PUBLIC HEALTH ORDINANCE FOR
McHENRY COUNTY ILLINOIS

McHENRY COUNTY DEPARTMENT OF HEALTH

ARTICLE IV
WASTEWATER AND SEWAGE TREATMENT AND DISPOSAL

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PURPOSE: See § 8.04.020 of Article I.

§ 8.04.350 GENERAL PROVISIONS

A. Title This Ordinance shall be known and cited as "The McHenry County Private Sewage Treatment and Disposal Ordinance" (hereinafter the "Ordinance").

B. General Rule Construction of private sewage disposal systems shall not be permitted on property where a sanitary sewer is available and accessible. If a sanitary sewer is not available and accessible, every residence, business, building or enterprise shall have its own private sewage disposal system in conformance with the provisions set forth in this Ordinance.

C. Applicability After the effective date of adoption of this Ordinance, all private sewage disposal systems as defined herein shall only be constructed or modified in accordance with the provisions of this Ordinance.

DEFINITIONS See § 8.04.010 of Article I.

§ 8.04.370 GENERAL REQUIREMENTS

A. Owner's Responsibility Property owners of all buildings or places where people live, work, or assemble, shall provide for the sanitary disposal of all human waste and domestic sewage. Human waste and domestic sewage from each such building or place not disposed of by discharging into a sanitary sewer, shall be disposed of in compliance with this Ordinance.

B. Building Occupancy No person shall occupy or permit occupancy of any building or structure not in compliance with Subsection A above.

C. Rate of Flow for Domestic Sewage Each unit of the private sewage disposal system shall be designed to treat the volume of domestic sewage discharged to it. The volume of sewage flow shall be determined from § 8.04.430 A-D and Tables IA, IB, and II (See Appendix B).

D. Type of Waste A private sewage disposal system shall be designed to receive all domestic sewage from the buildings served. No cooling water, groundwater, discharge from roof drains, discharge from footing tile drains, swimming pool wastewater, or other clear water discharges shall be directed to the private sewage disposal system. Waste products, such as automotive grease, oils, solvents, and chemicals, shall not be discharged to a private sewage disposal system. These waste products shall be handled according to the rules for disposal of oil, gas and grease promulgated under the Environmental Protection Act, or according to 35 Ill. Adm. Code Subtitle G. Drains or fixtures receiving any wastewater other than domestic sewage shall be

discharged to a special waste holding tank and not to a private sewage disposal system; (See § 8.04.730).

E. Water Softener Backwash Backwash water from a water softener shall discharge to one of the following:

1. A separate subsurface seepage system provided that the seepage field is designed to accommodate the liquid capacity of the water softener on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.

2. A separate building drain, in accordance with the Illinois Plumbing Code, that will discharge to a subsurface seepage system, provided that seepage field is designed to accommodate the flow from this device on a daily basis. The separate building drain from this device may bypass the septic tank in front of the seepage field. A septic tank is not required in front of a seepage field receiving flow from this device.

F. Hot Tub Wastewater Domestic sewage generated by a hot tub or other similar device shall be discharged to one of the following:

1. A separate subsurface seepage system, provided the seepage field is designed to accommodate the liquid capacity of the hot tub on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.

2. The septic field serving the domestic sewage flow, provided the seepage field is increased in size to accommodate the additional flow from the hot tub on a daily basis. This drainage shall be piped around the septic tank and directly into the seepage field.

G. Clear Water Discharges Clear water wastes may be discharged directly to storm sewers, natural drainage areas, or to the ground surface without additional treatment provided that it does not conflict with any State or local drainage law. Such drainage shall not result in nuisance conditions which create an offensive odor, or which produce a stagnant wet area, or which produce an environment for the breeding of insects.

H. Swimming Pools Wastewater from swimming pools may not be discharged to a private sewage disposal system receiving domestic sewage. Wash or backwash water from swimming pool sand filters may be discharged to natural drainage areas, storm sewers, or to the ground surface provided that it does not conflict with any State or local drainage law. Diatomaceous earth filter wash or backwash water may be discharged to one of the above after treatment consisting of one of the following:

1. Passing the earth filter wash or backwash water through a separation tank designed for removal of the diatomaceous earth and suspended solids.

2. Settling the earth filter wash or backwash water in a tank, which is capable of holding the volume of one backwash. One backwash is defined as the amount of water generated from the backwash of the filters for a period of 2 minutes for diatomaceous earth filters, at the required backwash flow rate. The tank shall be dewatered after settling and prior to subsequent backwashes. Settled sludge shall be periodically removed to prevent flushing of solids during backwashing.

3. A separate private sewage disposal system designed and constructed in accordance with the applicable Sections of this Ordinance.

I. Off Site or Shared Private Sewage Disposal Systems Private sewage disposal systems to serve more than one property or on a property separate from the structure to be served, must meet one of the following conditions:

1. The private sewage disposal system is located on common property under joint ownership of the users and a deed restriction has been recorded with the McHenry County Recorder of Deeds ensuring the property will remain under common ownership; or
2. A private sewage disposal system easement has been established granting access to all users for installation, operation, repair, sampling and maintenance of the system. The easement must be recorded with the McHenry County Recorder of Deeds.

J. Water and Sewer Line Separation See Table IV, Appendix B.

K. Permit Required No private sewage disposal system shall be constructed, replaced, modified, altered, extended or repaired until a permit has been issued by the Health Authority. Applications for permits shall be in writing on forms provided by the Department and shall be signed by the owner or his authorized agent. Said permit to construct replace, modify, alter, extend or repair shall be valid for a period of two (2) years from date of issuance. If construction or repair is not completed within said period, the permit shall expire unless an extension is approved by the Health Authority. The permit can be renewed for a period of 6 (six) months for 1/2 of the prevailing permit fee, provided all the conditions of the original submittal remain valid. Where a private sewage disposal system is required for a structure, no building permit shall be issued without the prior or simultaneous issuance of a private sewage disposal system permit. No private sewage disposal system shall be put into use until it has been approved by the Health Authority.

L. Pending Permit Applications: Permit applications that are pending approval due to insufficient information or require revision due to non-compliance with Ordinance requirements, are subject to cancellation, after notification to the applicant, if the permit application is inactive for six (6) months.

M. No Permit Required No permit is required when the nature of a repair is so minor as to not influence the size or substantially alter the function of the system (i.e., broken vent pipe, settling of distribution box, replacement of solid piping).

N. New Construction In all cases of new construction, the private sewage disposal system shall either be in compliance with Article IV requirements or new septic plans approved for the new construction prior to the issuance of the building permit.

O. Exemptions

1. **Structure Destroyed or Unsound** In the event a structure is destroyed by 50% or more of the existing habitable square footage by fire, wind, or water, or 50% or more of the existing habitable square footage is determined by a Licensed Architect or Structural Engineer to be unsound; it shall be eligible for a replacement structure if the property cannot support a private sewage disposal system meeting Article IV new construction requirements. A

replacement residential structure must be of the same number of bedrooms and can be up to 50% larger in habitable square footage than the original structure. The estimated and actual domestic sewage flow of a replacement non-residential structure may not exceed the estimated domestic sewage flow (See Table II, Appendix B) of the original structure. A Licensed Architect or Structural Engineer shall issue a certificate as to the condition of the structure to the Health Authority; or

2. **Additions Greater than 50% or Replacement Structures**
   a. When additions greater than 50% of the habitable square footage of the existing structure, or a replacement structure, and no new bedrooms are added; the private sewage disposal system must be in acceptable condition, as confirmed by an evaluation provided by an Illinois Licensed Engineer or Licensed Environmental Health Practitioner; or
   b. New private sewage disposal system plans must have been approved by the Department for the structure.

P. Other Restrictions The above exemptions do not supersede any local zoning or building restrictions (i.e. minimum size of structure and structure setbacks).

Q. Application for Permit Application for permits shall be in writing, shall be signed by the applicant and property owner, if the owner is not the applicant, and shall include the following unless not applicable to the application (i.e. abandonments):

1. Name and address of the applicant, and date and signature of owner, owner's agent or private sewage disposal system installation contractor.

2. The location and legal description of the property and permanent property index number (PPI) on which construction, repair, replacement, modification, alteration, abandonment or extension is proposed, and size (dimensions) and area of lot or building site. A plat of survey of the property shall be provided. No plat of survey is required for permit applications for private sewage disposal system abandonment only.

3. The number of bedrooms (for single-family residences) or the estimated domestic sewage flows from Table II, Appendix B (for non-residential structures).

4. A description including sizes of each unit of the proposed sewage treatment or disposal systems, and all calculations that entered into the sizing of the system(s).

5. Evidence to demonstrate that a public sewer is not available and accessible to the property line of the building for which a septic system is proposed.

6. Soil findings from on-site soil evaluation as required in § 8.04.420 A through § 8.04.420 E.

7. Four (4) copies of the design, not exceeding 24" by 36" in size, of the system drawn to scale (one inch equals 10', 20', or 30') and fully dimensioned, and specifications to fully describe the system. It shall show:

   a. Lot boundaries and property dimensions;

   b. Proper orientation of directions relative to the property in question;

c. Locations of any underground utilities;

d. Locations of any easements and/or septic restricted areas;

e. Locations and sizes of all drains, wells, storm water drywells, buildings, driveways, parking areas, sidewalks, decks, patios, and designated subsurface seepage and future replacement subsurface seepage areas, whether existing or proposed on the subject and adjacent properties;

f. The private sewage disposal system to be constructed, repaired, replaced, modified, altered or extended;

g. Locations of soil borings;

h. A clearly described benchmark which will be maintained throughout the construction period;

i. Any trees to remain within 10 feet of any part of the private sewage disposal system;

j. Existing and proposed topography in one foot contours;

k. A detailed plan of proposed tank(s) and effluent disposal system (both top and side view);

l. All critical elevations, (e.g. top of foundation, invert of plumbing stub-out, inlet and outlet of tank, inlet of distribution box, seepage tile line, bottom of trench, etc.) referenced to the benchmark;

m. Private sewage disposal system design calculations (sizing, LPP calculations, etc.);

n. Building location with all lateral distances indicated, including distance from building served to system, from system to well(s) (list type of wells), adjoining systems, lot lines, lake, stream or other water-course;

o. Detail of lift station including tank size, dose, reserve capacity, pump specifications, access riser to 6 inches above grade, forcemain protection and high water alarm;

p. Trench detail showing a cross sectional view of the subsurface seepage area; and

q. A statement, which specifies whether or not the private sewage disposal system is designed to accommodate a hot tub or garbage grinder/garbage disposal or water softener; whether the system is located within the 100 year flood zone; and the impact of any fill (if applicable) and

r. Location of special waste holding tank on subject and neighboring properties.

R. All private sewage disposal system designs shall be drawn by or under the direct supervision of a Registered Professional Engineer (as that term is defined in 225 ILCS 325) or Licensed Private Sewage Disposal Installation Contractor (as defined) or a Licensed Environmental Health

Practitioner (as defined). All private sewage disposal system designs shall be based on soil characterization information determined by a soil classifier, meeting the criteria in § 8.04.420 A through § 8.04.420 E. All copies of application forms and plans shall bear the signature and license expiration date of the individual who performed or supervised the specific work. Any person who designs a private sewage disposal system shall be responsible for the accuracy of all information required by § 804.370 ¶ Q on that design.

S. Permit Granted When, upon review of the application, the proposed design meets the requirements of the Ordinance, the Health Authority shall grant written approval of said application. The Department may impose conditions on the permit approval (i.e. monitoring of actual water usage, conducting waste strength analysis after a specific operating period). Failure to fulfill the conditions of the permit approval represents a violation of this Ordinance.

T. Permit Denial When, upon review of the application, the Health Authority finds the information incomplete, inaccurate, or does not meet the requirements of this Ordinance, they shall deny approval of said application.

U. Appeal of Review or Permit Denial Any permit applicant may appeal the review or denial of any permit application through the provisions set forth in Article I of the Public Health Ordinance.

V. Variances When circumstances exist which make impractical full compliance with the requirements of this Ordinance, as listed in this paragraph, an applicant may request that the Health Authority grant a variance. Such request shall be made in writing and shall accompany the system plans. Any data which supports the request shall be submitted. The Health Authority may grant the request for variance, provided said variance does not conflict with the stated purpose of this Ordinance. (See Table VIII in Appendix B for general guidelines.)

W. Variances for Existing Structures When variations are granted for separation distances to water wells; separation from bottom of trench to limiting layers; location of the system in the flood hazard area or for sizing of the seepage area at less than required based upon Tables IA and IB in Appendix B for replacement private sewage disposal systems for existing structures, these restrictions must be recorded as covenant(s) running with the land with the McHenry County Recorder of Deeds.

X. Maintenance of Private Sewage Disposal Systems

1. Private sewage disposal systems installed after January 1, 2014 shall be maintained in compliance with Section 905.20q of the Illinois Private Sewage Disposal Code.
2. Private sewage disposal systems which are subject to flooding shall not be operated when floodwaters are covering the septic tank, lift station, pre-treatment unit or any portion of the seepage component.
3. Private sewage disposal systems which are subject to the influence of seasonal high groundwater shall be monitored and pumped as often as necessary by a qualified and permitted septic pumper to prevent a malfunction of the private sewage disposal system.
4. The area of the private sewage disposal system shall be maintained as indicated on the approved design including finished grading and vegetative cover over the seepage component.
5. Existing private sewage disposal system components, which are no longer accepted for new installations, including but not limited to cesspools, dry wells, or modified leaching pits, may not be repaired or modified, and shall be replaced with an approved private

sewage disposal system in the event that it is damaged, structurally deteriorated or malfunctions.

6. Private sewage disposal systems shall be operated within the design capacity and maximum waste strength parameters of the approved design.
7. Malfunctioning private sewage disposal systems shall be repaired or replaced in compliance with this Ordinance.
8. All components of a private sewage disposal system shall be maintained in good working order. Components that are deteriorated, missing or otherwise in a condition which no longer functions properly, shall be repaired or replaced in compliance with this Ordinance.

Y. Construction Impact Reviews A construction impact review (health review) must be completed when historical permit documentation is not available to confirm that the proposed construction of an addition, remodel, accessory structure, etc., will comply with Ordinance requirements related to private sewage disposal system(s). An application, on forms provided by the Department, must be submitted with a site plan detailing the work to be done and setback distances to water wells and private sewage disposal system components. A health review fee, as outlined in the Public Health Fee Ordinance, is required.

§ 8.04.380 EXPERIMENTAL SYSTEMS

A. **Experimental Systems – General** The Health Authority may issue an experimental use permit for a private sewage disposal system or component which is new or innovative, and is not described in this Ordinance. Written approval is also required from the Illinois Department of Public Health for such system.

B. **Experimental Permit Applications** Applications for experimental use permit shall be submitted in accordance with, and shall conform to, the permit requirements set forth in § 8.04.370 K and § 8.04.370 Q as well as the following additional criteria:

1. Experimental Permit Details The application shall specify the type of proposed system or component and be accompanied by plans, specifications per applicable sections and engineering data to support the system's ability to comply with the system design requirements under § 8.04.420 and § 8.04.430.

2. Experimental Replacement System The experimental system shall be replaced with an approved system if the experimental system fails to perform in accordance with any of the sections of this Ordinance or with criteria established as a condition to approval of the system.

3. Experimental Permit Review Process Upon receipt of the information required in § 8.04.430, the Department will review the experimental system to assess the system's ability to conform to requirements of this Ordinance. The Department may request additional review by or consultative assistance from other qualified private sewage disposal system professionals. (See § 8.04.550). If approved, the Department will issue an "Experimental Use Permit" for the system and file a Certificate of Notice with the Office of the McHenry County Recorder, which shall indicate that the property's private sewage disposal system is an experimental system under evaluation by the Department. The Certificate of Notice shall remain on the title through the evaluation period. The performance of the experimental system shall be evaluated by the Department for a two-

year period. The experimental system shall be in use throughout the evaluation period. At the end of the two-year evaluation period, the Department shall make a determination as to the system's acceptability. The system shall be unacceptable if sewage erupts from the ground, or if the system fails to meet the criteria established as condition to approval of the system. If acceptable, the experimental system shall become an approved private sewage disposal system for that specific site. If unacceptable, the experimental system shall not be approved and shall be replaced with an approved system. The Department shall notify the applicant in writing of its final determination. If acceptable, the Department shall record a release of the Certificate of Notice. If unacceptable, the Certificate of Notice shall remain on the title until an approved system has been installed.

§ 8.04.390 PRIVATE SEWAGE DISPOSAL SYSTEM INSTALLATION

A. **Licensed Private Sewage Disposal Installation Contractor** No installation shall be made without a written permit from the Health Authority issued either to a Licensed Private Sewage Disposal Installation Contractor, or to the owner or lessee of the lot. All private sewage disposal system installations, repairs, alterations, extensions and modifications must be performed by a Licensed Private Sewage Disposal Installation Contractor. In order to operate in McHenry County, a contractor must be licensed by the Illinois Department of Public Health (IDPH) pursuant to 225 ILCS 225/4, of the Illinois Compiled Statutes.

B. **Installer Responsibilities** It is the responsibility of the licensed private sewage disposal installation contractor to install the private sewage disposal system per the approved design, and to notify the Health Authority of any discrepancies between the installation site and the approved private sewage disposal system design. Failure to install the private sewage disposal system per the approved design or to notify the Health Authority of such discrepancies constitutes a violation of this Ordinance by the Private Sewage Disposal Installation Contractor.

C. **Protection of Area** After the permit has been issued for a proposed private sewage disposal system, the area in which the system is to be installed shall be identified and shall not be cut, excavated, filled, or otherwise altered in any way except as specified in the approved plans. The permit holder shall protect the area from construction traffic and all other activities, which might compact the soil.

D. **Owner Responsibility** It shall be the responsibility of the property owner to protect all components and reserve areas of their private sewage disposal system from damage due to installation of utilities.

E. **Free from Encroachment** The area to be used for a private sewage disposal system shall be selected and maintained so that it is free from encroachment by driveways, decks, accessory buildings, swimming pools, parking areas, buried lawn sprinkling systems, underground utility services, patios, slabs, additions to the original structure or any other structure which limits free access to the system for maintenance, servicing or proper operation. Once installed, the private sewage disposal system shall remain free from encroachment.

F. **Construction Traffic** On sites where private sewage disposal system installation will be difficult (i.e. on small lots), the Health Authority will require that the location for material storage and a pathway for construction traffic be specified on the private sewage disposal system design.

G. **Tree Removal** Any removal of trees greater than or equal to six (6) inches in diameter shall be by

cutting near the surface. Stumps may be removed by grinding or cutting, but shall not be uprooted.

§ 8.04.400 FEES

A. **Fee Schedule** No permit shall be issued until the appropriate permit fee, as set forth in the Public Health Fee Ordinance, has been paid. All fees double if work is started without a permit or registration.

B. **Miscellaneous Sewage Program Fees** The fee schedule is set forth in the Public Health Fee Ordinance for miscellaneous services.

§ 8.04.410 INSPECTIONS

A. **Department Access** The Department shall have access to any property at reasonable times seeking permit approval, site evaluation review, health review or is required to maintain a registration for a non-residential pre-treatment device or special waste holding tank, or to investigate a malfunctioning private sewage disposal system to determine satisfactory compliance with the provisions set forth in the Ordinance. Access shall be deemed essential for, but not necessarily limited to, the following:

1. Performing soil investigations and witnessing soil borings.

2. On-site layout review.

3. Inspecting any stage of installation of the system including all system components prior to backfill and a final inspection following completion of the system installation.

4. Inspection of a malfunctioning private sewage disposal system.

5. Confirming the location(s) of the components of a private sewage disposal system.

6. Inspections of non-residential pre-treatment devices or special waste holding tanks.

B. **Notice of Installation** The owner or contractor shall give 1 business day advance notice to the Department before beginning installation, modification, alteration, or extension or abandonment of any component of the private sewage disposal system. Inspection and approval by the Department is required prior to covering any portion of the system which will prevent the Department from viewing the system to determine compliance with this Ordinance. Additional inspections are required of Types 3, 4, and 5 systems, and any system incorporating low pressure pipe distribution. Refer to § 8.04.430 ¶ K and L and § 8.04.540 ¶ J and S for additional information.

C. **Order to Uncover** If any person constructs, installs, repairs, or modifies a private sewage disposal system without complying with any of the requirements of this Ordinance and backfills any portion of the system or covers any portion of the system with earth, gravel, or any other material which will prevent the Department from viewing the system to determine compliance with this Ordinance, the property owner and/or private sewage disposal installation contractor shall uncover the backfilled or covered portions of the system for inspection by the Department, upon request of the Department.

§ 8.04.420 FIELD EXAMINATION OF SITE SOIL MATERIALS

A. **Soil Investigation** Determination of soil characteristics on sites proposed for development with private sewage disposal systems shall be based on soil boring data collected by a soil classifier. Each property owner or applicant shall contract with a soil classifier, to identify soil characteristics and classifications for the purpose of reporting soil suitability potential for soil absorption systems. The Department shall utilize NRCS for periodic quality control sessions with all classifiers available for the performance of on-site soil evaluations, and for needed soils expertise to the Department in connection with the needs of this Ordinance.

B. **Boring Criteria** There shall be a minimum of three (3) suitable borings per soil absorption system site. More soil borings may be necessary for accurate and appropriate evaluation of a site where there is concern about the consistency of the soil materials. There shall be a minimum of one boring at the lowest elevation and one at the highest elevation of the seepage area. Such borings shall extend at least five (5) feet below the natural ground surface or greater if needed, based on the proposed system design. The proposed subsurface seepage system shall be located within the area of the soil borings. Soil borings shall be valid for one year after the test date, after which time an update is required by the soil classifier.

C. **Soil Pits** Observation and determination of soil characteristics may also be determined from a pit dug by a backhoe or other excavating equipment. Soil pits (backhoe excavation) shall be required in cases where ground is frozen, where the soil materials are considerably varied in texture, where there has been filling or proposed cutting of soils, or where trenches are proposed deeper than normally considered, etc. Such soil pits shall be prepared at the perimeter of the expected soil absorption area to minimize damage to natural soil distribution network that may be caused by settling after installation of the system. Soil pits shall be at least two (2) feet wide and five (5) feet deep.

D. **Site Characteristics** Site characteristics to be described include zones of seasonal and permanent water saturation, depth to bedrock, USDA/NRCS soil texture, USDA/NRCS soil structural features of note, slope, compaction and depth, soil coloration, depth of soil redoximorphic features, permeability range, and other limiting soil characteristics that may reduce permeability.

E. **County Review** The County reserves the right to review site soil characteristics with assistance from a certified NRCS soil classifier. In the process, the County reserves the right to witness any such tests. If conflicting soils investigation is provided about a given site, a certified NRCS soil classifier will be requested to provide professional information.

F. **Site Evaluation** Private sewage disposal systems may be utilized where lots or parcels are in compliance with the applicable County Ordinances in effect on the date of permit application and all of the criteria for site consideration in Tables IA and IB (See Appendix B) are satisfied.

G. **Minimum Depth to Limiting Layer** In no case shall the depth to any limiting layer be less than 12 inches from the natural soil surface. See Tables IA and IB, Appendix B.

H. **Setbacks** All setbacks and horizontal distances in Table IV, Appendix B shall be satisfied.

I. **Surface Water Overflow** The site of the installation shall not be subject to saturation from surface water overflow from natural or artificial drainage of ground surfaces, driveways, roads

or roof drains.

J. **Flood Hazard Area** The land elevation at the site of the proposed system installation shall not be subject to flooding, (i.e. shall not be within the 100 year flood hazard area as defined by the base flood elevation of the closest stream or body of water). Such elevation shall be provided in USGS/MSL (United States Geological Survey Mean Sea Level) datum.

K. **Future Replacement Area – Non Residential Properties** In all cases where non-residential properties are proposed for development, an area for a full-size replacement private sewage disposal system shall be provided. The area shall be suitable for septic installation as confirmed by onsite soil investigation and designated for future septic system replacement. This replacement area shall be kept free from encroachment on all properties per § 8.04.390 ¶ E.

L. **Slope Restrictions** Private sewage disposal systems shall not be permitted on slopes exceeding 25% (reference Tables IA and IB, Appendix B on slope limitation).

M. **Septic Suitability on New Land Parcels** Parcels of less than 10 acres created on or after September 1, 1990 will be required to demonstrate (via on-site soils evaluation procedures) one-half acre of contiguous, non-critical soils within the boundaries of the parcel(s), or designated subsurface seepage and future replacement subsurface seepage areas, in non-critical soils, in compliance with § 8.04.650 Platting of New Subdivisions, before a permit will be issued for installation of a private sewage disposal system. The private sewage disposal system must be installed within an area of non-critical soils, or the designated subsurface seepage area. This is to ensure that all new parcels being created are being developed in a manner that is consistent with § 8.04.650. On all lots within a subdivision recorded after the date of February 1, 2003, the 1/2 acre of contiguous, non-critical soils, or the designated subsurface seepage areas on each lot shall not be altered or modified until a private sewage disposal system permit has been issued.

N. **Water Table Monitoring Wells** Water table monitoring may be utilized when the property owner feels that the results of the soil test conducted do not accurately reflect present day seasonal water tables. The following requirements will be used when a request is made to use observed water tables in lieu of soil borings. Monitoring in itself does not ensure approval to install a soil absorption system. Once monitoring is completed, a request for a variance from the use of soil redoximorphic features as an indicator of high groundwater or seasonal saturation must be made in writing to the Public Health Administrator.

1. **Installation Approval** Written approval will be given by the Department after all the required data listed below has been received and reviewed. Construction of monitoring wells shall not start until this approval has been received.

2. **Soil Boring Logs** Detailed soil boring logs of the area to be monitored are to be submitted with the proposal.

3. **Number of Monitoring Wells** No less than two (2) monitoring wells shall be present in the area of the proposed private sewage disposal system. One (1) of the monitoring wells shall be located in the lowest portion of the proposed subsurface seepage area and one at the highest elevation. Monitoring wells shall be present to accurately portray seasonal groundwater conditions.

4. **Location and Design** The location and design of the monitoring wells shall be drawn to scale on a plot sheet. The design shall be based upon Illustration 2 (Appendix C) or other design as approved by the Department.

5. **Monitoring Data Format** The monitoring data shall be recorded by a licensed professional engineer or soil classifier.

6. **Monitoring Period** The wells will be required to be monitored for a period of one (1) year with precipitation amounts of plus or minus 15% of the average. Rainfall during the Spring season (March 21 to June 21) must be equal to or greater than the normal amount for that period. The precipitation amounts will be taken from the closest reporting weather station.

7. **Monitoring Frequency** The observations shall be made within two (2) weeks after the frost is absent and thereafter every seven (7) days until July 1st, after which, the frequency shall be once a month until the test year is complete. However, if there is a heavy rainfall (1/2 inch or more within a 24 hour period) the monitoring well shall be checked within 24 hours.

8. **Monthly Precipitation Totals** Precipitation totals are to be recorded daily and reported with monitoring well levels monthly.

9. **Site Approval** If no two (2) consecutive observations show the presence of water above the critical depth, the site will be considered acceptable.

§ 8.04.430 SOIL ABSORPTION SYSTEM REQUIREMENTS

A. **Design of Soil Absorption System** The construction of any private sewage disposal system requiring soil for ultimate treatment, shall conform to the requirements herein established. The private sewage disposal system design shall be prepared by a professional designer meeting the qualifications of § 8.04.370 R experienced in the field of on-site private sewage disposal system design. The system shall be designed to receive all domestic sewage from the structure proposed to be served. Plans and specifications shall be in accord with the requirements in § 8.04.370 R of this Ordinance.

B. **Basis of Design** Private sewage disposal systems shall be located within an area of suitable soil. Private sewage disposal system sizing is determined by the most restrictive soil boring in the area of the seepage field. (See Tables IA and IB, Appendix B). The Department will allow split sizing or a split seepage area detail based upon the most restrictive of two (2) soil borings which delineate the highest and lowest portion of the seepage field area. Split sizing or split trench details require separate trenches, at grade units or mound units for each separate design permeability range or seepage area detail.

C. **Soil Absorption System Sizing** The minimum design for a private sewage disposal system serving any non-residential structure or structures shall be based on the permeability range in inches per hour from Tables IA and IB (See Appendix B). This shall be used to determine the maximum sewage loading rate (gallons per square foot per day) for establishing bottom soil absorption area (square feet). When the sewage flow exceeds 1500 gal./day, and there is to be a surface discharge system, then approval shall be obtained from the Illinois Environmental Protection Agency (IEPA). Residential designs shall be based upon square footage per bedroom.

D. **Metered Water Use Data** The Department will consider, for non-residential properties, metered

water use data in lieu of the estimated sewage flow set forth in Table II (See Appendix B). For metered flow considerations, the applicant shall provide authenticated monthly water use data, documenting water consumption for the most recent 12 month period for at least three (3) other establishments of like size operations engaged in the same type geographic environment, and which have approximately the same operating hours.

E. **Location and Installation** The private sewage disposal system shall be located in the same area where the soil investigation was conducted for which the system design was approved. All private sewage disposal systems shall be located and installed so that with proper maintenance, the system functions in a sanitary manner, does not create sanitary nuisances or health hazards and does not endanger the safety of any domestic water supply. Sewage waste and effluent from individual on-site private sewage disposal systems shall not be discharged onto the ground surface or into ditches, drainage structures, surface waters, or aquifers. The minimum distances between components of private sewage disposal systems and water supplies, bodies of water, dwellings, property line and field drain tile listed in Table IV (See Appendix B) shall be observed.

F. **Artificial Drains** (Curtain drains, vertical drains or underdrains). The following high water table conditions may be capable of being altered when all of the following conditions can be satisfied:

1. Shallow, perched water table but not confined under pressure.

2. Water table conditions are caused by laterally flowing groundwater.

3. Groundwater table is in granular or coarse textured soils. High groundwater table conditions existing in level sites within soils which are saturated for periods of time are considered as being incapable of effective draining by these methods.

G. **Proposals to Lower Groundwater Table Levels** For any proposal for the use of these methods of attempting to lower existing groundwater table levels, hydraulic calculations shall be submitted. The proposal shall be acceptable provided that the hydraulic calculations support the ability of the drainage system to lower the existing groundwater table levels and the drainage system will meet the required setbacks outlined in Table IV. (See Appendix B).

1. **Monitoring Wells** A network of observation wells shall be installed on the site and periodic groundwater levels shall be recorded for at least one year subsequent to installation of the artificial drainage system (See § 8.04.430 F in accordance with § 8.04.420 N (Water Table Monitoring Wells).

2. **Discharge from Drainage System** Any proposed drainage system shall have an acceptable gravity outfall which shall not produce surface water or groundwater problems or nuisances. Discharge to roadside drainage ditches is not permitted without written permission from the responsible highway organization or entity.

H. **Installation in Existing Fill Material (sites filled on or before February 1, 2003)** Filled sites must be evaluated by means of soil pits for their ability to meet the requirements of § 8.04.420 G and Tables IA and IB (See Appendix B).

I. **Sizing in Existing Fill Material** The existing fill material shall meet the requirements of § 8.04.420 G and Tables IA & IB (Appendix B). Due to the unpredictability of fill material, all private sewage disposal systems installed in existing fill material, twelve (12) inches or greater in depth, shall be

sized at the largest sizing category in Tables IA and IB, Appendix B. In addition, the sewage effluent shall be distributed by low pressure pipe distribution.

J. **Installation of Private Sewage Disposal Systems Which Require Fill** Whenever a private sewage disposal system design incorporates the addition of fill, the designer shall provide a written assessment of the impact of the fill on the retention or drainage of surface waters on the subject and adjacent properties.

K. **Site Preparation** Any preparation of the soil absorption area shall be conducted only when the soil is dry. Site preparation shall be conducted under the supervision of the licensed private sewage disposal system installation contractor as established in this Section. All sites shall be mowed and cleared of brush. Sites approved for private sewage disposal system types 3, 4 and 5 (See § 8.04.470 - § 8.04.490 and Illustration 1, Appendix C) shall be tilled prior to the placement of fill or gravel and shall be inspected and receive approval from the Department prior to the placement of fill or gravel. Tilling shall be done parallel to the site contour. Tillage shall be minimal to break the consistency of the sod; maximum depth of tilling shall be eight inches. After tilling, the site shall not be graded or smoothed.

L. **Fill Placement** The placement of fill material for private sewage disposal system types 3, 4 and 5 shall be as established in this section. Fill shall be approved coarse graded sand (FA1, FA2, FA3) except in the type 4 at-grade system where only gravel is required, but is handled and placed in the same manner as fill; or porous earth fill (as defined) with certification from a soil classifier; and except that the top four (4) inches shall be top soil for the restoration of vegetation. The fill shall be placed according to the approved plan and shall be placed immediately after site preparation. The storage and transportation of fill shall be as specified on the approved plan; no traffic shall be allowed directly on the tilled area. Inspection and approval from the Department is required for final grading of Types 3, 4, and 5 private sewage disposal systems.

M. **Method of Fill Placement** Fill shall be placed only from the upslope or ends of the proposed soil absorption area as follows:

1. **Using Backhoe** Material may be placed with a backhoe reaching into the soil absorption area; or
2. **Using Low Compaction Equipment** Material may be pushed into the soil absorption area by low compression equipment maintaining a minimum of ten (10) inches of material beneath the equipment.

N. **Installation in Fine Textured Soils** To prevent soil smearing and excessive compaction, seepage fields shall not be installed within forty eight (48) hours of 1/2 inch or greater rainfall. Seepage fields which are partially or wholly above grade shall not be installed when there is any frost in the ground. Seepage fields which are wholly into grade shall not be installed when there is six (6) inches or more of frost in the ground. It is the responsibility of the private sewage disposal system installation contractor to evaluate site conditions and assure that the installation will not result in smearing of soils or excessive soil compaction.

O. **Replacement Systems There** shall be no limit on the number of additional conventional private sewage disposal systems installed as replacements for existing systems.

§ 8.04.440 PRIVATE SEWAGE DISPOSAL SYSTEMS TO SERVE NON-RESIDENTIAL PROPERTIES

A. **Type of Waste:** Only domestic sewage flows may be discharged into a private sewage disposal system.

B. **Design Considerations:** Design criteria shall consider those elements of the proposal which may impact the functioning and longevity of the private sewage disposal system including but not limited to waste strength, peak flows, removal of non-domestic wastewater, seasonal flow variations, soil or site limitations, adequate future replacement area, and elements of the proposal which may require special arrangements for access or maintenance. Wastewater constituents of concern are dependent upon the anticipated waste stream and include but are not limited to total suspended solids, fats, oils and greases, nutrients (i.e. nitrates, chlorides, phosphates) and biochemical oxygen demand and shall not exceed the following limits prior to entering the subsurface seepage system:

1. Biochemical Oxygen Demand (BOD5) – 225 mg/l
2. Total Suspended Solids (TSS) – 155 mg/l
3. Fats, Oils and Greases (FOG) – 20 mg/l

Upon the applicant's request, the Health Authority will review any proposal for a private sewage disposal system to serve a non-residential property via an informal meeting with the designer prior to its submittal for approval. The prior proposal review shall be limited to 1 review per application prior to permit application. A prior proposal review fee is required as outlined in the Public Health Fee Ordinance.

When a pre-treatment unit, other than a septic tank, is proposed to serve a non-residential property, the manufacturer of that pre-treatment unit shall review the proposal and provide written confirmation that the pre-treatment unit is appropriate to the proposed use.

C. **New Non-Residential Properties** All non-residential properties, constructed after February 1, 2003; and served by private sewage disposal systems shall meet the following requirements:

1. **Metered Water Usage** A water meter shall be installed on the water supply. The water meter shall measure water usage in increments of gallons or tens of gallons. A water meter is not required for private sewage disposal systems designed and used exclusively for private use by the property owner.

2. **Monitoring Water Usage** The property owner shall monitor and record the water usage daily. These records shall be kept available for two (2) years for Department review.

3. **Peak Domestic Wastewater Flows** Domestic sewage flows shall not exceed the design capacity of the private sewage disposal system.

4. **Department Inspection and Sampling** Random inspection and/or sampling may be accomplished by the Department to ensure compliance with this Ordinance. Sampling may include, but not be limited, to BOD-5, total suspended solids, fats oils and greases and pH.

5. **Type of Waste** Domestic sewage flows only are to be discharged into these types of systems.

6. **Operational Waste Strength Testing:** Operational waste strength testing, when required, shall be the responsibility of the property owner and is required 30 – 60 days after the start of operations. All waste strength testing shall be performed by an Illinois Environmental Protection Agency (IEPA) certified laboratory. Copies of all operational waste strength testing results shall be submitted to the Department and designer of the private sewage disposal system, for review within ten (10) days of receipt. If waste strength exceeds design parameters, modification of the facility's operation or the private sewage disposal system will be required prior to approval of the installation. Required waste strength testing parameters, conditions and testing time frames shall be indicated on the approved septic system design.

D. **Existing Non-Residential Properties** All non-residential properties, constructed prior to February 1, 2003; and served by private sewage disposal systems shall adhere to the following:

1. **Peak Domestic Wastewater Flows** Domestic sewage flows shall not exceed the design capacity of the private sewage disposal system.

2. **Department Inspection and Sampling** Random inspection and/or sampling may be accomplished by the Department to ensure compliance with this Ordinance. Sampling may include, but not be limited to, BOD-5, suspended solids and pH.

3. **Type of Waste** Only domestic sewage flows are to be discharged into these types of systems.

E. **Non-Residential Pretreatment Device Registration** All non-residential properties which utilize a pre-treatment device (other than a septic tank) prior to the seepage system shall meet the following requirements:

1. A registration shall be maintained with the Department. The property owner or lessee shall update the registration in the event of changes such as property ownership, contact information, etc.

2. The registration shall be on forms provided by the Department.

3. The pre-treatment device shall be subject to inspection by the Department a minimum of once every other year. Additional inspections shall be done as necessary to ensure compliance with Ordinance requirements (i.e. response to complaints, follow-up inspections, etc.) The owner or operator shall allow Department staff access to a non-residential pre-treatment device or a special waste holding tank for inspection within 2 business days of the request, unless an alternative, mutually agreed upon date and time has been established.

4. Inspection fees, as established in the Public Health Fee Ordinance, shall apply to Department inspections.

5. Any service records and sampling data required in the registration shall be maintained for two (2) years. The property owner shall provide this information to the Department upon request. Sampling data may include, but is not limited to daily flows, BOD5, fats, oils and greases, pH and total suspended solids.

§ 8.04.450 APPROVED PRIVATE SEWAGE DISPOSAL SYSTEMS

A. General Provisions The following systems are approved for private sewage disposal when designed, constructed, operated, and maintained in accordance with the applicable section(s) in this Ordinance:

B. Septic Tank (§ 8.04.520) or Aerobic Treatment Plants **(**§ 8.04.620) or Illinois Department of Public Health approved NSF 350 Pretreatment unit (§ 8.04.625) in addition to one of the following:

1. Subsurface seepage field.

2. Seepage Bed (See § 8.04.560 for restrictions).

3. Gravelless seepage system which complies with all the requirements of the Illinois Private Sewage Disposal Code.

4. Mound System designed in accordance with the Wisconsin Mound Soil Absorption System Siting, Design, and Construction Manual, Small Scale Waste Management Project, University of Wisconsin-Madison, January, 1990, and § 8.04.490.

5. Wisconsin At Grade System designed in accordance with the Wisconsin At Grade Soil Absorption System Siting, Design and Construction Manual, Small Scale Waste Management Project, University of Wisconsin-Madison, January 1990, and § 8.04.480.

C. Peat Filter System, followed by an approved subsurface seepage system sized at 2/3 the sizing required in Tables IA and IB (Appendix B).

D. Vault privies, portable toilets, re-circulating toilets, incinerator toilets and compost toilets are approved for private sewage disposal of human wastes. Re-circulating toilets, incinerator toilets and compost toilets shall meet NSF Standard 41 and bear the NSF seal.

E. Illinois Raised Filter Bed, preceded by a Class I batch treatment aeration system (See § 8.04.620), meeting the requirements of a Type 5 system as indicated in Tables IA and IB (Appendix B). The mantle shall be sized using the formula A=QT/25, where A = Mantle area, Q = Quantity of domestic sewage per day, and T is the percolation rate (min/inch). (See column 7 of Table 1B).

F. Subsurface drip irrigation system in accordance with Section 905.60g of the Illinois Private Sewage Disposal Code, and meeting the requirements of a Type 5 system as indicated in Tables IA and IB (Appendix B), except that separation distances are measured from the bottom of the tubing.

G. Any other systems for which a variance in accordance with § 8.04.370 V –§ 8.04.370 W has been issued or for which an experimental permit in accordance with § 8.04.380 has been issued.

H. Holding tanks installed in accordance with § 8.04.590.

I. SYSTEM TYPES. For the purpose of this ordinance, five (5) types of private sewage disposal systems have been established. The type of system which may be used is determined by the amount of suitable soil between the natural soil surface and limiting layers (See Tables IA and IB

in Appendix B).

§ 8.04.460 TYPE 1 and TYPE 2 SYSTEMS

Type 1 and Type 2 private sewage disposal systems shall be designed to minimum requirements as follows:

A. Pretreatment shall be by septic tank, Class I aeration device, or Illinois Department of Public Health approved NSF 350 pretreatment unit sized for the projected design flow.

B. Effluent distribution to the absorption trench may be by serial distribution, equal distribution, or low pressure pipe (LPP) distribution.

C. Lift stations, shall be installed in accordance with the requirements of § 8.04.500.

D. Distribution in the absorption trench shall be by perforated pipe.

E. No perforated pipe shall be located closer than three (3) feet to the distribution device.

F. The invert of the distribution pipe shall be a minimum of six (6) inches above the trench bottom.

G. The square footage of a gravel trench bottom shall be per Tables IA and IB, Appendix B.

H. Illinois Department of Public Health approved gravelless chamber systems will be per Table IX, Appendix B.

I. The maximum trench length shall be one hundred (100) feet from the distribution device (excluding the solid header).

J. The maximum trench width shall be thirty-six (36) inches; the minimum trench width shall be twelve (12) inches.

K. Trenches shall be separated by a minimum of five (5) feet of undisturbed soil. See Tables VI and IX, Appendix B.

L. The bottom of trench of a Type 2 system shall penetrate the original soil surface by a minimum of twelve (12) inches.

M. The minimum depth of gravel in the absorption trench shall be twelve (12) inches with six (6) inches of gravel beneath the distribution pipe and two (2) inches above. Gravel shall not be placed closer than three (3) feet to the distribution device.

N. Every Type 1 and Type 2 system shall be covered with a minimum of six (6) inches of earth cover.

O. Where distribution to and into a Type 1 or Type 2 system is by low pressure pipe (LPP), the applicable requirements of § 8.04.540 shall be met.

P. Seepage beds shall be sized at 1.5 times the absorption area specified in Tables IA and IB (Appendix B). See also § 8.04.560.

Q. Type 1 and Type 2 systems shall meet the requirements of all other applicable sections of the Ordinance.

§ 8.04.470 TYPE 3 SYSTEMS

Type 3 private sewage disposal systems shall be designed to minimum requirements as follows:

A. **P**retreatment shall be by septic tank, Class I aeration device or Illinois Department of Public Health approved NSF pretreatment unit sized for the projected design flow.

B. The soil absorption area shall be prepared prior to placement of any fill in accordance with § 8.04.430 K -N. The fill material shall extend a minimum of five (5) feet beyond any absorption trench.

C. Distribution to the absorption trench may be by serial distribution, equal distribution, or low-pressure pipe (LPP) distribution. LPP network piping shall be as specified in § 8.04.540.

D. Lift stations shall be installed per the requirements of § 8.04.500.

E. No perforated pipe shall be located closer than three (3) feet to the distribution device.

F. The invert of the distribution pipe shall be a minimum of six (6) inches above the trench bottom.

G. The square footage of a gravel trench bottom shall be per Tables IA and IB, Appendix B.

H. Illinois Department of Public Health approved gravelless chamber systems shall be sized per Table IX, Appendix B.

I. The maximum trench length shall be one hundred (100) feet from the distribution device (excluding the solid header).

J. The maximum trench width shall be thirty-six (36) inches; the minimum trench width shall be twelve (12) inches.

K. Trenches shall be separated by a minimum of five (5) feet of undisturbed soil. See Tables VI and IX, Appendix B.

L. The bottom of trench of a Type 3 system shall penetrate the original soil surface by a minimum of six (6) inches.

M. The minimum depth of gravel in the absorption trench shall be twelve (12) inches, with six (6) inches of gravel below the pipe and two (2) inches above.

N. Gravel shall not be placed closer than three (3) feet to the distribution device.

O. Every Type 3 system shall be covered with a minimum of six (6) inches of earth cover, and a maximum of twenty-four (24) inches.

P. Seepage beds shall be sized at 1.5 times the absorption area specified in Tables IA and IB, Appendix B. See also § 8.04.560.

Q. Type 3 systems shall meet the requirements of all other applicable sections of the Ordinance.

§ 8.04.480 TYPE 4 SYSTEMS

Type 4 At-Grade Absorption systems shall be designed to minimum requirements as follows:

A. Pretreatment shall be by septic tank, Class I aeration device or Illinois Department of Public Health approved NSF 350 pretreatment unit sized for the projected design flow. If a septic tank is utilized, it shall be augmented by an effluent filter. When a Class I aeration device is utilized, the Type 4 system shall be designed and constructed to be at least 80% of the size determined necessary by estimated soil permeability.

B. The soil absorption area shall be prepared in accordance with § 8.04.430 K -N.

C. Distribution to and into the absorption area shall be by low pressure pipe (LPP) distribution. LPP network piping shall be as specified in this section and in § 8.04.540.

D. The lift station shall be in accordance with § 8.04.500.

E. The invert of the distribution lines shall be a minimum of six (6) inches above the original soil surface.

F. The effective length of the absorption area is the actual length of the aggregate along the contour. The effective width on sloping sites is the distance from the distribution pipe to the downslope toe of the aggregate and on level sites it is the width of the aggregate. See Illustrations 3 and 4, Appendix C. For the purpose of this Ordinance, any site with a slope greater than 1% shall be considered a sloping site.

G. The square footage of absorption area shall be equal to the projected flow in gallons per day (GPD) (200 gallons per bedroom for residential properties, and per Table II for non-residential properties) divided by the assigned soil loading rate in gallons per day per square foot (See Tables IA and IB, Appendix B).

H. The minimum length of the at-grade domestic wastewater absorption area parallel to the site contour shall be limited by the maximum linear loading rate. The linear loading rate is equal to the projected daily flow in gallons per day divided by the total length of the absorption area in feet, and shall be determined per Tables IA and IB, Appendix B.

I. The minimum depth of gravel in the at-grade absorption area shall be twelve (12) inches, with six (6) inches of gravel beneath the pipe and a minimum of two (2) inches above.

J. The gravel of an at-grade soil absorption system shall be covered with a minimum of six (6) inches of topsoil to support vegetative cover. Additional cover shall be placed as necessary to shed storm water.

K. The gravel shall be completely covered with a geotextile fabric prior to the placement of the topsoil.

L. The soil cover shall extend a minimum of five (5) feet beyond each side and end of the aggregate to tie the system into the existing soil surface. Multiple Type 4 systems may be utilized to

provide the total seepage area required for a specific application. The minimum separation distance between the aggregate of multiple Type 4 systems shall be six (6) feet.

M. Observation ports are optional.

N. Separation distances from Type 4 systems to structures, water wells, bodies of water; etc. shall be measured from the closest portion of the aggregate.

O. Type 4 at-grade systems shall meet all requirements of all other applicable sections of the Ordinance and shall comply with the provisions of Wisconsin At-Grade Soil Absorption System Siting, Design, and Construction Manual as incorporated in Appendix A.

§ 8.04.490 TYPE 5 SYSTEMS

Type 5 Mound Systems shall be designed to minimum requirements as follows:

A. Pretreatment shall be by septic tank, augmented by an effluent filter, Class I aeration device or Illinois Department of Public Health approved NSF 350 pretreatment unit sized for the projected flow. When a Class I aeration unit is utilized, the Type 5 system shall be designed and constructed to be at least 80% of the size determined necessary by estimated soil permeability.

B. The soil infiltration area shall be plowed and filled in accordance with § 8.04.430 K –N. The fill material shall cover the soil infiltration area, or basal area.

C. Coarse sand fill shall have an effective diameter of .15 to 2.0 mm with a uniformity coefficient between 4 and 6, and have less than 5% silt and clay.

D. Distribution to and into the application bed shall be by low pressure pipe (LPP). LPP network piping shall be as specified in this section and in § 8.04.540.

E. The lift station shall be in accordance with § 8.04.500.

F. The invert of the distribution line(s) shall be a minimum of six (6) inches above the fill material.

G. The square footage of the application bed (absorption area) shall be equal to the projected daily flow in gallons per day (200 gallons per bedroom for residential properties, and per Table II for non-residential properties) divided by the loading rate of the coarse sand fill - one gallon per day per square foot (1 GPD/sq. ft.) or 1.2 GPD/sq. ft. where a Class I aeration device is proposed for pretreatment.

H. The minimum length of the application bed parallel to the site contour shall be limited by the maximum linear loading rate. The linear loading rate is equal to the projected daily flow in gallons per day divided by the total length of the application bed in feet, and shall be determined per Tables IA and IB (Appendix B).

I. The square footage of the infiltration area (basal area) shall be equal to the projected daily flow divided by the assigned soil domestic wastewater loading rate in gallons per day per square foot (Tables IA and IB, Appendix B).

J. The basal area is defined based upon the slope of the site. See Illustrations 5 and 6. For the

purpose of this Ordinance, any site with a slope greater than 1% shall be considered a sloping site.

K. The minimum length of the basal area shall be equal to the minimum length of the application bed.

L. The fill material shall be extended beyond the basal area, tapering to grade at a 3:1 slope.

M. The minimum depth of gravel in the application bed shall be twelve (12) inches with six (6) inches of gravel beneath the pipe and two inches above.

N. The minimum depth of coarse sand fill material covering the basal area shall be twelve (12) inches.

O. The entire Type 5 Mound System shall be covered with a minimum of six (6) inches of topsoil to support vegetative cover. Additional cover shall be placed over the application bed at a slope in order to shed storm water.

P. The gravel of the application bed shall be completely covered with a geotextile fabric prior to the placement of topsoil.

Q. Multiple Type 5 systems may be utilized to provide the total seepage area required for a specific application. When utilizing multiple Type 5 systems, the minimum separation distance between the basal areas shall be the distance required for the fill material for each mound to taper back to original grade at a 3:1 slope, which shall be maintained to allow for appropriate drainage off of and between the mounds. With the exception that the minimum separation distance between the basal areas of multiple Type 5 systems, situated end (width) to end (width), shall be six (6) feet for a sloping or level design.

R. Observation ports are optional.

S. Leakage of domestic sewage from the toe of the mound at any time is unacceptable and considered to be a failure of the system.

T. Separation distances from Type 5 septic systems to structures, water wells, bodies of water, etc. shall be measured from the closest portion of the sand fill.

U. Type 5 Mound systems shall meet all requirements of all other applicable sections of the Ordinance and shall comply with the provisions of Wisconsin Mound Soil Absorption System Siting, Design and Construction Manual as incorporated in Appendix A.

§ 8.04.500 LIFT STATIONS AND PUMPS

A. **Lift Stations** A lift station consists of a tank, pump, pump controls, and alarm system. The tank can be a separate unit, or it can have common wall construction with the pretreatment unit. The tank shall have sufficient volume to provide the desired dosing volume, space for controls, space for setting the pump, plus a reserve volume. The reserve volume is the volume of the tank between the high water alarm switch and the invert of the inlet pipe; it provides storage during power outages or pump failure. A reserve capacity equal to the estimated daily domestic sewage flow is required. Duplex pump units can be used as an alternative to provide reserve

capacity. No reserve capacity is necessary when siphons are used.

B. **Pumps** Where it is necessary to pump sewage to the system, a separate leak-proof sump and pump shall be required.

C. **Pump Specifications** Pumps shall meet the following requirements:

1. The pump shall be submersible, designed to handle domestic sewage and a minimum of 1/2 inch diameter solids, capable of delivering the required flow at the design total dynamic head.
2. The discharge pipe shall be the same size or larger than the discharge of the pump.
3. The pump shall be constructed of corrosion resistant materials. Performance curves and specification sheets indicating the above criteria have been met shall be submitted upon request.

D. **Pumping Chamber** The pumping chamber shall be watertight. Watertight shall consist of sealing all joints. The pumping chamber shall be filled with water after being installed and backfilled to prevent the pumping chamber from floating out of position due to hydrostatic pressures, unless the tank is installed in dry soil.

E. **Access Riser** An access riser with a minimum dimension (width or diameter) of 12 inches shall be installed on the pumping chamber, and extend at least 6 inches above the ground surface.

F. **Dosing Volume** The dosing volume shall be at least 5 times the pipe volume of the dosing network plus provide for filling and drainback of the network. The average flow shall be used to determine the dosing volume. When multiple doses per day are proposed, the dosing volume delivered to the seepage system shall be equally divisible into the daily design capacity of the system and shall not exceed the daily design capacity of the system.

G. **Pump and Alarm Control** The pump control device shall be adjustable so that the required dosing volume is discharged during each pumping cycle. The control system for the pumping chamber shall consist of a control for operating the pump and an alarm system to detect when the system is malfunctioning. Pump controls shall allow flexibility in adjusting the on-off depth. An example of acceptable controls is shown in Appendix A: Illustration Q of the Illinois Private Sewage Disposal Code.

H. **Electrical Devices and Alarm Systems** A high water alarm shall be provided with audible and visual signals and a test function. The alarm shall be on a separate circuit and located outside the home or facility served. The alarm control device shall be a sealed float or diaphragm switch and shall be located to activate 2 to 3 inches above the pump turn-on level. Electrical devices installed after January 1, 2014 shall be provided with an electrical disconnect that is located within sight of, and not more than 50 feet away from, the device.

I. **ANCILLARY EQUIPMENT**

1. **Quick Disconnect** A quick disconnect device shall be included in the discharge piping to facilitate removal of the pump for inspection, repair, or replacement. The disconnect device shall be a threaded union, pitless adapter, or lift-out rail system.

2. **Pump Cable** A corrosion resistant rope or cable of adequate strength shall be affixed to the

pump to facilitate installation and removal, so that personnel need not enter the chamber to disconnect the pump.

3. **Pump Control Device** A pump control device must be adjustable so that the desired dosing volume can be discharged during each pumping cycle. The control device may consist of one or more sealed float or diaphragm switches, which may cooperate with a relay or contactor. Any separate control panels located outside the chamber must be protected from the weather and must provide no air path between the panel and the pump chamber.

4. **Check Valve** A check valve between the pump and the piping network shall not be allowed unless this piping system is below the frost line. A check valve is required when dual pumps are utilized.

§ 8.04.510 MALFUNCTIONING PRIVATE SEWAGE DISPOSAL SYSTEMS Any of the following conditions constitutes a malfunctioning private sewage disposal system, in violation of this Ordinance:

A. Discharge of domestic sewage to any watercourse, drainage ditch, storm sewer, agricultural field tile, water well, ground surface or back-up into a structure.
B. A system which fails to meet the criteria established as a condition of approval of the system.
C. Inoperable mechanical or electrical devices including pumps, alarms and pre-treatment devices.
D. Sewage and effluent levels above the ceiling of the component, whether or not the component is above or below grade.
E. Septic tanks, lift stations, pre-treatment devices, sewer pipe or distribution devices which are no longer watertight.

§ 8.04.520 SEPTIC TANKS

A. Septic Tank Specification All septic tanks shall conform to the specifications required in Section 905.40 of the Illinois Private Sewage Disposal Code.

B. Septic Tank Capacity Septic tank capacity for residential property shall be sized in accordance with the provisions of Table III (See Appendix B). The minimum size septic tank for any installation shall be 1000 gallons. Septic tanks for non-residential properties shall be sized in accordance with the estimated flow determined from data provided in Table II (See Appendix B). The size of the septic tank shall be calculated as follows:

1. The volume of the liquid level shall be one and one-half times the daily estimated flow.
2. When the total flow exceeds 1350 gallons per day, two or more tanks in series, or a multi-compartment tank, shall be installed.

C. Septic Tank in Series Whenever two or more septic tanks are to be used, they must be installed in series. If two tanks are used, the capacity of the first tank shall be at least one-half but not more than two-thirds of the total liquid capacity as calculated from either Table II or Table III, Appendix B.

D. Garbage Grinders/Garbage Disposals When garbage grinders/garbage disposals are used in residential property, solids shall be retained by one of the following methods:

1. **Solids Retention Tank** A solids retention tank constructed in accordance with Section 905.40 of the Illinois Private Sewage Disposal Code shall be placed between the domestic sewage

source and the septic tank to intercept solids from the garbage grinder. This tank shall receive waste from the garbage grinder(s) or the kitchen wastes only. No other fixtures shall discharge into this tank. The solids retention tank shall be at least 50% in liquid volume of the septic tank sized for the waste from the rest of the property, however, the minimum size tank to be used shall be 500 gallons.

2. **Septic Tank Sized Per Table III** A septic tank receiving all flows from the property sized in accordance with Table III (See Appendix B).

E. Septic Tank Access Access to the interior of the tank shall be provided to allow inspection and maintenance. A manhole or access port extension collar or riser with a minimum dimension (width or diameter) of 12 inches shall be provided by the private sewage disposal contractor to bring access to the tank to the ground surface. The joint between the septic tank and the riser(s) shall be watertight. When the riser consists of multiple sections, all joints shall be watertight. If a 2 compartment tank is used and the tank has an opening over the wall between the compartments, the center opening shall have access provided within 12 inches of the ground surface. A tight-fitting durable lid shall be provided on all access openings.

F. SEPTIC TANK INSTALLATION

1. **Level Tank** The septic tank shall be set level and backfilled to prevent floatation or drifting of the tank. Level shall mean plus or minus one-half (1/2) inch in any direction (length or width or diameter of the tank).

2. **Watertight Openings** If the inlet, outlet or access openings are to be set at or below the seasonal high water table, all openings in the tank shall be made watertight using mastic, tar, silicone caulk, etc.

3. **Connections in Overdig** There shall be no connections such as joints, splices, or fittings within the area of overdig around the septic tank.

§ 8.04.530 OTHER SEPTIC SYSTEM COMPONENTS

A. Distribution Boxes Distribution boxes may be installed between a septic tank or aerobic treatment plant and a subsurface seepage system for all gravity flow systems, which do not use serial distribution (See ¶P below). Distribution boxes shall be installed level on undisturbed earth (no fill beneath), and shall provide equal distribution of flow to the subsequent disposal system. A single solid header out of the distribution box with T connections to the individual trenches, is allowed provided that all lines are installed level. The solid headers out of the distribution box shall be Schedule 40. The elevation of the top of stone, chamber or gravelless pipe within the seepage trench shall be at least one inch lower than the invert of the septic tank or pre-treatment device outlet for gravity fed systems.

B. Connecting Pipe The pipe connecting the pre-treatment or primary treatment component to the distribution box and the pipe connecting the distribution box to the subsurface seepage system shall be watertight.

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

D. Distribution Box Access Distribution boxes shall be provided with an opening which will serve as a ready access for inspection, cleaning, and general maintenance.

E. Overdig Around Distribution Box There shall be no connection such as joints, splices or fittings within the area of the overdig around the distribution box.

F. Solid Header Whenever a distribution box is installed for the purpose of obtaining equal distribution of effluent, a minimum of three-foot solid pipe shall be provided between the distribution box and the drainage tiles.

G. Bedding Material The bedding material shall extend the full width of the trench and to a depth of at least 6 inches below the bottom of the distribution line. The bedding material shall extend at least 2 inches above the top of the seepage line. The bedding material shall be covered by geotextile fabric, untreated building paper or other permeable and/or biodegradable material to support the backfill as the laying of the distribution line proceeds. Tar paper, plastic, or other impervious material shall not be used between the bedding material and the earth backfill.

H. Looping Ends of Seepage Field The ends of all seepage fields shall be looped except in serial or low pressure pipe distribution systems.

I. Acceptable Pipe Materials All piping located more than 5 feet from the building foundation, used to convey domestic sewage to a private sewage disposal system, shall be considered a part of the private sewage disposal system and shall be watertight. This piping shall be ductile iron or plastic pipe. Only plastic pipe shall be used from the septic tank and after the distribution box (where used). Solid piping shall be bedded utilizing up to two (2) inches of coarse graded sand or fine aggregate (1 mm to 1/8 inch in size). Perforated pipe shall be used only as provided in this Ordinance.

J. List of Approved Pipe Use of plastic pipe and fittings shall conform to the uses designated in Section 905. Appendix A, Illustration C of the Illinois Private Sewage Disposal Code, except that all solid plastic piping used in the private sewage disposal system shall be Schedule 40 or heavier.

K. Pipe Size and Slope All solid pipes carrying domestic sewage by gravity flow shall have a nominal diameter of at least 4 inches and a minimum slope of 12 inches per 100 feet. Solid header lines used for equal distribution shall be level.

L. Pipe Length Building sewers in excess of 100 feet in length which carry domestic sewage from the buildings served to the septic tank, or aeration treatment plant shall be provided with at least one clean-out every 100 feet that terminates at grade.

M. Electrical Devices All electrical devices shall be wired in accordance with the National Electrical Code or a municipal, county or local electrical code, whichever is more stringent.

1. Any component of a private sewage disposal system that is electrically activated shall be provided with a visible and audible warning device.
2. Alarms installed after January 1, 2014 shall be located outside of the building served. The power supply for the alarm shall be on a dedicated circuit.
3. Class I Aerobic Treatment Device alarms shall be designed to meet the requirements specified in Section 5.8 of NSF International/ANSI Standard 40.

4. The alarm shall be housed in a weatherproof box.
5. When electrical components are required, it is the responsibility of the private sewage system installation contractor to obtain any necessary electrical permits and to ensure that all electrical components are installed per the applicable electrical code.

N. Abandoned Treatment Units The owner of an abandoned treatment unit including a septic tank, cesspool, pit privy, aerobic treatment plant, Illinois Department of Public Health approved NSF 350 pretreatment unit, lift station and seepage pit which is no longer in use shall ensure that it is properly pumped and filled or removed within 30 days. The floor and walls shall be cracked or crumbled so the tank will not hold water and the tank shall be filled with porous granular material or pea gravel. If the tank is removed from the ground, the excavation shall be filled with soil. Abandoned treatment units which are not concrete shall be completely removed and disposed in accordance with applicable regulations.

O. Distribution Lines Distribution lines shall be constructed of materials as approved in Section 905.20(f) of the Illinois Private Sewage Disposal Code. The lines shall be perforated. Perforated piping with the exception of 8 inch or 10 inch gravelless seepage systems, or chamber systems, shall have 1/2 to 3/4 inch diameter openings on 3 to 5 inch centers with a minimum of two rows. The openings in the pipe shall be placed downward.

P. Serial Distribution In serial distribution, adjacent trenches must be connected with a drop box or relief line arranged in a manner so that each gravel trench, gravelless pipe or chamber is completely filled with effluent to the full height of the gravel trench, gravelless pipe or chamber before effluent flows to the succeeding trench. All construction features of the serial distribution system shall be the same as the seepage field, but in addition, shall include the following:

1. **Drop Boxes** A minimum three foot solid header shall be provided from the drop box to the start of the perforated tile or chamber. The invert of the overflow outlet of the first drop box shall be at least one inch lower than the invert of the septic tank or aerobic treatment unit outlet.

2. **Relief Line** The invert of the first relief line shall be at least one inch lower than the invert of the septic tank or pre-treatment device outlet. (See Appendix A: Illustration K of the Illinois Private Sewage Disposal Code.) Subsequent relief lines shall be installed so that each gravel trench, gravelless pipe or chamber is completely filled with effluent to its full capacity.

3. **Solid Header** A minimum three foot solid header shall be provided from the drop box to the start of the perforated tile.

4. **Level Trench Bottom** The bottom of each trench and its distribution line shall be level.

5. **Earth Cover** There shall be a minimum of 6 inches and a maximum of 24 inches of earth backfill over the bedding material or the gravelless pipe or chambers in the trenches.

6. **Installation Along Contours** The trench shall follow the ground surface contours so that variation in trench depth will be minimized.

7. **Separation From Tank to Trench** There shall be a minimum of 5 feet of undisturbed earth between the septic tank and the nearest trench.

Q. Location Location of various components of a private sewage disposal system shall comply with distances specified in Table IV (See Appendix B).

R. Standards for Construction Soil absorption systems shall meet the requirements in Tables IV, V, VI and IX (See Appendix B).

S. Effluent Filters Effluent filters shall be tested and listed by NSF International or a laboratory approved by ANSI to determine compliance with the requirements of ANSI/NSF Standard 46 Evaluation of Components and Devices Used in Wastewater Treatment Systems.

T. Chamber Connections All connections between chamber units shall be per the manufacturer's specifications and ensure that each chambers is fully utilized prior to overflowing when serial distribution is used.

U. Gravelless Pipe/Chamber Location Devices: A solid ferrous iron bar or rod (a minimum of ½ inch diameter and a minimum of 12 inches long), shall be installed at the start and end of each chamber or gravelless pipe, terminating within 24" of the finished grade, in seepage systems installed after the effective date of this Ordinance to facilitate locating the trenches in the future.

§ 8.04.540 LOW PRESSURE DISTRIBUTION

Distribution of domestic sewage into private sewage disposal systems by low pressure pipe (LPP) systems as required by this section shall be designed to minimum requirements, as follows:

A. Pretreatment of effluent shall include an effluent filter for septic tank effluent.

B. Minimum supply/manifold line diameter shall be 1.5 inches.

C. Minimum lateral domestic sewage distribution pipe diameter shall be one and one-quarter (1 1/4) inches on laterals 50 feet or longer. On laterals less than 50 feet long, the minimum pipe diameter shall be one (1) inch

D. Lateral length from the manifold shall not exceed 100 feet.

E. Laterals shall be connected to the manifold by cross or t-connections at the same elevation or with a short riser pipe with the lateral located higher than the manifold when pumping uphill or with a short riser pipe with the lateral located lower than the manifold when pumping downhill.

F. Minimum perforation size shall be 3/16 inches.

G. Minimum distal end pressure on the highest lateral shall be 1 foot of pressure head. Maximum distal end pressure on any lateral line shall be 5 feet of pressure head. The distal head pressure of subsequent lower laterals on sloping designs shall be calculated using the difference in elevation from the highest lateral plus the specified distal head pressure of the highest lateral. Systems with more than 4 feet of elevation difference between the highest and lowest lateral cannot be designed with a single manifold. Separate manifolds for the separate upper and lower potions must be used. These separate manifolds must also have their own pressure control valve located in the lift station for pressure adjustment of the highest lateral to be served by the individual manifold. See ¶ S below.

H. The discharge rate of distribution lines shall be a minimum of .10 gallons per minute per lineal foot (10 gpm for a 100 foot line), and shall be equal among all distribution lines to within plus or minus 5 percent.

I. Table X (Appendix C) shall be utilized for calculation of perforation discharge rates and Table XI (Appendix C) shall be used to calculate friction loss in schedule 40 plastic pipe.

J. The first and last holes within each lateral shall be drilled ½ the specified hole spacing interval for the lateral from each end of the lateral. Holes shall be deburred in a manner which maintains the required size. Holes within stone trenches shall be drilled in a straight line along the bottom of the lateral. The first and last holes within a chamber system shall be drilled on the bottom of the lateral with a splash block provided to facilitate draining of the lateral. The remaining holes within a chamber system shall be drilled in the top half of the lateral in an alternating pattern at the 10 o'clock and 2 o'clock positions to prevent the scouring of the trench bottom. Inspection and approval of the hole spacing and hole placement is required by the Department prior to installation of the pipe in the seepage system.

K. The minimum dosing volume is the sum of the supply line volume and 5 times the volume of the lateral lines. When possible, dosing should be calculated for 2 to 4 times per day. When multiple doses per day are proposed, the dosing volume delivered to the seepage system shall be equally divisible into the daily design capacity of the system and shall not exceed the daily design capacity of the system.

L. Table XII (Appendix C) shall be utilized to determine storage capacity per 100 feet of PVC pipe.

M. Pumps shall be located on concrete blocks and/or be fitted with a pump stand within the pumping station at least 4 inches above the tank bottom to prevent pumping of any solids. Pumping chambers shall be sized to accommodate the pump height, minimum dosing volume and required reserve capacity.

N. The configuration of an LPP distribution system shall be such that the number of fittings is minimized.

O. Only deep socket high pressure fittings shall be utilized.

P. The end (opposite the supply line connection) of at least one lateral (including the lateral at the highest elevation on sloping sites) shall be equipped with a 90 degree turn-up elbow and riser pipe with a threaded cap to finished grade.

Q. A gate or globe pressure adjustment valve shall be installed in the supply line within the pumping chamber to allow for final adjustment of the system pressure. All pressure head adjustment valves shall be located within the lift station.

R. A ¼ inch siphon-breaker (weep) hole must be drilled in the bottom of the supply line within the lift station when pumping to a lower elevation.

S. Distal pressure head must be adjusted to match the pressure specified in the design. The pressure head is measured as the height the liquid will rise above the 90 degree turn-up elbow within the lateral when the pump is running and the system is pressurized. During installation a

riser pipe shall be installed and must extend at least to the specified distal pressure height elevation of the highest lateral. The adjustment valve within the lift station shall be adjusted to maintain the specified pressure of the laterals or highest lateral on a sloping design. On sloping designs the elevation difference of any subsequent lower laterals in relation to the highest lateral shall also be confirmed. Inspection and approval of the pressure head adjustment is required by the Department prior to approval of the installation of a low pressure pipe distribution system.

T. Construction shall comply with all other applicable sections of the Ordinance.

§ 8.04.550 OTHER ON-SITE SYSTEMS REQUIRING SPECIAL APPROVAL

Special Approval General Provisions The Department may request additional review and/or consultative assistance from private sewage professionals to provide technical assistance and direction in regard to the private sewage disposal ordinance including the review of proposals for experimental systems.

§ 8.04.560 SEEPAGE BEDS

A. General Provision A seepage bed may only be installed when the permeability is moderately rapid or faster.

B. Absorption Area The total bottom absorption area required for a seepage bed shall be one and one-half times the absorption area specified in Tables IA and IB (See Appendix B).

C. Design Construction features shall conform to § 8.04.450 through § 8.04.470 and § 8.04.500 through § 8.04.540. Distribution lines shall be equally spaced with no more than six (6) feet center to center. Seepage beds shall be constructed so that construction equipment does not drive over the bottom of the bed.

§ 8.04.570 PRIVIES

A. General Provisions Privies are approved for the disposal of human wastes only where the use of the area is for a public park, campground, or other recreational area.

B. Design and Construction Requirements The vault privy is the only type of privy that can be used for the disposal of human wastes.

C. Construction The vault privy shall be durable and constructed to facilitate satisfactory maintenance. The vault shall be fly-tight and rodent-proof at all times.

D. Watertight and Rodent-Proof The vault privy must be watertight and a readily accessible cleanout shall be provided. The cleanout shall be so constructed to prevent the entrance of rodents, insects and surface water.

E. Construction Specifications All privies used for the deposit of human wastes shall be constructed and maintained in accordance with the following:

1. **Minimum Capacity** The vault shall provide a minimum capacity of 50 cubic feet per seat. The vault shall be constructed of materials and in such a manner as to be able to endure the

anticipated load and use and to withstand the local environmental conditions without deteriorating. The vault shall be constructed such that there shall be access to the vault for pumping and cleaning purposes.

2. **Floor and Seat Riser** The floor and seat riser shall be constructed of an impervious material and in a manner to exclude insects and rodents. The seat riser shall be constructed and bonded with the floor to prevent seepage through the riser onto the floor.

3. **Seat Opening** The seat opening shall be covered with a hinged lid that forms a tight seal.

4. **Vents** Each privy shall be provided with vents of at least 0.5 square foot area for each seat. The vault shall be vented to the outside through a vent which creates airflow out of the building, with a minimum cross-sectional area of 12 square inches. The vent opening shall be screened with 16 mesh screen to prevent the entry of flies and shall terminate through the roof.

§ 8.04.580 PORTABLE TOILETS (CHEMICAL TOILETS)

Portable toilets shall be used and operated in compliance with Section 905.135 of the Illinois Private Sewage Disposal Code with the following additions and restrictions:

A. General Provisions Portable toilets are approved for use of collection of human wastes under the following conditions:

1. Where water carried sewage facilities are not provided or to supplement existing, plumbed restroom facilities, if allowed by the local plumbing authority and/or local building official; and

2. Provision is assured for treatment of sewage removed from the portable toilet at a facility operating under the jurisdiction of the Illinois Environmental Protection Agency.

B. Location of Portable Toilets

1. Portable toilets shall be conveniently located to prevent nuisance conditions and not compromise the wholesomeness or quality of food.

2. Portable toilets shall be located per the minimum separation distances specified in Table IV, Appendix B.

3. Portable toilets shall not be located less than twenty (20) feet from a temporary food establishment.

C. Portable Toilets at Food Establishments

1. Portable toilets and portable handwashing stations may not be utilized to replace permanent fixtures for foodservice employees at fixed food establishments.

2. **Handwashing Stations** Where foodservice is provided, an adequate number of properly equipped handwashing facilities must be provided within twenty (20) feet of the portable toilets.

3. Handwashing stations must have potable water under pressure, from a source approved by the Department, soap, a supply of disposable paper towels and covered waste receptacles.

D. Servicing of Portable Toilets Portable toilets shall be serviced by individuals licensed or certified per Section 905.135 of the Illinois Private Sewage Disposal Code and permitted by the McHenry County Department of Health.

E. Disposal of Portable Toilet Waste Disposal of waste from tank trucks shall be in accordance with Section 905.170(g) of the Illinois Private Sewage Disposal Code and § 8.04.630 of this Ordinance.

F. Removal of Portable Toilets: The Department may require removal of portable toilets in the event of repetitive violations of the Ordinance or in the event that the use of the portable toilet results in the creation of nuisance or unsanitary conditions.

G. Records Dates of service and the name of the service provider shall be maintained for fourteen (14) days after the event, and shall be made available to the Department upon request.

§ 8.04.590 HOLDING TANKS

A. General Provisions Holding tanks are approved for private sewage disposal only under the following circumstances:

1. As a temporary measure while awaiting the availability of a sewer, provided, however, that a contract for installation of the sewer has been awarded and the agency responsible for sewer operation certifies that it will be available for service within 180 days. The property owner shall assume all risks of the sewer not becoming available. They may then install a private sewage disposal system in full compliance with this Ordinance, or vacate the property; **OR**
2. As a sanitary dumping station in campgrounds or marinas to receive the discharges from holding facilities on recreational vehicles or boats; and provision is assured for treatment of sewage removed from the holding tank at a facility operating under the jurisdiction of the Illinois Environmental Protection Agency.

B. Temporary Holding Tanks Temporary holding tanks will be allowed for permitted properties under the following conditions:

1. The permit for the private sewage disposal system has been previously approved by this Department; and present and near future weather conditions (i.e. frozen ground, saturated soils) are unfavorable for the installation of a private sewage disposal system; and

2. An application for temporary utilization of a holding tank is completed and the appropriate fee is paid at the Health Department. The application shall include the following items:

    a. A contract for pumping the septic tank with a licensed private sewage disposal system pumping contractor.

    b. A contract with a sewage treatment plant to accept the waste; waste cannot be land applied.

c. A contract with a licensed private sewage disposal system installation contractor to complete the installation with an estimated cost and completion date specified.

d. A letter of credit with a federally insured bank or Savings and Loan Association with resources of at least five million dollars ($5,000,000.) for 1 1/2 times the installation cost and valid for a period of at least one year.

3. The temporary domestic sewage holding tank fee is approved by the McHenry County Board. The fee schedule is contained in the Public Health Fee Ordinance.

4. **Audio/Visual Alarm** The septic tank is to be installed and the tank outlet sealed with an audio/visual high-water alarm installed, and set at 2/3 of the septic tank capacity. The tank and alarm are to be inspected by the Department. Alarms installed after January 1, 2014 shall be located outside of the building served. The power supply for the alarm shall be on a dedicated circuit.

C. Temporary Holding Tank Approval / Renewal Temporary holding tank approval is for a period of time not to exceed six months. If the private sewage disposal system is not installed within a 6 month period, a renewal fee must be paid. Subsequent renewals of the original application will require a current letter of credit valid for a period of at least 6 months beyond the requested inspection period, and renewals shall be valid for a period of 30 days. A maximum of six (6) renewals will be allowed.

D. Temporary Holding Tank Expiration Failure to install the private sewage disposal system or renew the temporary holding tank application before the permit expiration shall be a violation of this Ordinance.

E. Temporary Holding Tank Construction and Location The holding tank shall be designed and constructed in compliance with § 8.04.520, except that the outlet shall be sealed. The holding tank shall be located in compliance with the requirements in Table IV (See Appendix B) for "Septic Tanks".

§ 8.04.600 SANITARY DUMP STATIONS

A. General Provision Sanitary Dump Stations are approved for receiving domestic sewage only from holding tanks on recreational vehicles.

B. Design and Construction Requirements Sanitary dump stations shall provide holding capacity designed on the basis of 140 gallons per unsewered recreational vehicle site.

C. All Sanitary Dump Stations shall be designed and constructed in accordance with the following:

1. A concrete pad shall be constructed around the drain leading to the holding tank. The pad shall extend at least 2 feet in every direction from the drain and shall have a 2 inch high curb around the outside perimeter. In addition, the pad shall be sloped to the drain at least one-tenth inch per foot.

2. A foot-operated, self-closing cap which forms a tight seal with the drain shall be provided.

3. The sewer line from the drain to the tank shall be at least 4 inches in diameter and constructed in accordance with the provisions in the Illinois Plumbing Code. It shall be installed to maintain at least a 10 foot horizontal separation from any water line.

4. A water supply distribution tap for flushing the pad shall be provided. The water supply line to the tap shall comply in all respects with the Illinois Plumbing Code or the applicable local plumbing code if more stringent, and shall be provided with approved, properly installed back siphonage protection. A "stop and waste" valve shall not be provided on the tap. The water tap shall be painted yellow and posted "Not For Human Consumption. Use for Flushing and Cleaning Purposes Only".

§ 8.04.610 ON-SITE WASTEWATER SYSTEMS IN RAPID AND/OR VERY RAPIDLY PERMEABLE SOILS

Penetration into rapid or very rapidly permeable soils shall only be permitted with standard depth trenches. See also Tables IA and IB, Appendix B.

§ 8.04.620 AERATION DEVICES

A. Aerobic Treatment Plant Approval Aerobic treatment plants shall be tested and listed by NSF International or a laboratory approved by ANSI to determine compliance with the requirements of ANSI/NSF Standard 40, Residential Wastewater Treatment Systems, January 18, 1999. Standard 40 is a standard which covers an organized and coordinated system of components that functions to treat domestic sewage from individual residences. This Part shall allow approved aerobic treatment plants to serve a residential property which is occupied on a year-round or full time basis. Aerobic treatment plants shall not be used to serve a residential property which is used as a seasonal, weekend or part-time residence. Aerobic treatment plants considered for use to serve a non-residential property shall meet the requirements of Section 905.100 J 1-3 of the Illinois Department of Public Private Sewage Code.

B. Class II Effluent Aerobic treatment plants listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF Standard 40 for Class II effluent shall discharge to a subsurface seepage system designed and constructed in accordance with the requirements of § 8.04.420 –§ 8.04.430.

C. Class I Effluent Aerobic treatment plants listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF Standard 40 for Class I effluent shall discharge to a Type 1, 2 or 3 system designed and constructed to be at least 2/3 the size determined necessary by estimated permeability or a Type 4 or 5 system designed and constructed to be at least 80% of the size determined necessary by estimated soil permeability.

D. Sizing Aerobic Treatment Plants Aerobic treatment plants which are listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF Standard 40 as Class I and rated at 500 gallons per day will be allowed for the treatment of domestic sewage from residential property having up to and including 4 bedrooms. Other aerobic treatment plants that are listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF Standard 40 as Class I shall be sized as specified in Table VII (See Appendix B).

E. Installation All components of aerobic treatment plants shall be installed at the time of the original installation.

F. Accessibility For Inspection and Maintenance The plant shall be equipped with one or more grade-level access manholes located to permit periodic physical inspection and maintenance of all compartments and component parts. Component parts include submerged bearings, moving parts, tubes, intakes, slots, filters, and other devices. Grade level access manholes with tight fitting, durable lids shall be provided on all access openings and shall be installed in a manner to prohibit the entry of soil, water and dirt into the unit.

G. Effluent Standards are those currently enforced in the State of Illinois Private Sewage Disposal Licensing Act and Code.

H. Service Contract A service contract shall be maintained on all aeration devices. All service shall be by a licensed private sewage disposal installation contractor who is familiar with the unit and utilizes manufacturer approved replacement parts.

I. Service Operation and Maintenance Service operation and maintenance shall adhere to standards established by the Illinois Private Sewage Disposal Code.

J. Non-functional Aeration Units If an aeration device is non-functional, the non-functional parts must be replaced so as to be maintained per the manufacturer's specifications. When the unit can no longer be maintained per the manufacturers specifications, the unit must be replaced with an approved Class I aeration device.

K. Non-Residential Properties See §8.04.440 ¶ E.

§ 8.04.625 NSF 350 PRETREATMENT DEVICE

An approved subsurface seepage system sized at 50% of the sizing determined by the onsite soil conditions as required in Tables IA and IB (Appendix B) may be installed after an Illinois Department of Public Health NSF 350 Pretreatment Device for all system types.

§ 8.04.630 COLLECTION, STORAGE, TRANSPORTION, DISPOSAL AND USE OF SEPTAGE, PORTABLE TOILET WASTE, AND DOMESTIC WASTE REMOVED FROM A HOLDING TANK, PRIVY VAULT OR SANITARY DUMP STATION

General Provisions – Permit Requirements

A. Any person who collects, stores, transports, disposes or uses septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault or sanitary dump station in McHenry County, shall be licensed by the Illinois Department of Public Health (IDPH) as a private sewage disposal system pumping contractor, or portable sanitation technician or portable sanitation technician trainee, permitted by the Department, and knowledgeable of the requirements of this section.

B. The collection, storage, transportation, disposal and use of septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station in McHenry County shall meet all the requirements of this Section, the Illinois Private Sewage Disposal Licensing Act and Code, and Title 40 of the Code of Federal Regulations, Part 503 “Standards for the Use or Disposal of Sewage Sludge” (40 CFR Part 503).

C. Whenever the Department determines, through inspections or other means, that there is a violation of any provision of this Section, the Department may, without any further notice, institute or cause to be instituted legal proceedings in the Circuit Court of McHenry County in cooperation with the State's Attorney's Office.

D. The Department shall issue a Private Sewage Disposal System Pumping Contractor Permit or Portable Sanitation Technician Permit to persons applying for such permit who have met the requirements of this Section and all other applicable regulations and who pay the required annual permit fee in an amount established in the Public Health Fee Ordinance. A permit issued under this Section must be renewed annually and shall expire on January 31 of the year following issuance. The Department may suspend or revoke any permit for a violation(s) of this Ordinance. An appeal of such suspension or revocation and any penalty for activities after permit suspension or revocation shall be as established by the Ordinance. Application for a Private Sewage Disposal System Pumping Contractor Permit or Portable Sanitation Technician Permit shall require completion of an application form provided by the Department. Any person who submits false information in an application for a Private Sewage Disposal System Pumping Contractor Permit or Portable Sanitation Technician Permit shall be in violation of this Ordinance. In the application, the contractor or technician shall submit information including, but not limited to, the following:

1. Company Name.

2. Owner and Operator Name.

3. Owner and Operator Home and Mailing Addresses.

4. Company Telephone Number.

5. Full name, and IDPH Private Sewage Disposal System Pumping Contractor or Portable Sanitation Technician or Portable Sanitation Technician Trainee license number for each individual engaged in the collection, storage, transportation, disposal or use of septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station.

6. Number of vehicles used to collect, store, transport, dispose or use septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station.

7. Address and permanent index number(s) (PIN) for all sites where septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station has been stored, disposed or used.

8. A description of all the types of waste that the contractor collects, transports, stores, disposes or uses.

9. A description of disposal or use methods for septage or any other waste, and any other records required to be maintained by State or Federal law pertaining to the collection, transportation, storage, disposal or use of septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station.

10. Rate/quantity, in gallons per acre per month, and per 365 day period, that septage was land applied at any site in McHenry County.

E. Disposal Methods Septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station shall be disposed or used in McHenry County only by the methods established in this Section:

1. Sewage Treatment Facility: Discharge to a municipal sanitary sewer system is approved when the municipality has approval from the Illinois Environmental Protection Agency (IEPA) to receive septage from private sewage disposal systems and the contractor has written approval from the municipality to discharge septage into the system.

2. Application to Agricultural Land: Septage shall be applied to land only as specifically established in this Section. No person shall land apply portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station in McHenry County.

3. Other Approved Methods: Septage may be disposed of by other methods subject to the approval of that method by the Illinois Environmental Protection Agency, the Illinois Department of Public Health and the McHenry County Department of Health.

F. Septage Management Site Permit No person shall store, dispose or use septage at any site in McHenry County, other than an IEPA permitted sewage treatment plant, without a valid permit issued by the Department.

The Department shall issue a Septage Management Site Permit to persons applying for such permit who have met the requirements of ¶ G –¶ N below, and all other regulations and who pay the required annual permit fee in the amount established in the Public Health Fee Ordinance. A permit issued under this section must be renewed annually and shall expire on January 31 of the year following issuance. The Department may suspend or revoke any permit for a violation(s) of the Ordinance. Any appeal of such suspension and any penalty for continued use of a site after permit suspension shall be as established by the Ordinance. A permit is required for each site where septage is stored, disposed or used.

G. Land Application Site Requirements No person shall apply septage to land in McHenry County in a manner that does not meet the requirements of this Ordinance, the requirements of the Illinois Private Sewage Disposal Licensing Act and Code, and the requirements of 40 CFR Part 503. No person shall land apply holding tank waste or portable toilet waste in McHenry County.

1. **Municipality notification:** No Septage Management Site permit shall be issued within the boundaries of a municipality without the applicant submitting documentation of having provided written notification to the municipality's corporate authority.

2. **Water table:** No person shall apply septage to land where the depth to the seasonal high ground water table or to fractured limestone formations is less than 4 feet below the ground surface.

3. **Floodplain:** No person shall apply septage to land that is at or below the 100-year floodplain elevation.

4. **Slope:** No person shall apply septage to land having greater than five percent (5%) slope.

H. Land Application Site Setback Requirements All land used for the land application of septage shall be offset as established by this Section.

1. **Water Wells:** No septage shall be land applied within 300 feet of a water well.

2. **Public Roads:** No septage shall be land applied within 100 feet of a public road.

3. **Residential, Commercial or Industrial Areas:** No septage shall be land applied within 500 feet of homes, commercial, or industrial buildings, where people live, work, or assemble.

4. **Surface Waters:** No septage shall be land applied within 200 feet of any surface water, pond, lake, stream, river, creek, wetland or surface inlet to subsurface drains.

I. Land Application Site Management

1. **Site boundaries:** The boundaries and restricted areas of all septage land application sites shall be marked by clearly visible stakes or other method approved by the Department.

2. **Even application:** Septage shall be applied evenly over the application area. No person shall apply septage to land with water or septage ponded upon it.

3. **Rainfall:** No person shall apply septage to land which has received rainfall of 1/2 inch or more during the 24 hour period preceding the application time.

J. Land Application Rates No person shall apply septage to land in excess of the application rate established in the Illinois Private Sewage Disposal Licensing Act and Code or the annual application rate established in 40 CFR Part 503. Septage shall be land applied in accordance with the lowest (most stringent) application rate established by State and Federal regulations.

K. Recordkeeping When septage is applied to land, the person who applies the septage shall develop the following information and retain the information for five (5) years. The information shall be made available to the Department for inspection or copying upon request.

1. The location, by either street address or permanent property index number, of each site on which septage is applied.

2. The number of acres in each site on which septage is applied.

3. The date and time septage is applied to each site.

4. The nitrogen requirement for the crop or vegetation grown on each site during a 365 day period.

5. The rate/quantity, in gallons per acre per month and also per 365 day period, at which septage is applied to each site.

6. Certification statement pertaining to pathogen and vector reduction requirements as described in 40 CFR Part 503.

7. A description of how pathogen and vector attraction reduction requirements as described in 40 CFR Part 503 are met.

L. Nuisance Conditions Where it is determined by the Department that nuisance conditions exist which create an offensive odor, produce a stagnant wet area or produce an environment for the breeding of insects, septage shall be immediately incorporated into the soil.

M. Spillage No person shall cause or allow the release or discharge of septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station onto any public road or right-of-way.

N. Vehicles And Equipment All vehicles used for the collection and transportation of septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station shall be in compliance with the Illinois Private Sewage Disposal Licensing Act and Code.

O. Inspections

1. **Land Application Sites:** The Health Authority shall inspect any site utilized for the land application of septage for compliance with this Ordinance not less often than one time per year.

2. **Vehicles and Equipment:** All vehicles and equipment used for the collection, transportation, storage, disposal or use of septage, portable toilet waste, or domestic sewage removed from a holding tank, privy vault, or sanitary dump station shall be subject to inspection and approval by a representative of the Department at any reasonable time. Upon request of the Department such vehicles and equipment shall be made available for inspection at a designated location. The Department shall inspect all vehicles used for septage management for compliance with this Ordinance at least one time per year.

P. Enforcement The Department may perform inspections, issue notices and orders requiring action, and initiate legal action as may be necessary to assure compliance with this Section.

Q. Other Regulations The requirements established by this Ordinance do not preclude compliance with any applicable State or Federal regulation.

R. Conflict Whenever the provisions of this Section conflict with any applicable ordinance, regulation, or rule, the most stringent requirement shall be applied.

§ 8.04.640 ADMINISTRATION

A. Powers And Duties Of The Department In accordance with the provisions of the McHenry County Private Sewage Treatment and Disposal Ordinance, the Department has the following powers and duties:

1. To make such inspections as are necessary to determine satisfactory compliance with the Private Sewage Disposal Ordinance.

2. To review and comment on soil evaluations and issue permits.

3. To investigate when a violation of any provision of the Wastewater and Sewage Treatment and Disposal Ordinance is reported to the Department.

4. To enter at reasonable times upon private or public property for the purpose of inspecting and investigating conditions relating to the administration and enforcement of the Wastewater and Sewage Treatment and Disposal Ordinance.

5. To institute or cause to be instituted legal proceedings in the Circuit Court of McHenry County in cooperation with the State's Attorney's Office in cases of non-compliance with the provisions of the Wastewater and Sewage Treatment and Disposal Ordinance.

B. Violations Whenever the Department determines through inspections or other means, that there is a violation of any provision of the Ordinance, the Department shall give notice of such alleged violation. Such notice shall be issued consistent with § 8.04.030 of Article I.

C. Revocation or Suspension of Permit The Health Authority shall have the authority to revoke or suspend permits when they are issued in error, or where the provisions of this Ordinance are violated. The reason for the revocation or suspension of a permit shall be posted in writing at the site, or mailed to the applicant at the address provided in the permit application, by certified mail, return receipt requested.

D. Penalty See § 8.04.050 of Article I.

E. Invalidity Should any section, clause or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance as a whole, or any part thereof, other than the part so declared to be invalid.

F. Conflicting Ordinances In any case where a provision of this Ordinance is found to be in any conflict with a provision of any other Ordinance or code in force, or adopted subsequent to the effective date of this Ordinance, the more stringent provision shall prevail.

§ 8.04.650 PLATTING OF NEW SUBDIVISONS

A. General The McHenry County Department of Health is required by Illinois Compiled Statutes 765 ILCS 205/2 to sign off on all plats of subdivision within McHenry County if any part of the subdivision will not be served by a public sewer system. The Department will evaluate all incorporated and unincorporated plats of subdivision by the criteria in this Section.

B. Subdivision Review Fee A fee schedule established by the McHenry County Board will apply to the new platting of land in McHenry County. The fee for the subdivision plat review in incorporated areas shall be paid at the time of the submittal to the Department for review. The fee schedule is available in the Public Health Fee Ordinance. Review fees for subdivisions in unincorporated areas are paid to the McHenry County Department of Planning and Development.

C. Options For Platting Subdivisions shall be platted providing for sewage disposal based upon one of the following methods:

1. Each lot shall contain ½ acre of contiguous, non-critical soils (as defined) as confirmed by onsite soil mapping; or

2. Each lot shall contain a designated full size private sewage disposal system area and full septic system replacement area in non-critical soils (as defined) as confirmed by onsite soils evaluation; or

3. The proposed subdivision shall be served by an Illinois Environmental Protection Agency (IEPA) permitted sewage disposal system (i.e. land treatment system or onsite package plant).

§ 8.04.660 SUBDIVISIONS PROVIDING ½ ACRE OF NON-CRITICAL SOILS

A. Soil Classifier Soil mapping based upon onsite determination of soil characteristics shall be conducted to determine soil suitability for private sewage disposal systems. Soil survey and mapping shall be by a Soil Classifier.

B. Number of Borings There shall be a sufficient number of soil borings throughout the proposed acreage for platting so as to allow intensive mapping of soil characteristics and limiting factors related to suitability for private sewage disposal systems. The mapping and overlay of such characteristics shall be of sufficient detail to minimize the potential for inclusions and to determine the existence of at least ½ acre of contiguous, non-critical soils on each proposed lot. There shall be at least one boring on each acre of the proposed subdivision. The location of all borings shall be shown on the soil map overlay.

C. 200 Foot Grid System A 200 foot grid system shall be established and one boring at each grid point shall be performed. In addition, sufficient additional borings shall be completed to adequately identify each soil mapping unit as well as variations within mapping units as far as depth to limiting layer.

D. Department Notification The Department shall be notified at least 24 hours before commencement of onsite borings so that the Department may observe the borings and sampling procedures, if it so desires. Any boring conducted without the Department being notified may not be acceptable.

E. Soil Classifiers Report A map and log of each soil series mapped on the site shall be prepared and included in the Soil Classifier's report. Specific boring logs shall be submitted in a format as required by the Department. These reports shall include, at a minimum, soil texture and permeability classifications by depth, along with the depth to any limiting layer.

F. Soil Update The date(s) of all fieldwork shall be indicated. Soil borings shall be valid for one year after the test date, after which time an update is required by the soil classifier.

G. Soil Mapping The entire subdivision area shall be mapped showing soil types present with boundaries of each defined, considering areas of transition. This mapping shall be coordinated with site topography, and shall be of the same scale as the tentative and final subdivision plats.

H. Soil Boundaries The map shall also depict areas of seasonal high groundwater or other limiting layers as determined by the Soil Classifier's observation of the drainage characteristics of the soil. Long-term monitoring of observation wells approved by the Department may be used to supplement this information (See § 8.04.420 N). Boundaries of the following areas shall be defined:

1. Actual or seasonal high groundwater or other limiting layer at less than 18 inches from the natural soil surface.

2. Actual or seasonal high groundwater or other limiting layer at 18 inches to 30 inches from the natural soil surface.

3. Actual or seasonal high groundwater or other limiting layer at 30 inches to 42 inches from the natural soil surface.

4. Actual or seasonal high groundwater or other limiting layer at 42 inches to 60 inches from the natural soil surface.

5. Actual or seasonal high groundwater or other limiting layer greater than 60 inches from the natural soil surface.

I. Map Of Boring Locations A detailed map showing the soils present and locations of borings shall be provided. The signature(s) of the Soil Classifier(s) by whom the soil mapping was done and the report prepared, must be affixed to both the report and the soil map.

J. Topography The topography of the subdivision shall be shown in one (1) foot contours.

K. Restricted Soils Soils not considered non-critical shall not be included in the ½ acre of required soils, and in addition, shall be indicated as being restricted for private sewage disposal systems on the tentative and final subdivision plats.

L. Tanks in Septic Restricted Areas Septic tanks, lift stations, aeration devices and Illinois Department of Public Health approved NSF 350 pretreatment units will be allowed in septic restricted areas if not prohibited by another restriction including but not limited to flood plain, easements, and surface water flow provided that provisions are made to ensure that the inlet and outlet inverts, tops of tanks, pretreatment units, lift stations and aeration devices are water tight.

M. Usable Size And Configuration The developer must prove to the satisfaction of the Department that each lot on the tentative and final subdivision plats has at least ½ acre of non-critical soil in a continuous area and of usable size and configuration.

N. Building Sewer/Forcemain Easements When access to the septic suitable area will require the crossing of easements, lot lines or roadways, building sewer or forcemain easements shall be designated and provisions for protecting the forcemain or building sewer (i.e. sleeving) shall be specified.

§ 8.04.670 SUBDIVISIONS WITH DESIGNATED PRIVATE SEWAGE DISPOSAL AND FUTURE SEPTIC SYSTEM REPLACEMENT AREAS WITHIN NON-CRITICAL SOILS

A. Soil Evaluation Soils evaluation for proposed lots which will have designated private sewage disposal and future private sewage disposal system replacement areas, shall be consistent with § 8.04.420 A - § 8.04.420 M of the Ordinance.

B. Tank Outside Designated Areas Septic tanks, lift stations, aeration devices and Illinois Department of Public Health approved NSF 350 pretreatment units will be allowed in areas

which are not included in the designated private sewage disposal and future septic system replacement areas if not prohibited by another restriction including but not limited to floodplain, easements and surface water flow and does not conflict with minimum required lateral setbacks, provided that provisions are made to ensure that the inlet and outlet inverts, tops of tanks, pretreatment units, lift stations and aeration devices are water tight.

C. Minimum Number Of Borings A minimum of three (3) soil borings shall define the designated area with one boring each at the high, middle and lowest elevations of the area.

D. Topography The topography of the designated private sewage disposal system area and future septic system replacement areas shall be provided in one (1) foot contours.

E. Sizing of Designated Septic Areas The designated areas shall be sized per Tables IA and IB (Appendix B) requirements. The designated private sewage disposal system and future system replacement areas must be clearly shown on the tentative and final subdivision plats.

F. Design Exhibits. Each designated private sewage disposal area and future septic system replacement area requires a design exhibit, prepared by a qualified designer, and submitted at the tentative and final subdivision plat stages. Design exhibits shall provide the following information, at a minimum, whether existing or proposed.

1. Lot boundaries and property dimensions.
2. Proper orientation of directions relative to the property in question.
3. Locations of any underground utilities.
4. Locations of any easements and/or septic restricted areas.
5. Locations of curtain drains, field tiles, wells, designated well areas, storm water drywells, and designated private sewage disposal system and future septic system replacement areas.
6. The layout of the absorption areas (trenches) to determine the designated area configuration.
7. Locations of relevant soil borings.
8. A clearly described benchmark.
9. Existing and proposed topography in 1 foot contours.
10. Elevations of the bottom of the absorption areas referenced to the benchmark.
11. Absorption area design calculations.

G. Free From Encroachment The designated private sewage disposal system and future septic system replacement areas shall remain free from encroachment per § 8.04.390 ¶ E.

H. Building Sewer/ Forcemain Easements When access to the designated private sewage disposal and/or future septic system replacement areas will require the crossing of easements, lot lines or roadways, building sewer and/or forcemain easements shall be designated and provisions for protecting the forcemain or building sewer (i.e. sleeving) shall be specified.

I. Designated Septic System Areas To Serve More Than One Property Septic systems serving more than one property shall comply with § 8.04.370 ¶ I.

§ 8.04.680 SITES UTILIZING IEPA PERMITTED TECHNOLOGY : Within the unincorporated areas of the county, sites utilizing IEPA permitted technologies shall provide a copy of the approved IEPA

Construction Permit and documentation confirming that the permitted system has sufficient capacity to receive and treat the domestic wastewater for the number of lots proposed in the subdivision.

§ 8.04.690 OTHER SUBDIVISION REQUIREMENTS

A. Slope Restriction No area which exceeds the maximum allowable slope per Table I, Appendix B, shall be included in the ½ acre of non-critical soils or the designated septic system and future replacement areas.

B. Required Setbacks The ½ acre of non-critical soils and the designated septic system and future replacement areas shall be exclusive of all areas which fall within the setback distances listed in Table IV, Appendix B.

C. Storm water Drywells There shall be a 200 foot well restriction from all existing and proposed storm water drywells (Class V injection wells) shown on the tentative and final subdivision plats.

D. Designated Locations Designated locations of water wells and private sewage disposal systems shall be shown on relevant lots (on the tentative and final subdivision plat), where applicable, to eliminate future conflicts between wells and private sewage disposal systems.

E. Easements The ½ acre of non-critical soils, and areas designated for private sewage disposal systems and replacement private sewage disposal systems, are exclusive of all easements (i.e. drainage, road construction, utility, landscape, etc.).

F. Flood Hazard Land designated as Flood Hazard is not acceptable for the installation of a private sewage disposal system and cannot be included as part of the ½ acre of non-critical soils, or the designated private sewage disposal system and future replacement areas. All areas within the subdivision which are located within the Flood Hazard area shall be designated on the final subdivision plat.

G. Dimensions All dimensions, linear, curvilinear, and angular, necessary to properly re-survey, shall be shown, with linear dimensions in feet and decimals of a foot.

H. Scale Of Subdivision Plats Tentative and final subdivision plats shall be drawn at a scale of 1 inch to 100 feet or larger.

I. Community Sewer And Water Documentation shall be provided to the Department that community water and sewer are not available and accessible to the property.

J. Cutting/Filling Of Soils All areas of filling and/or cutting must be clearly delineated on an engineering plan. It should be known that this may influence septic suitability and additional soil work may be required.

K. The use of fill and/or cutting of soils is strongly discouraged and usually results in at least as critical if not more critical soil limitations for onsite private sewage disposal systems. The primary controlling factor to be considered is that the natural soils must be unencumbered by a limiting layer within 30 inches of the natural soil surface. Fill can only be used if that criterion is met. In this event, fill would have to be limited to carefully controlled situations, accompanied by detailed engineering. The lower portion, if not all of the sewage disposal system, must be a minimum of six inches into natural (undisturbed), uncompacted soils and no deeper than thirty-

six (36) inches from a final grade. At the time, the separation below the trench bottom to the top of the limiting layer shall be maintained as required in Tables IA and IB (Appendix B).

L. Made Land Removal of native soils and replacement with fill shall be considered a "made land" situation, and is not usually acceptable for on-site private sewage disposal systems. Any such consideration of this approach should be only after consultation with Department personnel prior to preparing any plans. In addition to the normal soils evaluation in areas of made lands, the following factors will also influence soil suitability: length of time fill has been in place; degree of compaction; stratification of soil texture; re-establishment of soil structure and depth; predictable extent of materials; and integrity of the fill/natural soil interface.

M. Artificial Drains Use of artificial drains to lower seasonal high groundwater tables shall be in compliance with § 8.04.430 F.

N. Hydrogeological Assessment The proposal shall comply with § 8.04.610 of this Ordinance. When rapid or very rapid permeable soils are present in the top thirty six (36) inches of a proposed subdivision utilizing subsurface domestic wastewater disposal, a hydrogeological investigation report will be required. This report shall be completed by a licensed professional geologist or licensed professional engineer and contain, at a minimum, the following information:

1. An evaluation as to the availability of sufficient quantity of water to serve the proposed subdivision; and

2. Shallow groundwater depth(s) and flow direction(s) at the proposed subdivision.

3. An evaluation of upgradient negative groundwater influences on the proposed subdivision. Potential influences for consideration shall include but not be limited to known groundwater contamination sites and upgradient land uses which may impact groundwater quality;

4. An evaluation of downgradient negative groundwater influences by the proposed subdivision. The cumulative impact of chlorides, nitrates, phosphates and bacteria on groundwater, and any downgradient sensitive environments (i.e. surface water, wetlands, fens, etc.) shall be evaluated at a minimum, and

5. Recommended actions to minimize impact of upgradient groundwater on the subdivision or the subdivision's impact on downgradient groundwater.

§ 8.04.700 SUBDIVISION REVIEW PROCESS

Plats of Subdivision shall be submitted for review in a two-step process:

A. Tentative Plat of Subdivision

B. Final Plat of Subdivision

§ 8.04.710 TENTATIVE SUBDIVISION PLAT STAGE

A. The Tentative Plat of Subdivision shall depict the proposed lot lines, streets, easements, existing structures within the boundary, engineering improvements, existing topography, locations of all

private sewage disposal systems, water wells and storm water drywells within 200 feet of the boundary, all private sewage disposal system and/or well restriction areas, and/or designated private sewage disposal and future private sewage disposal system replacement areas.

B. Soil Map And Soil Logs The soil map and soil boring logs shall be submitted with the Tentative Plat of Subdivision.

C. Net Square Footage Of Non-Critical Soils For all subdivisions providing ½ acre of non-critical soils per lot, the net square footage of contiguous, non-critical soils per lot shall be shown on the tentative plat of subdivision.

D. Delineating Septic Restricted Areas Septic restricted areas shall be shaded consistently (with a corresponding legend) on the tentative and final plats of subdivision for clarity.

§ 8.04.720 FINAL SUBDIVISION PLAT STAGE

A. All private sewage disposal system requirements of the Tentative Plat of Subdivision stage must continue to be met at the Final Plat of Subdivision stage. The Final Plat of Subdivision shall depict the lot lines, streets, easements, engineering improvements, all well and/or private sewage disposal system restricted areas, and/or the designated private sewage disposal system and future private sewage disposal system replacement areas.

B. Final Engineering. A copy of the engineering plans for any engineering improvements shall be submitted for review with the final plat of subdivision. Where site specific engineering has been approved, the engineering plans must include details of such engineering.

C. Soil Stockpiling And Traffic Routes. Soil stockpiling areas and heavy vehicular traffic routes shall be designated in the final engineering plans or on the final plat of subdivision.

D. Notes and Restrictions. The following notes and/or restrictions shall be provided on the final plat of subdivision, as applicable:

1. General
    a. Any recommended actions to minimize the impact of upgradient groundwater on the subdivision or the subdivision's impact on downgradient groundwater based upon a hydrogeological study per § 8.04.690 ¶ N.
    b. Any provisions to protect forcemains and building sewers within easements, and when crossing easements, lot lines or roadways.

2. Designated Private Sewage Disposal Areas
    a. Private sewage disposal system absorption areas shall be installed within the designated areas as provided.
    b. Private sewage disposal systems must meet the standards in place at the time of the permit application.
    c. Designated private sewage disposal and future septic system replacement areas shall remain free from development or encroachment from water wells, water service lines, structures, decks, patios, driveways, swimming pools, stormwater structures and underground utilities.

E. Public Health Administrator's Certificate. The Plat Act, as amended January 1, 1988, requires the local Health Authority to sign a plat of subdivision with respect to sewage disposal systems if any part of the platted land will not be served by a public sewer system. The following signature certificate shall be provided on the final plat of subdivision:

No public sewer system exists to serve this subdivision. This plat of subdivision is approved with respect to onsite sewage disposal and the acreage involved has been reviewed in accordance with established soil suitability evaluation procedures.

_____

Public Health Administrator

_____

Date

F. Recording of Final Plat of Subdivision. If the Final Plat of Subdivision is not recorded at the McHenry County Recorder's Office within six (6) months of the date of the Public Health Administrator's signature, the plat of subdivision shall be invalid.

G. Plat of Amendment. Whenever private sewage disposal system restriction lines or designated private sewage disposal system areas or future replacement septic system area locations are to be changed from the locations shown on the approved Final Plat of Subdivision, a Plat of Amendment shall be required. The Plat of Amendment shall comply with § 8.04.650 – § 8.04.720 F of this Ordinance.

§ 8.04.730 SPECIAL WASTE HOLDING TANKS

A. General Wastewater not disposed of by discharging into a sanitary sewer, shall be disposed of in compliance with this section. Compliance with this Section does not relieve the property owner or lessee from adhering to any additional federal, state or local regulations in this matter.

B. Permit Required. No Special Waste Holding Tank shall be installed until a permit has been issued by the Health Authority. Applications for permits shall be in writing on forms provided by the Department and shall be signed by the owner or their authorized agent. Said permit to construct or repair shall be valid for a period of two (2) years from date of issuance. If construction or repair is not completed within said period, the permit shall expire unless an extension is approved by the Health Authority. The permit can be renewed for a period of 6 (six) months for 1/2 of the prevailing permit fee, provided all the conditions of the original submittal remain valid. Where a Special Waste Holding Tank is required for a structure, no building permit shall be issued without the prior or simultaneous issuance of the Special Waste Holding Tank permit. No Special Waste Holding Tank shall be put into use until it has been inspected and approved by the Health Authority.

C. Construction. The Special Waste Holding Tank shall be designed and constructed in compliance with § 8.04.520, except that the outlet shall be sealed, and the tank shall have an audio/visual alarm installed at 2/3 capacity of the tank.

D. Location. The Special Waste Holding Tank shall be located in compliance with the requirements in Table IV (See Appendix B).

E. Base Flood Elevation . The land elevation at the site of the proposed special waste holding tank shall not be subject to flooding (i.e. shall not be within the 100 year flood hazard area as defined by the base flood elevation of the closest stream or body of water.) Such elevation shall be provided in USGS/MSL (United States Geological Survey Mean Sea Level) datum.

F. Minimum Size. The minimum size of a special waste holding tank shall be 1000 gallons.

G. Abandoned Special Waste Holding Tank. Special Waste Holding Tanks which are no longer in use shall be completely pumped by a special waste hauler and shall be removed per the requirements of the Illinois Environmental Protection Agency and State Fire Marshal.

H. Licensed Contractor. No installation of a special waste holding tank shall be made without a written permit from the Health Authority issued either to a licensed private sewage disposal installation contractor or to the owner or lessee of the location, on the condition that the owner or lessee provides evidence of contracting a licensed private sewage disposal installation contractor to perform the installation.

I. Free From Encroachment. The area to be used for the special waste holding tank shall be maintained so that it is free from encroachment by driveways, decks (except as allowed in Table IV, Appendix B), accessory buildings, swimming pools, parking areas, buried lawn sprinkling systems, underground utility services, patios, slabs, additions to the original structure which limits free access to the system for maintenance, servicing or proper operation. Once installed the special waste holding tank shall remain free from encroachment.

J. Access. Access to the interior of the special waste holding tank shall be provided to allow inspection and maintenance. A manhole or access port extension collar or riser with a minimum dimension (width or diameter) of twelve (12) inches shall be provided by the private sewage disposal installation contractor to bring access to the tank to the ground surface. The joint between the special waste holding tank and the riser(s) shall be watertight. When the riser consists of multiple sections, all joints shall be watertight. A tight fitting, durable lid, which is labeled “Special Waste” shall be provided on all access openings.

K. Handling of Waste Water. The waste from Special Waste Holding Tanks shall be handled according to the rules for disposal of oil, gas and grease promulgated under the Environmental Protection Act, or according to 35 Ill Administrative Code Subtitle G. Note: Also see Illinois Plumbing Code (77 Ill. Adm. Code 890.)

L. Special Provisions. All properties which have Special Waste Holding Tanks shall meet the following requirements:

1. A registration shall be maintained with the Department. The property owner or lessee shall update the registration in the event of changes such as property ownership, contact information, etc.

2. The registration shall be on forms provided by the Department.

3. The property owner shall maintain information including the type and amount of waste being discharged to the holding tank, results of any laboratory analysis done on the wastewater, the name of the special waste hauler removing and transporting the wastewater, and the ultimate destination of the wastewater for two (2) years. The property

owner or lessee shall provide this information to the Department upon request.

4. The Special Waste Holding Tank shall have the outlet sealed with an operable audio/visual high water alarm installed at 2/3 capacity of the tank. Alarms installed after January 1, 2014 shall be located outside of the building served. The power supply for the alarm shall be on a dedicated circuit.

5. The Special Waste Holding Tank shall be subject to inspection by the Department a minimum of once every other year. Additional inspections shall be done as necessary to ensure compliance with Ordinance requirements (i.e. response to complaints, follow-up inspections). The owner or operator shall allow Department staff access to a special waste holding tank for inspection within 2 business days of the request, unless an alternative, mutually agreed upon date and time has been established.

6. Inspection fees, as established in the Public Health Fee Ordinance shall apply to Department inspections.

APPENDIX A - INCORPORATED MATERIALS

The following materials are incorporated as a part of this Ordinance for reference purposes:

A. Illinois Private Sewage Disposal Licensing Act (225 ILCS 225/l et seq.) and Illinois Private Sewage Disposal Code (Title 77 Illinois Administrative Code, Chapter I, Subchapter r, Part 905)

B. Wisconsin Mound Soil Absorption System Siting, Design, and Construction Manual, Small Scale Waste Management Project, University of Wisconsin-Madison, January, 1990

C. Wisconsin At Grade Soil Absorption System Siting, Design and Construction Manual, Small Scale Waste Management Project, University of Wisconsin-Madison, January 1990

APPENDIX B

A. Table IA - Soil Suitability for On-site Waste Water Disposal

B. Table IB – System Sizing Soil Application Rates for Onsite Wastewater Disposal

C. Table II - Estimated Domestic Sewage Flows

D. Table III - Minimum Liquid Capacities For Septic Tanks Serving Residential Units

E. Table IV - Minimum Lateral Separation Distances

F. Table V - Standards for Seepage Field Construction

G. Table VI - Size and Spacing for Seepage Field Construction

H. Table VII - Sizing of Aerobic Treatment Plants

I. Table VIII - Variance Guidelines

J. Table IX – Spacing and Sizing for Gravelless Chamber Systems

APPENDIX B - TABLE I A
SOIL SUITABILITY FOR ON-SITE WASTEWATER DISPOSAL

(See Also Corresponding Notes Below (1-5), Sections 8.04.460 -490, Table I B and Illustration 1)

Permeability Range (in/hr)	Associated USDA Soil Textures	Minimum Separation to Seasonal High Ground Water Table from Natural Soil Surface (1) (inches)	Allowable System Types in Relation to Column 3	Type 1-3 Minimum Separation to Seasonal High Ground Water from Bottom of Trench (inches)	Type 4 Minimum Separation to Seasonal High Ground Water from Bottom of Stone- (inches)	Type 5 Minimum Separation to Seasonal High Ground Water from Bottom of Sand (inches)	Type 1-5 Minimum Separation to Slowly Permeable or Loose Rock Fragment Limiting Layers from Natural Soil Surface (1) (inches)	Type 1-5 Minimum Required Separation to a More Restrictive Soil Loading Permeability Rate (1) (inches)	Maximum Allowable Slope %
Very Rapid (2) Greater than 20	Gravelly Sand, Coarse Sand	66 or greater	1,2,3,4,5	48	48 (2)(4)	48 (2)(4)	48 (2)	48 (2)	25 (2)
		60-65	2,3,4,5						
		54-59	3,4,5						
		24-53	4,5 (4)						
		12-23	N/A						
Rapid 6 to 20	Loamy Coarse Sand, Sand	>66	1,2,3,4,5	48	48 (4)	48 (4)	48	48	25
		60-65	2,3,4,5						
		54-59	3,4,5						
		24-53	4,5 (4)						
		12-23	N/A						
Moderately Rapid 2 to 6	Fine Sand, Gravelly Loam, Gravelly Sandy Loam, Sandy Loam, Loamy Fine Sand	54 or greater	1,2,3,4,5	36 (3)	24	24	36	36	20
		48-53	1 (3), 2,3,4,5						
		42-47	1 (3), 2(3),3,4,5						
		24-41	3 (3),4,5						
		12-23	N/A						
Upper Moderate 1 to 2	Very Fine Sandy Loam, Loam Very Fine Sand, Silt Loam, Loam, Sandy Clay Loam, Silty Clay Loam, Clay Loam	42 or greater	1,2,3,4,5	24 (3)	18	12	24	24	15
		36-41	1 (3),2,3,4,5						
		30-35	2 (3),3,4,5						
		18-29	3 (3) ,4,5						
		12-17	5						
Lower Moderate .6 to 1	Clay Loam, Silty Clay Loam, Silt Loam	42 or greater	1,2,3,4,5	24 (3)	18	12	24	24	15
		36-41	1 (3),2,3,4,5						
		30-35	2 (3),3,4,5						
		18-29	3 (3) ,4,5						
		12-17	5						
Moderately Slow (5) (5) .2 to .6	Silty Clay Loam, Clay Loam, Silty Clay, Clay (Dense Loam Tills)	42 or greater	1,2,3,4,5	24 (3)	18	12	24	24	10
		36-41	1 (3),2,3,4,5						
		30-35	2 (3),3,4,5						
		18-29	3 (3) ,4,5						
		12-17	5						

NOTES CORRESPONDING TO TABLE 1 A

(1) Required separation is measured from the bottom of trench in a type 1, 2 or 3 system, bottom of aggregate in a type 4 system or bottom of sand fill in a type 5 system.

(2) Not suitable for development. A variance will be considered when demonstrated that treatment will reduce the groundwater Nitrate levels to less than 10 milligrams per liter leaving the property or the density of domestic wastewater disposal is less than or equal to 1 per 1.5 acres, and the effluent meets the requirements of NSF standard 40.

(3) When low pressure piping distribution is utilized for a type 1, 2 or 3 system the required separation from the bottom of trench to seasonal high groundwater can be reduced to 18" in moderate soils and 24" in moderately rapid soils.

(4) The required separation from bottom of aggregate in a type 4 system or sand fill in a type 5 system to seasonal high ground water can be reduced to 24 inches when seasonal high ground water is 24-53 inches from the natural soil surface and with treatment capacity to reduce the groundwater Nitrate levels to less than 10 milligrams per liter leaving the property and the effluent meets the requirements of NSF standard 40.

(5) Systems must be pressurized utilizing a pump and indexing valve or duplex pumps alternating to each half of the seepage field or by low pressure piping distribution as specified in section 8.04.540.

APPENDIX B - TABLE I B
SYSTEM SIZING SOIL APPLICATION RATES FOR ON-SITE WASTEWATER DISPOSAL
(See Also Table I A, Sections 8.04.460 - 490)

Permeability Range (in/hr)	Pretreatment Type	Type 4 & 5 Systems Assigned Soil Loading Rate gpd/sf	Type 4 & 5 Systems Assigned Linear Loading Rate gpd/lf	Type 1-3 Residential Assigned Loading Rate sf/br	Type 1-3 Non-Residential Assigned Loading Rate gal/sf	Illinois Raised Filter Bed Mantel Sizing min/in
Very Rapid **(1)** Greater than 20	Septic Tank	0.8	10	200	1	NA
	Class I	1	12.5	133.34	0.67	10
	NSF 350	1.6	20	100	0.5	NA
Rapid 6 to 20	Septic Tank	0.8	10	200	1	NA
	Class I	1	12.5	133.34	0.67	10
	NSF 350	1.6	20	100	0.5	NA
Moderately Rapid 2 to 6	Septic Tank	0.6	8	275	0.8	NA
	Class I	0.75	10	183.34	0.53	30
	NSF 350	1.2	16	137.5	0.4	NA
Upper Moderate 1 to 2	Septic Tank	0.4	6	350	0.7	NA
	Class I	0.5	7.5	233.35	0.47	60
	NSF 350	0.8	12	175	0.35	NA
Lower Moderate .6 to 1	Septic Tank	0.4	4	480	0.5	NA
	Class I	0.5	5	320.02	0.33	100
	NSF 350	0.8	8	240	0.25	NA
Moderately Slow (2) .2 to .6	Septic Tank	0.2	3	700	0.3	NA
	Class I	0.25	3.75	466.69	0.20	125
	NSF 350	0.4	6	350	0.15	NA

(1) Not suitable for development. A variance will be considered when demonstrated that treatment will reduce the groundwater Nitrate levels to less than 10 milligrams per liter leaving the property or the density of domestic wastewater disposal is less than or equal to 1 per 1.5 acres, and the effluent meets the requirements of NSF standard 40.

(2) Systems must be pressurized utilizing a pump and indexing valve or duplex pumps alternating to each half of the seepage field or by low pressure piping distribution as specified in section 8.04.540.

APPENDIX B – TABLE II
ESTIMATED DOMESTIC SEWAGE FLOWS

TYPE OF ESTABLISHMENT	UNIT (PER)	GALLONS PER DAY
PERMANENT DWELLINGS		
Board Houses	person	50
Boarding Schools	person	150
Institutions, other than hospitals	bed	125
Mobile Homes, individual	bedroom	200
Mobile Home Parks	space	400
Multi Family Dwellings	bedroom	200
Rooming Houses	resident	40
Single Family Dwellings	bedroom	200
Kennels	run or cage	30
TRAVEL AND RECREATIONAL FACILITIES		
Airports, Railway Station, Bus Stations	passenger	5
CAMPGROUNDS		
Campgrounds w/Mobile Homes	site	150
Comfort Station w/toilets & showers	space	35
Comfort Station w/toilets, no showers	space	25
Day Camps, no meals	person	25
Day Camps w/meals	person	35
Travel Trailer parks with water and sewer hook-ups	space	50
Cottages and/or Small Dwellings with seasonal occupancy	bedroom	150
Country Clubs	member	25
Highway Rest Areas	traveler	5
Hotels and Motels	bed	50
Picnic Parks	person	10
Places for Public Assembly	person	5
Swimming Pools and Bathing Beaches	person	10
Youth Camps without Cafeteria	person	50
Youth Camps with Cafeteria	person	60
Migrant Labor Camps	person	150
Sanitary Dump Station for Unsewered Site	site	20
Campgrounds with Central Bath and Toilet Facilities	space	35
THEATRES		
Movie	seat	5
Drive-in	car space	10
COMMERCIAL, INDUSTRIAL, and MISCELLANEOUS		
Churches	seat	3
Churches w/kitchens	meal	6
FACTORIES		
With toilets and showers	person	35
With toilets, no showers	person	20
Hospitals	bed	250
Hospitals, Medical	employee	15
Hospitals, Mental	bed	150

APPENDIX B – TABLE II
ESTIMATED DOMESTIC SEWAGE FLOWS (CONTINUED)

Hospitals, Mental	employee	15
Long-Term Care Institutions	bed	125
Long-Term Care Institutions	employee	15
Prison	inmate	150
Prison	employee	15
Laundries	customer	50
Offices and other day workers	Person	15
Office and other day workers (less than 4.5 hours per day)	Person	7.5
Restaurants, with seating	seat	25
Additional for bars and cocktail lounges	Seat	5
Restaurants without seating	meal	3
Taverns	seat	20
Restaurants 24 hour	seat	50
Restaurants – additional for gas pumps	Day	1000
Event Venues Fully Catered	Person/Event	12.5
Event Venues Fully Catered with Liquor Service	Person/Event	17.5
SCHOOLS		
Without cafeterias or showers	person	15
With cafeterias and showers	person	25
With cafeterias, no showers	person	20
Service Stations	vehicle served	10
Shopping Centers	per 1000 square feet of floor area	250
Stores	toilet	400
Retail Food Store	per 1000 square feet of floor area	250
Retail Food Store, with food preparation	per 1000 square feet of floor area	400
Retail Food Store – additional for gas pumps	day	1000

APPENDIX B – TABLE III
MINIMUM LIQUID CAPACITIES FOR SEPTIC TANKS SERVING RESIDENTIAL UNITS

Number of Bedrooms	Minimum Liquid Capacity of Tank (Gallons)	Minimum Liquid Capacity Of Tank (Gallons) When Garbage Grinder Is Used
2 or less	1000	1500
3	1250	2000
4	1500	2200
5	1750	2600
6	2000	3000
7	2250	3375

APPENDIX B - TABLE IV
MIMIMUM LATERAL SEPARATION DISTANCES (1)

NOTE: all measurements are in feet.

Component Part of System	Well or Suction Line (7) from Pump to Well	Water Supply Line Pressure	Lake, Stream, Retention Pond or other Surface Body of Water	Habitable Building or With or Without Attached Garage	Covered Porches	Property Line	Field Drain Line / Curtain Drain	Storm Water Conduit or Pipe	Drainage or Storm Water Detention Easements	Inground Swimming Pool or Hot Tub	On Ground/ Above Ground Swimming Pool or Hot Tub	Accessory Structures	Driveways or Parking Areas (5)	Under-ground Utilities	Sealed Wells	Landscape Retaining Walls Below Natural Grade or Used to Retain Fill Around Sepage Field	Fences	Decks and Patios
Solid Piping (schedule 40 or greater)	10	N/A	25	N/A	N/A	N/A	10	N/A	25	25	5	N/A	N/A	5 (7)	5	5	No Encroachment	N/A
Existing Solid Piping (< schedule 40)	50	10	25	N/A	N/A	N/A	10	10	25	25	5	N/A	5	5 (7)	5	5	No Encroachment	N/A
Septic Tank, Liftstation, Aerobic Treatment Plant or Other Pre-treatment Tank	50	10	25	5	5	5	10	10	25	25	5	5	5	5	5	5	No Encroachment	See note 6
Special Waste Holding Tanks	50 (3)	10	25	5	5	5	10	10	25	25	5	5	5	5	5	5	No Encroachment	See note 6
Distribution or Drop Box	75	25	50	20	20	5	20	15	25	25	10	10	5	5	5	5	No Encroachment	No Encroachment
Subsurface Seepage System (2)	75	25	50	20	20	5	20	15	25	25	10	10	5	5	5	5	No Encroachment	No Encroachment
Subsurface Seepage System Classified as a Class V Injection Well (2)	200 (4)	25	50	20	20	5	20	15	25	25	10	10	5	5	5	5	No Encroachment	No Encroachment
Sand Filter (2)	75	25	50	20	20	5	20	15	25	25	10	10	5	5	5	5	No Encroachment	No Encroachment
Chemical Toilet	10	N/A	25	5	5	5	N/A	N/A	25	10	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A
Privy	75	N/A	25	20	20	5	10	N/A	25	25	10	10	N/A	N/A	N/A	N/A	No Encroachment	N/A

NOTES CORRESDPONDING TO TABLE IV

(1) These distances have been determined for use in clay and loam soils only. The minimum distances required for use in sand or other types of soil shall be determined for the proposed private sewage disposal system and approved by this Department. Such approval will be given where the Department determines that the soil will provide treatment of the sewage.

(2) Separation distances are measured from the bottom of trench or aggregate of a type 1, 2, or 3 system, the aggregate of a type 4 system or the sand fill of a type 5 system.

(3) The minimum separation distance shall be 200 feet if the special waste holding tank meets the criteria of a potential secondary source as defined.

(4) A lesser separation distance (75') may be obtained with approval or a waiver from the IEPA.

(5) A drive way or parking area may be closer than 5', provided a permanent barrier to prevent trafficing over the septic system is provided and is not located over any portion of the septic system.

(6) Decks shall be allowed over septic tanks, aeration devices and lift stations provided that access is maintained at each access point for maintenance and repair, and that the deck does not encroach upon the soil absorption or designated expansion areas. For decks greater than or equal to five (5) feet above the ground surface, the space below the deck will be considered the access. Patios shall be allowed over septic tanks, aeration devices and lift stations provided that free access to all of the portals is provided.

(7) A force main, manifold or building sewer may be located less than 5 feet from a utility conduit, provided the force main, manifold or building sewer is sleeved within a larger diameter Schedule 40 or heavier solid pipe for any portion less than 5 feet from the utility.

APPENDIX B – TABLE V
STANDARDS FOR SEEPAGE FIELD CONSTRUCTION

Trench length, maximum length from point of discharge into seepage trench	100 feet
Trench bottom, minimum width	12 inches
Trench bottom, maximum width	36 inches
Trench bottom, minimum depth	18 inches
Trench bottom, maximum depth	36 inches
Trench bottom, slope	level
Distribution line, minimum diameter	4 inches [1]
Distribution line, minimum earth cover	6 inches
Distribution line, maximum earth cover	24 inches
Distribution line, maximum slope	level
Distribution line, maximum length (from header line)	100 feet

1. Unless system is fed by means of pressurized distribution

APPENDIX B – TABLE VI
SIZE AND SPACING FOR GRAVEL SEEPAGE FIELD CONSTRUCTION

Width of Trench at Bottom (inches)	Minimum Center to Center Spacing of distribution Lines (feet)	Effective Absorption Area Per Lineal Foot of Trench (square feet)
12	6.0	1.0
18	7.0	1.5
24	7.0	2.0
30	8.0	2.5
36	9.0	3.0

APPENDIX B – TABLE VII
SIZING OF AEROBIC TREATMENT PLANTS

Bedrooms	Minimum Rated Treatment Capacity – Gallons
1	500
2	500
3	500
4	500
5	750
6	900
7	1000
8	1200
9	1350
10	1500

APPENDIX B - TABLE VIII
VARIANCES TYPICAL FOR PRIVATE SEWAGE DISPOSAL SYSTEMS TO SERVE NEW CONSTRCTION

When circumstances exist which make impractical full compliance with the requirements of the Ordinance, an applicant may request a variance. Each variance request is reviewed in conjunction with the specific on-site conditions. It should not be assumed that a variance will automatically be granted. The following table provides general guidelines for variances which may be considered for private sewage disposal systems for new construction:

All measurements are in feet

System Component	Minimum Separation with a Variation Granted					
	Water Line Under Pressure	**Dwelling**	**Property Line**	**Accessory Structure, Above or on ground Pool or hot tub**	**Fences**	**Criteria**
Building Sewer	See Table IV	N/A	N/A	2.5	Above ground floating fence panels may encroach provided support piers and post footings do not	Amount of area available, location of adjacent dwellings, water wells, etc.
Septic Tank, Pretreatment Device or Lift Station	5	5	2.5	2.5	Above ground floating fence panels may encroach provided support piers and post footings do not	Amount of area available, location of adjacent dwellings, water wells, etc.
Distribution or Drop Box	12.5	10 (1)	2.5	5	No Variance	Amount of area available, soil permeability, site topography, locations of adjacent dwellings, water wells, etc.
Subsurface Seepage System	12.5	10 (1)	2.5	5	Above ground floating fence panels may encroach provided support piers and post footings do not	Amount of area available, soil permeability, site topography, locations of adjacent dwellings, water wells, etc.

Note: 1. Typically granted in moderate soil permeabilities where space is limited. Typically not granted in moderately rapid or rapid soil permeabilities, or when the septic system is upgradient of the dwelling.

APPENDIX B - TABLE IX
SIZE AND SPACING FOR GRAVELLESS CHAMBER SEEPAGE FIELD CONSTRUCTION

Chamber Dimensions – Average Inside Bottom Dimension	Minimum Center to Center Spacing of Distribution Lines	Effective Absorption Area Per Lineal Foot of Trench (square feet)
1.6 ft. – 2.42 ft.	9.0 feet	3.0
2.43 ft. or greater	9.0 feet	4.0

APPENDIX C

A. Table X – Perforation Discharge Rates

B. Table XI – Friction Loss in Schedule 40 Plastic Pipe

C. Table XII – Storage Capacity of Schedule 40 Plastic Pipe

D. Illustrations

APPENDIX C – TABLE X
PERFORATION DISCHARGE RATES IN GALLONS PER MINUTE VERSUS PERORATION DIAMETER AND IN-LINE PRESSURE

In-Line Pressure (ft)	Perforation Diameter (in)					
	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"
1.0	0.42	0.74	1.15	1.66	2.26	2.95
1.1	0.44	0.77	1.20	1.73	2.36	3.08
1.2	0.45	0.80	1.25	1.81	2.46	3.21
1.3	0.47	0.84	1.31	1.88	2.56	3.35
1.4	0.48	0.87	1.36	1.96	2.66	3.48
1.5	0.50	0.90	1.41	2.03	2.76	3.61
1.6	0.52	0.93	1.45	2.09	2.85	3.72
1.7	0.54	0.96	1.50	2.15	2.93	3.83
1.8	0.55	0.98	1.54	2.22	3.02	3.95
1.9	0.57	1.01	1.59	2.28	3.10	4.06
2.0	0.59	1.04	1.63	2.34	3.19	4.17
2.1	0.60	1.07	1.67	2.40	3.27	4.27
2.2	0.62	1.09	1.71	2.45	3.34	4.37
2.3	0.63	1.12	1.74	2.51	3.42	4.46
2.4	0.65	1.14	1.78	2.56	3.49	4.56
2.5	0.66	1.17	1.82	2.62	3.57	4.66
2.6	0.67	1.19	1.85	2.67	3.64	4.75
2.7	0.68	1.21	1.89	2.72	3.71	4.84
2.8	0.70	1.24	1.92	2.77	3.77	4.92
2.9	0.71	1.26	1.96	2.82	3.84	5.01
3.0	0.72	1.28	1.99	2.87	3.91	5.10
3.1	0.73	1.30	2.02	2.92	3.97	5.18
3.2	0.74	1.32	2.05	2.96	4.03	5.26
3.3	0.75	1.34	2.09	3.01	4.10	5.35
3.4	0.76	1.36	2.12	3.05	4.16	5.43
3.5	0.77	1.38	2.15	3.10	4.22	5.51
3.6	0.78	1.40	2.18	3.14	4.28	5.59
3.7	0.79	1.42	2.21	3.18	4.34	5.66
3.8	0.81	1.43	2.24	3.23	4.39	5.74
3.9	0.82	1.45	2.27	3.27	4.45	5.81
4.0	0.83	1.47	2.30	3.31	4.51	5.89
4.1	0.84	1.49	2.33	3.35	4.57	5.96
4.2	0.85	1.51	2.36	3.39	4.62	6.03
4.3	0.87	1.52	2.38	3.44	4.68	6.11
4.4	0.88	1.54	2.41	3.48	4.73	6.18
4.5	0.89	1.56	2.44	3.52	4.79	6.25
4.6	0.90	1.58	2.47	3.56	4.84	6.32
4.7	0.91	1.60	2.49	3.60	4.89	6.39
4.8	0.92	1.61	2.52	3.63	4.94	6.45
4.9	0.93	1.63	2.54	3.67	4.99	6.52
5.0	0.94	1.65	2.57	3.71	5.04	6.59

APPENDIX C – TABLE XI
FRICTION LOSS IN SCHEDULE 40 PLASTIC PIPE
(Feet of Head Loss per 100 feet)

	Pipe diameter (inch)				
Flow (gpm)	1 ¼	1 ½	2	3	4
10	1.46	0.70	0.21		
11	1.77	0.84	0.25		
12	2.09	1.01	0.30		
13	2.42	1.17	0.35		
14	2.74	1.33	0.39		
15	3.06	1.45	0.44	0.07	
16	3.49	1.65	0.50	0.08	
17	3.93	1.86	0.56	0.09	
18	4.37	2.07	0.62	0.10	
19	4.81	2.28	0.68	0.11	
20	5.23	2.46	0.74	0.12	
25		3.75	1.10	0.16	
30		5.22	1.54	0.23	
35			2.05	0.30	0.07
40			2.62	0.39	0.09
45			3.27	0.48	0.12
50			3.98	0.58	0.16
60				0.81	0.21
70				1.08	0.28
80				1.38	0.37
90				1.73	0.46
100				2.09	0.55
125					0.85
150					1.17
175					1.56

APPENDIX C – TABLE XII
STORAGE CAPACITY OF SCHEDULE 40 PVC PIPE

Pipe Diameter (inches)	Storage Capacity (gallons per 100 feet)
1	4.1
1.25	6.4
1.5	9.2
2	16.3
2.5	25.5
3	36.7

ILLUSTRATIONS

A. Illustration 1: System Types

B. Illustration 2: Water Table Observation Well Construction

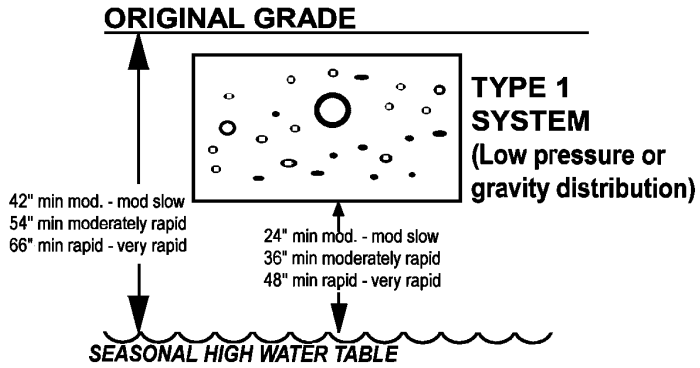
C. Illustration 3: At Grade System Design Sloping Site

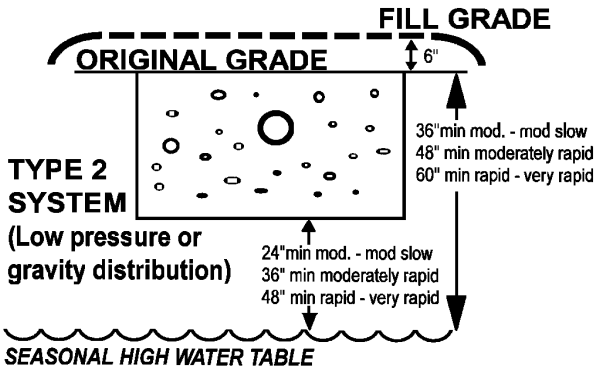
D. Illustration 4: At Grade System Design Level Site

E. Illustration 5: Mound Design on a Level Site

F. Illustration 6: Mound Design on a Sloping Site

ILLUSTRATION 1 SYSTEM TYPES
Also see Table 1 and Corresponding Notes





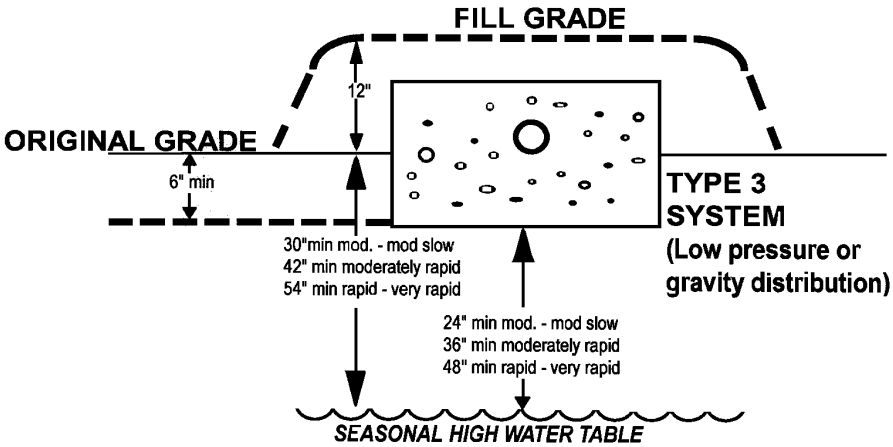


ILLUSTRATION 2 – WATER TABLE OBSERVATION
Well Construction

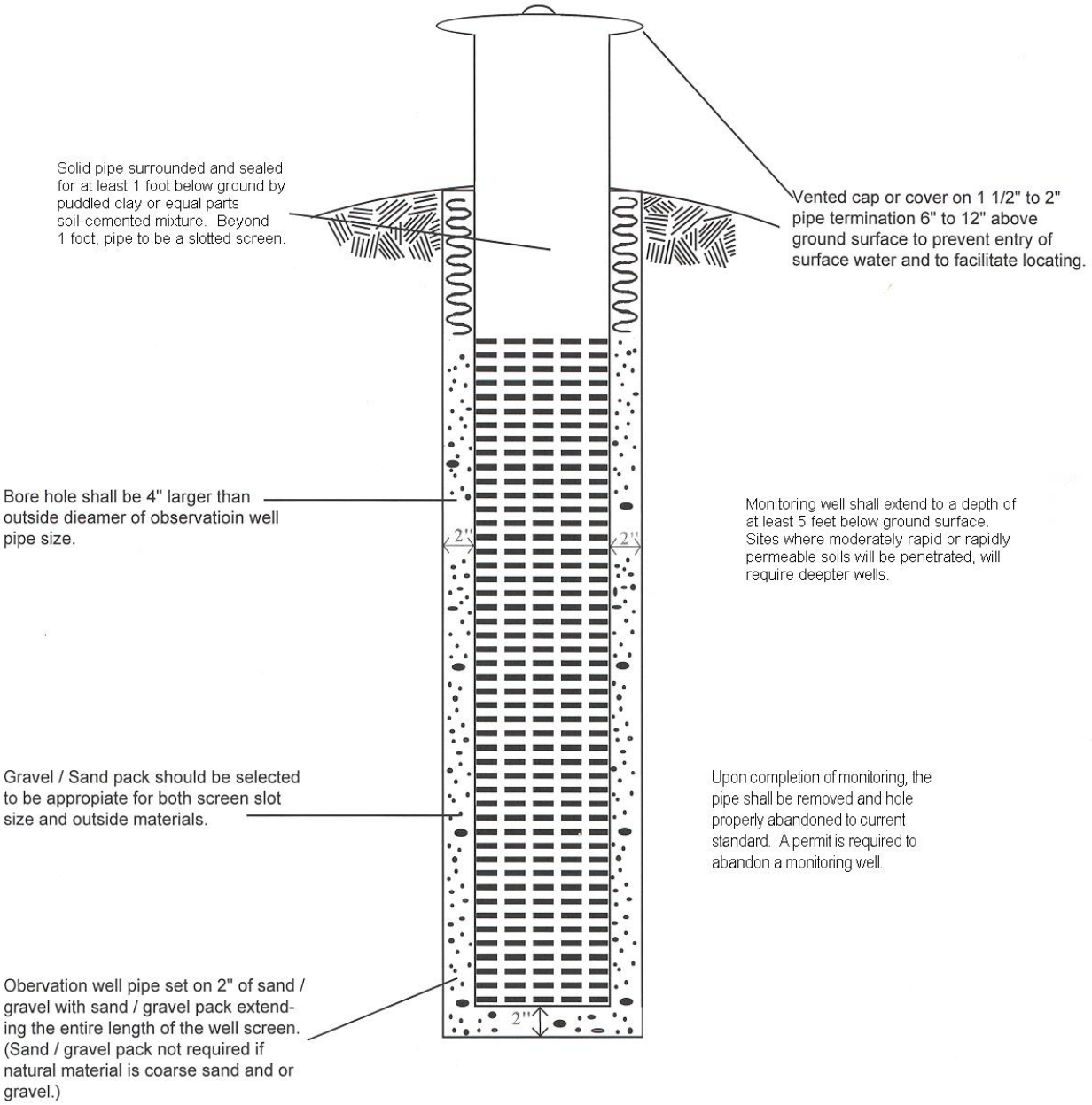
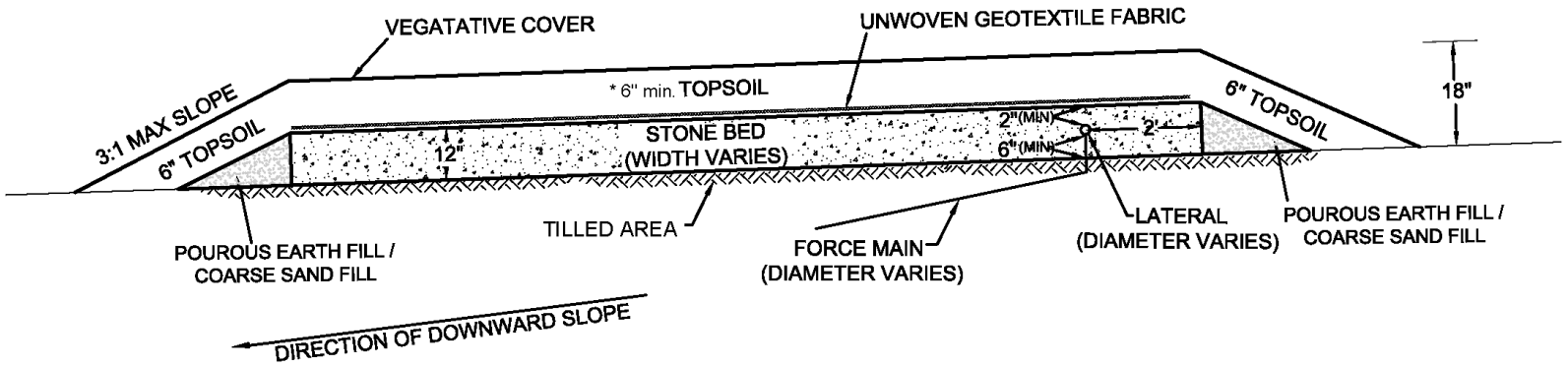
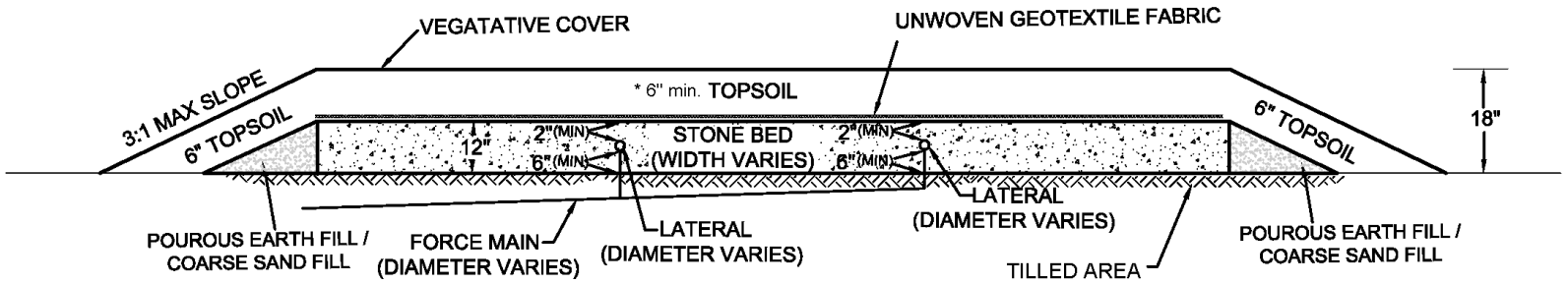


ILLUSTRATION 3
TYPE IV AT GRADE SYSTEM ON SLOPING SITE
(NOT TO SCALE)



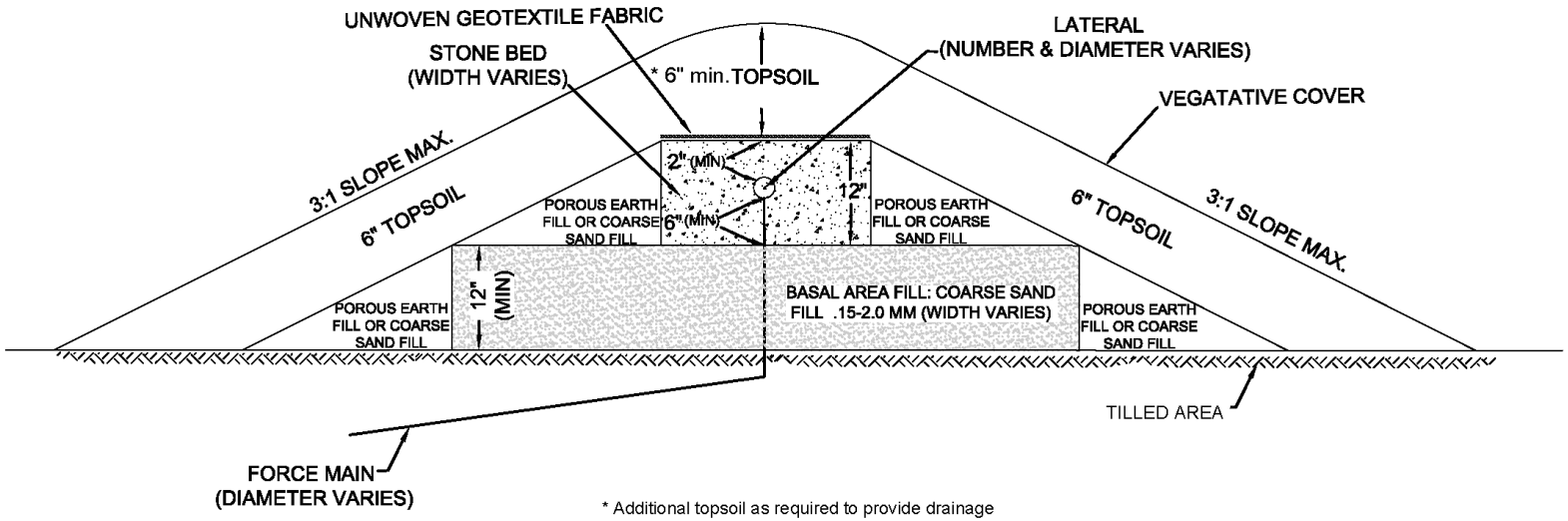
*Additional topsoil as required to provide drainage

ILLUSTRATION 4
TYPE IV AT GRADE SYSTEM ON LEVEL SITE
(NOT TO SCALE)



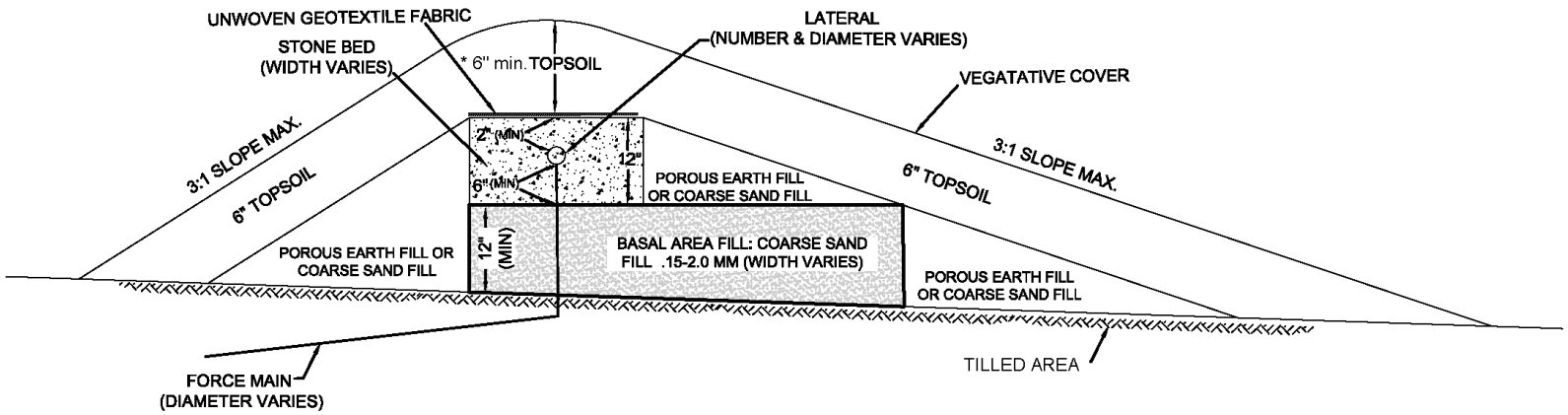
*Additional topsoil as required to provide drainage

ILLUSTRATION 5
TYPE V MOUND SYSTEM ON LEVEL SITE
(NOT TO SCALE)



* Additional topsoil as required to provide drainage

ILLUSTRATION 6
TYPE V MOUND SYSTEM ON SLOPING SITE
(NOT TO SCALE)



* Additional topsoil as required to provide drainage