lieu of rockfill providing an equivalent surface area of soil is utilized.

3. **Spacing.** Trenches must have a minimum spacing of undisturbed earth of six feet [1.83 meters] for eighteen-inch to twenty-four-inch [45.72-centimeter to 60.96-centimeter] trench widths and nine feet [2.74 meters] for trenches up to thirty-six inches [91.44 centimeters]wide.

4. **Absorption field.** The size and requirements for absorption fields shall conform to those given in the following table:

Table - Recommended absorption trench area.

Percolation Rate Minutes/Inch	Soil Classification	Depth of Rock Below Distribution Pipe 6"	12"	18"	24"
	-Trench bottom area loading rate, gal/ft^2/day				
.1 to 5	Sand	1.2	1.5	1.80	2.1
6 to 15	Sandy loam	0.8	1.0	1.20	1.4
16 to 30	Loam	0.6	0.75	0.90	1.05
31 to 45	Silt loam	0.5	0.63	0.76	0.89
46 to 60	Clay loam	0.45	0.57	0.68	0.79
	-Square feet of trench bottom/bedroom[1]				
.1 to 5		125	100	85	70
6 to 15		190	150	125	110
16 to 30		250	200	165	145
31 to 45		300	240	200	170
46 to 60		330	265	220	190

[1]Based on sewage volume of 150/GPD/Bedroom

5. **Absorption lines.**

   a. Gravity distribution. Absorption lines shall be constructed of four-inch [10.16-centimeter] pipe. For approved plumbing materials, see table 14-1 of chapter 14 of the Uniform Plumbing Code.

   b. Pressure distribution. Absorption lines must be constructed of one and one-half-inch to two-inch [3.81-centimeter to 5.08-centimeter] rigid plastic pipe with one-fourth-inch [6.35-millimeter] holes drilled in the bottom of the pipes. The number ofperforations and spacing of perforations for different diameter pipes for pressure distribution laterals must not exceed ten percent of the average pressure head on the perforations. The pipe and connections must be able to withstand a pressure of at least forty pounds per square inch. The perforated laterals should be attached to a two-inch [5.08-centimeter] manifold pipe and should have the ends capped. The laterals should be spaced no further than forty inches [101.6 centimeters] on center and no further than twenty inches [50.80 centimeters] from the edge of the rock. Pipe must be installed level and capped at the ends. The manifold must be supported and backfilled by hand.

6. **Grade.** The absorption trench bottom must be level.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-10. Piping material.

All piping from building drain to sewage treatment system shall be four inches [10.16 centimeters] or larger service schedule 40 acrylonitrile-butadiene-styrene or polyvinyl chloride plastic pipe, type PSP PVC sewer pipe SDR 3540 , and fittings A.S.T.M. D3033 or D3034, exclusive of the absorption lines, which shall be as insubsection 5 of section 62-03.1-03-09.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-11. Pumps and pump systems.

This section pertains to pumps installed after the septic tank. Sumps and ejectors installed before the septic tank must meet the requirements set forth in section 710.0 of the Uniform Plumbing Code.

1. **Pumping chambers.**

   a. The pumping chambers must be watertight and constructed of corrosion-resistant material.

   b. The working capacity of the pumping chamber must equal one-fourth of the daily sewage flow. Total capacity of the pumping chamber must equal or exceed daily sewage flow.

   c. A secure cover must be provided that is either bolted on or heavy enough to prevent unauthorized entry.

   d. An external electrical outlet must be provided for connection to the pump and control switches. Openings for wiring into the pump chamber must be sealed.

   e. No electrical splices or connections shall be located in the pump chamber or riser.

2. **Pumps.**

   a. Effluent lift pumps must be of cast bronze, cast iron, or plastic construction and must be designed for handling septic tank effluent. Pedestal sump pumps with an open motor are not allowed.

   b. Set the pump on a pedestal on the bottom of the pump chamber to minimize grit and solids entering the impeller.

   c. The pump must have maximum lift capability at least five feet [1.52 meters] greater than the actual elevation, plus pipe friction loss. A pump to a sewage mound ("Wisconsin mound") shall deliver seven and five-tenths gallons [28.38 liters] per minute for each one hundred square feet [9.29 square meters] of rock area.

   d. Outlet piping must be one and one-fourth inches [31.75 millimeters] in diameter or greater. The pipe must be laid below frostline or uniformly graded to drain back to the pump chamber. Volume of drain back should not exceed ten percent of the working capacity of the pump chamber. If piping is set to drain back, any check valves on the pump should be removed and a one-fourth-inch [6.35-millimeter] drainhole drilled on the low point of the outlet pipe. Piping connection to the pump must be with a union or quick disconnect coupling near the top of the pump chamber.

3. **Pump controls.**

   a. On-off switching for sewage pumps must be sealed mercury float switches or of a type approved by the administrative authority.

   b. Electrical connections must not be made in the pump chamber or pump chamber riser.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-12. Alternative systems.

1. **Mounds.** Mounds may be constructed on soils having a percolation rate faster than one hundred twenty minutes per inch [2.54 centimeters]. For soils slower than one hundred twenty minutes per inch [2.54 centimeters], either the system must be moved to more amenable soil or see subsection 2 on lagoons.

   a. Location. Mounds may not be located on sites of greater than twelve percent slope. For moderately permeable soils, the administrative authority may approve construction on slopes over six percent. Mounds may not be built in areas where water may pond.

   b. Design. The basal sand area of the mound must be sized on the basis of eighty-three hundredths gallons [3.12 liters] per square foot [0.09 square meter] per day. The basal sand may be twelve inches to twenty-four inches [30.48 centimeters to 60.96 centimeters] deep and must extend at least five feet [1.52 meters] beyond the rock filter material in all directions. The rock layer may be twelve inches to twenty-four inches [30.48 centimeters to 60.96 centimeters] deep and may not exceed ten feet [3.05 meters] in width. Only pressure distribution may be used in the mound, so piping shall be one and one-half-inch to two-inch [38.10-millimeter to 50.80-millimeter] diameter rigid ABS or PVC. A one and one-fourth inch [31.75 millimeters] hole must be drilled every thirty-six inches [91.44 centimeters] and the ends of the lateral must be capped. A one-fourth inch [6.35 millimeters] hole shall be drilled in the top of the cap to serve as a siphon break. Laterals shall be spaced no further than forty inches [101.60 centimeters] on center and no further than twenty inches [50.80 centimeters] from the edge of the filter rock. Surface water must be diverted by a berm located uphill from the base of the mound.

   c. Specifications. Sand must be uniformly graded, with no more than fifteen percent fines. Filter rock must be one inch to three inches [25.40 millimeters to 76.20 millimeters] in diameter, washed or screened to less than ten percent fines.

   A jar test should be used to determine sand suitability. In a one quart [.95 liters] jar, place two inches [50.8 millimeters] of the sand. Add water to three-fourths level, cap, shake, and set aside to settle. If a layer of silt is present on top which is more than one-eighth inch [3.18 millimeters] thick, the sand is not suitable for mound construction.

   d. Construction.

      (1) Scarify the area with backhoe teeth or a cultivator. Do not remove topsoil. Bring outlet pipe from pump up into the center of the mound area.

      (2) Lay sand on scarified area. Do not compact the soil with machinery tires. Level sand to desired depth.

      (3) Lay filter rock down the center of the sand layer. Level.

      (4) Connect piping to manifold and lay pipe on rock. Cover pipe with rock and level by hand. Holes must be on bottom of the pipe.

      (5) Lay sand up to the top of the rock on all sides, sloping sand away at a three-to-one or four-to-one slope.

      (6) Cover rock with red rosin paper, hay, or filter fabric.

      (7) Backfill entire mound to a three-to-one or four-to-one grade. Downhill side of mound on slopes must be backfilled at a four-to-one or longer grade. Cover mound with topsoil.

(8) Seed grass over mound. Trees and shrubs may be planted on the toe and up the sides of the mound, but do not plant shrubs or trees on top. If vegetation is not established before winter, cover mound with hay or straw to prevent freezing.

2. **Lagoons - Total containment.** In areas where normal septic systems will not function, and where the administrative authority finds that a nuisance will not be presented, a lagoon may be used for onsite sewage disposal.

   a. Design. Depth may not exceed five feet [1.52 meters], and side berms shall be graded to three-to-one for proper aeration. The site must be fenced, and the berms must be seeded. The berms must be at least one foot [0.30 meter] higher than the liquid level at design capacity. Inlet pipes must discharge onto a splash pad to minimize erosion. Outlet pipes may not be installed without the approval of the administrative authority.

   b. Maintenance. Weeds must be controlled in the lagoon and on the berms to maximize aeration.

   c. Prohibitions. Lagoons may not be constructed on sand, gravel, or light loamy soils. No lagoon may be discharged into receiving waters or onto the ground without the approval of the department of environmental quality.

3. **Alternative design.** Alternate designs for construction of sewage treatment systems complying with the intent of this code may be submitted to the administrative authority for approval.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-13. Chemical toilets.

1. All requests for permission to erect and use chemical toilets shall be approved by the administrative authority.

2. Where approved by the administrative authority, chemical toilets shall be as follows:

   A chemical toilet consists of a toilet seat connected by a metal hopper to a metal tank containing chemicals, usually sodium hydroxide. All connections to the toilet seat and the tank shall be watertight. A rod shall extend above the floor of the room to operate the agitator in the chemical tank.

3. A supply of the chemical shall be available in a closed container for periodic additions to the toilet.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-14. Privies.

1. All requests for permission to erect and use privies shall be approved by the administrative authority.

2. General specifications for the design and construction of a privy. A privy pit must be constructed by providing a watertight structure in the pit. The watertight structure shall provide a minimum capacity of sixty cubic feet [1.70 cubic meters]. A privybuilding shall be placed over the structure. The floor of this building shall be of wood or concrete with the privy seat of

suitable material which is easily cleaned and serviceable. A vent located adjacent to the seat shall extend from the vault to a point above the roof of the building. The seat shall be provided with a cover which shall be self-closing.

All openings in the building shall be screened to prevent the entrance of flies. The building shall be so constructed so as to prevent the entrance of rats to the vault. The privy door shall be self-closing.

3. Removable cans. When removable cans are used in a privy, they shall be placed in watertight vaults and provision made for removing the seat so the cans can be moved for disposal of the contents in a manner acceptable to the administrative authority. The privy building shall comply with the above specifications for a pit privy building.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09

62-03.1-03-15. Septic tank pumpers.

1. Every person engaged in the business of removing and disposing of the solid and liquid contents of private sewage treatment systems shall obtain an annual license from the department of environmental quality.

2. All solid and liquid contents of chemical toilets, septic tanks, pump chambers, and watertight pits for septic tank effluent shall be removed, when necessary, and disposed of in conformance with subsections 3 through 9.

3. Every pumper shall obtain a license to engage in such operations as specified in the appropriate rules of the department of environmental quality, chapter 33.1-21-01.

4. A metal license tag with the number of the license issued shall be posted in a conspicuous place on the left side of the servicing unit.

5. Every vehicle used for pumping purposes shall be equipped with a watertight tank so that there will be no spillage on private premises or on highways or roads.

6. All portable receptacles used for transporting liquid or solid waste shall be watertight, equipped with tight-fitting lids, and cleaned daily.

7. All pumps and hose lines shall be maintained so as to prevent leakage.

8. All waste material shall be disposed of in such a place and in such a manner as will not constitute a nuisance or a menace to public health.

9. Waste material collected by a pumper shall not be discharged into ditches, watercourses, lakes, ponds, tidewater, or at any point where it can pollute any water supply, bathing area, or shellfish growing area. It shall not be deposited on the surface of the ground within one thousand feet [304.8 meters] of any residence or public road.

History: Effective March 1, 2000.
General Authority: NDCC 43-18-09
Law Implemented: NDCC 43-18-09