

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE 124 – RULES AND REGULATIONS

FOR THE DESIGN, OPERATION AND MAINTENANCE OF

ON-SITE WASTEWATER TREATMENT SYSTEMS

REVISED EFFECTIVE DATE – ~~DECEMBER 26, 2007~~

FINAL DRAFT AMENDMENTS

March 2012 EQC

DAVE HEINEMAN

GOVERNOR

THIS PAGE LEFT INTENTIONALLY BLANK

NEBRASKA ADMINISTRATIVE CODE
 NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY
 TITLE 124 – RULES AND REGULATIONS FOR THE DESIGN,
 OPERATION AND MAINTENANCE OF ON-SITE
 WASTEWATER TREATMENT SYSTEMS

ALPHABETICAL TABLE OF CONTENTS

<u>SUBJECT</u>	<u>STATUTORY AUTHORITY</u>	<u>CHAPTER</u>
Application of Regulations	81-1505(8)	2
Certification Requirements for On-site Certified Professionals	81-15,244; 81-15,247; 81-15,248; & 81-15,252	20
Closure of Septic Tank and Lagoon Systems	81-1505(8); 81-1506; 81-15,237; 81-15,247; & 81-15,248	17
Definitions		1
Design and Construction of Trench and Bed Soil Absorption Systems	81-1505(8)	14
<u>Design Flow</u>	<u>81-1505(8)</u>	<u>12</u>
Floor Drains	81-1505(8)	19
General Provisions	81-1505; 81-1505(1)(2)(a); 81-1507; 81-1508; 81-1509; & 84-901 thru 84-919	25
Grease Trap <u>Tank</u>	81-1505(8)	129
 Holding Tank <u>Mound Systems</u>	<u>81-1505(8)</u>	11
Lagoons: – Site Location, and Evaluation; <u>and</u> Design	81-1505(8)	18
Maintenance of Septic Systems and Lagoons	81-1505(8)	15

<u>SUBJECT</u>	<u>STATUTORY AUTHORITY</u>	<u>CHAPTER</u>
Permits and Authorization by Rule	81-1505(8); 81-1506; 81-15,237; 81-15,247; & 81-15,248	3
Placement of Septic Tank	81-1505(8)	9
Private Onsite Wastewater Treatment System Advisory Committee	81-15,245 & 81-15,246	24
Registration of On-Site Wastewater Treatment Systems	81-15,244; 81-15,247; 81-15,248; & 81-15,252	22
Revocation, Suspension or Refusal To Grant Certification	81-15,249; 81-15,251; & 81-15,253	21
Septic Tank Capacity	81-1505(8)	10
Septic Tank; Construction; Materials Used	81-1505(8)	7
Septic Tank <u>and Holding Tank</u> Design <u>and Placement</u>	81-1505(8)	8
Setback Distances	81-1505(8)	5
Site Evaluation and Subdivisions	81-1505(8); 81-15,237; 81-15,247; & 81-15,248	4
Soil Absorption System <u>(RESERVED)</u>	81-1505(8)	13
Soil Percolation	81-1505(8) & 81-15,248	6
Tank Pumping and Domestic Septage Disposal	81-1505 & 81-15,251	23
Type of Waste <u>Prohibitions</u>	81-1505(8)	16

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY
 TITLE 124 – RULES AND REGULATIONS FOR THE DESIGN,
 OPERATION AND MAINTENANCE OF ON-SITE
 WASTEWATER TREATMENT SYSTEMS

NUMERICAL TABLE OF CONTENTS

<u>CHAPTER</u>	<u>SUBJECT</u>	<u>STATUTORY AUTHORITY</u>
1	Definitions	
2	Application of Regulations	81-1505(8)
3	Permits and Authorization by Rule	81-1505(8); 81-1506 81-15,237; 81-15,247; 81-15,248
4	Site Evaluation and Subdivisions	81-1505(8); 81-15,237; 81-15,247; 81-15,248
5	Setback Distances	81-1505(8)
6	Soil Percolation	81-1505(8); 81-15,248
7	Septic Tank; Construction; Materials Used	81-1505(8)
8	Septic Tank <u>and Holding Tank Design and Placement</u>	81-1505(8)
9	Placement of Septic Tank <u>Grease Trap Tank</u>	81-1505(8)
10	Septic Tank Capacity	81-1505(8)
11	Holding Tank <u>Mound Systems</u>	81-1505(8)
12	Grease Trap <u>Design Flow</u>	81-1505(8)
13	Soil Absorption System <u>(RESERVED)</u>	81-1505(8)
14	Design and Construction of Trench and Bed <u>Soil Absorption Systems</u>	81-1505(8)

<u>CHAPTER</u>	<u>SUBJECT</u>	<u>STATUTORY AUTHORITY</u>
15	Maintenance of Septic Systems and Lagoons	81-1505(8)
16	Type of Waste <u>Prohibitions</u>	81-1505(8)
17	Closure of Septic Tank and Lagoon Systems	81-1505(8); 81-1506; 81-15,237; 81-15,247; 81-15,248
18	Lagoons: Site Location, and Evaluation, <u>and Design</u>	81-1505(8)
19	Floor Drains	81-1505(8)
20	Certification Requirements for On-site Certified Professionals	81-15,244; 81-15,247; <u>81-15,248;</u> 81-15,252
21	Revocation, Suspension or Refusal to Grant Certification	81-15,249; 81-15,251; <u>81-15,253</u>
22	Registration of On-site Wastewater Treatment Systems	81-15,244; 81-15,247; <u>81-15,248;</u> 81-15,252
23	Tank Pumping and Domestic Septage Disposal	81-1505; 81-15,251
24	Private Onsite Wastewater Treatment System Advisory Committee	81-15,245; 81-15,246
25	General Provisions	81-1505; 81-1505(1)(2)(a); 81-1507; 81-1508; 81-1509; & 84-901 thru 84-919

<u>CHAPTER</u>	<u>SUBJECT</u>	<u>STATUTORY AUTHORITY</u>
Appendix A	Fee Schedule	81-15,247; 81-15,248
<i><u>DELETE REMAINING APPENDICES</u></i>		
Appendix B	Form E Application for Hardship Certificates for Onsite Professionals	81-15,247
Appendix D	Onsite System Registration Form G	81-15,247; 81-15,248
Appendix E	Form D Application for Certification by Examination and Renewal of Certification for Onsite Professionals	81-15,247
Appendix F	Form H Application for Examination for Onsite Professionals	81-15,247
Appendix G	Form J Construction Completion Card	81-15,247
Appendix H	Form K Record of Continuing Education for Onsite Professionals	81-15,247
Appendix I	Form SD Application for Subdivision Review and Approval	81-1505(8)
Appendix J	Application Form L; Application for Endorsement to Onsite Professional Certificate by Examination	81-15,247
Appendix K	Form B Application for Construction/ Operating Permit for an Onsite Wastewater Treatment System	81-1505(8)

THIS PAGE LEFT INTENTIONALLY BLANK

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 1 – DEFINITIONS

~~001~~ "Apron" means a pad at least two feet square in area upon which the discharge pipe of a wastewater lagoon rests.

~~001~~ "Advisory Committee" means the Private Onsite Wastewater Treatment System Advisory Committee.

~~002~~ "Authorized representative" means:

~~002.01~~ In the case of a corporation, a principal executive officer in charge of a principal business function and of at least the level of vice president;

~~002.02~~ In the case of a limited liability company, a manager, or a person as described in Neb. Rev. Stat. § 21-2606 (1)(g), or a principal executive officer;

~~002.03~~ In the case of a partnership, a general partner;

~~002.04~~ In the case of a sole proprietorship, the proprietor; or

~~002.05~~ In the case of a municipal, state or other public entity, a principal executive officer or ranking elected official.

~~002003~~ "Baffle" means a partition installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes sanitary tees.

~~004~~ "Bed or seepage bed" means an excavated or below-grade soil absorption system containing filter material and an effluent distribution system where the filter material is wider than 36 inches where pipes are used for distribution or wider than five feet where chambers are used for distribution. The maximum width of a bed is limited to 20 feet.

~~003005~~ "Bedrock" means solid rock exposed at the surface of the earth or overlain by unconsolidated material.

~~004006~~ "Bedroom" means any room within a dwelling that might reasonably be used as a sleeping room.

Title 124
Chapter 1

005007 "Bentonite" means ~~a~~ high swelling clay derived from a chemically altered volcanic ash.

006008 "Blackwater" means wastes carried off by toilets, urinals, and kitchen drains. Blackwater is wastewater for the purposes of these regulations.

007009 "Building drain" means that portion of the lowest horizontal piping of a drainage system which receives the wastewater discharge from within the walls of the building and conveys it to the building sewer beginning 30 inches outside the building footings.

008010 "Building sewer" means that part of the drainage system extending from the end of the building drain to a treatment system or other approved point of disposal.

009011 "Certified Professional" means a private onsite wastewater treatment system professional certified under the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act to perform the tasks for which the certification has been issued.

~~010 "Class 1 Foundations" means full basements, or non-basement footing foundations, and slab on grade for living quarters that are lower in elevation from the on-site wastewater treatment system.~~

~~011 "Class 2 Foundations" means non-basement footing foundations, trailer houses and slab on grade living quarters that are higher in elevation than the on-site wastewater treatment system.~~

012 "Class 3 Foundations" means structures using slab on grade construction not used as living quarters. "Cesspool" means an underground pit into which raw household wastewater has or can discharge and from which the liquid has or can seep into the surrounding soil. A cesspool is a failed or prohibited system for the purposes of these regulations.

013 "Chamber or chambers" means a pre-formed manufactured conduit with an open-bottom configuration used to distribute effluent in a soil absorption system.

014 "Closure or close" means the proper cleanup and decommissioning of an onsite wastewater treatment system after its use has been discontinued.

Title 124
Chapter 1

013015 "Community water supply system" means a public water supply system that (a) serves at least ~~fifteen~~ 15 service connections used by year-round residents of the area served by the system or (b) regularly serves at least ~~twenty-five~~ 25 year-round residents.

014016 "Construction" means the installation of an ~~new septic tank onsite wastewater treatment~~ system or the replacement, reconstruction, alteration, modification, ~~or expansion, or closure~~ of an existing system including the installation of required wastewater lagoon fencing. Construction includes excavation or similar activity related to the installation, replacement, reconstruction, alteration, modification, or expansion of an onsite system, or closure of an onsite system. For the purposes of subdivision review and approval, "construction" means physical activity on a development area including the building of roads, cut and fill, grading, installation of utilities, construction of any foundations, buildings or structures for the development, and construction work on drainage, piping, trenching, lighting, foundations, or other site activities. Construction does not include siting, soil percolation testing, or soil boring.

015017 "Department" means the Nebraska Department of Environmental Quality.

016018 "Depth marker" means a device used to measure the liquid level present in a septic tank, wastewater lagoon, or other on-site wastewater treatment system.

019 "Design flow" means the maximum volume of wastewater estimated to be generated by a dwelling or non-dwelling facility in a twenty-four-hour period. It includes both a typical operating capacity and a surge capacity for the system during periodic heavy use events. The sizing and design of the onsite wastewater treatment system components are based on the design flow.

017020 "Development Area" means an area of land in the State of Nebraska subdivided into lots where on-site wastewater treatment systems will be used. Such subdivision shall include the dividing of an area of land into smaller areas to be sold, transferred, leased, rented, or allowed to be used for the purpose of constructing or locating a dwelling, ~~establishment, or other development feature~~ non-dwelling facility that generates wastewater.

018021 "Direct supervision" means ~~that~~ the person overseeing the work of others is physically present on the site where the work is being done and has control over, responsibility for, and professional knowledge of the work being done.

019022 "Director" means the Director of the Department of Environmental Quality.

Title 124
Chapter 1

020023 "Distribution box" means a watertight box that receives ~~the discharge or~~ effluent from a ~~septic tank wastewater treatment component~~ and ~~equalizes~~ distributes the flow by gravity to each individual ~~line~~ section of a soil absorption system at a rate proportional to the bottom surface area of that section.

021024 "Distribution system, distribution piping, or distribution line" means piping or other devices which distribute ~~wastewater effluent~~ within a soil absorption system either by gravity (gravity distribution system) or pressure (pressure distribution system).

022025 "Domestic septage or septage" means the liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic wastewater. Domestic septage does not include liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant. Domestic septage does not include wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities.

023026 "Domestic waste or domestic wastewater" means human body waste and household type wastes including bath and toilet wastes, household laundry wastes, household kitchen wastes, and other similar wastes from a dwellings and establishments or a non-dwelling facility. Domestic waste or wastewater does not include drainage from roofs; footing or foundation drains; process waste from any industrial, agricultural, or commercial establishment; automotive or industrial chemicals or petroleum products; kitchen waste or wastewater from a restaurant or food preparation facility; water carrying animal waste or commercial process water or wastewater; or similar waste.

024027 "Dose or dosing" means the use of a pump or siphon device to convey intermittent discharges of effluent ~~from a wastewater treatment device by gravity or pressure distribution~~ to ~~the~~ a soil absorption system, ~~and~~ Dosing is characterized by brief periods of high flow followed by long periods of no flow.

025028 "Dosing chamber or dosing tank" means a watertight receptacle ~~for retaining wastewater containing a pump or siphon device and that retains effluent~~ until it is intermittently pumped or siphoned to the distribution system or soil absorption system.

Title 124
Chapter 1

~~026~~—"Dosing device" means a pump, siphon, or other device that discharges septic tank effluent from the dosing chamber to the absorption area.

~~029~~ "Drop box" means a watertight box that receives the discharge of effluent from a septic tank and provides serial or sequential distribution of effluent by gravity to each soil absorption system trench where such trenches are installed at progressively lower elevations.

~~030~~ "Dry well" means an excavation or structure (other than a soil absorption system meeting these regulations) constructed above the water table that has or can receive waste or wastewater, and from which the waste or wastewater has or can seep or discharge into the surrounding soil. A dry well is a failed or prohibited system for the purposes of these regulations.

~~027031~~ "Dwelling" means a building, structure, or place used or intended to be used for human occupancy as a single family or multi-family residence and which generates a domestic wastewater flow equivalent to less than 10 bedrooms or 1000 gallons per day. If any portion of the wastewater generated at such a building, structure or place is a non-domestic wastewater, the facility shall be considered a non-dwelling facility.

~~028032~~ "Effluent" means ~~wastewater~~ the liquid flowing out of a septic tank or other treatment component of an on-site wastewater treatment system.

~~029033~~ "Encroachment" means ~~the an~~ intrusion on ~~the a~~ required setback distances.

~~030034~~ "Endorsement" means ~~a condition that may be~~ qualification added to a certificate that authorizes the certificate holder to perform special procedures that require advanced levels of skills or training.

~~031~~—"Establishment" means ~~a building, structure, house or place which generates wastewater flows greater than 1000 gallons/day, or generates non-domestic wastewater, or serves as a restaurant or food preparation facility.~~

~~032035~~ "Failed or Failing" means an unauthorized discharge of effluent or wastewater: on the surface of the ground; or to a cesspool, seepage pit, dry well, or leaching pit; or to ~~an~~ a soil absorption system with less than ~~4~~ four feet to groundwater or other limiting soil characteristics; or which threatens to cause pollution of any air, water, or land of the State; or which threatens public health.

Title 124
Chapter 1

033036 "Fill" means soil, rock, gravel, or waste material which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

034037 "Filter material or filter media or treatment media" means washed-gravel, rock, crushed stone, slag, clean gravel, or tire chips, ~~ranging any of which that range~~ in size from ~~1/4 one-quarter inch~~ to ~~2 1/2 2 1/2~~ inches. The filter media shall be free of clay, silt, ~~and~~ rubber crumbs, and other fine material. Tire chips shall be 95-~~%~~ percent free of metal. Flat slabs of tire are not acceptable for use as tire chips. Crushed stone shall be durable and non-calcareous.

~~035 "Flood elevation ten year" means that flood elevation which has a probability of being equaled or exceeded once in ten years.~~

036038 "Freeboard" means the vertical distance between the design full liquid level and the level at which liquid will overflow from a lagoon.

037039 "Gravelless distribution system" ~~means a chamber or pipe absorption system designed to be installed~~ means a distribution pipe, chamber, or other conduit designed for use in a soil absorption system without filter material.

040 "Gravity Distribution or Gravity Dosing" ~~means to intermittently discharge effluent using the force of gravity to distribute effluent to a soil absorption system.~~

038041 "Graywater" means all domestic waste excluding blackwater and including bath, lavatory, laundry, and sink waste except kitchen sink waste. Graywater is wastewater for the purposes of these regulations.

039042 "Grease trap or grease trap tank or grease interceptor" means a watertight tank designed for the collection and retention of fats, oils, and grease, and which is accessible for periodic removal of the contents.

040043 "Groundwater" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

041044 "Holding tank" means a tank for the storage of wastewater until it can be transported to a point for proper disposal.

Title 124
Chapter 1

042045 "Industrial waste" means wastewater not otherwise defined as domestic wastewater, including the runoff and leachate from areas that received pollutants associated with industrial or commercial storage, handling, or processing.

043046 "Influent" means wastewater flowing into an on-site wastewater treatment system component or device.

044047 "Inspecting" means the practice of examining the components of an onsite wastewater treatment system, the operational condition of the system, or the site conditions for the purpose of providing verification of compliance with this Title. These practices are not considered inspecting when performed by a Master or Journeyman Pumper for the purpose of pumping an onsite wastewater treatment system or when performed by a Master or Journeyman Installer for the installation, modification, alteration, or repair of an onsite wastewater treatment system or for an evaluation conducted for those purposes.

045048 "Inspector" means a certified professional holding ~~a temporary provisional certificate~~, a certificate by examination, or a hardship certificate issued by the Department in the category of Inspector.

~~046 — "Installer" means a certified professional holding a temporary provisional certificate or a hardship certificate issued by the Department in the category of Installer.~~

047049 "Journeyman Installer" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Journeyman Installer.

048050 "Journeyman Pumper" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Journeyman Pumper.

049051 "Layout" means the practice of determining wastewater design flows and loadings, selecting system type, sizing and selecting system components, ~~and or~~ locating system components for the purpose of construction, reconstruction, alteration or modification of an onsite wastewater system.

052 "Leaching pit" means an underground pit into which waste or wastewater has or can discharge and from which the liquid has or can seep into the surrounding soil with little or no treatment. A leaching pit is a failed or prohibited system for the purposes of these regulations.

Title 124
Chapter 1

050053 "Liner" ~~shall mean~~s the material or substance used to line the bottom of a wastewater lagoon, sand filter, wetlands cell, or other onsite wastewater treatment system so that percolation of liquids through the soil is controlled.

054 "Loamy sand" means a soil material containing 70 to 85 percent sand, up to 30 percent silt, and up to 15 percent clay.

051055 "Master Installer" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Master Installer.

052056 "Master Pumper" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Master Pumper.

053057 "Mound system" means an onsite wastewater treatment system that includes a septic tank for primary treatment, an effluent pumping system, and a soil absorption system that includes a pressurized effluent distribution system within a prescribed layer of rock or acceptable treatment media that is elevated above the original ground surface by a layer of clean sand. an onsite wastewater treatment designed and installed such that the infiltrative surface is above the original ground elevation, includes at least 12 inches of clean sand between the bottom of the infiltrative surface and the original ground elevation. The distribution system is pressure dosed to provide uniform distribution of effluent over the entire infiltrative surface layer of treatment media, and treatment media is capped with suitable by a protective layer of geotextile fabric (to prevent fine material intrusion from the soil), soil, material to stabilize the surface and encourage vegetative growth and grass.

058 "Native soil" means soil that is naturally occurring, formed by normal geologic and biological processes, which is characterized by the distinct soil horizons or color patterns found in naturally developed, undisturbed soil.

054059 "Non-community water supply system" means any public water supply system that is not a community water system.

059 "Non-dwelling facility" means a building, structure, place of business, place of gathering, or waste collection system which is not a dwelling and which generates wastewater.

Title 124
Chapter 1

~~055~~—"NPDES" means a permit issued in accordance with Title 119—Rules and Regulations Pertaining to the Issuance of Permits Under the National Pollutant Discharge Elimination System.

~~056~~—"Observation hole" means an excavation, test pit, or auger boring, used to determine the soil profile and conditions, or monitor the groundwater levels.

057061 "On-site wastewater treatment system" means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or non-domestic wastewater, but not including wastewater from a livestock waste control facility, on the property where it originates, or on nearby property under the control of the user, which system is not connected to a public sewer system. An on-site wastewater treatment system begins at the end of the building drain. ~~All systems except septic systems are limited to a maximum size of~~ A system using a lagoon is limited to a maximum design flow of 1,000 gallons per day to be considered an on-site wastewater treatment system. The word "onsite" used in this Title is equivalent to the word "on-site".

058062 "Percolation rate" means the rate, usually expressed in minutes per inch or mpi, which is obtained from soil percolation tests used in determining conducted to help determine the amount of soil absorption area required, ~~usually expressed in minutes per inch for a soil absorption system.~~

059063 "Percolation test" means the determination of the suitability of an area for subsurface wastewater effluent disposal by ~~testing a standardized test of~~ the rate at which the undisturbed soil in an excavated pit or hole of standard size will absorb liquid per unit of surface area.

~~060~~—"Perforated pipe" means ~~one type of distribution tile generally four inches in diameter with half to three-fourths inch diameter perforations designed to distribute wastewater effluent.~~

061064 "Plastic limit" means the water content where soil transitions between brittle and plastic behavior characterized by the point at which a thread of soil begins to crumble when rolled between hands to a diameter of one-eighth inch, ~~expressed as a percentage of the dry weight of soil at which the soil mass ceases to be plastic and becomes brittle.~~

062065 "Pollution" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water of the State.

Title 124
Chapter 1

~~063066~~ "Private well" means a well which provides water supply to less than 15 service connections and regularly serves less than 25 individuals.

~~067~~ "Pressure distribution or pressure dosing" means the use of a pump to intermittently discharge effluent under positive pressure through a network of piping designed to evenly distribute the effluent throughout a soil absorption system.

~~064068~~ "Professional ~~e~~Engineer or P.E." means a person who is licensed as a professional engineer by the Nebraska Board of Engineers and Architects.

~~069~~ "Professional development hour or PDH" means at least 60 minutes spent in Department approved educational activity.

~~065070~~ "Public water supply system" means a water supply system for providing the public with water for human consumption through pipes or other constructed conveyances, if such system has at least ~~fifteen~~ 15 service connections or regularly serves an average of at least ~~twenty-five~~ 25 individuals daily at least ~~sixty~~ 60 days per year. This definition shall include:

~~065.01070.01~~ Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and

~~065.02070.02~~ Any collection or pretreatment storage facilities not under such control, which are used primarily in connection with such system.

~~066~~ ~~"Pumper" means a certified professional holding a temporary provisional certificate or a hardship certificate issued by the Department in the category of Pumper.~~

~~071~~ "Pump tank" means a watertight container with a capacity over 50 gallons which houses a pump or pump unit and associated appurtenances used to convey effluent or sewage. The capacity of a pump tank is measured at the normal high (pump start) operating level. The capacity of a tank housing a pump or used as a pump tank is not considered part of the treatment volume required for a septic tank for the purposes of these regulations.

~~072~~ "Pump chamber or pump basin" means a watertight container with a capacity of 50 gallons or less and which houses a float or liquid level activated pump and associated appurtenances used to convey sewage or effluent. The capacity of a pump chamber is measured at the normal high (pump start) operating level. The capacity of a chamber housing a pump or

Title 124
Chapter 1

used as a pump basin is not considered part of the treatment volume required for a septic tank and is not subject to tank setbacks for the purposes of these regulations.

067073 "Pumping" means the practice of maintaining septic tanks, grease trap tanks, holding tanks, and any other components of onsite wastewater systems through the removal, transportation, and disposal of accumulated liquid and solid wastes ~~contents of the components~~.

068074 "Registered eEnvironmental hHealth specialist or REHS" means a person who has the educational requirements and has had experience in the field of environmental sanitation required by Nebraska Revised Statutes §71-3703 and is registered with the Nebraska Board of Registration for Environmental Health Specialists in accordance with Nebraska Revised Statutes §71-3702 through §71-3715.

069075 "Repair" means the correction of a mechanical, electrical, or minor structural defect in an existing onsite wastewater system component such as, but not limited to, sealing a crack in a tank lid, repairing or replacing a tank baffle or access manhole riser, repairing or replacing a pump or electrical switch, leveling a distribution box, replacing a building sewer pipe, or replacing a cracked pipe between the septic tank and soil absorption system. Repair does not include replacement, reconstruction or modification of a tanks or soil absorption systems; extension or enlargement of a soil absorption components and systems; replacement of a distribution pipes; or covering or plugging holes in repair or replacement of a metal or concrete block tanks.

070 ~~"Restaurant" means a public eating place.~~

071076 "Sand" means a soil texture material composed by weight of at least 90 percent of soil particles ranging in size between 0.05 and 2.0 mm or 0.002 inches and 0.08 inches.

072077 "Sandy soil" means the soil having the following textures: sands, fine sands, loamy fine sands, and loamy very fine sands.

078 "Seepage pit" means an excavation or structure constructed below or partially below the water table into which waste or wastewater has or can discharge and from which the waste or wastewater has or can seep into the surrounding saturated soil. A seepage pit is a failed or prohibited system for the purposes of these regulations.

Title 124
Chapter 1

079 "Septic system" means an onsite wastewater treatment system that has a septic tank for primary treatment and a trench or bed soil absorption system for secondary treatment of wastewater.

073080 "Septic tank" means a watertight covered receptacle designed and constructed to receive wastewater from a building sewer, attenuate flows, separate store digested solids through a period of detention to allow settleable and floating solids to separate from liquids, allow digestion of organic matter by anaerobic bacteria, store digested solids through a period of detention, and allow the clarified liquid to discharge for additional treatment and final dispersal to a soil absorption system.

~~074 "Septic system" means an onsite wastewater treatment system that has a septic tank and a soil absorption system.~~

075081 "Sewage" means any water carrying domestic waste exclusive of footing and roof drainage, from any industrial, agricultural, or commercial establishment or any dwelling or any other structures. Domestic waste includes but is not limited to liquid waste produced by bathing, laundry, cooking operations, and liquid waste from toilets and floor drains and specifically excludes animal waste and commercial process water.

076082 "Site" means the area bounded by the dimensions required for the proper location of the soil absorption system.

077083 "Siting" means the practice of the investigation, examination, and reporting of design-controlling physical characteristics of an area at which an onsite wastewater system is to be constructed, reconstructed, altered, or modified; including, but not limited to topography, drainage, landscape position, soil evaluation, location and type of wells, water lines, property lines, foundations, and surface water features.

078084 "Slope" means the ratio of vertical rise or fall to horizontal distance.

079085 "Sludge" means the accumulated settled solids deposited from wastewater and containing water to form a semi-liquid mass.

080086 "Soil absorption system" means a drainfield, leaching area, or seepage bed, including the effluent application ~~or~~ distribution system ~~intended used~~ for the soil based dispersal and treatment of wastewater or ~~disposal of~~ effluent. The soil absorption system includes the infiltrative soil surface in the absorption trench, ~~and~~ the undisturbed soil between

Title 124
Chapter 1

and around the trenches, and a final cover of suitable soil to stabilize the completed installation, support vegetative growth and shed runoff. The soil absorption system is the part of the onsite wastewater treatment system that uses the soil to further treat and dispose of effluent from the onsite wastewater treatment system in a manner that does not result in a point source discharge and does not create a nuisance, health hazard, or ground or surface water pollution.

081087 "Soil Evaluation" means the practice of the investigation, examination, testing, and reporting of design-controlling characteristics of the soil and subsurface features at an area at which an on-site wastewater soil absorption system is to be constructed, reconstructed, altered, or modified; including, but not limited to soil type, structure, permeability, absorption capacity, and percolation rate, and the depth to seasonal high groundwater, bedrock, or other subsurface barrier layers.

082088 "Soil Evaluator" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Soil Evaluator.

083089 "Subdivision" means the division of a lot, tract, or parcel of land into two or more lots, sites, or other divisions of land for the purpose, whether immediate or future, of ownership or building development, except that the division of land shall not be considered to be a subdivision when the smallest parcel created is more than ~~ten~~ 10 acres in area. For the purposes of this regulation, the term "subdivision" includes the dividing of an area of land into smaller areas to be sold, transferred, leased, rented, or allowed to be used for the purpose of constructing or locating a dwelling, ~~establishment, or other development feature~~ or non-dwelling facility that generates wastewater.

084090 "Surface waters" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the state. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

091 "Tank" means a watertight structure or container used to hold wastewater for such purposes as aeration, dilution, disinfection, equalization, mixing, sedimentation, storage, collection for transport, treatment, or addition of chemicals.

092 "Trench or absorption trench" means an excavation containing filter material and an effluent distribution system used for the distribution of effluent in a soil absorption system.

Title 124
Chapter 1

085093 "Wastewater" means liquid and water borne wastes from a dwelling or ~~establishment~~ non-dwelling facility. Wastewater includes both blackwater and graywater.

086094 "Wastewater lagoon" means a shallow body of water ~~in which~~ where organic wastes are decomposed by bacteria in the presence of free oxygen.

087095 "Wastewater works" means facilities for collecting, transporting, pumping and treating wastewater and the disposal of treated effluent and sludge.

088096 "Waters of the state" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, water courses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

Legal Citation: Title 124, Ch. 1, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 2 - APPLICATION OF REGULATIONS

001 A dwelling or ~~establishment~~ non-dwelling facility that generates wastewater shall have an on-site wastewater treatment system in accordance with these regulations or be connected to a wastewater works. For the purposes of these regulations, a wastewater treatment system with a design flow greater than 1,000 gallons per day and that does not use a soil absorption system is not considered an onsite wastewater treatment system but is considered a wastewater works subject to the requirements in Nebraska Administrative Code Title 123 - Rules and Regulations for the Design, Operation and Maintenance of Wastewater Works.

002 Private onsite wastewater treatment systems installed at an electric generation facility site owned by a district organized under Nebraska Revised Statutes, Chapter 70, article 6 are not subject to registration of the on-site systems or required to have installation of the system by a certified Onsite Professional.

003 An on-site wastewater treatment system installed on or after the effective date of these regulations shall meet all requirements of this Title.

004 An existing on-site wastewater treatment system is subject to these design requirements if:

004.01 It ~~is endangering~~ ings public health, ~~failings~~, or discharginges a prohibited or unauthorized discharge. A cesspool, seepage pit, dry well, or leaching pit is a ~~failing~~ failed system. A soil absorption system with less than four feet to groundwater or other limiting soil characteristic is a ~~failing~~ failed system;

004.02 It is being replaced, reconstructed, altered, or modified;

004.03 There is an adverse change in use such as an increase in the number of bedrooms, design flow, or waste strength;

004.04 It begins ~~receiving to receive~~ wastewater from a different dwelling or ~~establishment~~ non-dwelling facility than it was originally constructed to serve;

004.05 It begins ~~receiving to receive~~ wastewater from a dwelling or ~~establishment~~ non-dwelling facility that is reconstructed or replaced following an event such as fire that renders the structure unsuitable for occupancy; or

Title 124
Chapter 2

004.06 The system owner creates or causes an encroachment on a setback distance by a change in a property line or construction of a new development feature such as a well, water line or foundation.

005 Repairs and maintenance can be performed on an on-site wastewater treatment system that ~~is functioning~~ properly without being subject to the design requirements of this regulation if:

005.01 The repair is to fix a minor structural ~~component defect~~ of the existing system such as: to seal a crack in a tank lid; level a distribution box; or to repair or replace a manhole riser, inspection pipe, tank baffle, building sewer pipe, or a pipe between the septic tank and soil absorption system, or

005.02 The repair is to fix a mechanical devices, such as repair or replacement of a pumps, blowers, ~~and or~~ electrical equipment.

006 A temporary modification to a ~~fail~~ing on-site wastewater treatment system ~~not meeting the requirements of this regulation~~ may be performed without meeting the design requirements in these regulations if the modification is to prevent a surface discharge or reduce a threat to public health. The temporary modification must be registered, with a written description submitted with the registration which states that a temporary modification was made and which also specifically describes the problem that caused the discharge with the reason the temporary modification was made. Use of a system with a temporary modification may operate for no more than four months without Department approval is prohibited.

007 A discharge of wastewater is prohibited:

007.01 To surface water without a ~~National Pollutant Discharge Elimination System (NPDES)~~ permit issued in accordance with Nebraska Administrative Code Title 119 - Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System;

007.02 To groundwater without Department approval; and

007.03 To the land surface from a dwelling, ~~establishment non-dwelling facility,~~ building sewer, or on-site wastewater treatment system without Department approval.

Title 124
Chapter 2

008 In implementing these regulations, the Department shall protect the quality of surface water and groundwater in the immediate vicinity of any proposed on-site wastewater treatment system. The Department shall consider the following:

008.01 The use classification of the surface water and groundwater (Title 117 - Nebraska Surface Water Quality Standards and Title 118 - Ground Water Quality Standards and Use Classification);

008.02 Vulnerability of surface water and groundwater to pollution;

008.03 The beneficial uses existing or assigned to the surface waters and groundwaters. Beneficial uses are those uses of surface waters and groundwaters as determined through Title 117 and Title 118, respectively;

008.04 Characteristics of the on-site wastewater treatment system;

008.05 Technical and socioeconomic factors; and

008.06 Other appropriate site-specific factors.

009 In addition to the requirements of these regulations, all subsurface disposal systems having the capability to accept sanitary waste generated by ~~greater than 20~~ or more persons, or the fluid flow of greater than 1,000 gallons per day, or on-site wastewater treatment systems receiving non-domestic wastes may be subject to Nebraska Administrative Code Title 122 - Rules and Regulations for Underground Injection and Mineral Production Wells. The discharge of motor vehicle wastes to a septic system is prohibited.

010 Nothing in this Title shall prevent more stringent local requirements from being adopted.

011 Where applicable, Nebraska Health & Human Services System Title 178 NAC 12 - Regulations Governing Water Well Construction, Pump Installation, and Water Well Decommissioning Standards and Title 179 NAC 2 - Regulations Governing Public Water Supply Systems may require more stringent setback requirements.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 2, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 3 - PERMITS AND AUTHORIZATION BY RULE

001 There shall be two procedures designed to cover all onsite wastewater treatment systems under these regulations as follows:

001.01 Authorization by Rule as described in 002 below.

001.02 Construction and Operating Permits as described in 003 below.

002 Authorization by Rule:

002.01 The owner of a dwelling or, ~~an establishment~~ a non-dwelling facility with a design flow ~~from toilets, urinals, and lavatories~~ of domestic wastewater of less than 1,000 gallons per day or less, is ~~hereby~~ authorized by rule, through the services of a professional engineer, registered environmental health specialist, or certified professional, to construct, reconstruct, alter, ~~or~~ modify, or close an on-site wastewater treatment system provided such system does not endanger human health or cause pollution and meets all the provisions for design, setback distances and reserve area prescribed in these regulations. Construction of a mound system is not covered by Authorization by Rule, except for a mound system designed and constructed under the direct supervision of a certified Master Installer with Mound System Endorsement, a Professional Engineer, or a Registered Environmental Health Specialist in accordance with the requirements specified in this Title for an endorsed mound system design.

002.02 The owner of a dwelling or, ~~an establishment~~ a non-dwelling facility with domestic wastewater flow ~~from toilets, urinals, and lavatories of less than~~ of 1,000 gallons per day or less, is ~~hereby~~ authorized by rule to operate an on-site wastewater treatment system provided such system is not failing, does not endanger human health, does not cause pollution, and if installed on or after January 1, 2004, the system meets the requirements of this Title at the time it was installed and has been registered with the Department in accordance with this Title. Operation of a mound system designed, installed, and registered in accordance with the endorsed mound system requirements of this Title is ~~not also~~ covered by Authorization by Rule.

002.03 A copy of the following information must be maintained on the premises of the facility using the on-site wastewater treatment system and made available to the Department by the owner or installer upon request:

002.03A Copy of the system registration form submitted to the Department in accordance with this Title.

002.03B An appropriately scaled drawing of the on-site wastewater treatment system, which specifies location, setbacks, capacity, materials of construction, and the construction details for all components of the system, including pump and pump tank or pump chamber specifications for any system using a pump. The scaled drawing shall be on no less than 8.5 by 11 inch paper and shall be neatly drawn with appropriate dimensions and fixed reference point indicated.

002.03C Data and results for Ssoil percolation tests or seepage tests results performed in accordance with ~~Chapter 6~~ this Title.

003 Permit Application

003.01 The owner of a dwelling or ~~establishment~~ non-dwelling facility proposing to construct, reconstruct, alter, or modify an onsite wastewater treatment system for a domestic wastewater design flows of more than 1,000 gallons per day ~~or more, or with or for a design flow that includes wastewater~~ other than ~~household type wastes~~ domestic wastewater, or proposing to construct, reconstruct, alter, or modify an onsite wastewater treatment system not covered by “Authorization by Rule” as provided for in section 002 above shall apply for and obtain a construction/operating permit from the Department in accordance with this Chapter or on a form provided by the Director. Authorization by Rule does not apply to construction of a soil absorption system in a soil with a percolation rate slower than 60 minutes per inch or to construction of a household lagoon on a lot with less than three acres. When an application for a construction/operating permit is required, the owner must obtain a construction permit from the Department prior to ~~construction~~ the start of the work and an operating permit from the Department prior to ~~operation~~ use of the system. The construction permit and the operating permit for a single system are covered by one application.

~~003.01~~003.02 The permit application shall include, at a minimum, the completed permit application form (Form B in Appendix K), following:

003.02A The words “Application for Onsite Wastewater Treatment System Construction/Operating Permit”;

003.02B The owner's full name (first name, middle initial, and last name), mailing address, and phone number. If the application is for a business or legal entity, include that name;

003.02C The engineer's full name (first name, middle initial, and last name) and Nebraska engineer license number or as provided for in 003.03B below the Master Installer's name and certification number, along with that professional's mailing address, phone number, and email address;

003.02D The address for the planned facility and the legal description (quarter section, quarter section, section, township, range) or latitude and longitude (to four decimal places) for the planned onsite system, including the county of location;

003.02E The statement "I swear or affirm that the application information and documentation submitted are true, complete, and accurate";

003.02F The owner's signature and date signed. If the application is signed by an authorized representative, the application shall include a description of the authorized representative's authority to sign on behalf of the owner and the representative's full name (first name, middle initial, and last name), mailing address, and phone number;

003.02G ~~the~~The permit application fee (see Appendix A); and

003.02H ~~plans~~Plans, specifications, soil percolation ~~information~~ data and results, soil evaluation, and soil boring or observation information. Three sets of all plans, specifications, reports, and technical documents shall be submitted and shall included ~~the following~~:

003.02H.1 A detailed description of the waste and wastewater sources the onsite system is proposed to treat or store, and the peak single-day flow;

003.02H.2 A complete and detailed site plan with accurate information drawn to an appropriate scale The site plan shall include a fixed geographic reference point; the location of all percolation tests and soil borings; a visual scale; all development features including, but not limited to, foundations, outbuildings, driveways, wells, property lines, and natural topographic features including lakes, ponds, streams, drainage ways, and

ditches; and existing and planned elevation contour lines to show the direction and steepness of the slope of the ground surface. Information may also be required for adjacent property to provide verification that setback requirements are met;

003.02H.3 The type, size, location, and elevation of all the components of proposed system, clearly identified on a scaled drawing of sufficient size that shows the legal description and survey of the lot and immediate vicinity property lines, buildings, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, and the location and the type of water supply wells within 1000 feet of the proposed onsite wastewater treatment system;

003.02H.4 Depth to the seasonal highest measured or estimated groundwater table and to the bedrock or other barrier layer surface, if this depth is less than the depth of the seasonal high groundwater table, along with a detailed description of the method used to determine depth for the planned location of the soil absorption, treatment lagoon, or any holding tank facilities. If the depth to seasonal high groundwater or to the bedrock or other barrier layer is less than 10 feet, soil borings or other site specific methods are required to be used;

003.02H.5 Direction of groundwater flow; and

003.02H.6 Soil conditions, properties, and soil percolation test locations, data and results.

003.02003.03 The plans, specifications, reports, and other technical documents submitted as part of the application;

003.03A shall be prepared and properly stamped and signed by a Professional Engineer ~~licensed in the State of Nebraska or~~

003.03B For domestic wastewater flows of 1,000 gallons per day or less for an onsite wastewater treatment system that does not endanger human health or cause pollution and which meets all the provisions for setback distances and reserve area but that does not meet all the provisions for design prescribed in these regulations to be covered by Authorization by Rule, the plans, specifications, reports, and other technical documents submitted as part of the application may be

prepared by a Master Installer, who shall include the statement “I swear or affirm that the application information and documentation submitted are true, complete, and accurate” and who shall also sign and date said documents.

003.03003.04 See Chapter 4 for minimum site evaluation information requirements. Other information may be required by the Department to ensure proper engineering design and operation.

003.05 An onsite system construction/operating permit application expires one year from the date the initial application is received by the Department unless the owner submits a written request for reauthorization or extension from the Department prior to the expiration date and the reauthorization or extension is approved by the Department. Such reauthorization or extension shall be subject to requirements in effect at the time the reauthorization or extension is issued, and such reauthorization or extension will be valid for no more than one year from the date of issuance. Additional reauthorization or extension may be requested in writing prior to expiration.

004 Construction Permit:

004.01 A construction permit shall be issued in the name of the facility, ~~facility’s owner, or its cognizant official, along with its~~ for the legal location of the facility.

004.02 A construction permit is valid for one year from date of issuance. Prior to expiration, the owner may submit a written request for reauthorization or extension from the Department. ~~Such~~ If approved, the reauthorization or extension ~~may shall~~ be subject to ~~any additional~~ requirements of regulations in effect at the time the reauthorization or extension is issued, and such reauthorization or extension will be valid for no more than one year from date of reissuance. Additional reauthorization or extension may be requested in writing prior to expiration.

004.03 The onsite wastewater treatment system shall be constructed, reconstructed, altered, or modified according to the Department approved design.

004.04 The owner shall notify the Department of ~~significant modifications~~ any changes to the approved design or changes in wastewater characteristics (quality or quantity) and obtain Department approval prior to changes being made in the system, ~~including but not limited to additions, changes in wastewater characteristics (quality or quantity), and system design.~~ If the Department determines that any such changes are significant modifications to the previously approved design, the Department may require submittal

of a new application and application fee. If a new construction permit is issued, the previous construction permit shall become null and void.

004.05 The Department may require, as a construction permit condition, submittal of an operation and maintenance manual or plan to provide for the proper operation of the on-site wastewater treatment system.

004.06 The Department may require, as a construction permit condition, submittal of a groundwater- monitoring plan for an on-site wastewater treatment system if there is a potential for groundwater pollution.

005 Operating Permit:

005.01 An operating permit shall be issued when construction that complies with the approved construction permit documents has been completed and:

005.01A The ~~Department is notified, on Form J (Appendix G) signed by the p~~Professional ~~e~~Engineer who designed the system, ~~that construction of the system is complete, in compliance with the approved design, and has satisfied all construction permit conditions, or the Master Installer for a system designed by the Master Installer as provided for in 003.03B above, submits a construction completion notice to the Department. The Master Installer's submittal of the system registration can be used to satisfy this requirement. The construction completion by the P.E. shall include the following:~~

005.01A.1 The words "Notification of Construction Completion of an Onsite System".

005.01A.2 The onsite system construction permit number.

005.01A.3 The owner's full name as identified on the permit application.

005.01A.4 A short description of the onsite system.

005.01A.5 The name of the Master or Journeyman Installer, Professional Engineer, or Registered Environmental Health Specialist under whose direct supervision the system was constructed.

005.01A.6 The statement “I swear or affirm that the information and documentation submitted are true, complete, and accurate and certify that construction agreed with approved construction permit documents or subsequent changes approved by the Department”.

005.01A.7 The engineer’s name and Nebraska issued Professional Engineering license number, or as provided for in 003.03B above the Master Installer’s name and certification number, along with the engineer or installer’s signature and the date signed; and

005.01B The system registration form, system registration fee, and any applicable late fee have been received by the Department.

005.02 The Department may require, as an operating permit condition, groundwater monitoring for any on-site wastewater treatment system if there is a potential for groundwater pollution.

005.03 The Department may require, as an operating permit condition, implementation of a Department approved operation and maintenance plan to ensure proper operation of the on-site wastewater treatment system.

005.04 The permittee shall operate and maintain the on-site wastewater treatment system in compliance with any permit conditions, these regulations and the Nebraska Environmental Protection Act §§81-1501 et seq.

006 Any permit or authorization by rule may be denied, suspended, or revoked, after notice and opportunity for public hearing according to Title 115 – Rules of Practice and Procedure, for cause, including, but not limited to:

006.01 Violation of any term or condition of a permit or authorization by rule.

006.02 Obtaining or attempting to obtain a permit by misrepresentation of any relevant facts or failure to disclose fully all relevant facts.

006.03 Information indicating that the on-site wastewater treatment system is likely, in the Department's judgment, to adversely affect human health or that a potential for ground or surface water pollution exists.

Title 124
Chapter 3

006.04 The existence of factors arising after permit issuance or authorization by rule which would have required limitations or a denial of permit application or authorization by rule.

006.05 Adverse changes in use, such as flow greater than design, or type of wastewater.

006.06 Adverse changes in site conditions created or caused by the system owner such as an encroachment on setback distances, placement of fill or an impermeable surface over the soil absorption system, vehicular traffic or other soil compacting activities over the soil absorption system, or reduction in the size of a lot where a lagoon is installed to an area less than three acres.

006.07 The performance of any siting, layout, construction, reconstruction, alteration, modification, repair, or pumping of the on-site wastewater system, on or after January 1, 2004, by any person who is not a professional engineer, a registered environmental health specialist, or certified professional holding a valid certificate in accordance with this Title in the category of work performed.

006.08 Failure to have registered with the Department an on-site wastewater system that was constructed, reconstructed, altered, or modified on or after January 1, 2004.

007 Transferability of Permits and Authorization by Rule:

007.01 Any transfer of ownership of a permitted or authorization by rule system shall automatically authorize the new owner to operate under the existing permit or authorization by rule.

007.02 ~~A S~~subsequent ~~permit or authorization by rule holders are~~ owner is under the same obligations and conditions of the permit or authorization by rule as was the original or previous ~~owner permittee or authorization by rule holder~~.

008 Operating an on-site wastewater system is prohibited if:

008.01 The system was constructed, reconstructed, altered, or modified under a construction permit and there is no operating permit or the operating permit has been denied, suspended, or revoked;

Title 124
Chapter 3

008.02 The system was constructed, ~~reconstructed, altered, or modified~~ under authorization by rule and the authorization by rule to operate has been suspended or revoked;

008.03 The system was constructed, ~~reconstructed, altered, or modified~~ without a construction permit and did not meet the requirements for authorization by rule to construct without a construction permit; or

008.04 The system ~~is endangering~~ public health ~~or failing, has failed~~, or if operation of the system results in a prohibited discharge.

009 The owner of a septic tank and soil absorption system may also be required to apply for authorization to operate the system or to apply for and obtain a separate permit under Title 122 - Rules and Regulations for Underground Injection and Mineral Production Wells. The Department will make a determination of the need for a permit under Title 122.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8), §81-1506, §81-15,237, §81-15,247, §81-15,248.

Legal Citation: Title 124, Ch. 3, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 4 - SITE EVALUATION AND SUBDIVISIONS

001 Each proposed site for the location of an on-site wastewater treatment system shall be evaluated by a professional engineer, registered environmental health specialist, Journeyman Installer, or Master Installer, and the following information shall be recorded and provided to the Department on request.

001.01 The type, size, location, and elevation of the proposed system, clearly identified on a scaled drawing of sufficient size which will include: the legal description and survey of the lot and immediate vicinity property lines, buildings, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, and the location and the type of water supply wells within 1000 feet of the proposed on-site wastewater treatment system.

001.02 Depth to the seasonal highest measured or estimated groundwater table and to the bedrock or other barrier layer surface, if this depth is less than the depth of the seasonal high groundwater table, along with a detailed description of the method used to determine depth. If the depth to seasonal high groundwater or to the bedrock or other barrier layer is less than 10 feet, soil borings or other site specific methods are required to be used;

001.03 Direction of groundwater flow.

001.04 Soil conditions, properties, and permeability soil percolation test locations, data and results.

001.05 ~~When a permit or subdivision approval is to be issued, a~~ Additional information may be required as part of the application process for a permit or subdivision approval.

~~002—A new on-site wastewater treatment system shall not be installed in a designated ten-year flood plain.~~

003002 The seasonal high water elevation of the groundwater table must be at least four feet below the bottom of the infiltrative surface of the soil absorption system in order to provide adequate filtration through the soil and avoid pollution of the groundwater. One or more of the following sources or types of information shall be used to determine the seasonal high water elevation of the groundwater.

~~003.01~~002.01 U.S. Department of Agriculture Natural Resources Conservation Service soils maps and soil interpretation records.

~~003.02~~002.02 Evaluation of soil color and the presence or absence of mottling.

~~003.03~~002.03 Evaluation of impermeable or semi-permeable soil layers.

~~003.04~~002.04 Measured water levels ~~for any~~ from nearby test hole(s), observation well(s), or water well(s).

~~004003~~ Subdivision Review and Approval Application

003.01 Prior to construction of a development area where an on-site wastewater treatment system is proposed on any lot less than three acres in size, the owner of the development area shall submit an application for subdivision review and receive Department approval for the use of on-site wastewater treatment systems for the development area in accordance with this Chapter or on a form provided by the Director. The Department will review the application and determine the acceptability of on-site wastewater treatment systems for the development area. The Department will either approve or deny the use of on-site wastewater treatment systems for the development area. Approval will be based upon an evaluation of the submitted information to meet design requirements of this Title.

003.02 Once the Department has issued a subdivision approval, any subsequent change may be considered a new application and subject to the subdivision review and approval application and fee requirements.

003.03 An application for subdivision review and approval expires one year from the date the initial application is received by the Department unless the owner submits a written request for reauthorization or extension from the Department prior to the expiration date and the reauthorization or extension is approved by the Department. Such reauthorization or extension shall be subject to requirements in effect at the time the reauthorization or extension is issued, and such reauthorization or extension will be valid for no more than one year from the date of issuance. Additional reauthorization or extension may be requested in writing prior to expiration.

003.04 The application shall include, at a minimum, the following:

003.04A The words “Application for Onsite Wastewater Subdivision Review and Approval”;

003.04B The owner’s full name (first name, middle initial, and last name), mailing address, and phone number. If the application is for a business or legal entity, include that name;

003.04C The full name (first name, middle initial, and last name), certification or professional license number, mailing address, phone number, and email address for the Master or Journeyman Installer, Registered Environmental Health Professional, or Professional Engineer responsible for the siting and layout;

003.04D The legal description (quarter section, quarter section, section, township, range) or latitude and longitude (to four decimal places) for the planned development area, including the county of location;

003.04E The statement “I swear or affirm that the application information and documentation submitted are true, complete, and accurate”;

003.04F The owner’s signature and date signed. If the application is signed by an authorized representative, the application shall include a description of the representative’s authority to sign on behalf of the owner and the representative’s full name (first name, middle initial, and last name), mailing address, and phone number;

003.04G The subdivision review and approval application fee (see Appendix A); and

003.04H ~~a completed Form SD (Appendix I), the applicable application fee, and~~ Three sets of all plans, specifications, reports, and supporting technical documents, all prepared by a professional engineer, registered environmental health specialist, or a master or journeyman installer. Minimum site evaluation information to be submitted as part of the application ~~is~~ shall include the information identified in 001 above; existing and planned elevation contour lines to show the direction and steepness of the slope of the ground surface and natural topographic features including lakes, ponds, streams, drainage ways, and ditches; and a benchmark or fixed reference point with north orientation clearly indicated. Cut and fill areas and planned changes to topography must be clearly identified and shown on the plans. Other information, including but not limited to

information for adjacent property to provide verification that setback requirements are met, may be required by the Department as needed to allow adequate review of the proposed development area. The drawings and soils information shall be in accordance with the following requirements:

004.01003.04H.1 For development areas with lot sizes less than 3 acres (12,140 sq. m) but greater than or equal to 1 3/4 acres (8,470 sq. m), the drawings must include the location of all on-site wastewater treatment systems, reserve areas, and well locations for all lots. Also, soil percolation tests, and soil borings or site excavations shall be conducted on a minimum of every fifth lot to determine the soil characteristics and evidence of groundwater.

004.02003.04H.2 For development areas with lot sizes less than 1 3/4 acres (8,470 sq. m) but greater than or equal to 1 1/4 acre (6050 sq. m), the drawings must include the location of all on-site wastewater treatment systems, reserve areas, and well locations and areas for structures including the dwelling or establishment non-dwelling facility, driveway, and outbuildings for all lots. Also, soil percolation tests, and soil borings or site excavations shall be conducted on a minimum of every fifth lot to determine the soil characteristics and evidence of groundwater.

004.03003.04H.3 For development areas with lot sizes less than 1 1/4 acre (6050 sq. m), the drawings must include the location of all on-site wastewater treatment systems, reserve areas, and well locations and areas for structures including the dwelling or establishment non-dwelling facility location, driveway, sidewalks, and outbuildings for all lots and the number of bedrooms available for dwellings and maximum flows for establishment non-dwelling facilities. Also, soil percolation tests, and soil borings or site excavations shall be conducted on every lot to determine the soil characteristics and evidence of groundwater.

005004 The owner of any dwelling or establishment non-dwelling facility constructed after the effective date of these regulations shall establish a reserve area to be used for a replacement on-site wastewater treatment system, which will meet the requirements of these regulations. The reserve area will be considered a part of the on-site wastewater treatment system and all setback requirements apply.

Title 124
Chapter 4

006005 For the purpose of this chapter, “lot size” means the area of a lot excluding all area below the normal high water level of any surface water feature, ~~all area below a ten-year flood elevation~~, and all area within the right-of-way or easement of a street, road, or access easement.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8), §81-15,237, §81-15,247, §81-15,248.

Legal Citation: Title 124, Ch. 4, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 5 - SETBACK DISTANCES

001 The installation of a septic tank system, pump tank, or holding tank is prohibited within the horizontal setback distances in Table 5.1 unless individually reviewed and a construction permit is issued by the Department or the installation is in an area controlled by a local government agency that has a Memorandum of Agreement (MOA) with the Department with specific encroachment allowances listed in the MOA as determined by scientific data and inspected by the local agency.

TABLE 5.1—Septic Tank, Holding Tank, and Soil Absorption Systems

Item	Minimum Setback Distance—feet (meters)	
	Tanks	Absorption, Infiltrative, and Evaporative Systems
Surface Water:	-50 ft. (-15.2 m)	-50 ft. (-15.2 m)
Private Drinking Water Wells:	-50 ft. (-15.2 m)	100 ft. (-30.5 m)
Public Drinking Water Supply Wells:		
—Non Community System	-50 ft. (-15.2 m)	100 ft. (-30.5 m)
—Community System	500 ft. (152.4 m)	500 ft. (152.4 m)
Community System when a septic system or soil absorption system of > 1000 gpd is proposed	500 ft. (152.4 m)	Evaluated by professional engineer for potential impact on the well and submitted to the Department for approval if less than 1000 ft.
All Other Water Wells:	-50 ft. (-15.2 m)	100 ft. (-30.5 m)
Water Lines:		
—Pressure Main	-10 ft. (-3.1 m)	-25 ft. (-7.6 m)
—Pressure—Service Connection	-10 ft. (-3.1 m)	-25 ft. (-7.6 m)
—Suction Lines	-50 ft. (-15.2 m)	100 ft. (-30.5 m)
Property Lines:	-5 ft. (-1.5 m)	-5 ft. (-1.5 m)
Foundations: (see “class” definition following Table 5.2)		
—Except Neighbors Foundation:		
—Class 1 *	-15 ft. (-4.6 m)	-30 ft. (-9.1 m)
—Class 2 **	-10 ft. (-3.1 m)	-20 ft. (-6.1 m)
—Class 3 ***	-7 ft. (-2.1 m)	-10 ft. (-3.1 m)
—Neighbors Foundation:		
—Class 1 *	-25 ft. (-7.6 m)	-40 ft. (-12.2 m)
—Class 2 **	-20 ft. (-6.1 m)	-30 ft. (-9.1 m)
—Class 3 ***	-15 ft. (-4.6 m)	-20 ft. (-6.1 m)

002 The installation of a lagoon is prohibited within the setback distances in Table 5.2 unless individually reviewed and a construction permit is issued by the Department, or the installation is in an area controlled by a local government agency that has a Memorandum of Agreement (MOA) with the Department with specific encroachment allowances listed in the MOA as determined by scientific data and inspected by the local agency. The setback distance in Table 5.2 is the horizontal distance measured from the high water mark for the maximum operating depth of the lagoon. However, in no case shall a lagoon be installed in a location that results in any item listed in Table 5.2 being located closer than 10 feet horizontally out from the outer toe of a lagoon dike.

TABLE 5.2 – Lagoons

Item	Minimum Setback Distance – feet (meters)
Surface Water: Distance from High Water Mark	–50 ft. (15.2 m)
Private Drinking Water Wells:–	100 ft. (30.5 m)
Public Drinking Water Supply Wells:	
–Non-Community	100 ft. (30.5 m)
–Community	Evaluated by a professional engineer for potential impact on the well and submitted to the Department for approval if less than 1000 ft (304.8 m).
All Other Water Wells:	100 ft. (152.4 m)
Water Lines:	
–Pressure Main	–25 ft. (7.6 m)
–Pressure Service Connection	–25 ft. (7.6 m)
–Suction Line	100 ft. (30.5 m)
Property Lines:	–50 ft. (15.2 m)
Trees:	–50 ft. (15.2 m)
Foundations: (see “class” definition at end of Table 5.2)	
–Except Neighbors Foundation:	
–Class 1 *	100 ft. (30.5 m)
–Class 2 **	100 ft. (30.5 m)
–Class 3 ***	–50 ft. (15.2 m)
–Neighbors Foundation:	
–Class 1 *	200 ft. (61.0 m)
–Class 2 **	200 ft. (61.0 m)
–Class 3 ***	100 ft. (30.5 m)

~~*–Class 1 Foundations:~~

Title 124
Chapter 5

~~Full basements, or non-basement footing foundations and slab on grade for living quarters that are lower in elevation from the on-site wastewater treatment system.~~

~~** Class 2 Foundations:~~

~~Non-basement footing foundations, trailer houses and slab on grade living quarters that are higher in elevation than the on-site wastewater treatment system.~~

~~*** Class 3 Foundations:~~

~~Structures using slab on grade construction and are not used as living quarters.~~

003 Location of an on-site wastewater treatment system on property not owned by the facility using the system shall have ~~an~~ a properly executed and filed property easement between the facility and the land owner on which the system resides for the life of the facility, which shall include provisions that allow for the operation and maintenance of the onsite wastewater treatment system. A copy of the filed easement shall be submitted with the system registration.

004 The Department may require greater setback distances for approvable surface discharge systems as necessary to protect the surface water and groundwater.

005 Setback distances for all other on-site wastewater treatment systems shall be determined by the Department to protect public health and the environment.

006 Construction or relocation of a foundation, well, water line, surface water feature, or property line by the system owner within the setback distances listed in Table 5.1 or Table 5.2 of any onsite wastewater system or area reserved for a replacement soil absorption system is prohibited, except that the Department may approve, at the system owner's request, encroachment of a foundation within the minimum setback distances to system components upon submittal of a foundation construction plan and a letter from a professional engineer stating that he or she has evaluated the proposed construction plan and in his or her professional opinion, the encroachment will not have any detrimental effect on the structural integrity of the foundation or system components, or on the proper function and operation of the system components, or on the ability to maintain or replace any of the system components.

007 The water well setback does not apply to a monitoring well meeting the requirements of Nebraska Administrative Code Title 178 - Regulations Governing Water Well Construction, Pump Installation, and Water Well Decommissioning Standards, that is installed and used for monitoring the performance of an onsite wastewater treatment system and determining ground water quality.

008 A swimming pool shall be considered living quarters for the purposes of foundation classes used in determining setbacks in Tables 5.1 and 5.2.

Title 124
Chapter 5

009 No parking area, driveway, or impermeable surface or cover shall be installed, created, or located by the owner, or anyone acting for the owner, over or within five feet horizontally of a soil absorption system or reserve area.

010 For setback purposes, foundation classes are defined as follows:

010.01 Class 1 Foundation means a basement, a non-basement footing, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.

010.02 Class 2 Foundation means a non-basement footing foundation, trailer house, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation.

010.03 Class 3 Foundation means slab-on-grade construction that is not used as living quarters.

TABLE 5.1 - Tank and Soil Absorption System Setbacks

<u>Item</u>	<u>Minimum Setback Distance feet (meters)</u>	
	<u>Tanks</u>	<u>Absorption, Infiltrative, and Evaporative Systems</u>
<u>Surface Water</u>	<u>50 ft. (15.2 m)</u>	<u>50 ft. (15.2 m)</u>
<u>Private Drinking Water Wells</u>	<u>50 ft. (15.2 m)</u>	<u>100 ft. (30.5 m)</u>
<u>Public Drinking Water Supply Wells:</u>		
<u>Non-Community System</u>	<u>50 ft. (15.2 m)</u>	<u>100 ft. (30.5 m)</u>
<u>Community System</u>	<u>500 ft. (152.4 m)</u>	<u>500 ft. (152.4 m)</u>
<u>Community System when a septic system or soil absorption system of > 1000 gpd is proposed</u>	<u>500 ft. (152.4 m)</u>	<u>Evaluated by professional engineer for potential impact on the well and submitted to the Department for approval if less than 1000 ft.</u>
<u>All Other Water Wells</u>	<u>50 ft. (15.2 m)</u>	<u>100 ft. (30.5 m)</u>
<u>Water Lines:</u>		
<u>Pressure-Main</u>	<u>10 ft. (3.1 m)</u>	<u>25 ft. (7.6 m)</u>
<u>Pressure-Service Connection</u>	<u>10 ft. (3.1 m)</u>	<u>25 ft. (7.6 m)</u>
<u>Suction Lines</u>	<u>50 ft. (15.2 m)</u>	<u>100 ft. (30.5 m)</u>
<u>Property Lines</u>	<u>5 ft. (1.5 m)</u>	<u>5 ft. (1.5 m)</u>
<u>Parking area, driveway, sidewalk, or other impermeable surface or cover</u>	<u>5 ft. (1.5 m)</u>	<u>5 ft. (1.5 m)</u>
<u>Foundations: (see definitions above)</u>		
<u>Except Neighbor's Foundation:</u>		
<u>Class 1</u>	<u>15 ft. (4.6 m)</u>	<u>30 ft. (9.1 m)</u>
<u>Class 2</u>	<u>10 ft. (3.1 m)</u>	<u>20 ft. (6.1 m)</u>
<u>Class 3</u>	<u>7 ft. (2.1 m)</u>	<u>10 ft. (3.1 m)</u>
<u>Neighbor's Foundation:</u>		
<u>Class 1</u>	<u>25 ft. (7.6 m)</u>	<u>40 ft. (12.2 m)</u>
<u>Class 2</u>	<u>20 ft. (6.1 m)</u>	<u>30 ft. (9.1 m)</u>
<u>Class 3</u>	<u>15 ft. (4.6 m)</u>	<u>20 ft. (6.1 m)</u>

TABLE 5.2 - Lagoon Setbacks

<u>Item</u>	<u>Minimum Setback Distance - feet (meters)</u>
<u>Surface Water: Distance from High Water Mark</u>	<u>50 ft. (15.2 m)</u>
<u>Private Drinking Water Wells</u>	<u>100 ft. (30.5 m)</u>
<u>Public Drinking Water Supply Wells:</u>	
<u>Non-Community</u>	<u>100 ft. (30.5 m)</u>
<u>Community</u>	<u>Evaluated by a professional engineer for potential impact on the well and submitted to the Department for approval if less than 1000 ft (304.8 m).</u>
<u>All Other Water Wells</u>	<u>100 ft. (152.4 m)</u>
<u>Water Lines:</u>	
<u>Pressure-Main</u>	<u>25 ft. (7.6 m)</u>
<u>Pressure-Service Connection</u>	<u>25 ft. (7.6 m)</u>
<u>Suction Line</u>	<u>100 ft. (30.5 m)</u>
<u>Property Lines</u>	<u>50 ft. (15.2 m)</u>
<u>Trees and Brush</u>	<u>50 ft. (15.2 m)</u>
<u>Foundations: (see definitions above)</u>	
<u>Except Neighbor's Foundation:</u>	
<u>Class 1</u>	<u>100 ft. (30.5 m)</u>
<u>Class 2</u>	<u>100 ft. (30.5 m)</u>
<u>Class 3</u>	<u>50 ft. (15.2 m)</u>
<u>Neighbor's Foundation:</u>	
<u>Class 1</u>	<u>200 ft. (61.0 m)</u>
<u>Class 2</u>	<u>200 ft. (61.0 m)</u>
<u>Class 3</u>	<u>100 ft. (30.5 m)</u>

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 5, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 6 - SOIL PERCOLATION

001 Soil percolation tests shall be conducted in the area where the soil absorption system will be located. Such tests shall not be made on disturbed ground or frozen ground. Where fissured or creviced formations are encountered below the ground surface, the Department shall be consulted for assistance. Soil percolation tests shall be conducted by a professional engineer, registered environmental health specialist, or a certified professional holding a certificate in the category of Inspector, Soil Evaluator, Master Installer, or Journeyman Installer.

002 Percolation tests shall be performed as follows:

002.01 At least three test holes shall be dug and spaced uniformly over the proposed absorption field site. If the difference between the fastest and the slowest measured percolation rate is greater than 20 minutes per inch, or there are other indications that soil conditions are highly variable, a minimum of four test holes and two test holes per lateral is required.

002.02 These holes shall be dug or bored with horizontal dimensions of from four to twelve inches and vertical sides to the depth of the bottom of the proposed distribution trench. Holes can be bored with a posthole type auger.

002.03 Roughen or scratch the bottom and sides of the holes to provide a natural surface. Remove all loose material from the hole. Place about two inches of 1/4 to 3/4 inch gravel in the hole to prevent bottom scouring.

002.04 Fill the hole with clear water to a minimum depth of ~~twelve~~ 12 inches over the gravel. By refilling, if necessary, or by supplying a surplus reservoir of water (automatic siphon), keep water in the hole for at least four hours; and preferably overnight.

002.04A Soils with moderately slow permeability or that contain greater than 30 percent clay will require several days soaking to reach saturation, especially when the soil is dry, in order to obtain the required saturation prior to making measurements.

002.04B In sandy soils containing little or no clay, soaking is not necessary. If after filling the hole twice with 12 inches of water; the water seeps completely

away each time in less than ~~ten~~ 10 minutes; then the test can proceed immediately and described in. ~~See 002.05C below.~~

002.05 Percolation rate measurements should be made on the day following the saturation process, except in highly permeable sandy soils with fast percolation rates as noted below or in less permeable soils with high clay content and slow percolation rates, as note above. For all soils, the percolation rate of the planned last test measurement for any one test hole should approach a uniform rate and not vary more than 10 percent from the previous measurement for that test hole.

002.05A If the water remains in the test hole after overnight saturation, adjust the water depth to a minimum of six inches over the gravel. From a fixed reference point, measure the drop in water level during an approximate 30 minute period.

002.05B If no water remains in the hole after overnight saturation, add clear water to a depth of six inches over the gravel. From a fixed referenced point, measure the drop in water level at approximate 30 minute intervals over a four hour period, refilling the hole to a depth of six inches as necessary after each 30 minute period. The drop which occurs during the final 30 minute period is used to calculate the percolation rate.

002.05C ~~A shorter measurement time interval of 10 minutes may be used for sandy or coarse grained soils with fast permeability, or in other soils in which where the first six inches of water seeps away in less than 30 minutes even after the overnight saturation or swelling period, the time interval between measurements can be taken as ten minutes, refilling the hole to a depth of 6 inches as necessary after each interval, s~~ Six test measurements will be made shall be taken, one at ten the end of each 10 minute intervals, refilling the hole to a depth of six inches as necessary after each interval. The drop that occurs during the final ~~ten~~ 10 minutes is used to calculate the percolation rate.

~~002.05D~~ ~~Soils with moderately slow permeability and/or containing greater than 30% clay in the testing zone will require several days saturation when the soil is dry in the summer and other seasons of the year to obtain the required saturation prior to making measurements.~~

002.06 The percolation test data shall be recorded and maintained on the premises, ~~or submitted to the Department as required in Chapter 3~~ and made available to the Department by the owner or installer upon request.

Title 124
Chapter 6

002.07 Other methods of determining the percolation rate may be approved by the Department if the method is recognized as providing accurate and consistent results.

003 ~~To obtain~~ The percolation rate of a test hole (the average time in minutes for the water level in the test hole to ~~fall~~ drop one inch); is determined by divided dividing the number of minutes elapsed by the water level drop in inches during the final measurement period. ~~An average~~ The design percolation rate for the ~~entire field should then~~ soil absorption system shall be determined ~~from by averaging~~ the percolation rate of ~~each of all~~ the test holes unless ~~the difference between the fastest and slowest measured rates in an area is more than 20 minutes per inch, in which case the slowest percolation rate shall be used. If tests in the area vary more than 20 minutes/inch, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged and design should be based on the slowest rate, or site relocation should be considered. If any percolation test is faster then five minutes per inch or slower than 60 minutes per inch, then see 004 below.~~

004 Site Acceptability Based on Soil Conditions:

004.01 Soil is unsuitable for a soil absorption system if the percolation rate is faster than 5 five minutes per inch; or is slower than 60 minutes per inch, except as provided for below.

004.01A004.02 Soils with a percolation rate faster than 5 five minutes per inch are acceptable if ~~a twelve~~ 12-inch thick loamy sand soil liner with a percolation rate of 15 to 20 minutes per inch is installed in the trench or bed in accordance with Chapter 14. ~~A~~ The trench or bed is then sized based on this soil liner's percolation rate.

004.03 A soil absorption system ~~will~~ shall not be installed if the percolation rate is ~~outside the range defined above~~ slower than 60 minutes per inch unless designed by a professional engineer and a construction permit is issued in accordance with Chapter 3; ~~Section 003~~.

004.04 ~~Any~~ Installation of an alternative on-site wastewater treatment system ~~which is proposed~~ to accommodate unsuitable soil conditions ~~will have to be~~ requires a construction permit approved by the Department in accordance with Chapter 3; ~~Section 003~~.

004.05 Construction of a soil absorption system in fill is prohibited except as provided for in Chapter 14.

Title 124
Chapter 6

005 The Department may require verification of percolation rates when submitted results are inconsistent with other known data.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8), §81-15,248.

Legal Citation: Title 124, Ch. 6, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 7 - ~~SEPTIC TANK; CONSTRUCTION; MATERIALS USED~~

001 A septic, holding, dosing, pumping, grease trap, or other tank used in an onsite wastewater treatment system shall be constructed of materials not subject to excessive corrosion or decay and shall be water-tight. Acceptable tank construction materials are ~~C~~concrete, ~~concrete blocks~~, fiber reinforced plastic (~~FRP~~), high density plastic, and fiberglass ~~are acceptable~~.

~~001.01002~~ When precast and cast in place reinforced concrete tanks are used they shall be properly cured and of watertight construction.

~~001.02003~~ All concrete interior surfaces of a tank that are exposed to air shall be coated with a bitumastic or similar protective compound beginning at an elevation 3 inches below the normal effluent operating level to minimize corrosion and degradation of the concrete.

~~001.03~~ ~~Concrete block tanks shall be laid on a solid foundation and mortar joints shall be filled. The interior of the tank shall be surfaced with two one-fourth inch thick coats of portland cement, sand plaster, or shall be coated with a bitumastic material. Special attention shall be given to job built tanks to insure water tightness.~~

~~004~~ Concrete block and metal are not acceptable materials for new tank construction. When an existing system is being replaced, reconstructed, altered, or modified and there is an existing concrete block or metal tank that is part of the system, the tank must be inspected. The existing tank must be replaced with a tank meeting current requirements unless the existing tank is determined to be structurally sound and watertight.

~~001.04005~~ The tank shall be designed to withstand soil pressures when empty and not collapse or undergo excessive deflection which would prevent the proper operation of the system, crack or distort components of the system such as the baffles, prevent proper sealing of lids over manholes and inspection ports, reduce capacity below the required minimum tank design capacity, or reduce the design working volume of the system.

~~001.05006~~ All septic tanks shall be permanently marked to specify the capacity in gallons, manufacturer, and the manufacturer's address. The gallon and manufacturing identification label shall be located next to the manhole towards the inlet side.

Enabling Legislation: ~~Rev.~~ Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 7, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 8 - SEPTIC TANK AND HOLDING TANK DESIGN AND PLACEMENT

All septic tanks and holding tanks regardless of material or method of construction shall conform to the following criteria ~~as shown in Figures 8.1, 8.2, 8.3, and 8.4.~~

001 The depth from the invert of the outlet to the floor of the tank (liquid depth) of any septic tank or compartment thereof shall not be less than ~~42~~ 36 inches and a liquid depth greater than 78 inches shall not be considered in determining tank capacity. The diameter of a septic tank shall not be less than 60 inches and the length shall be approximately two to three times the width.

002 No septic tank or compartment thereof shall have an inside horizontal dimension less than 24 inches.

003 Inlet and outlet connections of the septic tank shall be provided with baffles. ~~See Figure 8.5.~~

004 The space in the septic tank between the liquid surface and the top of the inlet and outlet baffles shall be not less than 20 percent of the total required liquid capacity, except that in horizontal cylindrical tanks and tanks with other irregular, non-rectangular cross-sectional shapes this space shall be not less than 15 percent of the total required liquid capacity.

005 Inlet and outlet baffles shall be constructed of acid resistant concrete, acid resistant fiberglass, or plastic.

006 Sanitary tees shall be affixed to the inlet or outlet pipes with a permanent waterproof adhesive. Baffles shall be integrally cast with the septic tank, affixed with a permanent waterproof adhesive, or affixed with stainless steel connectors top and bottom.

007 The septic tank inlet baffle shall extend at least ~~6~~ six inches but not more than 20 percent of the total liquid depth below the liquid surface and at least one inch above the crown of the inlet sewer.

008 The septic tank outlet baffle and the baffles between compartments shall extend below the liquid surface a distance equal to approximately 40 percent of the liquid depth, except that the penetration of the indicated baffles or sanitary tees for horizontal cylindrical tanks and tanks with other irregular, non-rectangular cross-sectional shapes shall be approximately 35 percent of the total liquid depth. ~~They~~ The baffles shall also ~~shall~~ extend above the liquid surface as

Title 124
Chapter 8

required in item 004. In no case shall ~~they~~ the baffles or tees extend less than six inches above the liquid surface.

009 There shall be at least ~~4~~ one inch between the underside of the top of the septic tank and the highest point of the inlet and outlet devices.

010 The septic tank inlet invert shall be not less than ~~2~~ one inches above the outlet invert.

011 The septic tank inlet and outlet shall be located opposite each other along the axis of maximum dimension and shall be constructed of non-corrosive materials. The horizontal distance between the nearest points of the inlet and outlet devices shall be at least ~~4~~ four feet. A septic tank with two or more compartments may have the inlet and outlet located along the end of the tank or within 12 inches of the end of the tank as long as the inlet and outlet baffle requirements identified in this chapter are met.

012 Sanitary tees shall be at least ~~4~~ four inches in diameter. Inlet baffles shall be located no less than ~~6~~ six inches or no more than 12 inches measured from the end of the inlet pipe to the nearest point on the baffle. Outlet baffles shall be located ~~6~~ six inches measured from beginning of the outlet pipe to the nearest point on the baffle.

013 Septic Tank or Holding Tank Access ~~to the septic tank shall be as follows:~~

013.01 There shall be one or more access manholes at least 12 inches in diameter and located within six feet of all walls of the tank. Each access manhole shall have a properly secured cover.

013.01A The manhole shall extend through the top of the tank to a point within 12 inches but at least six inches below grade for a tank with no manhole riser. ~~Each manhole shall have a cover.~~ The manhole cover shall be covered with at least six inches of ~~earth~~ soil unless otherwise properly secured to prevent unwarranted access.

013.01B ~~A~~ For a tank with a manhole riser, as described in Chapter 9, Section 003 ~~the riser shall be sufficiently large to allow for access and removal of the manhole cover. The manhole riser may extend to or above the ground surface may also be provided.~~ The manhole riser shall have a properly secured cover to prevent unwarranted access.

Title 124
Chapter 8

013.02 ~~There~~Each septic tank shall ~~be~~ have an inspection pipe at least ~~6~~ six inches in diameter ~~or a manhole~~ over both the inlet and outlet devices. The inspection pipe shall extend to or above the ground surface and be capped flush or above finished grade. The inspection pipe cap shall be properly secured to prevent unwarranted access. A manhole access riser that meets the requirements of this Title may be used over both the inlet and outlet devices to satisfy the inspection pipe requirement.

014 ~~Compartmentation of s~~Single ~~t~~Tanks.

014.01 ~~Where a septic system has a single S~~septic tanks larger than 3,000 gallons ~~and that is~~ fabricated as a single unit, the tank shall be divided into two or more compartments.

014.02 When a septic tank is divided into two compartments, the volume in the first compartment in the direction of flow shall not be less than one-half ~~nor or~~ more than two-thirds of the total volume ~~shall be in the first compartment of the tank~~.

014.03 When a septic tank is divided into three or more compartments, one-half of the total volume shall be in the first compartment and the other half equally divided in the other compartments.

014.04 Connections between compartments shall be baffled so as to obtain effective retention of scum and sludge. The submergence of the inlet and outlet baffles of each compartment shall be as specified in 007 and 008.

014.05 Adequate venting shall be provided between compartments by baffles or by an opening of at least 50 square inches near the top of the compartment wall.

014.06 Adequate access to each compartment shall be provided by one or more manholes.

015 Multiple Tanks

015.01 Where more than one septic tank is used to obtain the required liquid volume, the tanks shall be connected in series.

015.02 No more than four septic tanks in series shall be used to obtain the required liquid volume.

Title 124
Chapter 8

015.03 The first septic tank shall be no smaller than any subsequent tanks in series.

016 A holding tank shall be equipped with an alarm or visible float that indicates when the tank is 90 percent or more full, except that an alarm or visible float is not required for an outdoor style toilet facility holding tank where no water supply is used.

017 Septic tanks and holding tanks shall be bedded with at least six inches of sand or fine gravel where rock or other undesirable conditions are encountered. The tank shall be placed level. Backfilling the excavation for the tank shall be done in layers with sufficient compaction to avoid settling. Backfill material shall be free of large stones and debris.

018 A tank subject to flotation, such as one located in an area where the seasonal high water table may be higher than the bottom of the tank, shall be properly secured or ballasted to prevent flotation.

Title 124
Chapter 8

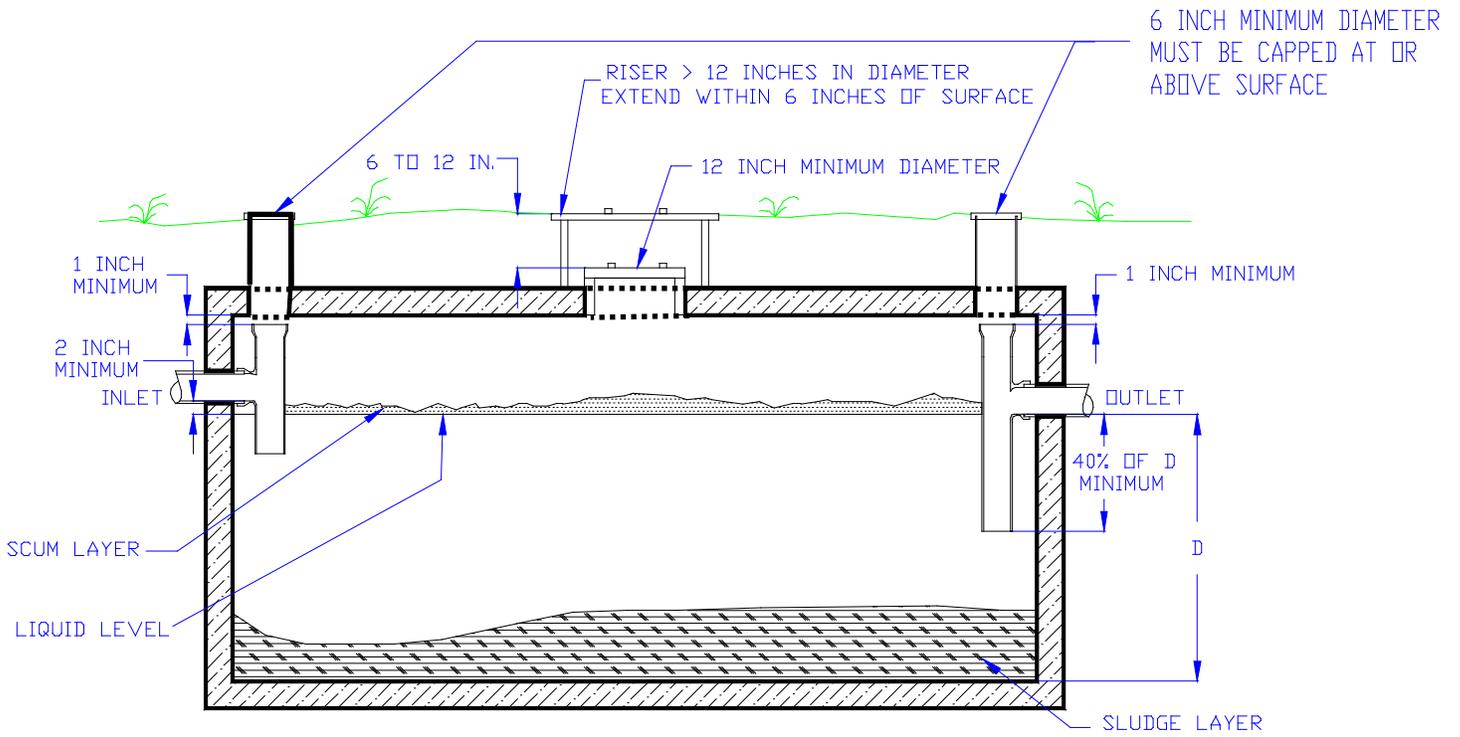


FIG 8.1 Septic Tank, Profile View ~~DELETE FIGURE~~

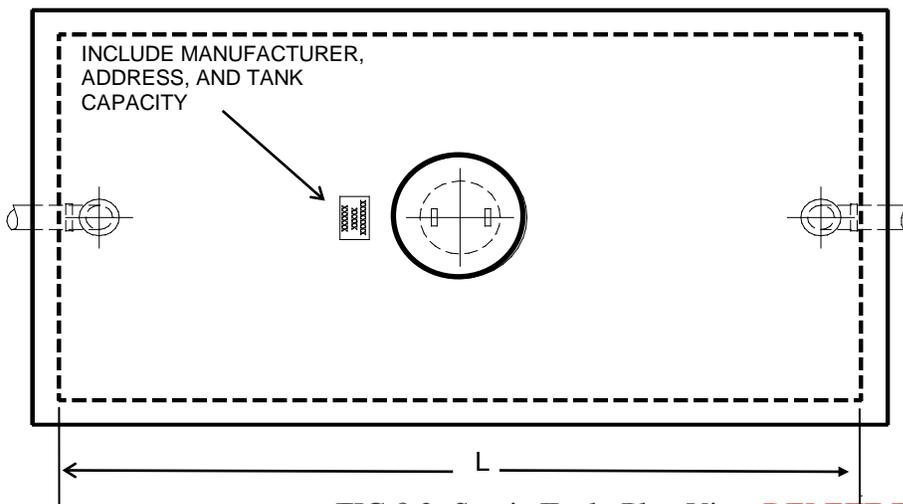


FIG 8.2 Septic Tank, Plan View ~~DELETE FIGURE~~

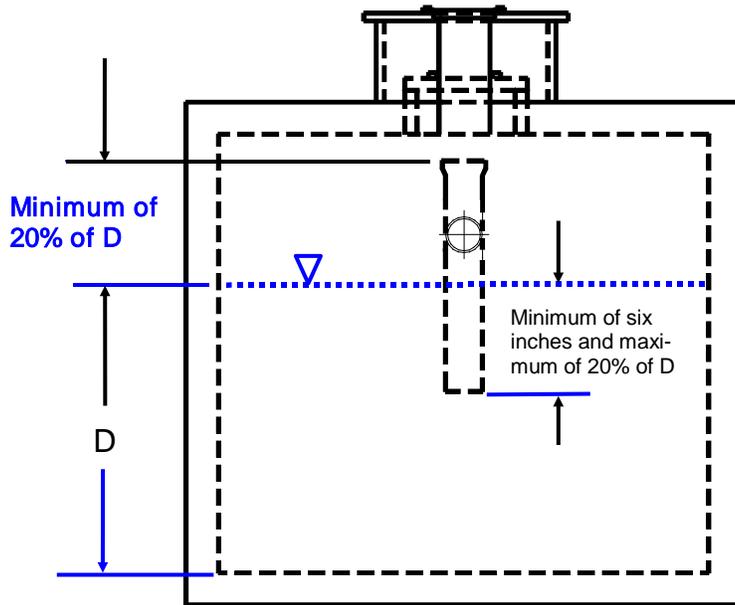


FIG 8.3 Septic Tank Inlet End View ~~DELETE FIGURE~~

HORIZONTAL, CYLINDRICAL SEPTIC TANK

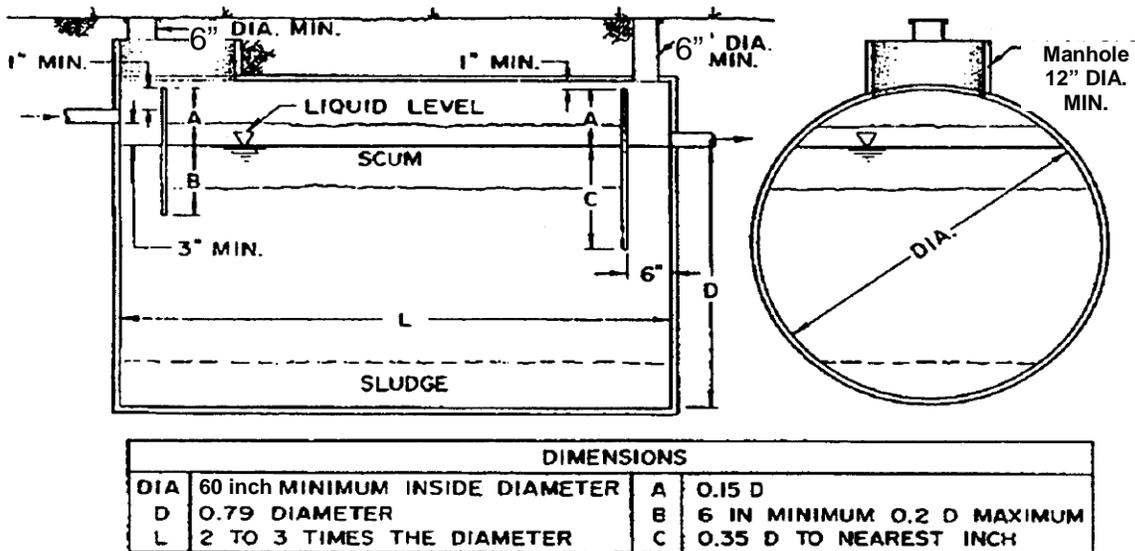
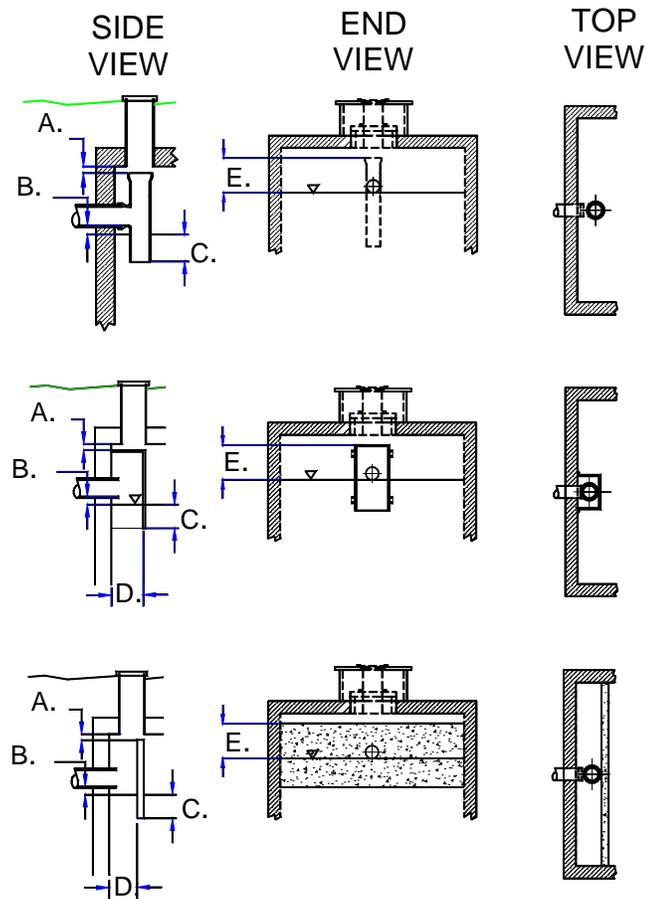


FIG 8.4 - Horizontal Cylindrical Septic Tank ~~DELETE FIGURE~~



Baffle Notation	Measurement in Inches
A	≥ 1
B	Inlet ≥ 2
C	Inlet ≥ 6 but not more than 20 % of tank depth Outlet ≥ 6 but not more than 40% for square tanks and 35% for round tanks
D	Inlet ≥ 6 but ≤ 12 Outlet = 6
E	≥ 6

FIG 8.5 Baffles ~~DELETE FIGURE~~

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 8, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 9 - PLACEMENT OF SEPTIC TANK GREASE TRAP TANK

~~001~~—The septic tank shall be bedded with at least six (6) inches of sand or fine gravel where rock or other undesirable conditions are encountered. The tank shall be placed level. Where excavation is required the hole shall be sufficiently large to permit placement of the tank. Backfilling the excavation for all septic tanks shall be done in layers with sufficient tamping to avoid settling. Backfill material shall be free of large stones and debris.

~~002~~—A tank located in a high water table shall be properly secured or ballasted.

~~003~~—The manhole shall extend to a point within 12 inches and no closer than 6 inches of finished grade. A riser larger than the manhole extending to the surface, to a point at, or at least within 6 inches of finished grade is also recommended. A cover shall be provided for the riser.

~~004~~—The inspection pipe shall extend through the cover and be capped flush or above finished grade.

001 A restaurant or non-dwelling facility involved in food preparation shall have a separate wastewater line to a grease trap tank for the food preparation and dishwashing wastes. Any wastewater line for graywater and non-kitchen blackwater including restroom and toilet wastes shall not be connected to the grease trap tank. The grease trap tank shall be located ahead of the septic tank. An existing restaurant or non-dwelling facility involved in food preparation that is replacing or modifying its onsite wastewater treatment system may install an additional septic tank in the waste line in lieu of a grease trap tank provided the following conditions are met:

001.01 The restaurant or non-dwelling facility was constructed before the effective date of these regulations;

001.02 The current kitchen and blackwater waste streams are not separated;

001.03 The additional septic tank is sized following Section 004 below; and

001.04 The additional tank is placed in series with other tanks and all tanks comply with all other requirements of this Title.

002 Materials and Specifications

Title 124
Chapter 9

002.01 An external grease trap tank shall be watertight, durable, and constructed of the same materials as septic tanks.

002.02 The inlet invert shall be at least three inches above the outlet invert.

002.03 The inlet baffle or sanitary tee shall extend at least 24 inches below the liquid level.

002.04 The outlet baffle or sanitary tee shall extend to within eight inches of the tank bottom.

002.05 The grease trap tank shall be provided with an inspection or clean out cover over the inlet and outlet.

002.06 Blackwater other than kitchen waste shall not be connected to a grease trap tank.

002.07 All wastewater from the kitchen operation shall be connected to the external grease trap tank. The effluent from the grease trap tank shall connect to the inlet line of the septic tank.

003 Operation and Maintenance

003.01 The grease trap tank shall be operated properly and maintained, inspected, and cleaned regularly for proper functioning of the grease trap tank to prevent the escape of appreciable quantities of grease.

003.02 Accumulated fats, oils, grease, and solids shall be removed when these exceed 50 percent or more of the wetted height of the grease trap, as measured from the bottom of the grease trap to the invert of the outlet pipe.

004 Sizing a Grease Trap Tank

004.01 A grease trap tank shall provide twenty four hours of detention time for the average daily flow.

004.02 The minimum capacity of any grease trap tank shall be 750 gallons.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 9, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 10 - ~~SEPTIC~~ TANK CAPACITY

001 ~~"Dwellings"—The liquid capacity of a septic tank serving a dwelling shall be based on the number of bedrooms served. For three or less bedrooms, an adequate septic tank capacity shall be one thousand gallons. For each additional bedroom two hundred fifty gallons shall be added. Table 10.1 may be used to determine capacities.~~

001.01 ~~For ten or more bedrooms the septic tank shall be sized under the category of "Establishments."The minimum septic tank capacity for a single family or multi-family dwelling shall be determined using the design flow (see Chapter 12) and the tank capacity listed in Table 10.1. The capacity of any pump tank or pump chamber is not considered part of or applicable to the required minimum septic tank capacity.~~

001.02 ~~For multiple dwellings connected to a single tank, one additional bedroom capacity must be added for each dwelling connected. Table 10.2 may be used for sizing.For a dwelling served by more than one septic system, the total design flow for the dwelling shall be distributed between the separate systems based on the percentage of the design flow that will be conveyed to each system. The minimum septic tank capacity for each system shall be as listed in Table 10.1. In no case shall the minimum septic tank capacity for any system be less than 1,000 gallons.~~

001.03 ~~A holding tank serving a dwelling shall have a minimum capacity of 1,000 gallons for two or fewer bedrooms plus 300 gallons for each additional bedroom.~~

001.04 ~~A pump tank serving a dwelling or non-dwelling shall have a minimum storage capacity above the normal high (pump start) operating level for one day of flow at the design flow rate.~~

002 ~~"EstablishmentsNon-dwelling facility"—~~

002.01 ~~The liquid capacity of a septic tank serving an establishment a non-dwelling facility-other than a dwelling shall be at least equal to 1,125 gallons plus 0.75 times the design flow in gallons per day (gpd) for flows over 1,500 gpd. For flows less than of 1,500 gpd or less, 1.5 times the design flow may be used but a minimum of a 1,000 gallon tank is required. For a non-dwelling facility served by multiple septic systems, the minimum septic tank capacity for each system shall be 1,000 gallons.~~

002.02 A holding tank serving a non-dwelling facility shall have a minimum capacity at least five times the daily flow but not less than 1,000 gallons unless approved by the Department in a construction permit and operated in compliance with the subsequent operating permit.

003 For septic systems with design flows greater than 2,000 gpd, the installation of a two-compartment septic tank or two septic tanks installed in series is required.

004 The tank capacity required for septic systems serving high strength, high temperature or inhibitors in wastewater such as camper dump stations, laundry mats, and butcher shops or other similar facilities shall be doubled. The septic tank capacity required for a septic system receiving high strength or high temperature wastewater, such as from a laundry, butcher shop, camper dump station, restaurant, or similar facility, shall be doubled. Because these types of wastes are not domestic waste, discharge of these wastes to a septic system is prohibited unless construction of the system is approved by the Department in a construction permit and the system is operated in compliance with the subsequent operating permit.

TABLE 10.1– Septic Tank Sizing for a Single Dwelling

Number Of Bedrooms One Dwelling	Design Flow in Gallons per Day	Septic Tank Size In Gallons	Dwelling With Whirlpool Bath, Septic Tank Size In Gallons
1	200	1000	1000
2	300	1000	1000
3	400	1000	1250
4	500	1250	1500
5	600	1500	1750
6	700	1750	2000
7	800	2000	2250
8	900	2250	2500
9	1000	2500	2750
10	1100	Establishment	Establishment

~~TABLE 10.2 Equivalent Septic Tank Sizing for Multiple Dwellings~~

Total Bedrooms	Single Family Dwelling	Two-Units	Three-Units	Four-Units	Five-Units
1	1	-	-	-	-
2	2	3	-	-	-
3	3	4	5	-	-
4	4	5	6	7	-
5	5	6	7	8	9
6	6	7	8	9	Establishment
7	7	8	9	Establishment	Establishment
8	8	Establishment	Establishment	Establishment	Establishment
9	9	Establishment	Establishment	Establishment	Establishment

005 For the purpose of this chapter, "capacity" shall be the volume as measured by the dimensions below the bottom of the outlet. Septic tank capacity for a single compartment tank shall be increased by 50 percent to provide adequate attenuation when a pump is used to deliver wastewater from the building, or after the building drain, into the septic tank.

006 The capacity of a septic tank means the interior volume of the tank below the level of the inside bottom of the outlet or effluent pipe. The capacity shall not include the volume of the air space above the normal operating water level of the tank.

007 The capacity of a holding tank or a pump tank means the interior volume of the tank below the level of the inside bottom of the inlet or influent pipe. The capacity shall not include the volume of the air space at the top of the tank.

TABLE 10.1 Minimum Septic Tank Capacity for a Dwelling *

<u>Design Flow in Gallons per Day (see Ch. 12)</u>	<u>Septic Tank Capacity in Gallons</u>		
	<u>For Dwelling without a Garbage Grinder or a Large Capacity Tub</u>	<u>Dwelling with a Garbage Grinder or a Large Capacity Tub</u>	<u>Dwelling with a Garbage Grinder and a Large Capacity Tub</u>
<u>200</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>
<u>300</u>	<u>1,000</u>	<u>1,000</u>	<u>1,250</u>
<u>400</u>	<u>1,000</u>	<u>1,250</u>	<u>1,500</u>
<u>500</u>	<u>1,250</u>	<u>1,500</u>	<u>1,750</u>
<u>600</u>	<u>1,500</u>	<u>1,750</u>	<u>2,000</u>
<u>700</u>	<u>1,750</u>	<u>2,000</u>	<u>2,250</u>
<u>800</u>	<u>2,000</u>	<u>2,250</u>	<u>2,500</u>
<u>900</u>	<u>2,250</u>	<u>2,500</u>	<u>2,750</u>
<u>1,000</u>	<u>2,500</u>	<u>2,750</u>	<u>3,000</u>

* A “large capacity tub” means any bathtub or similar fixture with a maximum working volume greater than 50 gallons. A “garbage grinder” is typically used or placed in the kitchen sink drain and may also be referred to as a garbage disposal or waste disposal.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 10, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 11 - ~~HOLDING TANK MOUND SYSTEMS~~

~~001— For dwellings, a holding tank shall have a minimum capacity of 1,000 gallons for two or fewer bedrooms plus 300 gallons for each additional bedroom.~~

~~002— For establishments, a holding tank shall have a minimum capacity of at least five times the daily flow but never less than 1,000 gallons.~~

~~003— Holding tanks shall be equipped with an alarm or visible float that indicates the tank is 90 percent (90 %) full.~~

~~001 A mound system that receives only domestic wastewater and either serves a dwelling that contains no more than five bedrooms or a non-dwelling that generates no more than 600 gallons per day provided such system does not endanger human health or cause pollution and meets all the provisions for design, setback distances and reserve area prescribed in these regulations may be designed by a Master Installer with a Mound System Endorsement, a Professional Engineer, or a Registered Environmental Health Specialist without the need for a permit from the Department provided the requirements of this chapter are met in addition to all other site location, setback, and other design requirements in this Title unless specifically identified otherwise. The following requirements are specific to mound systems designed, constructed, and operated under provisions in this Title for the mound system endorsement.~~

~~002 Site Requirements~~

~~002.01 A minimum of one foot of vertical separation of native undisturbed soil is required between the bottom of the sand fill of the mound for a mound system and the top of the seasonal high groundwater level, bedrock, or other limiting soil feature.~~

~~002.02 The minimum vertical separation from the treatment media distribution bed to the top of the seasonal high groundwater, bedrock, or other limiting soil feature is four feet.~~

~~002.03 The percolation rate of the native undisturbed soil beneath the sand fill shall not be slower than 60 minutes per inch.~~

~~002.04 The percolation rate of the native undisturbed soil shall be measured in the top 12 inches of the soil.~~

002.05 An endorsed mound system shall not be installed on ground with a slope over five percent.

002.06 The location restrictions and horizontal setback requirements for soil absorption systems from Table 5.1 in Chapter 5 apply and shall be measured from the toe of the mound.

002.07 A mound shall not be constructed in a location or manner that causes water to pond on the surface or that blocks and retains runoff from precipitation.

003 Design and Construction of Endorsed Mound Soil Absorption System

003.01 Site Preparation

003.01A Vegetation over two inches tall and loose organic matter shall be removed prior to placing the sand layer. Trees and brush shall be cut flush with the ground surface and the roots left in place.

003.01B The supply pipe from the pump to the effluent distribution system shall be installed prior to preparation of the soil surface with minimal native soil disruption. The pipe trench shall be backfilled using the excavated native soil and compacted level to avoid future settlement.

003.01C The native undisturbed soil under the entire mound area shall be roughened to a depth of six to eight inches using backhoe teeth or chisel plow to improve the surface contact between the native soil and sand fill of the mound. The roughening shall be performed with a four to six inch layer of sand in place and only when the moisture content of the soil is below its plastic limit. The native soil shall not be pulverized or compacted. Rototilling is not permitted. Disking is permitted only if the native soil is sand or loamy sand. The roughening shall be performed along the contour or perpendicular to the slope.

003.02 Sand Layer

003.02A A layer of clean sand shall be installed over the original ground surface to a thickness that provides at least 48 inches of vertical separation between the elevation of the bottom of the treatment media distribution bed as described below and seasonal high groundwater, bedrock, or any other barrier layer. The sand

layer must also be at least 12 inches thick below the uphill edge of the Treatment Media Distribution Bed.

003.02B The sand for the sand layer shall be clean, natural silica free of fines and debris, meeting the gradation shown in Table 11.1.

Table 11.1 - Sand Specification for Endorsed Mound Sand Layer

<u>Sieve Size</u>	<u>Percent Passing</u>
<u>3/8 inch</u>	<u>100</u>
<u>No. 4</u>	<u>95 to 100</u>
<u>No. 8</u>	<u>80 to 100</u>
<u>No. 16</u>	<u>45 to 85</u>
<u>No. 30</u>	<u>15 to 60</u>
<u>No. 50</u>	<u>3 to 15</u>
<u>No. 100</u>	<u>0 to 4</u>
<u>No. 200</u>	<u>0 to 2</u>

003.02C The first six inches of the sand layer shall be placed immediately prior to roughening the native undisturbed soil surface. The first sand layer shall be placed without driving vehicles of any kind on the area of the soil surface to be roughened. The remaining sand shall be placed using techniques that minimize compaction and if vehicle traffic is necessary only track-type equipment shall be used in placing and leveling the remaining sand with at least six inches of sand must be kept underneath equipment.

003.02D The top of the sand layer under the treatment media distribution bed shall be level in all directions.

003.02E The sand layer shall extend up on all sides of the treatment media layer to the same elevation as the top of the media.

003.02F The side slopes of the sand layer shall not be steeper than three horizontal units to one vertical unit.

003.02G The sand layer shall be constructed to the dimensions shown in Tables 11.3 through 11.5. Dimensions shall be based on the depth to groundwater or

impermeable layer, the percolation rate, the ground slope, and the number of bedrooms for dwellings or the maximum daily wastewater flow for non-dwellings.

003.02H The length direction of the sand layer shall be oriented parallel to ground surface contour lines. On ground slopes greater than one percent, the length of the sand layer shall be curved to match the site contour lines.

003.03 Treatment Media Distribution Bed

003.03A A treatment media distribution bed at least 12 inches thick shall be constructed on top of the sand layer. The media serves a number of purposes including but not limited to providing a biological treatment media, holding the effluent distribution piping in place, and helping to distribute the partially treated effluent flow over the sand layer.

003.03B For rock used as the treatment media the rock shall be ¾-inch minimum to 2 ½-inch maximum dimension, clean, durable, non-calcareous, and meeting the gradation specified in Table 11.2. Alternately, cylindrical bundles of expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting may be used.

Table 11.2 - Rock Specification for Endorsed Mound Media Distribution Bed

<u>Sieve Size</u>	<u>Percent Passing</u>
<u>2 ½</u>	<u>95 - 100</u>
<u>¾</u>	<u>0 - 5</u>
<u>No. 200</u>	<u>0 - 1</u>

003.03C The width of the treatment media distribution bed shall be 10 feet.

003.03D The length of the treatment media distribution bed shall be as given in Tables 11.3 through 11.5. When the sand layer is curved to match site contour lines, the media layer shall be curved to match the curvature of the sand layer.

003.03E There shall be at least eight inches of media below and two inches above the effluent distribution piping. The media shall encase the distribution piping. The effluent distribution piping shall be level. For rock, the bottom nine inches of

the media layer shall be placed on top of the sand layer then the effluent distribution piping shall be placed on top of the rock, and the remaining three inches of rock placed over the entire rock bed media area, encasing the distribution piping.

003.03F A minimum four-inch diameter PVC inspection pipe with removable cap shall be installed from the bottom of the media bed extending to six inches above the mound surface. The bottom six inches of the inspection pipe shall have two rows of holes three-eighth inch in diameter spaced nominally three inches apart around the circumference of the pipe.

003.04 Effluent Distribution Piping

003.04A Pressure distribution shall be used to distribute effluent evenly throughout the treatment media bed. Distribution shall be by a piping system consisting of a force main pipe, manifold pipe, and lateral distribution pipes.

003.04B All pipe used for pressure distribution shall be at least Schedule 40 or stronger PVC pipe with a suitable pressure rating for the intended use.

003.04C Force Main

003.04C.1 The nominal force main pipe inside diameter shall be 2 inches.

003.04C.2 If the distribution laterals in the mound are lower than the low water level in the pump tank, a sewage vacuum breaker valve shall be installed at the high point of the force main or a three-sixteenth inch weep hole shall be adequately placed in the bottom of the force main inside the pump tank to prevent siphoning of the pump tank contents to the mound.

003.04C.3 The force main shall be installed at a continuous slope to allow the pipe to drain completely between pump cycles to prevent freezing. There shall be no sags or low spots that collect water. The force main shall be buried between the pump tank and the mound at a depth sufficient to protect the pipe from damage.

003.04D Manifold Pipe

003.04D.1 The nominal manifold pipe inside diameter shall be two inches.

003.04D.2 The manifold pipe shall run perpendicular to the long direction of the treatment media distribution bed.

003.04D.3 The manifold pipe shall be located at either end of the rock bed, or shall be at the midpoint of the length of the mound, with equal-length lateral distribution pipes running each side from the center-located manifold.

003.04E Lateral Distribution Pipes

003.04E.1 The 10-foot wide treatment media distribution bed shall have three lateral distribution pipes running lengthwise, spaced 40 inches apart and 20 inches from the sides of the media bed.

003.04E.2 The nominal inside diameter of the lateral distribution pipes shall be 1.5 inches.

003.04E.3 Each lateral pipe shall have three-sixteenth inch diameter orifice holes drilled at 24 inch centers in a straight line along the bottom of the pipe. When a center-located manifold is used, the first orifice on each lateral shall be 12 inches from the center of the manifold so that the 24 inch center-to-center spacing is maintained. All orifice holes shall be precision drilled using a drill press, and the pipe shall be deburred inside and outside.

003.04E.4 Orifice shields shall be affixed over each orifice to protect the orifice from blockage from contact with the treatment media, except that orifice shields are not required when the lateral distribution pipes are placed in perforated pipe, the perforated pipe shall not exceed four inches nominal diameter, and there shall be at least eight inches of treatment media below and two inches above the perforated pipe. Orifice shields shall be designed with drain holes or slots to allow complete drainage to prevent freezing and shall be removable to allow for orifice cleaning.

003.04E.5 The number of orifices per lateral shall be as shown in Table 11.6.

003.04E.6 The downstream end of each lateral shall be equipped with a sweep elbow turning up and terminating a minimum of six inches above the surface. Each sweep elbow shall be equipped with either a shut-off valve readily accessible from the surface through a valve box or a screw-on cap, to allow flushing of the laterals.

003.05 Soil Cover

003.05A A layer of non-woven geotextile fabric shall be placed over the top and sides of the treatment media distribution layer. The fabric shall be of adequate thickness to resist tearing. The fabric shall allow passage of water and shall prevent migration of soil particles into the media layer.

003.05B A cover layer of loam or sandy loam soil shall be placed over the media and fabric layers as well as the sand side slopes. Clay soil is not acceptable. This cover layer shall be at least six inches thick over the side slopes and at the edges of the media bed, and shall be crowned to provide at least 12 inches of cover soil over the middle of the media bed to promote surface drainage.

003.05C A layer of topsoil at least six inches thick, suitable for sustaining a healthy growth of perennial grass, shall be placed over the entire mound area. After placement of the topsoil layer, the final minimum thickness of the loam and topsoil layers over the sand layer and media bed shall be 12 inches and crowned to a minimum of 18 inches over the middle of the media bed.

003.05D Following construction of the mound, a shallow rooted perennial grass shall be established and maintained on the entire surface of the mound and the ground surface upslope from the mound shall be graded to drain precipitation around the ends of the mound. Brush, trees, or garden plants (including flowers or vegetable plants) shall not be grown on the mound.

004 Primary Treatment (Septic Tank)

004.01 All wastewater discharged to a mound system shall have undergone treatment in a septic tank that is designed, installed, and maintained in accordance with all requirements of this Title.

004.02 The effluent from the septic tank shall pass through a filter with one-sixteenth inch maximum openings before entering the pump to the effluent distribution piping. If more than one septic tank is used then the tanks shall be placed in series and the filter shall be placed in the outlet of the last tank.

005 Effluent Pumping System

005.01 Each mound system shall have an effluent pumping system to transport septic tank effluent to the effluent distribution piping in pressurized doses. The pumping system shall include a pump tank, effluent pump, discharge piping, level controls, and alarm system.

005.02 Pump Tank

005.02A The minimum pump tank capacity shall be as shown in Table 11.7.

005.02B The pump tank shall meet all the requirements for materials, construction, access, and installation as for septic tanks in accordance with this Title.

005.02C The pump tank shall be watertight and access to the pump tank shall extend to the ground surface with a secured lid.

005.03 Dose Pump

005.03A The pump shall be for submersible operation, designed for pumping wastewater or septic tank effluent. The pump shall be capable of passing a one-sixteenth inch particle, or shall be equipped with an adequate screening device to prevent clogging.

005.03B The pump shall be securely supported within the pump tank to resist movement from starting torque and dynamic hydraulic forces in the discharge piping. The pump inlet shall be located at a distance from the tank floor and walls as recommended by the pump manufacturer.

005.03C The pump shall be removable without requiring human entry into the pump tank or other confined space.

005.03D The pump shall be designed to produce the minimum flow rate and minimum discharge pressure listed in Table 11.7.

005.03E A pump with an internal check valve shall not be used, unless the check valve is removed or a one-quarter inch weep hole is drilled in the bottom of the discharge pipe to allow the force main to drain back to the pump tank between pump cycles. The discharge pipe must drain completely between cycles.

005.04 Discharge Piping

005.04A The discharge piping shall include a union or quick-disconnect fitting that allows the pump to be disconnected from the discharge pipe and removed from the pump tank without human entry into the tank.

005.04B The discharge piping shall be Schedule 40 or stronger PVC pipe, shall be no smaller than the pump discharge fitting size, and shall provide a smooth transition to the two-inch diameter force main.

005.05 Pump and Level Controls and Alarms

005.05A The pump tank shall be equipped with a level control system to start the pump at a preset high water level, stop the pump and a preset low water level, and activate an alarm at a preset high water alarm level.

005.05B The level control and alarm switches shall be of the sealed, weighted float or diaphragm type. The cords shall be secured to prevent tangling. The level control switches shall be located where they are visible from the ground surface and accessible for cleaning and adjustment without human entry into the pump tank or other confined space.

005.05C The pump-stop control switch shall be set to stop the pump at or above the minimum pump submergence level recommended by the pump manufacturer.

005.05D The pump-start control switch shall be set to start the pump at a height above the pump-stop level to provide the required dose volume (see Table 11.7) based on the dimensions of the pump tank plus the volume of the force main pipe if the force main drains back to the pump tank. The volume for the two inch diameter pipe should be taken as 0.15 gallons per linear foot of pipe.

005.05E The high-level alarm switch shall be set approximately three inches above the pump-start level.

005.05F The dose volume shall be as shown in Table 11.7.

005.05G The pump control panel shall include externally mounted visible and audible alarms. The alarms shall be mounted in a location readily visible to the owner. If the control panel is mounted outdoors, the enclosure shall be for weather tight duty.

005.05H The pump electrical power shall be supplied on a separate electrical circuit from that of the alarm system.

005.05I The alarm system shall be comprised of both audible and visible alarm indicators.

005.05J Electrical control panel(s) shall be located outside the pump tank, must be protected from the weather and must provide no air path between the panel and the pump tank. Electrical connections inside the tank shall be made using moisture and gas resistant connectors suitable for the wastewater environment.

Table 11.3 - Mound Dimensions for Ground Slope of 0% to 1%

<u>Depth to Seasonal High Groundwater (ft)</u>	<u>Percolation Rate (m.p.i.)</u>	<u>Bed-rooms</u>	<u>Flow (gpd)</u>	<u>Sand Layer Height (ft)</u>	<u>Total Berm Height (ft)</u>	<u>Total Mound Width (ft)</u>	<u>Total Mound Length (ft)</u>	<u>Rock Bed Length (ft)</u>	<u>Uphill Berm Width (ft)</u>	<u>Downhill Berm Width (ft)</u>	<u>End Berm Width (ft)</u>
<u>< 1.0</u>	<u>Construction permit required if less than 12 inches to seasonal high groundwater.</u>										
<u>≥ 1.0 and < 2.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>49</u>	<u>17</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>2</u>	<u>300</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>57</u>	<u>25</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>3</u>	<u>400</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>65</u>	<u>33</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>4</u>	<u>500</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>74</u>	<u>42</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>5</u>	<u>600</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>82</u>	<u>50</u>	<u>16</u>	<u>16</u>	<u>16</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>49</u>	<u>17</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>2</u>	<u>300</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>57</u>	<u>25</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>3</u>	<u>400</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>65</u>	<u>33</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>4</u>	<u>500</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>74</u>	<u>42</u>	<u>16</u>	<u>16</u>	<u>16</u>
		<u>5</u>	<u>600</u>	<u>3</u>	<u>5</u>	<u>42</u>	<u>82</u>	<u>50</u>	<u>16</u>	<u>16</u>	<u>16</u>
<u>≥ 2.0 and < 3.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>42</u>	<u>17</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>2</u>	<u>300</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>50</u>	<u>25</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>3</u>	<u>400</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>58</u>	<u>33</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>4</u>	<u>500</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>67</u>	<u>42</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>5</u>	<u>600</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>75</u>	<u>50</u>	<u>13</u>	<u>13</u>	<u>13</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>43</u>	<u>17</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>2</u>	<u>300</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>51</u>	<u>25</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>3</u>	<u>400</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>59</u>	<u>33</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>4</u>	<u>500</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>68</u>	<u>42</u>	<u>13</u>	<u>13</u>	<u>13</u>
		<u>5</u>	<u>600</u>	<u>2</u>	<u>4</u>	<u>36</u>	<u>76</u>	<u>50</u>	<u>13</u>	<u>13</u>	<u>13</u>
<u>≥ 3.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>1</u>	<u>3</u>	<u>30</u>	<u>37</u>	<u>17</u>	<u>10</u>	<u>10</u>	<u>10</u>
		<u>2</u>	<u>300</u>	<u>1</u>	<u>3</u>	<u>30</u>	<u>45</u>	<u>25</u>	<u>10</u>	<u>10</u>	<u>10</u>
		<u>3</u>	<u>400</u>	<u>1</u>	<u>3</u>	<u>30</u>	<u>53</u>	<u>33</u>	<u>10</u>	<u>10</u>	<u>10</u>
		<u>4</u>	<u>500</u>	<u>1</u>	<u>3</u>	<u>30</u>	<u>62</u>	<u>42</u>	<u>10</u>	<u>10</u>	<u>10</u>
		<u>5</u>	<u>600</u>	<u>1</u>	<u>3</u>	<u>30</u>	<u>70</u>	<u>50</u>	<u>10</u>	<u>10</u>	<u>10</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>1</u>	<u>3</u>	<u>34</u>	<u>36</u>	<u>17</u>	<u>12</u>	<u>12</u>	<u>10</u>
		<u>2</u>	<u>300</u>	<u>1</u>	<u>3</u>	<u>34</u>	<u>44</u>	<u>25</u>	<u>12</u>	<u>12</u>	<u>10</u>
		<u>3</u>	<u>400</u>	<u>1</u>	<u>3</u>	<u>34</u>	<u>52</u>	<u>33</u>	<u>12</u>	<u>12</u>	<u>10</u>
		<u>4</u>	<u>500</u>	<u>1</u>	<u>3</u>	<u>34</u>	<u>61</u>	<u>42</u>	<u>12</u>	<u>12</u>	<u>10</u>
		<u>5</u>	<u>600</u>	<u>1</u>	<u>3</u>	<u>34</u>	<u>69</u>	<u>50</u>	<u>12</u>	<u>12</u>	<u>10</u>

Table 11.4 - Mound Dimensions for Ground Slope of >1% to 3%

<u>Depth to Seasonal High Groundwater (ft)</u>	<u>Percolation Rate (m.p.i.)</u>	<u>Bed-rooms</u>	<u>Flow (gpd)</u>	<u>Sand Layer Height (ft)</u>	<u>Total Berm Height (ft)</u>	<u>Total Mound Width (ft)</u>	<u>Total Mound Length (ft)</u>	<u>Rock Bed Length (ft)</u>	<u>Uphill Berm Width (ft)</u>	<u>Downhill Berm Width (ft)</u>	<u>End Berm Width (ft)</u>
<u>< 1.0</u>	<u>Construction permit required if less than 12 inches to seasonal high groundwater.</u>										
<u>≥ 1.0 and < 2.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>3</u>	<u>5</u>	<u>43</u>	<u>49</u>	<u>17</u>	<u>15</u>	<u>18</u>	<u>16</u>
		<u>2</u>	<u>300</u>	<u>3</u>	<u>5</u>	<u>43</u>	<u>57</u>	<u>25</u>	<u>15</u>	<u>18</u>	<u>16</u>
		<u>3</u>	<u>400</u>	<u>3</u>	<u>5</u>	<u>43</u>	<u>65</u>	<u>33</u>	<u>15</u>	<u>18</u>	<u>16</u>
		<u>4</u>	<u>500</u>	<u>3</u>	<u>5</u>	<u>43</u>	<u>74</u>	<u>42</u>	<u>15</u>	<u>18</u>	<u>16</u>
		<u>5</u>	<u>600</u>	<u>3</u>	<u>5</u>	<u>43</u>	<u>82</u>	<u>50</u>	<u>15</u>	<u>18</u>	<u>16</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>3</u>	<u>5</u>	<u>45</u>	<u>49</u>	<u>17</u>	<u>15</u>	<u>20</u>	<u>16</u>
		<u>2</u>	<u>300</u>	<u>3</u>	<u>5</u>	<u>45</u>	<u>57</u>	<u>25</u>	<u>15</u>	<u>20</u>	<u>16</u>
		<u>3</u>	<u>400</u>	<u>3</u>	<u>5</u>	<u>45</u>	<u>65</u>	<u>33</u>	<u>15</u>	<u>20</u>	<u>16</u>
		<u>4</u>	<u>500</u>	<u>3</u>	<u>5</u>	<u>45</u>	<u>74</u>	<u>42</u>	<u>15</u>	<u>20</u>	<u>16</u>
		<u>5</u>	<u>600</u>	<u>3</u>	<u>5</u>	<u>45</u>	<u>82</u>	<u>50</u>	<u>15</u>	<u>20</u>	<u>16</u>
<u>≥ 2.0 and < 3.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>43</u>	<u>17</u>	<u>12</u>	<u>15</u>	<u>13</u>
		<u>2</u>	<u>300</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>51</u>	<u>25</u>	<u>12</u>	<u>15</u>	<u>13</u>
		<u>3</u>	<u>400</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>59</u>	<u>33</u>	<u>12</u>	<u>15</u>	<u>13</u>
		<u>4</u>	<u>500</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>68</u>	<u>42</u>	<u>12</u>	<u>15</u>	<u>13</u>
		<u>5</u>	<u>600</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>76</u>	<u>50</u>	<u>12</u>	<u>15</u>	<u>13</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>2</u>	<u>4</u>	<u>42</u>	<u>43</u>	<u>17</u>	<u>12</u>	<u>20</u>	<u>13</u>
		<u>2</u>	<u>300</u>	<u>2</u>	<u>4</u>	<u>42</u>	<u>51</u>	<u>25</u>	<u>12</u>	<u>20</u>	<u>13</u>
		<u>3</u>	<u>400</u>	<u>2</u>	<u>4</u>	<u>42</u>	<u>59</u>	<u>33</u>	<u>12</u>	<u>20</u>	<u>13</u>
		<u>4</u>	<u>500</u>	<u>2</u>	<u>4</u>	<u>42</u>	<u>68</u>	<u>42</u>	<u>12</u>	<u>20</u>	<u>13</u>
		<u>5</u>	<u>600</u>	<u>2</u>	<u>4</u>	<u>42</u>	<u>76</u>	<u>50</u>	<u>12</u>	<u>20</u>	<u>13</u>
<u>≥ 3.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>37</u>	<u>17</u>	<u>9</u>	<u>13</u>	<u>10</u>
		<u>2</u>	<u>300</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>45</u>	<u>25</u>	<u>9</u>	<u>13</u>	<u>10</u>
		<u>3</u>	<u>400</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>53</u>	<u>33</u>	<u>9</u>	<u>13</u>	<u>10</u>
		<u>4</u>	<u>500</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>62</u>	<u>42</u>	<u>9</u>	<u>13</u>	<u>10</u>
		<u>5</u>	<u>600</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>70</u>	<u>50</u>	<u>9</u>	<u>13</u>	<u>10</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>37</u>	<u>17</u>	<u>9</u>	<u>20</u>	<u>10</u>
		<u>2</u>	<u>300</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>45</u>	<u>25</u>	<u>9</u>	<u>20</u>	<u>10</u>
		<u>3</u>	<u>400</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>53</u>	<u>33</u>	<u>9</u>	<u>20</u>	<u>10</u>
		<u>4</u>	<u>500</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>62</u>	<u>42</u>	<u>9</u>	<u>20</u>	<u>10</u>
		<u>5</u>	<u>600</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>70</u>	<u>50</u>	<u>9</u>	<u>20</u>	<u>10</u>

Title 124
Chapter 11

Table 11.5 - Mound Dimensions for Ground Slope of >3% to 5%

<u>Depth to Seasonal High Groundwater (ft)</u>	<u>Percolation Rate (m.p.i.)</u>	<u>Bed-rooms</u>	<u>Flow (gpd)</u>	<u>Sand Layer Height (ft)</u>	<u>Total Berm Height (ft)</u>	<u>Total Mound Width (ft)</u>	<u>Total Mound Length (ft)</u>	<u>Rock Bed Length (ft)</u>	<u>Uphill Berm Width (ft)</u>	<u>Downhill berm width (ft)</u>	<u>End Berm Width (ft)</u>
<u>< 1.0</u>	<u>Construction permit required if less than 12 inches to seasonal high groundwater.</u>										
<u>IV 1.0 and > 2.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>49</u>	<u>17</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>2</u>	<u>300</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>57</u>	<u>25</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>3</u>	<u>400</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>65</u>	<u>33</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>4</u>	<u>500</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>74</u>	<u>42</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>5</u>	<u>600</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>82</u>	<u>50</u>	<u>14</u>	<u>20</u>	<u>17</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>49</u>	<u>17</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>2</u>	<u>300</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>57</u>	<u>25</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>3</u>	<u>400</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>65</u>	<u>33</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>4</u>	<u>500</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>74</u>	<u>42</u>	<u>14</u>	<u>20</u>	<u>17</u>
		<u>5</u>	<u>600</u>	<u>3</u>	<u>5</u>	<u>44</u>	<u>82</u>	<u>50</u>	<u>14</u>	<u>20</u>	<u>17</u>
<u>IV 2.0 and > 3.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>43</u>	<u>17</u>	<u>11</u>	<u>16</u>	<u>14</u>
		<u>2</u>	<u>300</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>51</u>	<u>25</u>	<u>11</u>	<u>16</u>	<u>14</u>
		<u>3</u>	<u>400</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>59</u>	<u>33</u>	<u>11</u>	<u>16</u>	<u>14</u>
		<u>4</u>	<u>500</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>68</u>	<u>42</u>	<u>11</u>	<u>16</u>	<u>14</u>
		<u>5</u>	<u>600</u>	<u>2</u>	<u>4</u>	<u>37</u>	<u>76</u>	<u>50</u>	<u>11</u>	<u>16</u>	<u>14</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>2</u>	<u>4</u>	<u>41</u>	<u>43</u>	<u>17</u>	<u>11</u>	<u>20</u>	<u>14</u>
		<u>2</u>	<u>300</u>	<u>2</u>	<u>4</u>	<u>41</u>	<u>51</u>	<u>25</u>	<u>11</u>	<u>20</u>	<u>14</u>
		<u>3</u>	<u>400</u>	<u>2</u>	<u>4</u>	<u>41</u>	<u>59</u>	<u>33</u>	<u>11</u>	<u>20</u>	<u>14</u>
		<u>4</u>	<u>500</u>	<u>2</u>	<u>4</u>	<u>41</u>	<u>68</u>	<u>42</u>	<u>11</u>	<u>20</u>	<u>14</u>
		<u>5</u>	<u>600</u>	<u>2</u>	<u>4</u>	<u>41</u>	<u>76</u>	<u>50</u>	<u>11</u>	<u>20</u>	<u>14</u>
<u>IV 3.0</u>	<u>0 to 30</u>	<u>1</u>	<u>200</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>39</u>	<u>17</u>	<u>9</u>	<u>13</u>	<u>11</u>
		<u>2</u>	<u>300</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>47</u>	<u>25</u>	<u>9</u>	<u>13</u>	<u>11</u>
		<u>3</u>	<u>400</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>55</u>	<u>33</u>	<u>9</u>	<u>13</u>	<u>11</u>
		<u>4</u>	<u>500</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>64</u>	<u>42</u>	<u>9</u>	<u>13</u>	<u>11</u>
		<u>5</u>	<u>600</u>	<u>1</u>	<u>3</u>	<u>32</u>	<u>72</u>	<u>50</u>	<u>9</u>	<u>13</u>	<u>11</u>
	<u>31 to 60</u>	<u>1</u>	<u>200</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>39</u>	<u>17</u>	<u>9</u>	<u>20</u>	<u>11</u>
		<u>2</u>	<u>300</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>47</u>	<u>25</u>	<u>9</u>	<u>20</u>	<u>11</u>
		<u>3</u>	<u>400</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>55</u>	<u>33</u>	<u>9</u>	<u>20</u>	<u>11</u>
		<u>4</u>	<u>500</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>64</u>	<u>42</u>	<u>9</u>	<u>20</u>	<u>11</u>
		<u>5</u>	<u>600</u>	<u>1</u>	<u>3</u>	<u>39</u>	<u>72</u>	<u>50</u>	<u>9</u>	<u>20</u>	<u>11</u>

Table 11.6 - Minimum Force Main Size (inches) – Schedule 40 PVC Pipe

Pumping Rate (gpm)	Total Force Main Length (ft)		
	0 to 100	>100 to 300	>300 to 500
0 to 20	1 1/4	1 1/2	2
>20 to 40	1 1/2	2	2 1/2
>40 to 60	2	2 1/2	3

Table 11.7 – Design Requirements for Rock Bed Lateral Pipe, Dose Pump, and Pump Tank

Bed-rooms	Flow (gpd)	Rock Bed Length (ft)	End Spacing* (ft)	Number of 3/16" Diameter Holes per Lateral	Number of Spaces at 24" Centers	Minimum Pump Capacity (gpm)	Minimum Pump Discharge Pressure Head ** (ft)	Gallons Pumped per Dose (gal)	Minimum Pump Tank Capacity (gal)
1	200	17	1.5	8	7	15	7 ft + H	70	500
2	300	25	1.5	12	11	22	9 ft + H	95	500
3	400	33	1.5	16	15	29	10 ft + H	120	500
4	500	42	2.0	20	19	36	12 ft + H	145	750
5	600	50	1.0	25	24	44	15 ft + H	170	750

* End Spacing is the distance from either end of the rock bed to the nearest lateral pipe orifice.

** H is the elevation difference between the pump intake and the top of the rock bed.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 11, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 12 - ~~GREASE TRAP DESIGN FLOW~~

~~001~~ — It is required that an external grease trap be installed for all restaurants and establishments involved in food preparation.

~~001.01~~ — Restaurants and establishments involved in food preparation that are replacing or modifying their on-site wastewater treatment system may install an additional septic tank in the waste line in lieu of a grease trap provided the following conditions are met:

~~001.01A~~ — The restaurant or establishment was constructed before the effective date of these regulations;

~~001.01B~~ — The current kitchen and blackwater waste streams are not separated;

~~001.01C~~ — The additional septic tank is sized following Section ~~004~~ below; and

~~001.01D~~ — The additional tank is placed in series with other tanks and complies with Chapter 8, Section ~~015~~.

~~002~~ — Materials and Specifications:

~~002.01~~ — If an external grease trap is used it shall be watertight, durable, and constructed of the same materials as septic tanks.

~~002.02~~ — The inlet invert shall be at least 3 inches above the outlet invert.

~~002.03~~ — The inlet baffle or sanitary tee shall extend at least 24 inches below the liquid level.

~~002.04~~ — The outlet baffle or sanitary tee shall extend to within 8 inches of the tank bottom.

~~002.05~~ — The grease trap shall be provided with an inspection or clean out cover over the inlet and outlet.

~~002.06~~ — Blackwater other than kitchen waste shall not be connected to a grease trap.

Title 124
Chapter 12

~~002.07 All wastewater from the kitchen operation shall be connected to the external grease trap. The effluent from the grease trap shall connect to the inlet line of the septic tank.~~

~~003 Operation and Maintenance~~

~~003.01 In order to be effective, grease traps shall be operated properly and cleaned regularly to prevent the escape of appreciable quantities of grease. The frequency of cleaning at any given installation can best be determined by experience based on observation.~~

~~004 Sizing of Grease Traps~~

~~004.01 A grease trap shall provide twenty four hours of detention time for the average daily flow.~~

~~004.02 The minimum capacity of any grease trap shall be 750 gallons.~~

001 The design flow for components of an onsite wastewater system other than a lagoon shall be as follows:

001.01 For a single-family dwelling, the design flow shall not be less than 100 gallons per day plus 100 gallons per day per bedroom. (See Table 12.1)

001.02 For a multi-family dwelling or multiple single-family dwellings connected to a common onsite wastewater system component, the design flow shall not be less than 100 gallons per day per dwelling unit plus 100 gallons per day per bedroom based on the total number of bedrooms. (See Table 12.2)

001.03 For a non-dwelling facility, the design flow shall not be less than the highest daily wastewater flow that is calculated to be generated based on the characteristics of the occupancy and use of the facility.

002 The design flow for an onsite wastewater lagoon shall be as follows:

002.01 For a single-family or multi-family dwelling, the design flow for a lagoon shall be 150 gallons per day for a one-bedroom dwelling plus 75 gallons per day for each additional bedroom. (See Table 12.3)

002.02 For a non-dwelling facility, the design flow for a lagoon shall be the average daily wastewater flow that is calculated to be generated based on the characteristics of the occupancy and use of the facility. Where the quantity of wastewater generated varies by day, week, month, or season, the design flow may be the average for that period of time provided that the lagoon is designed to have adequate storage volume below the maximum operating level to contain the peak period flows.

003 For non-dwelling facilities, the quantity of flow generated for various occupancy and uses shall be consistent with nationally recognized data published by the United States Environmental Protection Agency, state onsite wastewater regulatory agencies, or nationally recognized plumbing codes. If use of a non-dwelling facility includes residential occupancy, the estimated flow from the non-residential use shall be added to a residential design flow of 100 gallons per day plus 100 gallons per day per bedroom.

Table 12.1 – Design Flow for Single Family Dwelling

<u>Number of Bedrooms*</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
<u>Design Flow, Gallons per Day</u>	<u>200</u>	<u>300</u>	<u>400</u>	<u>500</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>1,000</u>

* Design flow for a dwelling with more than 9 bedrooms exceeds 1,000 gallons per day and a construction permit is required.

Table 12.2 – Design Flow for Multi-Family Dwelling

<u>Number of Dwelling Units</u>	<u>Total Number of Bedrooms</u>						
	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
	<u>Design flow in Gallons per Day</u>						
<u>2</u>	<u>400</u>	<u>500</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>1,000</u>
<u>3</u>	<u>500</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>1,000</u>	<u>**</u>
<u>4</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>1,000</u>	<u>**</u>	<u>**</u>
<u>5</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>1,000</u>	<u>**</u>	<u>**</u>	<u>**</u>

** Design flow exceeds 1,000 gallons per day and a construction permit is required.

Table 12.3 – Design Flow for a Lagoon for a Single or Multi-Family Dwelling
(Design flow in Gallons per Day)

<u>Total *** Bedrooms</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
<u>Lagoon Design Flow</u>	<u>150</u>	<u>225</u>	<u>300</u>	<u>375</u>	<u>450</u>	<u>525</u>	<u>600</u>	<u>675</u>	<u>750</u>	<u>825</u>	<u>900</u>	<u>975</u>

*** For lagoon design when the total number of bedrooms exceeds twelve, design flow exceeds 1,000 gallons per day and a construction permit is required.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 12, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 13 - ~~SOIL ABSORPTION SYSTEM~~(RESERVED)

~~001—A soil absorption system is the part of the on-site wastewater treatment systems which utilizes the soil to further treat and dispose of effluent from an on-site wastewater treatment system in a manner that does not result in a point source discharge and does not create a nuisance, health hazard, or ground or surface water pollution.~~

~~002—Two types of soil absorption systems are considered acceptable: absorption trenches and seepage beds.~~

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch.13, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 14 - ~~DESIGN AND CONSTRUCTION OF TRENCH AND BED~~ SOIL ABSORPTION SYSTEMS

001 The bottom of trenches and beds shall be at least four feet above the seasonal high groundwater table. ~~If a water table is not present then the bottom of the trench shall be at least four feet above the bedrock~~ or other barrier layer.

002 A soil absorption system shall not be installed in fill, except when the fill material is sand, or when the bottom 12 inches or more of the trench or bed is located in undisturbed native soil below the fill. When constructing a system in sand fill, sufficient time shall be allowed after placement of the fill, or sufficient compaction effort applied to the fill to prevent settlement after the system is installed.

003 When installing a trench or bed in soil that has a percolation rate faster than ~~5~~ five minutes per inch, a ~~twelve~~ 12-inch thick loamy sand soil liner ~~with designed to provide~~ a percolation rate of 15 to 20 minutes per inch shall be installed in the bottom and sides of the trench or bed. The loamy sand soil liner shall cover the bottom of the trench or bed and extend up the sidewalls of the trench a minimum of nine ~~(9)~~ inches for a soil absorption system that uses filter material ~~absorption systems~~. For a soil absorption system that does not use filter material, the liner shall cover the bottom of the trench and extend up the sidewalls at least to the top of the slotted sidewalls in on a gravelless chamber ~~systems~~, or to the top of the pipe in on gravelless pipe ~~systems~~. The loamy sand liner shall be constructed to provide a percolation rate of 15 to 20 minutes per inch. The soil absorption area ~~is then shall be~~ sized based on this the soil liner's percolation rate.

004 The bottom of the trench or bed excavation shall be level. ~~Trenches and beds shall not be~~ A trench or bed more than 100 feet in length ~~unless it is shall be~~ installed using an instrument to insure that the trench or bed is level, ~~then trenches can be up to 150 feet in length for gravity systems. Pressure systems are not restricted in length when an instrument is used to insure that the system is level.~~

005 ~~The bottom of the trench or bed excavation shall be level.~~ A trench or bed for a gravity distribution system shall not exceed 150 feet in length. A trench or bed with pressure distribution is not restricted in length when an instrument is used to insure that the trench or bed is level. Dosing (see 020 and 021 below) shall be provided when the distribution system has more than 500 linear feet of distribution line.

Title 124
Chapter 14

006 The bottom and sides of the soil absorption system to the top of the filter material shall be excavated in such a manner as to leave the soil in a natural, unsmeared, and uncompacted condition. Excavation shall be made only when the soil moisture content is at or less than the plastic limit.

007 When the percolation rate is slower than 10 minutes per inch, excavation equipment or other vehicles shall not be driven on the soil absorption area.

008 ~~The distribution pipes shall be laid level or on a uniform slope away from the distribution device of no more than four inches per 100 feet.~~ The absorption trenches shall follow the ground surface contours so that variations in trench depth are minimized.

009 ~~Distribution pipes in beds shall be uniformly spaced no more than 5 feet apart and not more than 30 inches from the side walls of the beds.~~ When ground slope is less than 10 percent, there shall be a minimum of four feet of undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench. When ground slope is 10 to 20 percent, there shall be a minimum of six feet of undisturbed earth between adjacent trenches and between the septic tanks and the nearest trench. When the slope exceeds 20 percent, there shall be a minimum of 10 feet of undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench.

010 The trenches or beds shall be backfilled and crowned above finished grade to allow for settling. The top six inches of soil shall have the same texture and density as the adjacent soil.

011 The minimum depth of cover over the distribution pipes shall be at least eight inches. The maximum depth of cover over the distribution pipes shall be no more than 36 inches.

012 A soil absorption system shall not be installed in an area that has an impermeable surface or where the soil has been compacted excessively by vehicle traffic or parking. No parking area, driveway, or impermeable surface or cover shall be installed, created, or located by the owner, or anyone acting for the owner, over or within five ~~(5)~~ feet horizontally ~~of the~~ an existing soil absorption system or reserve area.

013 Gravity Distribution Piping and Devices:

013.01 When a soil absorption system is located in ~~sloping~~ sloping ground ~~from 0 to 3% that slopes three percent or less,~~ septic tank effluent may be conveyed by gravity through be distributed piping to the soil absorption system ~~by either through one of the following distribution devices:~~ a distribution box, drop box or a header pipe.

Title 124
Chapter 14

013.02 A soil absorption systems in ~~sloping~~ ground with greater than ~~3%~~ three percent slope shall use either gravity distribution through a drop box or pressure distribution.

013.03 ~~The bottom of each trench shall be level.~~ Distribution pipes shall be laid level or on a uniform slope away from the distribution device of no more than four inches per 100 feet.

013.04 ~~The absorption trenches shall follow the ground surface contours so that variations in trench depth are minimized.~~ Distribution pipes in a seepage bed shall be uniformly spaced no more than five feet apart and not more than 30 inches from the side walls of the bed.

~~013.05 When ground slope is less than 10%, there shall be a minimum of 4 feet of undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench. When ground slope is 10% to 20%, there shall be a minimum of 6 feet of undisturbed earth between adjacent trenches and between the septic tanks and the nearest trench. When the slope exceeds 20%, there shall be a minimum of 10 feet of undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench.~~

014 ~~Distribution box: Septic tank effluent may be distributed by a distribution box. The~~ When a distribution box ~~may be built is used it can be~~ as an integral part of the septic tank or ~~may be~~ a separate unit set on solid ground and anchored in the drainfield. When a distribution box is used the following criteria shall be ~~observed~~ followed.

014.01 The distribution box shall be set level and arranged so that effluent is evenly distributed to each distribution line.

014.02 Each distribution line shall connect individually to the distribution box.

014.03 The pipe connecting the distribution box to the distribution line shall be of a tight joint construction laid on undisturbed earth or properly bedded throughout its length.

014.04 Distribution boxes shall be constructed of a durable watertight, non-corrosive material. They shall be designed to accommodate the necessary distribution lines.

014.05 Distribution boxes shall be provided with a minimum 12-inch diameter secured opening which will serve as ~~a ready~~ access for inspection, cleaning, and general maintenance.

Title 124
Chapter 14

014.06 The inverts of all outlets shall be at the same elevation as measured from a liquid surface in the bottom of the box.

014.07 The inlet invert shall be at least one inch above the outlet inverts.

014.08 The outlet inverts shall be at least ~~four~~ two inches above the distribution box floor.

014.09 When septic tank effluent is delivered to the distribution box by pump, either a baffle wall shall be installed in the distribution box or the pump discharge shall be directed against a wall or side of the box on which there is no outlet. The baffle shall be secured to the box and shall extend at least one inch above the crown of the inlet flow line.

015 ~~Header pipe:~~ If~~When~~ a header pipe is used the following criteria shall be ~~observed~~ followed.

015.01 Header pipe shall have a minimum diameter of ~~4~~ four inches.

015.02 ~~When a header pipe is used, there shall be an equal number of distribution lines~~ The header pipe shall be spaced evenly on both sides of the junction of the leader pipe to the header with an equal number of distribution lines of the same length on each side.

015.03 The header pipe shall be laid level with direct watertight connections to each drainfield line and the septic tank outlet pipe. The header pipe shall be encased in filter material.

016 ~~Drop box (see Figures 14.1 and 14.2):~~ When a ~~drop boxes are~~ is used the following criteria shall be followed:.

016.01 The drop box shall be watertight and constructed of durable materials not subject to excessive corrosion or decay.

016.02 The invert of the inlet pipe shall be at least one inch higher than the invert of the outlet pipe to the next trench.

016.03 The invert of the outlet pipe to the next trench shall be at least two inches higher than the invert of the outlet pipe of the trench in which the box is located.

Title 124
Chapter 14

016.04 When septic tank effluent is delivered to the drop box by a pump or siphon, the pump or siphon discharge shall be directed against a wall or side of the box on which there is no outlet.

016.05 The drop box shall have a removable cover ~~either flush or above finished grade or covered by more than six inches of soil.~~ If the cover is located at or above finished grade it shall be secured to help prevent unwanted access.

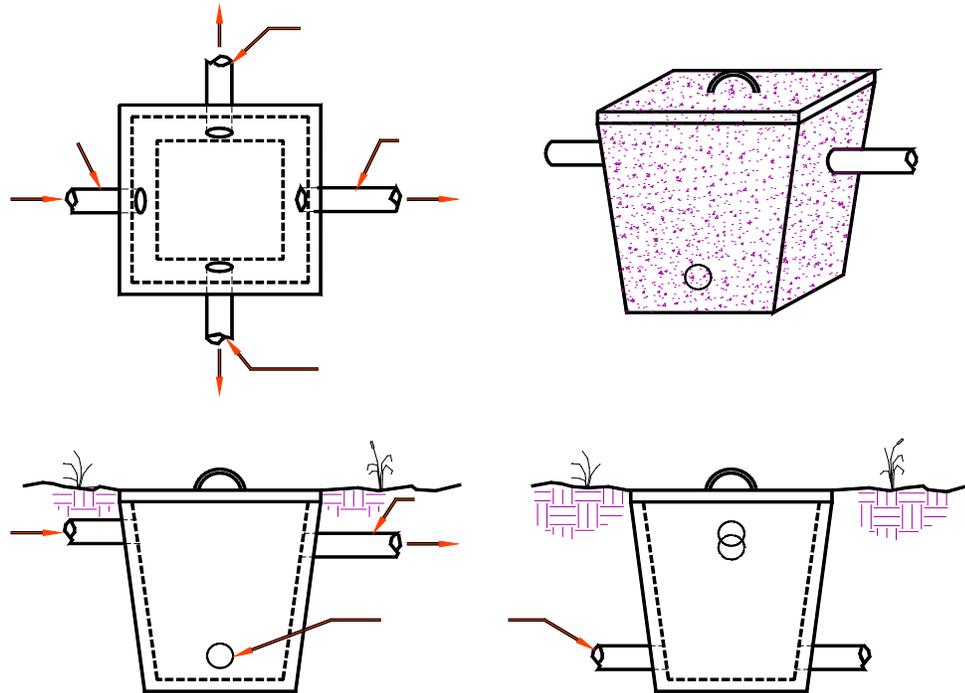


Figure 14.1 -
Drop Box **DELETE FIGURE**

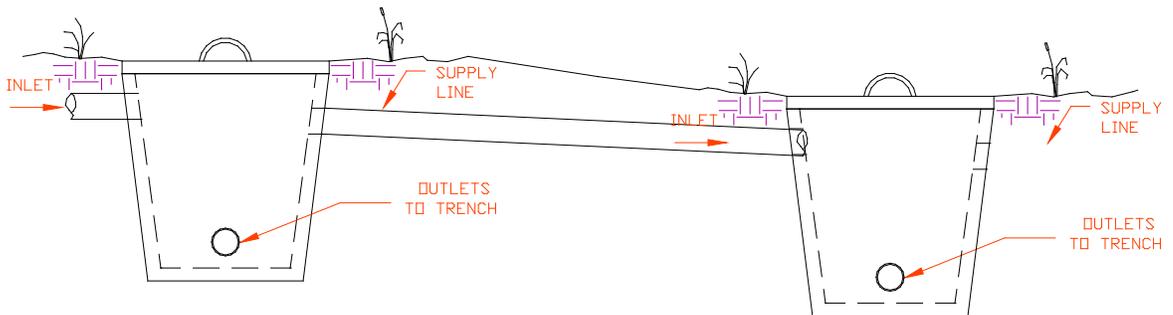


Figure 14.2 -
Drop Box On A Slope.
Profile View
DELETE FIGURE

017 ~~Filter Material~~ Soil Absorption Systems Where Filter Material Is Used

017.01 The trenches shall not be less than 18 inches nor more than 36 inches wide for pipe laterals and no more than ~~5~~ five feet wide for chambers. ~~Any~~ For soil absorption systems where filter material is used, any trench wider than 36 inches for pipes and ~~5~~ five feet for chambers shall be considered a bed and have the required square footage of the soil absorption area ~~reduced or drainfield trench increased~~ by the appropriate absorption bed multiplication factor ~~in Section 019.03 from Table 14.1. See Figures 14.3 and 14.4.~~

017.02 There shall be a layer of at least six but not more than 24 vertical inches of filter material in the bottom of the trenches and beds below the distribution piping or chamber extending uniformly to the width of the trench. ~~See Figures 14.3 and 14.4.~~

017.03 Distribution pipes, and gravity distribution.

017.03A Distribution pipes used in trenches or beds for gravity flow distribution shall be at least four inches in diameter and constructed of sound and durable material not subject to corrosion or decay or to loss of strength under continuously wet conditions. When open joint tile is used, the tile sections shall be spaced not less than ~~1/4~~ one-quarter inch nor more than ~~1/2~~ one-half inch apart.

017.03B Perforated pipe used for wastewater distribution pipes shall have one or more rows of holes of no less than one-half inch in diameter and no more than ~~3/4~~ three-quarter inch in diameter spaced no more than 36 inches apart. Holes shall be spaced to prevent failure of pipe due to loads. Distribution pipes shall have a load bearing capacity of more than 1,000 pounds per linear foot.

017.03C Half moon concrete chambers or plastic tile may be used for wastewater distribution and shall be placed in trenches resting on concrete blocks suitably placed before filter material is added unless specifically designed to be self supporting on the ~~gravel bed with an appropriate supporting foot~~ filter material. ~~See Figure 14.4.~~

017.03D Plastic chambers meeting the requirements for gravelless chambers installed without filter material may be used for effluent distribution in a trench or bed with filter material and may be installed directly on the trench bottom. For such installations, the width for calculating the trench bottom area shall be the width of the filter material covered trench.

017.03E Bundled expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting in cylinders 9 to 12 inches in diameter specifically designed for use without filter material and meeting the requirements for bundles installed without filter material may be used for effluent distribution in a trench or bed with filter material and may be installed directly on the trench bottom. For such installations, the width for calculating the trench bottom area shall be the width of the filter material covered trench.

017.04 The filter material shall completely encase the ~~disposal~~ distribution pipes, and chambers, or synthetic aggregate bundles to a depth of at least two inches extending uniformly to the width of the trench. See Figures 14.3 and 14.4.

017.05 The filter material shall be covered with ~~untreated building paper~~ a permeable layer that prevents the movement of fine soil particles into the filter material. Geotextile fabric, or a two-inch layer of hay or straw or similar, ~~approved~~ permeable materials shall be used. See Figures 14.3 and 14.4.

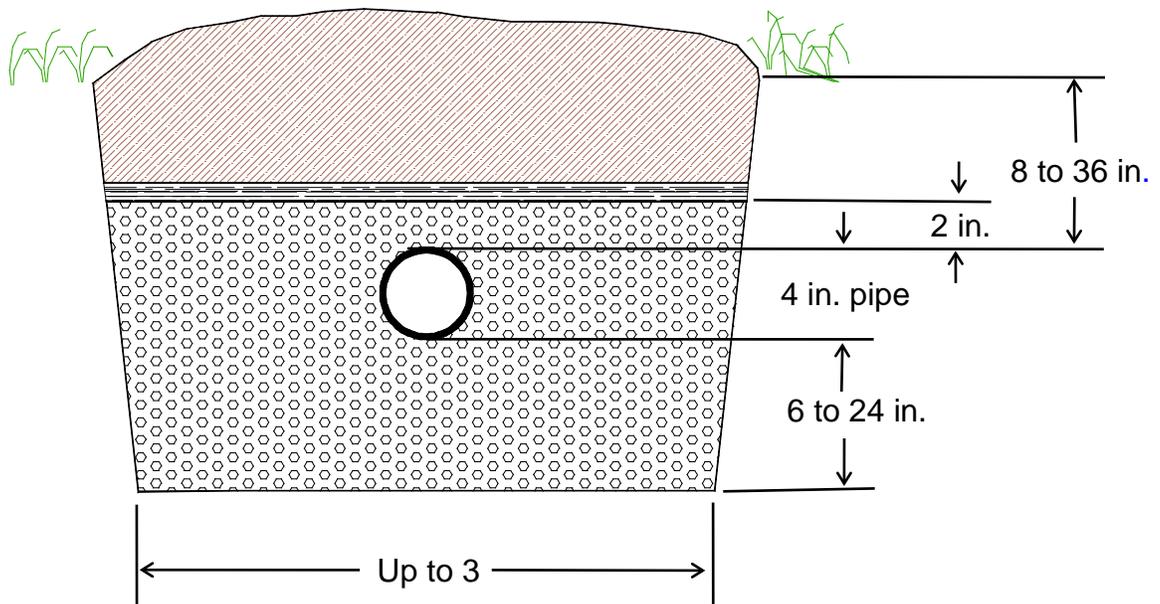


FIG 14.3 - **DELETE**
Filter material with 4 inch pipe

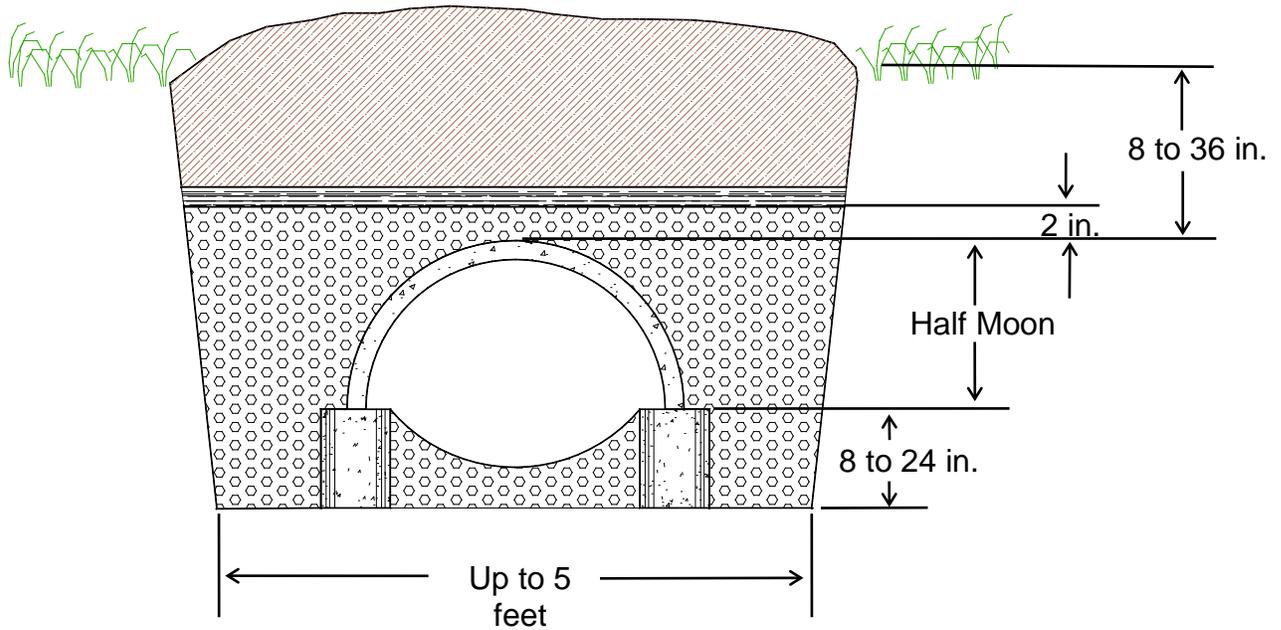


FIG 14.4 **DELETE**
Filter material and chambers

018 ~~Non Filter Material~~ Soil Absorption Systems Where Filter Material Is Not Used

018.01 ~~A G~~ gravelless ~~pipes and chambers~~ distribution system may be used to distribute effluent ~~for effluent~~ treatment in a soil absorption system under the following conditions.

018.01A ~~The P~~ pipes ~~and~~ chambers, or other conduit shall be of durable, non-degradable construction ~~(Figures 14.5, 14.6, 14.7)~~ specifically designed for installation without filter material.

018.01B ~~The P~~ pipes ~~and~~ chambers, or other conduit shall be able to meet load requirements of ~~1,000-lbs~~ pounds per linear foot.

018.02 ~~Non Filter Material~~ Effective Soil Absorption System Trench Bottom Area Square Footage When Filter Material Is Not Used

018.02A ~~Systems~~The effective width of the trench for a system using pipe wrapped with filter fabric, specifically designed for ~~gravelless~~ use without filter material, shall ~~use be~~ 75% percent of the outside perimeter of the pipe, for up to a 12 inch diameter pipe, ~~as the effective width of the trench~~. A construction permit as outlined in Chapter 3 is required when using pipe larger than 12 inches in ~~or larger~~ diameter pipe. ~~The effective width calculation does not apply when filter material is used in the trench.~~

018.02B ~~The effective width of the trench for a S~~systems using gravelless chambers with at least six inches of slotted sidewall, specifically designed for ~~gravelless~~ use without filter material, may ~~use up be up~~ to 1.50 times the bottom width of the chamber, measured as the distance between the inside edges of the base flanges ~~of the chamber, as the effective width of the trench~~. (See Fig. 14.7) The effective width of the trench shall not exceed five feet for design purposes. ~~The effective width calculation does not apply when filter material is used in the trench.~~

018.02C ~~The effective width of the trench for a system using bundled expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting in cylinders 9 to 12 inches in diameter specifically designed for use without filter material may be up to 1.5 times the maximum external width of the synthetic aggregate bundle. The trench may contain multiple bundles but at least one bundle length in the trench must include perforated distribution pipe. The effective width of the trench shall not exceed five feet for design purposes. The effective width calculation does not apply when filter material is used in the trench.~~

018.02D ~~For soil absorption systems that do not use filter material, any trench wider than 36 inches for pipes and five feet for chambers shall be considered a bed and have the required square footage of the absorption area or drainfield trench increased by the appropriate multiplication factor from Table 14.1.~~

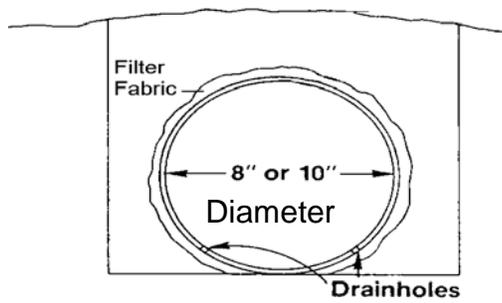


FIG 14.5
Gravelless Pipe with Filter
Fabric **DELETE**

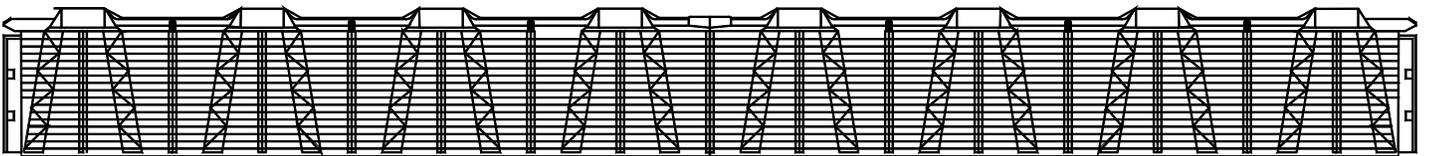


FIG 14.6
Gravelless
Chamber Profile
View **DELETE**

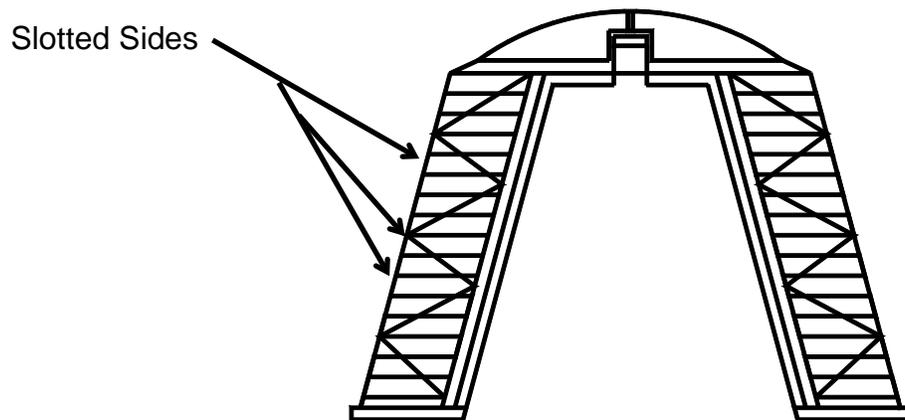


FIG 14.7 **DELETE**
Gravelless Chamber
End View

019 Absorption Trench Sizing

019.01 The required square footage for an absorption trench for a dwelling shall be determined by ~~Table 14.1~~ use of Table 14.2 when a percolation test was performed.

~~TABLE 14.1 (TABLE MOVED, RENUMBERED, REVISED)~~

~~Square Feet of Drain Field Trench Required for Single Family Dwelling~~

Perc Rate	1	2	3	4	5	6	7	8	9
in minutes	Bedroom	Bedroom	Bedroom	Bedroom	Bedroom	Bedroom	Bedroom	Bedroom	Bedroom
per inch	200-gpd	300-gpd	400-gpd	500-gpd	600-gpd	700-gpd	800-gpd	900-gpd	1000-gpd
<5	-Systems must be designed with a 12 inch loamy sand liner that would have a percolation rate of 15 to 20 minutes per inch and shall be designed at the 11-20 minute per inch level								
5-10	165	330	495	660	825	990	1155	1320	1485
11-20	210	420	630	840	1050	1260	1470	1680	1890
21-30	250	500	750	1000	1250	1500	1750	2000	2250
31-40	275	550	825	1100	1375	1650	1925	2200	2475
41-50	330	660	990	1320	1650	1980	2310	2640	2970
51-60	350	700	1050	1400	1750	2100	2450	2800	3150
>60	-Systems must be designed by a professional engineer. Construction Permit Needed								

019.02 The required square footage for ~~establishments a non-dwelling facility~~ shall be determined by use of the appropriate wastewater flow rate in Table 14.2 or by use of the following equation: The daily design flow ~~divided~~ multiplied by (Five divided 0.20 ~~multiplied~~ by the square root of the percolation rate).

$$\text{sq.ft.} = \text{design.flow(gpd)} \div [5 \div \sqrt{\text{percolation(min/in)}}]$$

$$\text{sq.ft.} = \text{design.flow(gpd)} \times 0.20 \times \sqrt{\text{percolation(min/in)}}$$

019.03 Absorption The required soil absorption area for a bed shall be calculated by determining the required square footage for a trench and multiplying ~~the that~~ area by the soil absorption bed multiplication factor from Table ~~14.2~~ 14.1.

~~TABLE 14.2 (TABLE MOVED, RENUMBERED, REVISED)~~

~~Absorption Bed Multiplication Factor~~

Width of Bed in feet	Factor
>3 to 10	1.25
>10 to 15	1.33
>15 to 20	1.50
>20	Unacceptable

020 Dosing-

020.01 ~~Dosing is recommended for all systems and of the soil absorption system shall be provided is required~~ when the ~~design wastewater flow requires more than 500 linear feet total length~~ of distribution line ~~is greater than 500 linear feet~~. Dosing may be accomplished by either pumps or siphons. The discharge from the pump or siphon shall be to a device designed to dissipate the velocity of the discharge and prevent erosion or disruption of the filter material or soil in the soil absorption system.

020.02 When the design wastewater flow requires more than 1,000 linear feet of distribution line, the soil absorption ~~field~~ system shall be divided into two equal portions and each half dosed alternately with equal volumes of effluent;

020.03 The system shall be designed so that the soil absorption system, or each half if divided into equal portions, is dosed at least once per day but not more than four times per day based on the design flow.

~~020.02~~020.04 ~~Dosing may be accomplished by either pumps or siphons. Each side of the system shall be dosed not more than four times per day.~~ The volume of each dose for an undivided system shall be the greater of the ~~daily volume from one day of design flow (the~~ wastewater daily design flow volume divided by the daily dosing frequency), or an

Title 124
Chapter 14

amount equal to approximately ~~3/4~~ three-fourths of the internal volume of the distribution lines being dosed (approximately 0.5 gallons ~~or 1.89 L~~ per linear foot of ~~4~~ four-inch pipe) to ensure distribution over the entire system. The volume of each dose for a divided system shall be half the amount determined for an undivided system.

020.05 When a dosing pump or siphon device is installed directly in a tank or tank compartment, the volume of that tank or tank compartment shall not be used to meet, or be considered part of, the minimum septic tank capacity requirement of this Title.

021 Pressure Dosing and Pressure Distribution

021.01 Pressure distribution must be accomplished by use of a pump. Use of a siphon in a pressure distribution system is not permitted.

021.02 A permit is required for the construction of an onsite wastewater treatment system with a pressure dosed soil absorption system, except for a pressure dosed system that is part of a mound system designed and constructed in accordance with this Title by a properly endorsed Master Installer, a professional engineer, or a registered environmental health specialist.

TABLE 14.1 - Soil Absorption Bed Multiplication Factor

<u>Wide of Bed, feet</u>	<u>Multiplier</u>
<u>> 3 to 10</u>	<u>1.25</u>
<u>> 10 to 15</u>	<u>1.33</u>
<u>> 15 to 20</u>	<u>1.50</u>
<u>> 20</u>	<u>Unacceptable</u>

TABLE 14.2 - Soil Absorption System Requirement, square feet

<u>Percolation Rate, mpi</u>	<u>200 gpd</u>	<u>300 gpd</u>	<u>400 gpd</u>	<u>500 gpd</u>	<u>600 gpd</u>	<u>700 gpd</u>	<u>800 gpd</u>	<u>900 gpd</u>	<u>1,000 gpd</u>
<u>< 5</u>	<u>Design for a 12 inch loamy sand liner with a percolation rate of 15 to 20 minutes per inch and use the 11-20 mpi design below or obtain construction permit.</u>								
<u>5 to 10</u>	<u>165</u>	<u>330</u>	<u>495</u>	<u>660</u>	<u>825</u>	<u>990</u>	<u>1155</u>	<u>1320</u>	<u>1485</u>
<u>10 to 20</u>	<u>210</u>	<u>420</u>	<u>630</u>	<u>840</u>	<u>1050</u>	<u>1260</u>	<u>1470</u>	<u>1680</u>	<u>1890</u>
<u>20 to 30</u>	<u>250</u>	<u>500</u>	<u>750</u>	<u>1000</u>	<u>1250</u>	<u>1500</u>	<u>1750</u>	<u>2000</u>	<u>2250</u>
<u>30 to 40</u>	<u>275</u>	<u>550</u>	<u>825</u>	<u>1100</u>	<u>1375</u>	<u>1650</u>	<u>1925</u>	<u>2200</u>	<u>2475</u>
<u>40 to 50</u>	<u>330</u>	<u>660</u>	<u>990</u>	<u>1320</u>	<u>1650</u>	<u>1980</u>	<u>2310</u>	<u>2640</u>	<u>2970</u>
<u>50 to 60</u>	<u>350</u>	<u>700</u>	<u>1050</u>	<u>1400</u>	<u>1750</u>	<u>2100</u>	<u>2450</u>	<u>2800</u>	<u>3150</u>
<u>> 60</u>	<u>Construction permit required when percolation rate is slower than 60 mpi.</u>								

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 14, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 15 - MAINTENANCE OF SEPTIC SYSTEMS AND LAGOONS

001 The owner of ~~any a~~ septic tank ~~or his agent~~ shall have a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist periodically inspect the septic tank and shall regularly inspect and arrange for the removal and sanitary disposal of ~~remove~~ septage from the tank whenever the top of the sludge layer is less than 12 inches below the bottom of the outlet baffles or whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle.

002 Pumping and ~~Disposal~~ of domestic septage shall be in accordance with ~~Federal, State and local rules and regulations~~ this Title.

003 The owner of a lagoon shall ~~inspect~~, operate and maintain the lagoon in the following manner:

003.01 The liquid level in a lagoon shall be maintained ~~with at~~ a minimum depth of two feet ~~of liquid depth~~. ~~Care shall be taken to pump additional~~ Additional water shall be added as necessary ~~to offset evaporation loss during hot weather~~ maintain the two foot minimum depth.

003.02 The lagoon area shall be mowed to keep grass and other plants at ~~6~~ six inches or less in height on the lagoon slopes and top of dike.

003.03 The lagoon shall be operated to prevent the liquid level from encroaching on the one foot freeboard requirement of the lagoon.

003.04 Solids will be removed from the lagoon if needed through the services of a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist and disposed of in accordance with ~~federal, state, and local regulations~~ this Title.

004 ~~To prevent soil erosion, a~~ All dike surface areas ~~above from the planned design high operating~~ waterline and to the outside toe of the dike ~~the lagoon and all other areas~~ which were disturbed during construction shall be seeded or sodded, ~~and a grass cover maintained to prevent~~ soil erosion. Short grasses, such as blue grass are preferred and shall be mowed frequently to prevent overhanging vegetation. Alfalfa ~~or similarly~~ and long rooted grasses which might damage the integrity of the lagoon shall not be used. Weeds, cattails, reeds, and other wetland

Title 124
Chapter 15

~~plants shall be removed by physical or chemical treatment as they emerge. No vegetation shall extend above the top of the dike. Trees and brush shall not be allowed to grow within the setback distances identified in Chapter 5, within a fifty foot radius of the lagoon, including trees, weeds and brush.~~

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 15, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 16 - ~~TYPE OF WASTE~~ PROHIBITIONS

001 The type of waste that can be directed to an on-site wastewater treatment system is limited to domestic wastewater. The following wastes are prohibited from entering an on-site wastewater treatment system unless approved in an operating permit issued for the system.

001.01 Cooling water, ground-water infiltration, discharge from roof drains, discharge from foundation tile drains, swimming pool wastewater, or other clear water discharges.

001.02 Hazardous waste: Any chemical substance or material, gas, solid, or liquid designated as hazardous in accordance with Title 128 – Nebraska Hazardous Waste Regulations.

001.03 Those pollutants or combination of pollutants or disease causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will on the basis of information available to the Department cause either death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations on such organism or its offspring.

002 The discharge of motor vehicle wastes to a septic system is prohibited. For the purposes of these regulations, “motor vehicle” means mechanized equipment used in agriculture, construction, industrial activities, maintenance, recreation, or transportation.

003 The discharge to a septic system of wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals (such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities) is prohibited unless approved in an operating permit issued for the system.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 16, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 17 - CLOSURE OF SEPTIC TANK AND LAGOON SYSTEMS

001 Whenever the use of an onsite wastewater treatment system is discontinued following the connection to a sanitary sewer or following condemnation or demolition of a building or property or due to the construction of another on-site wastewater treatment system, the onsite wastewater treatment system shall be properly closed and any further use of the system for any purpose shall be prohibited.

002 One of the following two methods shall be used for closure of a septic tank or holding tank~~;~~:

002.01 Pump and Fill Method: The tank shall be pumped of all liquids and solids and then filled with ~~earth soil~~. The ~~earth soil~~ shall be tamped completely so as to prevent voids which would occur as the result of settling~~;~~ or

002.02 Pump and Remove Method: The tank shall be removed after being pumped of all liquids and solids and the void left from the tank removal shall be filled in with ~~earth soil~~. The ~~earth soil~~ shall be mounded to provide for future settling.

003 The following method shall be used for closure of a wastewater lagoon:

003.01 The lagoon shall be drained ~~or allowed to evaporate until there is no completely of any~~ liquids ~~remaining;~~:

003.02 The fence shall be removed and the settled solids and liner material at the bottom of the lagoon shall be scraped out and properly disposed~~;~~ ~~and~~

003.03 The lagoon area shall be leveled and filled ~~in~~ with ~~dirt clean soil~~. The ~~dirt soil~~ shall be mounded over the lagoon area to provide for future settling ~~and to prevent water from ponding~~.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 17, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 18 - LAGOONS; - SITE LOCATION, ~~AND~~ EVALUATION; ~~AND~~ DESIGN

001 A site for a lagoon shall permit the unobstructed wind to sweep across the lagoon to provide ~~some~~ mixing action and to add oxygen to the water. Timber must be removed for a horizontal distance of at least 50 feet as measured from the high water mark for the maximum operating depth of the lagoon, but not less than 10 feet horizontal distance from the outer dike toe of the lagoon.

002 The lagoon shall be located and constructed so it will not receive surface runoff water.

003 A lagoon shall not be installed on a ~~property lot~~ less than three acres in size; For the purpose of this chapter, "lot size" means the area of a lot excluding all area below the normal high water level of any surface water feature, ~~all area below a ten-year flood elevation~~, and all area within the right-of-way or easement of a street, road, or access easement.

004 The lagoon shall be designed for complete retention.

005 The floor of the lagoon shall be located at least two feet above the seasonal highest expected groundwater level, bedrock, or other barrier layer.

006 The top of the dike shall be at least one foot above the 100 year flood elevation.

~~007 The lagoon shall be located at least 2 feet above fractured bedrock.~~

~~008007~~ Testing of the final seepage rate shall be completed based on soil permeability. The maximum allowable seepage rate is ~~1/8~~ one-eighth inch per day after sealing and compaction. This may be determined by an independent soils laboratory performing a hydraulic conductivity test on ~~a~~ an undisturbed soil sample taken at the site, or the two barrel method prior to filling, or a comparison test after prefilling with clean water but before introduction of wastewater.

~~008.01007.01~~ The two barrel method may be used for soil sealed lagoons before the lagoon is filled. Two similar 55 gallon drums are required, one a control drum with one end removed and the other drum (seepage drum) with both ends removed. One end of the seepage drum is pressed into the sealed soil layer, and a bead of polymer treated sodium bentonite clay is packed around the inside edge of the drum. The seepage drum is carefully filled with water and kept filled for two or more days to saturate the soil. The

Title 124
Chapter 18

test begins with filling each drum equally. Each day the difference in levels is recorded, and the barrels filled to the beginning level. The control drum measures the weather effects while the seepage drum records seepage plus weather effects. The test should continue for at least seven days.

~~008.02~~007.02 The comparison test method may also be used after the lagoon is prefilled. Isolate the lagoon and record the water level changes as a result of seepage and weather effects. The changes resulting from weather effects alone may be measured separately in a nearly full white plastic ~~5~~ five gallon bucket partially buried near the shore. The test should continue for at least seven days.

~~009008~~ Lagoon ~~s~~Sizing

~~009.01~~008.01 The size of a lagoon shall be based on the ~~location of the proposed system and design flow for the dwelling or non-dwelling facility, the seepage rate of the wastewater into the soil below the lagoon, and the number of bedrooms and/or gallons per day contemplated in the dwelling or establishment served. Regional lagoon size differences are a result of differential climatic conditions related to~~ average evaporation and precipitation using the appropriate location on the state evaporation and precipitation maps (Figures 18.1 and 18.2).

008.01A For a dwelling, the minimum wastewater flow for design of the onsite system shall be based on the number of bedrooms in the dwelling using the following: $150 \text{ gpd} + ((\text{Number of Bedrooms} - 1) \times 75 \text{ gpd})$, where gpd is gallons per day.

008.01B For a non-dwelling structure or other wastewater source, the wastewater flow shall be based on the highest daily wastewater flow.

~~009.02~~008.02 The ~~required~~ lagoon-size water surface area at the maximum operating level shall be determined by the following water balance equation: in Section 017 below using the state evaporation (Fig 18.3) and precipitation (Fig 18.4) maps to determine the net evaporation.

$$\text{Maximum Water Surface Area} = \frac{(\text{flow}) \times 976}{((\text{evap.} - \text{precip.}) \times 1.67) + (OD) + (\text{seepage} \times 608)}$$

Where: flow = daily design flow or inflow, gallons per day
evap. = annual lake evaporation for location from Fig. 18.1
precip. = annual precipitation for location from Fig. 18.2
OD = difference between maximum and minimum operating depths for the lagoon (typically three feet which is also the maximum allowed)

~~010009~~ Dike and floor Lagoon eConstruction

~~010.01009.01~~ 010.01009.01 The floor of the lagoon shall be level. A difference of plus (+) or minus (-) three inches is permitted. All vegetation shall be removed from the floor of the lagoon. This organic material shall not be used in the construction of the lagoon.

~~010.02009.02~~ 010.02009.02 The soil material of the lagoon floor shall be designed so that it shall not seep more than ~~1/8th~~ one-eighth inch per day. If soil borings and tests indicate that the existing soils are not conducive to compaction to meet this requirement, then ~~one of the following means of restricting seepage sodium bentonite clay or a synthetic liner shall~~ may be used to restrict seepage.

~~010.02A~~ Soda ash;

~~010.02B~~ Bentonite; or

~~010.02C~~ A synthetic liner.

~~011009.03~~ 011009.03 The inside slope of the dikes shall not be steeper than three horizontal to one vertical. The exterior slope of the dikes shall not be steeper than four horizontal to one vertical. The minimum width of the top of the dike shall be ~~4~~ four feet.

~~012010~~ 012010 The minimum operating depth of the lagoon shall be two feet. The maximum operating depth shall be ~~5~~ five feet. The dikes shall provide a minimum freeboard of 12 inches.

Title 124
Chapter 18

013011 The lagoon shall be equipped with a depth gage that provides a visual indication of the liquid level at minimum operating depth (two feet) and maximum design full depth relative to the lagoon floor.~~depth marker.~~

014012 The lagoon shall be fenced with a four foot high woven wire, welded wire, or seven strand barbed wire with the first strand starting three inches from the ground and the following strands spaced evenly. The fence shall be equipped with a standard main gate that is kept locked. The fence shall be placed on the outside edge of the top of the dike or four feet outside the toe of the dike. A Signs no less than 12 inches by 24 inches bearing the clearly-readable words shall be located on each gate with a warning of "NO TRESPASSING - WASTEWATER LAGOON" shall be located on the gate.

015013 ~~Influent line or distribution pipe~~Building Sewer Line

015.01013.01 The influent line from the building sewer shall be at least four inches inside diameter and shall have a grade of not less than ~~1/8~~ one-eighth inch per foot.

015.02013.02 The line shall be equipped with clean-outs with tight fitting caps, at every seventy-five feet or less, or where angles greater than forty five degrees are encountered. A clean out shall be located at least one foot above the highest water level and near the outside of the dike embankment.

015.03013.03 The line shall ~~be center discharging and shall~~ discharge at the center of the lagoon onto a concrete ~~apron~~ slab at least ~~2~~ two feet square with the discharge end of the pipe placed below the minimum operating depth of the lagoon.

015.04013.04 The sewer line pipe shall have a loading bearing capacity of not less than 1,000 (455 kg) pounds per square foot. Plastic pipe shall be installed and supported in such a manner that there is no deflection during backfilling or compaction.

016015 The lagoon shall be filled with surface or groundwater to a depth of two feet before wastewater wastes are discharged into it.

~~017~~ ~~Sizing Formula~~

$$A = \frac{(I : 7.48 \times 365 \times 20) : [(((EVAP - PRECP) : 12) \times 20) + LV + ((SEEP : 12) \times 365 \times 20)]$$

- ~~A = Area (surface area at maximum operating depth)~~
- ~~I = Inflow in gallons per day~~
- ~~$EVAP$ = Net evaporation from FIG 18.3 in inches per year~~
- ~~$PRECP$ = Net precipitation from Figure 18.4 in inches per year~~
- ~~LV = Lagoon depth between maximum and minimum operating depths (normally three feet)~~
- ~~$SEEP$ = Seepage rate through lagoon liner in inches per day; 1/8 inch or less allowable.~~
- ~~7.48 = Conversion of gallons per day to cubic feet per day~~
- ~~365 = Conversion from days to one year~~
- ~~12 = Conversion from inches to feet~~
- ~~20 = 20 year design life~~

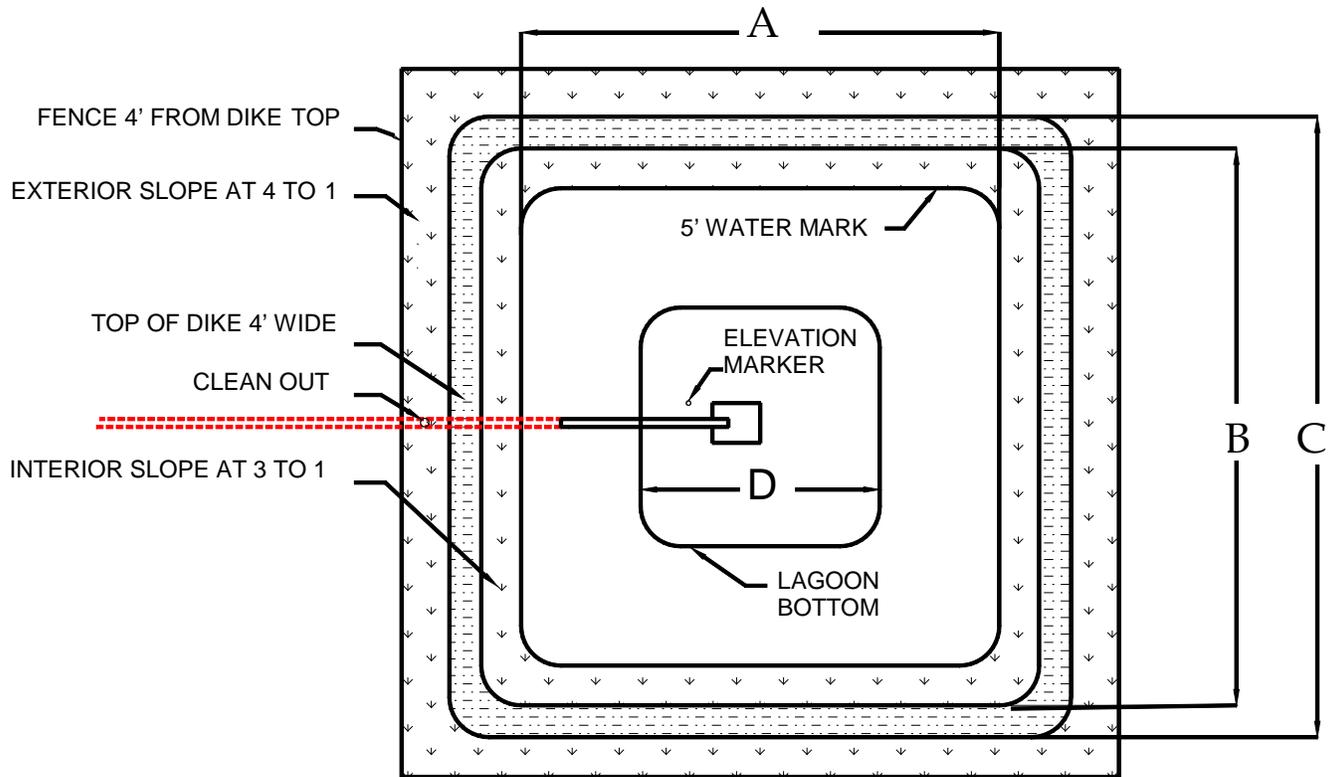
~~Simplified Equation:~~

$$A = \frac{I \times 976}{((EVAP - PRECP) \times 1.67) + LV + (SEEP \times 608)}$$

~~017.01~~ Take the square root of the area to get the length of a side at the high operating level for a square lagoon. (FIG 18.1, 18.2)

$$\text{Length of a side} = \sqrt{A}$$

~~017.02~~ Flow for dwellings shall be estimated at a minimum of 150 gpd + ((Number of Bedrooms - 1) x 75 gpd).



A = Width at High Water Mark
B = Width at Inside Top of Dike
C = Width at Outside top of Dike
D = Width at Lagoon Bottom

FIG 18.1 Plan View
DELETE FIGURE

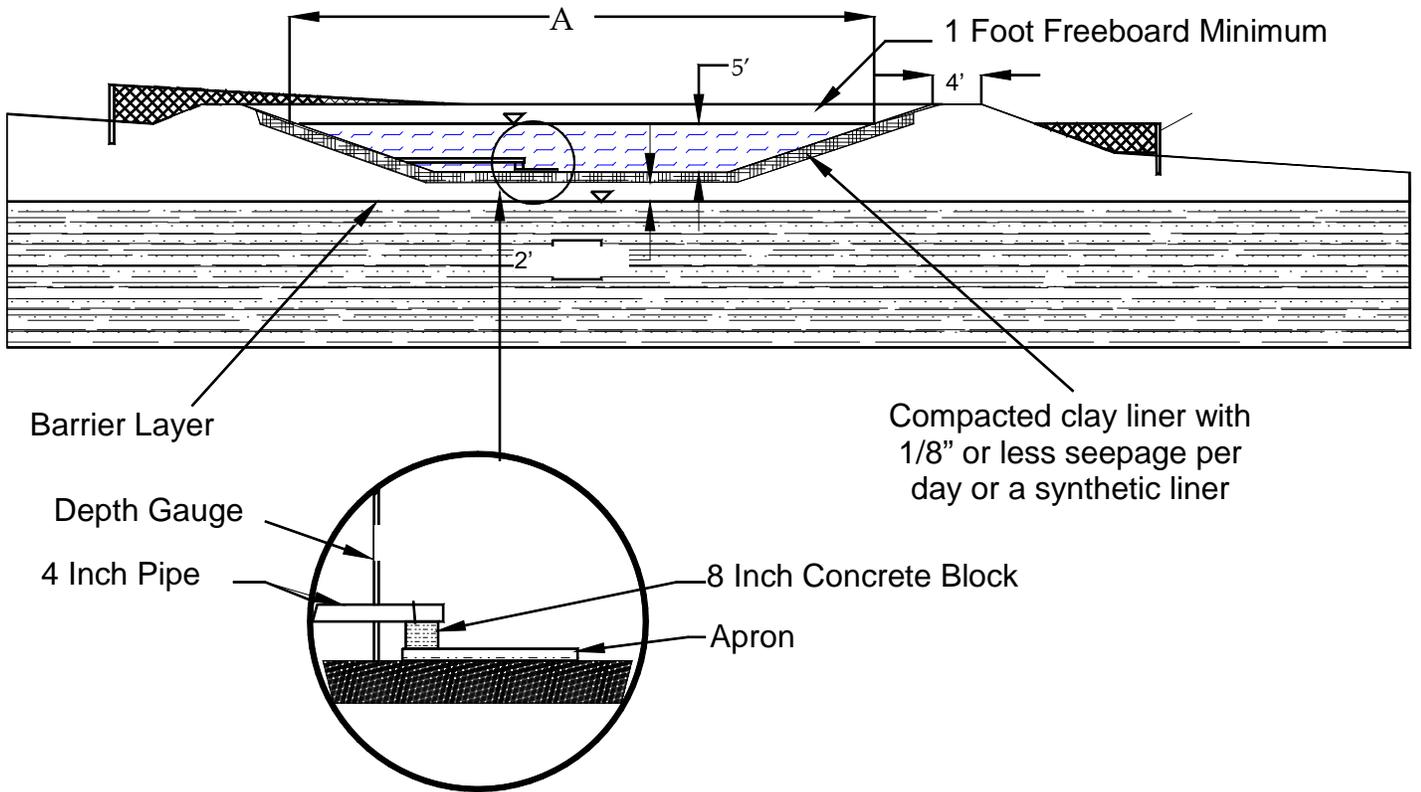


FIG 18.2 Profile View **DELETE FIGURE**

Total Annual Lake Evaporation

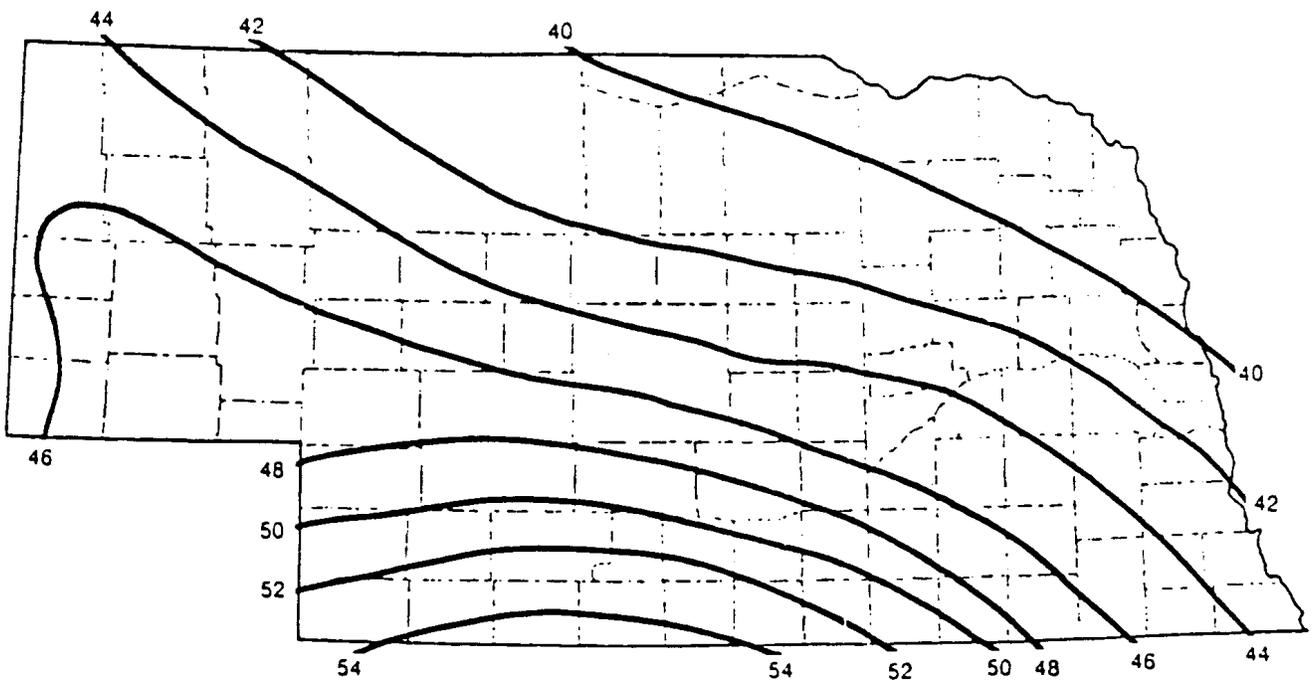


FIG-18.3 Figure 18.1 Average Annual Lake Evaporation, Inches

Total Annual Precipitation

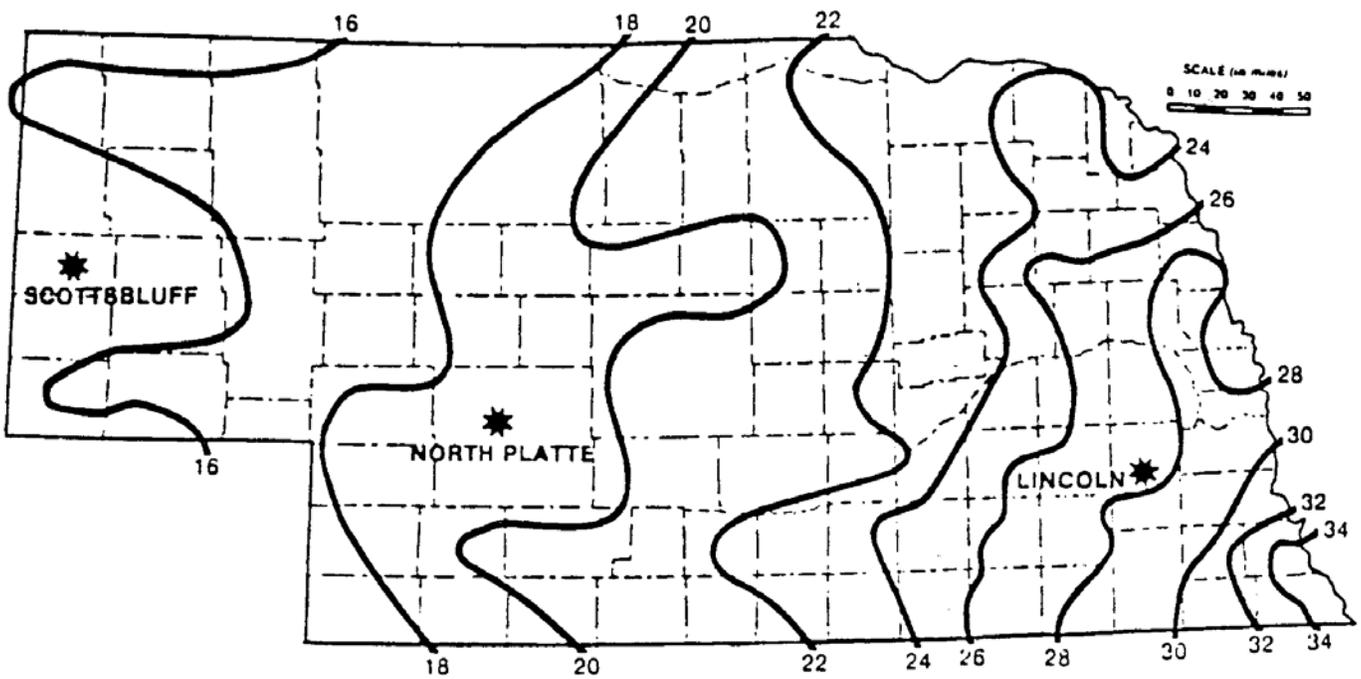


FIG 18.4 Figure 18.2 Average Annual Precipitation, Inches

Enabling Legislation: Neb. Rev. Stat. 81-1505(8).

Legal Citation: Title 124, Ch. 18, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 19 - FLOOR DRAINS

001 A floor drain in a dwelling garage may be connected to an onsite wastewater treatment system provided the drain does not receive ~~oil~~ petroleum products, paint, organic solvents, engine cleaner antifreeze, or hazardous materials and meets design requirements of Section 002. These drains are designed to handle snow and ice melt along with occasional exterior vehicle washing.

002 A floor drain in a dwelling garage that is connected to an onsite wastewater treatment shall meet the following design requirements:

002.01 The drain shall have an integral mud trap and oil separator; and

002.02 ~~A~~ The drain shall be equipped with a watertight cap or a valve shall be located immediately following the drain. ~~that~~ The cap shall normally be left secured on the drain or the valve shall normally be left closed.

003 The design ~~capacity~~ flow of the onsite wastewater treatment system shall be increased at least ~~75~~ 100 gallons to account for a dwelling garage floor drain connection to the system.

004 ~~It is recommended, but not required, that a~~ A permanent sign ~~or plate~~ shall be placed ~~on or~~ within view of the drain stating "WARNING - Water Only! Floor drain leads to an on-site wastewater treatment system". ~~This sign is intended~~ to remind current and future owners that the garage drain leads to an on-site wastewater treatment system that cannot properly treat some types of wastes.

005 The discharge of motor vehicle wastes or maintenance shop wastes to a septic system or to a soil absorption system is prohibited. The connection of a floor drain from a maintenance shop to a septic system or soil absorption system is prohibited.

006 Discharge of a non-domestic waste to a septic system is also subject to the requirements of Nebraska Administrative Code Title 122 - Rules and Regulations for Underground Injection and Mineral Production Wells.

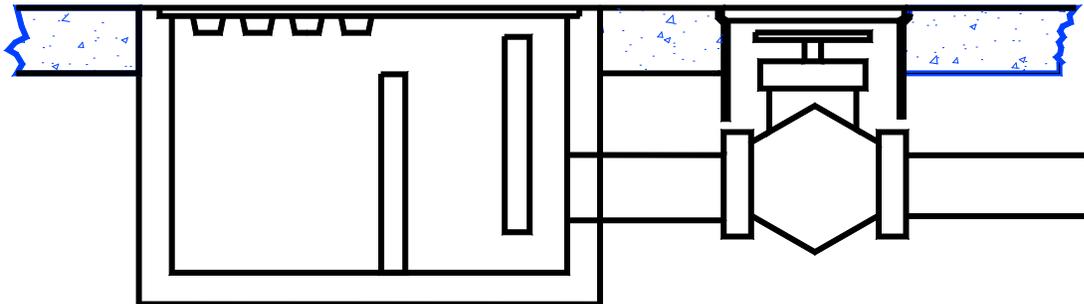
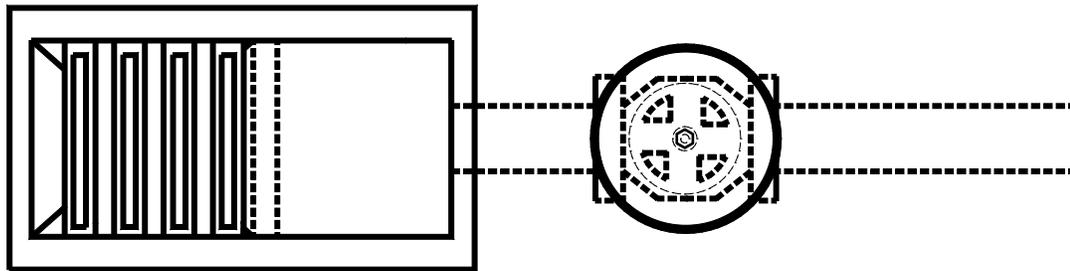


FIG 19.1 Dwelling Garage Floor Drain **DELETE FIGURE**

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

Legal Citation: Title 124, Ch. 19, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 20 - CERTIFICATION REQUIREMENTS ~~FOR ON-SITE-CERTIFIED~~
~~PROFESSIONALS~~

001 Only a certified professional, a professional engineer, a registered environmental health specialist, or a person under their direct supervision may engage in the inspection, pumping, siting, layout, construction, reconstruction, alteration, modification, repair, closure or otherwise changing of ~~a~~ an on-site wastewater treatment system. For the purposes of these regulations, “direct supervision” means the person overseeing the work is physically present on the site where the work is being done and has control over, responsibility for, and professional knowledge of the work being done. The certification requirement does not apply to a private onsite wastewater treatment system at an electric generation facility site owned by a district organized under Nebraska Revised Statutes, Chapter 70, article 6.

002 Certified professionals must hold a valid certificate by examination in accordance with this Title or a hardship certificate in one or more of the following categories:

- 002.01 Master Installer
- 002.02 Journeyman Installer
- 002.03 Soil Evaluator
- 002.04 Inspector
- 002.05 Master Pumper
- 002.06 Journeyman Pumper

003 Authorization to Practice~~z~~:

003.01 Authorization to Practice under Certificates by Examination:

003.01A A Master Installer or Journeyman Installer is authorized to engage in the siting, layout, construction, reconstruction, alteration, modification, ~~or~~ repair, or closure of on-site wastewater systems, except that a Journeyman Installer is only authorized to engage in any of these activities in accordance with the following restrictions:

003.01A.1 The Journeyman Installer is employed by a Master Installer, a professional engineer, or a registered environmental health specialist who is responsible for the work, or

Title 124
Chapter 20

003.01A.2 The Journeyman Installer is employed by a business or government entity that has a Master Installer, a professional engineer, or a registered environmental health specialist as an owner, officer, or employee of the business or of a government entity who is responsible for the work.

003.01B A Soil Evaluator is authorized to engage in the soil evaluation of on-site wastewater systems.

003.01C An Inspector is authorized to engage in the inspecting or soil evaluation of on-site wastewater systems.

003.01D A Master Pumper or Journeyman Pumper is authorized to engage in the pumping of on-site wastewater systems, except that a Journeyman Pumper is only authorized to engage in this activity in accordance with the following restrictions:

003.01D.1 The Journeyman Pumper is employed by a Master Pumper, a professional engineer, or a registered environmental health specialist who is responsible for the work; or

003.01D.2 The Journeyman Pumper is employed by a business or government entity that has a Master Pumper, a professional engineer, or a registered environmental health specialist who is an owner, officer, or employee of the business or government entity and responsible for the work.

003.02 Authorization to Practice under Hardship Certificates - A person holding a valid Hardship Certificate is authorized to practice in those categories listed on the certificate in accordance with Authorizations to Practice under Certificates by Examination of this Section.

004 No person shall engage in the siting, layout, construction, reconstruction, alteration, modification, repair, closure, or otherwise changing of a private on-site wastewater system unless a Master Installer, a Journeyman Installer, a professional engineer, or a registered environmental health specialist who is responsible for such work is physically present at the site where such work is being performed and is supervising the work, except that a Soil Evaluator or an Inspector may perform soil evaluation for the purpose of aiding in ~~the~~ siting and layout.

Title 124
Chapter 20

005 No person shall engage in the pumping of a private on-site wastewater system unless a Master Pumper, a Journeyman Pumper, a professional engineer, or a registered environmental health specialist who is responsible for such work is physically present at the site where such work is being performed and is supervising the work.

006 No person shall engage in the inspecting of a private on-site wastewater system unless an Inspector, a professional engineer, or a registered environmental health specialist who is responsible for the work is physically present at the site where such work is being performed and is supervising the work.

007 Hardship Certificates:

007.01 ~~A~~ Hardship Certificates may be issued to an individual upon submittal of the following in accordance with this Chapter or on a form provided by the Director. All information shall be typed or legibly printed except as indicated:

007.01A Submittal of a request for certification by hardship that includes the words “Application for Onsite Hardship Certification” and clearly stating states the conditions of the hardship and submittal of evidence supporting competency in the categories in which the individual is seeking certification;

007.01B The certified professional’s full name (first name, middle initial, and last name), mailing address, and phone number.

007.01C ~~Submittal of The~~ hardship certificate application fee in accordance with the fee schedule in Appendix A; and

007.01~~CD~~ ~~Submittal of a valid, complete application Form E (Appendix B)~~ The statement “I swear or affirm that the information and documentation submitted are true, complete, and accurate” followed by the certified professional’s signature and date signed.

007.02 A separate hardship application with application fee will be required for each category of certificate that the applicant applies for.

007.03 ~~AAA~~ hardship certificates expires 180 days after the date of issuance.

008 Certificates by eExamination:

Title 124
Chapter 20

008.01 To obtain a certificate by examination in any category, an applicant must pass an examination administered by the Department.

008.02 ~~Expiration:—All certificates by examination expire December 31 of every odd-numbered year unless renewed in accordance with this Chapter, except that certificates by examination issued prior to January 1, 2006, will not expire December 31, 2005.~~

008.03 Application for eCertificate by eExamination:

008.03A ~~Applicants~~An applicant for certification by examination shall submit the following to the Department in accordance with this Chapter or on a form provided by the Director. All information shall be typed or legibly printed except as indicated:

008.03A.1 ~~An application for a certificate on Form D (Appendix E)~~A request that includes the words “Application for Onsite Certification by Examination”;

008.03A.2 The applicant’s full name (first name, middle initial, and last name), mailing address, and phone number;

008.03A.3 The certificate application fee in accordance with the fee schedule (Appendix A);

008.03A.3008.03A.4 ~~An application for examination on Form H (Appendix F)~~A listing of each certificate that the applicant wishes to take a certification examination for; ~~and~~

008.03A.4008.03A.5 The examination fee in accordance with the fee schedule (Appendix A). The examination fee is required for each examination to be taken; and

008.03A.6 The statement “I swear or affirm that the information and documentation submitted are true, complete, and accurate” followed by the applicant’s signature and date signed.

008.03A.7 The Director may waive certification and examination fees for any Inspector employed by a governmental agency or subdivision which has adopted and has the authority to enforce an inspection and compliance

program at least as stringent as the standards for siting, layout, construction, closure, reconstruction, alteration, modification, repair, inspection, and pumping provided by the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act and this Title.

008.03A.7a The application for certification or for certificate renewal for which the fee waiver is requested shall include verification of employment as an inspector of onsite wastewater treatment systems by a local governmental agency or subdivision.

008.03A.7b The Department may request additional information as needed to verify employment or to determine that the local inspection program is at least as stringent as the requirements in this Title.

008.03A.7c An Inspector who is granted this fee waiver shall be limited to inspecting as a government employee within the jurisdiction and under the authority of that local governmental agency or subdivision.

008.03B All applications received less than five ~~(5)~~ days prior to a scheduled examination date may be held for the next scheduled examination date.

008.03C An individual seeking certification by examination in multiple categories of certification may submit a single application for certification ~~by examination with and one~~ application fee ~~for one or more categories~~, but must submit ~~a separate application for examination and the~~ examination fee ~~for each examination to be taken, and take a~~ A separate examination is required for each category sought. Where application is made for multiple categories and certification application fees for the categories are different, the applicant shall submit the highest fee.

008.03D An applicants who fails an examination will be permitted to be re-examined at a subsequent examinations. An applicants ~~desiring who desires~~ to be re-examined shall submit an application for certification by examination as identified in 008.03A above on Form H (Appendix F) and the examination fee in accordance with the fee schedule (Appendix A). The certificate application fee is not required for re-examination within two years of initial application as noted

below. ~~An applicants failing who fails~~ three ~~(3)~~ examinations in succession shall obtain a minimum of six ~~(6)~~ hours of approved continuing education prior to re-examination. Failure to pass the examination within two ~~(2)~~ years of the date the initial application for certification by examination was received shall result in the rejection of the application. ~~An individual~~s whose application has been so rejected who desires certification shall submit a new application for certification by examination ~~and certification~~ and the applicable examination and application fees.

008.03E Adding eCategories to eCurrent eCertificates:

008.03E.1 A certified professional holding a valid certificate by examination in the Master Installer, Master Pumper, Inspector, or Soil Evaluator category may apply for addition of other categories to the certificate by submitting an application for certification by examination as identified in 008.03A above ~~Form H~~ and the examination fee for each additional category and passing the appropriate exam.

008.03E.2 A certified professional holding a valid certificate by examination in the Journeyman Installer category may apply to add the Journeyman Pumper category, and a certified professional holding a valid certificate by examination in the Journeyman Pumper category may apply to add the Journeyman Installer category to the certificate by submitting an application for certification by examination ~~Form H~~ and the examination fee for the additional category and passing the appropriate exam.

008.03E.3 A certified professional holding a valid certificate by examination in the Journeyman Installer category may apply for certification in the category of Master Pumper, Inspector, or Soil Evaluator by submitting a new application for certification by examination ~~Form H~~ and the examination fee for each additional category, and submit the difference in certificate fees between the Journeyman Installer certificate fee and the Master Pumper, Inspector, or Soil Evaluator certificate fee and passing the appropriate exam.

008.03E.4 A certified professional holding a valid certificate by examination in the Journeyman Pumper category may apply for certification in the category of Master Installer, Inspector, or Soil

Evaluator by submitting a new application for certification by examination Form H and the examination fee for each additional category, and submit the difference in certificate fees between the Journeyman Pumper certificate fee and the Master Installer, Inspector, or Soil Evaluator certificate fee and passing the appropriate exam.

008.03E.5 A certified professional holding a valid certificate by examination in the Journeyman Installer category may upgrade to a Master Installer category, and a certified professional holding a valid certificate by examination in the Journeyman Pumper category may upgrade to a Master Pumper category, by submitting a completed application for certification by examination (008.03A above) and the difference in certificate fees between the two certificates.

008.04 Renewal of eCertificates by eExamination:

008.04A To renew a valid certificate, the certified professional ~~must shall~~ submit the following to the Department in accordance with this Chapter or on a form provided by the Director. All information shall be typed or legibly printed except as indicated:

008.04A.1 ~~A properly completed, signed, and dated application for renewal on Form D (Appendix E)~~A request that includes the words "Application for Onsite Certificate Renewal";

008.04A.2 ~~The certified professional's Record of fulfillment of eContinuing eEducation requirements on Form K (Appendix H) which shall include the following information in accordance with this Chapter or on a form provided by the Director. All information shall be typed or legibly printed except as indicated:~~

008.04A.2a ~~The words "Record of Continuing Education for Onsite Certification".~~

008.04A.2b ~~The certified professional's full name (first name, middle initial, and last name), mailing address, phone number, and certification number.~~

008.04A.2c For each educational program or course the date of the program, a description of the educational program, the name of the provider of the program, the program location, and the number of Department approved professional development hours (recorded to the nearest quarter hour) obtained by the certified professional for participation in that program recorded to the nearest quarter-hour.

008.04A.2e The statement “I swear or affirm that the information and documentation submitted are true, complete, and accurate”.

008.04A.2f The certified professional’s signature and date signed;
and

008.04A.3 The certificate renewal fee in accordance with the fee schedule (Appendix A).

008.04B If the Department does not receive the ~~application for renewal application Form D, which includes the~~ renewal fee, and record of continuing education, ~~Form K~~ prior to the expiration date of the certificate, the certificate shall expire.

008.04C The certificate of any certified professional who fails to comply with the continuing education requirements of this Chapter will expire on the expiration date of the certificate.

008.04D ~~Late Renewal of Expired Certificate~~

~~008.04D.1 To renew a certificate that has expired or to obtain a new certificate following revocation of a certificate, a person shall submit an~~ ~~A person may late renew their expired certificate within 60 days after the certificate has expired by submitting to the Department a properly completed application for onsite certificate renewal~~ ~~application for certification Form D (Appendix E) (008.04A), record of continuing education, and the certificate renewal fee (Appendix A), and a \$50 late renewal penalty.~~

008.04D.2 The late renewal application (which includes the record of continuing education, certificate renewal fee, and late penalty) must be

received by the Department no later than 60 days after the certificate has expired.

008.04D.3 Once the 60 day late renewal period has expired, ~~For each category of certification desired,~~ in order to obtain certification the individual shall ~~also~~ submit an application ~~for examination Form H (Appendix F) and for certification by examination (008.03A), including the application fee along with the~~ examination fee for each category, and pass the examination ~~in~~ for each category desired.

008.04E The Department will not renew a certificate or issue a new certificate to an individual whose certificate has been revoked until at least one year has passed since the date of revocation.

008.05 Examination Development and Administration:

008.05A Examinations for certification will be developed and administered by the Department.

008.05B Examinations for certification shall be designed to test the general knowledge of the applicants regarding on-site wastewater construction standards, soils and geology of the state, rules and regulations of this Title, and any other knowledge the Department deems essential to the successful practice of the profession for which certification is requested.

008.05C The examinations will be by open book testing.

008.05C.1 The Department shall make available to each examinee at the test site a copy of this Title and other documents which cover the subject matter tested in the exam. All materials provided to the examinee by the Department for use during the examination shall remain the property of the Department and shall be returned upon completion of the exam.

008.05C.2 Any such materials brought by examinees to the examination site for use in completing the examination may be subject to inspection by examination proctors and subject to confiscation or exclusion from the examination area for the duration of the exam without advance notice to examinees.

008.05C.3 Use of equipment capable of copying or reproducing the examination, by the examinee, ~~shall not be allowed~~ during the examination is prohibited and may result in expulsion from the examination, rejection of the application and forfeiture of all fees submitted.

008.05C.4 Use of telephonic or radio equipment, by the examinee, ~~shall not be allowed~~ during the examination is prohibited and may result in expulsion from the examination, rejection of the application and forfeiture of all fees submitted.

008.05D With good and sufficient cause shown, the Department may provide for special arrangements for administering the examinations, which to the extent possible, will accommodate special circumstances of an applicant without compromising the examination purposes or integrity. Such special circumstances may include but not be limited to reading difficulties, physical skills limitations or absence from the state during regular examination dates. Accommodations may include special proctors or readers, oral examination, dictation of answers or use of non-resident proctors.

008.05E Applicants must show photographic identification at the examination site to be admitted for examination.

008.05F All applicants will be notified in writing regarding examination results. Results will be either pass or fail.

008.05G Applicants who pass an examination in any category will be issued a certificate in that category. A passing grade of 80% ~~percent~~ shall be required for certification in any category.

009 Continuing Education:

009.01 Required Professional Development Hours (PDHs) for Certificate Renewal

009.01A ~~Beginning January 1, 2006, a~~ certified professional shall successfully complete a minimum of ~~twelve (12) professional development hours~~ PDHs of continuing education during every two-year certificate period.

009.01B For a certificate issued in the first or even numbered year of the two-year certificate period a certified professional shall successfully complete a minimum of 12 PDHs of continuing education during the first certificate period.

009.01C For certificates issued in the second or odd numbered year of the two-year certificate period a certified professional shall successfully complete a minimum of six PDHs.

009.01D Completion ~~prior to January 1, 2006~~ within 30 days prior to obtaining initial certification by examination of continuing education programs approved in accordance with this Title shall be accepted for the purposes of complying with ~~this the PDH~~ requirement for certificate renewal.

009.02 ~~One professional development hour (PDH) means at least 60 minutes spent in educational activity. A P~~professional development ~~time~~ hour (PDH) shall be recorded to the nearest ~~tenth of an hour (0.1 hours or six minutes)~~ quarter-hour (15 minutes).

009.03 A maximum of six ~~(6)~~ professional development hours acquired in excess of the minimum hours required during any certificate cycle may be carried over into the next two-year certificate cycle except that once a certificate has expired and the late renewal period has lapsed the PDHs also expire and there shall be no carryover of PDHs.

009.04 All ~~professional development hours~~ PDHs for certificate renewal shall be from courses or programs ~~pre~~ approved by the Department ~~to insure that the training is~~ These courses or programs must be appropriate, directly associated with the on-site wastewater industry or related workplace safety, covers topics related to the responsibilities carried on by the certified professional, and provides information or training that serves to enhance a certified professional's knowledge of and ability to perform activities that protect the public health and the environment.

009.05 Approval of Continuing Education Programs and Courses:

009.05A Any Only continuing education programs or courses ~~shall be~~ approved by the Department shall be used for ~~use as continuing education for purposes of fulfilling the education requirements of a certified professional. prior to the use of programs or courses for that purpose.~~

009.05B A continuing education provider shall submit to the Department its proposed program or course for approval not less than ~~sixty (60)~~ days prior to the date the proposed program or course is offered for presentation.

009.05C A continuing education provider shall not advertise or otherwise represent any program or course as approved for meeting the continuing education requirements of this Title until such program or course is approved by the ~~d~~Department.

009.05D ~~The~~For a classroom style continuing education program or course, the provider shall demonstrate that the instruction or presentations will be conducted by individuals qualified in the program or course topic. For an independent or self study program or course, the provider shall demonstrate that qualified individuals developed, and is directly responsible for, the program or course content. ~~and a~~adequate biographical information for each identified qualified individual shall be submitted for Department review and verification.

009.05E The continuing education provider shall submit an outline of the program or course with adequate detail to verify the topics of presentation, including detailed time lines to show the hours of education presentation planned. The continuing education provider shall provide the Department access to monitor or audit the program.

009.05F The continuing education provider shall demonstrate adequate capability of documenting and maintaining to document and maintain records ~~of that verify successful participation in or~~ attendance at the program or course, and shall agree to provide the Department a list of ~~attendees~~ participants who have completed the program or course within 30 days of its completion.

009.05G A certified professional may at his or her discretion submit a proposed program or course for approval if the provider has not submitted the same for consideration, except for independent or self study programs or courses which must be submitted by the provider. Any such submission, which is approved, shall thereafter be eligible for use as continuing education by any attending certified professional. The submitted information must include the contact name, address, and telephone number for the sponsoring organization or provider and the program or course agenda with adequate detail to verify the topics of presentation, including detailed time lines to show the hours of education presentation planned and the name of the presenter for each topic.

009.05H ~~If the~~When an application for approval is submitted by a certified professional without participation in the application by the continuing education provider, the certified professional shall submit a description of the means by which the continuing education provider has or will document successful participation or attendance and how the applicant has or will obtain and maintain records of participation or attendance. For independent or self study programs or courses this documentation must be submitted by the program provider.

009.05I The provider shall include a request for the number of professional development hours for the program or course with the request for approval, and include adequate supporting documentation for the PDHs requested. The Department will evaluate and determine the number of professional development hours that a certified professional can claim for successful, documented completion of the course or program.

009.06 A maximum of two ~~(2)~~ professional development hours in each two-year certification cycle may be from pre-approved courses peripheral to the actual activity of the on-site wastewater industry ~~if it is related to the business of contracting for such services- for such things as business tax law, accounting, or insurance, or the safety and protection of work activities from physical or environmental hazard or first aid training.~~ For the purposes of professional development hours, work place safety and protection of work activities shall be considered directly related to the actual activity of the onsite wastewater industry.

009.07 Continuing education records shall be maintained by the certified professional and submitted to the Department ~~on Form K in Appendix H~~ as part of application for certificate renewal. The record of continuing education shall include the information specified in 008.04A.2 above.

009.08 Continuing education records including evidence of participation shall be retained by the certified professional for a minimum of three years and shall be submitted to the Department upon request.

009.09 The Department may waive or exempt a certified professional from continuing education requirements or extend the period for completion of the required continuing education, in whole or in part, for any period for which the certified professional submits documentation supporting an exemption for circumstances beyond his or her control which prevented completion of such requirements.

010 Certification Endorsements:

010.01 ~~An E~~endorsements shall be issued, upon successful completion of examination, authorizing ~~the~~ certified professionals so endorsed to engage in special activities or procedures that require advanced training or skills identified in this Title as requiring an endorsement to perform.

010.02 An endorsement to engage in a special activity or procedure shall only be issued to ~~a those~~ persons holding a valid certificate in the appropriate categories as identified in the rules and regulations for such special activity or procedure.

010.03 Application and ~~e~~Examination for ~~e~~Endorsement:

010.03A Application for endorsement shall include submittal of ~~an application on Form L (Appendix J), the following information in accordance with this Chapter or on a form provided by the Director~~ and submittal of the endorsement application fee and the examination fee in accordance with the fee schedule (Appendix A). All information shall be typed or legibly printed except as indicated. A separate application ~~form~~ and examination fee shall be required for each endorsement examination.

010.03A.1 The words “Application for Onsite Certification Endorsement”.

010.03A.2 The certified professional’s full name (first name, middle initial, and last name), mailing address, phone number, and certification number.

010.03A.3 The category of endorsement requested.

010.03A.4 The statement “I swear or affirm that the information and documentation submitted are true, complete, and accurate”.

010.03A.5 The certified professional’s signature and date signed;

010.03B ~~Any~~ applications received less than five ~~(5)~~ days prior to a scheduled examination date may be held for the next scheduled examination date.

Title 124
Chapter 20

010.03C Applicants will be required to show photographic identification at the examination site to be admitted for examination.

010.03D Use of equipment capable of copying or reproducing the examination, by the examinee, ~~shall not be allowed~~ during the examination is prohibited and may result in expulsion from the examination, rejection of the application and forfeiture of all fees submitted.

010.03E Use of telephonic or radio equipment, by the examinee, ~~shall not be allowed~~ during the examination is prohibited and may result in expulsion from the examination, rejection of the application and forfeiture of all fees submitted.

010.03F ~~All a~~ Applicants will be notified in writing regarding examination results. Results will be either pass or fail.

010.03G Applicants who pass an examination for endorsement will be issued an endorsement to their certificate.

010.03H ~~Applicants who fail an examination will be permitted to be re-examined at subsequent examinations.~~ Applicants who fail and desiring desire to be re-examined for endorsement shall submit an application ~~for examination on Form L (Appendix J)~~ and the examination fee ~~in accordance with the fee schedule (Appendix A)~~ as specified in 010.03A above.

010.04 ~~An E~~endorsements shall ~~be~~ automatically renewed upon the renewal of the certificate to which ~~they are it is~~ attached.

010.05 ~~Endorsements shall~~ An endorsement expires upon the expiration, suspension, or revocation of the certificate to which ~~they are it is~~ attached, except that an endorsement may be late renewed in conjunction with late renewal of the certificate to which it is attached. An individual whose endorsement has expired who desires to obtain a new endorsement shall re-apply and meet all requirements for endorsement by examination in accordance with requirements of this section. ~~Upon successful completion of the requirements, a new endorsement shall be issued.~~

011 All fees are nonrefundable.

012 A certified professional shall only practice in the categories in which they hold a valid certificate.

Title 124
Chapter 20

Enabling Legislation: Neb. Rev. Stat. §81-15,244; 81-15,247; 81-15,248; & 81-15,252.

Legal Citation: Title 124, Ch. 20, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 21 - REVOCATION, SUSPENSION OR REFUSAL TO GRANT CERTIFICATION

001 The Director may revoke or suspend ~~the a~~ certificate ~~of~~, or refuse to grant a certificate, following opportunity for hearing, upon any reasonable ground including, but not limited to, the following:

001.01 Falsification of certification application.

001.02 Falsification of sworn affidavit for certification.

001.03 Violations of the rules and regulations of the Environmental Quality Council.

001.04 Violations of the Nebraska Environmental Protection Act.

001.05 The practice of fraud or deception.

001.06 Failure to submit a complete, valid certification application form.

001.07 Failure to submit required application fee.

001.08 Failure to successfully complete examination requirements of these rules and regulations.

001.09 Failure to perform requirements of these rules and regulations, including failure to register on-site wastewater systems.

001.10 Falsification of system registration information.

001.11 Failure to meet continuing education requirements required by these rules and regulations.

001.12 Failure to submit required registration fee.

001.13 Failure to submit required late registration fee.

001.14 Use of equipment capable of copying or reproducing the examination or use of telephonic or radio equipment, by the examinee, during the examination.

Title 124
Chapter 21

002 Violation of the above Section 001 may also result in a civil or criminal prosecution.

003 Notice of revocation or suspension action shall be issued by the director through certified mail to the affected certificate holder at that individual's last known address. That notice shall state the reason(s) for the action, the effective date of the action and the steps the certificate holder may take to contest the action.

004 Hearing procedures shall be pursuant to Title 115 – Rules of Practice and Procedure.

Enabling Legislation: Neb. Rev. Stat. §81-15,249; §81-15,251; §81-15,253.

Legal Citation: Title 124, Ch. 21, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 22 - REGISTRATION OF ON-SITE WASTEWATER TREATMENT SYSTEMS

001 On or after January 1, 2004, any on-site wastewater treatment system constructed, reconstructed, altered, modified, or otherwise changed by a certified professional, professional engineer, or registered environmental health specialist shall be registered with the Department by the certified professional, professional engineer, or registered environmental health specialist within ~~forty five (45)~~ days of completion of the construction, reconstruction, alteration, modification, or other change, except that a certified professional, professional engineer, or registered environmental health specialist inspecting, pumping, or performing repair, as defined by Chapter 1, to a system is not required to register the system. The registration requirement does not apply to a private onsite wastewater treatment system at an electric generation facility site owned by a district organized under Nebraska Revised Statutes, Chapter 70, article 6.

002 The certified professional, professional engineer, or registered environmental health specialist shall submit the required system registration information ~~on Form G in Appendix D, shall include with~~ the non-refundable system registration fee, and shall include, ~~if applicable,~~ the non-refundable initial late or final late system registration fee for any registration ~~submitted received by the Department~~ more than 45 days after completion. ~~The fee schedule is in Appendix A. For registration and late fee purposes, "submitted" means postmarked or received by the Department.~~ The system registration information shall include, at a minimum, the following in accordance with this Chapter or on a form provided by the Director. Additional requirements are as noted in 003 below for endorsed mound system registration. All information shall be typed or legibly printed except as indicated:

002.01 The words "System Registration for Onsite Wastewater Treatment System":

002.02 The owner's full name (first name, middle initial, and last name), mailing address, and phone number. If the system is for a business or legal entity, include the name of the business or legal entity. If the system is at a different address than the owner, include the physical address of the system;

002.03 The legal description (quarter section, quarter section, section, township, and range) or geographical coordinates (latitude and longitude to four decimal points) including the county of location;

002.04 Specify if the registration is for a dwelling or non-dwelling;

002.05 Specify the system design flow in gallons per day;

002.06 Specify if the registration is for a new system, a system inspection, or for the modification, reconstruction, or alteration of an existing system. If available, include the previous system registration number;

002.07 Specify the type of system such as one of following: holding tank, septic system, household domestic lagoon, endorsed mound system, or a permit system. For an endorsed mound system include the information identified in 003 below. For a permit system identify the Department issued construction permit number;

002.08 For a septic system specify the following:

002.08A Depth to seasonal high groundwater in feet;

002.08B Percolation rate in minutes per inch;

002.08C Septic tank capacity in gallons;

002.08D The details of the soil absorption system to include the number of trenches, total trench length in feet, actual width of trenches in inches, and total effective trench bottom area in square feet;

002.08E Specify whether or not filter material was used and, if so, provide a description of the filter material;

002.08F A description of the soil absorption system to include the type of distribution system (gravelless chambers without filter material, gravelless chambers with filter material, pipe with filter material, gravelless pipe without filter material, gravelless pipe with filter material, bundled expanded polystyrene synthetic aggregate without filter material, bundled expanded polystyrene synthetic aggregate with filter material, or a specific description if not one of these). For systems with no filter material include the inside bottom width of the gravelless chamber, diameter of the gravelless pipe, or the bundle diameter that was used in inches.

002.09 For a holding tank, the tank capacity in gallons;

Title 124
Chapter 22

002.10 For a lagoon, the surface area at the maximum operating depth in square feet and the seepage rate of the liner in inches per day.

002.11 The statement “I swear or affirm that the system complies with Title 124 requirements and that the registration information and documentation submitted are true, complete, and accurate”; and

002.12 The first name, middle initial, and last name of the Master or Journeyman Installer, Professional Engineer, or Registered Environmental Health Specialist under whose direct supervision the work on the system was done, that person’s certification number or, for a P.E. or REHS, professional license number, and that person’s signature with the date of inspection or completion of construction for the modification, reconstruction, or alteration.

003 The following information is required to be submitted by the endorsed Master Installer, Professional Engineer, or Registered Environmental Health Specialist as part of the system registration for an endorsed mound system in addition to the information required in 002 above:

003.01 Maximum ground slope in percent;

003.02 Pump tank capacity in gallons;

003.03 Pump off, pump on, and high water alarm levels in inches measured from the bottom of the pump tank;

003.04 Dose pump manufacturer, make, and model number; and

003.05 Force main length in feet;

003004 The system registration fee, initial late registration fee, and final late registration fee shall be as prescribed in the fee schedule of Appendix A.

004.01 The initial late fee is required for any registration received by the Department 46 to 90 days after completion of the system and is in addition to the system registration fee.

004.02 The final late registration fee is required for any registration received by the Department 91 or more days after completion of the system and is in addition to the system registration fee.

Title 124
Chapter 22

004005 The certified professional, professional engineer, or registered environmental health specialist shall provide a copy of the system registration form to the system owner.

Enabling Legislation: Neb. Rev. Stat. §81-15,244; 81-15,247; 81-15,248; & 81-15,252.

Legal Citation: Title 124, Ch. 22, Nebraska Department of Environmental Quality.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 23 – TANK PUMPING AND DOMESTIC SEPTAGE DISPOSAL

001 Domestic septage shall be removed from a septic tank whenever the top of the sludge layer is less than 12 inches below the bottom of the outlet baffles, whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle, or whenever the top of the scum layer is within one inch of the top of the outlet baffle.

002 Domestic septage shall be removed from a holding tank whenever the liquid level reaches 90% percent of effective tank capacity.

003 Tank contents shall be stirred, mixed, or agitated to suspend all solids in the liquid prior to removing the contents for disposal.

004 The entire contents of the tank, liquids and solids, shall be removed. If tank is refilled after pumping, it shall be filled with clear water.

005 Tank shall be pumped through the access manhole. Pumping of tank through baffle inspection ports is prohibited unless no other access port or manhole exists and the integrity of the baffle is maintained.

006 Disinfectant or anti-bacterial products shall not be used to clean the tank except as an optional step in preparing the tank for ~~abandonment closure~~.

007 The allowable methods for disposal of domestic septage shall be discharge to a publicly owned wastewater treatment facility, land application as provided for in this chapter, or other methods approved by the Department. Land application of wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals (such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities) is prohibited.

008 Domestic septage may be discharged to a publicly owned wastewater treatment facility that has a designated or certified operator certified with the Department provided that the septage is discharged with written permission of and under all rules, regulations, guidelines, directions, and requests of the facility owner or operator.

009 Domestic septage may be land applied under the following conditions:

Title 124
Chapter 23

009.01 Only non-public contact sites such as agricultural land, forests, and reclamation land shall be used for land application of domestic septage.

009.02 Land application of domestic septage without the landowner's written permission is prohibited.

009.03 Land application of domestic septage is prohibited within the setback distances in Table 23.1.

TABLE 23.1

Feature	Minimum Setback
Surface Water:	100 ft. (30 m.)
Public Drinking Water Supply Wells:	1000 ft. (300 m.)
All Other Water Wells:	200 ft. (60 m.)
Water Lines:	50 ft. (15 m.)
Property Line:	200 ft. (60 m.)
Public Road Right-of Way:	200 ft. (60 m.)
Buildings used for human occupancy:	500 ft. (150 m.)

009.04 Vector ~~a~~A~~ttraction~~ ~~r~~R~~eduction~~ ~~r~~requirements:

009.04A Untreated domestic septage shall be injected below the surface of the land and no significant amount of septage shall be present on the land surface within one hour after injection, or

009.04B Untreated domestic septage shall be incorporated into the soil by disking or plowing within six ~~(6)~~ hours after application.

009.04C Domestic septage that is applied to the land surface and is not injected or plowed-in within six hours shall be treated prior to application by raising and holding its pH at a level of 12 or higher for a minimum of 30 minutes. The minimum treatment method for raising the pH of the domestic septage shall be the addition and thorough mixing of no less than 50 pounds of hydrated lime per 1,000 gallons of septage.

009.05 Crop, ~~g~~G~~razing~~ and ~~s~~S~~ite~~ ~~r~~R~~estrictions~~, and ~~p~~P~~athogen~~ ~~r~~R~~eduction~~ ~~r~~requirements:

009.05A Land application of domestic septage is prohibited:

009.05A.1 On land from which human food crops with harvested parts below the ground such as but not limited to potatoes or beets will be harvested in the next 38 months after application;

009.05A.2 On land from which human food crops with harvested parts touching the ground surface such as but not limited to melons will be harvested in the next 14 months after application;

009.05A.3 On land from which human food crops with harvested parts that do not touch the ground surface such as but not limited to dry edible beans or sweet corn will be harvested in the next 30 days after application;

009.05A.4 On land from which crops grown for animal food or fiber will be harvested in the next 30 days after application;

009.05A.5 On land on which turf grass is grown for transplantation to lawns and other areas with potential for frequent human contact;

009.05A.6 On land on which livestock will be grazed in the next 30 days after application; and

009.05A.7 In areas readily accessible or frequently used by the public such as but not limited to parks, golf courses, sports fields, recreational lands, or residential or business development areas.

| 009.05B Public access to land where domestic septage is applied shall be restricted by fencing, no-trespassing signs, or remoteness for a minimum of 30 days after application of septage.

| 009.05C The ~~Pumper~~, Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer applying the domestic septage shall inform the land owner of all harvesting, grazing, and site access restrictions.

009.06 Land application of domestic septage at a rate that exceeds the amount of nitrogen required by the crop or vegetation is prohibited. When calculating maximum

Title124
Chapter 23

nitrogen application rates, all other sources of nitrogen such as livestock manure or commercial fertilizer shall be deducted from total nitrogen requirement.

009.07 Domestic septage shall be spread, sprayed, or injected in a manner that does not cause localized pooling, ponding, or runoff. Application of septage using a rate or method that creates a layer of septage exceeding ~~1/4"~~ one-quarter inch thick at any location on the ground surface immediately following application is prohibited.

009.08 Land application of domestic septage on saturated, frozen, or snow-covered ground is prohibited except as provided below for an emergency situation where the air temperature is below 10 degrees Fahrenheit, the distance to a suitable storage facility or publicly owned wastewater treatment facility for proper storage or disposal is more than 30 miles, and no other reasonable disposal or storage method is available.

009.08A The ground slope of the land application site shall not exceed five percent and the site shall be covered with dense perennial vegetation;

009.08B The waste shall be treated as provided for in 009.04C above and the land application rate shall not exceed 10,000 gallons per acre regardless of the nitrogen content of the waste;

009.08C The minimum setback requirements in Table 23.1 shall be doubled;

009.08D The recorded information shall include a description of the emergency situation and include air temperature, distance to nearest suitable storage facility or publicly owned wastewater treatment facility, and a description of the soil conditions; and

009.08D All other requirements of this Chapter shall be met.

010 Record-~~keeping~~ Keeping requirements:

010.01 The ~~Pumper~~, Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer shall keep records of all domestic septage pumped for a minimum of five years and shall make the records available to the Department upon request.

010.02 When domestic septage is disposed of at a publicly owned wastewater treatment facility, the following information shall be recorded for each load disposed:

Title124
Chapter 23

010.02A Date of disposal.

010.02B Name and location of treatment facility.

010.02C Total gallons disposed per load.

010.02D Date of pumping of each tank pumped per load.

010.02E Sources (owner name and address of each tank pumped per load).

010.02F Gallons pumped from each source per load.

010.02G Name, certificate or license number, and signature of ~~Pumper, the~~ Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer who performed the pumping.

010.03 When domestic septage is disposed of by land application, the following information shall be recorded for each land application site:

010.03A Location and legal description of application site.

010.03B Name and address of application site owner and the landowner's written permission to use the site for the land application of domestic septage.

010.03C Acreage of site to which domestic septage ~~is~~ was applied.

010.03D Type of crop or vegetation, expected yield, and annual nitrogen requirement.

010.03E Maximum rate of septage application based on nitrogen requirement (gallons per year).

010.03F Harvesting or grazing schedule for site.

010.03G Certification statement that pathogen reduction and vector attraction reduction requirements have been complied with.

Title 124
Chapter 23

010.03H For each load of septage applied to the site, the following shall be recorded:

010.03H.1 Date of application.

010.03H.2 Gallons of septage applied.

010.03H.3 Total gallons of septage applied year-to-date at site.

010.03H.4 Sources (owner name and address of each tank pumped).

010.03H.5 Gallons pumped from each source.

010.03H.6 Method of application (surface application, surface application plowed in within six hours, or direct subsurface injection).

010.03H.7 Method of treatment (none, pH adjustment).

010.03H.8 If treated by pH adjustment, pounds of hydrated lime used.

010.03H.9 Name, certificate or license number, and signature of ~~certified Pumper, the~~ Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer who applied the septage.

Enabling Legislation: Neb. Rev. Stat. §81-1505; 81-15,251.

Legal Citation: Title 124, Ch. 23, Nebraska Department of Environmental Quality.

FEE SCHEDULE

<u>Category</u>	<u>Fee</u>
Certificate by examination for Master Installer, Master Pumper, Soil Evaluator, or Inspector.	\$300
<u>Endorsement by examination for Master Installer (fee is separate from fee for certificate by examination)</u>	
Certificate by examination for Journeyman Installer or Journeyman Pumper	\$100
Certificate by hardship for Master Installer, Master Pumper, Soil Evaluator, or Inspector	\$300
Certificate by hardship for Journeyman Installer or Journeyman Pumper	\$100
Renewal of Master Installer, Master Pumper, Soil Evaluator, or Inspector Certificate	\$300
Renewal of Journeyman Installer or Journeyman Pumper Certificate	\$100
Certification Examination	\$50
Registration of Onsite System	\$140
Initial Late System Registration— add to system registration fee for any registration either postmarked or received by the Department 46 to 90 days after completion of the system	\$150
Final Late System Registration— add to system registration fee for any registration either postmarked or received by the Department 91 days or more after completion of the system	\$450
Application for Permit	\$450
Application for Subdivision Review and Approval – Fee is for Each Lot Subject to Approval	\$450 per lot

NOTES: All fees apply on the effective date. All fees are non-refundable. Fees apply to any documents ~~postmarked on or after, or hand-delivered and~~ received by the Department on or after, the effective date.

Form E

NDEQ Use Only
 CERT # H _ _ _ _

Application for Hardship Certificate for Onsite Professionals

Please attach documentation supporting basis for hardship request.
 (Please type or print)

Ver. Aug. 2007

Last Name	First Name	Middle Initial	Social Security Number - - - - -
Mailing Address <input type="checkbox"/> (check to receive official mailings here)	City	State	Zip Code
Business Name			
Business Address Physical Location		City	State
Mailing Address for Business <input type="checkbox"/> (check to receive official mailings here)	City	State	Zip Code
Please provide phone numbers in the order of desired contact.			
Phone # 1	<input type="checkbox"/>	Home	<p>Category of hardship certificate: (Check each category of hardship certification requested.)</p> <p><input type="checkbox"/> Master Installer <input type="checkbox"/> Journeyman Installer</p> <p><input type="checkbox"/> Master Pumper <input type="checkbox"/> Journeyman Pumper</p> <p><input type="checkbox"/> Soil Evaluator</p> <p><input type="checkbox"/> Inspector</p>
Phone # 2	<input type="checkbox"/>	Home	
Phone # 3	<input type="checkbox"/>	Home	
	<input type="checkbox"/>	Office	
	<input type="checkbox"/>	Cell	
	<input type="checkbox"/>	Cell	

The application fee for hardship certificate must accompany this application.

See Fee Schedule in Appendix A.

NOTE: Pursuant to the Federal Privacy Act of 1974, we are requesting voluntary disclosure of the social security number from applicants for the sole purpose of ensuring legal residency in the State of Nebraska. This number is currently used in the system to assist in proper identification when there are other individuals with the same name. A certification will not be denied solely because an individual declines to disclose his or her social security number. Applications not containing a social security number may take significantly longer to process because other means may be required to ensure proper record identification.

Make checks payable to the **Nebraska Department of Environmental Quality.**

Mail to NDEQ, Onsite Wastewater Unit, P.O. Box 98922, Lincoln, Nebraska 68509-8922

I swear or affirm that the information and documentation submitted supporting the basis for hardship and evidence of competency to practice in the categories applied for are true and accurate.

 Signature of Applicant

 Type or print name of Applicant

NDEQ Use Only

REG # _____

Fee Rcvd? _____

Onsite System Registration Form G

Existing System Registration # _____ (if previously registered)

(Please type or print) (Must be filed within 45 days of inspection or completion of work)

Ver. Dec. 2006

System Address and Ownership:							
_____		_____		_____		_____	
Owner's Last Name		First Name		Middle Init		Owner's Phone number	
_____				_____		_____	_____
Owner's Mailing Address				City		State	Zip code
_____				_____			
System Location Physical Address (if different than owner's)				Nearest Community			
System Location (either the Legal Description or the Geographic Coordinates is required):							
_____	_____	_____	_____	_____	_____	_____	_____
1/4	1/4	Section #	Twنشp	Range	County	Latitude	Longitude

System Information	
System is for: <input type="checkbox"/> Dwelling with _____ bedrooms, or <input type="checkbox"/> Establishment with _____ gal/day flow	
Septic Tank / Soil Absorption System	Lagoon System
Rated Tank Capacity = _____ gallons	Water Surface Area = _____ sq. ft.
Total effective trench bottom area = _____ sq. ft.	Tested seepage rate = _____ in/day
Number of Trenches = _____	Other Type System
Total Trench Length = _____ ft.	NDEQ Construction Permit# _____
Design Percolation Rate = _____ min/inch	
Depth to seasonal high groundwater = _____ ft. (if less than 10 feet below ground surface)	

Certified professional registering the system:			
_____	_____	_____	_____
Last Name	First Name	Middle Initial	Professional Certificate #
_____		_____	
Signature of Certified Professional		Date of inspection or completion of work	

The registration fee must accompany this completed registration form. See Fee Schedule in Appendix A. Include late fee if submitted more than 45 days after completion. Make checks payable to the **Nebraska Department of Environmental Quality**. Mail to: NDEQ, Onsite Wastewater Unit, P.O. Box 98922, Lincoln, Nebraska 68509-8922

**Application for Certification by Examination and
 Renewal of Certification for Onsite Professionals**
 (Please type or print)

Last Name	First Name	Middle Initial	Social Security Number _ - - - -
Mailing Address <input type="checkbox"/> (check to receive official mailings here)	City	State	Zip Code
Business Name			
Business Address Physical Location		City	State
Mailing Address for Business <input type="checkbox"/> (check to receive official mailings here)	City	State	Zip Code
Please provide phone numbers in the order of desired contact.			
Phone # 1	<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell	Type of Application: (Check only one.) <input type="checkbox"/> Application for certification by exam. (Attach Form H, Appendix F) <input type="checkbox"/> Renewal of current certificate. (Current certificate # _____) (Attach Form K, Appendix H)	
Phone # 2	<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell		
Phone # 3	<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell		

The certificate-by-examination fee or the certificate-renewal fee must accompany this application.
 See Fee Schedule in Appendix A.

NOTE: Pursuant to the Federal Privacy Act of 1974, we are requesting voluntary disclosure of the social security number from applicants for the sole purpose of ensuring legal residency in the State of Nebraska. This number is currently used in the system to assist in proper identification when there are other individuals with the same name. A certification will not be denied solely because an individual declines to disclose his or her social security number. Applications not containing a social security number may take significantly longer to process because other means may be required to ensure proper record identification.

Make your check payable to the **Nebraska Department of Environmental Quality.**
 Mail to NDEQ, Onsite Wastewater Unit, P.O. Box 98922, Lincoln, Nebraska 68509-8922

I swear or affirm that the information and documentation submitted are true and accurate.

 Signature of Applicant

 Type or print name of Applicant

NOTE: If you plan to work for a governmental agency or subdivision as an inspector of onsite wastewater treatment systems you may be eligible for a fee waiver. Contact the Onsite Wastewater Unit for more information.

<p><u>NDEQ Use Only</u></p> <p>CERT # C _ _ _ _</p>
--

Form H

Application for Examination for Onsite Professionals

<p>Ver. Aug. 2007</p>

(Please type or print)

<p>_____</p> <p>Last Name</p>	<p>_____</p> <p>First Name</p>	<p>_____</p> <p>Middle Initial</p>	
<p>_____</p> <p>Mailing Address</p> <p><input type="checkbox"/> (check to receive official mailings here)</p>	<p>_____</p> <p>City</p>	<p>_____</p> <p>State</p>	<p>_____</p> <p>Zip Code</p>

Certificate Number (if any)
 (If NDEQ has ever issued you any type of onsite wastewater certificate (temporary provisional certificate, hardship certificate, or certificate by examination), enter that certificate number here. Otherwise, leave this line blank.)

Please provide phone numbers in the order of desired contact.

<p>_____</p> <p>Phone # 1</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Home</p> <p>Office</p> <p>Cell</p>	<p>Category(s) of certificate: (Check each category for which a certification exam is being requested. Submit one fee payment or all categories requested.)</p> <p><input type="checkbox"/> Master Installer <input type="checkbox"/> Journeyman Installer</p> <p><input type="checkbox"/> Master Pumper <input type="checkbox"/> Journeyman Pumper</p> <p><input type="checkbox"/> Soil Evaluator</p> <p><input type="checkbox"/> Inspector</p>
<p>_____</p> <p>Phone # 2</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Home</p> <p>Office</p> <p>Cell</p>	
<p>_____</p> <p>Phone # 3</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Home</p> <p>Office</p> <p>Cell</p>	

The examination fee for each category requested must accompany this application.

See Fee Schedule in Appendix A.

A separate examination is required for each category of certification you wish to obtain.

Make your check payable to the **Nebraska Department of Environmental Quality.**

Mail to NDEQ, Onsite Wastewater Unit, P.O. Box 98922, Lincoln, Nebraska 68509-8922

 Signature of Applicant

 Type or print name of Applicant

NOTE: If you plan to work for a governmental agency or subdivision as an inspector of onsite wastewater treatment systems you may be eligible for a fee waiver. Contact the Onsite Wastewater Unit for more information.

Form J: Construction Completion Card

(For onsite wastewater systems constructed, reconstructed, altered, or modified under a construction permit.)

OWNER: _____ COUNTY: _____

PROJECT DESCRIPTION: _____

CONSTRUC. PERMIT NO. _____ DATE APPROVED: _____

DATE CONSTRUCTION STARTED: _____ DATE ENDED: _____

I certify that construction agreed with approved documents or submitted change orders:

Design Engineer's Signature: _____

PRINT NAME: _____ PE LICENSE #: _____

FIRM & CITY: _____

(stamp)

NDEQ
ONSITE WASTEWATER UNIT
PO BOX 98922
LINCOLN NE 68509-8922

ATTN (reviewer): _____

NDEQ Use Only

CERT # C _ _ _ _

Ver. Aug. 2007

Form K

Record of Continuing Education for Onsite Professionals

(Please type or print)

_____ Last Name	_____ First Name	_____ Middle Initial
_____ Mailing Address <input type="checkbox"/> (check to receive official mailings here)	_____ City	_____ State
# _____ Certificate Number (Provide the certificate number from your onsite wastewater professional certificate from NDEQ)		(____) _____ - _____ Phone #
		<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell

Date	Course Description	Provider or Sponsor	Location	PDH Hours (nearest 1/10)

Total Professional Development Hours (PDH) =	_____
---	-------

One Professional Development Hour (PDH) means at least 60 minutes spent in educational activity. Report to the nearest tenth (0.1) hour. Each six (6) minutes in educational activity counts as 0.1 PDH.

If you need more space to report your continuing education programs and courses than is provided on this form, complete and attach additional Forms K as necessary.

Retain documentation of completion of all continuing education hours submitted for a minimum of three (3) years. Documentation shall be submitted to NDEQ on request.

I swear or affirm that the information and documentation submitted are true and accurate.

Signature of Applicant

Type or print name of Applicant



Form SD

FOR DEQ USE ONLY
 APPROVAL NUMBER: _____
 APPROVED BY: _____
 DATE APPROVED: _____

Ver. Aug. 2007

Application for Subdivision Review and Approval (Approval is Required Prior to Any Construction in Development Area)

A. Owner Information (Required):
 Owner Name: _____ Owner Address: _____
 Street, PO Box, or Route City Zip

B. Certified On-site Professional, Registered Environmental Health Specialist, or Professional Engineer (Required):
 Name: _____ Certification Number or Engineer License Number _____
 Company Name: _____ Address: _____
 Street, PO Box, or Route City Zip

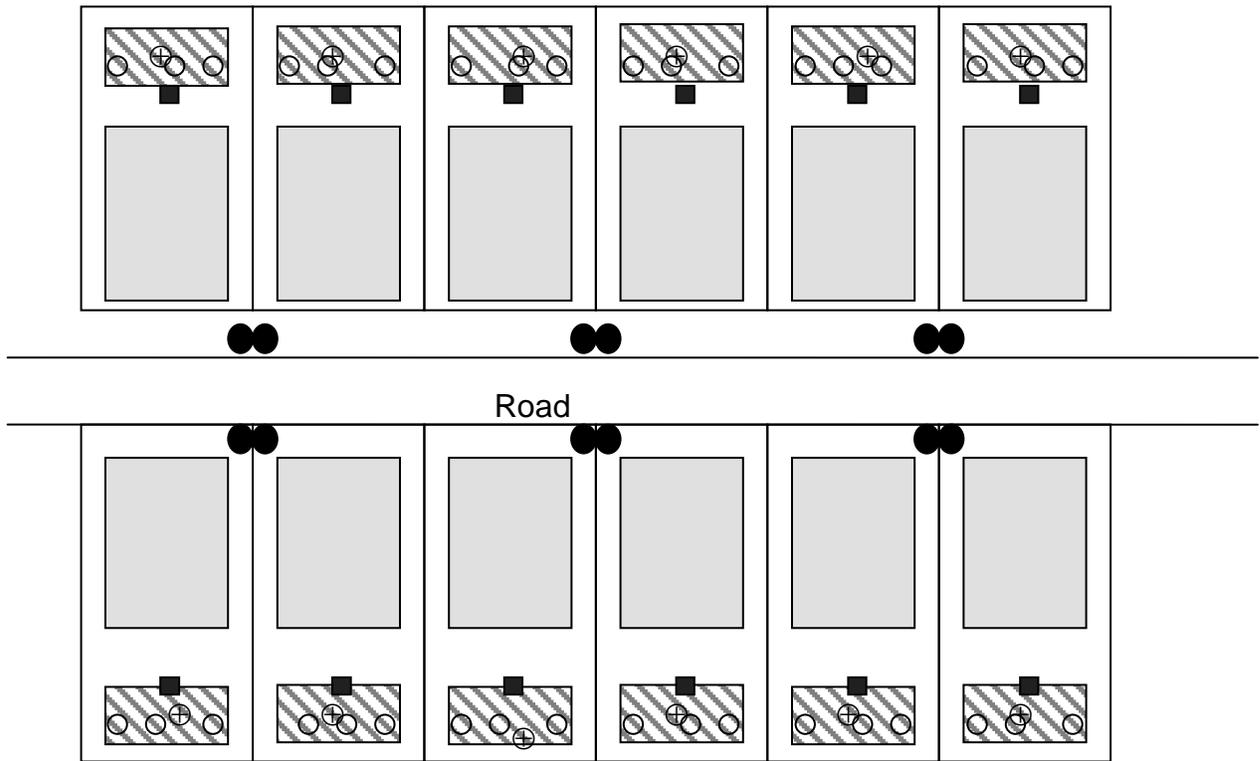
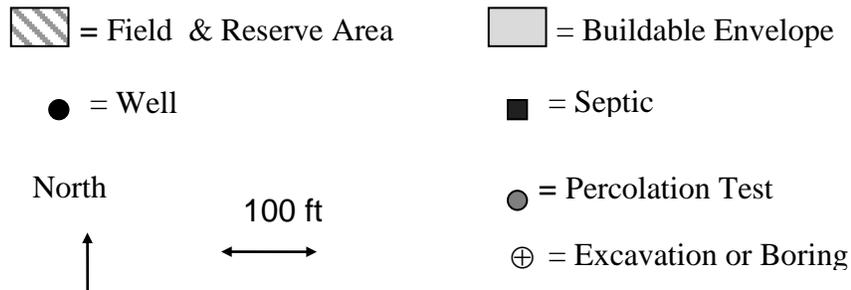
C. Subdivision Location (Required):
 Legal Description: _____ Subdivision Name: _____ Lots _____
 1/4 of 1/4 Section Twnshp Range
 County: _____ Street Address if Applicable _____

**Check Below if Required Information Has Been Submitted – refer to Chapter 4 for minimum requirements.
 (Remainder of Form To be completed by Certified On-site Professional, Registered Environmental Health Specialist, or Professional Engineer)**

If Lots are < 1 1/4 Acre	If Lots are > 1 1/4 but < 1 3/4 Acres	If Lots are > 1 3/4 Acres
<input type="checkbox"/> Percolation Test on Every Lot	<input type="checkbox"/> Percolation Test on Every Fifth Lot	<input type="checkbox"/> Percolation Test on Every Fifth Lot
<input type="checkbox"/> Excavation or Boring to 4 ft. Below Bottom of Proposed Absorption Trench Depth on Every Lot. Include Log of Soils for Each Excavation. Include Depth to Water or Any Barrier Layer Present.	<input type="checkbox"/> Excavation or Boring to 4 ft. Below Bottom of Proposed Absorption Trench Depth on Every Fifth Lot. Include Log of Soils for Each Excavation. Include Depth to Water or Any Barrier Layer Present.	<input type="checkbox"/> Excavation or Boring to 4 ft. Below Bottom of Proposed Absorption Trench Depth on Every Fifth Lot. Include Log of Soils for Each Excavation. Include Depth to Water or Any Barrier Layer Present.
<input type="checkbox"/> Lot Layout indicating All Buildings, Homes, Sidewalks, Driveways, and Outbuildings or Indicate Buildable Envelope (Properly Sized).	<input type="checkbox"/> Lot Layout indicating All Buildings, Homes, Sidewalks, Driveways, and Outbuildings or Indicate Buildable Envelope (Properly Sized).	
<input type="checkbox"/> On Lot Layout indicate all Wells and Water Lines Planned and Existing (Indicate if Public Water Supply Well)	<input type="checkbox"/> On Lot Layout indicate all Wells and Water Lines Planned and Existing (Indicate if Public Water Supply Well)	<input type="checkbox"/> On Lot Layout indicate all Wells and Water Lines Planned and Existing (Indicate if Public Water Supply Well)
<input type="checkbox"/> Show Planned Tank Location, Absorption Area and Reserve Area (Properly Sized).	<input type="checkbox"/> Show Planned Tank Location, Absorption Area and Reserve Area (Properly Sized).	<input type="checkbox"/> Show Planned Tank Location, Absorption Area and Reserve Area (Properly Sized).

Setbacks	Check if Required Setback Has Been Satisfied											
	Private Well	Public Well	Surface Water	Ground Water	Pressure Water Lines	Property Lines	Class 1 Foundation		Class 2 Foundation		Class 3 Foundation	
Distance From							Yours	Neigh bors	Yours	Neigh bors	Yours	Neighbors
Tank (ft)	<input type="checkbox"/> 50	<input type="checkbox"/> 500	<input type="checkbox"/> 50	<input type="checkbox"/> NA	<input type="checkbox"/> 10	<input type="checkbox"/> 5	<input type="checkbox"/> 15	<input type="checkbox"/> 25	<input type="checkbox"/> 10	<input type="checkbox"/> 20	<input type="checkbox"/> 7	<input type="checkbox"/> 15
Field (ft)	<input type="checkbox"/> 100	<input type="checkbox"/> 500	<input type="checkbox"/> 50	<input type="checkbox"/> 4	<input type="checkbox"/> 25	<input type="checkbox"/> 5	<input type="checkbox"/> 30	<input type="checkbox"/> 40	<input type="checkbox"/> 20	<input type="checkbox"/> 30	<input type="checkbox"/> 10	<input type="checkbox"/> 20

Form SD
Application for Subdivision Review
Page 2 of 2



NOTE: SAMPLE DIAGRAM. See Chapter 4 for minimum requirements. Other information may be required by the Department as needed to allow adequate review of the proposed development area.

Send or Deliver Completed Application Form SD, Supporting Documents, And Fee To:
Department of Environmental Quality
On-Site Wastewater Unit
1200 N Street, Suite 400
PO Box 98922
Lincoln NE 68509

<u>NDEQ Use Only</u>
CERT # C _ _ _ _

Application Form L

Application for Endorsement to Onsite Professional Certificate by Examination

(Please type or print)

Ver Dec. 2006

Last Name	First Name	Middle Initial
Mailing Address <input type="checkbox"/> (check to receive official mailings here)	City	State
Zip Code		

Certificate Number

(Provide the certificate number from your Certificate by Examination from NDEQ)

Please provide phone numbers in the order of desired contact.

Phone # 1	<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell	Category of endorsement requested: (Check only one. Separate application and fee required for each category requested.) <input type="checkbox"/> Mound Systems
Phone # 2	<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell	
Phone # 3	<input type="checkbox"/> Home <input type="checkbox"/> Office <input type="checkbox"/> Cell	

The examination fee must accompany this application.

See Fee Schedule in Appendix A.

A separate examination is required for each endorsement you wish to obtain.

Make your check payable to the **Nebraska Department of Environmental Quality.**

Mail to NDEQ, Onsite Wastewater Unit, P.O. Box 98922, Lincoln, Nebraska 68509-8922

Signature of Applicant

Type or print name of Applicant



Form B

FOR NDEQ USE ONLY

PERMIT NUMBER: _____

APPROVED BY: _____

DATE APPROVED: _____

Ver. Aug. 2007

Application for Construction/Operating Permit For An Onsite Wastewater Treatment System
(PLEASE PRINT OR TYPE)

A. Owner Information:

Owner: _____
Name _____ Street, P.O. Box, or Route _____ City _____

Owner: _____
Signature _____ State _____ Zip _____ Phone (Home) _____ (Work) _____

B. Engineer Information:

Designer: _____
Name _____ Firm _____ Phone (Work) _____

C. System Location:

Legal Description of Lot: _____
Section Township Range 1/4 1/4 Subdivision Block Lot#

County: _____ Have you checked on the need for a Local Permit? Yes No

Check here if system mailing address is not the same as the owners and complete mailing information

System mailing Address: _____
Street, P.O. Box, or Route _____ City _____ State _____ Zip _____

D. This System Will Serve A:

Dwelling

Number of Bedrooms: _____

Is There a Whirlpool Bathtub: Yes No

Establishment (Name) _____

Design Flow in Gallons per day: _____

Type of Wastewater: Domestic Non-Domestic

E. Septic Tanks:

Number of Tanks in Series: _____ Tank Size (gallons) _____
1st 2nd 3rd 4th 5th

F. Absorption system:

Percolation Rate: _____ (min. per inch) Soil Type: _____ Land Slope: _____ %

Type of Soil Absorption System: Trench Bed Other _____

Total Square Feet of Field Required: _____ (ft. sq.) Square Feet Proposed: _____ (ft. sq.)

Type of Lateral: Half-Moon Perforated Pipe Gravel Other Lateral Material: _____

G. Setbacks: Check the Boxes Below If the Required Setback Has Been Satisfied: Ch. 5, Title 124

Distance From	Private Well	Public Well 500 1000	Surface Water	Ground Water	Pressure Water lines	Property Lines	Foundations	CLASS I
Tank (ft)	50 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	50 <input type="checkbox"/>	NA <input type="checkbox"/>	10 <input type="checkbox"/>	5 <input type="checkbox"/>	Yours <input type="checkbox"/>	CLASS II <input type="checkbox"/>
Field (ft)	100 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	50 <input type="checkbox"/>	4 <input type="checkbox"/>	25 <input type="checkbox"/>	5 <input type="checkbox"/>	Neighbors <input type="checkbox"/>	CLASS III <input type="checkbox"/>

COMPLETE SECTIONS H & I

H.

Complete Adjacent Lot Worksheet for All Wells and Water Lines Within The Reporting Distance in Chapter 5 of Title 124.

NORTHWEST DISTANCE IN FEET FROM TANK FIELD WELL: _____ WATER LINES _____	NORTH DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____	NORTHEAST DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____
WEST DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____	↙ ↑ ↘ PROPOSED SEPTIC SYSTEM INSTALLATION ↙ ↓ ↘	EAST DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____
SOUTHWEST DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____	SOUTH DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____	SOUTHEAST DISTANCE IN FEET FROM: TANK FIELD WELL: _____ WATER LINES: _____

Submit:

- * Completed Form B application
- * Application Fee (see Fee Schedule)
- * Directions to the location with site map
- * Dimensioned plot plan and lot survey
- * Completed percolation test data
- * Log from soil boring or excavation noting soil type and seasonal high water table if present
- * Dimensioned drawing showing profile view of septic system and slope of terrain
- * For other than septic systems include appropriate system design information
- * Show applicant's name, address and phone number on each submitted page

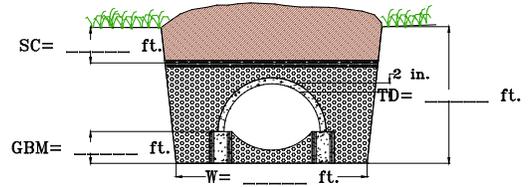
Other information may be required by the Department as needed to allow adequate review of the proposed system.

- * **Send or Deliver Documents to:**
 Department of Environmental Quality
 On-site Wastewater Unit
 1200 N Street, Suite 400
 P.O. Box 98922
 Lincoln, Nebraska 68509-8922

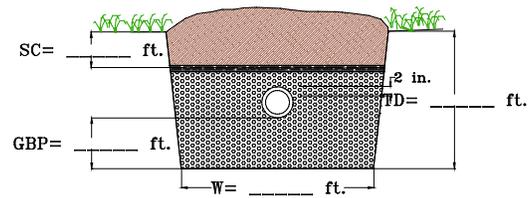
I.

CHECK THE BOX FOR THE APPROPRIATE ABSORPTION FIELD AND COMPLETE THE BLANKS

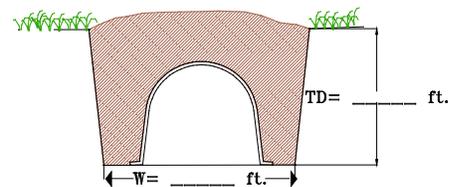
HALF-MOON IN GRAVEL



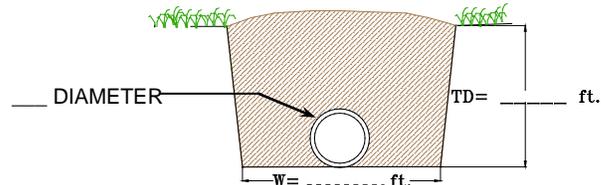
PIPE IN GRAVEL



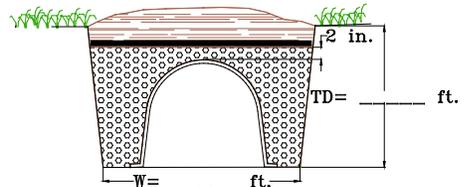
GRAVELLESS CHAMBER IN SOIL



GRAVELLESS PIPE IN SOIL



GRAVELLESS CHAMBER IN GRAVEL



OTHER: Include Drawing

KEY

SC= SOIL COVER, TD= TRENCH DEPTH,
 W= WIDTH, GBM= GRAVEL BELOW HALF MOON,
 GBP = GRAVEL BELOW PIPE