

Good morning Heather,

I am sending you this email to get some line items on the Cass County Commission agenda for the July 6, 2015 meeting.

On behalf of Fargo Cass Public Health, Environmental Division, I am submitting the following line items as well as supportive information for commission review:



- 1. The first line item is two parts, the first part is to update the current Cass County Onsite Septic Regulations utilizing Richland Counties current septic code and the second part is to adopt the proposed regulations as a Cass County Ordinance.**
 - a. Currently, Fargo Cass Public Health is working with the six southeast North Dakota regional counties (Cass, Richland, Ransom, Sergeant, Traill, Steele) to adopt the same onsite septic regulations in each county. By implementing the same regulations in each county, our intent is to promote consistency, reciprocity, and efficiency for the septic program
 - b. The current onsite septic regulations are not a Cass County Ordinance but upon review, Birch Burdick has recommended they be adopted as an ordinance
 - c. The current regulations were established on March 4, 1993, the proposed regulations, based on Richland Counties code, were developed on June 14, 2010
 - d. The proposed regulations based on the Richland County code have been attached for your reference with the changes highlighted in **red**
 - i. Please note, the current Cass County appendices will remain in the proposed regulations along with the addition of Appendix D, to include Section XIV – Appeals, listed on page 13 of the current Cass County regulations
 - e. One other note/change to the proposed Richland County regulations, under section I, it states “the authority granted in North Dakota Century Code, Chapter 23-14-35” which has been changed to Chapter 23-35 - Public Health Units
 - f. Birch Burdick and Hali Durand have both reviewed the proposed onsite septic regulations
- 2. For the second item we would like to update financial numbers associated with the onsite septic regulations.**
 - a. Currently, all licensed septic installers are required to have proof of \$8,000 in licensed and bonded insurance, we suggest this amount be increased to \$10,000 based on current actual costs for onsite systems
 - b. The current fee for an onsite septic permit is \$125, we recommend this be increased to \$150 to more sufficiently cover current permitting costs
 - c. The current fee to conduct an onsite septic evaluation is \$100, we recommend this fee also be increased to \$150 to cover current costs
- 3. The third line item is the updating/revision of the Cass County Swimming Pool Ordinance.**
 - a. I have attached a copy of the proposed ordinance revisions for your review
 - b. The primary reason to update the pool code is to clean up some language as well as implement a new title from Swimming Pools to Recreational Aquatic Facilities.
 - c. Recreational Aquatic Facilities will cover swimming pools as well as any splash pads, water parks, etc. that could be developed in Cass County

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JUN 29 2015
CASS COUNTY COMMISSION

FARGO CASS PUBLIC HEALTH
401 3RD AVE N
FARGO NORTH DAKOTA 58102
MARCH 4, 1993

These rules and regulations are an update of the 1979 Rules and Regulations.

Cass County Regulation Revision committee members:

Myron Berglund, FCPH
Terry Ludlum, FCPH
Earl Haugen, Cass County Planning Development
Dr. James Richardson, Soils Department, NDSU
Nord Lunde, Soil Testing and Consulting
Herman Clark, Clark Excavating
Dean Merhiy, Kindred Plumbing and Heating
Nick Gludt, Moore Engineering
John Goff, Cass County States Attorney

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**CASS COUNTY, NORTH DAKOTA
RULES AND REGULATIONS GOVERNING
THE INSTALLATION AND
USE OF ON-SITE SEWAGE DISPOSAL SYSTEMS**

SECTION I – PURPOSE-OBJECTIVE-INTERPRETATION

The improper design, location, installation, use and maintenance of on-site sewage treatment systems can adversely affect the public health, safety, and general welfare by discharge of inadequately treated sewage to surface and ground waters. In accordance with the authority granted in North Dakota Century Code, Chapter 23-~~35~~ and 54-40, the County of Cass hereby provides minimum standards and criteria for design, location, installation, use and maintenance of on-site sewage treatment systems. The purpose of the rules is to protect the health, safety and welfare of residents and future residents of Cass County.

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In any case, where a provision of these regulations is found to be in conflict with a provision of any zoning, building, safety or health ordinance or regulation in force in the incorporated or unincorporated areas of Cass County existing on the effective date of these regulations, the provision which establishes the higher standard for the promotion of the health and safety of the people of Cass County shall prevail.

Section II – Definitions

For the purpose of these regulations, certain terms or words used herein shall be interpreted as follows: the word “shall” is mandatory, the words “should” and “may” are permissive. All distances, unless otherwise specified, shall be measured horizontally.

“Active Mottling” – (redoximorphic features) reflect alternating reduction and oxidation conditions due to water table fluctuations. It indicates that a water table is high enough in the soil for seven days to create reducing conditions.

“Administrator” – is the Health Officer or designated officer.

“Aerobic Tank” – is any sewage tank which utilizes the principal of oxidation in the decomposition of sewage by the introduction of air into the sewage.

“Alternative System” – is an individual sewage treatment system employing such methods and devices presented in the rules.

“Basal Area” – will be determined as the total area under the mound on level ground, on sloping ground the basal area will be determined as the area under the trench area and that area under the mound down slope under the trench area.

“Baffle” – is a device installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes vented sanitary tees and submerged pipes in addition to those devices that are normally called baffles.

“Bedroom” – is any room within a dwelling that, in the judgment of the Health Officer, might be reasonably used as a sleeping room, including, but not limited to, rooms designated den, office, or study and unfinished areas with potential development to same.

“Building Drain” – is that part of the lowest piping of the drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning at least one (1) foot outside the building footings.

“Building Sewer” – is that part of the drainage system which extends from the end of the building drain and conveys its discharge to an individual sewage treatment system or to a public sanitary sewage collection system.

“Capacity” – is the liquid volume of a sewage tank using inside dimensions below the outlet.

“Cesspool” (or see Seepage Pits) – is an underground pit into which raw household sewage or other untreated liquid waste is discharged and from which the liquid seeps into the surrounding soil.

“Distribution Pipes” – is a device which is used to distribute sewage tank effluent to the distribution pipes, including but not limited to distribution boxes, drop boxes and valve boxes.

“Dosing Device” – or pump pit, siphon, or other device that discharges sewage tank effluent from the dosing chamber to the soil treatment system.

“Drain Field” – is also called the tile disposal field or soil absorption field and uses distribution pipes placed in favorable soil so that sewage from the septic tank can percolate through and into the soil.

“Dwelling” – is any building or place used or intended to be used by human occupants as a single-family or two-family unit.

“Filter Material” – is clean, rock, crushed igneous rock or similar insoluble, durable, and decay-resistant material free from sand, silt, or clay. The size shall range from three-fourths (3/4) inch minimum diameter to one and one-half (1 ½) inches effective diameter.

“Floodway” – the channel of a river, a stream, and those parts of the flood plain and adjoining the channel which are reasonably required to carry and discharge the flood water, a flood flow of the river or stream.

“Gray Water” – liquid waste from a dwelling or other establishment produce by bathing, laundry, floor drains, other than toilet wastes.

“Holding Tank” – is a water-tight tank for storage of sewage until it can be transported to a point of approved disposal.

“Impermeable” – with regard to soils, is a soil horizon or layer having a vertical permeability less than one (1) inch in twenty-four (24) hours and shall be considered impermeable.

“Individual Sewage Treatment System” – is a sewage treatment system or part thereof, serving a dwelling or other small living or business unit, or group thereof, which utilizes subsurface soil treatment and disposal.

“Lawn Area” – is the area bounded by the dimensions required for the proper location of the soil treatment area.

“Malfunctioning System” – any component or components of an existing or new septic system which fails and thereby causes overland flow, noxious odors, or public nuisance.

“Mound System” – is a system where the soil treatment area is built above ground to overcome limits imposed by proximity to water table or bedrock, or by rapidly or slowly permeable soils.

“Percolation Rate” – is the time rate of drop of water surface in a test hole.

“Permeability” – the ease with which gases or liquids penetrate or pass through a bulk mass of soil or layer of soil.

“Plastic Limit” – is soil moisture content below which the soil may be manipulated for purposes of installing a soil treatment system and above which manipulation will cause compaction and puddling. If a fragment of soil can easily be rolled into a wire one-eighth (1/8) inch diameter, the moisture content is below the limit and the soil may be manipulated. The standard method of determining the plastic limit is specified by the American Association of State Highway Officials (AASHO) Designation: #T 90-61.

“Professional Engineer” – shall mean a person who, by reason of his special knowledge or use of the mathematical, physical and engineering sciences, and the principles and methods of engineering analysis and design, acquired by engineering education and engineering experience, is qualified to practice engineering and who has been duly registered and licensed by the state board of registration for professional engineers and land surveyors.

“Qualified Designer” – an individual or business either properly trained, licensed or certified by a state or some other qualified training facility (approved by the Counties designated health officer) to analyze the percolation rate of the soil and the identifiable mottling zone.

“Regulations” – the work regulation or these regulations unless others indicated, shall refer to all rules and regulations adopted in this text.

“Registered Professional Soil Classifier” – shall mean a person who by reason of his special knowledge of the physical, chemical, and biological sciences applicable to soils as natural bodies and of the methods and principles of soil classification as required by soils education and soil classification experience in the formation, morphology, description, and mapping of soils is qualified to practice soil classifying and who has been duly registered by the

State Board of Registration for Professional Soil Classifiers, as per ND Century Code, Chapter 43-36-01, 2.

“Sand” – is a soil texture composed by weight of at least twenty-five percent (25%) of very coarse, coarse, and medium sand varying in size from two (2) to 0.25 mm, less than fifty percent (50%) of fine or very fine sand, ranging in size between 0.25 and 0.05 mm and no more than 10 percent (10%) of particles smaller than 0.05 mm.

“Septic Tank” – is a water-tight, covered receptacle, designed and constructed to receive the discharge from sewage from a building sewer, separate solids from liquid, digest organic matter, and store solids through a period of detention and allow the clarified liquids to discharge to a soil treatment system.

“Setback” – is a separation distance measured horizontally.

“Sewage” – is any water-carried domestic, commercial or agricultural waste, exclusive of footing and roof drainage or any residence or industry, agricultural or commercial establishment or other structure, whether treated or untreated, and includes but is not limited to liquid waste produced by bathing, laundry, culinary operations and liquid wastes from toilets and floor drains.

“Septic Tank Effluent” – is that liquid which flows from a septic or aerobic tank under normal operation.

“Site” – is the proposed on-site sewage treatment system area.

“Slope” – is the ratio of vertical rise or fall to horizontal distance.

“Soil Boring” – is any type of excavating capable of revealing in detail characteristics of soils penetrated.

“Soil Characteristics, Limiting” – are those soil characteristics which preclude the installation of a standard system, including, but not limited to, evidence of seasonal high ground water table or bedrock closer than three (3) feet to the ground surface and percolation rates faster than one-half (1/2) minutes per inch or slower than sixty (60) minutes per inch.

“Soil Texture Classification” – is where soil particle sizes or textures are specified in these regulations, they refer to the Guide for USDA Textural Classification.

“Soil Type” – is the lowest unit in the natural system of soil classification; a subdivision of a soil series and consisting of or describing soils that are alike in all characteristics including the texture of the A Horizon.

“Soil Treatment Area” – is an area where sewage tank effluent is treated and disposed of below the ground surface by filtration and percolation through the soil and also by evapotranspiration, and includes those systems commonly known as seepage bed, trench drain field, disposal field, and also includes mounds and seepage pits.

“State Approved Disposal Facility” – is any disposal facility which has a National Pollutant Discharge Elimination System (NPDES) Permit or State Disposal System Permit or letter of approval from the North Dakota State Health Department and Consolidation Laboratories.

“Standard System” – an individual sewage treatment system employing a sewage tank and the soil treatment system commonly known as seepage bed or trenches, drain field, or leach field.

“Superintendent” – shall mean the Cass County Health Department or its designated official.

“Valve Box” – is any device which can stop sewage tank effluent from flowing to a portion of the soil treatment area and includes, but is not limited to, caps or plugs on distribution or drop box outlets, divider boards, butterfly valves, gate valves, or other mechanisms.

“Waste Hauler or Septic Tank Pumper” – is any person who engages in the removal of sewage and/or industrial waste including, but not limited to, those generated by washing machines, kitchens, sinks, from septic tanks, cesspools, holding tanks, or other sewage treatment or disposal facilities and who deposits such materials at some location approved by the ND State Department of Health and Consolidated Laboratories.

SECTION III – ADMINISTRATION

The designated Health Officer of Cass County shall administrate the provisions of these regulations.

SECTION IV – LICENSING OF ON-SITE SEWAGE DISPOSAL INSTALLERS-PUMPERS

Every sewage disposal pumper working the county of Cass shall have a valid license from the State of North Dakota and be registered with Fargo Cass Public Health, Environmental Health Division.

No person, firm, or corporation shall engage in the business of installing or constructing on-site sewage systems within the County of Cass without first obtaining a license from Fargo Cass Public Health and procuring and posting with the County Auditor a bond in the amount specified by the County Board of Commissioners. Such license shall expire on December 31st of each calendar year.

Any installation, construction, alteration, or repair of an on-site sewage system by licensee in violation of the provisions of these regulations – or refusal on the part of the licensee, shall be cause for revocation of or refusal to renew a license. Before any license, issued under the provision of this section may be revoked, the licensee shall be given a hearing to show cause why such license should not be revoked. Notice of the time, place and purpose of such hearing shall be in writing.

The annual license fee shall be set by the County Board of Commissioners. Applications for such license shall be made annually on a form furnished by the designated officer.

LICENSE REQUIRMENTS – In order to obtain a license under the provisions of this ordinance, an applicant must:

1. Submit a license fee;
2. Submit a contractors performance bond in a form acceptable to the County; and
3. Either present a valid and existing comparable installers license from another County or State for the current year or the year previous or pass a written test prepared by the Cass County Health Department.

Annual License Fees and Bond amounts shall be set from time to time by the Cass County Commission.

SECTION V – INSPECTION

The designated Health Officer of Cass County shall make inspections on all newly constructed on-site systems. No part of the drain field system shall be covered until it has been inspected, unless prior approval has been granted. It shall be the duty of the owner or occupant of the property to give the designated officer free access to the property at reasonable times for the purpose of making an inspection. Upon completion and final inspection of the system, if found satisfactory and meeting the approval of the inspection, the designated officer shall issue to the applicant a certificate of approval.

If, upon inspection, the designated officer discovers that any part of the system is not constructed in accordance with the minimum standards provided in these regulations, the applicant shall be responsible for the correction or elimination of all defects, and no system shall be placed in service until all defects have been corrected or eliminated.

SECTION VI – PERMIT FOR INSTALLATION OF ON-SITE SYSTEMS

No person, firm, or corporation shall install, alter, repair, or extend any individual on-site sewage system in the county without first obtaining a permit from the designated officer.

The fee for the permit shall be in accordance as set or prescribed by the Cass County Commission.

Application for permits shall be made upon forms furnished by the designated officer and shall be signed by the applicant. Said permit to construct is valued for a period of 12 months from date of issuance. If construction is not started within this period, the permit is void, unless an extension is granted by the designated Health Officer.

The Health Officer shall refuse to grant a permit for the construction of an individual sewage disposal system where a public sewer system is available.

If construction is not started on the building or septic system within 12 months of the date of approval of the application, it will be necessary to resubmit an application and plot plan for the system to assure that the lot or house plan or location have not changed.

SECTION VII – SEVERABILITY

In any section, subsection, sentence, clause, phrase or portion of these regulations is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of these regulations.

SECTION VIII – REGULATION ENFORCEMENT

Malfunctioning private on-site sewage disposal systems (including septic tanks, cesspools, cisterns, dry wells, absorption bed-fields, holding tanks, and the like) are a menace to the health and general welfare of the citizens of this county and are hereby declared to be a nuisance.

Whenever brought to the attention of the Health Officer that any unsanitary conditions exist in any private sewage disposal system or

that any construction or work regulated by these regulations is dangerous, unsafe, unsanitary, a nuisance or a menace to life, health or property, or otherwise in violation of these rules and regulations, it is the responsibility of the Health Officer to investigate the problem and he/she may order any person using or maintaining any such condition to repair, alter, change, remove or demolish the problem area for the proper protection of life, health or property.

Every such order shall be in writing, addressed to the person using or maintaining any such conditions and shall specify a reasonable date or time for compliance with such order.

SECTION IX – GENERAL PROVISIONS

- No on-site disposal system shall be installed during wet conditions or conditions by which the soil would become smeared during construction.
- All sewage shall be disposed of by a valid method of collection, treatment, and disposal. Sewage shall not be disposed of in any manner that will create a nuisance. It shall not be discharged into any abandoned or unused well, or into any crevice, sink hole, or other opening either natural or artificial in a rock formation. Sewage shall not be discharged into any river, stream, lake, pond or similar water course.
- Cesspools shall not be installed.
- Surface and storm waters shall not be discharged into any on-site soil absorption field or drain tile system.
- No provision of these regulations shall be deemed to require a change in any portion of an on-site sewage disposal system or any other work regulated by these regulations in or on an existing building or lot when such work was installed and is maintained in accordance with law in effect prior to the effective date of these regulations, except, when it is determined that a system is dangerous, unsafe, unsanitary, a nuisance, or a menace to life, health or property.

- No private on-site sewage disposal system or parts, thereof, shall be located in any parcel of land other than the parcel of land which is the site of the building, structure, or premises served by such families, except centralized treatment.
- In the event that a septic system with a seepage pit is abandoned, the pit shall be filled with soil, sand, or gravel. This requirement is binding on all systems whether installed prior to regulations or not.

SECTION X – SITE CONDITIONS

All proposed sites for on-site sewage systems shall include the following minimum information; under certain conditions (additional data may be required):

- A. Depth of the seasonal high water table and bedrock
- B. Soil conditions – properties and permeability
- C. Slope
- D. The existence of lowlands, depressions, outcrops
- E. Surface water drainage patterns
- F. All setbacks, as required in these regulations, shall be described or drawn out.

Private on-site sewage disposal systems shall not be permitted or constructed within the floodway of any river or stream.

Subsurface absorption areas shall not be installed in or on ground having an original surface slope greater than 15 percent (15 foot drop in 100 feet horizontal).

SECTION XI – UNSUITABLE SOILS

If the application for an onsite sewage disposal system permit has been denied because of the soil, it being identified as unsuitable for an on-site sewage disposal system, the applicant may present a plan for a specialized sewage disposal system that overcomes the limitation of the lot.

SECTION XII – PENALTIES

Any person who violates these regulations or any rule or regulation adopted by the county or who violates any determination or order of the county under these regulations, shall be fined not less than fifty dollars (\$50.00) and not more than three hundred dollars (\$300.00) for each violation. Each continuing day of a violation is considered a separate offense.

SECTION XIII – VARIANCE

In any case where a permit is required by the Public Health Center or designated officer, and upon application by the responsible person or persons, the Public Health Center or designated officer finds that the strict enforcement of any provision of these standards would be unreasonable, impractical, or not feasible under the circumstances, the Health Officer or designated officer may permit a variance.

In granting the variance, the Health Officer or designated officer may include such conditions as is prescribed for prevention, control, or abatement of pollution in harmony with the general purpose of these rules and regulations and the interest of applicable local, state, or federal laws.

In granting the variance, the Health Officer or designated officer shall prepare a finding of facts which specifies the circumstances justifying the granting of the variance.

SECTION XIV – APPEALS

Any person aggrieved by any order or determination of the Health Officer or designated officer may within 30 days of such action petition the Cass County Planning Commission for a hearing. Such appeal shall be in writing and shall specify in detail the grounds for the appeal. The appeal shall be filed with the County ~~Planner~~ Auditor.

Within 30 days of filing, the Planning Commission shall fix a date for a hearing.

Notice in writing shall be given to the petitioner at least five days prior to the hearing.

Within 15 days after the hearing, the Planning Commission shall take action and shall mail, by registered mail, a copy of its order to the petitioner.

~~If the petitioner is aggrieved by the determination of the Planning Commission, the petitioner may petition the Cass County Board of Commissioners for a hearing.~~

~~The procedure followed by the Planning Commission shall be followed by the Board of Commissioners in hearing the appeal.~~

If the petitioner is aggrieved by the determination of the Board of Commissioners, the petitioner may ~~make an appeal to~~ petition the Cass County District Court. This appeal must be taken in accordance with the procedure provided in Section 28-34-01 of the North Dakota Century Code.

SECTION XV – CONSTRUCTION REQUIREMENTS

Every on-site sewage disposal system installed after the effective date of these regulations and every alteration, extension, and repair to any system made after that date shall conform to the standards of these regulations.

APPROVAL OF A SYSTEM BY THE PUBLIC HEALTH OF FARGO DOES NOT CONSTITUTE A GUARANTEE THAT THE SYSTEM WILL PROVIDE TROUBLE-FREE SERVICE. PROPER INSTALLATION, MAINTENANCE, AND USE, HOWEVER, WILL DECREASE THE POSSIBILITY OF A PREMATURE FAILURE.

APPENDIX A PROCEDURES FOR SOIL BORING AND PERCOLATION TESTS

A. Soil Borings – where soil borings are required, they shall be made as follows:

1. All soils borings shall be taken, analyzed and reported by a registered professional soil classifier **or qualified designer**.
2. Each boring or excavation shall be made to a depth of at least six feet deep.
3. A soil texture description shall be recorded by depth and notations made where texture changes occur.
4. Measurements shall be made to determine the highest known water table by recording the first occurrence of active mottling observed in the hole.
5. Laboratory **or qualified designer** analysis to determine particle size, including percent sand, silt, and clay.

B. Percolation Tests – where percolation tests are required they shall be made as follows:

1. Test hole dimensions and locations:

- a. Each test hole shall be six to eight inches in diameter, have vertical sides, and be bored or dug to the depth of the bottom of the proposed individual sewage treatment system.

2. Preparation of the test hole:

- b. The bottom and sides of the hole shall be carefully scratched to remove any smearing and to provide a natural soil surface into which water may penetrate.

3. Soil Saturation and swelling:

- a. The hole shall be carefully filled with clear water to a minimum depth of 12 inches over the soil at the bottom of the test hole and maintained for no less than four hours.
- b. The soil shall then be allowed to swell for at least 16 hours, but no more than 30 hours. In sandy soils, the saturation and swelling procedure shall not be required and the test may proceed if one filling of the hole has seeped away in less than ten minutes.

4. Percolation rate measurement:

- a. In sandy soils, adjust the water depth to eight inches over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level shall be measured in inches to the nearest one-eighth inch at approximately ten minute intervals. A measurement can also be made by determining the time it takes for the water level to drop one inch from an eight inch reference point. If eight inches of water seeps away in less than ten minutes, a shorter interval between measurements shall be used, but in no case shall the water depth exceed eight inches. The test shall continue until three consecutive percolation rate measurements vary by a range of no more than 10%.
- b. In other soils, adjust the water depth to eight inches over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level shall be measured in inches to the nearest one-eighth inch at

approximately 30 minute intervals, refilling between measurements to maintain an eight-inch starting head. The test shall continue until three consecutive percolation rate measurements vary by a range of no more than 10%. The percolation rate can also be made by observing the time it takes the water level to drop one inch from an eight-inch reference point if a constant water depth of at least eight inches has been maintained for at least four hours prior to the measurement.

5. Calculating the percolation rate:

- a. Divide the time interval by drop in water level to obtain the percolation rate in minutes per inch.
- b. Percolation rates determined for each test hole shall be averaged to determine the final soil treatment system design.

6. For reporting the percolation rate, worksheets showing all calculations and measurements shall be submitted.

7. A percolation test shall not be run where frost exits below the depth of the proposed soil treatment system.

APPENDIX B

MINIMUM CONSTRUCTION REQUIREMENTS

A. SEWAGE TANKS

1. General

- a. All tanks shall be concrete, pre-cast, or cast in place regardless of material or method of construction and shall be:
 1. Watertight.
 2. So designed and constructed as to withstand all lateral earth pressures under saturated soil conditions with the tank empty.
 3. So designed and constructed as to withstand a minimum of seven feet of saturated earth cover above the tank top.
 4. Not subject to corrosion or decay.
- b. Any tank not having an integrally cast bottom shall not be installed when the water table is closer than three (3) inches to the bottom of the excavation at the time of construction.

2. Septic Tanks

- a. Design – all tanks shall conform to the following criteria:
 1. The liquid depth of any septic tank or compartment thereof shall not be less than 30 inches. A liquid depth greater than six and one-half (6 ½) feet shall not be considered in determining tank capacity.

2. No tank or compartment thereof shall have an inside horizontal dimension less than 24 inches.
3. Inlet and outlet connections of the tank shall be submerged by means of baffles or sanitary tees.
4. The space in the tank between the liquid surface and the top of the inlet and outlet baffles shall be less than 20 percent of the total required liquid capacity, except that in horizontal cylindrical tanks, this space shall not be less than 15 percent of the total required liquid capacity.
5. Inlet and outlet baffles shall be constructed of acid resistant concrete, acid resistant fiberglass or plastic.
6. Sanitary tees shall be affixed to the inlet or outlet pipes with a permanent water-proof adhesive. Baffles shall be integrally cast with the tank, affixed with a permanent water-proof adhesive or affixed with stainless steel connectors, top and bottom.
7. The inlet baffle, or sanitary tee, shall extend at least six inches, but not more than 20 percent of the total liquid surface and at least one inch above the crown of the inlet sewer.
8. The outlet baffle, or tee, and the baffles between compartments shall extend below the liquid surface, a distance equal to 40 percent of the liquid depth, except that the penetration of indicated baffles or sanitary tees for horizontal cylindrical tanks shall be 35 percent of the total liquid depth. They also shall extend above the liquid surface. In no case shall they extend less than six inches above the liquid surface.

9. There shall be at least 1 inch between the underside of the top of the tank and the highest point of the inlet and outlet devices.
10. The inlet invert shall not be less than 3 inches above the outlet invert.
11. The inlet and outlet shall be located opposite each other along with the axis of maximum dimension. The horizontal distance between the nearest points of the inlet and outlet devices shall be at least 4 feet.
12. Sanitary tees shall be at least 4 inches in diameter. Inlet baffles shall be no less than 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 6 inches measured from beginning of the outlet pipe to nearest point on the baffle.
13. Access to the septic tank shall be as follows:
 - a. There shall be one or more manholes, at least 18 inches least dimension and located within 6 feet of all walls of the tank. ~~The manhole cover shall be covered with at least 6 inches and no more than 12 inches of earth~~ All manhole covers shall not be covered and shall be level or above the finished grade.
 - b. There shall be a ~~clean out pipe of at least 6 inches diameter located in the top of the tank. The clean out pipe shall be capped flush or above finished grade~~ 6 inch minimum inspection pipe for each baffled wall. The 18" manhole cover can serve as the inspection cover. All inspection pipes shall be capped flush or above the finished grade.
14. Compartmentation of single tanks

- a. Septic tanks larger than 3,000 gallons and fabricated as a single unit shall be divided into two or more compartments.
- b. When a septic tank is divided into two compartments, not less than one-half nor more than two-thirds of the total volume shall be in the first compartment.
- c. 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.
- d. Connections between compartments shall be baffled so as to obtain effective retention of scum and sludge.
- e. Adequate venting shall be provided between compartments by baffles or by an opening of at least 50 sq inches near the top of the compartment walls.
- f. Adequate access to each compartment shall be provided by one or more manholes, at least 18 inches least dimension, and located within 6 feet of all walls of the tank. ~~The manhole cover shall be covered with at least 6 inches of earth.~~ All manhole covers shall not be covered and shall be flush or above the finished grade.

15. Multiple tanks

- a. Where more than one tank is used to obtain the required liquid volume, the tanks shall be connected in series.
- b. Each tank shall comply with all other provisions of these regulations.

- c. No more than 4 tanks in series can be used to obtain the required liquid volume.
- d. The first tank shall be no smaller than any subsequent tanks in series.

16. Outlet pipe from septic tank

- a. The outlet pipe from the septic tank must not be cast in iron.
- b. The outlet pipe extending from the septic tank must be of sound and durable construction, not subject to corrosion or decay.
- c. The outlet pipe extending from the septic tank to the undisturbed soil beyond the tank must meet the strength requirements of the American Society for Testing and Materials (ASTM), schedule ~~30-34~~ 40 plastic pipe and must be supported in a manner that there is no deflection during the backfilling and subsequent settling of the soil between the edge of the septic tank and the edge of the excavation.
- d. The soil around the pipe extending from the septic tank must be compacted to original density for a length of 3 feet beyond the edge of the tank excavation.

17. Capacity

- a. Dwelling – the liquid capacity of a septic tank serving a dwelling shall be based on the number of bedrooms contemplated in the dwelling served and shall be at least as large as the capacities given below:

TABLE 1

Number of Bedrooms	Tank Liquid Capacities (in Gallons)
1 to 4	1,000
5 to 6	1,500
7, 8 or 9	2,000

For ten or more bedrooms, the septic tank shall be sized as an other establishment.

- b. Other establishments. The liquid capacity of the septic tank serving an establishment other than a dwelling shall be sufficient to provide a sewage detention period of not less than 36 hours in the tank for sewage flows less than 1,500 gallons per day, but in no instance shall the liquid be less than 1,000 gallons. For sewage flows greater than 1,500 gallons per day the minimum liquid capacity shall equal 1,125 gallons plus 75% of the daily sewage flow.
- c. Garbage disposal. If a garbage disposal unit is installed in a residence or other establishment at any time, septic tank capacity must be at least 50% greater than that required in items A and B and either multiple compartments or multiple tanks must be provided.
- d. Location
 - 1. The sewage tank shall be placed so that it is accessible for the removal of liquids and accumulated solids.
 - 2. The sewage tank shall be placed on firm and settled soil capable of bearing the weight of the tank and its contents.

3. Setbacks (see **Table 2** chart below)

TABLE 2
Minimum Setback Distances (Feet)

Feature	Sewage Tank	Soil Treatment Area
Water supply well less than 50 feet deep and not encountering at least ten feet of impervious material	50	100
Any other water supply well or buried water suction pipe	50	50
Buried pipe distributing water under pressure	10	10
Buildings	10	20
Lakes and Rivers	100	100

e. Maintenance: The owner of any septic tank or his agent shall regularly inspect and arrange for the removal and sanitary disposal of septage from the tank whenever the top of the sludge layer is less than 12 inches below the bottom of the outlet baffle or whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle.

18. Distribution and dosing of effluent:

1. Gravity distribution

a. Level ground - Where the elevation difference of the ground surface does not exceed 28 inches in any direction within the soil treatment system, the sewage tank effluent may be directed to the soil treatment system through a system of interconnected

distribution pipes or trenches in a continuous system.

b. Slightly sloping ground

1. Sewage tank effluent may be distributed by a distribution box provided the final ground surface elevation of the lowest trench is at least 1 foot higher than the outlet inverts of the distribution box.
2. Distribution box: the box shall be water tight with a removable cover and shall be constructed of durable materials not subject to excessive corrosion or decay.
 - a. The inverts of all outlets shall be at the same elevation as measured from a liquid surface in the bottom of the box.
 - b. The inlet invert shall be at least one inch above the distribution box floor.
 - c. The outlet inverts shall be at least 4 inches above the distribution box floor.
 - d. Each drain field trench line shall be connected separately to the distribution box and shall not be subdivided.
 - e. When sewage tank effluent is delivered to the box by pump, either a baffle wall shall be installed in the distribution box or the pump discharge shall be directed against a wall, bottom, 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.

c. Sloping Ground

1. Where the elevation difference of the ground surface treatment system and a distribution box cannot be used as specified in these regulations a drop box shall be installed at the head end of each lateral line. Connections between drop boxes shall be by water tight pipes.
2. Drop Boxes - The drop box shall be water tight and constructed of durable materials not subject to excessive corrosion or decay.
 - a. The invert of the inlet pipe shall be least one inch higher than the invert of the outlet pipe to the next trench.
 - b. 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.
 - c. When sewage tank effluent is delivered to the drop box by a pump, the pump discharge shall be directed against a wall or side of the box on which there is no outlet.
 - d. The drop box shall have a removable cover, either flushes or above finished grade or covered by no more than 6 inches of soil.

2. Pressure Distribution

a. Dosing

1. The dosing chamber shall be water tight and constructed of concrete.
2. There shall be one or more manholes, at least ~~20~~ 18 inches least dimension preferably located directly above the dosing device. The manhole shall extend through the dosing system chamber cover to final grade and ~~or above~~ shall be so constructed as to prevent unauthorized entry.
3. The size of the effluent dose shall be determined by design of the soil treatment unit but in no case shall the dosing chamber be sized to provide a dose of less than 75 gallons.
4. It shall be the responsibility of the installer to contact a qualified electrician for proper installation of any electrical component used for dosing.

b. Dosing devices for gravity distribution

1. A pump or siphon shall deliver the dose to the soil treatment unit for gravity distribution over the soil treatment area.
- ~~2. For dwellings, the dosing device shall discharge at least 600 gallons per hour, but no more than 2,700 gallons per hour.~~
- ~~3. For other establishments, the dosing device should discharge at a rate at least 10% greater than the water supply flow rate, but no faster than the rate at which effluent will flow out of the distribution device.~~

~~4. If dosing device is a siphon, a maintenance inspection shall be made every 6 months by the owner or his agent. The siphon shall be maintained in proper operating condition.~~

2. If the dosing device is a pump, it shall be cast iron or bronze fitted and with stainless steel screws or constructed of other sound, durable and corrosion-resistant materials.
3. Where the soil treatment area is at a higher elevation than the pump, sufficient dynamic head shall be provided for both the elevation difference and friction loss.

c. Dosing devices for pressure distribution

1. The dosing device shall be a pump which is cast iron or bronze fitted and with stainless steel screws or constructed of sound, durable and corrosion resistant materials.
2. The pump discharge capacity shall be at least 30 gallons per minute for a 3 bedroom or smaller dwelling and an additional 10 gallons per minute for each bedroom above three. For other establishments, the pump discharge shall be 10 gallons per minute of each 200 gallons per day of sewage flow or 30 gallons per minute, whichever is greater.
3. The pump discharge head shall be at least 5 feet greater than the head required to overcome pipe friction losses and the elevation difference between the pump and the distribution device.
4. The quantity of effluent delivered for each pump cycle shall be equal to 25% of one

day's sewage flow or 100 gallons, whichever is greater.

5. An alarm device shall be installed to warn of pump failure.

B. FINAL TREATMENT AND DISPOSAL

1. General - Final treatment and disposal of all sewage tank effluent shall be approved by the Health Officer or designated Health Officer.

Standard System

a. Sizing

1. The required soil treatment area shall be determined by number of bedrooms for dwellings, the sum of the areas required for each individual unit for multiple residential units, and by the daily sewage flow for other establishments.
2. The minimum soil treatment area required for any dwelling shall provide at least 2 bedrooms.
3. Estimates of sewage flow for dwellings are given in Table III.

TABLE III

Number of Bedrooms	Sewage Flow (Gallons per Day)
2	300
3	450
4	600
5	750
6	900

4. The soil treatment area shall be at least as large as set forth in Table IV.

**TABLE IV
Required Soil Treatment**

Percolation Rate (Minutes per Inch)	Area in Sq Feet (Per Gallon of Waste Per day)	Area per Bedroom Sq Feet
Faster than 0.1**	-	-
0.1 to 5***	0.83	125
6 to 15	1.27	190
16 to 30	1.67	250
31 to 45	2.00	300
46 to 60	2.20	330
Slower than 60****	-	-
** Soil is unsuitable for standard system if percolation rate is less than 0.1 minutes per inch.	*** Consider alternative sewage treatment systems for soils with this percolation rate range.	**** Soil is unsuitable for standard system if percolation rate is slower than 60 minutes per inch.

b. Location

1. On slopes in excess of 12%, the soil profile shall be carefully evaluated in the location of the proposed soil treatment system and down slope to identify the presence of layers with different permeabilities that may cause side hill seepage. In no case shall a trench be located within 15 feet of such a layer surfacing on the down slope.
2. Bed construction shall be limited to areas having natural slopes of less than 6%.

c. Design and Construction

1. The bottom trenches and beds shall be at least ~~30~~ 24 inches above the active mottling zone or bedrock.
2. The trenches shall not be less than 24 inches nor more than 36 inches wide. Any trench wider than 36 inches shall be considered a bed.
3. Trenches and beds shall not be more than 100 ft in length.
4. The bottom of the trench or bed excavation shall be level.
5. The bottom and sides of the soil treatment system to the top of the filter material shall be excavated in such a manner as to leave the soil in a natural, un-smearred, and uncompacted condition. Excavation shall be made only when the soil moisture content is at least or less than the plastic limit.
6. ~~When the percolation rate is slower than 15 minutes per inch, excavation shall be by back hoe or other means that allow the equipment wheels or tracks to remain on the surface soil. Excavation equipment or other vehicles shall not be driven on the soil treatment area.~~
7. There shall be a layer of at least 12 inches but no more than 24 inches of filter materials on the bottom of the trenches and beds.
8. Distribution pipes – gravity distribution

- a. Distribution pipe 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.
- b. Perforated pipe used for sewage distribution pipes shall have one or more rows of holes of no less than ½ inch in diameter spaced no more than 36 inches apart. Holes shall be spaced to prevent failure due to loads. Distribution pipes shall have a load bearing capacity of not less than 1,000 lbs per lineal foot.
- c. Other devices may be used to distribute sewage tank effluent over the soil treatment area upon approval by the Health Officer or designated Health Officer.

9. Pressure Distribution

- a. Distribution pipes used or beds for pressure distribution shall be at least one inch in diameter and constructed of sound and durable material not subject to corrosion or decay or to loss of strength under continuously wet conditions.
- b. Perforations shall be sized and spaced as shown in Table V.

TABLE V

Maximum Allowable Number of One-Fourth Inch Diameter or Smaller Perforations Per Pipe Diameter, Nominal and Inside

Perforation Spacing in Ft	1"	1-1/4"	1-1/2"	2"
2.5	8	14	18	28
3	8	13	17	26
3.3	7	12	16	25
4	7	11	15	23
5	6	10	14	22

10. The distribution pipes shall be laid level or on a uniform slope away from the distribution device of no more than 4 inches per 100 feet.
11. The 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 bed.
12. The filter material shall completely encase the disposal pipes to a depth of at least 2 inches.
13. ~~The filter material shall be covered with untreated building paper or a two-inch layer of hay or straw or similar, permeable materials~~ The filter material shall be covered with an unwoven geo-textile fabric or a similar, permeable material approved by the designated Health Officer.
14. The trenches or beds shall be backfilled and crowned above finished grade to allow for settling. The top 6 inches of soil shall

have the same texture and density as the adjacent soil.

15. The minimum depth of cover over the distribution pipes shall be at least 8 inches. The maximum depth of cover over the distribution pipes shall be no more than 36 inches and preferably no more than 24 inches.
16. A grass cover shall be established by the owner or his agent over the soil treatment system.

C. ALTERNATIVE SYSTEMS

1. **General** – the intent of this portion of the regulation is to provide guidelines for the design, location, installation, use and maintenance of alternative sewage treatment systems in areas of limiting soil characteristics, or where a standard system cannot be installed or is not the most suitable treatment.

2. Modified Standard Systems

a. Extreme caution and careful planning shall be employed wherever limiting characteristics including, but not limited to water table or bedrock, exist within 2 ft of the original ground surface.

b. Fluctuating ground water:

1. Where natural drainage will not provide 30 inches of separation between the bottom of the soil treatment area and the highest known or calculated level of the water table, agricultural drain tile may be used to intercept or lower the seasonal high water table, except within shore-lands of public waters. There shall be at least 10 feet of undisturbed soil between the sidewall of the soil treatment unit and the agricultural drain tile.

Commented [bas1]: Should this be 24 inches per the Richland code...also see the Richland code page 33, that refers to 30 inches as well? (see Design and Construction, page 32 section C.1. of this document)

2. Within shore lands of public waters, drain tile may be used to intercept the seasonal high water table provided the ground water table has a slope of at least 2 ft per 100 ft toward the public water and provided the drain tile is installed up-slope of the soil treatment system. There shall be at least 20 ft of undisturbed soil between the side-wall of the soil treatment unit and the agricultural drain tile.
 3. In all cases the greatest practical vertical separation distance from the water table shall be provided.
- c. Bedrock proximity – In no case shall filter material of the soil treatment system be placed closer than 30 inches to creviced bedrock or to consolidated permeable bedrock. When all horizons of the original soil profile have percolation rates slower than 60 minutes per inch, filter material of the soil treatment system shall be placed no closer than 7 ft to consolidated impermeable bedrock. A maximum depth of 24 inches of sand may be used under the filter material. Where additional fill is required to achieve the required separation distance, a soil having a percolation rate between 5 and 45 minutes per inch (loamy sand to silt loam) 12 months after placement shall be used. If it is not possible to allow the soil to settle for 12 months after placement, mechanical methods may be used to settle the fill to within 10% of its in situ density.
- d. Slowly permeable soils
1. In no case shall excavation for the purpose of constructing a soil treatment system be made in any soil layer having a percolation rate slower than 120 minutes per inch.
 2. In no case shall excavation for the purpose of constructing a soil treatment system be made in a soil layer having a percolation rate slower than 60 minutes

per inch unless the moisture content is lower than the plastic limit of the soil.

3. In no case shall construction equipment, wheels or tracks, be placed in contact with the bottom of the excavation during the construction of a soil treatment system in soils having a percolation rate slower than 15 minutes per inch.
 4. The size of the soil treatment system shall be based on 2.2 square ft/gallon/day for a soil at 60 m.p.i.; 4.2 square ft/gallon/day for a soil at 120 m.p.i.
- e. Rapidly permeable soils:
1. Filter material for a soil treatment unit using gravity distribution effluent shall not be ~~place~~ placed in contact with original soil having a percolation rate faster than one-tenth minute per inch.
 2. For coarse soils having a percolation rate faster than one-tenth minute per inch, at least 6 inches of sandy loam textured soil having a percolation rate between 5 and 15 minutes per inch after placement (loamy sand to sandy loam) shall be placed between the filter material and the coarse soil along the excavation bottom and sidewalls.
 3. For soils with percolation rates between one-tenth and 5 minutes per inch at least one of the following treatment techniques shall be used:
 - a. Provide at least 6 inches of sandy loam textured soil with a percolation rate between 5 and 15 minutes per inch after placement between the filter material and the coarse soil.

- b. Distribution of sewage tank effluent by pressure flow over the treatment area as outlined in these regulations.
 - c. Divide the total soil treatment area into at least four equal parts connected serially.
- f. Flood prone areas
- 1. No part of a system shall be installed in the floodway.
 - 2. The soil absorption system shall be located on the highest feasible area of the lot and shall have location preferences over all other improvements except the water supply well. The soil absorption system shall not be installed in the floodway.
 - 3. If a pumping station is used to move effluent from the sewage tank to the drain field, provisions shall be made to prevent the pump from operating when inundated with flood waters.
 - 4. The building sewer shall be designed to prevent back flow of liquid into the building when the system is inundated. If a holding tank is utilized, the building sewer shall be designed to permit rapid diversion of sewage into the holding tank when the system is inundated.
 - 5. Whenever the water level has reached a stage above the top of the sewage tank, the tank shall be pumped to remove all solids and liquids after the flood has receded before the use of the system is resumed.

3. Mounds

- a. Mounds must be constructed on original soils so that there is at least ~~30~~ 24 inches of separation between the bottom of the ~~drain filed rock layer~~ distribution medium and limiting soil characteristics.

- b. There must be at least 12 inches of original soil with a percolation rate faster than 120 minutes per inch.
- c. Where the original soil has a depth of at least 12 inches to the water table as the limiting soil characteristic, but has a percolation rate of 5 minutes per inch or faster, a layer of at least 12 inches of loamy sand textured soil with a percolation rate between 6 and 15 minutes per inch at the original site must be placed before placing the sand layer of mound. The required absorption width must be determined for a soil having a percolation rate between 16 and 30 minutes per inch.
- d. The allowable absorption area loading rate must be determined according to Table VI by the percolation rate of the 12 inches of original or fill soil immediately under the sand layer.

TABLE VI

Percolation Rate of	Allowable Absorption Area Loading Rate	
	Gallons per day per square foot	Square feet per gallon per day
Original soil under sand layer, minutes per inch		
6 to 15	0.79	1.50
16 to 30	0.60	2.00
31 to 45	0.50	2.40
46 to 60	0.45	2.67
61 to 120	0.24	5.00

- e. The required absorption width of mounds constructed on ground sloping from zero to 2.9% must include the width of the rock layer plus a distance measured between the outer edges of the upslope and the down-slope banks. The require absorption width for mounds constructed on ground sloping between 3% and 12%

must include the width under the drain field rock layer plus a portion of the width of the down slope bank.

- f. Mounds may be located on natural slopes exceeding 12 percent if the absorption area is designed to be at least 25 percent larger than the required in Table VI.
- g. The bottom area of the drain field rock layer must be sized on the basis of 0.823 square ft/gallon of waste per day.
- h. The width of the drain filed rock layer in a single bed must not exceed 10 feet.
- i. A rubber-tired tractor may be used for plowing or disking, but must not be driven on the absorption area after the surface preparation is completed. A crawler or track-type tractor must be used for mound construction. ~~where the soil percolation rate is slower than 15 minutes per inch.~~
- j. The discharge pipe from the pump to the mound area must be installed before soil surface preparation. The trench must be carefully backfilled and compacted to prevent seepage of effluent.
- k. All vegetation in excess of 4 inches in length and dead organic debris must be removed from the surface of the total area selected for the mound, including the area under the banks. The total area must be roughened by plowing to a depth of at least 8 inches or the sod layer broken and roughened by backhoe teeth. Furrows must be thrown uphill and there must be no dead furrow under the mound.

The soil must be plowed or roughened when the moisture content of a fragment 8 inches below the surface is below the plastic limit. The soil under a mound including the area under the banks must not be roughened by rototilling or pulverizing. In soils having

percolation rates faster than 15 minutes per inch (sandy loam) in the top 8 inch depth, disking may be used for surface preparation as a substitute for plowing. Mound construction must proceed immediately after surface preparation is completed. The original soil must not be excavated or moved more than one foot from its original location during soil surface preparation.

- I. A minimum of 12 inches of soil defined as sand must be placed where the drain field rock is to be located. This sand must be placed by using a construction technique that minimizes compaction. If the sand is pushed into place, a crawler tractor with a blade or unloaded bucket must be used to push the sand into place. At least 6 inches of sand must be kept beneath the equipment to minimize compaction of the plowed layer. When placing sand with a backhoe that has rubber tires, the tractor must not drive over the drain field rock or banks of the mound. The sand layer upon which the drain field rock is placed must be level.

On slopes of 3% or greater, the long axis of the level drain field rock layer must not diverge up or down the slope by more than 12 inches of elevation from the natural contour line. The depth of the sand layer along the upper edge of the level drain field rock layer must not vary by more than 12 inches.

On slopes of 3% or greater, and where the percolation rate in the top foot of original soil is in the 61 to 120 minutes per inch range, mounds must not be located where the ground surface contour lines directly below the long axis of the drain field rock layer represent a swale or draw, unless contour lines have a radius of curvature greater than 100 feet. Mounds must never be located in swales or draws where the radius of curvature of the contour lines is less than 50 feet.

- m. A depth of at least 9 inches of drain field rock must be placed over the bed area below the distribution pipe.
- n. Distribution of effluent over the drain field rock layer must be by perforated pipe under pressure.
- o. The drain field rock shall completely encase the top and sides of the distribution pipes to a depth of ~~at~~ 2 inches. The top of the drain field rock must be level in all directions.
- p. The drain field rock must be covered with ~~either a permeable synthetic fabric. or a ¼ inch layer of hay or straw covered with untreated building paper.~~ **either a permeable synthetic fabric. or a ¼ inch layer of hay or straw covered with untreated building paper.**
- q. Construction vehicles must not be allowed on the drain field rock until back fill is placed.
- r. Sandy loam soil must be placed on the drain field to a depth of 1 foot in the center of the mound and to a depth of 6 inches at the sides.

A maximum of two 10-foot wide beds may be installed side by side in a single mound if the original soil percolation rate is between 5 and 60 minutes per inch to a depth of at least 24 inches below the sand layer. The beds must be separated by 4 feet of clean sand.

When two beds are installed side by side, the sandy loam fill must be 18 inches deep at the center of the mound and 6 inches deep at the sides.

- s. Six inches of top soil must be placed on the fill material over the entire area of the mound.
- t. A grass cover must be established over the entire area of the mound.

- u. Shrubs must not be planted on the top of the mound. Shrubs may be placed at the foot and side of the mound.
- v. The side slopes on the mound must not be steeper than 3 to 1.
- w. Whenever mounds are located on slopes, a diversion must be constructed immediately upslope from the mound to intercept and direct runoff.
- x. A pump must be used as specified in these rules and regulations.

4. Holding Tanks

- a. **General** – Holding tanks may be allowed only as replacements for existing non-conforming systems or on existing parcels or lots as the date of the enactment of these standards and only where it can conclusively be shown that a standard or mound system cannot be feasibly installed.
- b. **Construction** – A holding tank shall be constructed of the same materials and by the same procedures as those specified for water tight septic tanks.
- c. **Access** – A cleanout pipe of at least ~~6~~ 18 inches in diameter shall extend to the ground surface and be provided with seats to prevent odor and to exclude insects and vermin. A manhole of at least ~~30~~ 18 inches in diameter shall extend through the cover to finished grade. ~~least dimension shall extend through the cover to a point within 12 inches, but no closer than 6 inches below finished grade. The manhole cover shall be covered with at least 6 inches of earth~~
- d. **Depth of bury** – The tank shall be protected against flotation under high water table conditions. This shall be

achieved by weight of tank, earth anchors, or shallow bury depths.

e. **Capacity**

1. For a dwelling the minimum size shall be 1,000 gallons or 400 gallons times the number of bedrooms, whichever is greater.
 2. For permanent structures other than dwellings, the capacity shall be based on measured flow rates or estimated flow rates. The tank capacity shall be at least 5 times the daily flow rate.
 3. Location: Holding tanks shall be located:
 - a. In an area readily accessible to the pump track under all weather conditions.
 - b. Where accidental spillage during pumping will not create a nuisance.
- f. **Contract** – A contract for disposal and treatment of the sewage wastes shall be maintained by the owner with a pumper, municipality, agency, or firm established for that purpose.
- g. **Accidental overflow** – Holding tanks shall be monitored to minimize the chance of accidental sewage overflows. Techniques such as visual observation, warning lights, or bells or regularly scheduled pumping shall be used. For other establishments, a positive warning system shall be installed which allows 25% reserve capacity after actuation.

5. Other Systems – where unusual conditions exist, special systems of treatment and disposal other than those specifically mentioned in these regulations may be provided if:

- a. Reasonable assurance of performance of such system is presented to the permitting authority;
- b. The engineering design of such system is first approved by the permitting authority;
- c. There is no discharge to the ground surface or to surface waters;
- d. Treatment and disposal of wastes is in such a manner so as to protect the public health and general welfare;
- e. Such systems comply with all applicable requirements of these standards and with all local codes and ordinances.

APPENDIX C

Regulations for Southeast Cass Water Resource Sewer Improvement District #89-1.

Regulations restricting the use of public sewers and drains, the installation and connection of sanitary and building sewers, and the discharge of waters and wastes into the public sewer and determining the rate to charge for services.

A. DEFINITIONS FOR APPENDIX C

Unless the context specifically indicates otherwise, the meaning of terms used in this appendix shall be as follows:

1. **“Biochemical oxygen demand (BOD)”** shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees centigrade, expressed in milligrams per liter.
2. **“Building drain”** shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five (5) feet (1.5 meters) outside the inner face of the building wall.
3. **“Building sewer”** shall mean the extension from the building drain to the public sewer or other place of disposal, also call house connection.
4. **“Combined sewer”** shall mean a sewer intended to receive both wastewater and storm or surface water.
5. **“Easement”** shall mean an acquired legal right for the specific use of land owned by others.

6. **“Floatable oil”** is oil, fat, or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. A wastewater shall be considered free of floatable fat if it is properly pretreated and the wastewater does not interfere with the collection system.
7. **“Garbage”** shall mean the animal and vegetable waste resulting from the handling, preparation, cooking, and serving of foods.
8. **“Industrial wastes”** shall mean the wastewater from industrial processes, trade, or business as distinct from domestic or sanitary wastes.
9. **“Natural Outlet”** shall mean any outlet, including storm sewers and combines sewer overflows, into a watercourse, pond, ditch, lake or other body of surface or groundwater.
10. **“May”** is permissive (see “shall”, Section 18).
11. **“Person”** shall mean any individual, firm, company association, society, corporation, or group.
12. **“pH”** shall mean the logarithm of the reciprocal of the hydrogen-ion concentration. The concentration is the weight of hydrogen-ions, in grams, per liter of solution. Neutral water, for example, has a pH value of 7 and a hydrogen-ion concentration of 10^{-7} .
13. **“Properly shredded garbage”** shall mean the wastes from the preparation, cooking, and dispensing of food that has been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than $\frac{1}{2}$ inch (1.27 centimeters) in any dimension.
14. **“Public sewer”** shall mean a common sewer controlled by a governmental agency or public utility.

15. **“Sanitary sewer”** shall mean a sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities of ground, storm and surface waters that are not admitted intentionally.
16. **“Sewage”** is the spent water of a community. The preferred term is “wastewater”, Section 24.
17. **“Sewer”** shall mean a pipe or conduit that carries wastewater or drainage water.
18. **“Shall”** is mandatory (see “May”, Section 10).
19. **“Slug”** shall mean any discharge of water or wastewater which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration or flows during normal operation and shall adversely affect the collection system and/or performance of the wastewater treatment works.
20. **“Storm drain”** (sometimes termed “storm water”) shall mean a drain or sewer for conveying water, ground water, subsurface water, or unpolluted water from any source.
21. **“Superintendent”** shall mean the Fargo Health Department along with the superintendent of wastewater facilities, and/or of wastewater treatment works, and/or of water pollution control of the County or his authorized deputy, agent or representative.
22. **“Suspended solids”** shall mean total suspended matter that either floats on the surface of, or is in suspension in water, wastewater, or other liquids, prescribed in “Standard Methods for the Examination of Water and Wastewater” and referred to as non-filterable residue.

23. **“Unpolluted water”** is water of quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sanitary sewers and wastewater treatment facilities provided.
24. **“Wastewater”** shall mean the spent water of a community. From a standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and storm water that may be present.
25. **“Wastewater facilities”** shall mean the structures, equipment, and processes required to collect, carry away, and treat domestic and industrial wastes and dispose of the effluent.
26. **“Wastewater treatment works”** shall mean an arrangement of devices and structures for treating wastewater, industrial wastes, and sludge. Sometimes used as synonymous with “waste treatment plant” or “wastewater treatment plant” or “water pollution control plant”.
27. **“Watercourse”** shall mean a natural or artificial channel for the passage of water either continuously or intermittently.

B. USE OF PUBLIC SEWERS REQUIRED

1. It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within County of Cass or in any area under the jurisdiction of said County, any human or animal excrement, garbage, or other objectionable waste.
2. It shall be unlawful to discharge to any natural outlet within the County of Cass or in any area under the jurisdiction of said county, any sewage or other polluted waters except where suitable treatment has been provided in accordance with subsequent provisions of these regulations.

3. Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of wastewater.
4. The owner of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the Southeast Cass Water Resource Sewer Improvement District #89-1, is hereby required at the owner's expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of these regulations, with 60 days after date of official notice to do so, provided that said public sewer is within 200 feet of the property line for a single unit, 400 feet for 2 units, 600 feet for 3 units, 800 feet for 4 units and 1,000 feet for 5 to 15 units.

TABLE VII

Size of Development	Distance
1 Unit	200 feet
2 Units	400 feet
3 Units	600 feet
4 Units	800 feet
5-15 Units	1,000 feet

For developments with more than 15 units and located within one mile of an existing public sanitary sewer system adequate justification shall be provided to the superintendent as to why they should not provide a connection to the existing public sewer system. For developments with more than fifteen units and located more than one mile from an existing system, the sanitary sewer system strategy shall be determined by the superintendent on a case-by-case basis, taking into consideration the density of development and cost.

5. The owner of all houses, building, or properties used for human occupancy, employment, recreation, or other purposes,

situated within the County and abutting on any street, alley, or right-of-way in which there is now or may in the future be located a public sanitary or combined sewer of the County, is hereby required at the owner's expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provision of these regulations, within 60 days after date of official notice to do so, provided that said public sewer is within 200 feet of the property line for a single unit, 400 feet for 2 units, 600 feet for 3 units, 800 feet for 4 units, and 1,000 feet for 5 to 15 units.

TABLE VIII

Size of Development	Distance
1 Unit	200 feet
2 Units	400 feet
3 Units	600 feet
4 Units	800 feet
5-15 Units	1,000 feet

For developments with more than 15 units and located within one mile of an existing public sanitary sewer system adequate justification shall be provided to the superintendent as to why they should not provide a connection to the existing public sewer system. For developments with more than fifteen and located more than one mile from an existing system, the sanitary sewer system strategy shall be determined by the superintendent on a case-by-case basis, taking into consideration the density of development and cost.

In all cases the engineer for the City and the engineer for the District must agree that the Project and sewage treatment facility of the City have sufficient capacity to handle the added sewage which will result from the new hookup or hookups, and that the proposed collection system is adequate and meets or exceeds the quality of the original collection system of the Project.

6. The owner of all existing houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, as of the date of these regulations, and having on – site wastewater facilities, situated within the County and abutting on any street, alley, or right-of-way in which there is now or may in the future be located a public sanitary or combined sewer of the County, is hereby required at the owner’s expense to install suitable toilet facilities therein, and to connect to such facilities directly with the proper public sewer in accordance with the provisions of these regulations, when such on-site wastewater facility is deemed unsanitary or needs upgrading in the opinion of the Superintendent, within 60 days after date of official notice to do so, provided that said public sewer is within 200 feet of the property line for a single unit, 400 feet for 2 units, 600 feet for 3 units, 800 feet for 4 units, and 1,000 feet for 5 to 15 units.

TABLE IX

Size of Development	Distance
1 Unit	200 feet
2 Units	400 feet
3 Units	600 feet
4 Units	800 feet
5-15 Units	1,000 feet

For developments with more than 15 units and located within one mile of an existing public sanitary sewer system adequate justification shall be provided to the superintendent as to why they should not provide a connection to the existing public sewer system. For developments with more than fifteen units and located more than one mile from an existing system, the sanitary sewer system strategy shall be determined by the superintendent on a case-by-case basis, taking in consideration the density of the development and cost.

In all cases the engineer for the City and the engineer for the District must agree that the Project and sewage treatment facility of the City have sufficient capacity to handle the added sewage which will result from the new hookup or hookups, and that the proposed collection system is adequate and meets or exceeds the quality of the original collection system of the Project.

C. SANITARY SEWER, BUILDING SEWERS AND CONNECTIONS

1. No unauthorized person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Superintendent.
2. There shall be one class of building sewer permit for residential and commercial service only. No industrial waste will be accepted per the agreement between the City of Fargo and Southeast Cass Water Resource District. The owner, or his agent, shall make application on a special form furnished by the Community Health Center of Fargo. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgment of the Superintendent. A permit and inspection fee for a resident or commercial building shall be paid to the Community Health Department of Fargo at the time the application is filed.
3. All costs and expense incidental to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the County from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.
4. A separate and independent building sewer shall be provided for every building; except where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear of the building through an adjoining alley, court, yard or driveway, the building sewer from the front building may be extended to the

rear of the building and the whole considered as one building sewer, but the County does not and will not assume any obligation or responsibility for damage caused by or resulting from any such single connection afore mentioned.

5. Old building sewers may be used in connection with new buildings only when they are found, on examination and tested by the Superintendent, to meet all requirements of these regulations.
6. The size, slope, alignment, materials of construction of all sanitary sewers including building sewers, and the methods used to be used in excavating, placing of the pipe, joints, testing, and backfilling the trench, shall all conform to the requirements of the building and plumbing codes or other applicable rules and regulations of the County. In the absence of suitable code provisions set forth in appropriate specifications of the ASTM, and WPCF Manual of Practice No. 9 shall apply.
7. Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In any building in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the building sewer.
8. No person shall make connection of downspouts, foundation drains, or other sources of surface runoff or groundwater to a building sewer, or indirectly to a public sanitary sewer.
9. The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing codes or other applicable and plumbing codes or other applicable rules and regulations of the applicable jurisdiction, or the procedures set forth in appropriate specifications of the ASTM and the WPCF Manual of Practice No 9. All such connections shall be made gastight and watertight and verified by proper testing. Any deviation from the prescribed

procedures and materials must be approved by the Superintendent before installation.

10. The applicant for the building sewer permit shall notify the Superintendent when the building sewer is ready for inspection and connection to the public sewer. The connection and testing shall be made under the supervision of the Superintendent or his representative.
11. All excavations for building sewer installation shall be adequately guarded with barricade and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the County.

D. USE OF THE PUBLIC SEWERS

1. No person shall discharge or cause to be discharged any unpolluted waters such as storm water, surface water, groundwater, roof runoff, subsurface drainage, or cooling water to any building drain or sewer which in turn is connected directly or indirectly to the sanitary sewer.
2. Storm water and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the Superintendent or other regulatory agencies. Unpolluted industrial cooling water or process waters may be discharged, on approval of the Superintendent, to a storm water, combined sewer, or natural outlet.
3. No person(s) shall discharge or cause to be discharged any of the following described water or wastes to any public sewers:
 - (a) Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas.
 - (b) Any waters containing toxic or poisonous sludge or any sewage treatment process constitute a hazard in or have an adverse effect on the waters receiving any discharge from the works. Each user which discharges any toxic pollutants which cause an increase in the cost of managing the effluent or the sludge of the Wastewater

treatment works shall pay for such increased costs. (c) Any waters or wastes having pH lower than 5.5, or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the wastewater works. (d) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the wastewater facilities such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar plastics, wood, underground garbage, whole blood, paunch manure, hair and fleshing, entails and paper dishes, cups, milk containers, etc. either whole or ground by garbage grinders except as defined in Section 13, Article I.

4. The following described substances, materials, waters or waste shall be limited in discharges to municipal systems to concentrations or quantities which will not harm the sewers, wastewater treatment process or equipment, will not have an adverse effect on the receiving stream, or will not otherwise endanger lives, public property, or constitute a nuisance. The Superintendent may set limitations lower than the limitations established in the regulation below if in his opinion such more severe limitations are necessary to meet the above objectives. In forming his opinion as to the acceptability, the Superintendent will give consideration to such factors as the quantity of the subject waste in relation to flows and velocities in the sewers, materials of construction of the sewers, the wastewater treatment process employed, capacity of the wastewater treatment plant, and other pertinent factors. The limitations or restrictions on materials or characteristics of waste or wastewater discharged to the sanitary sewer which shall not be violated without approval of the Superintendent are as follows:

- a) Wastewater having a temperature higher than 150 degrees Fahrenheit (65 degrees Celsius).
- b) Wastewater containing more than 25 milligrams per liter of petroleum oil, non-biodegradable cutting oils, or product of mineral oil origin.

- c) Wastewater from industrial plants containing floatable oils, fat or grease.
- d) Any garbage that has not been properly shredded (see Article I, Section 13). Garbage grinders may be connected to sanitary sewers from homes, hotels, institutions, restaurants, hospitals, catering establishments, or similar places where garbage originates from the preparation of food in kitchens for the purpose of consumption on the premises or when served by caterers.
- e) Any waters or wastes containing iron, chromium, copper, zinc and similar objectionable or toxic substances to such degree that any such material received in the composite wastewater treatment works exceeds the limits established by the superintendent for such materials.
- f) Any waters or wastes containing odor-producing substances exceeding limits which may be established by the Superintendent.
- g) Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Superintendent in compliance with applicable state or federal regulations.
- h) Quantities of flow, concentrations, or both which constitute a "slug" as defined herein.
- i) Waters or wastes containing substances which are not amendable to treatment or reduction by the wastewater treatment processes employed, or are amendable to treatment only to such a degree that the wastewater treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.
- j) Any water or wastes which, by interaction with other water or wastes in public sewer system, release

obnoxious gases, or create a condition deleterious to structures and treatment process.

5. If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which waters contain the substances or possesses the characteristics enumerated in Section 4 of this Article, and which in the judgment of the Superintendent, may have a deleterious effect upon the wastewater facilities, processes equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Superintendent may:
 - a) Reject the wastes,
 - b) Require pretreatment to an acceptable condition for discharge to the public sewers,
 - c) Require control over the quantities and rates of discharge, and/or
 - d) Require payment to cover the added costs of handling and treating the wastes not covered by sewer charges under the provisions of Section II of this Article.

If the superintendent permits the pretreatment or equalization of waste flows, the design and installation of the plant and equipment shall be subject to the review and approval of the Superintendent and the North Dakota State Health Department and Consolidated Laboratories.

6. Grease, oil, and sand interceptors shall be provided when, in the opinion of the Superintendent, they are necessary for the proper handling of liquid wastes containing floatable grease in excessive amounts as specified in Section 4 (c), or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the North Dakota Plumbing Code and shall be located as to be readily and easily accessible for cleaning and inspection. In the maintaining of these

interceptors, the owner shall be responsible for the proper removal and disposal by appropriate means of the captivated material and shall remain records of the dates, and means of disposal which are subject to review by the Superintendent. Any removal and saving of the collected materials not performed by the owner/personnel must be performed by currently licensed waste disposal firms.

7. Where pretreatment or flowing-equalizing facilities are provided or required by any waters or wastes, they shall be maintained continuously in satisfactory and effecting operation by the owner at his expense.
8. The superintendent may require a user of sewer services to provide information needed to determine compliance with this ordinance. These requirements may include:
 - a) Wastewater discharge peak rate and volume over a specified time period.
 - b) Chemical analysis of wastewaters.
 - c) Information on raw materials, processes, and products affecting wastewater volume and quality.
 - d) Quantity and disposition of specific liquid, sludge, oil, solvent, or other materials important to sewer use control.
 - e) A plot plan of sewers of the user's property showing sewer and pretreatment facilities.
 - f) Details of wastewater pretreatment facilities.
 - g) Details of systems to prevent and control the losses of materials through spills to the municipal sewer.
9. All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this ordinance shall be determined in accordance with the latest edition of "Standard Methods for Examination of Water and Wastewater",

published by the American Public Health Association. Sampling methods, location, times, duration and frequencies are to be determined on an individual basis by the Superintendent.

10. No statement contained in this article shall be construed as preventing any special agreement or arrangement between the county and the City of Fargo and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the County for treatment.

E. VANDALISM

1. No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance or equipment which is a part of the wastewater facilities. Any person violating this provision shall be subject to immediate prosecution.

F. POWER AND AUTHORITY OF INSPECTIONS

1. The Superintendent or other duly authorized employees are authorized to obtain information concerning industrial processes which have a direct bearing on the kind and source of discharge to the wastewater collection system. The industry may withhold information considered confidential. The industry must establish that the revelation to the public of the information in question might result in an advantage to competitors.
2. While performing the necessary work on private properties referred to in Article VII, Section 1 above, the Superintendent or duly authorized employees of the County shall observe all safety rules applicable to the premises established by the company, and the company shall be held harmless for injury or death to the County employees, and the County shall indemnify the company against loss or damage to its property by County employees and against liability claims and demands for personal injury or property damage asserted against the company growing out of the

gauging and sampling operation, except such as may be caused by negligence or failure of the company to maintain safe conditions as required in Article V, Section 8.

3. The Superintendent and other duly authorized employees of the County bearing proper credentials and identification shall be permitted to enter all private properties through which the County holds a duly negotiated easement for the purpose of, but not limited to, inspection, observation, measurement, sampling, repair, and maintenance of any portion of the wastewater facilities lying within said easement. All entry and subsequent work, if any, on said easement, shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property involved.

G. RATE OF DETERMINATION

1. PURPOSE

The purpose of this section shall be to generate sufficient revenue to pay all costs for the operation and maintenance of the complete wastewater system. The costs shall be distributed to all users of the system in proportion to each user's contribution to the total loading of the treatment works. Factors such as strength (BOD and TSS), volume, and delivery flow rate characteristics shall be considered and included as the basis of the user's contribution to ensure a proportional distribution of operation and maintenance costs to each user.

2. DETERMINING EACH USER'S WASTEWATER SERVICE CHARGE

- a. The City of Fargo and Southeast Cass Water Resource District agree that properties being served by the Project shall be charged a sewer rate for operation, repair and maintenance of the sewage collection and treatment facilities located in the City, which rate shall be comprised of these elements:

1. A monthly fee of \$4.70, which is the present sewer rate in the City. That monthly fee would be tied to the average residential sewer rate in Fargo and would increase or decrease along with the average residential rates in the City. That fee shall cover all operation, maintenance and repair costs of the collection and treatment facilities within the corporate boundaries of the City.
2. A monthly fee for the operation, repair and maintenance of the system outside of the City. Such fee shall initially be set at \$8.50 per month and shall be deposited into the operation and maintenance fund for the Project established by the City. That fee shall remain at \$8.50 (unless raised as set out below) for each billing through December 1, 1991. The monthly fee for the next twelve (12) months for this component of the rate will be based on an amount equal to raise 105% of the actual costs incurred by the City in 1991.

The actual cost to the City shall be based on the actual cost to the City of performing operation, maintenance, administrative, and legal services of the City which are directly related to the operation, repair and maintenance of the Project, including the collection of sewer system. Each year thereafter the fee will be based on the amount equal to collect 105% of the actual costs of the City for the prior year. Provided, however, if during the initial period where the fee is established at \$8.50 per month, the City's actual costs exceed the amount available in the operation and maintenance fund, the \$8.50 per month fee shall be increased for Fargo to a sum sufficient to cover actual costs. Such increase must be approved by District.

3. A monthly fee to restore the capital repair fund to an amount equal to \$50,000, the original amount of the capital repair fund. As long as the amount in the

capital repair fund is equal to or greater than \$40,000, no fee shall be charged. If the total sum in the capital repair fund in any quarter is reduced to an amount below that level, the next twenty-four (24) monthly payments may be raised an amount so as to raise sufficient funds to restore capital repair fund to \$50,000 at the end of the collection of the twenty-fourth (24th) monthly payment. Provided, however, if the City and the District agree that as a result of the expansion of the Project, or continual unforeseen capital repair expenses, that the \$50,000 reserve is insufficient to handle the needs of the system, the \$50,000 level and \$40,000 level set out above may be raised with the written consent of the City and the District.

The City will submit a bill to all properties connecting to the Project. Payment to the City will be due within thirty (30) days after the billing after which time the City may add interest to the charges at a rate of 10% per annum, unless the City establishes a rate of interest to charge its own residents will be the interest rate assessed under this agreement. If the actual rate being charged is disputed in writing by 10% or more of the users of the Project, the rate schedule will be reviewed by the District. If the District determines that the rate being charged is not proper, and the City does not reduce the rate to the rate approved by the District, the dispute shall be resolved by arbitration. The City shall appoint one arbitrator, the District shall appoint another arbitrator, and the two of them shall agree on a third arbitrator. The arbitration panel shall not have the authority to change the method of establishing the rate, but shall solely be responsible for determining whether or not the charges conform to the rates established in this agreement.

- b. If any property which is connected to the Project becomes a part of the City, the sewer rates set by this agreement

- shall cease for those properties, and the City shall determine appropriate fee to charge its own residents for their sewer service, which may or may not be the same charge assessed to other residents in the City with a different sewer system.
- c. If a property which is part of the Project or becomes connected to the Project at a later date comes within the City limits of an existing City or a newly incorporated City, any obligation and responsibility of the District and the City to maintain and repair the system as well as to permit that sewage to be treated in the sewage treatment facilities of the City shall terminate. In order to maintain the use of the sewage treatment facilities of the City, a separate agreement must be entered into between the City and the incorporated City of which such property is a part. Provided, however, that no property shall have service terminated in any year in which the District has levied an assessment against the property for purposes of paying off the bonds used to finance the construction of the Project.
 - d. If a property included originally in the Project is subdivided so that there is more than one sewer hookup, the hookup fee set out below must be paid before any other hookups are permitted. However, the District and City will allow other property outside the limits of an incorporated City to hook up to this Project under the following conditions:
 1. A hookup fee in the amount determined by the District is paid into the capital repair fund established by this Project.
 2. The property owner or owners shall pay all costs of connecting their house sewer and/or septic tank to the Project, and pay all expansion costs of the collection system needed to provide sewage service to their property.

3. The property owner must request a Petition of Annexation and enter into an easement agreement for maintenance with the City of Fargo and Southeast Cass Water Resource District.
4. The engineer for the City and the engineer for the District must agree that the Project and sewage treatment facility of the City have sufficient capacity to handle the added sewage which will result from the new hookup or hookups, and that the proposed collection system is adequate and meets or exceeds the quality of the original collection system of the Project.
5. The property owner must have complied with all applicable zoning, subdivision and building permit requirements that are applicable to that property.
6. A written permit is given by the City, which written permit must be given if conditions A through E are met.

3. DETERMINING EACH USER'S WASTEWATER CONTRIBUTION PERCENTAGE

In accordance with Chapter 17 of the City of Fargo's sewer and sewage ordinance and any future amendments.

4. DETERMINING A SURCHARGE SYSTEM FOR USERS WITH EXCESS BOD AND SS.

In accordance with Chapter 17 of the City of Fargo's sewers and sewage ordinance and any future amendments.

5. PAYMENT OF THE USER'S WASTEWATER SERVICE CHARGE AND PENALTIES.

In accordance with Chapter 17 of the City of Fargo's sewers and sewage ordinance and any future amendments.

6. REVIEW OF EACH USER'S WASTEWATER SERVICE CHARGE.

In accordance with Chapter 17 of the City of Fargo's sewers and sewage ordinance and any future amendments.

7. NOTIFICATION.

In accordance with Chapter 17 of the City of Fargo's sewers and sewage ordinance and any future amendments.

TL/jm

8/16/05